Electricity Generation Company of Bangladesh (EGCB)
Government of the People's Republic of Bangladesh

BANGLADESH SCALING-UP RENEWABLE ENERGY PROJECT
Environmental and Social Management Framework (ESMF)

May 2018

Abbreviations

ABC	Axially Bundled Cables
BDT	Bangladesh Taka
BMD	Bangladesh Meteorological Department
BNBC	Bangladesh National Building Code
BREB	Bangladesh Rural Electrification Board
BRTC	Bureau of Research Testing and Consultation
BUET	Bangladesh University of Engineering and Technology
COD	Chemical Oxygen Demand
DG	Director General
DoE	Department of Environment
DSM	Design Supervision Management
EA	Environmental Assessment
ECA	Ecologically Critical Area
ECR	Environment Conservation Rules
ECoP	Environmental Code of Practice
ECR	Environment Conservation Rules
EGCB	Electricity Generation Company of Bangladesh
EIA	Environmental Impact Assessment
EMF	Electro-Magnetic Field
ESA	Environmental and Social Assessment
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESU	Environmental and Social Unit
FGD	Focus Group Discussion
GIS	Gas Insulated Switchgear
GAAP	Governance and Accountability Action Plan
GoB	Government of Bangladesh
GRC	Grievance Redress Committee
GSS	Grid Substation
IDA	International Development Association
IEE	Initial Environmental Examination
LGED	Local Government Engineering Department
OHS	Occupational Health and Safety
OP	Operational Policy
PAP	Project Affected Person
PBS	Palli Biddyut Shamiti
PCAIP	Public Consultation and Access to information Plan
PD	Project Director
PM	Particulate Matter
PMO	Project Management Office
PMU	Project Management Unit
PPE	Personal Protective Equipment
RCC	Reinforced Cement Concrete
RoW	Right of Way
SECs	Special Environmental Clauses
SIA	Social Impact Assessment
SMF	Social Management Framework
SMP	Social Management Plan
SPM	Suspended Particulate Matter
TDS	Total Dissolved Solids
TL	Transmission Line
TPP	Tribal People Plan
ToR	Terms of Reference
WB	World Bank

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Executive Summary

Project Description

Electricity Generation Company of Bangladesh (EGCB) has identified a potential site to develop an aggregate capacity of 200 MW from solar PV and wind under Feni District in Sonagazi Upazilla. As part of the **Scaling-up Renewable Energy Project,** financed by The World Bank, Component-1 involves construction of a 50MW PV generation plant and the required infrastructure including: evacuation lines from the site to the nearest grid sub-station (GSS), pooling substations, civil engineering structures for mitigating flooding risks and roads within the project site. This project would be the first-ever large-scale grid-tied solar PV in Bangladesh, at a site owned by the state-owned generation utility (EGCB). EGCB will procure, through a competitive bidding procedure, an engineering, procurement and construction (EPC) and operation and maintenance (O&M) contract for the solar PV plant that covers O&M of the facility for the first three years after commissioning.

Power generated from the plant at Feni will be evacuated to one of possible three GSS. The Generated power from this project will be stepped up to kV level of transmission line and then evacuated through dedicated feeder lines to the pooling SS. The pooling SS is likely to be connected to 230 kV Mirsarai GSS. This pooling SS will be developed in a manner that the entire 200 MWac capacity shall be catered through this transmission line to the GSS.

An Environmental Impact Assessment for the proposed PV Plant has already been completed. Under the proposed project, the EGCB will keep the construction of the transmission line as one of the component for construction of 50 MWac Solar power plant at Sonagazi, Feni including identification of alignments, screening and analyses of alternatives. The ESMF presents guidelines (in the form of a simple format) for preparation of description of the sub-projects. Based on these and other relevant documents, EGCB will assess the requirements for subsequent environmental and social impact assessment (IEE and ESMP or ESIA), in consultation with the DoE.

The project is classified as “Category B” based on the expected impacts as per WB OP4.01. Given that the specific location and route of the transmission line has not yet been identified, an Environmental and Social Management Framework (ESMF) would be required to mainstream relevant environmental and social concerns into the preparation, design and implementation of the project. The approved ESMF should be disclosed publicly on the EGCB Ltd. Website in Bangladesh and on the World Bank website before the project appraisal by the Bank.

Policy, Legal and Administrative Framework

The proposed Bangladesh Scaling-Up Renewable Energy Project (SREP) will be implemented in compliance with applicable GoB environmental laws and regulations and the WB policies. This ESMF presents an overview of the major national environmental laws and regulations that are relevant and may apply to activities supported by the project, institutional arrangement at national and sub-national level, and World Bank safeguard policies.

Notable relevant national policies, laws and regulations include:

- National Environmental Policy 1992
- Bangladesh Environmental Conservation Act (ECA), 1995 amended 2002

- Environment Conservation Rules (ECR) 1997 amended 2003
- Bangladesh Labor Act, 2006
- Bangladesh National Building Code
- The Electricity Act, 1910
- Electricity (Amendment) Act,2012 (Draft)
- The Acquisition and Requisition of Immovable Property Act, 2017
- Constitutional Right of the Tribal People

The World Bank has ten environmental, social, and legal safeguard policies, the relevant ones to this project are listed in below:

- **Environmental policies:**
  OP/BP 4.01 Environmental Assessment
  OP/BP 4.04 Natural Habitats
- **Social Policies:**
  OP/BP 4.10 Indigenous Peoples
  OP/BP 4.12 Involuntary Resettlement

Environmental Management Framework

The ESMF presents general policies, guidelines and procedures to be integrated into the design and implementation of transmission line construction under Component 1 of the proposed SREP project[1]. Its overall objective is to assist EGCB to ensure that:

- 230KV double circuit Transmission line with moose conductor to Mirsarai sub-station will be implemented considering potential environmental and social issues, especially of those people who would be directly benefited or impacted by the proposed project;
- This transmission line will be designed considering unique socio-economic and environmental condition of the project selected project area
- To identify possible environmental and social impacts due to construction of Transmission line
- To guide preparing Environmental and Social Management Plan (ESMP) and Environmental Code of Practices (ECoP) to insure project activities comply with the relevant policies, rules and regulations of the GoB (e.g., Environmental Conservation Rules 1997) and safeguard policies of the WB. The EGCB will obtain the necessary environmental clearance from the Department of Environment (DoE).

Environmental/ Social Screening

In order to avoid significant negative social and environmental impacts a detailed screening is necessary to get a preliminary idea about the degree and extent of potential environmental and social impacts for construction of transmission line. The environmental/social screening would involve: (i) reconnaissance of the project areas/routes and their surroundings; (ii) identification of the major project activities and (iii) preliminary assessment of the impacts of these activities on the biological, physico-chemical and socio- economic environment of the project surrounding

[1] Environmental and social impacts, mitigation measures and management for the other physical works under Component 1 have been addressed in a separate ESIA document prepared by EGCB.

areas.

In general, the environmental/social screening process identifies what impacts will be generated and what type of mitigation measures will be required for the construction of the Transmission line. It will also determine whether a proposed project should follow the Environmental Code of Practices (ECoP) to mitigate/avoid its impacts or prepare a detailed assessment and environmental/social management plan. The level of environmental and social assessment (ESA) of a project will primarily depend on its classification according to OP 4.01, and ECR 1997. The proposed project herein has been classified as "Category B" which would require conducting an environmental and social assessment that takes into account the different stages of the project (pre-construction, construction, operation, and commissioning). The safeguard policies which are triggered in this case include: Environmental Assessment OP/BP4.01; Natural Habitats OP/BP4.04; Indigenous Peoples OP/BP 4.10, and Involuntary Resettlement OP/BP4.12. Furthermore, the World Bank Group General Environmental, Health and Safety (EHS) Guidelines and the Electric Transmission and Distribution EHS Guidelines are also applicable. Accordingly, the safeguard documents needed will include ESIA, ESMP, RAP and IPP (as applicable). These documents shall upon completion be disclosed on both EGCB and World Bank websites before project appraisal.

Analysis of Alternatives

The primary objective of the "analysis of alternatives" is to identify the location/technology for a particular project that would generate the least adverse impact, and maximize the positive impacts. The analysis of alternatives should be carried out at two different levels: (a) during the initial environmental/social screening; and (b) during carrying out of IEE/ESIA of a sub-project, if needed (e.g., by the consultant engaged for this purpose).

In general, for any sub-project, the analysis of alternative should focus on:
(a) Alternative location (for substation) or route (for transmission line);
(b) Alternative design and technology;
(c) Costs of alternatives; and
(d) No project scenario.

The consultant of EGCB will carry out screening for all proposed alternative sites/alignments for routes of the transmission line based on the screening form given in Annex 1. Then, utilizing the information contained in the completed screening forms, analysis of alternative routes (for new transmission lines) can be undertaken, such as avoiding homestead areas, as much as possible; avoiding crossing of rivers/hills/bamboo groves/cash-in trees, as much as possible. If the homestead areas (or other sensitive infrastructure) are not avoidable in any of the options, the EGCB will consult with the owner/respective authority and will take necessary steps to use their land for the construction of transmission/distribution lines. For transmission lines, use of Axially Bundled Cables (ABC) or insulated cables instead of the conventional separate cables would prevent pilferage of power through illegal connections. The outcome of the "analysis of alternatives", for example, with respect to location/ route of project, technology (e.g., type of substation, type of cables) should be included in the project description.

Assessment and Prediction of Impacts and Mitigation Measures

The overall impacts of the proposed transmission lines are expected to be minimized or eliminated by adopting appropriate mitigation measures (see Table A). There is also a scope to enhance some of the beneficial impacts to be generated.

Table A: **Possible impacts and mitigation measures during construction phase**

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Construction and operation of labor shed for workers	• Generation of sewage and solid waste; water/ environmental pollution.	• Construction of sanitary latrine/ septic tank system. • Erection of "no litter" sign, provision of waste bins/cans, where appropriate.	Contractor (Monitoring by EGCB or relevant agencies)
	• Health of workers	• Raising awareness about hygiene practices among workers. • Availability and access to first-aid equipment and medical supplies.	
	• Possible development of labor camp into permanent settlement	• Contractor to remove labor camp at the completion of contract	
	• Outside labor force causing negative impact on health and social well-being of local people	• Contractor to employ local work force, where appropriate; promote health, sanitation and road safety awareness.	
General construction works	• Drainage congestion and flooding	• Provision for adequate drainage of storm water. • Provision of adequate diversion channel, if required. • Provision for pumping of congested water, if needed. • Ensure adequate monitoring of drainage effects, especially if construction works are carried out during the wet season.	Contractor (Monitoring by EGCB)
	• Land slips/slides	• Detailed management plan to reduce landslides and ensure slope stabilization, wherever applicable	
	• Air pollution	• Ensure that all project vehicles are in good operating condition. • Spray water on dry surfaces/ unpaved roads regularly. • Maintain adequate moisture content of soil during transportation, compaction and handling. • Sprinkle and cover stockpiles of loose materials (e.g., fine aggregates). • Avoid use of equipment such as stone crushers at site, which produce significant amount of particulate matter.	

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	• Traffic congestion, obstruction to pedestrian movement	• Schedule deliveries of material/ equipment during off-peak hours. • Depute flagman for traffic control. • Arrange for signal light at night.	
	• Noise pollution	• Use of noise suppressors and mufflers in heavy construction equipment. • Avoid using of construction equipment producing excessive noise at night. • Avoid prolonged exposure to noise (produced by equipment) by workers. • Regulate use of horns and avoid use of hydraulic horns in project vehicles.	
	• Water and soil pollution • Destruction of aquatic habitat	• Prevent discharge of fuel, lubricants, chemicals, and wastes into adjacent rivers/ khals / drains. • Install sediment basins to trap sediments in storm water prior to discharge to surface water. • Keep noise level (e.g., from equipment) to a minimum level, as certain fauna are very sensitive to loud noise (e.g., during transmission tower construction over river/wetlands)	
	• Felling of trees, clearing of vegetation	• Replant native vegetation when soils have been exposed or disturbed. • Plantation to replace felled trees. • If alignment is through/near ecological sensitive areas, then a Biodiversity Management Plan may be required.	
	• Accidents	• Follow standard safety protocol. • Environmental health and safety briefing. • Provision of protective gears as specified in ECoP 20. • Provision of appropriate protective measures against accidental fall from elevated height (e.g. using body harness, waist belts, secured climbing devices, etc.)	
	• Spills and leaks of oil, toxic chemicals	• Good housekeeping. • Proper storage and handling of lubricating oil and fuel. • Collection, proper treatment, and disposal of spills.	
Health and Safety (see details in ECoP20)	• Exposure to physical hazards from use of heavy equipment and cranes; trip and fall hazards, • Exposure to dust and noise; falling	• A safety observer must be appointed at each subproject site by the Contractor before the commencement of work. • Only allowing trained and certified workers to install, maintain, or repair electrical equipment. • Deactivating and properly grounding live power distribution lines before	Contractor (Monitoring by EGCB)

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	objects; work in confined spaces; • Exposure to hazardous materials; • Exposure to electrical hazards from the use of tools and machinery. • Working at heights	work is performed on, or in close proximity, to the lines; • Proper Personal Protective Equipment (PPE) for all workers and others associated with work. • Where rehabilitation is required within minimum setback distances, specific training, safety measures, personal safety devices, and other precautions should be defined before work. • An EMG Exposure Mitigation Plan may be required.	
All construction works	• Beneficial impact on employment generation. • General degradation of environment. • Discovery of historical items and cultural remains.	• Employ local people in the project activities as much as possible. • Environmental enhancement measures, such as plantation, landscaping, traffic/ direction signs. • Follow “chance find procedure”	Contractor (Monitoring by EGCB)
Installation of poles of transmission / distribution lines adjacent to roadways	• Traffic congestion / traffic problems. • Safety	• Not storing electric poles/transmission tower components over busy roads/ highways. • Following standard safety protocols while erecting poles and stretching cables. • Taking appropriate protective measures against accidental fall from elevated height (e.g. using body harness, waist belts, secured climbing devices, etc.) as specified in ECoP.	Contractor (Monitoring by EGCB)
Construction of transmission line through natural habitat or tree plantation area	• Impact on biodiversity, vegetation and habitat	• Modify alignment, facility/activity locations and timing to avoid critical ecosystems, migratory routes and breeding areas • If there’s no alternative, felling, pollarding, lopping and pruning of trees for electric clearance, whenever necessary, to be done with permission from the local forest office/appropriate authority; • Hand clearing of vegetation. • Strict prohibition on use of chemicals for forest clearance/RoW maintenance. • Use of existing path/access roads for movement of man and machinery; • Carrying tower materials into forests by head loads. • If alignment is through/near	Contractor (Monitoring by EGCB)

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
		ecological sensitive areas, then a Biodiversity Management Plan may be required.	
Tower foundation in rivers	• Impact on fisheries and other aquatic life in rivers. • Collision with water vessels.	• Minimize river crossings • Installation of underwater enclosures to minimize noise propagation. • Use signage and construction of fender (if necessary).	Contractor (Monitoring by EGCB)

PGCB will be in charge of the operation and maintenance of the proposed power transmission infrastructure (see Table B). In addition, regular maintenance and management of storm drains in substations would be required to reduce potential risks associated with accidental spillage of transformer/ generator fuel into the drainage system.

Table B**: Possible impacts and mitigation measures during operational phase**

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Regular maintenance	• Safety	• Regular patrolling along the transmission line to identify the need for regular and immediate maintenance operation. • Inspection immediately after a major storm/rainfall event. • Regular cutting and trimming of trees around transmission lines. • Taking appropriate protective measures against accidental fall from elevated height during regular maintenance operations (e.g. using body harness, waist belts, secured climbing devices, etc.). • Provision for shutting down of line in case of snapping of line. • Regular monitoring of transmission line to prevent electricity pilferage	PGCB
Operation of Transmission Lines	• Ecological Impacts	• Transmission line design to minimize or avoid electrocution of birds	PGCB
Installation of new transformers	• Safety	• Adequate caution should be taken to carry out installation works by personnel at elevated height. • Instrument should be properly anchored with poles.	PGCB
Maintenance of transmission/ distribution lines	• Traffic congestion, obstruction to pedestrian movement, safety. • Impact on biodiversity, vegetation, habitat.	• Depute flagman for traffic control. • Arrange for signal light at night. • Following standard safety protocol. • Felling, pollarding, lopping and pruning of trees for RoW maintenance to be done with permission from the local forest office/appropriate authority.	/PGCB
Health and Safety	• Safety	• Avoiding alignments adjacent to	PGCB

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	• Exposure to EMF • Exposure to chemicals • Exposure to electrical hazards from the use of tools and machinery.	residential properties or locations with frequent human occupancy so as to avoid or minimize exposure to the public. • Only allowing trained and certified workers to maintain or repair electrical equipment. • Taking appropriate protective measures against accidental fall from elevated height during regular maintenance operations (e.g. using body harness, waist belts, secured climbing devices, etc.). • Deactivating and properly grounding live power distribution lines before work is performed on, or in close proximity, to the lines; • Proper Personal Protective Equipment (PPE) for all workers and others associated with work. • Training of workers in the identification of occupational EMF levels and hazards. • Establishment and identification of safety zones to differentiate between work areas with expected elevated EMF levels compared to those acceptable for public exposure. • Use of signs, barriers (e.g. locks on doors, use of gates, use of steel posts surrounding transmission towers, particularly in urban areas), and education / public outreach to prevent public contact with potentially dangerous equipment.	
Disposal of Waste Materials	• Pollution of land • Pollution of surface and/or groundwater resources	• All wastes materials (solid or liquid) should be handled, transported and disposed of in a safe manner. The appropriate disposal site should be selected in coordination with local government authorities.	PGCB, Local Government Authority (District Administration, Municipality, City Corporation)

PGCB shall ensure the adequate management of traffic and pedestrian movement to minimize potential risks of accidents during maintenance of transmission lines/ distribution lines. Movement of heavy vehicles (loaded trucks) on local roads should also be properly managed by concerned implementing agencies to avoid possible damages to local roads.

Social Management Framework

Stakeholder Engagement Community Participation & Consultations:

Community/stakeholder consultations will be conducted throughout the project cycle, with varying focus on issues relating to the subproject activities and the people who may have stakes therein. More formal consultations, focus group discussions and interviews of knowledgeable local persons will start with feasibility study, social (and environmental) screening, PAP census and impact assessment, and preparation and implementation of the impact mitigation plans. Focus of consultations will generally shift from wider audience to specific groups who have direct stakes in the project.

EGCB will employ consultant to conduct consultation meeting with local community before selecting RoW of transmission line. The project will seek to get feedback from the affected HHs of the transmission line and incorporate in the project document. If any mitigation measures are suggested by the stakeholders those will be incorporated following the law of the land. EGCB will take stakeholders' feedback as part of transmitting the generated renewable electricity to the beneficiary group. Table C describes the consultation and disclosure roles and responsibilities.

There have already been some consultations regarding the project as part of the ESIA for the PV Plant. These consultations included discussions regarding the proposed transmission line. A Public discussion meeting was held on 22nd January 2018 at Char Chandia Union Parishad, Char Chandia. Affected persons, local community and relevant stakeholders including both govt. and private sector representatives were participated in this Public Consultation Meeting.

Table C: Consultation and Disclosure Roles and Responsibilities

Project Phase	Activities	Details	Responsible Agency
Project Initiation Stage	-Subproject information dissemination on various components. -Disclosure of preliminary plans for proposed land acquisition. -Preliminary Information sharing about the tentative alignment/sites with the DPs in case of temporary impact on business, income and livelihood.	-Leaflets posted or distributed containing information on the project. -Public notice issued in public places including newspapers and direct consultation with DPs /DPs.	Consultant of EGCB
RAP Preparation Phase	Stakeholder consultations.	-Further consultations with DPs and households, titled and non-titled. -Summary RPF made available to all DPs at the convenient place which is easily accessible and should be in local language.	Consultant of EGCB
	Disclosure of final entitlements and rehabilitation packages and disclosure of draft RAP.	RAPs disclosed to all DPs in local language	Consultant of EGCB

Project Phase	Activities	Details	Responsible Agency
	Finalization of RP.	-Review and approval of RAP by EA. -Review and clearance of RP by World Bank (prior to award of contract). Web disclosure of the RAP. Disclosure of the Final RP to DPs	EA/IA
RAP Implementation Stage	Ongoing consultation with DPs during RAP implementation.	-Continued discussions and information disclosure to DPs; -Payment of entitlements (all compensation must be paid before displacement occurs. -Grievance Redress Mechanism activated. -Written notification from EA/IA to WB that all compensation paid before displacement occurs. Construction can begin on sections where compensation is paid and community notified of start date of civil works. - DPs with unresolved grievances or disputes over land ownership, compensation amounts, etc. are notified of any compensation payments set aside by EA/IA in separate escrow accounts to be paid when disputes are resolved.	EGCB/Implementing NGO

Abbreviated (Summary) Resettlement Action Plan

In cases where the impacts of the project are marginal such that less than 200 persons (about 40-50 families) are affected without any large scale displacement, or where the impacts are minor, although more than 200 persons may be affected, a simple abbreviated RAP should be prepared. It should provide general information on the project, social impacts and the number of people affected, entitlements for compensation and other assistance for each category of PAPs, estimated cost, and implementation schedule.

Detailed RAP

In cases where the project affects and/or displaces more than 200 people (40-50 families), a time-bound Resettlement Action Plan (RAP) for the project will be prepared in accordance with the provisions of this Framework. The threshold of 200 PAPs should apply to all sub-projects

put together for which one single standalone RAP would be required. Resettlement plans should be built around development strategy, and compensation, resettlement, and rehabilitation packages should be designed to improve or at least restore the social and economic base of those severely affected. Preference may be given to resettling vulnerable people dislocated from their existing settings by providing opportunities for sustainable income generation in similar settings following the law of the land to improve status of the poor to bring them up to an acceptable level above the poverty line.

The RAP will include: (i) project description and brief description of impacts; (ii) specific measures taken to minimize adverse impacts; (iii) socio-economic survey; (iv) detailed description of impacts and category of PAPs; (v) entitlement for different types of losses; (vi) specific measures provided to vulnerable groups and for income rehabilitation assistance; (vii) public consultation and participation; (viii) estimated resettlement cost; (ix) monitoring and evaluation procedures; (x) organizational responsibilities and implementation procedures including valuation of lost assets; (xi) implementation schedule and (xii) grievance redress mechanism.

Grievance Redress Mechanism

A Grievance Redress Mechanism (GRM) will be set up to address the raised issues, concerns, problems, or claims (perceived or actual) that individuals or community groups want to address and be resolved by the committee. . The grievance mechanism is a locally based, project-specific extra-legal way to deal with and resolve complaints and grievances to enhance project performance standards. . World Bank has specific clauses/guidelines requiring the borrower/client to set up and maintain a grievance redress mechanism at the Project level. A two-tier bottom up GRC system will be established in this Project. First, there will be Grievance Redress Committees (GRCs) at the local level, hereafter called Local GRC (union/municipality level); and second, GRC at the project level to allow grievances to be fairly reviewed. . The Affected Persons (Aps) will be informed through public consultation that they have a right to have their grievances redressed by the local committees as well as by the project management. Other than disputes relating to ownership right under the court of law, the GRC will review grievances involving all environmental and social issues. The local GRCs (at the union/municipal level) will hear the grievances first. Only unresolved cases will be forwarded to the next tier – Project level GRC for further review and resolution. Grievances will be redressed within a month from the date of lodging the complaints. GRC decisions will be on a majority basis and will be disclosed and available for review by the stakeholders. If any disputant is unhappy or unsatisfied with the outcome of the Project level GRC, he/she may approach to higher authority. The Project-Level GRC will review all unresolved cases forwarded to by Local GRCs. It will be headed by the Project Director (PD). The Project-level GRC with representation of member of relevant ministry and civil society member will further establish fairness and transparency in the resolution of disputes or grievances. In specific cases, Project-level GRC may seek legal advice from any external legal advisor through taking permission from the competent authority, if required.

Gender

A gender-responsive social assessment was undertaken and the major possible gaps identified were: 1) livelihood impact on female for construction of transmission line 2) information, awareness, capacity and financial gap among women, including entrepreneurs that could benefit from the construction of transmission line, and 3) low institutional gender capacity of EGCB that

could translate into effective gender institutional/regulatory mechanisms. The following activities have been agreed to help address the gaps: 1) EGCB will provide training and capacity building specifically to project affected women on alternative livelihoods, such as the fisheries, and productive uses of electricity including female participation in its training and capacity building activities; and 23) ECGB will review their labor and gender guidelines and prepare a plan on how to strengthen their implementation within the Project. Relevant indicators in the results framework include share of women that found the EGCB livelihood training useful, and a gender implementation plan in place at EGCB.

Institutional Arrangement and Responsibility

EGCB

A Project Implementing Unit (PIU) will be established in EGCB according to the government rules. The purpose of project implementation unit is to ensure (i) Project Oversight and Policy Direction, (ii) Project Coordination and Management, and (iii) Project Implementation. It will consist of a Project Director, Deputy Project Director, Deputy/Assistant Manager, Sub-Divisional Engineer, Assistant Engineer. To assist in the implementation of the ESMF (and subsequent ESIA if required), a Social Safeguards Specialist and an Environmental Consulting firm will be hired to support the PIU for stipulated time.

In addition of Contractor's general arrangement to carry out the project works, the Contractor must hire at least one environment, health and safety supervisor for each subproject before the commencement of work. The Contractor/Subcontractor shall abide by the rules of regulation of the Occupational Health and Safety as stipulated in the Labor Act- 2006 and BNBC codes. The contractor shall also abide by the clauses of health and safety in General Conditions and Particular Conditions of Contract of the bid document. Role of environment, health and safety supervisor: Primary role is to monitor the movement of people, workers and equipment, give timely warnings of any risk or non- compliance with safe work procedures and, where necessary, stop work if a risk situation escalates or cannot be minimized as well as look the potential environmental issues (air pollution, noise level, water quality, waste management etc.).

Department of Environment (DoE)

The DoE is a regulatory body for issuing Site Clearance and Environmental Clearance Certificates (ECC), if applicable as per Environmental Conservation Rules (1997). The DoE has mandate for monitoring and enforcement of conditions specified in the ECC as and when required.

Local Administration

The Deputy Commissioner's Office has authority to acquire land as and when required. . Usually No Objection Certificates (NOC) are issued by the local administration if required for any clearances including Environment.

The ESMF roles and responsibilities of the project implementation team are provided in Table C.

Table C: ESMF Roles and Responsibilities of Project Implementation Team

Responsible Unit	Major Activities	Output	Action Time Frame
Project Implementation Unit (PIU)	Guide overall Safeguard Performance of the project	Oversight and monitoring Obtain safeguard Clearance from World Bank	Throughout project life cycle
Social Safeguard Specialist, PIU (see sample TOR in Annex 5)	Monitor key activities and track performance of social issues. Identify and correct problems. Keep adequate records of performance. Conduct periodic safeguard management system audits Capacity development of PIU and professionals of implementing agencies	Instructions to PIU	Throughout project life cycle
Environmental Consultant, PIU (see sample TOR in Annex 6)	Monitor key activities and track performance of environmental issues. Identify and correct problems. Keep adequate records of performance. Conduct periodic safeguard management system audits Capacity development of PIU and professionals of implementing agencies	Instructions to PIU	Throughout project life cycle

Training Requirements

As discussed above, EGCB will be responsible for carrying out "environmental/social screening" and "analysis of alternatives", and guidelines have been provided in the ESMF for carrying out these activities. However, basic training on regulatory requirements, environmental impacts, and environmental assessment and management would greatly improve the capability of relevant EGCB engineers and experts in carrying out their responsibilities under the proposed project. Training for the officials may be arranged in phases, where project would be initiated immediately would receive training first, others would gradually receive training as project work progresses (see Table D). From logistic point of view, the trainings may be organized on a regional basis.

Table D: Training requirements for environmental management

Training Type/ Contents	Participants	Schedule
General environmental awareness, regulatory requirements, ESMF frameworks for project, environmental impacts and mitigation, analysis of alternatives, environmental management	Relevant engineers/ officials of EGCB	Prior to commencement of project activities
Advanced training on environmental assessment, management (EMP, RAP, TPP, ECoP), EHS/ OHS, monitoring, including details on ESMF framework	(a) Environment and social Unit of EGCB, (b) Relevant Engineers	Immediately after project commencement

EGCB will employ individual/supervision/DSM consultant, who would support EGCB in overall environmental/social management. However, since the overall responsibility of environmental management lies with EGCB, they need to ensure that the consultants are carrying out their responsibilities properly. For this purpose, it is important that the EGCB engineers/officials receive advanced training on environmental management and monitoring. Such training will

assist them in properly overseeing the activities of the consultant engaged in environmental management of the proposed project following the ESMF.

A training budget of approximately Taka 700,000 (USD 8,433) has been estimated for capacity building purposes (Table E).

Table E: ESMF Training Budget

SN	Item	Amount (BDT)	Amount (USD)[a]	Remarks
1	Training on Environmental and Social Issues for PMU	300,000	3,614	2-day training by hired Social and Environmental Consultants
2	Advanced training on environmental and social management and monitoring	300,000	3,614	2-day training of EGCB PMU Environment and Social Unit as well as relevant Engineers by hired Consultants
3	Training on Environmental and Social Issues for EGCB Officials	100,000	1,205	1-day training at EGCB office by PMU Environment and Social Unit

Notes: a. Conversion rate used: USD 1 = BDT 83

ESMF Monitoring and Reporting

During implementation of all sub-projects, the EGCB will be responsible to monitor and make sure that the environmental mitigation/enhancement measures (including health and safety measures) outlined in the ESMP for the particular project are being implemented in accordance to the provisions of the Tender Document.

ESMF monitoring will be carried out to ensure that the mitigation plans are regularly and effectively implemented (Table F). The PMU environment and social specialists will carry out ESMF monitoring to ensure that the mitigation plans are being effectively implemented and will conduct field visits on a regular basis.

Table F: ESMF Monitoring Plan

Project Phase	What	When	Who	How
Preparation	Training and Capacity Building Activities	Before preparation of tender documents	PD	Review Training Records
Preparation	Ensure Screening of Environmental and Social Issues	After alignment options are confirmed by PD	PMU Environment and Social Cell	Review completed Screening Sheets
Construction	Training and Capacity Building Activities	Monthly	PD	Review Training Records
Construction	Grievances Records	Monthly	PD	Review GRM register
Construction	Environmental and social mitigation/ enhancement measures (including health and safety	Monthly	PD	Review ESMP monitoring documents

Project Phase	What	When	Who	How
	measures) outlined in the ESMP and in cooperated in the tender bidding documents and the approved contracts.			
Operation and Maintenance	Grievances Records	3-Monthly	PD	Review GRM register
Operation and Maintenance	Environmental and social mitigation/ enhancement measures (including health and safety measures) outlined in the ESMP	3-Monthly	PD	Review ESMP monitoring documents

Table G: ESMF Reporting Requirements

Report/Document	Description	Prepared By	Submitted To	When
Training Records	Register of all Trainings and Capacity Building activities conducted under the project	Environment and Social Cell of PMU or Consultants	PD	Within 3 weeks of any training/capacity building activity
Completed Safeguards Screening Forms	Identifies Potential Environmental and Social Issues	Environment and Social Cell of PMU or Consultants	PD	After completing forms
GRM Records	Register of grievances received and actions taken	GRC or Consultants during construction phase and then relevant EGCB officer thereafter	PD	Monthly
ESMP Monitoring records	Monitoring data as defined in the ESMP	Contractor, Environment and Social Cell of PMU and/or Consultants	PD	Monthly or as per ESMP requirements

The ESMF reporting requirements include the following:

- Training Records prepared by Environment and Social Cell of PMU or Consultants
- Completed Safeguards Screening Forms prepared by Environment and Social Cell of PMU or Consultants
- GRM Records prepared by Grievance Redress Committee (GRC) or Consultants during construction phase and then relevant EGCB officer thereafter
- ESMP Monitoring records prepared by Contractor, Environment and Social Cell of PMU and/or Consultants

The above reports are to be reviewed by the Project Director on a regular basis (Table G).

Chapter-1: Project Description

1.1 Background of the Project

The Government of Bangladesh (GOB) has taken a systematic approach towards renewable energy (RE) development including relevant policy and institutional development. As per the National Renewable Energy Policy 2008, the plan is to add generation capacity of 2,000 MW by 2020 from renewable sources. The Government has also set renewable energy development targets for several technologies for each year from 2015 to 2021 ("RE Development Targets"). The RE Development Targets call for an additional 3,100 MW of renewable energy capacity to be installed by 2021. Most of the new capacity is planned from solar (1,676 MW, or 54 percent) and wind (1,370 MW, or 44 percent), and there are also targets for waste-to-energy (40 MW), biomass (7 MW), biogas (7 MW) and small hydro (4 MW). Furthermore, the Power System Master Plan 2010 sets goals for fuel diversification with an emphasis on increasing the role of renewable energy in the power generation mix.

Electricity Generation Company of Bangladesh Limited (EGCBL) has identified a potential site to develop an aggregate capacity of 200 MW from solar PV and wind under Feni District (**Figure 1**) in Sonagazi Upazilla (**Figure 2**). As part of the **Scaling-up Renewable Energy Project,** financed by The World Bank., The proposed 50MW PV generation plant and the required infrastructures including: evacuation lines from the site to the nearest grid sub-station (GSS), pooling substations, civil engineering structures for mitigating flooding risks and roads within the project site. and under the solar PV there would be provision for cultivation of coastal fisheries. This project would be the first-ever large-scale grid-tied solar PV in Bangladesh, at a site owned by the state-owned generation utility (EGCB). EGCB will procure, through a competitive bidding procedure, an engineering, procurement and construction (EPC) and operation and maintenance (O&M) contract for the solar PV plant that covers O&M of the facility for the first three years after commissioning.

Power generated from the plant at Feni will be evacuated to the 230 kV Mirsarai GSS through 230 kV double circuit transmission. The Generated power from this project will be stepped up to kV level of transmission line and then evacuated through dedicated feeder lines to the pooling SS. The pooling SS should be of 230 kV level to be connected to 230 kV Mirsarai GSS. This pooling SS will be developed in a manner that the entire 200 MWac capacity shall be catered through this transmission line to the 230 kV Mirsarai GSSs.

Under the proposed project, the EGCB will construct transmission line. EGCB will also identify project sites, screening and analyses of alternatives. The ESMF presents guidelines (in the form of a simple format) for preparation of description of the projects. Based on these and other relevant documents, EGCB will assess the requirements for subsequent environmental and social assessment (IEE and ESMP or ESIA), in consultation with the DoE.

The project is classified as "Category B" based on the expected impacts as per WB OP4.01. Given that the specific location and route of the transmission line has not yet been identified, an Environmental and Social Management Framework (ESMF) would be required to mainstream relevant environmental and social concerns into the preparation, design and implementation of the project. The approved ESMF should be disclosed publicly on the EGCB Ltd. Website in Bangladesh and on the World Bank website before the project appraisal by the Bank.

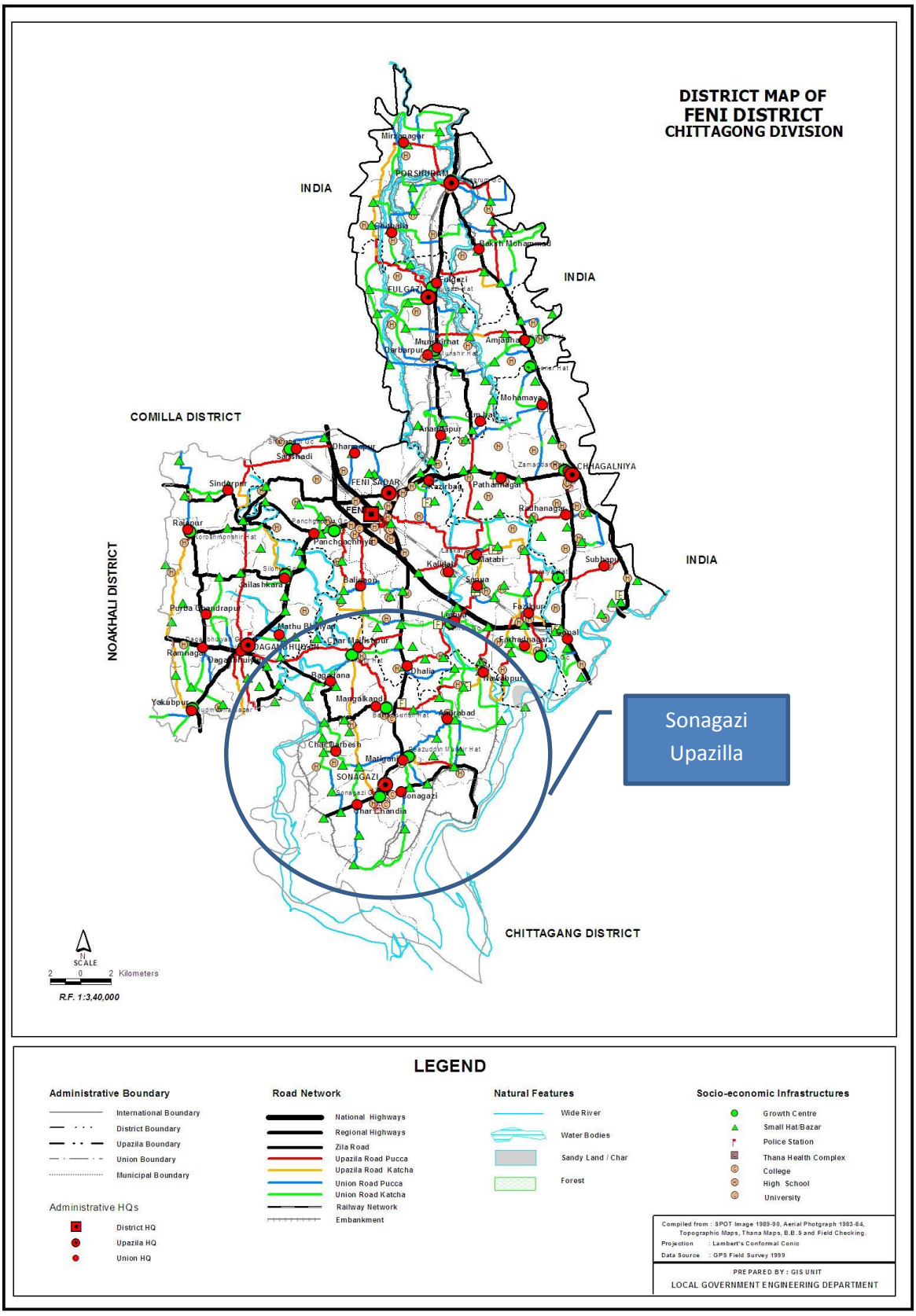


Figure 1: Feni District Map (Source: LGED)

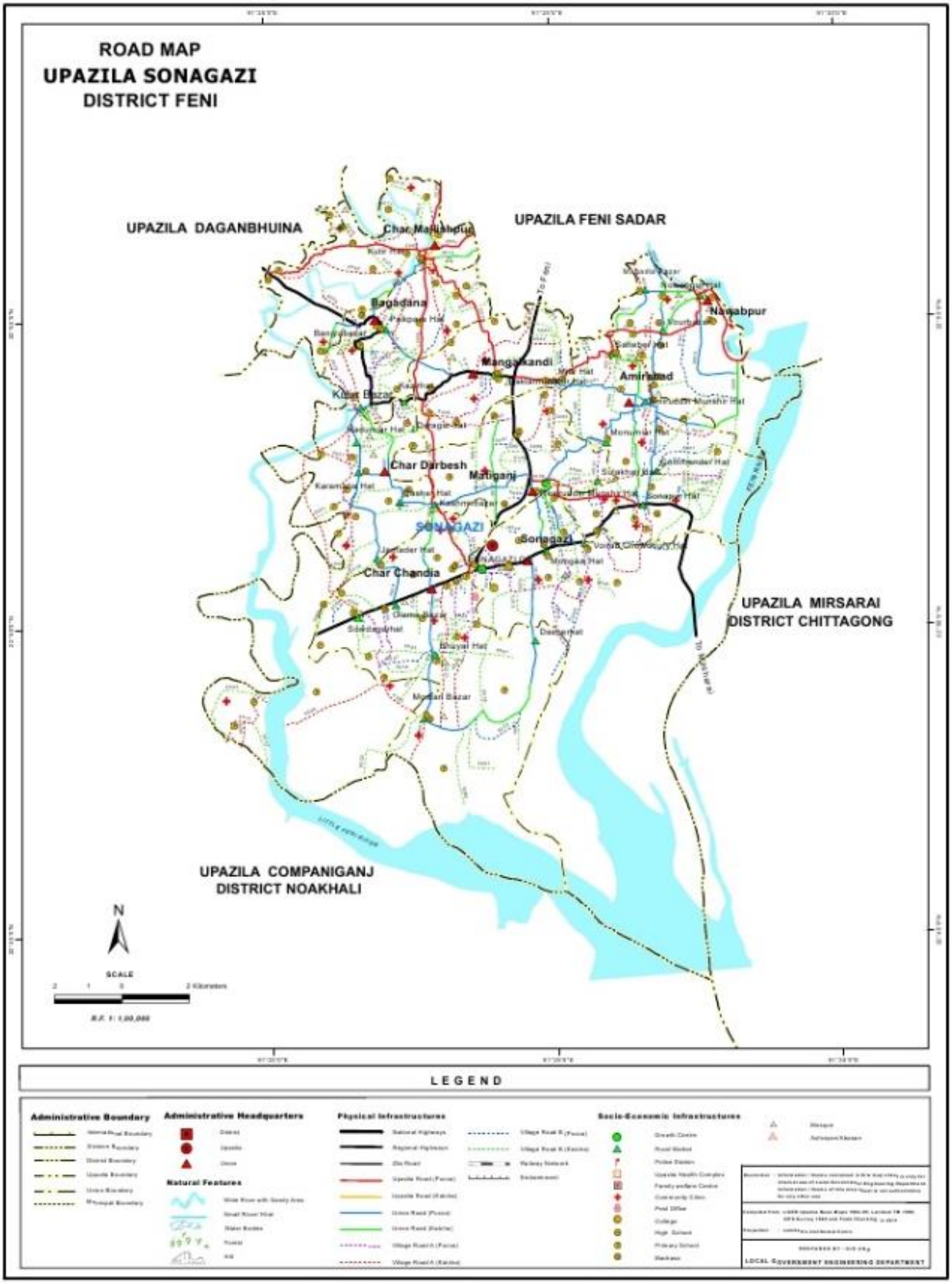


Figure 2: Sonagazi Upazila Map (Source: LGED)

1.2 Project Area

The start of the transmission line will be at the proposed site of the PV plant. An ESIA for the development of the 50MW grid-connected PV panel at the Feni site was completed in April 2018. , According to the ESIA, the PV Plant site is located on the north bank of the Choto Feni

River and falls within the Young Meghna Estuarine Floodplain. There are no large tree species and precious environmental components present in this site. Currently, the site topography is flat and the land is inundated for 4-5 months continuously at various depths. The maximum historical high water level has been 5 meters during the super-cyclone of 1991. Musapur Dam on Choto Feni River is close to the project site at 800m distance. The nearest important features near the PV plant site are (ESIA Report):

- Purbo Barodhuli Village – Approximately 250 m north from the Project Site boundary;
- Ashrayan/Adarsha Village – Approximately 400 m west-north-west from Project Site boundary;
- Musapur Dam – Approximately 700 m south-west from Project Site boundary;
- Musapur Regulator – Approximately 2.15 km south-west from Project Site Boundary;
- Musapur Reserve Forest – Approximately 1.4 km south-west from Project Site boundary.

The other end of the transmission line will connect to a proposed substation at Mirsarai. PGCB will construct a 230/132/33 kV Grid Substation in the land provided by BEZA at Mirsarai. The distance between the proposed PV power plant site from proposed PGCB grid substation at Mirsarai is around 9 km. The substation site is currently under development as part of the economic zone activities.

An alternative 132/32kV substation (under construction) is at Barayarhat (Mirsarai Upazila) for evacuation of the power from the PV Plant. However, the transmission line length will be around 20km and it is likely to cross several settlements, roads and canals.

A third option for grid connection (and transmission line route) is to the existing 132kV substation at Feni. As the alignment of the transmission line has not been finalized, an ESMF has been produced.

1.3 Objectives of ESMF

The ESMF presents general policies, guidelines and procedures to be integrated into the design and implementation of transmission line construction under Component 1 of the proposed SREP project[2]. Its overall objective is to assist EGCB to ensure that:

- 230KV double circuit Transmission line with moose conductor to Mirsarai sub-station or other alternative substations will be implemented considering potential environmental and social issues, especially of those people who would be directly benefited or impacted by the proposed project;
- This transmission line will be designed considering unique socio-economic and environmental condition of the project selected project area;
- To identify possible environmental and social impacts due to construction of Transmission line;
- To guide preparing Environmental and Social Management Plan (ESMP) and Environmental Code of Practices (ECoP) Project activities comply with the relevant policies, rules and regulations of the GoB (e.g., Environmental Conservation Rules 1997) and safeguard policies of the WB. The EGCB will take necessary environmental clearance from the Department of Environment (DoE).

[2] Environmental and social impacts, mitigation measures and management for the other physical works under Component 1 have been addressed in a separate ESIA document prepared by EGCB.

Chapter-2: Policy Legal and Administrative Framework

2.1 Introduction

The proposed Bangladesh Scaling-Up renewable energy project will be implemented in compliance with applicable GoB environmental laws and regulations and the WB policies. Bangladesh has an environmental legal framework that is conducive to both environmental protection and natural resources conservation. This environmental legal framework applies to the proposed project. In addition, a wide range of laws and regulations related to environmental and social issues are in place in Bangladesh. Many of these are cross-sectoral and partially related to environmental issues. This chapter presents an overview of the major national environmental laws and regulations that are relevant and may apply to activities supported by this project, institutional arrangement at national and sub-national level, and World Bank safeguard policies.

2.2 National Environmental Policies, Laws and Regulations

National Environmental Policy 1992

The concept of environmental protection through national efforts was first recognized and declared in Bangladesh with the adoption of the Environment Policy, 1992 and the Environment Action Plan, 1992. The major objectives of Environmental policy are to i) maintain ecological balance and overall development through protection and improvement of the environment; ii) protect country against natural disaster; iii) identify and regulate activities, which pollute and degrade the environment; iv) ensure environmentally sound development in all sectors; v) ensure sustainable, long term and environmentally sound base of natural resources; and vi) actively remain associate with all international environmental initiatives to the maximum possible extent.

Bangladesh Environmental Conservation Act (ECA), 1995 amended 2002

This umbrella Act includes laws for conservation of the environment, improvement of environmental standards, and control and mitigation of environmental pollution. It is currently the main legislative framework document relating to environmental protection in Bangladesh, which repealed the earlier Environment Pollution Control ordinance of 1977.
The main provisions of the Act can be summarized
as:

- Declaration of ecologically critical areas, and restrictions on the operations and processes, which can be carried or cannot be initiated in the ecologically critical area;
- Regulation in respect of vehicles emitting smoke harmful for the environment.
- Environmental Clearance;
- Regulation of industries and other development activities with regards to discharge permits;
- Promulgation of standards for quality of air, water, noises and soils for different areas for different purposes;
- Promulgation of standard limits for discharging and emitting waste; and
- Formulation and declaration of environmental guidelines;

Environment Conservation Rules (ECR) 1997 amended 2003

These are the first set of rules, promulgated under the Environment Conservation Act 1995.

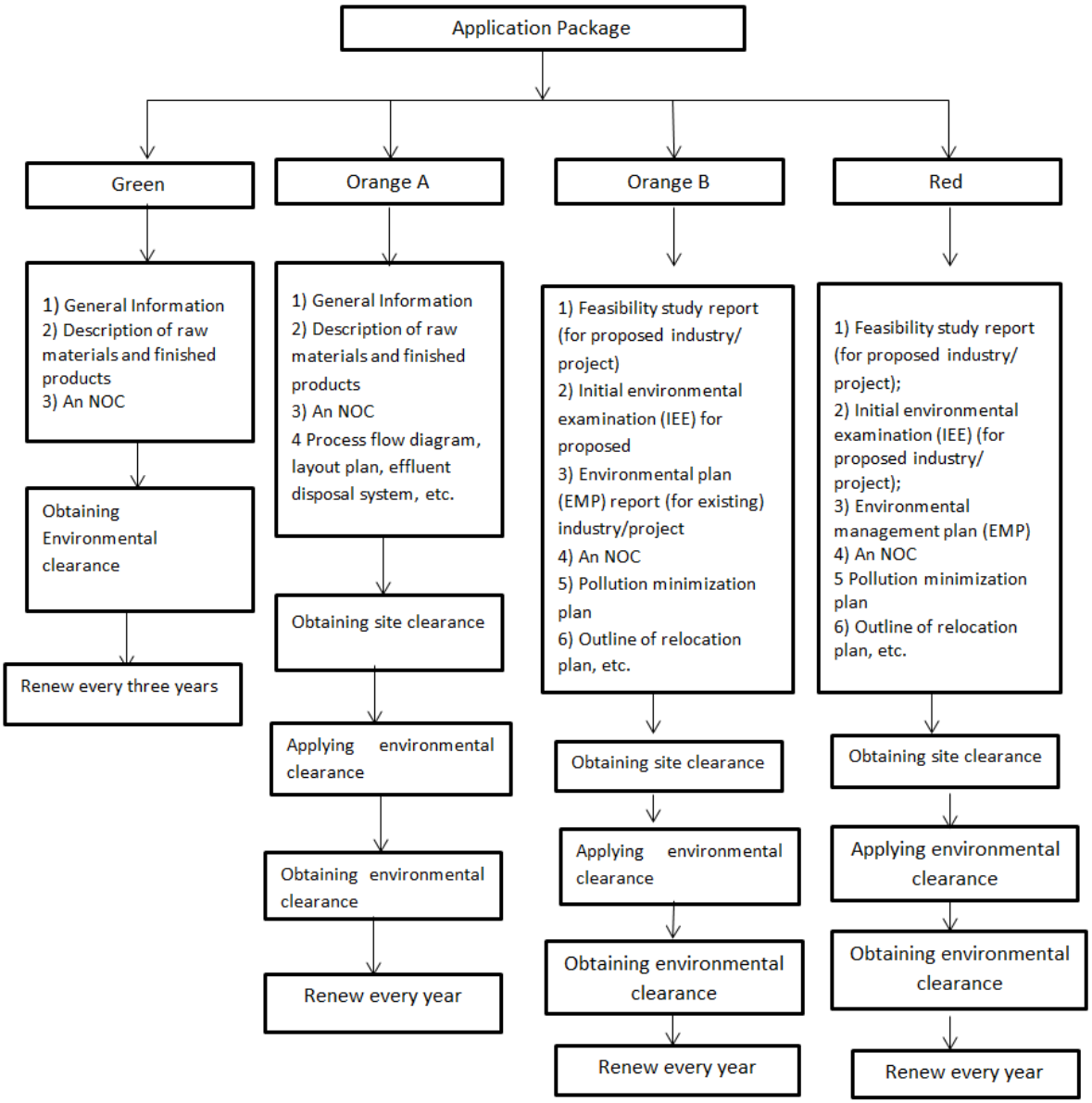
Among other things, these rules set (i) the National Environmental Quality Standards for ambient air, various types of water, industrial effluent, emission, noise, vehicular exhaust etc., (ii) requirement for and procedures to obtain Environmental Clearance, and (iii) requirements for IEE/EIA according to categories of industrial and other development interventions.

However, the rules provide the Director General a discretionary authority to grant '*Environmental Clearance*' to an applicant, exempting the requirement of site/location clearance, provided the DG considers it to be appropriate.

Presently, "EIA Guidelines for Industries" published by the Department of Environment and the "Environment Conservation Rules 1997" are the formal documents providing guidance for conducting Environmental Assessment. Any proponent planning to set up or operate an industrial project is required to obtain an "*Environmental Clearance Certificate*" from the Department of Environment (DoE), under the Environment Conservation Act 1995 amended in 2020.

Environment Conservation Rules-1997 ensures the right of any aggrieved party to appeal against the notice order or decision to the appellate authority. The appeal should be made to the appellate authority with clear justification and the attested copy of the specific notice, order, or decision of the respective DoE office against, which the appeal is to be made. Prescribed fee is to be paid through treasury Chalan and the relevant papers for the appeal must be placed.

Rule 7 of Environment Conservation Rules (ECR) has classified the projects into following four categories based on their site conditions and the impacts on the environment; (a) Green, (b) Orange A, (c) Orange B and (d) Red. Various industries and projects falling under each category have been listed in schedule 1 of ECR 1997. According to the Rules, Environmental Clearance Certificate is issued to all existing and proposed industrial units and projects, falling in the Green Category without undergoing EIA. However, for category Orange A and B and for Red projects, require location clearance certificate and followed by issuing of Environmental Clearance upon the satisfactory submission of the required documents. Green listed industries are considered relatively pollution-free, and therefore do not require *site clearance* from the DoE. On the other hand, Red listed industries are those that can cause 'significant adverse' environmental impacts and are, therefore, required to submit an EIA report. These industrial projects may obtain an initial *Site Clearance* on the basis of an IEE based on the DoE's prescribed format, and subsequently submit an EIA report for obtaining *Environmental Clearance*. **Figure 3** shows the process of application leading to environmental clearance for all four categories of projects.



NOC = No Objection Certificate, usually obtained from local government.

Figure 3: Process of application for environmental clearance in Bangladesh (Source: ECR 1997)

Bangladesh Labor Act, 2006

This Act pertains to the occupational rights and safety of factory workers and the provision of a comfortable work environment and reasonable working conditions. In the chapter VI of this law safety precaution regarding explosive or inflammable dust/ gas, protection of eyes, protection against fire, works with cranes and other lifting machinery, lifting of excessive weights are described. And in the Chapter VIII provision safety measure like as appliances of first aid, maintenance of safety record book, rooms for children, housing facilities, medical care, group insurance etc. are illustrated.

Bangladesh National Building Code

The basic purpose of this code is to establish minimum standards for design, construction,

quality of materials, use and occupancy, location and maintenance of all buildings within Bangladesh in order to safeguard, within achievable limits, life, limb, health, property and public welfare. The installation and use of certain equipment, services and appurtenances related, connected or attached to such buildings are also regulated herein to achieve the same purpose.

The Electricity Act, 1910

The main objective of this act is to amend the laws relating to the supply and use of electrical energy in Bangladesh. This act comprises of guidelines related to licenses, works, and supply for the supply of energy. It also includes guidelines related to supply, transmission and use of energy by non-licensees. A licensee is a person authorized by the Government to supply energy in any specified area and permitted to lie down or place electric supply lines for the conveyance and transmission of energy. In Part II of this act, guidelines are provided for carrying out works for the supply of energy. This act includes guidelines related to the execution of any works involved in placing of any infrastructure in, under, over, along or across any street, part of a street, railway, tramway, canal or waterway. Also, information on lying of electric supply lines, aerial lines, or other works near sewers, pipes or other electric supply-lines or works is provided in Part II of the act. According to this act a licensee shall, in exercise of any of the powers conferred by or under this act, cause as little damage, detriment and inconvenience as may be, and shall make full compensation of any damage, detriment and inconvenience caused by him or by any one employed by him. In Part IV of this act, Protective Clauses are provided for protection of railways and canals/waterways, docks, wharves and piers, telegraphic, telephonic and electric signaling lines. Part IV also includes guidelines for occurrences of any criminal offences such as dishonest abstraction of energy, installation of artificial means, malicious wasting of energy or injuring works, theft of line materials, tower members, equipment etc. and subsequent procedures to follow up that criminal offence.

Electricity (Amendment) Act,2012 (Draft)

This act is an amendment to The Electricity Act, 1910. In addition to the guidelines provided in the original act (The Electricity Act, 1910), this act includes more specific instruction relating to obligation on licensee to supply energy. According to section 22A (Sub section 1) of this act: a person authorized by a license, or exempted from the requirement to obtain a license, to generate, transmit, distribute or supply electricity – (a) shall, in generating, transmitting, distributing or supplying electricity, have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and (b) shall do what the person reasonably can to mitigate any effect which such generation, transmission, distribution or supply would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects. In section 22A (Sub- section 2) it is mentioned that, without prejudice to the provisions of Sub- section (1), a person authorized by a license, or exempted from the requirement to obtain a license, to generate, transmit, distribute or supply electricity and the Commission shall, in generating, transmitting, distributing or supplying electricity, or as the case may be, in the discharge of the Commission's functions, avoid, so far as reasonably practicable, causing injury to fisheries or to the stock of fish in any waters. section 22A (Sub- section 3 and 4) of this act also mentions that a generation licensee shall, in circumstances specified by the Commission, be entitled to construct, subject to conditions specified by the commission in consultation with the relevant water authority, water ways and pipelines, and to use water for its licensed activities and the relevant water authority shall not unreasonably deny such right. For this purpose, the 'relevant water authority' means such authority, as the Commission shall determine.

The Acquisition and Requisition of Immovable Property Act, 2017

Under the ARIPA 2017, The Deputy Commissioner (DC) determines the value of the acquired assets as at the date of issuing the notice of acquisition under section 4(1) of the Act. The DCs

thereafter enhance the assessed value by 200% and another 100% premium for loss of standing crops, structures and income due to compulsory nature of the acquisition. The compensation such determined is called the Cash Compensation under Law (CCL). If the land acquired has standing crops cultivated by a tenant (Bargadar) under a legally constituted written agreement, the law requires that compensation money be paid in cash to the tenants as per the agreement. The previous ARIPO of 1982 did not prescribe the acquisition of officially registered places of worship, graveyards and cremation grounds for any purpose. However, the new Act of 2017 under section 4 (13) permits the acquisition of those properties if it is for a public purpose provided the project for which the land is acquired provides for similar types of assets in some other appropriate place. Households and assets moved from land already acquired in the past for project purposes and/or government khas land are not included in the acquisition proposal and therefore excluded for considerations for compensation under the law. Lands acquired for a particular public purpose cannot be used for any other purpose. The new Act under section 4 (2) also facilitates the private organizations to request from the government to acquire the land for their development activities. Furthermore, the new Act under its section 15 provides for the acquisition of entire houses/buildings if their owners request to acquire the entire house or building against partial acquisition. The new Act of 2017 has incorporated certain provisions to address the above gaps and therefore it would reduce the gaps between the national legislative framework of the government and WB policies.

Constitutional Right of the Tribal People

The Constitution of Bangladesh does not mention the existence of the cultural and ethnic minorities in Bangladesh. The only protective provision for the ethnic minorities that the policy makers often refer to is Article 28 (4) which states that: Nothing shall prevent the state from making special provision in favor of women and children or for the advancement of any citizens in backward areas. The above provision is an ambiguous one and it does not define who or what constitutes "backward". However, the Government recognizes existence of “tribal peoples” and the need for special attention and in general tribal people are essentially viewed as backward, poor and socio-economically & culturally inferior. Towards this end a special program was initiated in 1996-97 by the Prime Minister’s Secretariat aimed at improving the socio-economic situation of the indigenous people of Bangladesh, resident outside the Chittagong Hill Tracts.

2.3 World Bank Environmental and Social Safeguard Policies

The objective of these policies is to prevent and mitigate undue harm to people and their environment in the development process. Safeguard policies provide a platform for the participation of stakeholders in project design, and act as an important instrument for building ownership among local populations. The effectiveness and development impact of projects and programs supported by the Bank has substantially increased as a result of attention to these policies. The World Bank has ten environmental, social, and legal safeguard policies, the relevant ones to this project are listed in below:

- **Environmental policies:**
  OP/BP 4.01 Environmental Assessment
  OP/BP 4.04 Natural Habitats
- **Social Policies:**
  OP/BP 4.10 Indigenous Peoples
  OP/BP 4.12 Involuntary Resettlement

OP/BP 4.01 Environmental Assessment

This policy is considered to be the umbrella safeguard policy to identify, avoid, and mitigate the potential negative environmental and social impacts associated with Bank lending operations. In World Bank operations, the purpose of Environmental Assessment is to improve decision making, to ensure that project options under consideration are sound and sustainable, and that potentially affected people have been properly consulted. The borrower is responsible for carrying out the EA and the Bank advises the borrower on the Bank's EA requirements. The Bank classifies the proposed project into three major categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts:

Category A: The proposed project is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works.
Category B: The proposed project's potential adverse environmental impacts on human population or environmentally important areas-including wetlands, forests, grasslands, or other natural habitats- are less adverse than those of Category A projects. These impacts are site specific; few if any of them are irreversible; and in most cases mitigation measures can be designed more readily than Category A projects.
Category C: The proposed project is likely to have minimal or no adverse environmental impacts.

OP/BP 4.04 Natural Habitats

The conservation of natural habitats is essential for long-term sustainable development. The Bank therefore supports the protection, maintenance, and rehabilitation of natural habitats and their functions in its economic and sector work, project financing, and policy dialogue. The Bank supports, and expects borrowers to apply, a precautionary approach to natural resource management to ensure opportunities for environmentally sustainable development. The Bank does not support projects that involve the significant conversion or degradation of critical natural habitats.

OP/BP4.12 Involuntary Resettlement

This policy is triggered in situations involving involuntary taking of land and involuntary restrictions of access to legally designated parks and protected areas. The policy aims to avoid involuntary resettlement to the extent feasible, or to minimize and mitigate its adverse social and economic impacts. It promotes participation of displaced people in resettlement planning and implementation, and its key economic objective is to assist displaced persons in their efforts to improve or at least restore their incomes and standards of living after displacement. The policy prescribes compensation and other resettlement measures to achieve its objectives and requires that borrowers prepare adequate resettlement planning instruments prior to Bank appraisal of proposed projects.

OP 4.10 Indigenous People

The term "Indigenous Peoples" is used in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees:

- self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
- collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and

- an indigenous language, often different from official language of the country/ region.

The Bank provides project financing only where free, prior, and informed consultation results in broad community support to the project by the affected Indigenous Peoples. Such Bank-financed projects include measures to (a) avoid potentially adverse effects on the Indigenous Peoples' communities; or (b) when avoidance is not feasible, minimize, mitigate, or compensate for such effects. Bank-financed projects are also designed to ensure that the Indigenous Peoples receive social and economic benefits that are culturally appropriate and gender and inter-generationally inclusive.

The World Bank Group Environmental, Health and Safety Guidelines

The Environmental, Health and Safety (EHS) Guidelines of the World Bank Group (WBG) is the safeguard guidelines for environment, health and safety for the development of the industrial and other projects. They contain performance levels and measures that are considered to be achievable in new facilities at reasonable costs using existing technologies. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent. If less stringent levels or measures than those provided in these EHS Guidelines are appropriate, in view of specific project circumstances, a full and detailed justification for any proposed alternatives is needed as part of the site-specific environmental assessment. This justification should demonstrate that the choice for any alternate performance levels are protective of human health and the environment.
The general EHS guidelines as well as the specific guideline for the transmission line will be applied.

Chapter-3: Environmental Management Framework

3.1 Environmental and Social Considerations in Project Formulation

By considering certain issues during project formulation, it is often possible to reduce or eliminate some of the possible adverse environmental and social impacts during both construction and operational phases of a project. For example, efforts to avoid, where possible, critical homestead areas or crossing of rivers/hills/bamboo groves along the route of transmission line could greatly reduce adverse impacts during construction and operational phases. Similarly, use of "guard cables" could save cash-in trees along the route of transmission lines. The above considerations, among others, are presented in Table 1 and would be worth exploring by PGCB at the project formulation stage to facilitate the proper management of the project potential impacts.

Table 1**: Environmental and social considerations to reduce/eliminate adverse impacts**

Project Activities	**Issues to be Considered at Project Formulation Stage**
Transmission Line	• Avoiding forests, protected areas, game reserve, national park, and ECAs. • Avoiding as much as possible the homestead areas and sensitive infrastructures (schools, hospitals, etc.). • Avoiding crossing of rivers/hills/bamboo groves/cash-in trees, as much as possible. Use of "guard cable" for saving cash-in trees. • Maintaining adequate clearance for right of way (RoW). • Use of Axially Bundled Cables (ABC) or insulated cables, instead of conventional separate cables, in order to prevent possible pilferage of power through illegal connections and provide added security against accidents. • Keeping layout of transmission line tower/pole such that they do not interfere with vehicular/pedestrian movements. • Designing transmission line and other structures considering wind speed suggested in the Bangladesh National Building Code (BNBC). • Checking structural adequacy of existing transmission line towers/poles (to accommodate new cables) for sub-projects involving transmission line re-conducting /rehabilitation. • Selecting alignment of transmission line avoiding routes of migratory birds, nesting sites, significant bird habitat, and take off/ landing routs of aircrafts. • Safety features in towers constructed over rivers against damage due to collision with water vessels. • In order to avoid fire hazards, using technology in transmission line which trips the line in fraction of a second.

3.2 Land use pattern and RoW of Transmission line

Land use along the transmission line has the potential to influence the safety of the transmission line. Though no land acquisition is required for ROW of transmission lines, it is recommended that EGCB could enter into an agreement with the landowners owning limited rights of ROW for O&M uses and restricting certain use of land that are detrimental to the safety of the transmission lines. This restriction is for the safety of local people residing nearby locations. The following issues are to be considered to avoid “major impacts” and requires to be coordinated by the EGCB:

- Driveways, access roads, utility crossings;
- Fish ponds;
- Community areas such as parks, playgrounds, cemeteries;
- Gravel pits, quarries, fill, berms, and retaining walls;
- Any activity involving elevation or grade changes more than 0.5 meters;
- Sewage disposal fields, detention/retention ponds, watercourse relocation;
- Portions of non-habitable buildings (e.g. animal sheds);
- Highways, roads and major pipelines parallel to and/or within the ROW;
- Street lamps and other lighting equipment;
- Any activity involving any type of mechanized equipment (e.g. excavators, bulldozers, etc.)

3.3 Environmental/Social Screening

According to GOB Electricity Act 1910, affected landowners under the transmission line will not be compensated (?). So before selecting the project RoW for the transmission line, environmental and social screening for alternative sites may be explored to avoid any unwanted consequences. . EGCB along with consultans will carry out environmental/social screening which would include: (i) reconnaissance of the project areas/routes and their surroundings; (ii) identification of the major project activities and (iii) preliminary assessment of the impacts of these activities on the biological, physico-chemical and socio- economic environment of the project surrounding areas.

3.4 Potential Environmental and Social Impacts

The potential impacts for construction of transmission line in this project is considered for preparatory, construction and operational phases. For each phase, the impacts have been further categorized into ecological impacts, physicochemical impacts and socio-economic impacts. A number of parameters could be explored in line with local issues for each categories. With few exceptions, the potential impact with respect to each parameter has to be classified as “significant”, “moderate” and “insignificant” or “none” while preparing preparatory documents.

3.4.1 Ecological Impacts

For transmission lines, four parameters have to be considered for screening of ecological impacts during preparatory and construction phase; these include (i) presence of forest/ protected areas/ game reserve/ national park/ ecologically sensitive areas (ECAs) along the transmissions line route; (ii) felling of trees, (iii) clearing of vegetation, and (iv) possible impact on aquatic ecology (for transmission line to be constructed on river/wetland). If the proposed route of the transmission line passes through biodiversity areas, then a detailed analysis of alternative routes would be carried out to identify possible route(s) that would eliminate/reduce risk to biodiversity, vegetation and habitats. Fragmentation of habitats need to be avoided to the extent possible. If it is not possible to completely avoid such sensitive areas, then possible impacts on biodiversity must be addressed during preparation of

ESIA. In such cases, necessary permission needs to be taken from relevant authority (e.g. Forest Department/ local forest officer) for construction/maintenance of transmission line. If construction of the transmission line involves felling/clearing of significant number of trees/vegetation along its route, the impact would be classified as "significant"; if it involves feeling/clearing of few trees/vegetation, the impact could be "moderate", while if felling/clearing of trees/vegetation is not involved, the impact would be "insignificant" or "none". Intended (revegetation) or unintended establishment of non-native plant species can also cause ecological impacts. Construction of transmission line towers in river/wetland could aggravate the aquatic ecology, thereby affecting aquatic flora and fauna, during construction phase.

Operation and maintenance of a transmission line is not likely to generate any significant adverse ecological impacts. On rare occasions, fires may occur in forested areas if underlying growth is left unchecked. Also, regular noise disturbance due to maintenance machinery/equipment and workers can disturb sensitive species in surrounding habitats. In rare occasions, electrocution of birds and other wildlife may occur. Long-term exposure to electric and magnetic fields may be harmful to some sensitive species. Explosions from transformers can also have some impacts on the local ecology.

3.4.2 Physicochemical Impacts

For construction of transmission line, three parameters have to be considered for screening of physicochemical impacts during construction phase these include noise pollution, air pollution, and water pollution. Construction of 230 kV double circuit transmission line towers could involve heavy equipment (e.g. pile driver for foundation of transmission tower), and could generate noise and air pollution, affecting nearby human settlements and sensitive ecological habitats. For construction of 230 kV transmission line, air and noise pollution impacts could be categorized as "significant", "moderate" and "minor", depending on the nature of construction works (e.g. whether pile driving would be necessary) and proximity of human settlements and sensitive ecological habitats. As noted above, construction of power line towers in river/wetland could aggravate the water quality during construction phase, e.g. from improper storage, handling and/or disposal of construction wastes. Care also needs to be taken to avoid erosions of the top soil and disturbances to the natural drainage system in the area. Excessive site runoff can lead to increased sediment loads in nearby water bodies. Also, during construction phase, site clearing can cause land degradation and in areas with steep slopes, can cause landslips or landslides. Influx of workers can also cause stress on local natural resources such as water bodies.

Generally speaking, the operation of transmission lines is not likely to generate any significant adverse physicochemical impacts. However, some localized ozone generation during transmission line operation as well localized contamination of surface and groundwater due to spillage of oils/chemicals during maintenance activities may occur and could be managed based on existing environmental rules as applicable.

3.4.3 Socio-economic Impacts

The parameters considered for screening of socio-economic impacts of a transmission line include impact on tribal population, archaeological/ historical sites, loss of income, traffic/pedestrian movement, safety and employment. Guidelines for addressing loss of income and impact on tribal population have been presented in this document. Construction of transmission line along busy highways or along narrow roads could generate traffic congestion and interfere with pedestrian movement (in the absence of mitigation measures). Both construction and operation/maintenance of transmission line would generate employment opportunities. Operation of transmission line is not likely to generate any significant adverse socio-economic impact. According to electricity act 1910, EGCB will not acquire land those are under transmission line, but compensation for the affected trees and structure will be paid by

EGCB. So during selection of RoW for the transmission line, it is important to avoid residential areas to minimize the project impact. Possible impact on indigenous population is also an important consideration. Therefore, project will avoid areas where there is presence of tribal people. The social management framework (SMF) presented in this document addresses the land acquisition and resettlement issues, and impact on indigenous people.

- Traffic congestion:

During construction phase of this project, traffic congestion may result from stock piling of material by the sides of roads, increased movement of people and vehicles carrying material and equipment. Construction of transmission lines in densely populated areas, along busy highway could aggravate the existing traffic problem during construction phase. This should be addressed with proper traffic management and avoiding stockpiling of materials in a way that could hamper traffic movement.

- Health and safety:

General construction activities pose safety risks, which should be addressed as part of occupational health and safety plan. Also during operation and maintenance phase, potential health and safety issues may arise due to working: (a) near live power lines (b) at height (c) near electric and magnetic fields (d) with chemicals. Transformer explosions can also cause injury to workers and other nearby people.

- Working condition of labor and labor influx

During construction phase, some beneficial impact at local level would come in the form of employment in project related works, which would depend on the nature and extent of the project. For example, labor-intensive project works (e.g. manual excavation) could generate employment for considerable number of semi-skilled/unskilled workforce. This in turn would induce some positive impacts on some other parameters including commercial activities in the project areas. During construction period there might be influx of labors in the project area. The influx of labors can let to adverse social and environmental impacts on local communities, especially if the communities are rural remote or small. Such adverse impacts may include increase demand and competition for local social and health services, as well as goods and services, which can let to price hikes and crowding out of the local consumers increase risk of spread of communicable diseases. Project authority should engage community labors as much as possible to avoid labor influx impacts.

- Impacts on archeological and historical sites:

Archeological and historical sites are protected resources. Damage of such sites can occur by digging, crushing by heavy equipment, uprooting trees, exposing sites to erosion, or by making the sites more accessible to vandals are of particular concern.

3.5 Analysis of Alternatives

The primary objective of the “analysis of alternatives” is to identify the location/technology for a particular project that would generate the least adverse impacts and maximize the positive impacts. The analysis of alternatives should be carried out at two different levels: (a) by consultant of EGCB along with environmental/social screening; and (b) during carrying out of IEE/ESIA of a sub-project, if needed (e.g., by the consultant engaged for this purpose).

In general, for any sub-project, the analysis of alternative should focus on:

(a) Alternative location (for substation) or route (for transmission line);

(b) Alternative design and technology;
(c) Costs of alternatives; and
(d) No project scenario.

The consultant engaged by EGCB authority will carry out screening for all proposed alternative sites/alignments for routes of the transmission line based on the screening form Annex 1. Then, utilizing the information contained in the completed screening forms analysis of alternative routes (for new transmission lines) can be undertaken, such as avoiding homestead areas, as much as possible; avoiding crossing of rivers/hills/bamboo groves/cash-in trees, as much as possible. If the homestead areas (or other sensitive infrastructure) are not avoidable in any of the options, the EGCB will consult with the owner/respective authority and will take necessary action following the law of the land for the construction of transmission/distribution lines. For transmission lines, use of Axially Bundled Cables (ABC) or insulated cables instead of the conventional separate cables would prevent pilferage of power through illegal connections. The outcome of the "analysis of alternatives", for example, with respect to location/ route of project, technology (e.g., type of substation, type of cables) should be included in the project description.

3.6 Nature and Extent of Environmental and Social Assessment (ESA)

In general, the environmental/social screening process identifies what impacts will be generated and what type of mitigation measures will be required for the construction of the Transmission line. It will also determine whether a proposed project should follow the Environmental Code of Practices (ECoP) to mitigate/avoid its impacts or prepare f a detailed assessment and environmental/social management plan. The level of environmental and social assessment (ESA) of a project will primarily depend on its classification according to OP 4.01, and ECR 1997. The proposed project herein has been classified as "Category B" which would require conducting an environmental and social assessment that takes into account the different stages of the project (pre-construction, construction, operation, and commissioning). The safeguard policies which are triggered in this case include: Environmental Assessment OP/BP4.01; Natural Habitats OP/BP4.04; Indigenous Peoples OP/BP 4.10, and Involuntary Resettlement OP/BP4.12. Furthermore, the World Bank Group General Environmental, Health and Safety (EHS) Guidelines and the Electric Transmission and Distribution EHS Guidelines are also applicable. Accordingly, the safeguard documents needed will include ESIA, ESMP, RAP and IPP (as applicable). These documents shall upon completion be disclosed on both EGCB and World Bank websites before project appraisal.

3.7 Guidelines for Carrying Out IEE and ESIA

Since the exact locations of the transmission line (i.e. the sub-projects) is still unknown, the guideline for environmental assessment presented here cover both IEE and ESIA (including ESMP). As noted earlier, the Social Management Framework (SMF), including detail guideline for carrying out SIA (as well as RAP and TPP, if needed). Both IEE and ESIA would cover the same elements. However, the level of details would be different; a full-scale ESIA would present more detailed and quantitative (where appropriate) analysis of impacts. The level of details would be determined through "scoping" at the onset of the environmental assessment process, considering the nature of the project.

The major activities involved in carrying out environmental assessment (IEE and ESIA):

(a) Identification of project influence area;
(b) Establishment of "baseline environment" within the project influence area, against which impacts of the proposed project would be evaluated;
(c) Identification of major project activities/processes during construction phase and operational phase;
(d) Assessment and evaluation of impacts of major project activities on the

baseline environment during construction phase and operational phase;
(e) Carrying out public consultations;
(f) Identification of mitigation measures for reducing/eliminating adverse impacts and enhancing positive impacts;
(g) Development of environmental and social management plan (ESMP), including monitoring requirements, and estimation of cost of ESMP and
(h) Identification of environmental code of practice (ECoP), including cost of ECoP

As described the IEE/ESIA will be carried out by the consultant of EGCB (Implementing Agency). The following section presents detail guidelines and processes for carrying out each of these major activities of IEE/ESIA.

3.8 Environmental Baseline

For environmental impact assessment, environmental baseline is required. The environmental baseline would include the following but not limited to:

- Nature of the project location,
- Nature/ extent of a project and its likely impact,
- Level of environmental assessment (e.g., screening versus full scale ESIA)

For systematic recording of data, baseline environment is usually classified into physicochemical environment, biological environment, and socio-economic environment; and important features/parameters under each category are identified and measured/ recorded during baseline survey. The important features/ parameters would depend on the nature of project location, category of project, and level of environmental assessment. The following sections provide guideline on identification of important features/parameters and collection of project specific environmental baseline data.

3.8.1 Physicochemical Environment

The important physicochemical parameters for defining baseline environment include:

- Important Environmental Features (IEFs),
- Climate,
- Topography and drainage,
- Geology and soil,
- Hydrology and water resources,
- Air quality,
- Noise level,
- Water quality,
- Traffic, and
- Electro-Magnetic Field (EMF)

- Climate: Climatic parameters include precipitation, temperature, relative humidity, wind speed and direction. These data may be collected from secondary sources (e.g., from the nearest station of Bangladesh Meteorological Department, BMD) closest to the project site. .
- Topography and drainage: Data and information on topographical information requires to be collected prior to any construction for transmission line for the proposed project. to fix the alignment.
- Geology and soil: The soil characteristics play an important role in managing related excavations and/or earthworks and taking necessary measures to avoid associated

environmental pollution (windblown dust, contaminated soil, etc).

- Hydrology and water resources: For the design of the project involving the construction of steel towers for the 230 kV double circuit transmission lines, information such as water level/ highest flood level are important. Information on surface and groundwater levels and their seasonal variations are important in assessing possible impacts due to accidental spillage of lubricants and/or transformer oil. For environmental assessment (IEE and EIA), information on hydrology (e.g., river network, flow, highest water level) and water resources (e.g., discharge, surface and groundwater levels) may be collected from secondary sources (e.g., from Bangladesh Water Development Board, BWDB). Air quality: Particulate matter (particularly PM_{10} and $PM_{2.5}$) is the most important air quality parameter from health perspective. However, measurement of air quality is relatively expensive and facilities for air quality measurement are not widely available. Therefore, baseline air quality data (PM) may be collected only for carrying out detailed environmental assessment (EIA).
- Noise level: Noise is typically generated from operation of machines and equipment (e.g., pile drivers, excavators, concrete mixing machine), and movement of vehicles. Noise is of particular importance if the project component (e.g., transmission tower) is located close to sensitive installations such as educational institutions, health care facilities, religious establishments, and human settlements. Activities to be carried out during construction phase of the projects would generate noise. For the project, baseline noise level should be measured and recorded, so that these could be compared with those generated during construction/ operation phase of the projects. The location and frequency of baseline noise level measurements would depend on physical extent of project, and presence of sensitive installations (e.g., schools, hospitals) within project influence area. The consultant engaged for carrying out IEE/ EIA will be responsible for measurement of baseline noise level at location(s) within the project influence area. Both day-time and night-time noise levels should be measured, using a calibrated noise level meter.
- Water quality: A number of activities during the implementation of sub-projects could have impacts on water quality. These include construction of substations and 132kV transmission towers. Accidental spillage of gasoline, transmission oil, transformer oil, etc. may contaminate surface water and/or ground water. Stagnation resulting from obstruction of cross drainage in rural areas following construction of access roads and substations may result in deterioration of water quality in the areas surrounding these sites. For these project activities, baseline water quality of the relevant water bodies should be measured, as a part of baseline survey (by the consultant engaged for carrying out IEE/EIA).
- Traffic: Storage of construction materials, power cables (conductors), SPC poles, steel members of 230 kV transmission towers, transformers, etc. on roads adjacent to project sites/routes are likely to cause traffic congestion. Similarly, movement of additional vehicles carrying construction materials and equipment along public roads are likely to increase traffic congestion.
- Electro-Magnetic Fields (EMF): Health concerns over exposure to EMF are often raised when a new transmission line is proposed. To date the research has not been able to establish a cause and effect relationship between exposure to magnetic fields and human disease, nor a plausible biological mechanism by which exposure to EMF could cause disease. Rehabilitation of existing transmission line is unlikely to increase EMF but new transmission line may increase exposure to EMF. However, this issue needs

to be addressed while conducting a comprehensive impact assessment.

3.8.2 Biological Environment

The biological environment baseline includes a description of the flora and fauna (aquatic and terrestrial) in the project site and within the influence area. Special attention needs to be given to any endangered or threatened species. Also, sensitive ecological habitats need to be identified. These are habitats of threatened/endangered species of species that would be significantly affected by negative impacts on these habitats.

3.8.3 Socio-economic Environment

Socio-economic data, including health, gender, education, occupational groups, should be collated and incorporated in the ESIA. The assessment will include the potential project impacts and benefits on this group. The baseline should also include a list of cultural and heritage sites falling along the RoW of the transmission line and sub-stations. The geographic location (latitude and longitude), distance from transmission line/sub-station and significance of the site need to be included in the report. .

3.9 Guideline for preparing Environment and Social Management Plan (ESMP)

After prediction of assessment of impacts the environmental management plan (EMP) is prepared. The primary objective of the ESMP is to ensure implementation of the identified "mitigation measures" in order to reduce adverse impacts and enhance positive impacts. Besides, it would also address any unexpected or unforeseen environmental impacts that may arise during construction and operational phases of this project.

The ESMP should clearly lay out: (a) the measures to be taken during both construction and operation phases of a project to eliminate or offset adverse environmental impacts or reduce them to acceptable levels; (b) the actions needed to implement these measures; and (c) a monitoring plan to assess the effectiveness of the mitigation measures employed. The environmental management program should be carried out as an integrated part of the project planning and execution. It must not be seen merely as an activity limited to monitoring and regulating activities against a pre-determined checklist of required actions. Rather it must interact dynamically as a project implementation proceeds, dealing flexibly with environmental impacts, both expected and unexpected.

The major components of the ESMP include:

- Mitigation and enhancement measures
- Monitoring plan
- Estimation of cost of ESMP
- Institutional arrangement for implementation of ESMP

3.10 Mitigation and Enhancement Measures

3.10.1 Construction Phase

The overall impacts of the proposed transmission lines are expected to be minimized or eliminated by adopting appropriate mitigation measures. There is also scope to enhance some of the beneficial impacts to be generated. This section describes the mitigation and enhancement measures that could be applied during the construction phase.

In order to identify mitigation/enhancement measures, the potential impacts have been categorized into: (a) "general impacts", which are typical common impacts to be experienced in most projects, and (b) "project specific impacts". **Table 2** shows typical activities to be carried

out under different construction activities/issues as well as corresponding "general impacts" and suggested mitigation and enhancement measures. It also assigns responsibility for implementation of mitigation and enhancement measures.

Table 2: **Possible impacts and mitigation measures during construction phase**

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Construction and operation of labor shed for workers	• Generation of sewage and solid waste; water/ environmental pollution.	• Construction of sanitary latrine/ septic tank system. • Erection of "no litter" sign, provision of waste bins/cans, where appropriate.	Contractor (Monitoring by EGCB or relevant agencies)
	• Health of workers	• Raising awareness about hygiene practices among workers. • Availability and access to first-aid equipment and medical supplies.	
	• Possible development of labor camp into permanent settlement	• Contractor to remove labor camp at the completion of contract	
	• Outside labor force causing negative impact on health and social well-being of local people	• Contractor to employ local work force, where appropriate; promote health, sanitation and road safety awareness.	
General construction works	• Drainage congestion and flooding	• Provision for adequate drainage of storm water. • Provision of adequate diversion channel, if required. • Provision for pumping of congested water, if needed. • Ensure adequate monitoring of drainage effects, especially if construction works are carried out during the wet season.	Contractor (Monitoring by EGCB)
	• Land slips/slides	• Detailed management plan to reduce landslides and ensure slope stabilization, wherever applicable	
	• Air pollution	• Ensure that all project vehicles are in good operating condition. • Spray water on dry surfaces/ unpaved roads regularly. • Maintain adequate moisture content of soil during transportation, compaction and handling. • Sprinkle and cover stockpiles of loose materials (e.g., fine aggregates). • Avoid use of equipment such as stone crushers at site, which produce significant amount of particulate matter.	

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	• Traffic congestion, obstruction to pedestrian movement	• Schedule deliveries of material/ equipment during off-peak hours. • Depute flagman for traffic control. • Arrange for signal light at night.	
	• Noise pollution	• Use of noise suppressors and mufflers in heavy construction equipment. • Avoid using of construction equipment producing excessive noise at night. • Avoid prolonged exposure to noise (produced by equipment) by workers. • Regulate use of horns and avoid use of hydraulic horns in project vehicles.	
	• Water and soil pollution • Destruction of aquatic habitat	• Prevent discharge of fuel, lubricants, chemicals, and wastes into adjacent rivers/ khals / drains. • Install sediment basins to trap sediments in storm water prior to discharge to surface water. • Keep noise level (e.g., from equipment) to a minimum level, as certain fauna is very sensitive to loud noise (e.g., during transmission tower construction over river/wetlands)	
	• Felling of trees, clearing of vegetation	• Replant native vegetation when soils have been exposed or disturbed. • Plantation to replace felled trees. • If alignment is through/near ecological sensitive areas, then a Biodiversity Management Plan may be required.	
	• Accidents	• Follow standard safety protocol. • Environmental health and safety briefing. • Provision of protective gears as specified in ECoP 20. • Provision of appropriate protective measures against accidental fall from elevated height (e.g. using body harness, waist belts, secured climbing devices, etc.)	
	• Spills and leaks of oil, toxic chemicals	• Good housekeeping. • Proper storage and handling of lubricating oil and fuel. • Collection, proper treatment, and disposal of spills.	
Health and Safety (see details in ECoP20)	• Exposure to physical hazards from use of heavy equipment and cranes; trip and fall hazards,	• A safety observer must be appointed at each subproject site by the Contractor before the commencement of work. • Only allowing trained and certified workers to install, maintain, or repair	Contractor (Monitoring by EGCB)

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
	• Exposure to dust and noise; falling objects; work in confined spaces; • Exposure to hazardous materials; • Exposure to electrical hazards from the use of tools and machinery. • Working at heights	electrical equipment. • Deactivating and properly grounding live power distribution lines before work is performed on, or in close proximity, to the lines; • Proper Personal Protective Equipment (PPE) for all workers and others associated with work. • Where rehabilitation is required within minimum setback distances, specific training, safety measures, personal safety devices, and other precautions should be defined before work. • An EMG Exposure Mitigation Plan may be required.	
All construction works	• Beneficial impact on employment generation. • General degradation of environment. • Discovery of historical items and cultural remains.	• Employ local people in the project activities as much as possible. • Environmental enhancement measures, such as plantation, landscaping, traffic/ direction signs. • Follow “chance find procedure”	Contractor (Monitoring by EGCB)
Installation of poles of transmission / distribution lines adjacent to roadways	• Traffic congestion / traffic problems. • Safety	• Not storing electric poles/transmission tower components over busy roads/ highways. • Following standard safety protocols while erecting poles and stretching cables. • Taking appropriate protective measures against accidental fall from elevated height (e.g. using body harness, waist belts, secured climbing devices, etc.) as specified in ECoP.	Contractor (Monitoring by EGCB)
Construction of transmission line through natural habitat or tree plantation area	• Impact on biodiversity, vegetation and habitat	• Modify alignment, facility/activity locations and timing to avoid critical ecosystems, migratory routes and breeding areas • If there’s no alternative, felling, pollarding, lopping and pruning of trees for electric clearance, whenever necessary, to be done with permission from the local forest office/appropriate authority; • Hand clearing of vegetation. • Strict prohibition on use of chemicals for forest clearance/RoW maintenance. • Use of existing path/access roads	Contractor (Monitoring by EGCB)

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
		for movement of man and machinery; • Carrying tower materials into forests by head loads. • If alignment is through/near ecological sensitive areas, then a Biodiversity Management Plan may be required.	
Tower foundation in rivers	• Impact on fisheries and other aquatic life in rivers. • Collision with water vessels.	• Minimize river crossings • Installation of underwater enclosures to minimize noise propagation. • Use signage and construction of fender (if necessary).	Contractor (Monitoring by EGCB)

3.10.2 Operational Phase

During the operational phase, the PGCB will be responsible for the operation and maintenance of the infrastructure to be developed under the Proposed Project. Apart from regular operation and maintenance, a number of issues would require special attention for reducing/avoiding possible adverse environmental impacts; for example, regular maintenance and management of storm drains in the substations to reduce risk of water pollution. Accidental spillage of transformer/generator fuel into the drainage system is also a serious concern, which can cause environmental pollution. Spilled fuel from transformer/generator, if not properly disposed, could bring about adverse health and environmental impacts.

Proper management of traffic and pedestrian movement could often minimize increased risks of accidents during the maintenance of transmission lines/ distribution lines by EGCB near the roadways. Movement of heavy vehicles (loaded trucks) in local roads is a common cause of road damage at many project sites. **Table 3** shows some important project specific impacts during operational phase and corresponding mitigation measures.

Table 3**: Possible impacts and mitigation measures during operational phase**

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Transmission Line			
Regular maintenance	• Safety	• Regular patrolling along the transmission line to identify the need for regular and immediate maintenance operation. • Inspection immediately after a major storm/rainfall event. • Regular cutting and trimming of trees around transmission lines. • Taking appropriate protective measures against accidental fall from elevated height during regular maintenance operations (e.g. using body harness, waist belts, secured climbing devices, etc.). • Provision for shutting down of line in case of snapping of line.	PGCB

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
		• Regular monitoring of transmission line to prevent electricity pilferage	
Operation of Transmission Lines	• Ecological Impacts	• Transmission line design to minimize or avoid electrocution of birds	PGCB
Installation of new transformers	• Safety	• Adequate caution should be taken to carry out installation works by personnel at elevated height. • Instrument should be properly anchored with poles.	PGCB
Maintenance of transmission/ distribution lines	• Traffic congestion, obstruction to pedestrian movement, safety. • Impact on biodiversity, vegetation, habitat.	• Depute flagman for traffic control. • Arrange for signal light at night. • Following standard safety protocol. • Felling, pollarding, lopping and pruning of trees for RoW maintenance to be done with permission from the local forest office/appropriate authority.	PGCB
Health and Safety	• Safety • Exposure to EMF • Exposure to chemicals • Exposure to electrical hazards from the use of tools and machinery.	• Avoiding alignments adjacent to residential properties or locations with frequent human occupancy so as to avoid or minimize exposure to the public. • Only allowing trained and certified workers to maintain, or repair electrical equipment. • Taking appropriate protective measures against accidental fall from elevated height during regular maintenance operations (e.g. using body harness, waist belts, secured climbing devices, etc.). • Deactivating and properly grounding live power distribution lines before work is performed on, or in close proximity, to the lines; • Proper Personal Protective Equipment (PPE) for all workers and others associated with work. • Training of workers in the identification of occupational EMF levels and hazards. • Establishment and identification of safety zones to differentiate between work areas with expected elevated EMF levels compared to those acceptable for public exposure. • Use of signs, barriers (e.g. locks on doors, use of gates, use of steel posts surrounding transmission towers, particularly in urban areas),	PGCB

Activity/Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
		and education / public outreach to prevent public contact with potentially dangerous equipment.	
Disposal of Waste Materials	• Pollution of land • Pollution of surface and/or groundwater resources	• All wastes materials (solid or liquid) should be handled, transported and disposed of in a safe manner. The appropriate disposal site should be selected in coordination with local government authorities.	PGCB , Local Government Authority (District Administration, Municipality, City Corporation)

3.11 Monitoring Plan

The primary objective of the environmental monitoring is to record environmental impacts resulting from the project activities and to ensure implementation of the "mitigation measures" identified earlier in order to reduce adverse impacts and enhance positive impacts from project activities.

3.11.1 Monitoring during Implementation Phase

During implementation of all sub-projects, the EGCB will monitor and make sure that the environmental mitigation/enhancement measures (including health and safety measures) outlined in the ESMP for the particular project are being implemented in accordance to the provisions of the Tender Document.

Apart from general monitoring of mitigation/enhancement measures and health and safety protocols (as outlined in the ESMF and Tender Document), important environmental parameters to be monitored during the construction phase of the sub-projects include noise level, water quality, drainage congestion, and traffic problems. However, the requirement and frequency of monitoring would depend on the type of project and field situation. The routine monitoring work will be done by /EGCB to ensure that:

- All personnel at work sites are provided with protective gears like helmets, goggles, boots, etc. so that injuries to personnel are avoided or minimized;
- Workforce likely to be exposed to noise levels beyond regulatory limits is provided with protective gears like hear plugs etc. and regularly rotated;
- Dust suppression measures like sprinkling of water are carried out in relevant operations areas;
- The construction camps have health care facilities and all construction personnel are subjected to routine vaccinations and other preventive/healthcare measures;
- The work and campsites have suitable facilities for handling any emergency situation like fire, explosion, electrocution, etc.;
- All areas intended for storage of hazardous materials are quarantined and provided with adequate facilities to combat emergency situations. All required permits for storage of inflammable/hazardous materials are to be obtained;
- The construction workers, supervisors and engineers are properly trained;
- The operational areas are access controlled and entry is allowed only under authorization;
- The construction camps have in-house community/common entertainment facilities.

3.12 Occupational Health and Safety Guidelines

In general, the objectives of occupational health and safety (OHS) plan are: (a) To develop, in the workplace, a collaborative approach to managing occupational health and safety between management and workers; (b) To provide and maintain safe working procedures and operations; (c) To ensure awareness of all potential work related risks and hazards and to develop preventive strategies against these risks and hazard; (d) To provide appropriate training to all concerned to work safely and effectively; (e) To maintain a constant and continuing interest in the improvement of occupational health and safety performance and to provide the required resources necessary for the implementation and maintenance of the OHS plan. For the projects to be implemented by EGCB, the occupational health and safety primarily focuses on work equipment and protective gear. The following section provides guidelines/ directives for: (a) work equipment, (b) protective gear, and (c) safety and health signs.

3.12.1 Safety Directives for Work Equipment

It is the employer's (contractor) obligation that every possible measure is taken to ensure the safety of workers and workplace environment. Accordingly, the employer shall pay attention to the specific working conditions which exist at the workplace as well as the specific safety instructions associated with each equipment item. A brief list of work equipment and safety issues to be considered given below:

- Work equipment control devices, which affect safety must be clearly visible and identifiable and appropriately marked where necessary.
- Work equipment presenting hazards due to emissions of gas, vapor, liquid or dust must be fitted with appropriate containment and/or extraction devices near the sources of the hazard.
- Where there is a risk of mechanical contact with moving parts of work equipment which could lead to accidents, those parts must be provided with guards or devices to prevent access to danger zones or to halt movements of dangerous parts before the danger zones are reached.
- Work equipment may be used only for operations and under conditions for which it is appropriate.
- Work equipment must bear warnings and markings essential to ensure the safety of workers.
- All work equipment must be appropriate for protecting workers against the risk of the work equipment catching fire or overheating, or of discharges of gas, dust, liquid, vapor or other substances produced, used or stored in the work equipment.
- All work equipment must be appropriate for preventing the risk of explosion of the work equipment or of substances produced, used or stored in the work equipment.
- All work equipment must be appropriate for protecting exposed workers against the risk of direct or indirect contact with electricity.
- Mobile work equipment such as Bulldozer or Road Rollers with ride-on workers must be designed to restrict, under actual conditions of use, the risks arising from work equipment roll-over.
- Fork-lift trucks carrying one or more workers must be adapted or equipped to limit the risk of the fork-lift truck overturning.
- Self-propelled work equipment, such percussion drills, which may, when in motion, engender risks for persons must have facilities for unauthorized start-up.
- Machinery for lifting loads, such as Crane, must be clearly marked to indicate its nominal load, and must where appropriate be fitted with a load plate giving the nominal load for each configuration of the machinery.
- Work equipment must be erected or dismantled under safe conditions, in particular observing any instructions which may have been furnished by the manufacturer.

3.12.2 Safety Directives for Protective Gears

Personal protective equipment is suggested for use when the risks cannot be avoided or sufficiently limited by technical means. All personal protective equipment must

- be appropriate for the risks involved, without itself leading to any increased risk
- correspond to existing conditions at the workplace
- fit the wearer correctly after any necessary adjustment.

The Contractor shall organize orientation to familiarize workers regarding use of personal protective equipment. Workers shall be informed of all measures to be taken. Consultation and participation shall take place on the matters related to the use of the protective equipment.

Head Protection: Protective helmets will be put on at all times mainly at the building and bridge construction sites, under scaffolds, erection and stripping of formworks, etc., where there are possibilities of head injuries from falling/flying objects.
Hearing Protection: Ear plugs/muffs should be worn in areas where exposure to high noise level is expected. Examples of such activities include percussion drill, bolt driving, etc.
Eye and Face Protection: Spectacles, Goggles, Face Shield or Arc-welding Mask with Hand Masks, whichever is appropriate, should be worn at times when percussion drilling, spray painting, welding or similar activities are in progress at the field.
Respiratory Protection: In work areas such as septic tanks, dump sites, sewers etc., where exposure to harmful or toxic gases is likely the workers should wear gas masks, dust filters, or insulating appliances with air supply, whichever is appropriate.
Hand and Arm Protection: In the work involving piercing, cutting or vibration. For protection against toxic chemicals special chemical resistant gloves should be worn. Over sleeves must be worn to protect ones' arms.
Foot *Protection:* In road and bridge constructions, working on or under scaffolds, roof works, formwork erection and dismantling safety shoes/boots are essential protective measures.

3.12.3 Safety and Health Signs

Safety signs, health signs, prohibition sign, warning sign, mandatory sign, emergency escape sign, first-aid sign, information sign, signboard, supplementary signboard, safety color, symbol, pictogram, illuminated sign, acoustic signal, verbal communication and hand signal are essential tools for preventing accidents by providing information in advance.

Preliminary list of protective gears to be used during construction works and operation of equipment are provided in **Table 4**.

Table 4: Brief list of protective gears to be worn during the use of some equipment

Works/ Equipment Use	Safety Measures for Workers and/or Work Areas
Common Construction Works	HH, STB, HG
Earth-works	HH, STB, HG
Electric-works	IB, HG
Cables and Wires	HG, EG, HH
Wood-works	HH, STB, HG
Road Paving	HH, STB, HG, BP, FM
Cranes	HH, STB, HG, WB
Pile Driver	HH, STB, HG, EP, WB
Arc Welder	HH, WV, HG Bull
Dozer	HH, STB, WB
Auger Drill	HH, STB, HG, WB

Works/ Equipment Use	Safety Measures for Workers and/or Work Areas
Concrete Mixer	HH, STB, HG, WB
Fork Lift	HH, HG, STB, WB
Elbow Jack	HH, STB, HG
Sledge/Pick Hammer	HH, STB, HG, WB
Vibrator	HH, STB, HG, WB
Pick Axe	HH, STB, HG, WB
Electric Saw	HG, EG, EM
Working on Poles, Towers	HH, STB, HG, WB
Note: HH = Hard Hat, STB = Steel-tipped Boot, HG = Hand Gloves, BH = Body Harness, WB = Waist Belt, EM = Ear Muff, EP = Ear Plug, WV = Welding Visor, FM = Face Mask, BP = Body Protective Apron, IB = Insulating Boots, EG = Eye protection Glasses.	

When working on or with overhead lines the provisions of the paragraphs shall be complied with:

- Prior to climbing poles, ladders, scaffolds, or other elevated structures, an inspection shall be made to determine that the structures are capable of sustaining the additional or unbalanced stresses to which they will be subjected.
- Where poles or structures may be unsafe for climbing, they shall not be climbed until made safe by guying, bracing, or other adequate means.
- Before installing or removing wire or cable, strains to which poles and structures will be subjected shall be considered and necessary action taken to prevent failure of supporting structures.
- When setting, moving, or removing poles using cranes, derricks, gin poles, A-frames, or other mechanized equipment near energized lines or equipment, precautions shall be taken to avoid contact with energized lines or equipment, except in bare-hand live-line work, or where barriers or protective devices are used.
- Unless using suitable protective equipment for the voltage involved, employees standing on the ground shall avoid contacting equipment or machinery working adjacent to energized lines or equipment.
- Lifting equipment shall be bonded to an effective ground or it shall be considered energized and barricaded when utilized near energized equipment or lines.
- Pole holes shall not be left unattended or unguarded in areas where employees are currently working.
- Tag lines shall be of a nonconductive type when used near energized lines.

For Metal Tower Construction:

- When working in unstable material the excavation for pad- or pile-type footings in excess of 1.5m deep shall be either sloped to the angle of repose as required in design or shored if entry is required. Ladders shall be provided for access to pad- or pile-type footing excavations in excess of 1.33m.
- When working in unstable material provision shall be made for cleaning out auger-type footings without requiring an employee to enter the footing unless shoring is used to protect the employee.
- A designated employee shall be used in directing mobile equipment adjacent to footing excavations.
- No one shall be permitted to remain in the footing while equipment is being spotted for placement.
- Where necessary to assure the stability of mobile equipment the location of use for such equipment shall be graded and leveled.
- Tower assembly shall be carried out with a minimum exposure of employees to falling objects when working at two or more levels on a tower.
- Guy lines shall be used as necessary to maintain sections or parts of sections in

position and to reduce the possibility of tipping.

- Members and sections being assembled shall be adequately supported.

3.12.4 Labor Conditions and Health and Safety Management

Temporary Works: The Contractor shall make sure that all equipment and safeguards required for the construction work such as temporary stair, ladder, ramp, scaffold, hoist, run away, barricade, chute, lift, etc. are substantially constructed and erected, so as not to create any unsafe situation for the workmen using them or the workmen and general public passing under, on or near them.

Health and Safety: All contractors are responsible to:

- Maintain standards of Health and Safety towards all of his employees not less than those laid down by the national standards or statutory regulations.
- Be in compliant with all Health and Safety Terms and Conditions described in ECoP 20 and 21;
- Ensure that all of its workers entering the worksite comply with the Occupational Health and Safety. The Contractor shall provide all appropriate protective clothing and equipment for the work to be done and ensure its proper use. Where required, safety nets, belts, harnesses and lines shall be provided by the contractor. The “safety directives for work equipment” and “safety directives for protective gears”, as specified in the Occupational Health and Safety Guidelines (attached) shall be followed.
- The Contractor shall supply and install PCB free transformers so as to prevent possible exposure to hazardous chemicals.
- Provide and maintain in prominent and well-marked positions all necessary first-aid equipment, medical supplies and other related facilities. A sufficient number of trained personnel will be required to be available at all times to render first aid.
- The Contractor shall provide or ensure that appropriate safety and/or health signs are in place at their work sites where hazards cannot be avoided or reduced.
- Report to the Engineer promptly and in writing particulars of any accident or unusual or unforeseen occurrences on the site, whether these are likely to affect progress of the work or not.
- Safety orientation prior to working at the work-site;
- Ensure that all equipment and tools, including PPE, used on the work-site are in good working condition, properly maintained;
- Ensure that equipment is operated only by those workers who have been properly trained and are skilled in the operation of the equipment;

Disposal and Pollution:

- The Contractor shall not dispose any waste, rubbish or offensive matter in any place not approved by the Engineer or Statutory Authority having jurisdiction. The Contractor shall not discharge into any watercourse oil, solids, noxious or floating materials.
- The Contractor shall, where required, treat PCB contained in old transformers using available technologies; namely, super critical oxidation, electro-chemical oxidation, solvated electron technology, chemical reduction method, dehalogenation process, and thermal desorption using pyrolysis, catalyzed dehalogenation and verification before disposal.
- The Contractor shall take all reasonable precautions to keep public or private roads clean of any spillage or droppings from his vehicles or equipment.

- The Contractor shall construct sanitary latrine or septic tank system or install portable cabin toilet for disposal of human waste in the site office and temporary labor sheds for workers/ employees; the Contractor shall provide waste bins/ cans for collection of solid waste at appropriate locations (as directed by the Engineer) and ensure proper transfer/ disposal of solid waste.

3.13 Institutional Arrangements and Responsibilities

3.13.1 Electricity Generation Company Bangladesh (EGCB)

A Project Implementing Unit (PIU) will be established in EGCB. The purpose of project implementation unit is to ensure (i) Project Oversight and Policy Direction, (ii) Project Coordination and Management, and (iii) Project Implementation. It will consist of a Project Director, Deputy Project Director, Deputy/Assistant Manager, Sub-Divisional Engineer, Assistant Engineer. To assist in the implementation of the ESMF (and subsequent ESIA if required), a Social Safeguards Specialist and an Environmental Consultant will be hired to support the PIU. The organizational flowchart for ESMF implementation is shown in Figure 3.

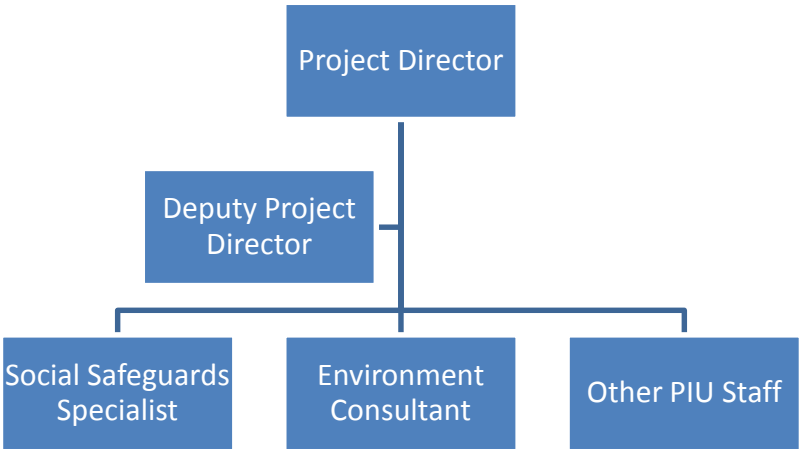


Figure 3: ESMF Institutional Arrangements

The ESMF roles and responsibilities of the project implementation team are provided in Table 5.

Table 5: ESMF Roles and Responsibilities of Project Implementation Team

Responsible Unit	Major Activities	Output	Action Time Frame
Project Implementation Unit (PIU)	Guide overall Safeguard Performance of the project	Oversight and monitoring Obtain safeguard Clearance from World Bank	Throughout project life cycle
Social Safeguard Specialist, PIU (see sample TOR in Annex 5)	Monitor key activities and track performance of social issues. Identify and correct problems. Keep adequate records of performance. Conduct periodic safeguard management system audits Capacity development of PIU and professionals of implementing agencies	Instructions to PIU	Throughout project life cycle
Environmental Consultant, PIU (see sample	Monitor key activities and track performance of environmental issues. Identify and correct problems.	Instructions to PIU	Throughout project life cycle

Responsible Unit	Major Activities	Output	Action Time Frame
TOR in Annex 6)	Keep adequate records of performance. Conduct periodic safeguard management system audits Capacity development of PIU and professionals of implementing agencies		

3.13.2 Contractors

In addition of Contractor's general arrangement to carry out the project works, the Contractor must hire at least one environment, health and safety supervisor for each subproject before the commencement of work. The Contractor/Subcontractor shall abide by the rules of regulation of the Occupational Health and Safety as stipulated in the Labor Act- 2006 and BNBC codes. The contractor shall also abide by the clauses of health and safety in General Conditions and Particular Conditions of Contract of the bid document.

Role of environment, health and safety supervisor: Primary role is to monitor the movement of people, workers and equipment, give timely warnings of any risk or non- compliance with safe work procedures and, where necessary, stop work if a risk situation escalates or cannot be minimized as well as look the potential environmental issues (air pollution, noise level, water quality, waste management etc.).

The tasks of environment and safety supervisor include the following:

- Ensure first aid facilities and personal protective equipment (PPE) for workers at the sites
- Provide orientation to workers before start of the subproject activities.
- Ensure restrain from undertaking any other tasks that may distract the workers focus on the work, mainly, work on or near live overhead conductors, work on transmission and communication towers.
- Stop the work, if necessary safety would not be ensured
- Pause the work while the safety observer changes position.
- Ensure special safety during elevated work platform work or crane operations on or near live conductors.
- Ensure proper collection and disposal of solid wastes within the construction site.
- Ensure proper infrastructure facilities, water supply and sanitation facilities for all workers.

3.13.3 Department of Environment (DoE)

DoE is a regulatory organization for issuing Site Clearance and Environmental Clearance Certificates (ECC), as per Environmental Conservation Rules (1997). The DoE has mandate to monitor and enforce conditions specified in the ECC as and when required. .

3.13.4 Local Administration

The District Commissioner's Office needs to provide support during land acquisition process, if required. Also, Union/Municipality needs to provide No Objection Certificate if the transmission line passes through their jurisdiction.

3.13.5 Capacity Building and Training Requirements

As a part of the "overall environmental and social assessment", existing environmental practices in recently completed and ongoing projects and capacities of EGCB has been evaluated through analysis of organizational set up and interviewing officials/ engineers. Details

of the evaluation are presented under “Overall Environmental Assessment”. It appears that the engineers at the EGCB limited exposure to environmental/social assessment and management. As discussed above, EGCB will be responsible for carrying out “environmental/social screening” and “analysis of alternatives”, and guidelines have been provided in the ESMF for carrying out these activities. However, basic training on regulatory requirements, environmental impacts, and environmental assessment and management would greatly improve the capability of relevant EGCB engineers and experts in carrying out their responsibilities under the proposed project. Training for the officials may be arranged in phases, where project would be initiated immediately would receive training first, others would gradually receive training as project work progresses. From logistic point of view, the trainings may be organized on a regional basis.

Both EGCB will employ individual/supervision/DSM consultant, who would support EGCB in overall environmental/social management. However, since the overall responsibility of environmental management lies with EGCB, they need to ensure that the consultants are carrying out their responsibilities properly. For this purpose, it is important that the EGCB engineers/officials receive advanced training on environmental management and monitoring. Such training will assist them in properly overseeing the activities of the consultant engaged in environmental management of the proposed project following the ESMF.

Table 6 summarizes the training requirements of EGCB officials. It is also advised to arrange basic training for key personnel on regulatory requirements, environmental impacts, and environmental assessment and management. A training budget is provided in **Table 7**.

Table 6: Training requirements for environmental management

Training Type/ Contents	Participants	Schedule
General environmental awareness, regulatory requirements, ESMF frameworks for project, environmental impacts and mitigation, analysis of alternatives, environmental management	Relevant engineers/ officials of EGCB	Prior to commencement of project activities
Advanced training on environmental assessment, management (EMP, RAP, TPP, ECoP), EHS/ OHS, monitoring, including details on ESMF framework	(a) Environment and social Unit of EGCB, (b) Relevant Engineers	Immediately after project commencement

Table 7: ESMF Training Budget

SN	Item	Amount (BDT)	Amount (USD)[a]	Remarks
1	Training on Environmental and Social Issues for PMU	300,000	3,614	2-day training by hired Social and Environmental Consultants
2	Advanced training on environmental and social management and monitoring	300,000	3,614	2-day training of EGCB PMU Environment and Social Unit as well as relevant Engineers by hired Consultants
3	Training on Environmental and Social Issues for EGCB Officials	100,000	1,205	1-day training at EGCB office by PMU Environment and Social Unit

Notes: a. Conversion rate used: USD 1 = BDT 83

Chapter-4: Social Management Framework

4.1 Introduction

This Social Management Framework (SMF) is to resolve any anticipated social safeguard issues and impacts that may arise during construction of transmission line. EGCB will be the implementing agency of Component 1. Under this component transmission line will be constructed. EGCB will implement the 50 MWac Solar power plant at the Feni site. The Ministry of Finance will be the borrower of IDA credit that will be on-lent to EGCB to finance the development as public investment.

EGCB has a vast experience working with World Bank. Since 2008 been working with the Bank as an implementing agency of the Siddhirganj Power Project that supports the construction of a gas-fired power plant as public investment. Throughout the project EGCB has been following and applying Bank's policies and procedures that are applicable to an EPC contract-based investment. However, this Project supports the first utility-scale solar PV investment by EGCB. It needs to gain experience in operation and maintenance of a solar PV plant after commissioning. This is ensured by including an O&M contract for three years in the procurement of the EPC contract and by transitioning of O&M skills and responsibility to EGCB staff during the period.

EGCB has established a project management team for the Project, headed by a Project Director reporting to the EGCB Managing Director. The team is comprised of six officers, including safeguards, procurement and financial management specialists. The project management team will be supported by an Owner's Engineer, funded by the Project,that will assist in all aspects of design, tendering, negotiation, and implementation of the EPC and O&M contract. EGCB will furthermore contract an international procurement specialist and an international technical specialist to be part of the EPC bid evaluation committee. A technical project management team will also be placed at the Feni site.

The provisions of this SMF are proposed in view of the World Bank's project financing policy that requires the borrowers to assess potential social safeguard issues and impacts in project preparation. Also, to adopt and implement appropriate measures to mitigate them, in compliance with the Bank Operational Policies (OP) 4.12 and 4.10. In this regard, since the locations and the nature and scale of safeguards impacts under this component one is remain to be assessed, the issues and impacts addressed in the SMF are largely based on past experience with the Bank supported projects implemented by various agencies within the Bangladesh Government. Once the Administrative Boundaries (district, upazila, union, etc.) of project area is planned, the proposed SMF will provide the basis to select the exact site, assess the social safeguard issues and impacts, and prepare the necessary plans to mitigate any projected adverse impacts.

4.2. Basic Planning Principles

Considering the potentials of impacts associated with this project, project will select the sites, and design and implement all off-site infrastructures required to support the economic activities within the project area, adhering to the following principles:

- Prior to selection of specific sites, project will undertake community and stakeholder consultations about the objectives and the planned economic activities in the selected sectors, as well as the social impacts, especially those that would result from private land acquisition and displacement from khas and other public lands. Consultations will include, inter alia,
- All formal/informal local entities, such as Union Parishads/Upazila Parishads and other local bodies with direct and indirect stakes in the project and are deemed key

actors to influence availability of lands for the specific sector and design and implementation of the component.

- Individuals, such as private landowners and those, especially the vulnerable who use public lands to live in and/or earn a living with or without authorization, as well as others who would be directly affected by the project.
- Individuals, who would be affected indirectly in terms of loss of livelihood and/or access to common property resources which may have been a substantial support to their livelihood.
- Unless absolutely required, project will do its best to avoid land acquisition from private ownerships and will always try to find khas and other public lands whenever it considers alternative sites in a given district, upazila, union or municipality.

Project will screen each site and its surroundings, and all physical works that might be undertaken to provide infrastructure support (e.g., access roads, electricity, water supply, etc.) to identify the associated safeguards issues and impacts, in order to determine applicability of the OP 4.12 and OP 4.10 and the required impact mitigation plans (a Screening Form is provided in Annex 1). Where land acquisition from private ownerships and displacement from public lands could not be avoided entirely, project will establish and build any required land-based infrastructure in accord with the following guidelines:

- **Guidelines for Land Acquisition & Resettlement:** Contains principles, policies and guidelines for private land acquisition and use of khas and other public lands and adverse impact mitigation; mitigation measures; and implementation and monitoring arrangements for mitigation plans; A separate Resettlement Policy Framework (RPF) and Small, Ethnic and other vulnerable community's development framework (SEVCDF) is necessary to prepare for this project through involving relevant consultant where applicable.

- **Guidance Note for Integration of Gender Issues:** Intended to help selected sectors and other authorities to take into account social (non-safeguard) and gender issues into subproject selection, preparation and implementation.

4.3 Stakeholder Engagement Community Participation & Consultations:

Community/stakeholder consultations will be conducted throughout the project cycle, with varying focus on issues relating to the subproject activities and the people who may have stakes therein. More formal consultations, focus group discussions and interviews of knowledgeable local persons will start with feasibility study, social (and environmental) screening, PAP census and impact assessment, and preparation and implementation of the impact mitigation plans. Focus of consultations will generally shift from wider audience to specific groups who have direct stakes in the project.

Table 8: Consultation and Disclosure Roles and Responsibilities

Project Phase	Activities	Details	Responsible Agency
Project Initiation Stage	-Subproject information dissemination on various components. -Disclosure of preliminary plans for proposed land acquisition. -Preliminary Information sharing about the tentative alignment/sites with the DPs in case of temporary impact on business, income and livelihood.	-Leaflets posted or distributed containing information on the project. -Public notice issued in public places including newspapers and direct consultation with DPs /DPs.	Consultant of EGCB
RAP Preparation Phase	Stakeholder consultations.	-Further consultations with DPs and households, titled and non-titled. -Summary RPF made available to all DPs at the convenient place which is easily accessible and should be in local language.	Consultant of EGCB
	Disclosure of final entitlements and rehabilitation packages and disclosure of draft RAP.	RAPs disclosed to all DPs in local language	Consultant of EGCB
	Finalization of RP.	-Review and approval of RAP by EA. -Review and clearance of RP by World Bank (prior to award of contract). Web disclosure of the RAP. Disclosure of the Final RP to DPs	EA/IA
RAP Implementation Stage	Ongoing consultation with DPs during RAP implementation.	-Continued discussions and information disclosure to DPs; -Payment of entitlements (all compensation must be paid before displacement occurs. -Grievance Redress Mechanism activated. -Written notification from EA/IA to WB that all compensation paid before displacement occurs. Construction can begin on sections where compensation is paid and community notified of start date of civil works. - DPs with unresolved grievances or disputes over	EGCB/Implementing NGO

Project Phase	Activities	Details	Responsible Agency
		land ownership, compensation amounts, etc. are notified of any compensation payments set aside by EA/IA in separate escrow accounts to be paid when disputes are resolved.	

Community consultations will always include the following as they relate to project preparation and implementation:

- The objectives, scope and implications with respect to the project, socioeconomic impacts, as well as the adverse impacts that are likely to be caused on users of khas and other public lands and private landowners;
- Gather community inputs/feedbacks as to how adverse impacts could be minimized; and the rights and responsibilities on the parts of the communities themselves and the agencies involved in preparation and implementation, such as GOB, World Bank, the consultant, etc.
- Potential impacts and their sources relating to the location and scope of the civil works required to build infrastructures in order to support the various economic activities
- Inform the community about Grievance Redress Mechanism and the Grievance Redress Committee that would be constituted at the local level and project level, its membership composition, and explain its functions and limitations and how an aggrieved person could lodge complaints and grievances
- Project will hold separate consultations with women. The main objective is to explore the possibilities of introducing economic activity that would benefit the local women. (Recording and analysis of inputs/feedbacks and other information will always be gender disaggregated.)

4.4 Grievance Redress Mechanism

Grievances are issues, concerns, problems, or claims (perceived or actual) that individuals or community groups want to address and be resolved by the Project. The grievance mechanism is a locally based, project-specific extra-legal way to deal with and resolve complaints and grievances faster and thus enhance project performance standards in terms of social and resettlement management.

World Bank has specific clauses/guidelines requiring the borrower/client to set up and maintain a grievance redress mechanism at the Project level. This mechanism does not replace donors' accountability mechanism, but is intended to solve grievances at the local level. If aggrieved, it is expected that affected people will first approach the local grievance mechanism before taking the issue to other forum. The GRC system established in this project is expected to be effective in resolving grievances related to compensation and relocation aspects. All affected persons will have full and free access to GRCs.

4.4.1 Grievance Redress Committee (GRC)

A two-tier bottom up GRC system will be established in this Project. First, there will be GRCs at the local level, hereafter called Local GRC (union/municipality level); and second, GRC at the project level to give room for grievances to be fairly reviewed. The APs will be informed through public consultation that they have a right to have their grievances redressed by the local

committees as well as by the project management. The APs can also call upon the support of the implementing NGO (INGO) engaged to implement the RAP to assist them in presenting their grievances or queries to the GRC. Other than disputes relating to ownership right under the court of law, the GRC will review grievances involving all resettlement assistance, relocation and other support. The local GRCs (at the union/municipal level) will hear the grievances first. Only unresolved cases will be forwarded to the next tier – Project level GRC for further review and resolution. Grievances will be redressed within a month from the date of lodging the complaints. GRC decisions will be on a majority basis and will be disclosed and available for review by the stakeholders. If any disputant is unhappy or unsatisfied with the outcome of the Project level GRC, he/she may approach to further higher authorities.

The Project-Level GRC will review all unresolved cases forwarded to by Local GRCs. It will be headed by the Project Director (PD). The Project-level GRC with representation of member of relevant ministry and civil society member will further establish fairness and transparency in the resolution of disputes or grievances. In specific cases, Project-level GRC may seek legal advice from the INGO Legal Advisor or any external legal advisor after getting permission from competent authority, if required.

4.4.2 GRM Documentation and Monitoring

To ensure impartiality and transparency, hearings on complaints at the GRC level will remain open to the public. The GRC will record the details of the complaints and their resolution in a register, including intake details, resolution process, and the closing procedures. PMU consultant will maintain the following three GRM Books:

Opening Book: (1) Case no., (2) Date and channel of receipt, (3) Name of complainant, (4) Gender, (5) Father or husband, (6) Complete address, (7) Main objection (loss of land/property or entitlements), (8) Complainants' story and expectation with evidence, and (8) Previous records of similar grievances.

Resolution Book: (1) Serial no., (2) Case no.,(3) Name of complainant, (4) Complainant's story and expectation, (5) Date of hearing, (6) Date of field investigation (if any), (7) Results of hearing and field investigation, (8) Decision of GRC, (9) Progress (pending, solved), and (10) Agreements or commitments.

Closing Book: (1) Serial no. (2) Case no., (3) Name of complainant, (4) Decisions and response to complainants, (5) Mode and medium of communication, (6) Date of closing, (7) Confirmation of complainants' satisfaction, and (8) Management actions to avoid recurrence.

The GRC will also prepare periodic reports on the grievance resolution process and publish these on their websites. PMU will consolidate reports from the GRCs on GRM and post in their website. A grievance Redress flowchart is given below.

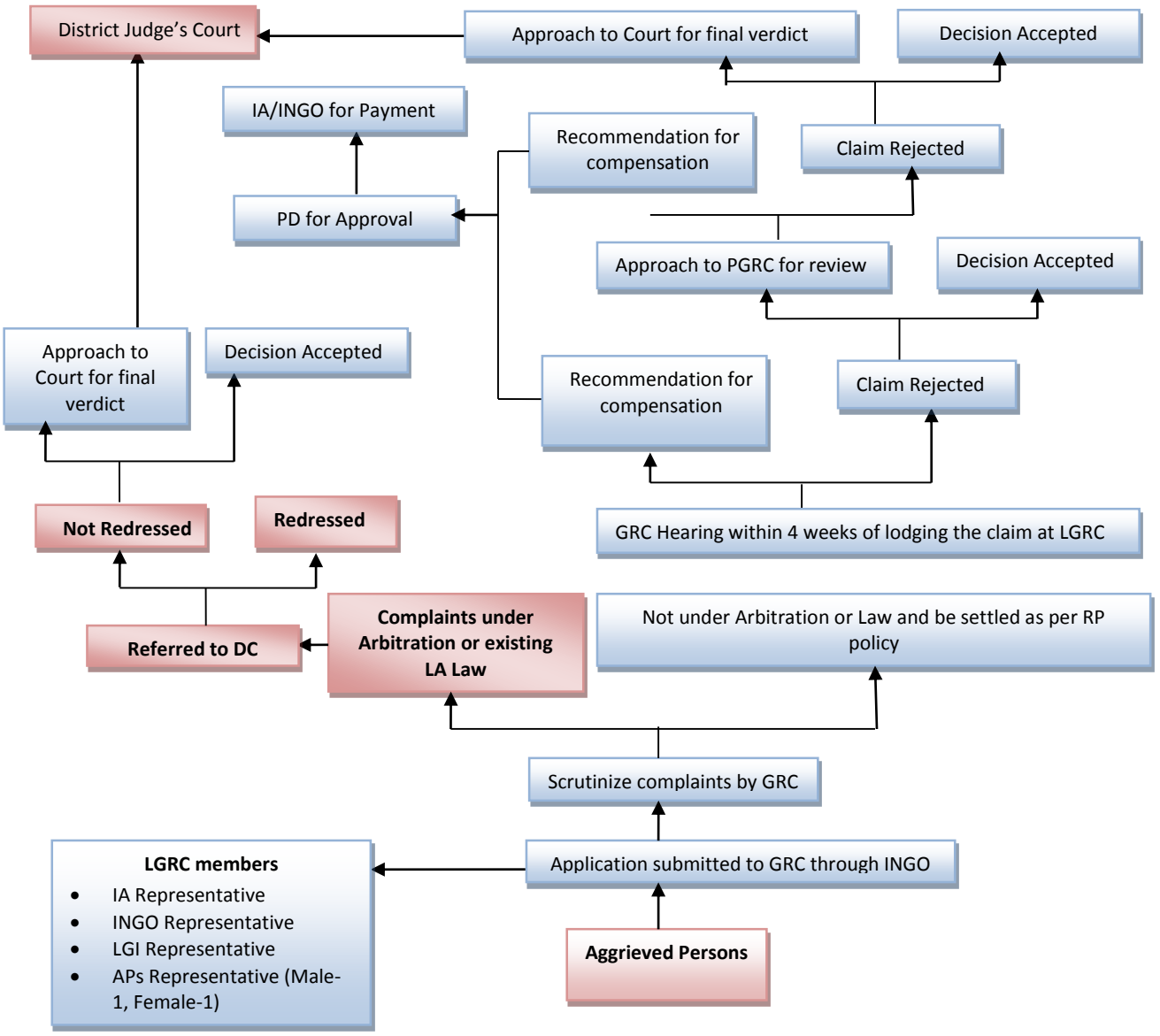


Figure 2: Grievance Redress Flowchart

4.6 Institutional Arrangements

The arrangements will be the same as described in section 3.13 above.

4.7 Institutional Capacity Building

The project has strong social development focus and the implementation of the project interventions with social compliance requires institutional capacity building in this area. It is therefore proposed to include Social Development Specialist in Project Implementation Unit under the project which should later be institutionalized in the organizational setup.

Institutional capacity building will also include various short and long training and awareness raising program. All such training and awareness raising program must include social development aspects such as resettlement, special assistance to small ethic and vulnerable communities and disadvantaged groups, inclusiveness, participation besides technical and environmental aspects and overall enhancement of disaster management capacity of the concerned organizations and the project in general.

4.8 Consultations and Citizen Engagement

EGCB along with relevant consultant will conduct consultation meeting with local community before selecting RoW of transmission line. Community people will be engaged with different committee of the projects like GRC, Property Assessment and Valuation Committee (PAVC) of the project. The project will seek to get feedback from the affected HHs of the transmission line and incorporate in the project document. If any mitigation measures are suggested by the stakeholders those will be incorporated in the ESIA. EGCB will be responsible for collecting the stakeholder feedback as part of transmitting the generated renewable electricity to the beneficiary group. The related beneficiary feedback indicator included in the results framework is the share of end-users expressing satisfaction with transmission line and cost of electricity service. The data for the indicator will be collected as part of the end user satisfaction surveys.

There has already been some consultation regarding the project as part of the ESIA for the PV Plant. These consultations included discussions regarding the proposed transmission line. A Public discussion meeting was held on 22nd January 2018 at Char Chandia Union Parishad, Char Chandia. Affected persons, local community and relevant stakeholders including both govt. and private sector representatives were participated in this Public Consultation Meeting (attendance list provided in Annex 7). The proceedings commenced at 10:00 am. The meeting was attended by a total of 22 people. The key findings and observations from the consultations process were:

- **Positive expectations from the project**: it was conferred that most people saw the project as a positive development for the communities specifically in terms of employment and contracting opportunities, better infrastructure and electricity supply. It is also expected that the project will support additional industrial development in the surrounding area.
- **Land & Compensation related Issues:** Acquired land was khas land and distributed to Landless people. However, complexity on ownership exists. Three types of affected persons have been identified i.e. Legal owners, sharecroppers and illegal land users. Compensation rate determined by the DC is higher than the current market price, will be known as replacement value, and people are willing to contribute for this development project.
- **Impact on Land Dependent Groups**: livelihood of the landowners, share croppers and illegal land users will be partially impacted. Acquired land is single cropped with low productivity for high degree of salinity. Sole dependency on the acquired land is not found as most of the dependents have to rely on other jobs or other lands those are not

being taken by the project intervention.

- **Adjacent Water bodies**: Two Canals exist in the project site those are originated from the Choto Feni River and pass through the project site. If they are filled or blocked, adjacent communities and agricultural lands may l be inundated during the wet season.

4.9 Gender

A gender-responsive social assessment was undertaken as part of Project preparation. Among the major possible gaps identified were: 1) livelihood impact on female for construction of transmission line 2) information, awareness, capacity and financial gap among women, including entrepreneurs that could benefit from the construction of transmission line, and 3) low institutional gender capacity of EGCB that could translate into effective gender institutional/regulatory mechanisms. The following activities have been agreed to help address the gaps: 1) EGCB will provide training and capacity building specifically to project affected women on alternative livelihoods, such as the fisheries, and productive uses of electricity; and 2) ECGB will review their labor and gender guidelines and prepare a plan on how to strengthen their implementation within the Project. Relevant indicators in the results framework include share of women that found the EGCB livelihood training useful, and a gender implementation plan in place at EGCB.

4.10 Monitoring and Evaluation

4.10.1 Indicators for Monitoring and Evaluation:

Impacts of the proposed subcomponents on physical, socioeconomic and cultural environment will be monitored on the basis of a scheduled plan. Frequency of monitoring will depend on size, location and magnitude of the project parameters. The PIU is responsible to adhere with monitoring parameters, locations, schedule and responsibilities. Impact monitoring will be carried out through internal monitoring system. Likewise, two-time impact evaluation will be carried out: mid-term evaluation in two years; and final evaluation in four years.

4.10.2 Stages of Monitoring and Evaluation

Monitoring and evaluation process will be focused on indicators specific to process by PIU and outcomes at three consecutive stages of RAP implementation (if required): RAP preparatory stage, relocation stage and rehabilitation stage. Viewpoint of M&E at these stages will be as follows:

4.10.2.1 M&E at Preparatory Stage

Monitoring is concerned with administrative issues for the period of the pre-relocation phase of the resettlement process such as, establishment of resettlement unit, budget management, and requirement for further land acquisition, consultation with DPs in the preparation of resettlement plan and their participation in the implementation process, information dissemination on payments of entitlement due, grievance redress, and so on. The major issues for monitoring will be to:

- Conduct additional baseline survey, if required;
- Consultations;
- Identify DPs and their numbers;
- Identification of different categories of DPs and entitlements of individuals;
- Collection of gender disaggregated data and preferences of women;
- Establish Inventory of losses;
- Ascertain Entitlements;
- Valuation of different assets not covered by PAVC;
- Budget delivery;
- Information dissemination;

- Institutional capacity assessment;

4.10.2.2 M&E at Rehabilitation Stage

Once the DPs have resettled at new self-relocated sites, the focus of monitoring will shift to issues of livelihood restoration. The key issue of monitoring will be:

- Initiation of livelihood restoration activities;
- Consultations;
- Assistance to enhance the livelihood and quality of life
-

4.11 Survey and Documentation

4.11.1 Preliminary Screening

During the identification and preliminary stages of project preparation, PMU will undertake a preliminary Land Acquisition Assessment to identify the types, degree, and scale of potential social impacts of the project. To correctly identify the relevant social issues and to assess the type and level of information required during subsequent field investigations, particular attention will be paid to adverse impacts to the affected community, such as loss of land and other fixed assets and the number of persons marginally or severely affected and the types of vulnerable groups affected.

4.11.2 Project Preparation

PIU with the help of consultants will be responsible for carrying out all necessary surveys, field studies and investigations, as identified during the screening. Prior to undertaking the survey PIU will conduct a public consultation campaign to describe the project components, types of impacts, content and schedule for the census and inventory or other background surveys to the key stakeholders.

At least three basic types of surveys will be needed: a census; an inventory of affected assets and other losses; and a socio-economic baseline survey. The census and the inventory of affected assets will cover all PAPs, regardless of entitlement or land ownership. Criteria for vulnerability of PAPs should be paid particular attention in order to provide additional assistance.

4.11.3 Public Consultation and Participation

PIU will employ numerous consultation and communication methodologies during the preparation and implementation of the project. Participatory workshops, household surveys, focus groups, etc. will be used to inform communities about possible project impacts, proposed mitigation measures, and to receive their feedback on their priorities and concerns, which in turn, will be used as key inputs for the preparation of the RAPs. Focus groups will discuss gender issues, children and schooling, health, land and security, access to places of employment, livelihood generation issues, among others.

PIU will carry out consultations at various stages of the preparation of the RAPs and the key stakeholders will be invited to participate in the deliberations for the formulation of the Resettlement and Rehabilitation (R&R) plans. The consultations will start with the reconnaissance level surveys followed by scoping workshops, focus group meetings, and follow up consultations. The opinions of stakeholders will be documented and incorporated in the R&R planning as well as in designing socially acceptable mitigation measures.

The public consultation exercises undertaken during the preparation of RAPs involve information dissemination – i.e., informing the target audience about the details of the project intervention in question and inviting their comments before finalizing the R&R design. The consultations will be carried out with individuals during the screening survey stage and with both individuals and

groups during the detailed social impact surveys. Based on preliminary social assessments, scoping and initial field appraisals, participatory strategies will be devised to ensure the participation of the affected populations in the RAP preparation. This approach will help identifying social sensitivities and concerns so as to suitably modify the design and planning of the project intervention; review measures to avoid, reduce or mitigate adverse impacts and minimize displacement; explain principles and procedures and significance of land acquisition, resettlement and rehabilitation compensations and assistance to PAPs. Public participation is performed and information will be made available during preparation and implementation of the resettlement plan and will include, at a minimum, community meetings and focus-group discussions.

4.11.4 Abbreviated (Summary) Resettlement Action Plan:

In cases where the impacts of the project are marginal such that less than 200 persons (about 40-50 families) are affected without any large scale displacement, or where the impacts are minor, although more than 200 persons may be affected, a simple abbreviated RAP should be prepared. It should provide general information on the project, social impacts and the number of people affected, entitlements for compensation and other assistance for each category of PAPs, estimated cost, and implementation schedule.

4.11.5 Detailed RAP

In cases where the project affects and/or displaces more than 200 people (40-50 families), a time-bound Resettlement Action Plan (RAP) for the project will be prepared in accordance with the provisions of this Framework. The threshold of 200 PAPs should apply to all sub-projects put together for which one single standalone RAP would be required. Resettlement plans should be built around development strategy, and compensation, resettlement, and rehabilitation packages should be designed to improve or at least restore the social and economic base of those severely affected. Preference should be given to resettling vulnerable people dislocated from their existing settings by providing opportunities for sustainable income generation in similar settings. Where a project is likely to adversely affect poor households the resettlement plans should specify measures additional to the compensation entitlements, aimed to improve status of the poor to bring them up to an acceptable level above the poverty line.

The RAP will include: (i) project description and brief description of impacts; (ii) specific measures taken to minimize adverse impacts; (iii) socio-economic survey; (iv) detailed description of impacts and category of PAPs; (v) entitlement for different types of losses; (vi) specific measures provided to vulnerable groups and for income rehabilitation assistance; (vii) public consultation and participation; (viii) estimated resettlement cost; (ix) monitoring and evaluation procedures; (x) organizational responsibilities and implementation procedures including valuation of lost assets; identification of alternative relocation sites; provisions for shelter, infrastructure and social services; and procedures for landownership, acquisition and transfer; and (xi) implementation schedule (xii) grievance redress mechanism.

4.11.6 Social and Gender Issues

This guidance note on gender integration is intended to make project authorities aware of the World Bank's concerns for gender-based inequalities and indignities prevalent in workplaces where men and women work together. It is observed that development effectiveness of projects can be enhanced by addressing such gender issues that are considered serious obstacles to inclusive and sustainable development. In this regard, the Bank considers it most important that development programs and projects should always explore feasible alternatives to enable the disadvantaged, especially women, to share in the benefits generated by the projects it supports.

The following are widely known issues that are to be addressed for fair treatment of workers in general and the female workers in particular.

- **Women workers** – especially unskilled and lowly skilled -- are particularly vulnerable to discrimination and abuse. In a situation where the wages are already very low and considered far less than living wage, female workers are known to be paid at considerably lower rates than the males for similar jobs.
- **Sexual harassment and indignities**, which range from verbal abuse to "touching" are rarely talked about -- but goes on quietly. Physical assault of workers is not too rare.
- **Freedom of association and collective** bargaining are still not allowed in all factories. (After years of rallies and agitations, which often turned violent, workers' unions are allowed in some of the privately-run factories. It is still not allowed in some enterprises where investments are mostly foreign.
- Lack of safety in the factories, which has been widely known and caused hundreds of deaths over the years, due to fire and structurally unsafe buildings that housed many of the factories.

Benefiting the local communities and workers at this level will require careful analyses of the current situation which may vary from one industry to another. Gender analysis at this level would help project to adopt appropriate guidelines to ensure gender integration into the economic activities selected to locate in industries that are aimed at improving the local economies. This will require analyzing the existing economic and socio-demographic conditions that will indicate economic characteristics and vulnerability of the different community groups, including women; social acceptance of women working outside the households; education that may make an important difference when it comes to suitability for particular jobs, including ease in training to perform particular tasks that the enterprises may require; and other factors that would enable project and the investors to make decisions about the kinds of industrial activities they want to undertake in a particular component. Analysis may include, but not limited to, the following information.

- Project location, describing physical characteristics (topography and other physical features) of the individual industries; proximity to existing urban centers; accessibility to the project site; existing/potential transport networks; power and water supply; and others that are usually considered important for setting up manufacturing enterprises.
- Community consultations, including women, about objectives of the project and the kinds of enterprises, with job prospects for men and women, which would be set up in the individual industry. Project will consider all inputs and feedbacks received from the communities, and record and analyze all information in terms of gender -- men and women. (Depending on local custom, consultations with women may have to be conducted separately.)
- Community profile, indicating population size; ethnicity; education and related facilities; prevalence/practice of gender differentiation; major economic activities; availability and use of common property resources; occupational groups; formal/informal institutions and rules and behavior that may influence gender integration into the industrial activities; and any other information relevant to particular activities identified for the individual industries'.
- Social acceptability, existing and potential issues and concerns related to the roles women play in the household and the prospects that they could work outside the households, without causing social conflicts.

Chapter-5: ESMF Monitoring and Reporting

5.1 Monitoring

ESMF monitoring will be carried out to ensure that the mitigation plans are regularly and effectively implemented. The PMU environment and social specialists will carry out ESMF monitoring to ensure that the mitigation plans are being effectively implemented and will conduct field visits on a regular basis. The ESMF monitoring plan is provided in **Table 9**.

Table 9: ESMF Monitoring Plan

Project Phase	What	When	Who	How
Preparation	Training and Capacity Building Activities	Before preparation of tender documents	PD	Review Training Records
Preparation	Ensure Screening of Environmental and Social Issues	After alignment options are confirmed by PD	PMU Environment and Social Cell	Review completed Screening Sheets
Construction	Training and Capacity Building Activities	Monthly	PD	Review Training Records
Construction	Grievances Records	Monthly	PD	Review GRM register
Construction	Environmental and social mitigation/ enhancement measures (including health and safety measures) outlined in the ESMP and in cooperated in the tender bidding documents and the approved contracts.	Monthly	PD	Review ESMP monitoring documents
Operation and Maintenance	Grievances Records	3-Monthly	PD	Review GRM register
Operation and Maintenance	Environmental and social mitigation/ enhancement measures (including health and safety measures)	3-Monthly	PD	Review ESMP monitoring documents

	outlined in the ESMP			

5.2 Reporting

The ESMF reporting requirements are listed in Table 10.

Table 10: ESMF Reporting Requirements

Report/Document	Description	Prepared By	Submitted To	When
Training Records	Register of all Trainings and Capacity Building activities conducted under the project	Environment and Social Cell of PMU or Consultants	PD	Within 3 weeks of any training/capacity building activity
Completed Safeguards Screening Forms	Identifies Potential Environmental and Social Issues	Environment and Social Cell of PMU or Consultants	PD	After completing forms
GRM Records	Register of grievances received and actions taken	GRC or Consultants during construction phase and then relevant EGCB officer thereafter	PD	Monthly
ESMP Monitoring records	Monitoring data as defined in the ESMP	Contractor, Environment and Social Cell of PMU and/or Consultants	PD	Monthly or as per ESMP requirements

Annex-1: Social Safeguard Screening Form

[To be filled in for each community jointly by Project Proponent(s) and consultants. Where private lands are to be acquired or public lands are to be resumed from authorized and unauthorized private users, census of affected persons and inventory of losses to be carried out.]

INVOLUNTARY RESETTLEMENT IMPACT CATEGORIZATION CHECKLIST

Probable Involuntary Resettlement Effects	**Yes**	**No**	**Not Known**	**Remarks**
Involuntary Acquisition of Land				
1. Will there be land acquisition?				.
2. Is the site for land acquisition known?				
3. Is the ownership status and current usage of land to be acquired known?				
4. Will easement be utilized within an existing Right of Way (ROW)?				
5. Will there be loss of shelter and residential land due to land acquisition?				
6. Will there be loss of agricultural and other productive assets due to land acquisition?				
7. Will there be losses of crops, trees, and fixed assets due to land acquisition?				
8. Will there be loss of businesses or enterprises due to land acquisition?				
9. Will there be loss of income sources and means of livelihoods due to land acquisition?				
Involuntary restrictions on land use or on access to legally designated parks and protected areas				
10. Will people lose access to natural resources, communal facilities and services?				
11. If land use is changed, will it have an adverse impact on social and economic activities?				

12. Will access to land and resources owned communally or by the state be restricted?				
Information on Displaced Persons:				
Any estimate of the likely number of persons that will be displaced by the Project? [ ] No [] Yes If yes, approximately how many?				
Are any of them poor, female-heads of households, or vulnerable to poverty risks? [] No [ ] Yes				
Are any displaced persons from indigenous or ethnic minority groups? [ ] No [ ] Yes				

Note: The project team may attach additional information on the project, as necessary.

Annex-2: Environmental Safeguard Screening Form

[To be filled in by Project Proponent(s), contractors and consultants where appropriate.]

PART A – Project Location Issues

Proximity of project Location/Alignment in relation to sensitive environmental features	Within 1km	Within 5km	More than 5km	Not Known	Remarks
1. Ecological critical area (ECA)					.
2. Protected Area (as per DoE notice)					
3. Habitats of rare or endangered species					
4. Will easement be utilized within an existing Right of Way (ROW)					
5. Rivers					
6. Khals or canals					
7. Seasonal wetlands (boars/haors)					
8. Permanent wetlands (beels)					
9. Reserve Forests					
10. Mangroves					
11. Estuaries					
12. Cultural or heritage site					
13. Other potentially natural/manmade sensitive environmental sites					

PART B – Potential Project Impacts

Possible impact during Construction / Operation / Decommissioning Phases	Project Phase (C/O/D)	Insignificant	Minor	Moderate	Significant	Remarks
1. Dust generation						.
2. Air quality (PM10, PM2.5, SOX, NOX, CO, etc.)						

3. Noise pollution						
4. Water Pollution (surface and groundwater)						
5. Soil Pollution						
6. Top soil loss						
7. Agricultural lands						
8. Tree felling						
9. Vegetation loss						
10. Disturbance to sensitive species						
11. Introduction of new (invasive) species						
12. Other potentially negative impacts						
13. Potentially positive environmental impacts						

Annex-3: Generic Environmental & Social Management Plan

Activity	Potential Environmental & Social Impacts	Proposed Mitigation	Institutional Responsibilities
Pre-Construction Stage	Loss of land / and other physical assets	• Carrying out analysis of alternatives to avoid/minimize involuntary taking of land and other physical assets. • Compensation at replacement value	Client
	Loss of livelihood	• Preferable employment with developer • Alternative livelihood options and training for skill enhancement • Corporate Social Responsibility (CSR) activities to be undertaken by the developer will ensure alternative livelihood opportunities	Client / Developer
	Loss of Access rights	• Project to ensure thorough analysis of alternatives that access enjoyed by the community remains intact. • In case of unavoidable circumstances, alternative access will be provided.	Client
Site Preparation	Soil Erosion; Alteration of natural drainage;	• Construction facilities to be placed 500 meters from water bodies, natural flow paths; • Minimize cut & fill operations, the site clearing and grubbing operations should be limited to specific locations only. • Any disruption of socially sensitive areas with regard to human habitation and areas of cultural significance will be avoided. • The existing slope and natural drainage pattern on the site should not be altered. • Trees on private lands are felled or damaged during construction operations, compensation shall be paid to the owner as determined by the forest/horticulture departments. • The contractor shall ensure that site preparation activities do not lead to disruption of activities of the local residents.	Client /Developer
Construction Activity	Noise from construction works	• Construction activity shall be restricted to daytime as far as possible to avoid disturbance to surrounding areas. • Wherever required, personal protective equipment (PPE) such as ear plugs, earmuffs, helmets etc. should be provided to the persons working in high-risk areas.	Client /Developer
Construction Activity	Dust	• Construction machinery shall be properly maintained to minimize exhaust emissions of CO, SPM, $PM_{2.5, 10}$ and Hydrocarbons. • Dust generated as a result of clearing, leveling and site grading operations shall be suppressed using water sprinklers. • Dust generation due to vehicle movement on haul roads/access roads shall be controlled through regular water sprinkling.	Client /Developer

Activity	Potential Environmental & Social Impacts	Proposed Mitigation	Institutional Responsibilities
Construction Activity	Safety Issues	• Prevent entry of unauthorized personnel and proper storage and control of hazardous materials on site. • The site shall be secured by fencing and manned at entry points	Developer
Laying of transmission lines	Exposure to safety related risks	• The setback of dwellings to overhead line route designed in accordance with the permitted level of power frequency and the regulation of supervision at sites	Client and Developer
Water for Construction	Conflicts with existing users due to the scarcity of resource base.	• A detailed assessment of the available resources and consent of the local representative for withdrawal of water from existing surface water sources shall be taken. • If ground water is withdrawn, adequate approvals from the appropriate department need to be undertaken before setting up bore wells.	Client / Developer
Road safety and traffic management plan	Increase in road accidents	• The movement of heavy machinery and equipment's shall be restricted to defined routes. • Proper signage's to be displayed at major junctions. • Road diversions and closures to be informed well in advance to the local residents. • The vehicular movement to be controlled near sensitive locations viz. schools, colleges, hospitals identified along designated vehicular transportation routes.	Client / Developer
Base Camp Construction Activity – Labour Camp Management	Conflicts with the local residents	• An alternate arrangement for fuel wood, heating and cooking should be made to meet fuel wood requirement of the labor • Work force should be prohibited from disturbing the flora, fauna including hunting of animals, Wildlife hunting, poaching and tree felling. • Adequate facilities ensuring sanitation for labour camps. • Treated Water will be made available at Site for Labour drinking purpose. • Adequate accommodation arrangements for labour	Client / Developer
Waste Management	Improper management and handling of hazardous and non-hazardous waste during construction.	Preparation of a waste management plan covering the following aspects • Construction and commissioning of Transmission Line • Temporary accommodation facilities for labor • Waste generation from equipment maintenance/vehicles on-site. • The scrap material generated from the erection of structures and related construction activities will be collected and stored separately in a stack yard and sold to local recyclers. • Hazardous waste viz. waste oil etc will be collected and stored in the paved and bounded area and subsequently sold to authorized recyclers. • Applicability of the Hazardous Waste Management Rules	Client / Developer

Health and Safety risks	▪ The potential for exposure to safety events such as tripping, working at height activities, fire from hot works, smoking, failure in electrical installation, mobile plant and vehicles, and electrical shocks. ▪ Exposure to health events during construction activities such as manual handling and musculoskeletal disorders, hand-arm vibration, temporary or permanent hearing loss, heat stress, and dermatitis.	▪ All construction equipment used for the execution of the project works shall be fit for purpose and carry valid inspection certificates and insurance requirements. ▪ The risk assessment shall be prepared and communicated prior to the commencement of work for all types of work activities on site. ▪ Provide walkways that are clearly designated as a walkway; all walkways shall be provided with good conditions underfoot; signposted and with adequate lighting. ▪ Signpost any slippery areas, ensure proper footwear with a good grip is worn for personnel working within slippery areas. ▪ Carry out fire risk assessment for the construction areas, identify sources of fuel and ignition and establish general fire precautions including, means of escape, warning, and fighting fire. ▪ Set up a system to alert workers on site. This may be temporary or permanent mains operated fire alarm. ▪ Fire extinguishers should be located at identified fire points around the site. The extinguishers shall be appropriate to the nature of the potential fire. ▪ Establish and communicate emergency response plan (ERP) with all parties, the ERP to consider such things as specific foreseeable emergency situations, organizational roles and authorities, responsibilities and expertise, emergency response and evacuation procedure, in addition to training for personnel and drills to test the plan ▪ Electrical equipment must be safe and properly maintained; works shall not be carried out on live systems. ▪ Only competent authorized persons shall carry out maintenance on electrical equipment, adequate Personal Protective Equipment (PPE) for electrical works must be provided to all personnel involved in the tasks. ▪ An adequate number of staff and first aiders shall be on site in accordance with Bangladesh Labor Law requirements. ▪ First aid kit with adhesive bandages, antibiotic ointment, antiseptic wipes, aspirin, non-latex gloves, scissors, thermometer, etc. shall be made available by the contractor on site. ▪ Emergency evacuation response shall be prepared by the contractor and relevant staff shall be trained through mock-up drills. ▪ Ensure all equipment is suitable for jobs (safety, size, power, efficiency, ergonomics, cost, user acceptability etc.), provide the lowest vibration tools that are suitable and can do the works. ▪ Ensure all tools and other work equipment are serviced and maintained in accordance with maintenance schedules and manufacturer's instructions. ▪ Regular noise exposure assessments and noise level surveys of noisy areas, processes and equipment shall be carried out in order to form the basis for remedial actions when necessary ▪ Awareness training sessions should be established and provided to all personnel involved during the construction phase in order to highlight the heat related illnesses of working in hot conditions such as heat cramps, heat exhaustion, heat stroke, dehydration. ▪ Ensure adequate quantities of drinking water are available at different locations within the site,	Client / Developer

Activity	Potential Environmental & Social Impacts	Proposed Mitigation	Institutional Responsibilities
		▪ Eliminate the risk of exposure whenever possible, provide proper PPE wherever necessary and to ensure that there are satisfactory washing and changing facilities. Ensure that all workers exposed to a risk are aware of the possible dangers. They should be given thorough training in how to protect themselves and there should be effective supervision to ensure that the correct methods are being used	
Decommissioning Phase	▪ The transmission line will contribute to economic benefits to the country through the provision of renewable power supply, designed in accordance with best practice, taking into account all relevant national and internal codes and legislation. ▪ The design life of the facility will be approximately 20 years. Therefore, the post-design life is expected to involve rehabilitation, upgrading, and modernization of the facility, with a possible expansion (retrofitting and the addition of new technology). As a result, impacts from decommissioning are not expected to arise in the near future unless retrofitting and upgrade of the facility was not feasible. However, the ESIA Study should consider potential decommissioning impacts in case there was a need for the facility to be dismantled and end operations. ▪ No impacts with high significance are anticipated to take place during decommissioning of the project since all facilities will be removed, transmission line and substations decommissioned, and solid wastes sent for recycling or disposal. ▪ The main mitigation and monitoring measures to minimize or reduce the environmental and social impacts during decommissioning are anticipated to be similar to those identified for the construction phase.		Client / Developer

The site specific ESMP may need to be prepared for different locations of the transmission line. An ESMP document should include:

1) Lists of all projects related activities and impacts, for each stage of their development , i.e., for the design, construction and operation stages
2) A list of regulatory agencies involved and their responsibilities
3) Specific remedial and monitoring measures proposed for each stage
4) A clear reporting schedule, including discussion of what to submit, to whom, and when
5) Cost estimates and sources of funding for both one-off costs and recurring expenses for implementation of the ESMPs.

ESMP shall primarily deal with the construction and operations stage of the project. The extent and timing of mitigation actions should be based on the significance of the predicted impacts. Some mitigation measures can be incorporated into the design of the project and can largely resolve the potential impacts of a project, e.g. drainage, access roads, etc. Other measures require an ongoing implementation plan to ensure that proposed actions are carried out at the correct times.

Annex-4: Sample ESIA TOR

Environment and Social Impact Assessment (ESIA) is a decision support mechanism to ensure that the project design and implementation are environmentally sound and sustainable. During the preparation phase, the objective of the ESIA is to provide inputs to the selection of subprojects, feasibility study; preliminary and detailed design as well as assist development of a holistic development of the project package. During the implementation phase, environmental management plans (developed as a part of the ESIA during the preparation phase) are to be used for executing the environmental mitigation, enhancement, and monitoring measures.

Objectives of ESIA

In the preparation phase, the ESIA shall achieve the following objectives:

i. Identify and analyze environmental issues that may affect the project and the sector.
ii. Establish the environmental and social baseline in the study area, and identify any significant environmental, social, health and safety issues (direct/ indirect/ induced/ cumulative).
iii. Assess impacts of the project, and provide for measures to address the adverse impacts by the provision of the requisite avoidance, mitigation and compensation measures.
iv. Integrate the environmental issues in the project planning and design; and
v. Develop appropriate management plans for implementing, monitoring and reporting of the suggested environmental mitigation and enhancement measures.

Description of the Project

Include a description of the project; covering geographical location, type of development envisaged, including a description of project activities. Also, include the current status of the project. Provide brief information on any other study already completed/ongoing or proposed) to be added by the Client.

Scope of Work

The ESIA comprises the following 3 components: (i) Environmental screening / Inception Report for the entire project; (ii) Environmental and Social Impact Assessment (ESIA) for the individual project/subprojects, as required; and (c) Environmental and Social Management Plans (ESMPs) for the individual project/sub-projects.

The following section gives the detailed scope of work in each of these stages.

Inception

The Consultants shall use the inception period to familiarize with the project details. The Consultants

shall recognize that the remaining aspects of the project, such as engineering designs, would be studied in parallel, and it is important for all these aspects are integrated into the final project design to facilitate their successful project implementation. The Consultants should also recognize that due care and diligence planned during the inception stage helps in improving the timing and quality of the ESIA reports.

During the inception period the Consultants shall: (a) study the project information to appreciate the context within which the ESIA has to be carried out; (b) identify the sources of secondary information on the project, on similar projects and in the project area; (c) carry out a reconnaissance survey and (d) undertake preliminary consultations with selected stakeholders.

Following the site visits and stakeholder consultations, the consultant shall study the various available surveys, techniques, models, and software in order to determine what would be the most appropriate in the context of this project.

The Consultant shall interact with the engineering and social consultants to determine how the ESIA work fits into the overall project preparation cycle; how overlapping areas are to be jointly addressed; and to appropriately plan the timing of the deliverables of the ESIA process. These shall be succinctly documented in the Inception Report.

Environmental Screening

Consultants shall summarize the potential environmental impacts. During such categorization, consideration shall be paid to (i) location of the project with respect to environmentally sensitive areas; and (ii) volume, nature, and technology of construction. The screening parameters should be such that their identification and measurement is easy, and does not involve detailed studies.

Environmental Scoping

Based on the result of the environmental screening exercise, consultants shall suggest the scope of Environmental and Social Impact Assessment to be undertaken. It shall include a listing of other environmental issues that do not deserve a detailed examination in the project ESIA (covering, for example, induced impacts that may be outside the purview of the client) along with a justification. The scoping needs to identify and describe the specific deviations of the ToR, if any, along with a justification; modify this ToR for the project ESIA, if required; and recommend studies that need to be conducted in parallel but are outside the ESIA process.

i. ***Baseline:*** All regionally or nationally recognized environmental resources and features within the project's influence area shall be clearly identified, and studied in relation to activities proposed

under the project. These will include all protected areas (such as national parks, wildlife sanctuaries, reserved forests, biosphere reserves, wilderness zones), unprotected and community forests and forest patches, wetlands of local/regional importance not yet notified, rivers, rivulets and other surface water bodies. and sensitive environmental features such as wildlife corridors, biodiversity hotspots, meandering rivers, flood prone areas, areas of severe river erosion, flood embankments (some of which are also used as roads). Consultants shall consolidate all this information in a map of adequate scale.

ii. ***Stakeholder Identification and Consultation:*** Consultation with the stakeholders shall be used to improve the plan and design of the project rather than merely having project information dissemination sessions. The consultants shall carry out consultations with Experts, NGOs, concerned Government Agencies and other stakeholders to (a) collect baseline information; (b) obtain a better understanding of the potential impacts; (c) appreciate the perspectives/concerns of the stakeholders; and (d) secure their active involvement during subsequent stages of the project. Consultations shall be preceded by a systematic stakeholder analysis, which would: (a) identify the individual or stakeholder groups relevant to the project and to environmental issues; (b) include expert opinion and inputs; (c) determine the nature and scope of consultation with each type of stakeholders; and (d) determine the tools to be used in contacting and consulting each type of stakeholder group. A systematic consultation plan with attendant schedules will be prepared for subsequent stages of project preparation as well as implementation and operation, as required.

iii. ***Identification of Relevant Macro/Regional Level Environmental Issues:*** Consultants shall determine the Valued Environment Components (VECs) considering the baseline information (from both secondary and primary sources), the preliminary understanding of the activities proposed in the project and, most importantly, the stakeholder (and expert) consultations, which would need to be carefully documented. Use of iterative Delphi techniques is recommended.
Based on the identification of VECs, consultants shall identify information gaps to be filled, and conduct additional baseline surveys, including primary surveys. The consultants shall conduct a preliminary analysis of the nature, scale, and magnitude of the impacts that the project is likely to cause on the environment, especially on the identified VECs, and classify the same using established methods. For the negative impacts identified, alternative mitigation/management options shall be examined, and the most appropriate strategy/technique should be suggested. The preliminary assessment should clearly identify aspects where the consultants shall also analyse indirect and cumulative impacts of all phases and activities of the project. For the positive measures identified, alternative and preferred enhancement measures shall be proposed.

iv. ***Environmental Assessment:*** The Consultants shall undertake necessary impact analysis on the basis of primary and secondary information and outputs from the stakeholder consultation process. In the cases of very significant environmental losses or benefits, the consultants shall estimate the economic/financial costs of environmental damage and the economic/financial benefits the project is likely to cause. In the cases, the impacts or benefits are not too significant, qualitative methods could be used. In addition, wherever economic and financial costs of the environmental impacts cannot be satisfactorily estimated, or in the cases of significant irreversible environmental impacts, the consultants shall make recommendations to avoid generating such impacts.

v. ***Environmental and Social Management Plan:*** The consultants shall prepare an ESMP to address identified planning, design, construction, and operation stage issues. For each issue, the consultants shall prepare a menu of alternative avoidance, mitigation, compensation, enhancement and/or mitigation measures, as required/necessary. Consultants shall provide robust estimates of costs for environmental management measures. These costs shall be verified for common works items in line with the rate analysis for other works. The consultants shall organize consultations with line departments and will the finalize the ESMP.

vi. ***Environmental Inputs to Feasibility Study and Preliminary Project Design:*** The ESIA consultants shall make design recommendations, related to alignment, cross-sections, construction material use, mitigation and enhancement measures. The ESIA consultants shall interact regularly with the Client and familiarize themselves with the project's overall feasibility analyses models so that the ESIA inputs are in conformity to the needs of the overall feasibility study.

vii. ***Capacity Building Preparation:*** Based on the preliminary findings of the environmental screening, stakeholder consultations, and analysis of the project sponsor's capacity to manage environmental issues, the consultants shall prepare a Capacity Building Plan (including the requirement of additional technical staff and facilities) to ensure effective implementation of the ESMP. Earmarking staff for environmental and social management and improving their skill-sets would be simultaneously pursued during project preparation and implementation.
The consultants shall interact regularly with the project sponsor throughout project preparation to ensure that the knowledge, skills, and perspectives gained during the ESIA assignment are transferred to the sponsor and are utilized effectively during project implementation (if required).

viii. ***Coordination among Engineering, Social, Environment, and Other Studies:*** The consultants, with assistance from the project sponsor, shall establish a strong coordination with the other project-preparation studies – engineering and/or institutional development. The consultants shall keep in mind the specific requirements of the project in general, and the engineering/design studies in particular, and shall plan their outputs accordingly. It is recommended that some of the

consultation sessions may be organized in coordination with the social and engineering consultants, as feasible, and when the stakeholders consulted are the same.

The consultant shall review the contract documents – technical specifications, and rate analysis, to ensure that there are minimal conflicts between the ESMP stipulations and specifications governing the execution of works under the project.

ix. ***Public Disclosure:*** The consultants shall prepare a non-technical ESIA summary report for public disclosure and will provide support to the project sponsor in meeting the disclosure requirements.

x. ***Consultant's Inputs:*** The Consultants are free to employ resources as they see fit. Additional expertise shall be provided as demanded by the context of the project. The consultants are encouraged to visit the project area and familiarize themselves, at their own cost, before submitting the proposal; and propose an adequate number and skill-set for the senior specialists and technical support staff for the ESIA assignment. Further, the consultant will allocate an adequate number of field surveyors, distinct from the technical support staff, to complete the study in time. Timing is an important essence for any ESIA study, which shall be closely coordinated with the works of the engineering and social teams, simultaneously involved in the preparation of the project.

    The consultants shall provide for all tools, models, software, hardware, and supplies, as required to complete the assignment satisfactorily. These should be widely recognized or accepted. Any new model or tool or software employed should be field-tested before use or the purpose of this ESIA.

xi. ***Consultant's Outputs:*** The consultant is expected to provide the outputs, as per the schedule is given in the ToR. The Consultants are expected to allocate resources, such as for surveys, keeping this output schedule in mind.

Annex-5: Sample TOR Social Safeguards Consultant to PIU

Assignment title	Social Development Consultant
Assignment duration	tbc
Assignment location	Dhaka, Bangladesh
Contracting entity	EGCB

sort

Background

Electricity Generation Company of Bangladesh (EGCB) has identified a potential site to develop an aggregate capacity of 200 MW from solar PV and wind under Feni District in Sonagazi Upazilla. As part of the Scaling-up Renewable Energy Project, financed by The World Bank, Component-1 involves construction of a 50MW PV generation plant and the required infrastructure including: evacuation lines from the site to the nearest grid sub-station (GSS), pooling substations, civil engineering structures for mitigating flooding risks and roads within the project site. This project would be the first-ever large-scale grid-tied solar PV in Bangladesh, at a site owned by the state-owned generation utility (EGCB). EGCB will procure, through a competitive bidding procedure, an engineering, procurement and construction (EPC) and operation and maintenance (O&M) contract for the solar PV plant that covers O&M of the facility for the first three years after commissioning.

Power generated from the plant at Feni will be evacuated to the 230 kV Mirsarai GSS through 230 kV double circuit transmission. The Generated power from this project will be stepped up to kV level of transmission line and then evacuated through dedicated feeder lines to the pooling SS. The pooling SS should be of 230 kV level to be connected to 230 kV Mirsarai GSS. This pooling SS will be developed in a manner that the entire 200 MWac capacity shall be catered through this transmission line to the 230 kV Mirsarai GSSs.

Key Activities/Responsibilities

The duties and responsibilities include but not limited to the following:

(i) Be overall responsible for overseeing the preparation, implementation and monitoring of Environmental and Social Impact Assessment (ESIA), Environmental and Social Management Plans (ESMPs) and if applicable Resettlement Action Plans (RAPs)
(ii) Support Project Director to respond to queries from stakeholders
(iii) Organize and facilitate consultations and workshops with stakeholders and prepare minutes and proceedings of the consultations.
(iv) Maintain and upgrade the computerized data base related to the delivery of Resettlement Entitlements (if applicable) and generate of periodical progress reports;
(v) Organize training and orientation workshops for the project/EGCB staff and other stakeholders as required by the project management
(vi) Coordinate with state revenue department to implement land acquisition (if required).
(vii) Undertake field visits and organize focus group discussions with settlements around alignment and others that may be affected by project and ancillary activities.
(viii) Coordinate the meetings of various committees established for the implementation Resettlement activities (if required);
(ix) Manage the resettlement impact assessment studies and other studies related to Resettlement (if required).
(x) Any other jobs/responsibilities assigned by the project management.

Skills and qualifications

1. **Qualification**: A Post Graduate of any recognized university in Social Science preferably in Sociology /Social welfare/ Anthropology / Public Administration, or Management.
2. **Experience**: At least 15 years of professional experience in the areas of land acquisition process, involuntary resettlement, consultation and participation, socio-economic surveys, monitoring and evolution, etc. and with communication skills. Good command of both in written and spoken English and Bangla. Previous experience with World Bank or ADB funded project in similar fields will be considered an added advantage.

Reporting Requirements

The consultant will directly report to the Project Director. S/he will submit monthly report on the activities related to social safeguards/development for the project within the first seven days of each calendar month.

Annex-6: Sample TOR Environmental Consultant to PIU

Assignment title	Environmental Consultant
Assignment duration	tbc
Assignment location	Dhaka, Bangladesh
Contracting entity	EGCB

Background

Electricity Generation Company of Bangladesh (EGCB) has identified a potential site to develop an aggregate capacity of 200 MW from solar PV and wind under Feni District in Sonagazi Upazilla. As part of the Scaling-up Renewable Energy Project, financed by The World Bank, Component-1 involves construction of a 50MW PV generation plant and the required infrastructure including: evacuation lines from the site to the nearest grid sub-station (GSS), pooling substations, civil engineering structures for mitigating flooding risks and roads within the project site. This project would be the first-ever large-scale grid-tied solar PV in Bangladesh, at a site owned by the state-owned generation utility (EGCB). EGCB will procure, through a competitive bidding procedure, an engineering, procurement and construction (EPC) and operation and maintenance (O&M) contract for the solar PV plant that covers O&M of the facility for the first three years after commissioning.

Power generated from the plant at Feni will be evacuated to the 230 kV Mirsarai GSS through 230 kV double circuit transmission. The Generated power from this project will be stepped up to kV level of transmission line and then evacuated through dedicated feeder lines to the pooling SS. The pooling SS should be of 230 kV level to be connected to 230 kV Mirsarai GSS. This pooling SS will be developed in a manner that the entire 200 MWac capacity shall be catered through this transmission line to the 230 kV Mirsarai GSSs.

An environmental consultant will be hired under the Project Implementation Unit (PIU) to support the Project Director (PD) in implementing the Environmental and Social Management Plans (ESMPs) of the Project and preparation of Environmental Assessments (EAs) of the Project.

Key Activities/Responsibilities

The key activities/responsibilities to be carried out by the **Environmental Consultant** are:

- Finalizing the terms of references and request for proposals for various environmental consulting firms to be hired for preparation of ESIA and implementation of the ESMP;
- Undertake environmental screening, assessment and management of any activities under with environmental implications;
- Oversee the pre-construction baseline monitoring of air, noise, water, soil and sediment quality to be carried out by the ESIA consultant;
- Ensure integration of the ESIA and resulting ESMP into the project redesign and implementation plans (contract documents);
- Ensure compliance of the mitigation measures by the Contractors including proper operation and maintenance of their equipment;
- Liaison with the DOE on environmental and other regulatory matters; including renewal of environmental clearance documents as and when required;
- Develop training program on environmental aspects for the key stakeholders (EGCB, contractors, public representatives and local government institutions/ NGOs);
- Maintaining project-specific Database for Environmental Management;

- Compiling monthly, quarterly and annual reports to update ongoing environmental processes and address current issues;
- Oversee activities of third-part environmental consulting firm (if applicable);
- Provide recommendations for implementation of corrective actions and suggest program for environmental improvements; and
- Provide any other necessary support to PIU related to environmental issues of the project.

Skills and Qualifications

The Environmental Consultant should a Master's degree in environmental engineering or environmental sciences and should have 10 years of experience in environmental planning, assessments and monitoring for large infrastructure projects (preferably related to transmission line projects). Knowledge in and experience with environmental safeguard policies and standards of the World Bank or other international development partners is preferred.

Annex-7: Attendance List from Public Consultation Meeting

ATTENDANCE SHEET

Location: Char Chandia union p. Date: 22th January Time: 11:00 am

Sl.	Name of Participant	Gender	Age	Occupation	Phone Number	Signature
1	Md. Masharefhossain milon		39	Chairman	01817384526	
2	Sayed Ahmed Kuddus	M	50	Farmer	0181-7732066	
3	Nijam uddin	M	65		01827436260	
4	Liton Boruwa	M	47	Farmer	01815495402	
5	Nurnobi	M	35	Teacher	01825592601	
6	Mujibul Haque	M	41	Businessman		
7	Shirajul Islam	M	43	Farmer	01814978109	
8	Nur Nabi	M	39	Businessman	01831565926	
9		M				
10	Md. Mostafa	M	55	Fisherman	01823[illegible]26	
11	Mir Ahmed	M	57	Farmer	01812506090	
12	Md. Anajet ullah	M	60	U.P member	01814837378	
13	Md. Mostafa	M	61	Farmer	01830559251	
14	Mojibur Molla	M	45	Mawlana		
15	Mahadi Hasan	M	38	Rickshaw-Driver	01672411041	
16	Abdul Mutaleb	M	58	Elder person	01556-328518	
17	Nazimul Alam	M	45	Farmer	01915-328291	
18	Amzad Ali	M	65	Elder person	01673-125217	
19	Moshiur Mia	M	37	Driver	01782-325191	
20	Ataur Alam	M	53	Farmer	01831-423349	
21	Shamim Khan	M	57	Elder Person	01841-556583	
22	Murtaza Hasain	M	60	"	01914-321762	
23	Idayyum Mia	M	41	Businessman	01791-428311	