

Environmental Monitoring Report

Project Number: 49423-006
Semi-Annual Report
July 2021

Bangladesh: Bangladesh Power System
Enhancement and Efficiency Improvement Project -
Additional Financing

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Environmental Monitoring Report

Reporting Period January 2021 to June 2021
Date July 2021

Title of the Project

BAN: Bangladesh Power System Enhancement and Efficiency Improvement Project - Additional Financing



Prepared by the Bangladesh Rural Electrification Board for the
Asian Development Bank

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
D.C.	Deputy Commissioner
DMCS	Dhaka, Mymensingh, Chottagram, and Sylhet
EA	Executing Agency
EMP	Environmental Management Plan
EIA	Environmental Impact Assessment
DoE	Department of Environment
ESMU	Environmental and Social Management Unit
FGD	Focused Group Discussion
GoB	Government of Bangladesh
GRC	Grievance Redress Committee
IEE	Initial Environmental Examination
Ltd.	Limited
LAA	Land Acquisition Act
LAO	Land Acquisition Officer
PAP	Project Affected Persons
PBS	Palli Bidyut Samity
PMU	Project Management Unit
RoW	Right of Way
RRKB	Rangpur, Rajshahi, Khulna, Barishal
S/S	Sub Station
SEIA	Summary of Environmental Impact Assessment
SIEE	Summary of Initial Environmental Examination
T&D	Transmission and Distribution
T/L	Transmission Line
T & T	Transmission and Transformation
URIDS	Up-gradation, Rehabilitation and Intensification of Distribution System

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Executive Summary

Bangladesh Rural Electrification Board (BREB) is working to electrify in rural areas of country since 1978. The activities of BREB are not just confined within Rural Electrification (RE) program only, it has been appreciated that the number of industries and commercial consumers are increased rapidly in rural areas. According to power system master plan of Bangladesh Government, BREB has to cover a supply of 16000 MW by the year 2024 and 25000 MW of electricity by 2030. BREB hold the capacity only up to 8700 MW at present which is miles behind from the target. Therefore, BREB has targeted to take modernization and capacity enhancement project in each division to meet the projected demand & to ensure un-interrupted, reliable, quality and affordable electricity supply for all.

Asian Development Bank (ADB) has agreed to finance \$200 million modernization and capacity enhancement project in nine Palli Bidyut Samity (PBS) such as Bagerhat PBS, Jessore PBS-I & 2 Jhenaidah PBS, Khulna PBS Kustia Magura PBS Satkhira PBS in Khulna Division. At present, there are about 60,416 km. distribution lines, 105 Nos. 33/ 1 1KV sub- stations (60M A) are constructed to serve about 3.45 million consumers of different categories under these nine (09) PBSs in Khulna division. The proposed additional financing for Bangladesh Rural Electrification Board (BREB) is proposed to further improve access to efficient and reliable electricity supply in rural areas in Khulna division (western Bangladesh).

The concern for Environmental issues is an integral part of the Project. BREB has already performed Initial Environmental Examination (IEE) for the Project as per ADB requirement. Furthermore, as per the local requirement of the Department of Environment (DoE), Bangladesh, a comprehensive Environmental Impact Assessment (EIA) study is also going on.

To monitor the safeguard policy of ADB, a safeguard monitoring is also performed within the period of January 2021 to June, 2021 for the Modernization and Capacity Enhancement Project of BREB Network (Khulna Division) Project.

The Modernization and Capacity Enhancement Project of BREB Network (Khulna Division) Project is still in design stage and even the activities of the pre-construction stage have not been started yet. Therefore, the safeguard monitoring hasn't found any major issues. But this monitoring has assessed some concerns that may rise in near future and need to be addressed in project implementation. Besides, the comprehensive safeguard monitoring needs to be carried on and to check those issues.

Project Name	Modernization and Capacity Enhancement of BREB Network (Khulna Division)
Executing Agency	Ministry of Power, Energy and Mineral Resources
Implementing Agency	Bangladesh Rural Electrification Board
Environment Safeguards Categorization	B
Environment Safeguards Documentation	Updated IEE
Project Stage Obtained	Pre-implementation
Detailed Design Required Post-Approval	Approximately 25% progress of detailed design is accomplished.
Contract(s) Awarded	No
Bidding Document(s) Include EMP Cleared by ADB	NA
Contract(s) Awarded Include EMP Cleared by ADB	NA
National Environment, Health and Safety Clearance(s) Obtained	NA
Contractor(s) Given Access to Site	NA
Construction Progress (%)	NA
Unanticipated Impacts including Change of Scope or Design	No
Number of Site Inspections and Audits Undertaken by Environment Safeguards Staff in Reporting Period	NA
Corrective Action Required from Previous Reporting Period	NA
Outstanding Corrective Action this Reporting Period	NA
Non-Compliances Recorded this Reporting Period	NA
Corrective Action Required	NA
Number of Health and Safety Incidents	0
GRM Functional	Yes, The issues of GRM are functional.
Number of Unresolved Grievances from Prior Reporting Period	0
Number of Grievances Received in Reporting Period	0
Number of Grievances Resolved this Reporting Period	0
Number of Grievances Still Outstanding	0
Number of Grievances referred to Court of Law	0
Number of Grievances referred to the Accountability Mechanism	0

1.0 Introduction

1.1 Brief Project Description

1. The proposed additional financing for Bangladesh Rural Electrification Board (BREB) is proposed to further improve access to efficient and reliable electricity supply in rural areas in Khulna division (western Bangladesh). The project will bring additional 150,000 new connections in which 65% is domestic customers and 35% is commercial and other customers. The increase in electricity demand is about 300 megawatts (MW) after the project is completed, and additional 660 megavolt ampere (MVA) in the capacity of substations and accordingly capacity enhancement of other distribution network.

Table 1: Summary of Project Activities (New)

Name of PBS	Construction of 33/11kV Substations (unit)	Installation of 33 kV line (km)	Installation of 11 kV and below line (km)
Bagerhat	3	60	156
Jashore -1	8	132	450
Jashore-2	7	55	579
Jhenaidah	6	143	720
Khulna	7	140	182
Kushtia	7	170	150
Magura	1	13	350
Meherpur	5	185	300
Satkhira	7	92	113
Total	51	990	3,000

km = kilometer, kV = kilovolt, PBS = Palli Bidyut Samity.

Source: Bangladesh Rural Development Board.

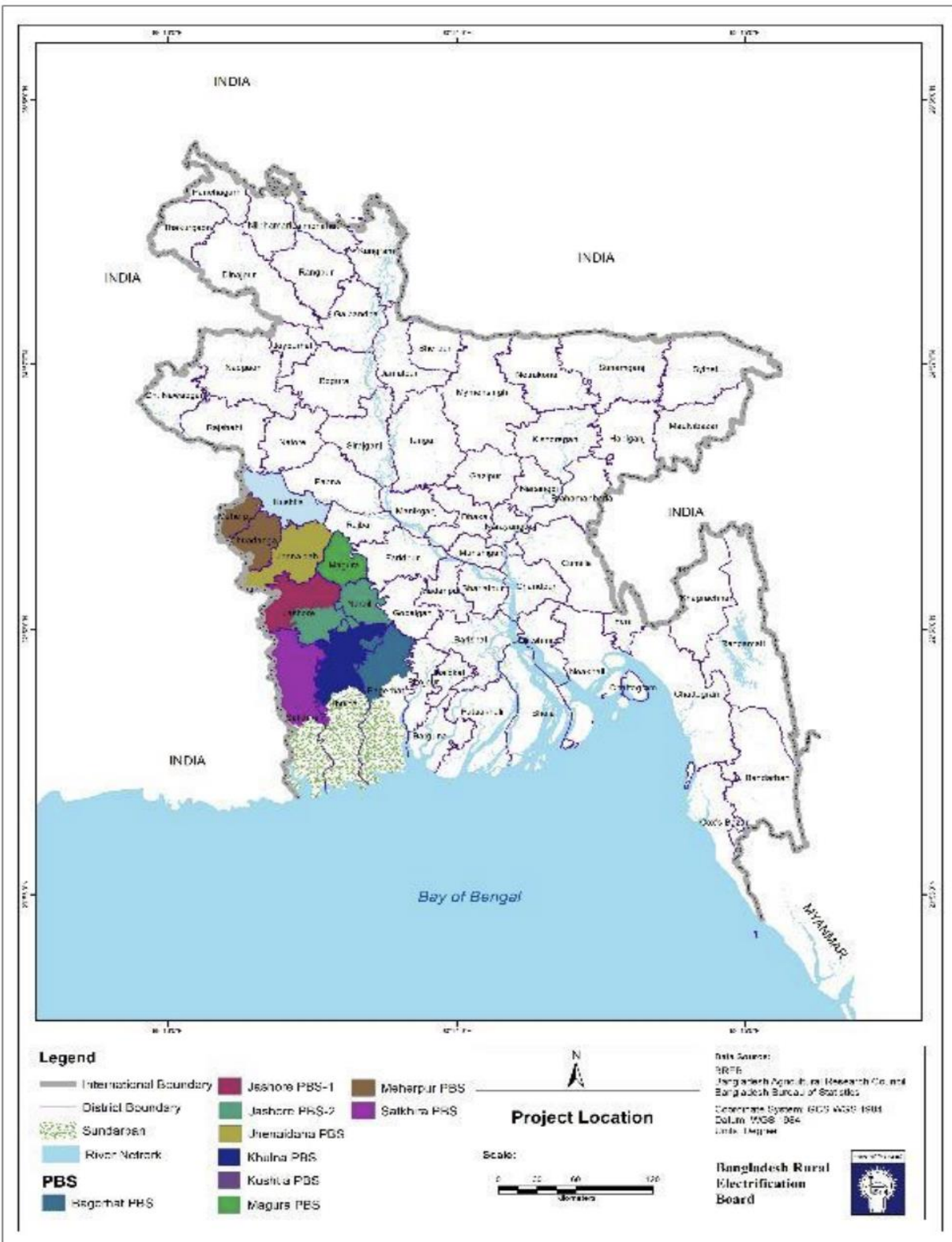
2. The impact and outcome of the overall project will remain unchanged from the ongoing project (100% access to power by 2021 and power sector sustainability improved in Bangladesh by 2030).

3. The proposed project will install additional 990 kilometers (km) of 33 kilovolts (kV) and 3,000 km of 11 kV distribution lines and associated facilities including 51 units of 33/11 kV substations, which will yield expansion of output 3 (distribution network in rural areas of Bangladesh improved) of the ongoing project.

4. The implementation arrangements of the ongoing project, such as the executing and implementing agencies, will remain unchanged. The executing agency of the additional financing project is the Ministry of Power, Energy and Mineral Resources, and implementing agency is the BREB, which distributes the electricity in rural areas in Bangladesh.

5. The category of the additional financing is classified as B for environment, B for resettlement and C for indigenous people.

Map of Project Locations



List of Substations and Location

PBS Name	District	Upazila/ sub-district
Bagerhat	Bagerhat	Bagerhat Sadar, Chitalmari
	Khulna	Rupsha
Jessore 1	Jashore	Jashore Sadar, Jhikargachha, Sharsha, Chaugachha, Bagherpara
Jessore 2	Jashore	Abhaynagar
	Narail	Kalia, Lohagara, Narail Sadar
Jhenaidah	Jhenaidah	Harinakunda, Jhenaidah Sadar, Kaliganj, Moheshpur, Shailkupa
Khulna	Khulna	Batiaghata, Dumuria, Dacope, Dighalia, Koyra
Kushtia	Kushtia	Daulatpur, Khoksha. Kushtia Sadar, Mirpur
Magura	Magura	Sreepur
Meherpur	Chuadanga	Chuadanga Sadar, Damurhuda, Jibonnagar
	Meherpur	Gangni,
Satkhira	Satkhira	Assasuni, Debhata, Kalaroa, Kaliganj, Satkhira Sadar, Tala

1.2 Project Progress Status and Implementation Schedule

Table 2: List of Goods and Works Contracts

Goods and Works								
Package Number	General Description of Package	Estimated Value (in million US\$)	Posting of IFB (date)	Contract Awarded (date)	Land acquired/cleared	EMP included in the contract	Progress of Payment (%)	Remarks
EQ-01	Sectionalising Devices	1	Not yet	Not yet	Not required	Not required	Not yet	
EQ-02	Fuse Links	0.2	Not yet	Not yet	Not required	Not required	Not yet	
EQ-03	Conductor Guys and Accessories	1	10-6-21	Not yet	Not required	Not required	Not yet	
EQ-03 (2)	Conductor Guys and Accessories	3	Not yet	Not yet	Not required	Not required	Not yet	
EQ-04	Power Transformer	4	Not yet	Not yet	Not required	Not required	Not yet	
EQ-05	Guys and Grounding Wire	1	Not yet	Not yet	Not required	Not required	Not yet	
EQ-05 (2)	Guys and Grounding Wire	2	Not yet	Not yet	Not required	Not required	Not yet	
EQ-06	SPC Poles	32	19-05-21	Not yet	Not required	Not required	Not yet	
EQ-07	33KV VCB with CT/PT and Control Cable	0.5	10-6-21	Not yet	Not required	Not required	Not yet	
EQ-08	11KV ACR	0.25	10-6-21	Not yet	Not required	Not required	Not yet	
EQ-08 (2)	11KV ACR	0.25	10-6-21	Not yet	Not required	Not required	Not yet	
EQ-09	Conductor and Wire (underground cable)	11	Not yet	Not yet	Not required	Not required	Not yet	
EQ-10	Connectors	0.50	Not yet	Not yet	Not required	Not required	Not yet	
EQ-10 (2)	Connectors	1.50	Not yet	Not yet	Not required	Not required	Not yet	
EQ-11	SPC Poles	24	Not yet	Not yet	Not required	Not required	Not yet	
EQ-12	SPC Poles	24	Not yet	Not yet	Not required	Not required	Not yet	
EQ-13	Distribution Transformers	2	10-6-21	Not yet	Not required	Not required	Not yet	

Goods and Works								
Package Number	General Description of Package	Estimated Value (in million US\$)	Posting of IFB (date)	Contract Awarded (date)	Land acquired/cleared	EMP included in the contract	Progress of Payment (%)	Remarks
SS1	Substation on Turnkey basis	91.7						
	Lot 1: Lot 1: 20/28 MVA	9.5	Not yet	Not yet	Not yet due	Not yet due	Not yet	
	Lot 2: Lot 2: 20/28 MVA	9.5	Not yet	Not yet	Not yet due	Not yet due	Not yet	
	Lot 3: Lot 3: 20/28 MVA	9.5	Not yet	Not yet	Not yet due	Not yet due	Not yet	
	Lot 4: Lot 4:10/14 MVA	8.8	Not yet	Not yet	Not yet due	Not yet due	Not yet	
	Lot 5: Lot 5:10/14 MVA	8.8	Not yet	Not yet	Not yet due	Not yet due	Not yet	
	Lot 6: Lot 6:10/14 MVA	8.8	Not yet	Not yet	Not yet due	Not yet due	Not yet	
	Lot 7: Lot 7:10/14 MVA	8.8	Not yet	Not yet	Not yet due	Not yet due	Not yet	
	Lot 8: Lot 8:10/14 MVA	7	Not yet	Not yet	Not yet due	Not yet due	Not yet	
	Lot 9: Lot 9:10/14 MVA	7	Not yet	Not yet	Not yet due	Not yet due	Not yet	
	Lot 10: Lot 10:10/14 MVA	7	Not yet	Not yet	Not yet due	Not yet due	Not yet	
	Lot 11: Lot 11:10/14 MVA	7	Not yet	Not yet	Not yet due	Not yet due	Not yet	

CT = current transformer, EQ = equipment, kV = kilovolt, MVA = megavolt ampere, PT = potential transformer, SPC = spun pre-stressed concrete, SS = substation, VCB = vacuum circuit breaker.

Source: Asian Development Bank estimates.

2.0 Compliance to National Regulations and International Agreements

National Regulation or International Agreement	Compliance Requirements under the Regulation or Agreement including any Environmental Clearances Required	Compliance Status	Remarks
Environment Conservation Act, 1995 (Amended in 2010)	<p>Before any new project can go ahead, as stipulated under the rules, the project promoter must obtain environmental clearance from the director general of Department of Environment (DOE).</p> <p>The amendment of the act in 2010 introduces new rules & restriction on a) Ensure proper management of hazardous wastes to prevent environmental pollution and health risk; b) remarked water body could not be filled up/changed, in case of national interest, it can be done after getting clearance from the respective department; and c) restriction on hill cutting d) Emitter of any activities/incident will be bound to control the emission of environmental pollutants that exceed the existing emission standards.</p>	Complied	<p>The project is following the Environment Conservation Act, 1995. As per the Act, BREB has recently achieved the Environmental Clearance Certificate, ECC from the Department of Environment (DoE).</p> <p>The ECC has been issued on October 10, 2021.</p>
Environment Conservation	<ul style="list-style-type: none"> The National Environmental Quality Standards (EQS) for ambient air, surface water, 	Still ongoing	Based on the Environment Conservation Rules (ECR),

National Regulation or International Agreement	Compliance Requirements under the Regulation or Agreement including any Environmental Clearances Required	Compliance Status	Remarks
Rules (ECR), 1997 (as amended in in 2002 & 2003)	<p>groundwater, drinking water, industrial effluents, emissions, noise, and vehicular exhaust;</p> <ul style="list-style-type: none"> • Categorization of industries, development projects and other activities on the basis of actual (for existing industries/development projects/activities) and anticipated (for proposed industries/development projects/activities) pollution load; • Procedure for obtaining environmental clearance certificate; • Requirements for undertaking IEE and EIA as well as formulating EMP according to categories of industries/development projects/activities; and • Procedure for damage-claim by persons affected or likely to be affected due to polluting activities or activities causing hindrance to normal civic life. 		1997, the Project in Red Category. Therefore, the Environment Impact Assessment (EIA) study has been performed through the approved ToR for EIA from DoE. The EIA study was started on December 13, 2020 when DoE approved the final ToR. After fulfilling all of the requirements and resolving the issues of DoE's district site offices, the EIA was completed in October, 2021.
National Environmental Policy 2018	<ul style="list-style-type: none"> • Natural equilibrium provision and overall development of the country through environmental protection and sustainable management • The spread of adaptation programs to reduce the adverse effects of climate change in the country • Encourage collection and promotion of low carbon emission technology in the country • Identifying and controlling all types of environmental pollution and degradation activities • Ensure environmental development in all fields • Ensure sustainable, long term and environmentally friendly use of all-natural resources • Exploring and expanding the areas of mutual cooperation in regional and international arenas for the development of global environment • Built up the environment education, capacity building, public awareness, and public opinion to protect the environment • To take public private partnership for the development of the environment • Maintain and streamline the environmental policies and strategies among other policy strategies in the interest of sustainable development • Creating a population capable of dealing with all kinds of environmental and environmental issues, including climate change • Ensure the Environmental Impact Assessment and Strategic Environmental Assessment in all necessary sectors • To discourage the introduce of foreign and invasive species of animals and plants, if necessary, make decisions through adequate research 	Complied	The project complies to the National Environmental Policy, 2018. The components of project conform to the Environmentally friendly policy as mentioned in the Policy document.

National Regulation or International Agreement	Compliance Requirements under the Regulation or Agreement including any Environmental Clearances Required	Compliance Status	Remarks
	<ul style="list-style-type: none"> Actively involved as possible with all international environmental initiatives and to take necessary actions at local and national levels Take action to reduce poverty through environmental protection Strengthen observations on proper compliance with environmental laws and regulations 		
The Bangladesh Wildlife Preservation Order (1973; amended to Act in 1974)	The Bangladesh Wildlife (Preservation) Order 1973 and amended to Act 1974 provides for the preservation, conservation, and management of wildlife in Bangladesh. The earlier legislations on wildlife preservation, namely, the Elephant Preservation Act, 1879, the Wild Bird and Animals Protection Act, 1912, and the Rhinoceros Preservation Act, 1932 have been repealed and their provisions have been suitably incorporated in this law	Complied	The activities of the project are designed in such a way that the activities of the project follow the Bangladesh Wildlife (Preservation) Order 1973, providing the scope of preservation, conservation, and management of wildlife in Bangladesh especially in the Sundarbans Mangrove Forest of Khulna Division.
The Forest Act, 1927 and subsequent amendments in 1982 and 1989	<ul style="list-style-type: none"> Categorization of forests as reserve, protected and village forests Permission is required for use of forest land for any non-forest purposes 	Complied	No activities have been designed within the area of DoE demarcated Ecologically Critical Area, ECA and preserved forest areas of the Department of Forest.
Wildlife (Conservation and Security) Act 2012	To conserve and protect wildlife in Bangladesh including designation of protected areas. Protection of wildlife is provided with lists of species with four schedules: first second, third and fourth schedule. The fourth schedule species have the highest level of protection.	Complied	Conservation of wildlife has been considered in project design.
The Vehicle Act, 1927; The Motor Vehicles Ordinance, 1983; and The Bengal Motor Vehicle Rules, 1940	<ul style="list-style-type: none"> Exhaust emissions; Vehicular air and noise pollution; Road/traffic safety; - Vehicle Licensing and Registration; Fitness of Motor Vehicles; Parking by-laws 	Still Ongoing	Complied in project planning stage. The acts and rules will be complied fully, when the purchase and operation of vehicles will be started.
The Ground Water Management Ordinance, 1985	<ul style="list-style-type: none"> Management of ground water resources; Installation of tube-wells at any place after license from Upazila Parishad only 	N/A	
National Biodiversity Strategy and Action Plan (2004)	<ul style="list-style-type: none"> Conserve, and restore the biodiversity of the country for well-being of the present and future generations Maintain and improve environmental stability for ecosystems Ensure preservation of the unique biological heritage of the nation for the benefit of the present and future generations Guarantee the safe passage and conservation of globally endangered migratory species, especially birds and mammals in the country Stop introduction of invasive alien species, genetically modified organisms and living modified organisms 	Still Ongoing	The issues of National Biodiversity Strategy and Action Plan (2004) are taken into account in the Environment Management Plan and Environment Impact Assessment of DoE. The ongoing EIA study will incorporate the issues with high priority.

National Regulation or International Agreement	Compliance Requirements under the Regulation or Agreement including any Environmental Clearances Required	Compliance Status	Remarks
The Protection and Conservation of Fish Act 1950 subsequent amendments in 1982	Protection and conservation of fish in Government owned water bodies	N/A	
The Embankment and Drainage Act 1952	An Act to consolidate the laws relating to embankment and drainage and to make better provision for the construction, maintenance, management, removal and control of embankments and water courses for the better drainage of lands and for their protection from floods, erosion and other damage by water	N/A	
The Factories Act, 1965 Bangladesh Labor Law, 2006, Bangladesh Labor Rules 2015	This Act pertains to the occupational rights and safety of factory workers and the provision of a comfortable work environment and reasonable working conditions	Complied	Child labour and gender discriminations are strictly prohibited in the project design.
Noise Pollution (Control) Rules 2006	<ul style="list-style-type: none"> - Prevention of Noise pollution; - Standards for noise levels. 	N/A at current stage of the project	No, construction activities will be performed at night. The health of surrounding people and local stakeholders have been planned to be taken into consideration.
Ozone Depleting Substances (Control) Rules, 2004	<ul style="list-style-type: none"> - Ban on the use of Ozone depleting substances - Phasing out of Ozone depleting substances 	N/A	
Rio Declaration	United Nations Conference on Environment and Development (UNCED) in 1992 adopted the global action Program for sustainable development called 'Rio Declaration' and 'Agenda 21'. Principle 4 of The Rio Declaration, 1992, to which Bangladesh is a signatory along with a total of 178 countries, states, "In order to achieve sustainable development, environmental protection should constitute an integral part of the development process and cannot be considered in isolation from it".	Complied	The project will comply to the SDG policy with clean energy with less system loss. Therefore, the Rio Declaration is also complied.
Convention on Biological Diversity, (1992)	The Convention on Biological Diversity, Rio de Janeiro, 1992 was adopted on 5th June 1992 and entered into force on 29 December 1993. Bangladesh ratified the convention on 20th March, 1994. This is the overarching framework for biodiversity and the signatories are required to develop a National Bio-diversity Strategy and Action Plan that incorporates the articles of the convention into national law and statutes. Obligation has been placed on state parties to provide for environmental impact assessments of projects that are likely to have significant adverse effects on biological diversity.	N/A	The project does not involve any biological issues. Besides, the EIA study is looking it up closely.
Wetlands of International Importance as	This is an intergovernmental treaty, which provides the framework for international cooperation for the conservation of wetland habitats. Obligations for	Complied	All the infrastructural construction of the project excludes the area of wetland

National Regulation or International Agreement	Compliance Requirements under the Regulation or Agreement including any Environmental Clearances Required	Compliance Status	Remarks
Waterfowl Habitat, (1971)	contracting parties include the designation of wetlands to the 'List of Wetlands of International Importance', the provision of wetland considerations within their national land use planning, and the creation of natural reserves. Bangladesh has two Ramsar sites-parts of the Sundarbans reserved forest (southwest of Bangladesh) and Tanguar Haor (Northeast of Bangladesh). The proposed project will not have any effect on these two Ramsar sites.		and Ramsar Recognised site of Sundarbans.
UN Convention on the Law of the Sea, Montego Bay, (1982)	This convention was adopted on 10 December 1982 at Montego Bay, Jamaica and Bangladesh has ratified this convention.	N/A	
IFC Environmental, Health and Safety (EHS) Guidelines	Section 4 on Construction and Decommissioning of the IFC EHS General Guidelines (April 30, 2007) will be applicable for this project. In addition, the IFC EHS Guidelines for Electric Power Transmission and Distribution (April 30, 2007) also needs to be considered while designing the substations and distribution line components and undertaking the environmental assessment. It requires consideration of terrestrial and aquatic habitat alteration, electric and magnetic fields, hazardous materials, occupational health and safety and community health and safety. The project is required to comply with these guidelines regarding assessment of potential impacts and management measures, performance indicators and monitoring guidelines. BREB shall follow the IFC EHS Guidelines for this project and shall also ensure that all appointed contractors and their subcontractors follow them.	still ongoing	BREB has achieved ISO 45001: 2018, having OHS (Occupation Health Safety) issues into its office management. Besides, when the project will be started, the OHS measures will be complied.

3.0 Compliance to Project Administration Manual (PAM)

Organization	Tasks	Compliance Status	Remarks
BREB	Para 37-PAM. At each PBS level, there should be one officer who is focal for the environmental and social safeguard.	Still ongoing	Before the start of the project, at each PBS of Khulna Division, a focal point officer of AGM or DGM level for environmental and social safeguard will be appointed.
Consultants	Para 37-PAM. Before starting of any filed work, there should be environmental and social safeguard training delivered by the environmental and social individual consultants in which BREB and PBS's focal and officers in charge for safeguard will participate.	Still ongoing	BREB has plan to appoint consultants so that proper trainings and awareness on environmental and social issues can be ensure.

4.0 Compliance to Contract

Contract Package	Contract Provisions	Compliance Status	Remarks
-	-	-	Contract Activities has not been started yet

5.0 Compliance to Environmental Management Plan

The compliance to the Environmental Management Plan has been checked by the examining the plans and design of the project to implement the EMP in right direction. The Project is still in Design State. The compliance status of Pre-construction stages are shown in the table below.

Environmental Impact	Remarks
Update and disclose IEE prior to contract award, update as required to reflect detailed designs	It has been planned to be complied when contract awards will be given.
Release of toxic pollutants, chemicals and gases to receptors (air, water, land) from transformers and other project equipment	N/A
Interference with land users, other utilities and traffic due to design and layout of project equipment	N/A
Cutting or trimming of trees and clearing of vegetation	N/A
Encroachment into ecologically sensitive areas	N/A
Final IEE and EMP in bidding documents	N/A
Planning for construction environmental management	N/A
Location of workers camp and materials storage areas could adversely affect residential areas and sensitive receptors (schools, hospitals/clinics)	N/A
Pollution prevention and generation of construction wastes	N/A
Health and safety	Planned to be complied
Unanticipated impacts on property including land and structures. Loss of agricultural land that causes temporary disruption of farming activities, damage to crops, bunds, canals and drains.	N/A
Cutting or trimming of trees and clearing of vegetation.	N/A
Interference with traffic and access ways	N/A
Soil erosion during substation construction and auguring/ excavation of pole foundation.	N/A
Risks of damages to sub-surface utilities and chance find of physical cultural resources during construction.	N/A
Dust, noise and general disturbance to local community	N/A
Pollution prevention and generation of construction wastes	N/A
Occupational health and safety	N/A
Community health and safety such as toppling of concrete poles, traffic and accidents, emergency spill of materials, and access of villagers to dangerous working areas.	N/A

6.0 Environmental Supervision and Monitoring Results

6.1 Environmental Supervision

Trainings	Number and Position of Participant/s	Location/s and Date/s	Remarks
Training of the PBS Officers and Field workers	-	-	Not started yet
Training of the BREB Officers	-	-	

6.2 Qualitative Environmental Monitoring

Both Quantitative and qualitative data collected from the field level have revealed that pre-construction activities have minimal impact on the environment, as found in the IEE report. Available quantitative data also have indicated that the interventions of the project have minimal impact on air, soil and water. Besides, as per the direction of the DoE, a comprehensive EIA study is going on.

Project activities have a very limited adverse impact on the environment, specially in the Pre-construction stage. The environmental impacts of pre-construction activities are minimal and the compliance statuses of them are found satisfactory.

None of the pre-construction packages of the project will have significant adverse environmental impacts. However, there will be a slight change in the vegetation pattern in some locations within the distribution line right-of-way, with restrictions imposed on planting of tall trees and also requires trimming of tall trees in the upcoming stages. This will be assessed comprehensively in next stage of monitoring as well.

Based on the results of monitoring and inspection as presented, there are no significant environmental issues raised during the reporting period from January to June 2021.

6.3 Pollution Control Monitoring

The pollution control monitoring has not been performed in this stage of the project. When the field offices are established and transportation of goods is started, the pollution control monitoring will be performed.

6.4 Occupational and Community Health and Safety Monitoring

Drills/Training/ Inspection:

Trainings/Drills/Inspections	Number and Position of Participant/s	Location/s and Date/s	Remarks
			Not started yet

Accident Records (Will be started when field offices of the Project division are formed)

	Number and Position of Person/s Involved	Location/s and Date/s of Incident	Detailed Description of Incident	Time-bound Corrective Action
Fatality				
Non-fatal Injury (Lost Time)				
Non-fatal Injury (Minor)				

Near-miss				
Illness				
Other Incidents				

7.0 Meaningful Consultation and Grievance Redress

The GRM has been communicated to the local people. To extend the reach of the GRM, the Palli Biddut Samiti (PBSs) of the project geographic area are working on this issue.

8.0 Conclusions and Recommendations

As the project is in pre-construction stage and the Environmental Impact Assessment study with a comprehensive Environmental Management Plan is still going on, almost no environmental impacts are found.

The plans and design of the project what are going on now, comply with the scope to implement the Environmental Management Plan.

This report recommends that preferably before the time of submission of the next semi-annual report a consultant firm should be appointed for the whole time period of the project. The consultant firm/ consultant(s) should both monitor the environmental and social safeguard as per ADB's requirement and perform monitoring as per local requirement of DoE to renew the Environmental Clearance Certificate when needed.

The report also recommends that, the EMP from IEE report and from ongoing EIA report is checked comprehensively. Besides, the findings of the EIA report are also taken into consideration in safeguard monitoring. As most of the issues of environmental concern will arise in upcoming stages of the project, therefore, the extent of monitoring should cover each and every PBS of the project areas.

APPENDICES

Table 6.1: Environmental Management Plan for the Proposed Project

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
				BREB	PIU/BES/EC	Contractor
A. DETAILED DESIGN AND PRE-CONSTRUCTION PHASE						
Update and disclose IEE prior to contract award, update as required to reflect detailed designs	<ul style="list-style-type: none">BREB to update the IEE for ADB clearance and disclosure prior to contract award.Considering the ongoing COVID-19 pandemic, further due diligence will be carried out within the procedural framework developed for the safeguard's due diligence (Appendix 5 of the IEE Report).BREB and Contractor to ensure, in the context of the COVID-19 pandemic, that all consultations and field activities are carried out following latest national COVID-19 requirements and WHO social distancing and hygiene guidelines as detailed in Appendix 7 of the IEE.BREB to review the final IEE following the completion of the detailed designs and update it, as required, to reflect the detailed design for all project components, and obtain ADB's clearance before the commencement of any works, including enabling works.If a change in project scope or design occurs during project implementation or if unanticipated impacts are identified at any point during project implementation BREB to inform ADB and, if deemed appropriate, BREB will update the IEE for clearance and disclosure by ADB.BREB to locally disclose in a timely manner the final IEE, any subsequent updates to it,	<p>Updated IEE cleared and disclosed by ADB prior to contract award.</p> <p>IEE updated, as required, to reflect the detailed design for all project components prior to the start of any works.</p> <p>Final IEE, any subsequent updates to it, and other environmental safeguards documentation are locally disclosed.</p>	<p>BREB counterpart funds, including costs of printing</p> <p>Part of supervision budget</p> <p>Part of contract cost, include costs of implementing EMP as BOQ line</p>	<p>BREB to comply with requirements prior to issue of bidding documents and before the commencement of works.</p> <p>BREB to supervise and monitor contractor to ensure their compliance with delegated requirements</p>	<p>Environment Consultant (EC) to supervise, monitor, and assist BREB in ensuring their own compliance. EC to support BREB in finalizing and updating IEE/EMP documentation.</p>	<p>Contractor to immediately inform BREB if any unanticipated impacts are identified at any point and make a copy of the latest IEE available at the project sites.</p>

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
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	and other environmental safeguards documentation by posting them on the BREB website and ensuring full copies of the latest IEE and its executive summary translated into Bangla are available at all local BREB offices and project substations.					
Release of toxic pollutants, chemicals and gases to receptors (air, water, land) from transformers and other project equipment	<ul style="list-style-type: none"> PCBs will not be used in any transformers and any other project facilities or equipment. Equipment purchased by BREB or Contractor for use on the project to be accompanied by letter from the manufacturer that it is guaranteed PCB free and labelled as PCB free. Surrounding soil exposed to oil leakage from equipment should be assessed by Contractor, and appropriate removal and / or remediation measures should be implemented in accordance with the General EHS Guidelines. BREB to ensure that asbestos containing material (ACMs) will not be used in new substations, equipment or other project facilities. BREB should develop and have a protocol in handling PCBs and other hazardous wastes like lead acid batteries (if any), lubricants, etc. in their operations. 	<p>100% of new transformers used in the project are confirmed to be PCB free</p> <p>No H&S incidents involving PCBs reported</p> <p>Compliance with national laws and regulations</p>	Part of detailed design and pre-construction cost, include as BOQ line	<p>Comply with mitigating measures</p> <p>Include mitigating measures for Contractor as part of tender specifications</p> <p>Supervise and monitor Contractor compliance</p> <p>Transport, storage, decontamination, and disposal of contaminated units</p>	<p>Check contract document to ensure compliance</p> <p>Train / support PIU and Contractor re PCBs.</p> <p>Supervise and monitor PIU/Contract or compliance</p>	Comply with mitigating measures
Interference with land users, other utilities and traffic due to design and layout of project equipment	<ul style="list-style-type: none"> New 33/11kV substations to be located on purchased land. New 33/11 kV lines ideally aligned along the right of way (RoW) of existing rural roads although some sections may need to pass thorough agricultural or plantation areas with compensation in accordance 	<p>100% of clearances obtained and compensation paid in accordance with RP before</p>	Part of pre-construction cost, include as BOQ line	<p>Comply with mitigating measures</p> <p>Include mitigating measures for</p>	<p>Check contract document to ensure compliance</p> <p>Assist with</p>	Comply with mitigating measures

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
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	<p>with the RP.</p> <ul style="list-style-type: none"> Since any damages to be paid by contractor photographic and structural pre-condition surveys of property including existing utilities, structures (e.g. buildings) and roads, crops, and drains, utilities, should be completed by the Contractor and agreed with BREB and the property owner prior to any works to provide a baseline for any claims. Continue to follow criteria for site selection in the event of any design change; if required update the IEE and EMP to reflect changes. Obtain necessary clearances consistent with the requirements of Government of Bangladesh from other utilities that could be affected by the project (electric, water, telecommunications etc.) Contractor to prepare for BREB approval traffic management plan in consultation with relevant local authorities to ensure proper execution of traffic controls including where temporary blockage of one lane of the road during installation is required for health and safety purposes that highly visible guides, advance warning signs or flag persons are in place to direct pedestrian and vehicular traffic. 	<p>commencement of works</p> <p>Traffic management plan approved before commencement of works</p> <p>No unresolved grievances from local community</p> <p>Compliance with national laws and regulations</p>		<p>Contractor as part of tender specifications</p> <p>Review and approval of traffic management plan</p> <p>Supervise and monitor Contractor compliance</p>	<p>review and approval of traffic management plan</p> <p>Supervise and monitor PIU/ Contractor compliance</p>	
Cutting or trimming of trees and clearing of vegetation	<ul style="list-style-type: none"> As far as is practical, alignment to avoid the need to cut/trim trees by avoiding areas with a high concentration of trees. ^[1]_{SEP} Cutting or trimming of trees will only be planned when required to meet safety clearance requirements. 	<p>100% of compensation paid prior to commencement of works</p> <p>No unresolved</p>	<p>Part of detailed design and pre-construction cost, include as BOQ line</p>	<p>Comply with mitigating measures</p> <p>Include mitigating measures for</p>	<p>Supervise and monitor PIU/ Contractor compliance</p>	<p>Comply with mitigating measures</p>

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
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	<ul style="list-style-type: none"> Where alignment results in loss of fruit-bearing trees that have economic value compensate in accordance with the entitlement matrix in the project Resettlement Plan. Schedule works requiring tree cutting/trimming outside the bird breeding season. Efforts to be taken to replant the species nearby where no disturbance due to project activity is envisaged; The replant species number shall be 3 times of actual vegetation cutting; The plant species varieties need to be selected in a way so that both the territorial flora and fauna's habitat can be restored there; 	<p>grievances from local community</p> <p>Compliance with national laws and regulations</p>		<p>Contractor as part of tender specifications</p> <p>Supervise and monitor Contractor compliance</p>		
Encroachment into ecologically sensitive areas	<ul style="list-style-type: none"> Obtain approvals from forest department as per national regulatory framework, approvals are required for tree cutting/trimming outside protected or forest areas. No works shall be undertaken and no temporary or permanent project facilities established within a designated protected area, IBA, reserve forest area, or sacred grove etc. New lines will be designed retrofitted to be ecologically sensitive for birds in accordance with international good practice e.g. maintaining 1.5 meter spacing between energized components and grounded hardware or, where spacing is not feasible, covering energized parts and retrofitting elevated perches, insulating jumper loops, 	<p>No impact on protected area, IBA, reserve forest area, or sacred grove etc.</p> <p>100% of new lines designed to incorporate ecologically sensitive features</p> <p>Compliance with national laws and regulations</p>	Part of detailed design and pre-construction cost, include as BOQ line	<p>Comply with mitigating measures</p> <p>Include mitigating measures for Contractor as part of tender specifications</p> <p>Supervise and monitor Contractor compliance</p>	Supervise and monitor PIU/ Contractor compliance	Comply with mitigating measures

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
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	placing obstructive perch deterrents, changing the location of conductors, and / or using raptor hood.					
Final IEE and EMP in bidding documents	<ul style="list-style-type: none"> Prior to finalization of detailed design review the project scope and alignments to confirm no change from those described and assessed in this IEE, if there are any aspects that were not included or changed update the IEE and seek ADB clearance. Continue to undertake consultation, ensure consultation with potentially affected residents within 100 meters of RoW prior to finalization of the route alignment. Final IEE to be posted on the BREB website, substations, and also notices posted in the vicinity of works to inform of its availability – hard copy to be made available to view on site free of charge on request. Ensure final EMP is included in the bidding documents and forms integral part of the contractor's agreement. 	EMP included in bidding documents	N/A	Include mitigating measures for Contractor as part of tender specifications	Check contract document to ensure compliance	N/A
Planning for construction environmental management	<ul style="list-style-type: none"> Project to comply with national and international regulatory framework as set out in the IEE plus other applicable environment, health and safety legislation. Project to comply with the EHS General Guidelines (April 2007) and the EHS Guidelines for Electric Power Transmission and Distribution (April 2007) in addition to the mitigation set out in this table. BREB to appoint an EHS Team comprising a suitably qualified and experienced dedicated Environment Specialist and Social Specialist. 	<p>Contractor appointed full contingency staff prior to mobilization</p> <p>EMP approved before commencement of works</p> <p>No unresolved grievances from local community</p>	Part of detailed design and pre-construction cost, include as BOQ line	<p>Comply with mitigating measures</p> <p>Include mitigating measures for Contractor as part of tender specifications</p> <p>Review and approval of EMP</p>	<p>Check contract document to ensure compliance</p> <p>Train / support PIU and Contractor in meeting EMP requirements and GRM operation.</p>	Comply with mitigating measures

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
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	<ul style="list-style-type: none"> Conduct training on EMP implementation for those with responsibilities under it. Contractor to appoint a suitably qualified and experienced dedicated Environment, Health and Safety Officer. Ensure GRM is operational by or before loan effectiveness and members of GRM is receiving training if necessary. Conduct training on GRM for those with responsibilities under it and distribute verbally and through leaflets, brochures, notices with the GRM contacts. Prior to mobilization the Contractor to update and submit environmental management plan (EMP) to BREB for approval, to provide details on how contractor plans to implement the construction mitigation measures specified in this EMP and relevant parts of the EHS Guidelines on Construction and Demolition. Approved EMP will identify temporary construction facilities needed e.g., laydown and storage areas, concrete casting areas, workers facilities etc. 			Supervise and monitor Contractor compliance	Assist with review and approval of EMP Supervise and monitor PIU/Contract or compliance	
Location of workers camp and materials storage areas could adversely affect residential areas and sensitive receptors (schools, hospitals/clinics)	<ul style="list-style-type: none"> Transformers to be required via the contract to generate sound pressure levels of between 45 and 55 dBA at 1m distance. Install new transformers 10m from site boundary of substations/30m from sensitive receptors; if this is not possible undertake noise calculations to demonstrate noise standards will be met given distance involved, if necessary, providing an enclosure to provide a sound barrier. If required, laydown and storage areas, 	Related facilities located sufficient distance from nearest receptors No unresolved grievances from local community Compliance with national laws and	Part of detailed design and pre-construction cost, include as BOQ line	Comply with mitigating measures Include mitigating measures for Contractor as part of tender specifications Supervise	Supervise and monitor PIU/ Contractor compliance	Implement mitigating measures

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
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	<p>concrete casting areas, workers facilities etc. to be located at least 200m away residential areas, waterbodies, groundwater wells, and sensitive receptors (houses, schools, clinics, temples, etc.).</p> <ul style="list-style-type: none"> Local communities to be consulted when selecting sites for project facilities prior to finalization. 	regulations		and monitor Contractor compliance		
Pollution prevention and generation of construction wastes	<ul style="list-style-type: none"> Detailed design to ensure sanitation to be connected existing sewerage system or to septic tank with soakaway located at least 50m from any spring or well used for drinking water and 10m from any drain, stream or river. Pit latrines prohibited, no untreated sanitary wastewater is to be disposed of to surface or groundwater. Detailed designs of substations to ensure all drainage prevents flooding and is fitted with oil and grease interceptors to catch oil spill. For all transformers and related fuel, oil chemical, and waste storage areas the design is to incorporate bunded area to 110% volume of impermeable concrete surface which is not connected to the drainage system in order to capture any leaks or spills; the storage for fuel, oil and chemicals is to also be under lock and key and covered to protect it from rain with space also provided for solid and hazardous waste garbage bins to be stored. Design to include for oil spill clean-up materials (sorbet pads, loose sorbet material, etc.) to be stationed in/outside any oil/fuel storage building in clearly labelled 	<p>PPP and CWMP approved before commencement of works</p> <p>Compliance with national laws and regulations No unresolved grievances from local community</p>	Part of detailed design and pre-construction cost, include as BOQ line	<p>Include mitigating measures for Contractor as part of tender specifications</p> <p>Review and approval of PPP and CWMP</p> <p>Supervise and monitor Contractor compliance</p>	<p>Supervise and monitor PIU/ Contractor compliance</p> <p>Assist with review and approvals of PPP and CWMP</p>	Implement mitigating measures

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
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	<p>containers.</p> <ul style="list-style-type: none"> Garbage bins for disposal of waste generated by workers, burning of waste prohibited. Prepare pollution prevention plan (PPP) and construction waste management plan (CWMP) for solid and hazardous waste management in accordance with national regulations and EHS Guidelines. 					
Health and safety	<ul style="list-style-type: none"> For all construction works comply with GoB rules and regulations for the protection of workers. For all construction works undertake risk assessment and prepare H&S plan in accordance with EHS Guidelines, considering occupational and community H&S and including adherence emergency preparedness and response plan with communication systems and protocols to report an emergency situation. In undertaking H&S risk assessment and preparing Emergency Preparedness and Response Plan adequate attention will be given to the risks associated with COVID-19 pandemic and other communicable viral diseases. National restrictions for containing the spread of COVID-19 must be complied with and Government of Bangladesh and ADB guidance (https://www.adb.org/publications/safety-well-being-workers-communities-covid-19) is to followed, as well as further guidance detailed in Appendix 7. Contractor will provide adequate sanitation and welfare facilities including hand washing and clean PPE in sufficient quantity are provided on- 	<p>H&S Plan approved before commencement of works</p> <p>Compliance with national laws and regulations</p> <p>No unresolved grievances from workers of the local community</p> <p>Supply of water meets drinking water standards (test results)</p>	<p>Part of detailed design and pre-construction cost, include as BOQ line</p>	<p>Comply with mitigating measures</p> <p>Include mitigating measures for Contractor as part of tender specifications</p> <p>Review and approval of H&S Plans</p> <p>Supervise and monitor Contractor compliance</p>	<p>Supervise and monitor PIU/ Contractor compliance</p> <p>Assist with review and approvals of H&S Plans</p>	<p>Implement mitigating measures</p>

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
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	<p>site and at accommodation; Contractor will also consider the ability of communities to comply with protective measures such as regular handwashing and the local health care facilities' capacity to deal with any infections agreeing with the with nearest Health Center and/or Hospital for emergency cares of workers. Particular attention must be paid to accommodation of workforce given the transient nature of work on transmission and distribution lines, to avoid spreading any virus between communities. EPRP must include response flow chart and contact details to deal with any construction worker or community member being diagnosed with COVID-19 during the course of the works. To limit contacts and hence contamination risk, the same workers should be grouped in accommodation, transport, and work teams. Medical insurance will be provided by Contractor for all workers with sick leave allowance to ensure symptomatic workers do not attend site; Contractor will avoid no-work-no-pay policies, whereby by fear of not getting paid workers would be tempted to report to work and hide any symptoms, creating more risk for the wider workforce and community. Given the unprecedented nature of responding to COVID-19, public health officials/experts must be consulted in undertaking the risk assessment and management planning for COVID-19.</p> <ul style="list-style-type: none"> • Conduct training on occupational health and safety related to project (including Covid-19) for all construction workers including regular refreshers. To include training for PIU and all Contractor 					

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
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	<p>management and construction workers including subcontractors before commencement of works.</p> <ul style="list-style-type: none"> • Conduct training of workers on emergency preparedness and response procedures related to project (including Covid-19 related emergencies) in case of an occupational or community health and safety incident during construction works. To include training for PIU and all Contractor management and construction workers including subcontractors before commencement of works. This is to include fire plan for the substations with training given to staff on how to use the firefighting equipment. • Detailed designs of substations to ensure infrastructure is located above maximum flood level (allowing for climate change) and incorporate adequate drainage design to attenuate storm water runoff leaving the site to greenfield runoff rates (allowing for climate change and considering addition of impermeable surfaces) such that there will be minimal changes to the natural flow rates and paths of storm water runoff across adjacent land. Drainage will be designed to route storm water runoff from the substation to existing watercourses or to infiltrate to ground in order to avoid flooding of access roads and nearby areas. Storm water management shall conform to governmental agency requirements. • Unpaved access roads used for construction traffic and operational access will be surfaced using concrete or asphalt. • New access roads will also be concrete or 					

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	<p>asphalt surfaced with adequate drainage.</p> <ul style="list-style-type: none"> For all substations provide secure fence with locked gates and warning signs to include the ISO 7010 Hazard Type: Electrical Symbol warning of the risk of electrocution. Design to include adequate pole foundation in order that all poles remain vertical during operation, and that the lines are tensioned, for reconductoring old poles or poles previously incorrectly installed may need to be replaced. Design to provide on all substation boundaries/equipment and poles visual and written warning signages to the public to include the ISO 7010 Hazard Type: Electrical Symbol warning of the risk of electrocution. Design to provide lighting arrestors along all lines. Design to provide around the base of all pole mounted transformers a fence or similar deterrent to prevent climbing with suitable warning signs. Detailed design of substations and lines to ensure EMF levels are within international good practice International Commission on Non-Ionizing Radiation Protection (ICNIRP) reference levels (average and peak exposure) and to meet national vertical and horizontal safety distances Detailed design of lines to ensure their installation of above or adjacent to locations intended for highly frequent human occupancy (e.g. schools) avoided. 					


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	<ul style="list-style-type: none"> • If safety distances found not to be complied with during reconductoring reroute to facilitate compliance; also reroute to avoid distribution lines passing over any school compounds or similar community facilities. • Detailed design to include for sufficient fire extinguishers of the type suitable for fighting an oil or fuel fire and for other firefighting equipment positioned where oil-filled transformers or other oil-filled equipment is used as well as outside/within the store. • Detailed design to ensure fire detection and alarm system is to be provided in the control buildings. • Detailed design of substations to include adequate sanitation and welfare facilities for permanent workers, including indoor kitchen facilities and eating area with provision of sufficient fuel supply for cooking other than wood, and adequate number of indoor toilets/washrooms for bathing with a hot and cold running water supply connected to either • Source of drinking water that meets drinking water standards to be identified, if an authorized supplied of canned water is not used this may require drinking water filter to be included in the detailed design. Such water must be regularly tested to confirm if meets drinking water standards. 					
B. CONSTRUCTION PHASE						
Unanticipated impacts on property including land and structures.	<ul style="list-style-type: none"> • Follow design drawings and implement careful construction practices to avoid damage to existing structures (e.g. buildings) and roads, crops, bunds, canals 	100% of structures (e.g. buildings) and roads, crops,	Part of construction cost, include as BOQ line	Check with Contractor regarding need for pole	Supervise and monitor PIU/ Contractor	Implement mitigation measures

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Loss of agricultural land that causes temporary disruption of farming activities, damage to crops, bunds, canals and drains.	and drains. <ul style="list-style-type: none"> Demarcation of the working area and avoid encroachment outside the agreed corridor of impact. All unanticipated damage to existing structures (e.g. buildings) and roads, crops, bunds, canals and drains outside the assessed corridor of impact shall be restored to pre-project condition and/or compensated at cost of contractor. 	bunds, canals and drains left in same condition as prior to construction No unresolved grievances from local community		replacement on private land and initiate necessary engagement with landowner Supervise and monitor Contractor compliance Undertake site visits using checklist to confirm implementation of measures by Contactor	compliance Undertake site visits and review documentation to audit implementation of measures at all construction sites	To advise PIU and SC of need for pole replacement on private land
Cutting or trimming of trees and clearing of vegetation.	<ul style="list-style-type: none"> No works shall be undertaken and no temporary or permanent project facilities established within a protected area, IBA, reserve forest area, or sacred grove etc. Follow design drawings and implement careful construction practices to avoid damage to trees. Demarcation of mature trees to be avoided and retained. Demarcation of the working area and avoid encroachment outside the agreed corridor of impact. Cutting or trimming of trees prohibited 	No impact on protected area, IBA, reserve forest area, or sacred grove etc. Works in accordance with EMP measures, approved EMP and compensatory afforestation plan Compliance with	Part of construction cost, include as BOQ line	Supervise and monitor Contractor compliance Undertake site visits using checklist to confirm implementation of measures by Contactor	Supervise and monitor PIU/ Contractor compliance Undertake site visits and review documentation to audit implementation of measures at all	Implement mitigation measures

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
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	<p>unless in accordance with design drawings in order to meet safety clearance requirements. [SEP]</p> <ul style="list-style-type: none"> • Cut/trimmed trees and other vegetation trimmings will be temporarily stored at designated places outside of built up area to avoid blocking of accesses or dumping on agriculture fields. • Cut/trimmed trees and other vegetation trimmings will be removed off-site as soon as line is completed. Unless sold for reuse, to be disposed of to a suitably licensed waste management facility with all waste transfer records retained. • Unanticipated loss of fruit-bearing trees that have economic value shall be compensated at cost of contractor in accordance with Resettlement Plan. • For all public trees removed replacement by native tree species in consultation with forest department. • Before cutting/trimming trees Contractor's EHS Officer to check for presence of nesting birds or roosting bats. • Undertake works requiring tree cutting/trimming outside the bird nesting/breeding season. • Avoidance of construction works from one hour after dawn to one hour before dusk in areas where there is no existing human disturbance. • Removal and disposal of identified invasive plant species in an ecologically sound manner. 	<p>national laws and regulations</p> <p>No unresolved grievances from local community</p>			construction sites	
Interference with	<ul style="list-style-type: none"> • Implement agreed traffic management plan. 	Works in	Part of	Supervise	Supervise	Implement

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
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traffic and access ways	<ul style="list-style-type: none"> Safe access to property and roads should be maintained and alternative routes and access provided where there are temporary diversions or blockages. Stockpiling of poles, spoil and cable reels shall be away from properties and only in designated areas where no access will be blocked. Implement traffic management controls during construction works with advance warning signs or flag persons to ensure health and safety of construction workers and road users. Road safety and warning signs must be posted at 500m, 100m, and immediately in advance of the works at least two weeks prior to the works commencing to inform the public of the temporary blockage of one lane of the road. Scaffolds will be constructed to protect pedestrians and vehicles (and the conductor itself) from potential injury /damage during conductor stringing. 	<p>accordance with EMP measures and approved traffic management plan</p> <p>Compliance with national laws and regulations</p> <p>No unresolved grievances from local community</p>	construction cost, include as BOQ line	<p>and monitor Contractor compliance</p> <p>Undertake site visits using checklist to confirm implementation of measures</p>	<p>and monitor PIU/ Contractor compliance</p> <p>Undertake site visits and review documentation to audit implementation of measures at all construction sites</p>	mitigation measures
Soil erosion during substation construction and auguring/ excavation of pole foundation.	<ul style="list-style-type: none"> Excavation for substations will be limited to within the substation footprint. Minimize removal of existing vegetation and topsoil to that which is absolutely necessary. Once earthworks are complete immediately revegetate areas of substation not utilized for infrastructure using native species etc. Undertake earthworks for substations only during the dry season to minimize sediment laden surface water runoff. Excavated soil will be covered with 	<p>Works in accordance with EMP measures and approved EMP provisions</p> <p>Compliance with national laws and regulations</p> <p>No unresolved grievances from</p>	Part of construction cost, include as BOQ line	<p>Supervise and monitor Contractor compliance</p> <p>Undertake site visits using checklist to confirm implementation of measures</p>	<p>Supervise and monitor PIU/ Contractor compliance</p> <p>Undertake site visits and review documentation to audit implementation of</p>	Implement mitigation measures

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	<p>tarpaulin when spoil heaps are not active and stored at least 10m from watercourses.</p> <ul style="list-style-type: none"> Topsoil disturbed during the development of sites will be used to restore the surface of the excavated area. Infertile and rocky material will where possible be reused as fill material, if it needs to be taken off site it will be disposed by licensed waste management operator at designated disposal area suitable for accepting inert wastes. Records of excavated soil, generated waste, and transfer records will be kept by the contractor. Excavation for poles will be limited to within the agreed corridor of impact, ideally road reserve. Rehabilitate any disturbed areas beyond footprint of pole foundation to at least original condition immediately through revegetation using native species etc. Use of auguring to limit the area to be disturbed for pole foundation. [SEP] Undertake installation of poles during the dry season to minimize exposed areas subject to erosion by surface water runoff. 	local community			measures at all construction sites	
Risks of damages to sub-surface utilities and chance find of physical cultural resources during construction.	<ul style="list-style-type: none"> Check with relevant local authorities (electric, water, telecoms) whether there are known pipes, cables, or other utility lines to identify any unknown underground utilities prior to excavation Rehabilitate any damaged utilities to at least original condition in conjunction with relevant local authorities at cost to the contractor. 	<p>Works in accordance with EMP measures and approved chance find procedure provisions</p> <p>Compliance with</p>	Part of construction cost, include as BOQ line	<p>Supervise and monitor Contractor compliance</p> <p>Undertake site visits using checklist to</p>	<p>Supervise and monitor PIU/ Contractor compliance</p> <p>Undertake site visits and review</p>	Implement mitigation measures

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	<ul style="list-style-type: none"> Follow chance find procedure if physical cultural resources are found during construction works; if physical cultural resources are encountered, all works at the find site should be immediately halted. 	<p>national laws and regulations</p> <p>No unresolved grievances from local community</p>		confirm implementation of measures	documentation to audit implementation of measures at all construction sites	
Dust, noise and general disturbance to local community	<ul style="list-style-type: none"> Provide at least one-month advance notice to local community through the village heads about the schedule of, location plan, and details of planned construction works. Carry out construction works only during daytime hours (8am-6pm) and on weekdays unless otherwise agreed with the village heads and all residents within 100m to avoid noise nuisance. Construction to be conducted using manual and no heavy equipment. Noise generating construction-related activities will be avoided during evenings, school hours, prayer times, religious or cultural events in close proximity to the sensitive receptors.  Construction noise in the vicinity of houses and other sensitive receptors must be limited to 55dB(A) as 1hour LAeq – if nighttime work is permitted it must be limited to 45dB(A) as 1hour LAeq. If these levels are exceeded the contractor will be required to implement additional noise mitigation measures such as adjusting his working methods or placing of temporary noise barriers to ensure the noise standard is met. Use of low noise generating equipment e.g. 	<p>Comply with national air and noise standards, or WHO noise guidelines where stricter than the national</p> <p>Works in accordance with EMP measures and approved EMP</p> <p>Compliance with national laws and regulations</p> <p>No unresolved grievances from local community</p>	Part of construction cost, include as BOQ line	<p>Supervise and monitor Contractor compliance</p> <p>Undertake site visits using checklist to confirm implementation of measures</p> <p>If required undertake quantitative dust and noise monitoring to confirm compliance with performance standards at any given location</p>	<p>Supervise and monitor PIU/ Contractor compliance</p> <p>Undertake site visits and review documentation to audit implementation of measures at all construction sites</p>	Implement mitigation measures

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
				BREB	PIU/BES/EC	Contractor
	<p>less than 55dBA sound pressure level at 1m</p> <ul style="list-style-type: none"> • Equipment (e.g. generators) to meet applicable national air and noise emission requirements. • Ensure all construction machinery and vehicles are maintained in good working order and have passed emissions test for noise and air emissions as applicable to them • Prohibit the use of horns in areas where sensitive receptors are located (houses, schools, clinics, temples, etc.) • Construction workers exposure to noise should not exceed the levels set out in the General EHS Guidelines on Occupational Health and Safety otherwise the hearing protection is to be provided • Unpaved access roads to substations to be surfaced before any excavation or other earthworks at the substation commence • Limit engine idling to maximum 5 minutes • Impose speed limits on construction vehicles to minimize dust emission along areas where sensitive receptors are located (houses, schools, clinics, temples, etc.) • During the dry season or in windy conditions undertake water sprinkling at least twice a day in exposed areas prone to dust generation where sensitive receptors are located (houses, schools, clinics, temples, etc.) and at substations and on unpaved access roads to distribution lines but more often if needed during excavations, earthworks, and windy 					

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
				BREB	PIU/BES/EC	Contractor
	<p>conditions that enable dust to be easily mobilized</p> <ul style="list-style-type: none"> • Stockpiles of soil and other dust generating materials will be covered with tarpaulin • Providing workers with N95 dust masks to be worn when dust generating activities take place • Vehicles delivering construction materials shall be covered • Burning of wastes generated by project-related activities to be strictly prohibited • Ensure all stationary emission sources are maintained in good working order in accordance with manufacturer instructions • Position any stationary emission sources (e.g. diesel generators, compressors, etc.) as far as practical from sensitive receptors (houses, schools, clinics, temples, etc.) • Follow General EHS Guidelines for the use and storage of fuel, oil, and chemical including prevention and control of hazards associated with spill prevention, emergency response, clean up and contaminated soil remediation • Fuel, oil and chemicals used to be kept under lock and key and stored in labelled, sealed containers on drip trays to provide secondary containment, ideally these will be located on an impermeable surface • Mounting of plant containing oil and diesel on drip trays to catch leaks. • Refueling operations, equipment servicing and washdown to take place on an impermeable surface at least 50m from watercourses, springs and wells, with 					

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
				BREB	PIU/BES/EC	Contractor
	<p>drainage directed through oil and grease interceptors before being discharged into a settling pond prior to discharge offsite</p> <ul style="list-style-type: none"> Provide sufficient absorbent materials (e.g. sorbants, dry sand, sandbags) on-site for soaking up fuel, oil or chemical leaks/spills. 					
Pollution prevention and generation of construction wastes	<ul style="list-style-type: none"> Provision of adequate on-site sanitation facilities including septic tanks and soak-away pits or alternative sanitary facilities that do not allow the untreated disposal of sewage to adjacent water bodies e.g. portable toilets (same requirement applies to any construction camps). Provision of an appropriate domestic solid waste and construction waste collection and disposal system. Provision of designated hard standing areas for equipment servicing, refueling and wash down at least 50m from watercourses, springs and wells, with drainage directed through oil and grease interceptors before being discharged into a settling pond prior to discharge offsite. Implement agreed waste management plan and avoid or minimize the generation of waste materials, as far as is practicable. Collect and segregate construction wastes including scrap metal, oils, and solid waste. Store all wastes in designated, labelled area in an environmentally sound manner e.g. oils to be stored in sealed drums on drip trays, solid wastes to be stored in an enclosed bin. Recover recyclable wastes that could be reused or sold to recyclers. 	<p>Works in accordance with EMP measures and approved PPP and CWMP</p> <p>Compliance with national laws and regulations</p> <p>No unresolved grievances from local community</p>	Part of construction cost, include as BOQ line	<p>Supervise and monitor Contractor compliance</p> <p>Undertake site visits using checklist to confirm implementation of measures</p>	<p>Supervise and monitor PIU/ Contractor compliance</p> <p>Undertake site visits and review documentation to audit implementation of measures at all construction sites</p>	Implement mitigation measures

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
				BREB	PIU/BES/EC	Contractor
	<ul style="list-style-type: none"> Prohibit burning of construction wastes. Prohibit dumping of construction wastes into canals, rivers, agricultural fields etc. Scrap metal and similar waste to be immediately removed off-site to the BREB stores for appropriate reuse or disposal with all waste transfer records retained. Unless reused or sold, other construction waste to be disposed of to a suitably licensed waste management facility (depending on if hazardous or non-hazardous) with all waste transfer records retained. 					
Occupational health and safety	<ul style="list-style-type: none"> Require workers to confirm they have seen and understood the requirements of the OHS plan before proceeding with the work. Only allow suitably trained and qualified workers to be allowed to work on electrical equipment and at height, these workers must have training record of attending suitable training course on electrical safety and working at height. Untrained workers will not be permitted to work with live electricity or at height. Provide PPE for workers in accordance with Table 2.7.1. Summary of Recommended Personal Protective Equipment According to Hazard in EHS Guidelines on OHS. Enforce disciplinary system (e.g. immediate removal from site) for non-compliance with PPE requirements During the COVID-19 pandemic, temperature checks to be carried out at entrance of the work site at start of shift, 	<p>No fatalities or lost time incidents</p> <p>100% of H&S incidents including near miss recorded, immediately investigated, and corrective action taken to prevent repeat</p> <p>Works in accordance with EMP measures and approved H&S Plans</p> <p>Compliance with national laws and regulations</p>	Part of construction cost, include as BOQ item	<p>Supervise and monitor Contractor compliance</p> <p>Undertake site visits using checklist to confirm implementation of measures</p>	<p>Supervise and monitor PIU/ Contractor compliance</p> <p>Undertake site visits and review documentation to audit implementation of measures at all construction sites</p>	Implement mitigation measures

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
				BREB	PIU/BES/EC	Contractor
	<p>and records of all suspected and confirmed cases to be kept.</p> <ul style="list-style-type: none"> • Require workers to observe the EHS Guideline on Construction and Demolition • Require workers to observe EHS Guideline on T&D requirements for working with live power lines • Ensure proper grounding and deactivation of live power lines during construction work or before any work in close proximity to the lines and this will be checked and certified by Health and Safety Officer in advance. [SEP] • Only suitably trained workers that meet the requirements set out in EHS Guidelines on Transmission and Distribution (T&D) to be allowed to work on live power lines with strict adherence to safety and insulation standards including those listed in the EHS Guidelines • Require other workers to observe the minimum approach distances for excavations, tools, vehicles, pruning, and other activities when working around power lines [SEP] • Require workers to observe EHS Guideline on T&D requirements for working at height • Require workers to test the structural integrity of poles prior to proceeding with the work. [SEP] • Use fall protection measures when working on poles, i.e. mobile elevated working platform, all workers are required to wear body harness. [SEP] • Unless transformers have been certified PCB free workers must wear suitable 	No unresolved grievances from workers or the local community				

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
				BREB	PIU/BES/EC	Contractor
	<p>chemical and/or oil resistant gloves, goggles, and protective clothing whilst working with transformers. Eye wash station and water supply to shower to be provided during works due to risk of PCB coming into contact with skin.</p> <ul style="list-style-type: none"> • During construction works ensure qualified first aider and trained fire marshal is available on-site at all times with an appropriately equipped first aid kit and appropriate fire extinguisher and other firefighting equipment immediately available for use • Provide an ambulance for more serious cases. • Arrange with nearest Health Center and/or Hospital for emergency cares of workers • Provide workers with access to an existing functional toilet facility (toilets and hand washing area) or provide a self-contained portable toilet with hand washing facilities (use of pit latrines to be prohibited) – generated wastewater to be disposed of to existing local facilities. • Sufficient toilet facilities should be provided for the number of workers, and there should be an indication of whether the toilet facility is “in use” or “vacant” if not segregated. • Toilet facilities to be provided with adequate supplies of hot and cold running water, soap, and hand drying device. • Provide workers with access to clean eating area with supply of drinking water. • Adequate supplies of potable drinking water meeting national standards should be 					

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
				BREB	PIU/BES/EC	Contractor
	<p>provided to workers.</p> <ul style="list-style-type: none"> Since workers will not be local to the area suitable accommodation must be provided by the contractor, ideally use should be made of existing accommodation facilities but if a construction camp is provided it must be adequately equipped with sufficient toilets, hand washing facilities, showers or baths, food preparation and clean eating area, etc. 					
Community health and safety such as toppling of concrete poles, traffic and accidents, emergency spill of materials, and access of villagers to dangerous working areas.	<ul style="list-style-type: none"> Install on all substation fences/equipment and poles visual and written warning signages to the public to include the ISO 7010 Hazard Type: Electrical Symbol warning of the risk of electrocution. Install lighting arrestors along all lines. Provision for ensuring security of the cable to avoid vandalism. Install around the base of all pole mounted transformers a fence with locked gate or similar deterrent with suitable warning signs. Fence and sign immediate working area to prevent public access during construction works Do not leave hazardous conditions (e.g. unlit open excavations without means of escape) overnight unless no access by public can be ensured Prevent standing water as it may become a breeding habitat for mosquitoes etc. During construction works provide signage detailing site and office contacts in case of grievance. Before handover all poles to be confirmed 	<p>No fatalities or lost time incidents</p> <p>100% of H&S incidents including near miss recorded, immediately investigated, and corrective action taken to prevent repeat</p> <p>Works in accordance with EMP measures and approved H&S Plans</p> <p>Compliance with national laws and regulations</p> <p>No unresolved grievances from local community</p>	Part of construction cost, include as BOQ item	<p>Supervise and monitor Contractor compliance</p> <p>Undertake site visits using checklist to confirm implementation of measures</p>	<p>Supervise and monitor PIU/ Contractor compliance</p> <p>Undertake site visits and review documentation to audit implementation of measures at all construction sites</p>	Implement mitigation measures

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
				BREB	PIU/BES/EC	Contractor
	<p>to have adequate foundation that they will remain vertical during operation, and that all the feeder lines are correctly tensioned.</p> <ul style="list-style-type: none"> Contractors staff will also be given awareness raising in infectious disease including COVID-19, and code of conduct at work Wherever possible, the contractor should not discriminate and should proactively encourage the employment of suitably skilled women on the project. 					
C. OPERATIONAL AND MAINTENANCE PHASE						
Impacts on occupational health and safety due to exposure to live power lines, working at heights, and risks of accidents (electrocution, lightning, fires and explosion)	<ul style="list-style-type: none"> BREB Team to appoint suitably qualified and experienced staff on a full time basis to oversee implementation of environment, health and safety matters across the organization, to provide staff regular trainings, and continually improve compliance with national requirements and good international practice for EHS For all maintenance works undertake risk assessment and prepare H&S plan in accordance with EHS Guidelines, considering occupational and community H&S and including adherence to emergency preparedness and response plan with communication systems and protocols to report an emergency situation. Require workers to confirm they have seen and understood the requirements of the OHS plan before proceeding with the work. Conduct training on occupational health and safety for all operations and maintenance workers including refreshers. Conduct training of workers on emergency 	<p>No fatalities or lost time incidents</p> <p>100% of H&S incidents including near miss recorded, immediately investigated, and corrective action taken to prevent repeat</p> <p>Works in accordance with EMP measures and approved H&S Plans</p> <p>Compliance with national laws and regulations</p> <p>No unresolved</p>	PBS O&M Budget	PBS District Units; supervision and monitoring by BREB HQ Team	NA	NA

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
				BREB	PIU/BES/EC	Contractor
	<p>preparedness and response procedures in case of an occupational health and safety incident during operation and maintenance.</p> <ul style="list-style-type: none"> Only allow suitably trained and qualified workers to be allowed to work on electrical equipment and at height, these workers must have training record of attending suitable training course on electrical safety and working at height. Provide PPE for workers in accordance with Table 2.7.1. Summary of Recommended Personal Protective Equipment According to Hazard in EHS Guidelines on OHS. Enforce disciplinary system (e.g. immediate removal from site) for non-compliance with PPE requirements Ensure proper grounding and deactivation of live power lines during maintenance work or before any work in close proximity to the lines ^[1]_{SEP} Require workers to test the structural integrity of poles prior to proceeding with the work ^[1]_{SEP} Use fall protection measures when working on poles, i.e. mobile elevated working platform, all workers are required to wear body harness ^[1]_{SEP} Require workers to observe the minimum approach distances for excavations, tools, vehicles, pruning, and other activities when working around power lines^[1]_{SEP} During maintenance works ensure qualified first aider and trained fire marshal is available on-site at all times with an 	grievances from local community				

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
				BREB	PIU/BES/EC	Contractor
	<p>appropriately equipped first aid kit and appropriate fire extinguisher and other firefighting equipment immediately available for use</p> <ul style="list-style-type: none"> • Arrange with nearest Health Center and/or Hospital for emergency cares of workers • Provide workers with access to an existing functional toilet facility or provide a self-contained portable toilet with hand washing facilities (use of pit latrines to be prohibited) • Occupational EMF exposure should be prevented or minimized through the preparation and implementation of an EMF safety program in accordance with the “Environmental, Health, and Safety Guidelines – Electric Power Transmission and Distribution” (IFC) dated 30 April 2007 					
Impacts to community health and safety such as electrocution and lightning strikes, explosion and fire, and exposure to magnetic field.	<ul style="list-style-type: none"> • For all maintenance works undertake risk assessment and prepare H&S plan in accordance with EHS Guidelines, considering occupational and community H&S and including adherence emergency preparedness and response plan with communication systems and protocols to report an emergency situation. • Conduct training of workers on emergency preparedness and response procedures in case of a community health and safety incident during operation and maintenance. • Undertake public information/awareness campaign covering all project villages using distribution of posters, leaflets and safety booklets as well as orientation at village level on health and safety risks related to substations and live electric lines and how 	<p>No fatalities or lost time incidents</p> <p>100% of H&S incidents including near miss recorded, immediately investigated, and corrective action taken to prevent repeat</p> <p>Works in accordance with EMP measures and approved H&S Plans</p>	PBS O&M Budget	PBS District Units; supervision and monitoring by BREB HQ Team	NA	NA

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
				BREB	PIU/BES/EC	Contractor
	<p>to avoid or respond to incidents. ^[11]_[SEP]</p> <ul style="list-style-type: none"> Regularly inspect (at least monthly) the condition of substations, poles, lines and transformers to check minimum vertical clearance and protection is maintained; integrity of the poles and line is in good condition; electrical safety warning signs and lighting arrestors in place; missing or corroded parts are immediately identified and replaced; that any leaking oil from transformers is immediately addressed; and, the status of any vegetation growth that may damage or threaten the integrity of the lines. Inspection protocol should include possible conductor snapping and de-energizing of the line within three cycles to avoid the potential for electrocution from a breakage Keep photographic records and log of all inspections and actions taken in response. 	<p>Compliance with national laws and regulations</p> <p>No unresolved grievances from local community</p>				
Disturbance to local community due to maintenance works.	<ul style="list-style-type: none"> Provide at least one-month advance notice to local community through the village heads about the schedule of, location plan, and details of planned maintenance works. Carry out maintenance works only during daytime hours and on weekdays unless otherwise agreed with the village heads. During maintenance works provide signage detailing site and office contacts in case of grievance. Implement traffic management controls during maintenance works with advance warning signs or flag persons to ensure health and safety of maintenance workers and road users. 	<p>Works in accordance with EMP measures and approved H&S Plans</p> <p>Compliance with national laws and regulations</p> <p>No unresolved grievances from local community</p>	PBS O&M Budget	PBS District Units; supervision and monitoring by BREB HQ Team	NA	NA

Environmental Impact	Mitigating Measures	Performance Standard	Budget/ Source	Responsibilities		
				BREB	PIU/BES/EC	Contractor
	<ul style="list-style-type: none"> Prohibit the use of herbicides, pesticides or burning to control any vegetation growth or to manage vegetation waste. Removal and disposal of identified invasive plant species in an ecologically sound manner. Scrap metal and similar waste to be immediately removed off-site to the DISCOM stores for appropriate reuse or disposal with all waste transfer records retained. Vegetation and other solid waste to be immediately removed off-site and disposed of to a suitably licensed waste management facility with all waste transfer records retained. 					

Table 6.2: Environmental Monitoring Plan for the Project


Measure/Indicator	Locations	Frequency	Methods of Monitoring	Responsibility
Pre-Construction Phase				
About 2,129 trees ¹ cutting within the substation area	<ul style="list-style-type: none"> Plantation of 6,387 trees at a ratio of 1:3 Confirm that this planting plan is being followed during the construction period also 	During pre-construction phase	Tree replanting plan and record of compensation	Implementation: BREB Supervision: PD & PIU
EMP Implementation Training for Better understanding of environmental safeguards and how they are to be implemented is needed. BREB needs to provide this briefing to the contractor	At BREB office	Prior to contractor mobilization	Obtain record of presentation	Implementation: BREB Supervision: PD & PIU
Construction Phase				
Loss or damage to crops, trees etc. Notify farmers, owners, provide compensation for crop loss/trees	New pole locations at new sites, and stringing sites	Initial one-off compensation as required	Field visits. PBS Consultant Engineers and DC's staff as necessary	Implementation: PD, DC office Supervision: PIU
Interference with traffic and road crossings	Roads where distribution lines work are taking place	Every week during project construction	Field observation. Informal interview. PBS Consultant Engineers	Implementation: PD, DC office Supervision: PIU
Air Quality <ul style="list-style-type: none"> Dust resulting from construction work Exhaust gas from construction machinery and vehicles used for mobilization of equipment 	Substation site and along the distribution line alignment	Daily	Visual inspection is suggested since no sensitive areas nearby	Implementation: Contractor Supervision: PD & PIU

¹A total of 3,721 trees are expected to be affected of which 917 are timber trees, 1,190 are fruit-bearing tree, 22 are medicinal and rest 1,592 are banana and nursery. In this number the timber, fruit-bearing and medicinal trees are counted for re-plantation since Department of Environment does not recommend re-plantation of Banana trees. The number of trees eligible for re-plantation is 2,129. Thus, The total number of re-plantation trees are 6,387 at a ratio of 1:3.

Wastes • Construction waste from construction work • Domestic waste from workers	Substation site, workers camp	Daily	Record of kinds and quantity of waste, and the disposal method	Implementation: Contractor Supervision: PD & PIU
Infectious Diseases such as Covid-19 Temporary influx of migrant labor during construction may increase risk of infection	Camp site	Twice a year	Labor health record	Implementation: Contractor Supervision: Social safeguard expert
Worker condition including work safety	Working site	Record of accidents	Continuous record	Implementation: Contractor Supervision: Social safeguard expert
Loss of electricity to businesses/ interruptions to be kept to a minimum and loss of income to be minimized	Work along bazaars and commercial areas	Every week during construction activity	PBS Consultant Engineers	PD & PIU
Safety of workers and general public during implementation	All substation sites and at distribution line sites in commercial area	Every week during construction activity	PBS Consultant Engineers	PD & PIU
Waste from substation construction site and new distribution line work sites and proper disposal at central locations at PBS warehouses and yards	Substation construction site	Once at each	Field observation	Implementation: Contractor(s). PBS Supervision: PD & PIU
Post-Construction/Operation Phase				
Oil waste from transformers maintenance Recycle, reuse, safe storage and disposal at PBS sites recognized agencies	PBS operations at warehouses and stores	Half yearly at each PBS	Visits to PBS stores depots, and check records	PD, PIU and Monitoring Consultant

PIU – Project Implementation Unit, DC Office – Deputy Commissioner’s Office, PBS - Palli Biddiyut Samities, PD – Project Director

Approved ToR for EIA from DoE

শেখ হাসিনার বাংলাদেশ পরিচ্ছন্ন পরিবেশ			
<p>Government of the People's Republic of Bangladesh Department of Environment Head Office, E-16 Agargaon Dhaka-1207 www.doe.gov.bd</p>			
Memo No: 22.02.0000.018.72.085.20- 334		Date: 15/12/2020	
Subject: Approval of Terms of Reference (ToR) for Environmental Impact Assessment (EIA) in favor of the project "Modernization and Capacity Enhancement of BREB Network (Khulna Division)".			
Ref: Your Application dated 11/11/2020.			
With reference to your letter received on 11/11/2020 for the subject mentioned above, above, the Department of Environment hereby gives Exemption from Initial Environmental Examination (IEE) and approval of ToR (Terms of Reference) for Environmental Impact Assessment (EIA) in favor of the project "Modernization and Capacity Enhancement of BREB Network (Khulna Division)" subject to fulfilling the following terms and conditions:			
I. The project authority shall submit a comprehensive Environmental Impact Assessment (EIA) considering the overall activity of the proposed Project in accordance with the ToR and time schedule submitted to the Department of Environment (DoE).			
II. The EIA report should be prepared in accordance with following indicative outlines:			
Executive Summary			
1.0 Introduction			
1.1 Background			
1.2 Rationale of the Project			
1.3 Objective of the Study			
1.4 Scope of Study/Work			
1.5 Approach and Methodology			
1.6 The EIA Team			
1.7 Structure of the Report/Report Format			
2.0 Legal, Policy and Administrative Framework			
2.1 Introduction			
2.2 Relevant National Policies and Legislations			
2.3 Compliance with DOE EIA Guidelines			
3.0 Project Description			
3.1 Introduction			
3.2 Project Objective			
3.3 Description of the project activities			
3.4 Project Options			
3.5 Project Schedule and timeline			
3.6 Resources and utilities demand			
3.7 Interventions under Selected Options			
3.8 Project Plan, Design, Standard, Specification, Quantification, etc.			
4.0 Environmental and Social Baseline			
4.1 Meteorology			
4.1.1 Temperature			
4.1.2 Humidity			
4.1.3 Rainfall			
4.1.4 Evaporation			
4.1.5 Wind Speed			
4.1.6 Sun Shine Hours			
4.2 Water Resources			
4.2.1 Surface Water System			

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- 4.2.2 Tropical Cyclones and Tidal Flooding
- 4.2.3 Salinity
- 4.2.4 Drainage Congestion and Water Logging
- 4.2.5 Erosion and Sedimentation
- 4.2.6 River Morphology
- 4.2.7 Navigation
- 4.2.8 Ground Water System
- 4.3 Land Resources
 - 4.3.1 Agro ecological Regions
 - 4.3.2 Land Types
 - 4.3.3 Soil Texture
 - 4.3.4 Land Use
- 4.4 Agriculture Resources
 - 4.4.1 Farming Practice
 - 4.4.2 Cropping Pattern and Intensity
 - 4.4.3 Cropped Area
 - 4.4.4 Crop Production
 - 4.4.5 Crop Damage
 - 4.4.6 Main Constraints of Crop Production
- 4.5 Livestock and Poultry
 - 4.5.1 Feed and Fodder Shortage
 - 4.5.2 Livestock/Poultry Diseases
- 4.6 Fisheries
 - 4.6.1 Introduction
 - 4.6.2 Problem and Issues
 - 4.6.3 Habitat Description
 - 4.6.4 Fish Production and Effort
 - 4.6.5 Brackish Water and Pond Aquaculture
 - 4.6.6 Fish Migration
 - 4.6.7 Fish Biodiversity
 - 4.6.8 Fisheries Management
- 4.7 Ecological Resources
 - 4.7.1 Bio-ecological Zone
 - 4.7.2 Common Flora and Fauna
 - 4.7.3 Ecosystem Services and Function
- 4.8 Socio Economic Condition
 - 4.8.1 Socio Economic Condition
 - 4.8.2 Quality of Life Indicators
 - 4.8.3 Income and Poverty
 - 4.8.4 Gender and Women
 - 4.8.5 Common Property Resources
 - 4.8.6 Conflict of Interest and Law and Order Situation
 - 4.8.7 Historical, Cultural and Archaeological Sites
- 4.9 Ecological Resources
 - 4.9.1 Bio-ecological Zone
 - 4.9.2 Common Flora and Fauna
 - 4.9.3 Ecosystem Services and Function
- 5.0 Analysis of Alternative
 - 5.1 No. of Project Alternative Routes
 - 5.2 Alternative option Analysis with Impact Matrix
 - 5.3 Best Option for the project
- 6.0 Identification and Analysis of Key Environmental Issues (Analysis shall be presented with Scenarios, Maps, Graphics, etc. for the Case of Anticipated Impacts on Baseline)
 - 6.1 Environmental Sensitivity Investigation
 - 6.2 Environmental Asset



- 6.3 Environmental Hot Spots
- 6.4 Likely Beneficial Impacts
- 6.5 Community Recommendations
- 7.0 Environmental and Social Impacts
 - 7.1 Introduction
 - 7.2 Impact on Water Resources
 - 7.2.1 Pre-Construction Phase
 - 7.2.2 Construction Phase
 - 7.2.3 Post-Construction Phase
 - 7.3 Impact on Land Resources
 - 7.3.1 Pre-Construction Phase
 - 7.3.2 Construction Phase
 - 7.3.3 Post-Construction Phase
 - 7.4 Impact on Agriculture Resources
 - 7.4.1 Pre-Construction Phase
 - 7.4.2 Construction Phase
 - 7.4.3 Post-Construction Phase
 - 7.5 Impact on Fisheries
 - 7.5.1 Pre-Construction Phase
 - 7.5.2 Construction Phase
 - 7.5.3 Post-Construction Phase
 - 7.6 Impact on Eco System
 - 7.6.1 Pre-Construction Phase
 - 7.6.2 Construction Phase
 - 7.6.3 Post-Construction Phase
 - 7.7 Socio Economic Impact
 - 7.7.1 Pre-Construction Phase
 - 7.7.2 Construction Phase
 - 7.7.3 Post-Construction Phase
- 8.0 Public Consultation and Disclosure
 - 8.1 Introduction
 - 8.2 Objectives of Public Consultation and Disclosure Meeting
 - 8.3 Approach and Methodology of Public Consultation and Disclosure Meeting
 - 8.4 Public Consultation Meetings (PCMs)
 - 8.5 Public Disclosure Meetings (PDMs)
- 9.0 Environmental Management Plan
 - (a) The responsibilities and actions required of the project initiator or implementing body should be identified in the EMP. Some of those responsibilities and actions include: allocation of institutional responsibilities for planning and management of environmental requirements, allocate responsibility to execute mitigation action, implement a program of monitoring to check the effectiveness of mitigation measures, and if necessary, taking additional measures to correct or overcome the impact in question, in-house monitoring capacity building and allocation of budget.
 - (b) The EMP should recognize and include the following:
 - i. Mitigation Plan, Enhancement Plan, Compensation Plan, Contingency Plan and Supervision & Monitoring Plan.
 - ii. Management of soil erosion, landslides and siltation during site clearance and earth work
 - iii. Management of runoff
 - iv. Regulation of the types of activities allowed in the project activities in the project are at various phases of the project
 - v. Management of liquid, solids, sludge and gaseous wastes generated from the project area
 - vi. Environmental monitoring requirements
 - vii. Responsibilities and role of the project proponent for protection of environment
 - viii. Adequate measures to avoid and mitigate nuisance, pollution and public sufferings of any kind during preparation, construction and operational phases
 - (c) The program for monitoring should generally identify:

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- i. the type of monitoring required
- ii. the location of monitoring
- iii. the types of parameters to be measured (e.g. dissolve oxygen, if fisheries is important in a river)
- (d) Monitoring parameters, location, timing, frequency and conditions must be in consistent with that of the baseline.

10.0 Monitoring Plan/Procedures:

- For each significant major impact, proposed mitigation measures will be set out for incorporation into project design or procedures, impacts, which are not capable of mitigation, will be identified as residual impacts. Both technical and financial plans shall be incorporated for proposed mitigation measures..
- An outline of the Environmental Management Plan shall be developed for the project.
- In Environmental Monitoring Plan, a detail technical and financial proposal shall be included for developing an in-house environmental monitoring system to be operated by the proponent's own resources (equipments and expertise).


11.0 Waste Disposal Plan

12.0 3R plan and its implementation in the project proponent

13.0 Emergency Response Plan and Disaster Impact Assessment

14.0 Conclusions and Recommendations

- III. Without approval of EIA report by the Department of Environment, the project authority shall not be able to open L/C in favor of importable machineries.
- IV. Without obtaining Environmental Clearance, the project authority shall not be able to start the physical activity of the project.
- V. The Project Authority shall submit the EIA along with a filled-in application for Environmental Clearance in prescribed form, the applicable fee in a treasury Chalan, the applicable VAT on clearance fee in a separate treasury Chalan, the No Objection Certificates (NOC) from local authority, NOC from forest department (if it is required in case of cutting any forested plant, private or public) and NOCs from other relevant agencies for operational activity etc. to the Khulna Divisional office of DoE in Khulna with a copy to the Head Office of DoE in Dhaka.


12.12.2020

(Syed Nazmul Ahsan)
Director (Environmental Clearance)
Phone # 02-8181673

Project Director
"Modernization and Capacity Enhancement of BREB Network (Khulna Division)" Project
Bangladesh Rural Electrification Board
Head Office Building (3rd Floor)
Nikunja-2, Khilkhet
Dhaka-1229.

Copy Forwarded to :

- 1) Director, Department of Environment, Khulna Divisional Office, Khulna.
- 2) Assistant Director, Office of the Director General, Department of Environment, Head Office, Dhaka.

Environmental Clearance Certificate from DoE

শেখ হাসিনার নির্দেশ
জনাবায় সহিষ্ণু বাংলাদেশ



Government of the People's Republic of Bangladesh
Department of Environment
Head Office, Paribesh Bhaban
E-16 Agargaon, Dhaka-1207
www.doe.gov.bd

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Date: October 10, 2021

Subject: Environmental Clearance for Modernization and Capacity Enhancement Project of BREB Network (Khulna Division)

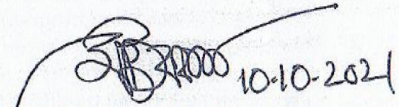
Ref: Your Application received on 06/09/2021.

With reference to the above, the Department of Environment (DoE) hereby accords the Environmental Clearance to **Modernization and Capacity Enhancement Project of BREB Network (Khulna Division)** subject to fulfilling the following terms and conditions:

1. This Environmental Clearance Certificate is valid for the following activities in 8 districts namely Jashore, Jhenaidah, Magura, Khulna, Satkhira, Meherpur, Bagerhat and Kushtia under Khulna Division:
 - a) Construction of 1015 km of 33KV new distribution lines
 - b) Upgradation of 158 km of existing distribution lines
 - c) Construction of 40 km of 33KV new underground lines
 - d) Construction of 3042 km of 11KV new distribution lines
 - e) Upgradation of 7505 km of 11KV existing distribution lines
 - f) Construction of 94 km of 11KV new underground lines
 - g) Construction of 2250 km of 11 KV insulated lines
 - h) Conversion of 3305 km LT to HT line
 - i) Conversion of 2910 km HT 1-ph to HT 3-ph line
 - j) Construction of 15 nos. of 20MVA and 36 nos. of 10MVA 33/11KV new Substation (total 660MVA)
2. The activity under this Project shall not result in the loss of containment of any materials that would affect health or will have damaging impact on the environment or natural resources.
3. Proper and adequate sanitation facilities shall be ensured in labor camps throughout the proposed construction program.
4. No solid waste can be burnt in the project area. The project authority shall collect, treat and dispose off all solid wastes in such manner so as not to cause environmental pollution.
5. Proper and adequate on-site precautionary measures and safety measures shall be ensured so that no habitat of any flora and fauna would be demolished or destructed.
6. All the required mitigation measures suggested in the EIA report along with the emergency response plan are to be strictly implemented and kept operative/functioning on a continuous basis.
7. To reduce dust, spraying of water over the earthen materials should be carried out from time to time.
8. To control dust, during construction period spraying of water on the earthen materials should be carried out from time to time.
9. The project authority shall ensure that the ambient noise levels within the project sites shall not exceed the limits specified in the Noise Pollution (Control) Rules, 2006.
10. Construction material should be properly disposed off after the construction work is over.
11. As described in the report environmental monitoring should be strictly followed and monitoring report should be shared with DoE to ensure the environmental management properly.



12. At the time of commissioning of the distribution lines, underground lines, insulated lines, substation and other construction/ upgradation utmost precautionary measures should be taken to reduce the possibility of accident.
13. The Environmental Impact Assessment (EIA) included in the EMP Report shall strictly be implemented and kept functioning on a continuous basis.
14. All pollution incidents shall be reported immediately and simultaneously to the nearby Office of the Department of Environment.
15. Full and adequate utilization of the techniques for mitigation of pollution and environmental damage as well as that for treatment of wastes shall be ensured.
16. Comprehensive Environmental Performance report shall be submitted on a monthly basis to the DoE Head Office and Khulna Divisional office including actual intervention and the rehabilitation, mitigation and treatment options adopted at the project site.
17. All parameters of effluent discharge and gaseous emission shall be within the limits in the Environment Conservation Rules (ECR) 1997. In case of hazardous waste shall be adhered to Hazardous Waste and Ship breaking Waste Management Rules, 2011.
18. There shall be specific format for Environment Monitoring. Environmental Monitoring Reports shall be made available to DoE Head Office and Khulna Divisional office on a monthly basis during the whole period of the development project.
19. Rehabilitation of human settlement or compensation for any sort of activity which will incur damage or loss of public or private property or any natural resources shall be addressed as per Government of Bangladesh rules and regulations;
20. Appropriate permission would be required to obtain from the Forest Department in favor of cutting/felling of any plant/tree/sapling forested by any individual or government before doing such type of activity.
21. Bangladesh Rural Electrification Board (BREB) shall extend active cooperation to DoE officials to facilitate their visit to the site as and when necessary.
22. This clearance is valid for one year from the date of issuance and the project authority shall apply for renewal to the Khulna Divisional Office of DoE with a copy to the Head office of DoE at least 30 days ahead of expiry.
23. Violation of any of the above mentioned conditions shall render this Environmental Clearance as void and legal action will be taken as per Environmental Conservation Act, 1995 and relevant Rules made under the Act.
24. This Environmental Clearance Certificate has been issued with the approval of the appropriate authority.


(Masud Iqbal Md. Shameem)
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Project Director

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Copy Forwarded to:

1. PS to Secretary, Ministry of Environment, Forest and Climate Change, Bangladesh Secretariat, Dhaka.
2. Director, Department of Environment, Khulna Divisional Office, Khulna.
3. Assistant Director, Office of the Director General, Department of Environment, Head Office, Dhaka.