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Environmental & Social Impact Assessment (ESIA)

For

Modernization and Capacity Enhancement Project of BREB Network (Chattogram -Sylhet Division)

July 2024

Prepared for

Bangladesh Rural Electrification Board

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LIST OF ACRONYMS

AEZ	Agro-Ecological Zone
BBS	Bangladesh Bureau of Statistics
BMD	Bangladesh Meteorological Department
BREB	Bangladesh Rural Electrification Board
BWDB	Bangladesh Water Development Board
BOD	Biochemical Oxygen Demand
BOQ	Bill of Quantity
CITES	Convention on International Trade of Endangered Species
CPR	Cultural Property Resources
COD	Chemical Oxygen Demand
CDMP	Comprehensive Disaster Management Programme
DO	Dissolved Oxygen
DoA	Department of Archeology
DoE	Department of Environment
DL	Distribution Line
DPP	Detail Project Plan
DoE	Department of Environment
DGM	Deputy General Manager
ECC	Environmental Clearance Certificate
ECR	Environment Conservation Rules
ECA	Environment Conservation Act
EA	Executing Agency
ESF	Environmental & Social Framework
EHS	Environment Health and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
FI	financial intermediary
FGD	Focus Group Discussion
FD	Forest Department
GAP	Gender Action Plan
GBV	Gender Base Violence
GHG	Greenhouse Gas
GIS	Geographical Information System
GM	General Manager
GoB	Government of Bangladesh
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
HFL	Highest Flood Level
IEE	Initial Environmental Examination
IA	Implementing Agency
IPP	Indigenous People Plan
MoEFCC	Ministry of Environment, Forests and Climate Change
NOx	Oxides of Nitrogen
NYS	Not Yet Standard
OHS	Occupational Health and Safety
PCBs	Poly Chlorinated Biphenyls
PBS	Palli Bidyut Samity
PD	Project Director
PM	Particulate Matter
PIU	Project Implementation Unit
PPE	Personal Protective Equipment
RE	Retainer Engineer
RAP	Resettlement Action Plan
ROW	Right of Way

SO_2	Sulphur Dioxide
SEP	Stakeholder Engagement Plan
SPIA	Sub Project Influence Area
SPC	Spun Pre-Stressed Concrete
SPM	Suspended Particulate Matter
SPS	Safeguard Policy Statement, 2009
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
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EXECUTIVE SUMMARY

INTRODUCTION AND BACKGROUND

At present BREB is rendering its services through 80 PBSs and BREB has already achieved 100% electrification with recommendable success. According to Vision-2041 of Perspective Plan (2021-2041) SDG-7, the demand for electricity will increase by 9.3% in the period 2021-2041. According to this plan, there is a need to increase the capacity of the distribution system, and the implementation of the proposed project will increase the capacity of the distribution network, increase reliability and efficiency.

BREB is willing to initiate a modernization and capacity enhancement project in 19 palli bidyut samity (PBS) such as Brahmanbaria PBS, Chandpur PBS-1, Chandpur PBS-2, Chattogram PBS-1, Chattogram PBS-2, Chattogram PBS-3, Cox's Bazar PBS, Comilla PBS-1, Comilla PBS-2, Comilla PBS-3, Comilla PBS-4, Feni PBS, Habiganj PBS, Lakshmipur PBS, Moulvibazar PBS, Noakhali PBS, Sylhet PBS-1, Sylhet PBS-2, and Sunamganj PBS in Chattogram and Sylhet Divisions.

OBJECTIVES OF THE STUDY

The overall objective of this study is to ensure that the project is developed in an environmentally sound and sustainable manner ensuring that all possible negative effects are mitigated as best as practical and positive impacts are enhanced. More specifically, the ESIA aims to identify the likely potential impacts to be generated by the project and to provide a set of actions that need to be implemented to meet national and international environmental safeguard standards. The key objectives of the study are as follows:

SCOPE OF WORK

The scope of the present ESIA report describes the following most important features:

i) A review of the environmental & social legislative, regulatory and policy guidelines and considerations relating to the implementation of the project; ii) A review of the AIIB ESF guidelines and GAP analysis between AIIB and GoB policies ;iii)A general description of the project and existing physical, biological, and socio-economic conditions; iv) Analysis of different alternatives and associated facilities to the project in terms of environmental and social perspectives; v) Identification and assessment of the potential impacts on the natural and human environment in the project area due to implementation of the project; vi)Consultation with the locals/stakeholder involving concerned people in order to identify and act on any undocumented or perceived environmental issues; vii)Identification of mitigation measures in the form of an Environmental & Social Management Plan (ESMP); and viii) Recommendations and conclusions in order to operate the project work in a sustainable manner.

APPROACH & METHODOLOGY

A combination of primary and secondary data was used in this ESIA study. The primary data includes the data from direct field observations and secondary data includes a review of the relevant information from several government departments relevant secondary reports. Discussions were held with stakeholders including government officials, community representatives, etc. To establish the baseline biophysical conditions within the study area, relevant secondary and primary data were collected and reviewed, a comprehensive field visit was undertaken, and several consultations with local people were carried out. As limited secondary information on the environmental quality and the ecology of the study area is available, By successfully categorizing the likelihood and consequence of potential impacts, direction can be given to those potential impacts that should be subjected to the most rigorous attention. So, a schematic of the risk assessment process adopted for the development of this ESIA.

POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

Due to the nature and small scale of this project and applying the ESF-2021 of AIIB the project has been classified as category B project as it has a limited number of potentially adverse environmental and social impacts.

According to the guidelines, illustrated in ECR, 1997 of DoE, this project falls under the red category of projects on the basis of location, size and severity of potential environmental pollutions. it needs to prepare Environmental Impact Assessment (EIA) in due course following prescribed format and to be submitted to the DoE for getting the Environmental Clearance Certificate (ECC) during project feasibility and detailed design stage respectively. BREB has already got the ECC and further renewal from the DoE as per ECR, 1997. However, the project is not classified under any category as per the latest ECR, 2023 which has been published on 05 March 2023.

Considering the project implementation, the land acquisition should be completed before any civil work starts as per ARIPA 2017. However, the generally ARIPA 2017 will not be followed for substations sites under PBS of the BREB, but willing buyer and willing seller mechanism followed for the project. In case of negotiation failure or seller refuses to sell the land at any point, PBS will change location and ask for another seller. There will be no expropriation. All the relevant policies & guidelines related to the project scope are discussed on main chapter.

PROJECT DESCRIPTION.

The main project components under this project are to construct 90 nos. of 33/11 kV new Sub-station (+1512MVA), to upgrade of 49 nos. of 33/11 kV existing sub-station (+550 MVA), to construct 12430 km (New/Up-gradation) of 33kV and bellow voltage line, to construct/purchase 234 km. of 33kV underground/submarine cable, to construct/purchase 298 km. of 11kV underground/submarine cable, to construct 4990 km. of insulated line, conversion of 3320 km LT to HT line, conversion of 4950 km HT 1-ph to HT 3-ph line, reconstruction/ rehabilitation of 3678 km line in flood affected area, construction of 11 sets river crossing tower, construction of 11 sets switching stations, installation of 3 set SCADA system for fifteen substations incorporation in Chattogram PBS-1, Comilla PBS-3 & Habiganj PBS, installation of 9000 sets fault locator.

The tentative commencement date of the project is 1st July 2024, and the estimated date of completion is 30 June 2029. Total cost of the project is estimated for 2029 is 9028989.20 Lakh BDT.

BASELINE ENVIRONMENTAL AND SOCIAL DATA

The baseline environmental quality is assessed through field studies within the impact zone for various components of the environment like air, noise, water, land, and socio-economic conditions etc. Data was collected mostly through an environmental survey using a checklist that was already mentioned in the methodology. Collection of primary information includes extrapolating environmental features on proposed subproject design, tree inventories, location, and measurement of socio-cultural features adjoining proposed development. Consultation was another source of information for understanding local environmental conditions, impacts, suggestions, etc. The process also gathered information from relevant concerns authorities and local community to address these in the project implementation stage. When the survey was conducted, all the substation's locations were not yet selected, that's why the survey team surveyed the project location on sample basis where most of the land are purchased. BREB always intends to purchase the land far away from the resettlement and sensitive receptor. Details are discussed in the main chapter of this report.

Baseline environmental quality survey was conducted during the ESIA preparation. This chapter shows that the air quality meets the national standard for most of the sampling station except for a few parameters exceeds the standard limit. From the assessment of the ambient

air quality noise monitoring of the project area, it has been anticipated that all the parameters are within national standard according to the ECR-97.

The noise result shows that the time-weighted average value of the sound monitored around the project slightly exceeded the standard set for Noyakandi (59.2 db), Sadullahpur (51.4 dB), Matlab-uttor, Chandpur and both sampling locations of Cox's Bazar (66 db) and Sitakundu (57.7 dB) in the daytime.

From the test result, it is seen that all parameters are within national standard except DO and BOD value of surface water in Ghopal, Feni and pH value of surface water in Ramu, Cox's Bazar. However, that pH value was 8.62 indicating slightly basic water.

The Chattogram division forms with several notable river systems. The Meghna, Matamuhuri, Titas, Dakatia, Gumti, Feni, Karnafuli, and Sangu are the major rivers of this division. Aquifer material of Chattogram division is covered with 25-30 m thick zone of silt and clay.

During survey works no archeological sites major educational and religious institutions were observed at substations site and distribution line areas. BREB always prioritized those areas where no interventions affect the properties of the local community.

The Sylhet division forms the Surma-Meghna-Kushiara River system. The Surma-Meghna-Kushiara River System is one of the three major river systems of Bangladesh and drains one of the world's heaviest rainfall areas. The most significant waterway within the Study Area is the Surma River which flows through the center in an east-west direction. In the study area, there is limited information that is available or accessible in the aquifer systems. As per the seismic zone classifications, project area falls in Zone I means high seismic intensity. The project areas are located in low river flooding, moderate river flooding, moderate tidal surge, severe tidal surge and non flood prone areas.

Data for housing types for Sylhet division shows that most people in the subproject areas live in a kacha house, followed by semi-pucca, then pucca and lastly jhupri. In these project areas, only 43.1% of the households have electricity connections.

While identifying the diversity of floral and faunal species in the subproject areas, some wildlife species were identified as locally vulnerable. The names of these vulnerable species is Bengal monitor, Rat snake, Common vine snake, Crested Serpent-eagle, Yellow-footed green pigeon, Common mongoose etc. According to the IBAT assessment for the proposed project components, it has been noted that, there is no critical and endangered species is found within 1 km of project area of interest. No CR, EN Chiroptera (Bats) has identified within the project influence area. In addition, there is no key Biodiversity Area and Protected area found within the 1 km of the PIA.

There are no archaeological sites, sensitive cultural or biodiversity receptors of international, national, state, or district importance including protected areas, key biodiversity areas, forest areas, sacred groves, or historical/cultural monuments around the identified substation sites or along the alignments.

ANALYSIS OF ALTERNATIVES

In the Chattogram-Sylhet Region of South-eastern Bangladesh, the project will enhance the country's rural distribution network, minimize aggregate, technical and commercial (AT&C) losses, increase the existing sub-stations capacity, and number of sub-stations within the geographical area of 19 PBS, the 33 KV source line which will be approved by SE&D directorate of BREB. For selection of optimum route of distribution lines some points are taken into consideration: as well as river crossing towers, the following points are taken into consideration: (i) The route of the proposed DL does not involve any human rehabilitation. (ii) Any monument of cultural or historical importance is not affected by the route (iii)The proposed route of DL does not affect any public utility services like playgrounds, schools, other establishments etc. (iv)The line route does not pass through any sanctuaries, National Park etc. (v) The line route does not infringe with area of natural resources. In addition, care is also taken to avoid Ecologically Critical Areas (ECA), critical areas, forest areas, homesteads,

cultural sites etc. Keeping above in mind the routes of proposed lines under the project has been so aligned that it takes care of above factors. As a result, the 'with'' project option was chosen above the 'no project' option. However, during the design phase, different route alignment will be studied for the selection or finalization of DL route. Detail impact assessment of different line routes will be assessed then.

EVALUATION OF ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS WITH MITIGATION MEASURES

Most of the impacts are likely to occur during construction stage and are temporary in nature. In pre-construction period, impact is primarily caused due to land clearing, cutting of full-grown trees, borrowing of earth and relocating Public Utility. Removal of mature trees will cause ecological loss to the environment, takes initiative to replant trees as per the guidance of Forest Department (FD) of Bangladesh (e.g., minimum two tree seedlings to be planted for each tree felled after completion of the construction activities of the project).

As well as pollution, health, and safety risks to workers and the community health safety issue in proximity to the work if the construction activities are not well managed. Pollution, health and safety risks to workers and the community will remain during operation and maintenance works. The major potential environmental impact during construction is associated with old equipment, particularly transformers that leak and which may contain oil depending on the date of manufacture and oil replacement. Removal, storage and disposal of phased-out transformers will be done in accordance with international good practices and the Government regulations to ensure that there will be no residual impact associated with the disposal of any old transformers that were found to contain PCBs. The procurement division of BREB is always aware of this PCB related issues. Now there is no use of PCB containing material at BREB, Since the practice of using PCB in transformers is already voided in BREB. For the existing and proposed sub-station within the geographical area of every PBS, the 33KV source line is proposed and it will be approved by BREB. Comprehensive risk assessment has been carried out during each of these Project stages form the basis for potential impact identification and analysis.

According to the final DPP no land acquisition will occur. Rest of the land will be purchased by win-win situation as BREB's policy. Upgradation of existing lines will have no significant impact on surrounding environment. For the exixting line upgradation, the height of the pole and line will never change. New lines are not defined yet, the lines may cross some agricultural lands, therefore there will be some temporary impacts in terms of crop loss which is not significant. However, this environmental & social study confirmed that most of the line will go through aisle of both barren & cropland and most of the lines will be constructed by the alongside of existing roads.

The new lines will be defined considering public demand. New lines will be constructed for the newly constructed Sub-station's 33 kV source and supply side 11 kV backbone which is a very small amount in comparison to the total line to be constructed. For 33 kV & 11 kV lines very few cases or a very small portion of total line may go through the private agricultural land. Based on lineonline type generally 25 to 32 numbers of pole required in per km distribution line construction work, each pole costed on average 2'-2' area of land and the land area affected by ROW is 10' from the center of the line either side (both for 33 kV & 11 kV line). As per the BREB's early experience since most of the lines will are going through public land there will not beare not any mentionable permanent and temporary economic/ physical displacements. However, for this project the distribution line route will be finalized during detail design stage and the impact will be assessed if any DL line go through the private land and that result in physical displacement. Besides, it should be mentioned that there is no legal provision of Bangladesh Electricity Act 2018 to compensate any land loss that took place in construction of Distribution line. However, this is the key gap with AIIB ESS-2. To minimize the gap, BREB has kept the provision to compensate for affected crops, tree and for vulnerable households. In Construction of distribution lines there will be no use of towers. Poles will be used in construction of lines. Generally, SPC Pole will be used as SPC poles are environment

friendy and use recycled materials and contribute less to deforestation compared to wooden poles. The extent of land required for the installation pole is very small and whichand varies based on pole size. Generally, each pole costs on average 2'-2' area of land.

Therefore, there will be some temporary impacts in terms of crop loss which is not significant. However, this environmental & social study confirmed that most of the line will go through aile of both barren & cropland and most of the lines will be constructed by the alongside of existing roads. The new lines will be defined considering public demand and it will be confirmed after a detailed design process. Approximately 30 poles will be installed per kilometer and one electric pole require 2/2 feet space. Resettlement costs will not be applicable for pole erection. During transportation if any crop land is affected then crop compensation will be given.

A total of Eleven (11) river crossing towers will be constructed having very minimal impact over the surrounding environment. The main reason for the minimal impact is, all of the river crossing tower will be constructed far away from the riverbank and there is no possibilities of flood and erosion. BREB will get navigation clearance from BIWTA prior to construction of river crossing tower. The project will create opportunities for employment and supplier business during project construction. These will be through increases in income generating sources.

There is no adverse impact on the existing water pipes, gas pipelines, and power/ telephone lines.

There will be temporary effects in terms of loss of crops during the construction of distribution lines which will be very minimal and can be mitigated during the construction. During unavoidable circumstances. The distribution length alignment has been initially prepared and based on early surveys, total 12430 km distribution line (excluding underground, submarine, conversion, insulated conductor, and reconstruction of line in flood prone area) are estimated for 33kV and below voltage line. The exact loss will be known during the construction which will mostly be avoided and mitigated and if not, will be compensated. No, structures are expected to be affected under the lines. Electric poles may be constructed mainly on the government land (roadside land). Some poles may be constructed on the private land with adequate consent from landowners. BREB is always aware of this issue and tries to avoid as much as possible.

LABOR AND OSHE

The primary objective of ESS-1 as per AIIB on "Environmental & Social Assessment & Management" is to promote sound labour management relationships and enhance the development benefits of a project by treating workers in the project fairly while also providing them with safe and healthy working conditions.

During the construction phase of the project, a huge number of manpower will be required. Use of locally available labors creates minimum effects on social risks such as gender-based violence, theft, price hiking of daily used products etc.

A Labor Management Plan (LMP) and Occupational Health and Safety (OHS) Plan will be prepared by the respective contractor. GRM will be established to address community grievances related to health and safety aspects.

A Workers' Code of Conduct has been outlined for this proposed project which is essential to ensure the safety, efficiency, and professionalism of all personnel involved in the project. Construction of these substations and distribution line projects can involve various tasks, so the Workers Code of Conduct outlined the key aspects like safety, Training and Certification, Electrical Codes and Regulations, Quality Workmanship, Worksite Cleanliness, Emergency Procedures, Biodiversity Conservation, GBV Prevention: SEA and SH Prevention etc.

ENVIRONMENTAL & SOCIAL MANAGEMENT PLAN

A detailed ESMP with possible mitigation measures during pre-construction, construction, and operational phases has been proposed in this ESIA report. The ESMP table has been spit out

for turn-key contractor and for the line contractor. A standard compensation plan has to be developed for the individuals or households who are affected due to the proposed project and any injury, or diseases occur during construction or operation phase.

The BREB is the key authority to follow up all the relevant environmental safeguard requirements following institutional arrangement. In addition, the relevant organizations such as PBS, RE section of PBS, contractor, DoE and FD are also included. Enhancement of the capacity of the BREB's ESU is required for the effective implementation of proposed mitigation measures and monitoring the resultant effect, some training programs and awareness workshops are also essential.

An ESMP budget has prepared for the proposed project. ESMP. ESMP budget delineate that the total budget for pre-construction phase & construction phase is BDT 3,27,29,600 and this budget will derive from the project capital cost. In addition, the recurrent cost will be considered for the operation phase. For the operation period the budget is prepared on a yearly basis.

MONITORING & REPORTING

A monitoring schedule has been drawn up based on the environmental components that may be affected during the preconstruction/construction and operation stages of the project. Monitoring activities will be performed during the four years of construction period. The schedule of implementing the ESMP has been prepared based on the environmental issues/parameters illustrated in the ESMP which will be followed at a certain period of the project. However, this implementation schedule is subject to change depending on the existing situation.

The BREB is the key authority to follow up all the relevant environmental safeguard requirements following institutional arrangement. In addition, the relevant organizations such as PBS, RE section of PBS, contractor, DoE and FD are also included.

PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

The eight (08) consultation meetings were conducted in different 08 PBS. No significant environmental and social concerns were raised, and all stakeholders consulted strongly support the project and are looking forward to the benefits of improved electricity services. Some pointed out that the project will provide benefit to students as they will get assured power supply during the evening for studying. As per the information disclosure processes, BREB has also arranged a workshop on ESIA and RPF where GM/SGM of all respective PBSs and other officials were present. The consultant presented specific findings along with suggestions on the environmental and social aspects of the RPF and ESIA.

STAKEHOLDER ENGAGEMENT PLAN & GRIEVANCE REDRESS MECHANISM

BREB Authority and contractors are responsible in the implementation of Stakeholder Engagement activities. This Stakeholder Engagement Plan is developed for the current Project design and capacity and is designed to facilitate information disclosure, consultation and participation, grievance redress mechanism within the project area throughout construction stage.

As a partner in the delivery of this project, the AIIB's environmental safeguard requirements were carefully considered during the preparation of this ESIA. The description of a grievance redress mechanism (GRM) is not required under the GoB environmental legislation but is mandatory for any AIIB-funded project. Each GRC will have 5 members:

- Project Implementing Agency (BREB) the official who is in charge of all construction and other activities at individual worksites will act as convener.
- A male worker representing the workers.
- A female worker representing the workers.
- Resident engineer of the Construction Supervision Consultant.
- A PIU official, designated by the Project Director, is not associated with the construction activities in the field but a member of the PIU.

CONCLUSION AND RECOMMENDATION

Government of Bangladesh's vision on the power sector is 'To ensure affordable, reliable, sustainable and modern electricity services for all the people of the country by 2030.'. Access to affordable, and reliable electricity is a key requirement for both economic development and poverty reduction. Without improved electricity coverage, particularly in rural areas, Bangladesh cannot achieve the goals of national plans. So, this project has contributed to achieving the vision, mission of the Ministry/ Division and Implementing Agency

However, no infrastructure development can be anticipated without environmental consequences. The positive benefits on the nation and human beings will only be relevant, and long-term growth will only be achievable, if the negative effects are avoided through the stringent maintenance and control procedures outlined for this project. All of these would necessitate careful attention and cost money, and the project authorities should take these factors into account.

I. INTRODUCTION

A. BACKGROUND

1. Government of Bangladesh has accentuated first concern to speed up the pace of electrification program throughout the country Access to affordable and reliable electricity is a key requirement to both economic development and poverty alleviation. It is considered as the driving force of all development activities. Bangladesh Rural Electrification Board (BREB) has been established as a vital institution to help improving the quality of life of the vast rural multitude and accomplish continuous advancement to their socio-economic conditions through the supply of stable and reliable electric power to the rural areas of the country. At present BREB is rendering its services through 80 PBSs and BREB has already achieved 100% electrification with recommendable success.

2. According to Bangladesh Government's power system master plan (PSMP-2016), BREB has to cover a supply of 13,500 MW by the year 2025 and 18,200 MW of electricity by the year of 2030 as against National demand of 27,009 MW in2025, and 39,670 MW in 2030 respectively. As per 8th Five Year Plan of the Government of Bangladesh, power sector has been identified as a top priority and has considered increasing power consumption by more than 8% per annum and also has emphasized on ensuring uninterrupted, reliable and quality power supply, efficiency development and affordable prices, which is consistent with the proposed project. Also, as per SDG-7 (Ensure access to affordable, reliable, sustainable and modern energy for all), the Target is 'By 2030, ensure universal access to affordable, reliable and modern energy services and the indicators are (a)' Proportion of population with access to electricity' and (b) 'Proportion of population with primary reliance on clean fuels and technology'. As action to Indicator (a) it is 100% achieved. About the other indicator (b) this project is consistent with the indicator.

3. According to Vision-2041 of Perspective Plan (2021-2041) SDG-7, the demand for electricity will increase by 9.3% in the period 2021-2041. According to this plan, there is a need to increase the capacity of the distribution system, and the implementation of the proposed project will increase the capacity of the distribution network, and also increase reliability and efficiency.

4. BREB holds the capacity to cater 8,700 MW load at present, which is far behind the target. At present, for all the 80 PBSs the aforesaid master plan cannot be implemented unless its capacity is enhanced. Existing overloaded distribution lines and sub-stations are required to be upgraded & the total power networking system has to be modernized to meet and to provide improved quality deliverable power at the consumer end. BREB has, therefore, targeted to take on a 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. A feasibility study in this respect is therefore essential to identify the future demand of electricity for a modern & sustainable electricity distribution network and resource requirement for the purpose of supply of un-interrupted, reliable, quality and affordable electricity.

5. On the other hand, forecasted demand according to the PSMP-2016 in 19 PBSs is 3165 MW in 2030, To meet up this demand considering 60% of loading and 15% diversity factor, the substation capacity has to be 7750 MVA by 2030. Total capacity including the capacity addition through running projects will be 4300 MVA. So, it's needed to enhance the capacity (7750-4300) =3450 MVA.

6. In line with these projections, it is proposed to enhance the capacity of 3070 MVA (2062 MVA in place and 1512 MVA facility created) in the proposed project through the construction of 90 nos.(+1512 MVA in place & 1512 MVA facility created) of 33/11 kV new

substations, augmentation of 49 nos. (+550 MVA) existing 33/11 kV substations, construction of 12,430 km 33 KV & bellow voltage line (New/ Up-gradation) line, 234 km 33 LV underground/submarine cable, 298 km 11kV underground/submarine cable, 3678 km line rehabilitation in flood prone area and 13,260 km conversion of existing lines; i.e. 29,900 km new/ up-gradation/ conversion will be done in the project area. Currently, about 1,22,000 km, (HT+LT) distribution lines,238 Nos. 33/11kV sub-stations (4278 MVA) are energized to serve shout 920 million consumers of different categories under these nineteen (19) PBSs in Chattogram -Sylhet divisions. All the subcomponents of the project are given in the following table.

*	Construction of 33/11 kV new Sub-station	+1512	MVA	:	90	Nos.
*	33/11 kV Sub-station Augmentation	+550	MVA	:	49	Nos.
	Total Substation	**+2062**	**MVA**	:	**139**	**Nos.**
*	Construction of 33kV and bellow voltage line (New/Up-gradation)			:	12430	km
*	33kV underground/submarine cable			:	234	km
*	11kV underground/submarine cable			:	298	km
*	Installation of insulated conductor			:	4990	km
*	Conversion of LT to HT line			:	3320	km
*	Conversion of HT single Phase to HT three phase			:	4950	km
*	Reconstruction of line in flood prone area			:	3678	km
	Total Line			:	**29900**	**km**
*	Construction of River crossing Tower			:	11	set
*	Construction of Switching Stations			:	11	set
*	Installation of SCADA System for 15 substations at Chattogram PBS-1, Comilla PBS-3 & Hobiganj PBS.			:	3	set
*	Installation of Fault Locator			:	9000	set

7. BREB has prepared the Environmental and Social Impact Assessment study for aforesaid 19 PBSs of Chattogram - Sylhet Division under the name of 'Modernization and Capacity Enhancement of BREB Network (Chattogram - Sylhet Division) Project'.

8. BREB is willing to initiate a modernization and capacity enhancement project in 19 palli bidyut samity (PBS) such as Chattogram -1 PBS, Chattogram -2 PBS, Chattogram -3 PBS, Cox's Bazar PBS, Feni PBS, Lakshmipur PBS, Comilla-1 PBS, Comilla-2 PBS, Comilla-3 PBS, Comilla-4 PBS, Noakhali PBS, Brahmanbaria PBS, Chandpur-1 PBS, Chandpur-2 PBS, Sylhet -1 PBS, Sylhet -2 PBS, Sunamganj PBS, Moulvibazar PBS, Habiganj PBS in Chattogram - Sylhet Division.

B. OBJECTIVES OF ESIA

9. The implementation of the project activities has both positive and negative impacts on the surrounding environment. These impacts will be on the physio-chemical, biological/ecological, and socio-economic environment. Hence, to prevent and/or to reduce the negative environmental impacts to an acceptable level and to enhance the positive environmental impacts linked with the implementation of the subproject activities of the project; an ESIA is to be required.

10. The overall objective of this study is to ensure that the project is developed in an environmentally sound and sustainable manner ensuring that all possible negative effects are mitigated as best as practical and positive impacts are enhanced. More specifically, the ESIA aims to identify the likely potential impacts to be generated by the project and to provide a set

of actions that need to be implemented to meet national and international environmental safeguard standards. The key objectives of the study are as follows:

- Present a general description of the project and the process.
- Analyze and compare E&S impacts among alternatives of the project.
- Identification of applicable national and international legal environmental and social requirements
- Establishment of environmental and socio-economic baseline conditions of the study area
- Identify the environmental & social impacts of the project and quantify them to the extent possible.
- Propose measures to avoid, reduce, minimize and mitigate the negative environmental impacts of the project.
- Development of Environmental and Social Management Plan (ESMP)

C. SCOPE OF THE ESIA STUDY

11. As per AIIB's Environmental and Social Framework (ESF), The bank determines the Project's category on the basis of the Project's component presenting the highest environmental or social risk and potential impacts (including direct, indirect, cumulative and induced impacts, as relevant, in the Project area). The Project has been tentatively assigned Category B under the Bank's Environmental and Social Policy (ESP). because A Project is categorized B (i) it has a limited number of potentially adverse environmental and social impacts; (ii) the impacts are not unprecedented; (iii) few if any of them are irreversible or cumulative; (iv) they are limited to the Project area; and (v) they can be successfully managed using good practice in an operational setting. In this case the project is lying into category B.

12. The scope of work for the ESIA study involves environmental & social assessment of the activities involved in the 19 PBSs authorities under Chattogram -Sylhet Divisions. The work involved includes several small subprojects spread across 19 PBSs. This ESIA report has been prepared to keep in view the requirement of AIIB. The scope of the present ESIA report describes the following most important features:

- A review of the environmental legislative, regulatory and policy guidelines and considerations relating to the implementation of the project.
- A review of the AIIB ESF guidelines and gap analysis between AIIB and GoB policies.
- A general description of the project and existing physical, biological, and socio-economic conditions.
- Analysis of different alternatives and associated facilities to the project in terms of environmental and social perspectives.
- Identification and assessment of the potential impacts on the natural and human environment in the project area due to implementation of the project.
- Consultation with the locals/stakeholder involving concerned people in order to identify and act on any undocumented or perceived environmental issues.
- Identification of mitigation measures in the form of an Environmental & Social Management Plan (ESMP); and
- Recommendations and conclusions in order to operate the project work in a sustainable manner.

D. METHODOLOGY OF ESIA STUDY

1. Approach

13. The study has been conducted in accordance with Environment Conservation Rules (ECR), 2023 and EIA Guidelines for Industries, 2021, and AIIB Environmental and Social Framework (ESF) and its relevant Environmental and Social Standards (ESSs) 2021. The

study is based on both primary and secondary data and information. The primary data includes data collected from field observations and secondary data includes review of the Bangladesh statistical and relevant information from Government Departments. For social baseline, discussions were held with stakeholders including government officials, community representatives and a wide range of beneficiaries by the respective PBS. The main purpose of this approach was to obtain a fair impression of the people's perceptions of the project and its environmental impacts.

2. Methodology

14. To establish the baseline biophysical conditions within the study area, relevant secondary and primary data were collected and reviewed. Further, a comprehensive field visit was undertaken, and a number of consultations with local people were carried out. For a better assessment, the data collection program was planned as per the Terms of References (ToR). The data generated allowed us to better understand the complex interplay between the various biotic and abiotic factors within the study area and to establish the baseline conditions. Once this baseline was established it was used as a reference point to identify potential changes to the environment that may occur as a result of the proposed project activities, as well as to allow the development of measures to prevent, mitigate or manage these potential impacts. The following methodology was adopted for carrying out the ESIA of the proposed project:

a) Environmental Data Collection and Analysis

15. This section describes the methods and techniques used to investigate and describe the potential environmental risks of the Project. To establish the baseline biophysical conditions within the Project area, relevant secondary and primary data was identified and reviewed, a comprehensive field visit program established, and a number of specialist studies were carried out. This included the gathering of primary and secondary data from various sources including from discussions with groups, discussion with individuals, Government sources, PBS officials and from locally active NGOs.

16. The assessment of potential environmental impacts requires detailed information on all aspects of the habitats, biodiversity and physical aspects of the Project area. It also requires development of an understanding of how the existing environmental processes work together to form a complex ecosystem. This information can be used to identify potential changes to the environment that may occur because of the Project, and to propose measures to prevent mitigate or manage potential environmental impacts.

17. The potential for environmental impacts was considered for activities during all stages of the proposed Project. This includes site establishment, drilling operations and site decommissioning and demobilization stages. As the environments within the Project area have not been widely studied in the past, knowledge gaps identified within the consultation phase have been filled through detailed investigations and field visits as part of this more comprehensive ESIA report.

(i) Secondary Data Collection

18. A review was conducted of the biophysical, ecological and legal literature relevant to the Project. The review of secondary sources and informal initial field investigations were undertaken to prepare a preliminary assessment of the physical and social environment, biodiversity, and conservation significance of the identified study area. This preliminary literature reviews also assisted in identifying data gaps which would require collection of additional primary information through physical field survey. The following activities were included in this phase of the Project:

- Data and information were collected from various government relating to site aspects climate (weather), groundwater quality and soils; secondary ecological data sources were collected and assessed.

- An appraisal was made of all legislation having direct and indirect relevance to environmental management within the Study Area including aspects such as biodiversity conservation, water quality, waste management, natural resource management and spill response;
- Previous environmental site studies, where available, were reviewed as well as relevant scientific journal articles; and
- Thereafter, an information gap analysis was undertaken to identify the areas where further primary data collection would be required to complete the ESIA.

19. Further detail regarding the titles of the relevant literature, policies, acts and other regulations and guidelines reviewed and applied during the course of this process can be found in legal section of this report.

(ii) Baseline Data Collection and Analysis

20. Primary data collection was initiated to fill gaps in knowledge resulting from the secondary data review. Further, it aimed to provide a site-specific data set of relevant physical and biological environmental aspects relevant to the Project. The primary data collection program was undertaken in April 2019. During the field visit, stakeholders were consulted, and several important additional secondary sources of environmental information, data and literature were collected.

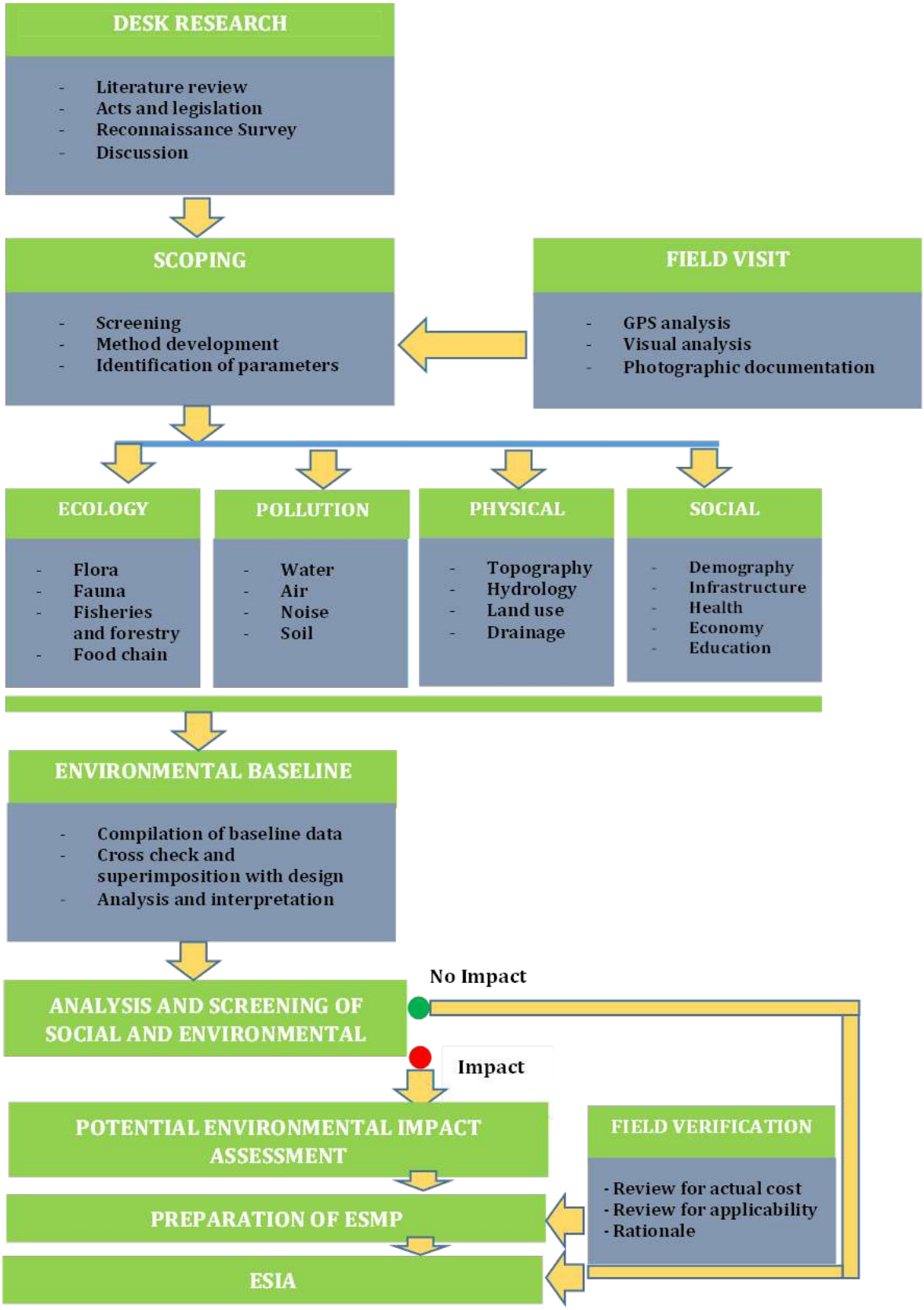


Figure I-1 Route map of Environmental & Social Impact Assessment (ESIA)

Physical Environment Field Survey

21. To comprehensively evaluate the existing Project area baseline conditions, a field visit and data collection program incorporating a number of biophysical investigations was developed and implemented. A desktop assessment was then prepared to enable the collection of refined and verifiable information. The field survey program was conducted throughout the Project area by a specialist environmental team.

22. This survey aimed to identify important environmental components and environmental issues within the study area. It included investigation and observation of the local landforms, market location, habitat types, drainage patterns, species abundance and distribution, soil types, water quality (surface water and groundwater), air quality, noise, vibration and hydro-morphology.

23. The study area and surrounds were surveyed on foot and by boat. Important environmental features were identified and logged. Hand-held geographic positioning systems (GPS) were used to identify specific features for mapping and further analysis in the Project office. Features that were recorded or ground-truthed with GPS included:

- ✓ Habitation and settlement areas;
- ✓ Cultural Property Resources (CPR);
- ✓ Plantations;
- ✓ Habitat areas;
- ✓ Sensitive environments; and
- ✓ Transportation routes;

24. Direct observation and key informant interview techniques were employed within the field survey. Direct observations were subject to accessibility and were guided by satellite image maps and local information. Observations were made along rivers, roads, embankments, and local footways across the agricultural fields and village groves. An environmental observation checklist was completed for each of the areas.

Ecological Field Survey

Initially, secondary data sources were reviewed to compile a potential presence/absence list of significant fauna and flora species. Thereafter two members among the field survey team were deployed to undertake the required sampling and assessment. Sampling and survey were conducted for both aquatic and terrestrial ecosystems; validation checks were confirmed against the earlier-compiled species lists to establish a comprehensive baseline.

25. The following activities were undertaken during the terrestrial and aquatic field surveys:

Direct Observation

26. Direct observation on the occurrence and abundance of flora and fauna was made while travelling along road edges, across the agricultural fields, the forest areas and within village groves. As well as direct sightings, identification of animal presence was also based on identification of tracks, footprints, feeding signs and animal/bird calls. Appropriate field guides and data preforms were used for this activity so that information was accurately recorded.

Interviews with Local Residents

27. Many of the mammalian and reptilian species are cryptic and unlikely to be encountered using standard field sampling methods. As such, experience suggests that interviews with local people are a very useful method for collecting information on local biodiversity. This data is anecdotal and as such should not form the core of any assessment;

however, it does nonetheless provide useful supplementary information. During the field survey period, extensive interviews with local people were conducted to collect information on animal and plant presence, including occurrences, behavior, breeding, distribution and seasonal appearance.

Socioeconomic Field Survey

28. The ESIA study mostly used the socio-economic data collected by the Social and Resettlement Team for social assessment. However, during the environmental survey some consultations were conducted with the local people on environmental issues, but social conditions were also discussed.

Consultations

29. For this report, Focus Group Discussions (FGD) were conducted along the project corridor. A team of experienced professional and support staff has conducted surveys and consultation meetings after being briefed about the project. The respondents were selected by random sampling method from each of the locations. Respondents' contact information was collected for further verification, if and when required.

Geographical Information Systems (GIS)

30. Geographical Information Systems (GIS) was used as a specialized analysis and presentation tool. Before commencing field investigations, spatial analysis of satellite imagery and present administrative areas and other boundaries/constraints was considered for the environmental assessments. For example, the sanctuaries, forest areas, spawning grounds, infrastructures, and the contract packages were identified. It also supports more detailed on-ground survey, particularly spatial features that may be directly or indirectly influenced by Project activities.

31. Detailed on-ground validation of spatial information – particularly land use – was undertaken using a hand-held, non-differential GPS. The spatial data acquisition team took detailed transect walks through the Project area in order to identify various land use types and confirm the findings of the satellite imagery analysis. This extensive ground-truthing exercise both validated the land use mapping and identified additional sensitive areas to include within the environmental fieldwork for sampling.

b) Impact Assessment Methods

32. The ESIA process identifies the potential environmental & social impacts that may result from the implementation of the project. Both positive and negative potential impacts for the project were identified through the application of standardized international best practice methods of environmental & social impact assessment. Some of the methods of environmental & social impact assessment utilized include:

- Ad-hoc methods;
- Application of expert judgment;
- Risk based approach including residual risk assessment;
- Systematic and sequential approaches; and
- Spatial analysis methods (including GIS).

33. Further to these methods, social potential impacts were assessed based on previous experiences and opinions of local people and important stakeholders e.g., government agencies and through literature review relevant to the Project area. Social impacts were identified through public consultations, focus group discussions and from BBS 2011. Till now, only 5 lands have been purchased by PBS for these proposed substations. During the survey 3 sites were surveyed and later on all the land purchase status has been collected from

respective PBSs. Since, the new distribution lines and it's route is not finalized at this stage. So, the survey work couldn't be possible for new distribution lines. However, we have assessed the generic impact of construction of dl as per BREB's earlier experiences.

34. The principal method for assessing the potential impacts of the Project on the biophysical and social environments utilized for this ESIA was risk assessment. Details on the risk assessment process and how it was utilized to identify impacts, the likelihood and consequence of the actions and implement appropriate mitigation measures to reduce any potential impacts to an acceptable level is detailed within the following sections.

Risk Assessment Matrix of Proposed Project

35. Relevant environmental issues were taken from the ESIA and further investigated within the ESIA utilizing a risk-based assessment methodology. Risk assessment is a process that supports the analysis of potential negative impacts that may result from implementation of a Project. It provides a means of categorizing how potential impacts are to occur, and of categorizing what the potential consequences might be if impacts were to occur. Risk assessment is the primary method of impact assessment that is applied in this ESIA.

36. Risk assessment was utilized in this ESIA as the primary tool to support environmental and socio-economic impact assessments. It provides a means of categorizing the frequency and magnitude of potential impacts and provides a basis for the application of different degrees of mitigation and management measures.

37. By successfully categorizing the likelihood and consequence of potential impacts, direction can be given to those potential impacts that should be subjected to the most rigorous attention. Such impacts are designated as potentially significant impacts. Alternatively, potential impacts that are shown to be infrequent and a low magnitude of consequence can be treated as insignificant. Figure I-2 presents a schematic of the risk assessment process adopted for the developed of this ESIA.

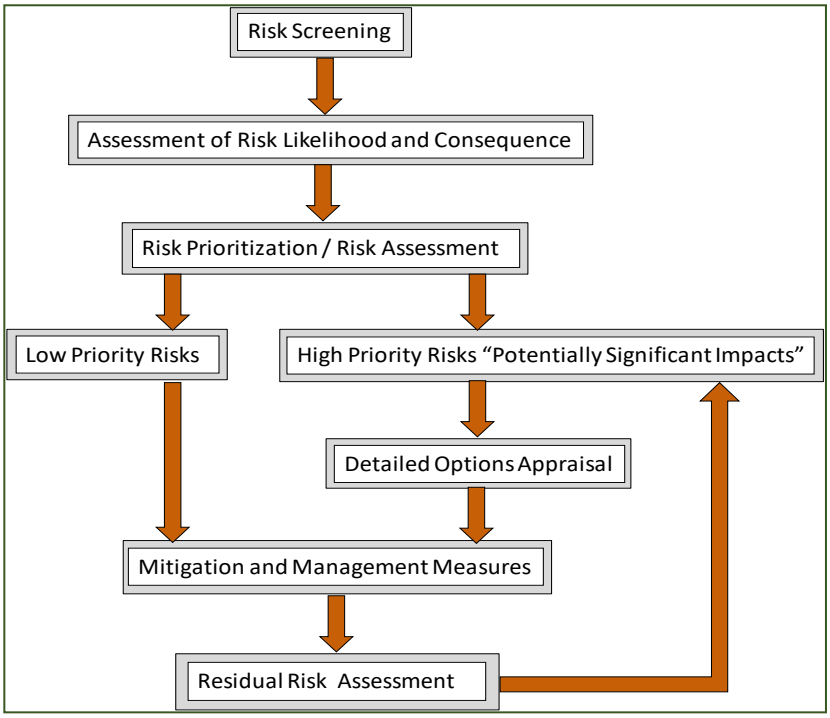


Figure I-2 Risk Assessment Process

38. All socio-economic and environmental impact assessment methods, including risk assessment, incorporate a degree of inherent uncertainty. This is largely due to the unavoidable variations and uncertainties characterized by natural, social and economic systems. However, the use of risk assessment allows analysis of risks (or potential impacts) to be classified on an empirical scale. Such a scale is useful because it limits the inherent subjective and interpretive nature of impact assessment. Further accuracy in risk assessment results is driven by the workshop approach to hazard categorization and through the application of experienced expert knowledge.

39. Certain impacts identified in this section have the potential to be significant. The determination of whether a given potential impact is significant depends on several factors:

- The potential for on-site and off-site impacts;
- The potential for direct and indirect impacts;
- The frequency and duration of a potential impact;
- The geographic area affected by a potential impact
- The period of time affected by any potential impact;
- The sensitivity of the receiving environment; and
- The degree of confidence with which the potential impacts of the action/activity are known and understood.

40. Measures of potential impact significance as part of the Project planning and assessment phase presented in this ESIA have been determined using a risk-based model. The risk-based model is a two-dimensional matrix of 'magnitude of impact' and 'likelihood'. Both are assigned score between 1 and 5 based on severity or probability and multiplied to obtain the 'risk band'.

41. The 'magnitude of impact' is a 5-point based scale set by expert's judgment. The scale and its explanation are given in Table I-1.

Table I-1: Explanation and Assignment of Scores to 'Magnitude of Impact'

Color Band	Incidental	Minor	Moderate	Major	Severe/catastrophic
Score	Score: 1	Score: 2	Score: 3	Score: 4	Score: 5
Explanation	Impacts such as localized or short-term effects on habitat, species or environmental media.	Localized, long term degradation of sensitive habitat or widespread, short-term impacts to habitat, species or environmental media	Impacts such as localized but irreversible habitat loss or widespread, long-term effects on habitat, species or environmental media	Widespread and persistent changes in habitat, species or environmental media	Persistent reduction in ecosystem function on a landscape scale or significant disruption of a sensitive species.

42. The 'likelihood' is also a 5-point based scale set by expert's judgment. The scale and its explanation are given below.

Table I-2: Explanation and assignment of scores to 'likelihood'

Color Band	Rare	Unlikely	Seldom	Occasional	Likely
Score	Score: 1	Score: 2	Score: 3	Score: 4	Score: 5
Explanation	Rare or unheard of	Reasonable to expect that the consequence	Exceptional conditions may allow	Conditions may allow the consequence to	Consequence can reasonably be

Color Band	Rare	Unlikely	Seldom	Occasional	Likely
		will not occur during this project though has occurred several times in industry	consequences to occur within the project lifetime	occur during the project lifetime, or the event has occurred within similar projects	expected to occur in life the project

43. Therefore, "Risk" factor is derived from the following equation:

Risk = Magnitude x likelihood

44. The score of 'Risk' ranges from 1 to 25. The score is classified in 3 classes. The explanation is given in Table I.4. The score matrix for risk assessment has been used to identify the priority environmental impact and their mitigation plan.

Table I-3: Two-Dimensional Risk Assessment matrix

Impact			MAGNITUDE OF IMPACT				
			Incidental	Minor	Moderate	Major	Severe/cats.
			Score: 1	Score: 2	Score: 3	Score: 4	Score: 5
LIKELIHOOD	Rare	Score: 1	1	2	3	4	5
	Unlikely	Score: 2	2	4	6	8	10
	Seldom	Score: 3	3	6	9	12	15
	Occasional	Score: 4	4	8	12	16	20
	likely	Score: 5	5	10	15	20	25

E. THE ESIA TEAM

45. BREB has formed a multidisciplinary team of professionals having experience in conducting the ESIA of large-scale industrial and infrastructural development projects. The following table I-4 represents the names with the position of the professionals.

Table I-4: ESIA Team with the names and position of the professionals

SL	Key Personnel Name	Designation for this Assignment	Area of Expertise Relevant to the Assignment
1.	Md. Shafiqur Rahman	Team Leader / Environmental Specialist	Environmental Science, Water Resources Development
2.	Mamun Ar Rashid	Social Development Specialist	Social Science
3.	Raisin Akter Feroz	Biodiversity Expert	Environmental Science/ Ecology
4.	Madhu Sudan Das	GIS Expert	Urban & Regional Planning
5.	Saiful Islam Imran	Junior Environmental & Social Specialist	Environmental Science

F. CONTENTS OF THE REPORT

46. This report includes the following main elements.

Chapter I: Introduction and background

This chapter consists of the background of the project along with the objectives, scope and the methodology of preparing the ESIA report. This chapter also includes the organization of the total ESIA report.

Chapter II: Policy, Legal and Administrative framework

In this chapter the national and international laws and policies are described which are relevant to the environmental aspects of the project. The relevant guidelines of the funding agency AIIB

are also described in this chapter. Finally, the requirements for making ESIA for this project according to DoE and AIIB are described.

Chapter III: Description of the Project

This chapter includes the background and objectives of the proposed project. The location of the project, proposed project interventions and project cost are described here. In total, this chapter gives a detailed idea about the project.

Chapter IV: Baseline Environmental and Social Data

This section provides the definition and baseline conditions or attributes of the study area and its existing physical, biological and socio-economic environment. This section presents both environmental and socio-economic aspects and draws upon both secondary and primary data collection. Maps tables, figures and plates are used to present relevant data about the study area to provide a comprehensive picture of the existing environment prior to Project implementation.

Chapter V: Analysis of alternatives

In this chapter, the alternative options of the proposed project are analyzed. It starts from no project alternative and ends at analyzing all the possible alternatives. This chapter concludes by declaring the proposed project as the best solution after analyzing all the other alternatives.

Chapter VI: Evaluation of Environmental and Social risks and impacts & Mitigation Measures

In this chapter, the possible environmental impacts due to the implementation of this project and their mitigation measures have been illustrated. Besides, the restoration process of the loss due to the project activities has also been discussed in this section. This chapter also describes mitigation measures and major residual negative impacts that cannot be mitigated and, to the extent possible, assesses the acceptability of those residual negative impacts.

Chapter VII: Labor and OSHE

This chapter includes indicating the potential risks of the project on labor and OSHE, working conditions and management of workers, and also specifies assessment of GBV risks in relation to labor camps/influx.

Chapter VIII: Environmental & Social Management Plan

This chapter includes the Environmental and Social Management Plan which includes the impacts of the proposed project on the environment and society is described. All the anticipated impacts in the pre-construction stage, construction stage and operational stage are described here.

Chapter IX: Public Consultation and Information Disclosure

This section presents the outcomes of the stakeholder engagement and consultation undertaken as part of the ESIA. Different types of engagement and consultation were undertaken with different stakeholder groups including local and divisional government administrations, the local community, business and social leaders, NGO's and individuals. These were largely undertaken by one-on-one meetings, small group interviews, and focus group discussions.

Chapter X: Stakeholder Engagement Plan & Grievance Redress Mechanism

This chapter includes the details methodology and mechanism for stakeholder management plan and the grievances from the local people during the implementation of the project.

Chapter XI: Conclusion and recommendation This chapter includes the conclusion, and some recommendations are suggested here about the proposed project.

G. LIMITATIONS

47. The major limitation of this report is that all of the substation's land was not purchased when we conducted the survey and that distribution line routes are not finalized. The BREB land purchase process is an ongoing endeavor, and this ESIA report is a live document that will undergo updates in the near future. During the detailed design phase, the distribution route will be decided, and it may be modified to some amount based on demand. Apart from these restrictions, there are also time limitations. Notwithstanding these drawbacks, BREB is continuously updating to make the report better based on available information.

48. For Environmental quality testing the air quality was done in 2022 since most of the substation site was not finalized. So, air quality was monitored in four PBS locations in Chattogram division and two PBS locations in Sylhet division. During the survey, river crossing tower locations were not finalized. Therefore, it was not possible to carry out surveys and surface water quality testing on these proposed rivers crossing tower locations.

49. New environmental or social issues might arise during project execution that weren't identified in the ESIA. The report can't prescribe mitigation measures for these unforeseen circumstances. If any unforeseen situations arise then the designated E&S personnel will be updated with the ESIA and ESMP.

50. Although the ESIA process includes stakeholder participation and consultation, it may not adequately address all public concerns because BREB undertook stakeholder engagement activities in 2021 before all project components were finalized. In other words, the stakeholder failed to convey the issues brought up during the consultation sufficiently. In addition, local populations will need more knowledge about the project's components which are partially compliance in this report.

II. ENVIRONMENTAL POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

A. REGULATORY REQUIREMENTS FOR THE PROJECT

51. According to the national environmental legislation of Bangladesh all development projects are governed by some legal and institutional requirements. As such, assessment of relevant legal provisions, policies, strategies and institutional issues are very important for any project proponent or developer before execution of a program or plan. The proponent has to be well aware of these requirements and comply with the provisions as applicable and necessary. Before initiating any development project, it is hence required to obtain environmental clearance from DoE. Department of Environment (DoE), under the Ministry of Environment, Forests and Climate Change (MoEFCC) is the regulatory body responsible for enforcing the environmental laws and regulations like ECA'95 (amended in 2010) and ECR'23.

52. Regulatory requirements toward protection and conservation of environment and various environmental resources and also toward protection of social environment from adverse impact of projects and activities associated with them have been enunciated by the GoB as well as the AIIB relevant requirements are summarized below.

Table II-1: Applicable National Policy/Acts/Rules

Sl No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
1.	National Environment Policy, 2018	Major elements of the policy are • Natural equilibrium provision and overall development of the country through environmental protection and sustainable management • 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. • Maintain and streamline the environmental policies and strategies among other policy strategies in the interest of sustainable development. • Ensure the Environmental Impact Assessment and Strategic Environmental Assessment in all necessary sectors. • Actively involved as possible with all international environmental initiatives and take necessary actions at local and national levels.	The environmental policy aims at prevention of pollution and degradation of resources as some solid waste will be generated due to construction activities as well as some environmental pollution may be occurred due to construction of substation and other infrastructure development.
2.	National Environmental Management Action Plan (NEMAP), 1995	The NEMAP was developed with the following objectives: • to identify key environmental issues affecting Bangladesh. • to identify actions to halt or reduce the rate of environmental degradation. • to improve management of the natural environment. • to conserve and protect habitats and biodiversity. • to promote sustainable development; and	The plan proposes developing and applying guidelines to avoid environmental pollution due to transport and communication systems. It emphasizes different environmental pollution, hampers of natural drainage patterns, and agricultural land acquisition due to the

Sl No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
		• to improve the quality of life.	development of the transport system.
3.	Environment Conservation Act (ECA), 1995 (with all amendments)	The main objectives of ECA are: • Conservation and improvement of the environment; and • Control and mitigation of pollution of the environment. • The main focuses of the Act can be summarized as: • Declaration of ecologically critical areas and restriction on the operations and processes, which can or cannot be carried out/ initiated in the ecologically critical areas (ECA); • Regulations in respect of vehicles emitting smoke are harmful to the environment. • Environmental clearance. • Regulation of industries and other development activities' discharge permits. • Promulgation of standards for quality of air, water, noise, and soil for different areas for different purposes. • Promulgation of a standard limit for discharging and emitting waste; and • Formulation and declaration of environmental guidelines.	According to this law, no industrial unit or project shall be established or undertaken without obtaining an Environmental Clearance Certificate from the Director General in the manner prescribed by rules.
4.	The Water Act, 2013	The Act recognizes the significance of managing all water resources in the natural flow of surface water and recharge of groundwater. The private landowners will use the surface water inside their property for all purposes per the Act. No individuals or organizations will be allowed to extract, distribute, use, develop, protect, and conserve water resources, nor will they build any structure that impedes rivers and creeks' natural flow. Electrification projects that involve laying cables underground or installing new water pumps could fall under WARPO's purview for ensuring minimal impact on groundwater resources.	To regulate the water quality during the construction phase as well as six (06) river crossings will be constructed. As most of the underground cabling is used to connect substations and substations to outgoing feeder, no ground water sources will be affected, and no clearance will require.
5.	Environment Conservation Rules, 1997 (with all amendments)	The Environment Conservation Rules, 1997, were issued by the GOB to exercise power conferred under the Environment Conservation Act (Section 20), 1995. Under these Rules, the following aspects, among others, are covered: • Declaration of ecologically critical areas. • Classification of industries and projects into four categories. • Procedures for issuing the Environmental Clearance Certificate (ECC); and • Determination of environmental standards.	Following the Environment Conservation Rules (ECR) of 1997, the Project is classified as a Red Category, requiring a complete Environmental Impact Assessment (EIA) for BREB to obtain clearance for construction. BRBE has already obtained ECC from DoE. Rule 8(1) lists PCBs as scheduled hazardous waste, categorized as "Red List-3: Extremely Hazardous Waste. Rule 8(3) prohibits the import, manufacture, storage, sale, use, or disposal of Red List-3

Sl No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
			waste without obtaining prior permission from the DoE. Rule 12 specifies requirements for storage, labeling, and transportation of hazardous waste, which apply to PCBs in substations.
6.	Environment Conservation Rules, 2023	These rules categorize all the industries and projects as well as the types of environmental assessments that should be conducted in relation to each category of industries or projects. The ECR 1997 has been replaced by the ECR 2023.	According to ECR-2023 this project does not fall under any category.
7.	Environmental Courts Act, 2000	This Act sets out a policy for effective pursuance and completion of legal proceedings related to environmental crimes. Under this Act, the Director General of the DoE has the power to impose heavy penalties on industrial polluters who are dumping untreated wastewater into the environment or not operating their legally mandated ETPs.	According to this act, the government can take legal actions if any environmental problem occurs due to project interventions.
8.	Wetland Protection Act, 2000	The latest Wetland Act -- The Playground, Open Spaces, Gardens, and Wetland Conservation Act 2000 -- suffers from loopholes and inadequacies regarding the protection of water bodies. Section 1 of this Act suggests that it applies to the water bodies of the cities, divisional and district towns, and municipalities. The water bodies in the rural areas are outside the jurisdiction of this Act	The Act specifies the fine and imprisonment term for violation of its provisions. It does not direct the government to recover the original characteristics of the water bodies if someone fills them up.
9.	The Forest Act (1927) and the Forest (Amendment) Act (2000)	It is the main legislative context for forestry protection and management in Bangladesh. It was enacted to control trespass illegal resources extraction from forests and to provide a framework for the forestry revenue collection system	The Act is relevant to the sub-project as construction of the project intervention will require cutting some trees for distribution line.
10.	National Forest Policy (amendment), 1994	The policy is designed to conserve the existing forest areas, bring about 20 % of the country's land area under the Forestation Programme, and increase reserve forests by 10 percent per year to 2015.	The Act is relevant to the sub-project as construction of the project intervention will require cutting and trimming some trees.
11.	The Private Forests Ordinance, 1959	An Ordinance to provide for the conservation of private forests and the afforestation in some wetlands in Bangladesh.	According to Section 61 of this Ordinance, any land is required for any of the purposes of this Ordinance; such land shall be deemed to be needed for a public purpose.
12.	Bangladesh Wildlife (Conservation & Security) Act, 2012 (previously known as Bangladesh Wildlife (Preservation) Order, 1973; amended as Bangladesh Wildlife (Preservation) Act, 1974	This Act protects 1,307 species of plants and animals under four schedules that mandate imprisonment and fines for wildlife poaching, capturing, trapping, and trading.	This Act is relevant to the sub-project as an intervention may affect wildlife habitation and obstruct movement.
13.	National Water Policy, 1999	The policy emphasizes efficient and equitable management of water resources, proper harnessing and development of surface and groundwater, availability of	Measures must be taken to minimize disruption to the natural aquatic environment in streams and water channels.

Sl No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
		water to all concerned, and institutional capacity building for water resource management	This act is relevant to this ESIA as eleven (11) river crossings will be constructed, and some distribution line may be traversed through the water body.
14.	National Fisheries Policy, 1999	The National Fisheries Policy focuses on aquaculture and marine fisheries development. The policy suggests, among others, that biodiversity will be maintained in all-natural water bodies and marine environment, and control measures will be taken against activities that harm fisheries, resources, and vice-versa	The project required proper action to prevent biodiversity in all-natural water bodies and the aquatic environment. This act is relevant to this ESIA as eleven (11) river crossings will be constructed, and some distribution line may be traversed through the water body.
15.	Protection and Conservation of Fish Act 1950 (Amended 1982)	This is framework legislation with rulemaking powers. Among others, some of these rules may prohibit the destruction of, or any attempt to destroy, fish by the poisoning of water or the depletion of fisheries by pollution, by industrial effluent, or otherwise.	The project requires proper action to prevent biodiversity in all-natural water bodies and the marine environment.
16.	National Agriculture Policy, 1999	This policy aims to make the nation self-sufficient in food through increasing production of all crops, including cereals, and ensure a dependable and secure food system for all	This act is relevant to this ESIA as most of the substations' land is agricultural land and the distribution route traverses beside the agricultural land. Due to project intervention's construction activities, adequate measures should be taken to reduce waterlogging and hamper the irrigation system.
17.	National Land Use Policy, 2001	The main contents of this policy are: •Stopping the high conversion rate of agricultural land to nonagricultural purposes. • Utilizing agro-ecological zones to determine maximum land-use efficiency. • Adopting measures to discourage the conversion of agricultural land for urban or development purposes. • Improving the environmental sustainability of land-use practices.	The proposed project must adhere to this policy to ensure the environmental sustainability of land-use practices.
18.	Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009	This is a comprehensive strategy to address climate change challenges in Bangladesh. Bangladesh Climate Change Strategy and Action Plan built on and expanded the NAPA.	Relevant as the sub-project area is prone to climate change effect. BREB always emphasizes climate resilient structure.
19.	The Acquisition and Requisition of Immovable Property Act 2017 (ARIPA)	It is the principal legislation governing eminent domain land acquisition in Bangladesh. The Act requires that compensation be paid for: (i) land and assets permanently acquired (including standing crops, trees, houses); and (ii) any other damage caused by such acquisition. The Act also provides the acquisition of properties belonging to religious organizations like mosques, temples, pagodas, and graveyards if acquired for the	The nature of the civil works related to the project like land purchased, Willing Buyer Willing Seller method have been adopted for land purchasing. However, if any land needs to be acquired in future, ARIPA 2017 needs to be considered.

Sl No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
		public interest. The Ministry of Land (MoL) is the authorized government agency to undertake the process of land acquisition. The MoL partly delegates its authority about the land acquisition to the Commissioner at the Divisional level and the Deputy Commissioner at the District level. The Deputy Commissioners (DC) are empowered by the MoL to process land acquisition under the act and pay compensation to the legal owners of the acquired property. Khas (government-owned land) should be acquired first when a project requires both Khas and private land. If a project requires only khas land, the land will be transferred through an inter-ministerial meeting following the acquisition proposal submitted to DC or MoL. The Government of Bangladesh does not have a national policy on involuntary resettlement. The new Act of 2017 has incorporated specific provisions to address social and economic impacts that were not previously included in the 1982 land acquisition ordinance. Therefore, these provisions under the new law would reduce the gaps between the national legislative framework of the government and AIIB policies.	
20.	Public Procurement Rule,2008	This is the public procurement rules of Bangladesh, and this rule shall apply to the Procurement of Goods, Works or Services by any government, semi-government or any statutory body established under any law. Conditions of service and employment including wages and payment, the establishment of Wages Boards, employment of young people, maternity benefits, working hours, and leave. (i) Safeguard the health and safety of all workers working on the Site and other persons entitled to be on it, and to keep the Site in an orderly state and (ii) Protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of the Contractors methods of operation.	Applicable for this project such as electric cable, transformers and necessary equipment will be purchased under this project.
21.	National 3R Strategy for Waste Management, 2010	The National 3R Strategy for waste management has been established by Department of Environment in December 2010. Sector specific strategies for promotion of 3R are depicted in this national 3R strategy. The national 3R goal for waste management is achieve complete elimination of waste disposal on open dumps, rivers, flood plains by 2015 and promote recycling of waste through mandatory segregation of waste at source as well as create a market for recycled products and provide incentives for recycling of waste.	During the construction period, some solid, non-hazardous waste may generate. So, this policy fits in this regard.
22.	Cultural Heritage	The Antiques Law of 1968 consolidates all laws relating to the preservation and protection of antiquities under the auspices	Project activities may lead to unearthing antiques or impact cultural heritage by chance.

Sl No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
		of the Department of Archaeology. The law empowers the Director of the Department of Archaeology to take steps necessary for antiquity's custody, preservation, and protection. The Environment Conservation rules (1997) state that GoB will consider the presence of human habitat, ancient monuments, or archeological sites, among other factors, in declaring an area as ecologically critical.	Therefore, laws related to cultural heritage and antiques apply to this project to protect these finds.
23.	Bangladesh Labor Act (Amendment), 2013	The Bangladesh Labor Act (Amendment) Bill was enacted by parliament in 2013, to make the present legislation more time-appropriate for workers' wellbeing. The bill was approved with the conditions of legalizing trade unions in factories, assuring worker safety at work, establishing mandatory group insurance, and prohibiting children from working in dangerous environments.	To carry out the civil work, labor will be required to be hired. Therefore, these laws will be triggered to safeguard the interest of the labor, host community, project authorities, Contractors, and other project stakeholders. The project will ensure that the stipulations of the law are duly followed when it comes to labor-related activities. There is no provision for workers family to live in workers camps during project construction period as the workers camps are dedicated for only workers and it is very unusual for workers family to reside with ototherorkers, but there will be some female workers who need adequate sanitation and lactate facilities in workers' camp. BREB always look after in this regard. No child labour will also allow in construction activities.
24.	The Building Construction Act 1952 (with subsequent amendments)	An Act to provide for the prevention of haphazard construction of building and excavation of tanks which are likely to interfere with the planning of certain areas in Bangladesh	Applicable as the project involves the development of infrastructure
25.	Electricity Act 2018	This act reveals, no license shall harm or obstruct or interfere with railways, highways, airports, waterways, canals, docks, wharves and jetties and pipes, during power generation, transmission, supply or distribution; and shall, in co-ordination with the concerned authority, take measures for protection and safety of the same. This grants the government and authorized parties the right to lay electric lines over private land, provided fair compensation is offered.	Applicable as the main theme of the project is the modernization of the electricity network and distribution of the electricity. Width of RoW varies depending on voltage level: distribution lines (≤33 kV). REB guidelines emphasize community involvement in RoW selection and negotiation to minimize local conflicts.

Sl No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
26.	Electricity Rules 2020	Electricity Rules has been published by the ministry on November 2020 based on Clause 59 of Electricity Act 2018 (SRO 297 of Act/2020). The main observation is to provide compensation for the installation of transmission line towers to the landowners as per the applicable laws and policy. As per this policy BREB shall ensure to provide compensation to project affected persons (PAPs) according to the rules.	Applicable as the main theme of the project is electricity generation and distribution
27.	Electricity Rules 2020 (Amendment on 2022)	Electricity Rules have been amendment on 10 February 2022 and published by the ministry on November 2020 based on Clause 59 of Electricity Act 2018 (SRO 297 of Act/2020). The main observation is to provide compensation for the installation of transmission line towers to the landowners as per the applicable laws and policy. As per this policy BREB shall ensure to provide compensation to project affected persons (PAPs) according to the rules.	Applicable as the main theme of the project is electricity generation and distribution
28.	GoB 8th Five Year Plan, 2021-25	The preparatory process of the 8th Five Year Plan is marked by the infestation of major global catastrophe 'COVID-19', which has caused consequential economic conundrum across the world. The Eighth Five Year Plan is unique compared to its preceding two plans as it blends the COVID-19 recovery strategies in the macroeconomic framework as well as developing sectoral strategies in the plan	Applicable as the project involves the development of infrastructure
29.	Water Resource Planning Act, 1992	An Act was made to ensure the development and balanced use of water resources. The Institution shall have the following functions, namely. • To conduct the general planning of environmentally balanced water resources for the purpose of developing water resources. • To determine the national means and methods for the scientific utilization and preservation of water resources. • To give advice to other institutions involved in the development, utilization and preservation of water resources.	As the project proponent consists of eleven river crossing towers and some distribution line traverse beside some river this policy is applicable.
30.	Power System Master Plan, 2016	To show the targets and approach in the Energy and Power Sectors in order to achieve Bangladesh's national goal: to achieve VISION2041 and become a high-income country by 2041.	Enhancement of imported energy infrastructure and its flexible operation. Efficient development and utilization of domestic natural resources (gas and coal)
31.	National Water Management Plan, 2001 (Approved in 2004)	The plan provides a framework within which all concerned with the development, management, and use of water resources water services in Bangladesh can plan and implement their own activities in a coordinated and integrated manner. The planned activity programs have been presented in the eight sub-sectoral clusters: i) Institutional Development, ii) Enabling Environment, iii) Main River, iv) Towns and Rural Areas, v) Major Cities; vi) Disaster Management; vii) Agriculture and Water Management, and viii) Environment and	The project proponent consists of eleven river crossing tower. This policy is applicable.

Sl No.	Policy/Acts/Rules	Key provisions and purpose	Applicability to the Project
		Aquatic Resources. Each cluster comprises of a number of individual programs.	
32.	E-waste management Rules 2021	On June 10, 2021, Bangladesh's Department of Environment (DOE) published the Hazardous Waste (e-waste) Management Rules, 2021 under the Bangladesh Environmental Protection Act, 1995. The main provisions of this regulation are as follows. • Registered manufacturers, recyclers, etc. shall obtain environmental clearance in accordance with the Bangladesh Environmental Protection Rules, 1997. • Manufacturers have to establish individual or joint collection centers and set aside funds for the management of WEEE.	As the project proponent may create some E-waste
33.	Solid Waste Management Regulations 2021	The Solid Waste Management Regulations 2021 were published in Bangladesh on December 23, 2021, under the Bangladesh Environmental Protection Act, 1995. The Regulations define the responsibilities of businesses involved in solid waste management and impose collection, recycling, and disposal obligations according to Extended Producer Responsibility (EPR) on manufacturers of non-biodegradable products such as glass, plastic, and bottles. The Regulations also include provisions for the treatment of solid waste such as composting and energy recover	As the project proponent may generate some E-waste
34.	Bangladesh Fire Service and Civil Defense Act, 2013:	This is the comprehensive law that established the legal framework for fire prevention, firefighting, and civil defense in Bangladesh.	This law establishes safety regulations for buildings and infrastructure, including fire prevention and emergency response plans relevant to electrical safety.

B. INTERNATIONAL CONVENTIONS, TREATIES AND PROTOCOLS (ICTPS)

53. Bangladesh is a party to a large number of international conventions; treaties and protocols (ICTPs) related to the Project and are committed to ensuring that these protocols are complied with during all development works. The five applicable ICTPs that BREB is also aware of and is complying with are enumerated in Table II-2.

Table II-2: International Conventions, Treaties and Protocols Signed by Bangladesh

Conventions	Years	Ratified/Accessed (AC)/Accepted (AT)/ Adaptation (AD)	Relevance
International Plant Protection Convention (Rome,) & Plant Protection Agreement for SE Asia and Pacific (1999 Revision)	1951 1999	01.09.1978 04.12.1974 (AC) (Entry into Force)	Ensuring that the Project work or construction materials do not introduce plant pests
Convention on Wetlands of International Importance ("Ramsar Convention":1971)		20.04.1992 (ratified)	Protection of important wetland and prevention of draining or filling during construction
Convention Concerning the Protection of the World Cultural and natural Heritage (Paris, 1972)		03.08.1983 (AT) 03.11.1983 (ratified)	Prevention of damage or destruction of culturally and/or historically significant sites, monuments, etc.
Convention on Biological Diversity, (Rio de Janeiro, 1992.)	1992	05.06.1992	Protection of biodiversity during construction and operation.
Convention on Persistent Organic Pollutants, Stockholm.	2001	In process	Restrict use of different chemicals containing POPs.
United Nations Framework Convention on Climate Change, (New York, 1992.)	1992	15.04.94	Reduction of emission of greenhouse gases.
Convention on Biological Diversity, (Rio De Janeiro, 1992.)	1992	03.05.94	Conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.
Kyoto protocol to the United Nations Framework Convention on Climate Change		21.8.2001 (AC) 11.12.1997 (AD)	Reduction of emission of greenhouse gases.
International Convention for Protection of Birds, Paris	1950	Signed	Protection of the birds in their wild state.
Convention Concerning the Prevention and Control of Occupational Hazards caused by Carcinogenic Substances and Agents, Geneva.	1974	Signed	To protect workers against hazards arising from occupational exposure to carcinogenic substances and agents.
Convention Concerning the Protection of Workers Against Occupational Hazards in the Working Environment due to Air Pollution, Noise and Vibration, Geneva	1977	Signed	Protection of workers' health against occupational hazards in the working environment due to air pollution, noise and vibration.
Convention on the Conservation of Migratory Species of Wild Animals, Bonn.	1979	Signed	Conservation and sustainable use of migratory animals and their habitats
Convention Concerning Occupational Safety and Health and the Working Environment, Geneva.	1981	Signed	Ensuring occupational health and safety of workers in all branches of economic activity.
Vienna Convention for the Protection of the Ozone Layer, Vienna	1985	02.08.90 (AC) 31.10.90 (entry into force)	Preventing human activities that may have adverse effects on ozone layer.
Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal.	1987	31.10.90 (entry into force)	Reduction of the abundance of the substances that deplete the ozone layer in the atmosphere, and thereby protect the earth's fragile ozone Layer.
Convention Concerning Safety in the Use of Chemicals at Work, Geneva.	1990	Signed	Regulating the management of chemicals in the workplaces I order to protect workers from

Conventions	Years	Ratified/Accessed (AC)/Accepted (AT)/ Adaptation (AD)	Relevance
			the harmful effects of these substances.
London Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, London.		18.03.94 (AC) 16.06.94 (entry into force)	To strengthen the control procedure and extend the coverage of Montreal Protocol to new substances.
Preparedness, Response and Cooperation (London, 1990.)30.11.90United Nations Framework Convention on Climate Change, New York	09.06.92	15.04.94	Achieving stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.
Convention on Biological Diversity, Rio De Janeiro	05.06.92	03.05.94	Conservation of biological diversity (or biodiversity) and sustainable use of its components.
International Convention to Combat Desertification, Paris.	14.10.94	26.01.1996 (Ratification) 26.12.1996 (entry into force)	Combating desertification and mitigating the effects of drought.
Agenda 21, UNCED, Rio de Janeiro	1992	Signed	Ensuring sustainable development.
Montreal Amendment of the Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal		27.7.2001 (Accepted) 26.10.2001 (Entry into force)	Controls in the trade of ozone depleting substances and the use of licensing procedures to control the import and export of new, recycled and reclaimed ozone depleting substances.

Source: MoEFCC, 2013

C. ASIAN INFRASTRUCTURE INVESTMENT BANK (AIIB) ENVIRONMENT AND SOCIAL FRAMEWORK AND STANDARDS

54. The AIIB Environmental and Social Framework (ESF), 2021 provides an overview of the AIIB concerning (a) environmental and social sustainability; and (b) its role in meeting the challenge of sustainable development in Asia. The pursue of complete objectives of development is framed within the ESF in terms of both local impacts, and global challenges, especially in climate change. The ESF provides general specifications, standards and objectives, that clients should adhere to during project preparation and implementation. Thus, the ESF attaches importance to country regulatory systems as sources of legally binding procedures and standards.

55. The Environmental and Social Policy (ESP) in the ESF comprises essential environmental and social requirements for each project and is accompanied by: (a) three associated mandatory Environmental and Social Standards (ESSs) setting out requirements applicable to clients on, respectively, Environmental and Social Assessment and Management, Land Acquisition and Involuntary Resettlement and Indigenous Peoples; (b) an Environmental and Social Exclusion List (ESEL); and (c) a Glossary of certain terms used in the ESP and ESSs.

56. The three ESSs mentioned in the ESP are, ESS 1: implementation of environmental and social assessment and management, ESS 2: prevent/minimize involuntary resettlement and ESS 3: protection of vulnerable/indigenous people. These standards require clients to implement structured process of impact assessment, planning, and mitigation to address the adverse effects of projects throughout the project cycle. Together, the ESP and the ESSs comprise an environmental and social management approach designed to: (i) ensure

environmental and social screening and categorization, (ii) analyze future project environmental and social threats, and impacts; (iii) identify measures to prevent, reduce, mitigate, cover or make up for project environmental and social impacts; (iv) provide a process to consult the public on environmental and social risks and impacts of projects and to disclose information.

57. The AIIB classifies all its projects into four categories. The project is categorized as Category A if it is likely to have adverse environmental and social impacts that are irreversible, cumulative, diverse or unprecedented and requires the client to conduct an Environmental and Social Impact Assessment (ESIA) with Environmental and Social Management Plan (ESMP). A project is categorized as Category B when: it has a limited potentially adverse environmental and social impacts; the impacts are not unprecedented; few if any of them are irreversible or cumulative; they are site-specific; and can be successfully managed using good practice in an operational setting and requires clients to conduct an initial review of the environmental and social implications of the Project. A Project is categorized C when it is likely to have minimal or no adverse environmental and social impacts, and the client is required to prepare a review of the environmental and social aspects of the Project. A Project is categorized FI if the financing structure involves the provision of funds to a financial intermediary (FI) for the Project, whereby the Bank delegates to the FI the decision-making on the use of the Bank funds, including the selection, appraisal, approval and monitoring of Bank-financed subprojects. The Bank requires the FI to develop and apply an appropriate ESMS that is proportional to the environmental and social risks associated with the Bank-supported portfolio, is consistent with this ESP, excludes from Bank support activities covered in the ESEL and incorporates applicable provisions of the ESSs.

1. Key Elements of Environmental & Social Framework

58. The objective of this overarching policy is to facilitate achievement of these development outcomes, through a system that integrates sound environmental and social management into Projects. The overarching policy comprises Environmental and Social Policy (ESP), and Environmental and Social Standards (ESSs) and Environmental and Social Exclusion List. The ESP sets out mandatory requirements for the Bank and its Clients relating to identification, assessment and management of environmental and social risks and impacts associated with Projects supported by the Bank.

Environmental and Social Standards

59. The environmental and social standards (ESSs) set out more detailed mandatory environmental and social requirements, as described below.

60. Environmental and Social Standard 1 (ESS 1). The ESS 1 aims to ensure the environmental and social soundness and sustainability of Projects and to support the integration of environmental and social considerations into the Project decision-making process and implementation. ESS 1 is applicable if the Project is likely to have adverse environmental risks and impacts or social risks and impacts (or both). The scope of the environmental and social assessment and management measures are proportional to the risks and impacts of the Project. ESS 1 provides for both quality environmental and social assessment and management of risks and impacts through effective mitigation and monitoring measures during the course of Project implementation. The ESS 1 defines the detailed requirements of the environmental and social assessment to be carried out for any project to be financed by the Bank.

61. Environmental and Social Standard 2 (ESS 2). The ESS 2 is applicable if the Project's screening process reveals that the Project would involve Involuntary Resettlement (including Involuntary Resettlement of the recent past or foreseeable future that is directly linked to the Project). Involuntary Resettlement covers physical displacement (relocation, loss of residential

land or loss of shelter) and economic displacement (loss of land or access to land and natural resources; loss of assets or access to assets, income sources or means of livelihood) as a result of: (a) involuntary acquisition of land; or (b) involuntary restrictions on land use or on access to legally designated parks and protected areas. It covers such displacement whether such losses and involuntary restrictions are full or partial, permanent or temporary. The ESS 2 defined detailed requirements of resettlement planning of the projects involving involuntary resettlement.

62. Environmental and Social Standard 3 (ESS 3). The ESS 3 is applicable if Indigenous Peoples are present in, or have a collective attachment to, the proposed area of the Project, and are likely to be affected by the Project. The term Indigenous Peoples is used in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees: (a) self-identification as members of a distinct indigenous cultural group and recognition of this identity by others; (b) collective attachment to geographically distinct habitats or ancestral territories in the Project area and to the natural resources in these habitats and territories; (c) customary cultural, economic, social or political institutions that are separate from those of the dominant society and culture; and (d) a distinct language, often different from the official language of the country or region. In considering these characteristics, national legislation, customary law and any international conventions to which the country is a party may be considered. A group that has lost collective attachment to geographically distinct habitats or ancestral territories in the Project area because of forced severance remains eligible for coverage, as an Indigenous People, under ESS 3. The ESS 3 defines the detailed requirements of People planning, in case such groups are present in the project area and are likely to be affected by the project.

63. AIIB requires the client to establish, in accordance with the ESP and applicable ESSs, a suitable grievance mechanism to receive and facilitate resolution of the concerns or complaints of people who believe they have been adversely affected by the Project's environmental or social impacts, and to inform Project-affected people of its availability. People who believe they have been or are likely to be adversely affected by a failure of the Bank to implement the ESP may also submit complaints to the Bank's oversight mechanism in accordance with the policies and procedures to be established by the Bank for such mechanism.

64. ESF 2021 has also provisions for identify measures to avoid, minimize, or mitigate potentially adverse impacts on and risks to physical, biological, socioeconomic and cultural resources, safety of both workers and affected community and natural resources during the design, construction, operation, and decommissioning of the project.

2. Applicability of AIIB ESS

65. Modernization & Capacity Enhancement of BREB Network (Chattogram - Sylhet) project triggers the local environmental and social laws and regulations and also the ESP and ESS of AIIB. Under this project, ESS 1: Environmental and Social Assessment and Management and ESS 2: Involuntary Resettlement are applicable. The ESIA (this study) addresses ESS1 and RPF addresses ESS 2. In the Sylhet and Moulvibazar areas, there are indigenous people such as Monipuri and Khashia. But, during the baseline and census studies, proposed substations land has been found to be located far away from the inhabitant of indigenous people. However, in Sylhet PBS-2 area most of the IP community is resided. As a result, Standards on Indigenous Peoples (ESS 3) are triggered by the proposed project. Detail information will be derived after land audit report.

66. The Bank requires its clients to manage the environmental and social risks and impacts associated with its project in a manner designed to meet the ESP and the applicable ESSs. The present ESIA has been developed in compliance with the ESS 1. The applicability of ESP and ESSs for the proposed project is presented in Table II-3.

Table II-3: Applicability of AIIB ESS

Environmental and Social Standards		Applicability	Triggering Status
ESS 1	Environmental and Social Assessment and Management	ESS 1 is applicable if the Project is likely to have adverse environmental risks and impacts or social risks and impacts (or both)	Yes, since the proposed project is likely to have negative environmental and social impacts. The present EISA has been conducted in compliance
ESS 2	Involuntary Resettlement	ESS 2 is applicable if the project is likely to cause involuntary resettlement impacts.	Yes. The project involves economic displacement due to the siting of the project. Given such impacts, though low intensity in nature, ESS 2 is triggered
ESS 3	Indigenous Peoples	ESS 3 is applicable if Indigenous People are present in the project area and they	Proposed projects of any PBS have been found to be located far away from the inhabitant of indigenous people such as Monipuri and Khashia, during the baseline and census studies in the Sylhet and Moulvibazar

D. PROJECT CATEGORIZATION BY GOB

67. Under the ECR 1997, a classification system was established for development projects and industries on the basis of the location, the size, and the severity of potential pollution. There are four categories of projects: green, orange A, orange B and Red with respectively no important, minor important, medium important and severe environmental impacts. According to the guidelines illustrated in the ECR, this project falls under the red category of projects.

68. "Red Category: According to ECR-97 of DoE "Water, power and gas distribution line laying/relaying/extension"" projects fall under Red Category; Red category project needs to conduct IEE and EIA and submit the report to DoE for ECC."

69. Therefore, for this project, it needs to prepare an IEE and EIA in due course following prescribed format and be submitted to the DoE for getting the ECC of the project. The EIA should include the prediction, evaluation and mitigation of environmental impacts and an EMP.

70. BREB has got Environmental Clearance Certificate (ECC) from DoE as per ECR 1997 and further renewal also done. But the proposed project does not classify under any category for substation or distribution line construction as per new ECR 2023.

E. CATEGORIZATION BY AIIB

71. The Bank determines the Project's category on the basis of the Project's component presenting the highest environmental or social risk and potential impacts (including direct, indirect, cumulative and induced impacts, as relevant, in the Project area). The Bank assigns each proposed Project to one of the following four categories and determines the type of assessment and instrument required. Based on AIIB ESF-2021, four categories are as follows:

1. Category-A
2. Category-B
3. Category-C
4. Category-FI

72. The AIIB Environmental and Social Framework determines the project category by the type of the project's component presenting the highest environmental or social risk, including

direct, indirect, cumulative and induced impacts, as relevant, in the project area. The Environmental and Social Standards mentioned in the ESP covers environmental and social assessment and management, involuntary resettlement and vulnerable/indigenous people. These standards require clients to implement structured processes of impact assessment, planning, and mitigation to address the adverse effects of projects throughout the project cycle. Together, the ESP and the ESSs comprise an environmental and social management which require that: (i) environmental and social screening and categorization is ensured early, (ii) future project environmental and social threats and impacts are analyzed; (iii) measures are identified to prevent, reduce, mitigate, cover or make up for project environmental and social impacts; (iv) a process to consult the public on environmental and social risks and impacts of projects and to disclose information is provided. The ESF applies to all AIIB-financed projects, including private sector operations, and to all project components.

73. Due to the nature and small scale of this project and applying the AIIB ESF-2021 the project has been classified as category B project. Category B refers to proposed projects if it is likely to have a limited number of potentially adverse environmental and social impacts; the impacts are not unprecedented; few if any of them are irreversible or cumulative; they are site-specific; and can be successfully managed using good practice in an operational setting. For this category, the Bank determines the appropriate environmental and social assessment documentation the Client is required to prepare on a case-by-case basis. If the Bank determines that this Project has limited impacts with well-known mitigation and monitoring measures, it may decide that the only required environmental and social assessment document is an ESIA, ESMP or ESMPF (or both, as applicable), or another Bank-approved document.

F. GAP ANALYSIS BETWEEN AIIB'S REQUIREMENTS AND NATIONAL LAWS

74. As part of the E&S capacity assessment of IAs, a gap analysis between AIIB's ESSs and GoB Regulations was performed. The gap analysis revealed that Bangladesh's ES risk assessment and management system for development projects is open-ended, but, like other countries' EIA systems, does not cover all of the AIIB ESF's ES Standards. The ECA/ECR does not even define the scope of the EIA study (or the IEE), leaving that to the EIA preparation to determine through initial assessment/screening. The scope of the ESIA study would thus be determined by the expertise of the EIA team or the DoE reviewers. There is no guarantee that each ESS Standard (1-3) is considered in the ESIA study and the development of the ESMP. Despite the fact that the ESIA is heavily weighted toward environmental issues, more and more social issues are being incorporated into the assessment. Furthermore, under normal circumstances, the practice does not include labor management issues. Another critical gap is the absence of provisions requiring the development of project-specific ES management plans. In the case of non-titled entities, the eminent domain land acquisition system, for example, does not require the preparation of a RAP. In addition, the projects are not required to develop their own Labor Management Procedures/Plans. Because of the gaps, this ESIA will adhere to the most stringent standards and requirements. Table II-4 below provides an overview of the gaps between GoB laws and AIIB's ESSs, as well as steps to close those gaps.

Table II-4: Gaps Between GoB Laws and AIIB ESSs

AIIB's ESF Standard	Objectives	Requirements	Applicability	Gaps	Gap Minimization
ESS1: Environmental and Social Assessment and Management	• Identify and assess potential environmental and social risks and impacts of projects. • Develop and implement measures to avoid, minimize, mitigate, or compensate for adverse impacts. • Manage environmental and social risks and impacts throughout the project cycle. • Enhance stakeholder engagement and information disclosure.	• Conduct environmental and social impact assessment (ESIA) for projects with potential significant impacts. • Develop an Environmental and Social Management Plan (ESMP) to address identified risks and impacts. • Implement environmental and social management measures during project implementation. • Monitor and report on environmental and social performance. • Engage stakeholders meaningfully in the assessment and management process.	ESS 1 is applicable if the Project is likely to have adverse environmental risks and impacts or social risks and impacts (or both)	(i) EIA study screening and scoping do not guarantee coverage of all ESS standards in the assessment. (ii) EIA study does not advocate to include both the environment and social impacts at same scale but the ESF does. (iii) The stakeholder engagement during the conduct of the EIA is limited and the EIA report is not disclosed. (iv) The EIA system in Bangladesh does not require analysis of alternatives.	ESIA has suggested to follow the ESS1 requirements, given in the relevant sections of Environmental Management Procedures.
ESS2: Involuntary Resettlement	• Avoid or minimize involuntary resettlement wherever possible. • Ensure that displaced persons are compensated fairly and assisted in improving or at least restoring their livelihoods and living standards. • Implement resettlement in a manner that is consistent with applicable laws and regulations, and with international best practices.	• Prepare a Resettlement Plan (RP) that outlines resettlement and compensation measures for affected people. • Conduct a census of affected people and assets. • Provide compensation for lost assets at replacement value. • Assist displaced persons with relocation and livelihood restoration. • Monitor and evaluate resettlement outcomes.	ESS 2 is applicable if the project is likely to cause involuntary resettlement impacts.	Bangladesh: ARIPA (i) does not require the preparation of RAP in case of titled and non-titled entities. (ii) does not provide compensation or assistance to those who do not have formal legal claim to the land; (iii) does not provide transitional allowances for restoration of livelihoods for informal settlers. (iv) relies on cash compensation.	A RPF has been prepared which will be followed in the project.

AIIB's ESF Standard	Objectives	Requirements	Applicability	Gaps	Gap Minimization
				(v) no provision to give special attention to the vulnerable groups (vi) valuation of lost asset is not based on "replacement cost' standard	
ESS3: Indigenous People	• Respect the rights of Indigenous Peoples, including their rights to land, territories, and resources, as well as their cultural and social identity. • Ensure that Indigenous Peoples receive culturally appropriate social and economic benefits from projects. • Avoid adverse impacts on Indigenous Peoples and their communities.	• Conduct a process of free, prior, and informed consultation (FPIC) with Indigenous Peoples affected by projects. • Develop an Indigenous Peoples Plan (IPP) that addresses potential impacts and benefits for Indigenous Peoples. • Implement measures to protect Indigenous Peoples' rights and interests, including cultural heritage and traditional knowledge. • Monitor and evaluate project impacts on Indigenous Peoples.	ESS 3 is applicable if Indigenous People are present in the project area and they are likely to be affected by the project.	No equivalent requirements on: (i) coverage of IP impacts in the ESIA; (ii) special treatment or differentiated approach to IPs and vulnerable groups; (iii) conduct of FPIC; (iv) development of IP Plan.	BREB will prepare Indigenous Peoples plan (IPP) and Indigenous Peoples planning framework (IPPF), which is provided to the Bank as a freestanding document. The IPP or IPPF complements the broader coverage of social risks and impacts in the environmental and social assessment and provides specialized guidance to address specific issues associated with the needs of affected Indigenous peoples.

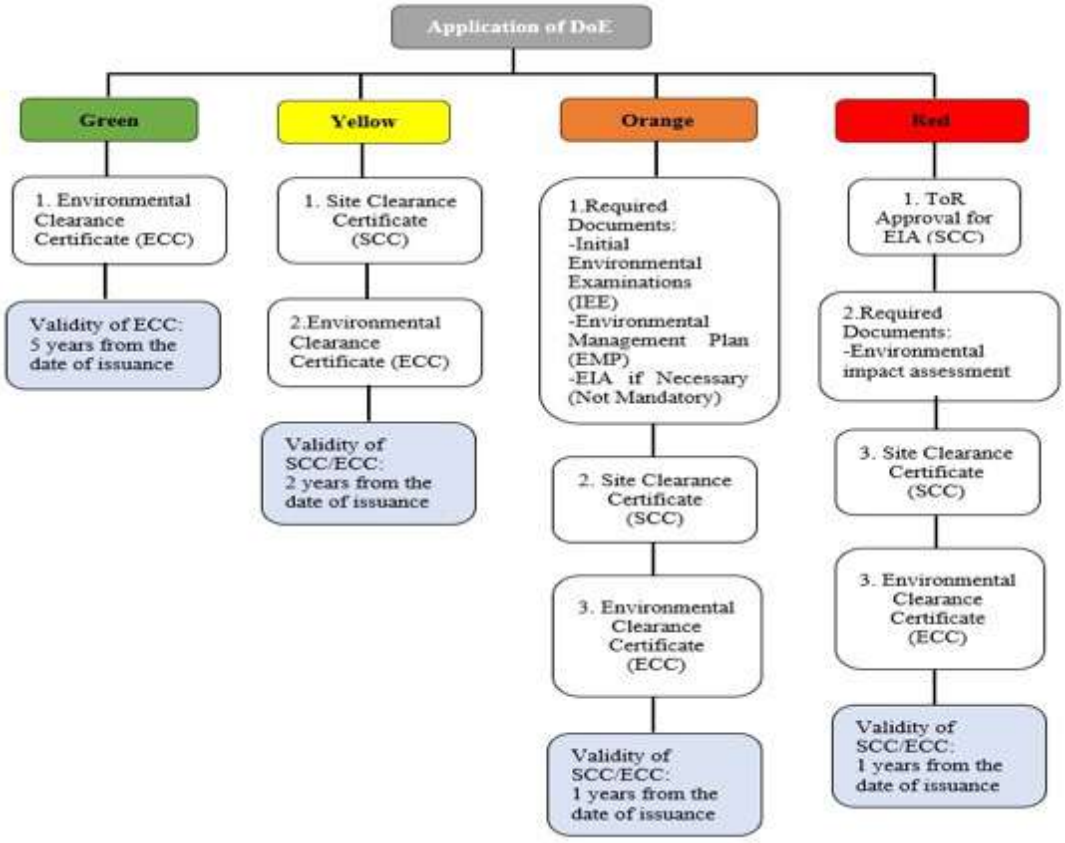
G. GOB ENVIRONMENTAL CLEARANCE

75. Formal EIA guidelines in Bangladesh are set out in "Rules and Regulations under the 1995 Environmental Protection Acts" as published in the Official Gazette on August 27, 1997. Any proponent planning an industrial project is currently required under Paragraph 12 of the Environmental Protection Acts, 1995 to obtain "environmental clearance letter:" from the Department of Environment.

76. Steps to be followed for obtaining the Environmental Clearance Certificate for this electricity distribution project are shown in Figure II.1 as the project is under 'Category Red' and to prepare a full EIA prior to implementation of such project for approval.

77. BREB has already got the Environmental Clearance Certificate (ECC) from DoE on 30 December 2021 in accordance with ECR-1997. But according to ECR-2023 there is no criteria for substation construction as well as distribution line. So, there is no legal provision and SCC/ECC requirements for this project according to new ECR 2023.

78. Under the ECR 2023, a classification system has been established for development projects and industries on the basis of the location, the size, and the severity of potential pollution. There are four categories of projects: Green, Yellow, Orange, and Red with respectively no, minor, medium, and severe environmental impacts.



Source: Environmental Conservation Rules'2023

Figure II-1: Government of Bangladesh Environmental Assessment Process

H. COMPLIANCE WITH BREB HEALTH ENVIRONMENTAL AND SAFETY (HES) REQUIREMENTS

79. The BREB has its own policy and requirements for compliance relating to environment, health and safety issues for its operations. BREB is committed to managing its operations in a safe, efficient and environmentally responsible manner. The BREB's Health Environment and Safety (HES) manuals, guidelines, procedures and plans are important tools of their commitment. HES manuals include:

- Environmental Impact Assessment Module,
- Guideline on Integrated Impact Assessment,
- Health Impact Assessment Module, and
- Social Impact Assessment Module

80. In addition, the requirement for impact assessment is affirmed in the BREB's Statement of General Business Principles. The BREB is committed to

- Pursuing the goal of no harm to people,
- Protecting the environment, and
- Managing HES as any other critical business activity.

81. BREB has its own instruction manual (PBS INSTRUCTION: 100-301 & 100-292) for Substation/ Distribution network Operation, Inspection and Maintenance. As well as Emergency Procedure and Management has been given in BREB PBS INSTRUCTION: 100-753. also follow a training manual/guideline of safety working procedure for distribution network operation.

I. WILLING BUYER WILLING SELLER PROCEDURES APPLICABLE TO THE PROJECT

82. The BREB always followed willing buyer and willing seller mechanism for the BREB projects. The land acquisition following ARIPA 2017 takes at least two years. Considering the project implementation period is around 3 years and the land acquisition should be completed before any civil work starts, there would be conflict of schedule if the land is acquired going through ARIPA 2017. Thus, willing buyer and willing seller mechanism is the most feasible option for the project. Under the willing buyer and willing seller norm, suitable land will be identified by PBS and will be purchased accordingly for future sub-stations. The steps are in given below:

- PBS finds the locality where a substation shall be located and identifies several slots.
- PBS researches the ownership status of the spots and consults with owners to check their will for negotiation and selling.
- Once the owners confirm their will, then the negotiation will start. Meanwhile PBS collect market rates and recent transaction details around the area.
- Through the negotiation, the contract details and amount to be paid for purchasing land is decided.
- PBS pays advance to the seller and a land purchase intention deed (*Baina* deed) is prepared, if necessary, and registered with the local Land Office. This Baina deed is valid for 3 months.
- Within 3 months, a sale deed is prepared and registered with the Land Registration Office. During registration the remaining amount is paid by cheque to the seller. and the amount shall be transferred to the owners after verification of the ownership documents.

[1] BREB. 2020. PBS Instruction 100-30.
[2] BREB .2020. PBS Instruction 100-29
[3] BREB. 2020. PBS Instruction 100-75

- PBS receives the sale deed from the Land Registration Office. This deed is kept at the PBS local office. Later the Land Department updates their records. From then on land belongs to concerned PBS. The "necessary fees" referenced in this paragraph to register the deed will be paid by the PBS.

83. Respective PBS will ensure that price of the land needs to be at least equal to the prevailing and actual market price in the area or three times of the registration value whichever is higher. PBS will verify the land ownership, possession, interested parties, documents, etc. with the help of the land office. After completion of verification, PBS, and seller both will communicate this decision to the land office, Department of Land. The seller with the assistance of Surveyor from local registration office, gets the land surveyed and demarcated in the presence of adjoining landowners. Disputes and claims if any will be resolved then and there. After verification, PBS calls a meeting with the seller where all the information about the land is shared and discussed and if the seller agrees, then PBS will proceed further to purchase the land. The entire process of consultation, negotiation, agreement, transfer of land documents will be recorded by the PBS and will be available for review by the AIIB. At any point of time during the process, the seller will have the right to refuse to sell. It is, however, willing buyer-willing seller, if when the seller refuses to sell, the PBS will change the location and ask another seller. There will be no expropriation in case of failure of negotiation.

84. All potentially affected individuals are meaningfully consulted, informed of their rights, and provided with reliable information concerning environmental, economic, social and food security impacts of the proposed investment. The PBS officials will make the best effort to address risks of asymmetry of information and bargaining power. They are enabled to negotiate fair value and appropriate conditions for the transfer and to have access to grievance redress mechanisms are put in place. There will be independent third party engaged to document negotiation and settlement processes.

III. DESCRIPTION OF THE PROJECT

A. GENERAL

85. According to Vision-2041 of Perspective Plan (2021-2041), the demand for electricity will increase by 9.3% in the period 2021-2041. According to this plan, there is a need to increase the capacity of the distribution system, and the implementation of the proposed project will increase the capacity of the distribution network, and also increase reliability and efficiency. BREB holds the capacity to cater 8,700 MW load at present, which is far behind the target. At present, for all the 80 PBSs the aforesaid master plan cannot be implemented unless its capacity is enhanced. Existing overloaded distribution lines and sub-stations are required to be upgraded & the total power networking system is to be modernized to meet and to provide improved quality deliverable power at the consumer end. BREB has targeted to take modernization and capacity enhancement projects in each division to meet the projected demand & ensure uninterrupted, reliable, quality, and affordable electricity supply for all. AIIB has agreed to finance for the modernization and capacity in hands mint through the project in modernization and capacity enhancement of BREB network (Chattogram -Sylhet Division).

86. BREB has carried out Environmental and Social Impact Assessment study for aforesaid 19 PBSs of Chattogram -Sylhet under the name of 'Modernization and Capacity Enhancement of BREB Network (Chattogram -Sylhet Division) Project'. BREB is willing to initiate a modernization and capacity enhancement project in 19 Palli Bidyut Samity (PBS) such as Brahmanbaria PBS, Chandpur PBS-1, Chandpur PBS-2, Chattogram PBS-1, Chattogram PBS-2, Chattogram PBS-3, Cumilla PBS-1, Cumilla PBS-2, Cumilla PBS-3, Cumilla PBS-4, Cox's Bazar PBS, Feni PBS, Laxmipur PBS, Noakhali PBS, Hobigonj PBS, Sunamganj PBS, Moulvibazer PBS, Sylhet PBS-1, Sylhet PBS-2 in Chattogram -Sylhet Division.

B. NEED FOR THE PROJECT

87. The Bangladesh would not have been able to achieve the desired yearly GDP growth rate if power penetration in rural regions had not been improved. The BREB's operations are not limited to the RE program; it has been noted that the number of industries and commercial consumers in rural regions is rapidly increasing. Furthermore, most of the upcoming 100 economic zones are situated in BREB operation area and the Government has also taken the "Amar Gram, Amar Shohor" program translating urban facilities to the rural areas. To support the country's economic growth those industries and commercial institutes need an 'uninterrupted, reliable and quality electricity supply and BREB has to provide this facility to them.

88. BREB has completed 100 percent electrification in 462 sub-districts across Bangladesh under BREB command area. Therefore, 100% population of Chattogram and Sylhet divisions under BREB command areas are getting electricity service. The project will be implemented in Chattogram -Sylhet divisions to ensure uninterrupted and quality power supply.

89. The 8th Five Year Plan of the Government of Bangladesh has identified the power sector as a top priority and has considered increasing power consumption by more than 8% per annum also has emphasized on ensuring uninterrupted, reliable and quality power supply, efficiency development and affordable prices, which is consistent with the proposed project.

90. SDG is a global indicator as it measures the performance of any project. SDG-7 calls for "affordable, reliable and sustainable energy services for all" by 2030. Indicator 7.1.1 means proportion of population with access to electricity which is 100% achieved. Moreover, indicator 7.1.2 resembles proportion of population with primary reliance on clean fuels and technology. This project is consistent with the indicator 7.1.2.

91. According to Vision-2041, Power Transmission and Distribution (T&D) losses are planned to be reduced from 11% to 8% by 2030 and the demand for electricity will increase by 9.3% in the period 2021-2041. In this context, a plan has been adopted to increase the power generation to 82,000 MW by 2041 [Bangladesh Perspective Plan 2021-2041, page 122 and xi (Bangla version)]. According to this plan, there is a need to increase the capacity of the distribution system and the implementation of the proposed project will increase the capacity of the distribution network, and also increase reliability and efficiency.

C. OBJECTIVES OF THE PROJECT

92. The main objectives of the project are given below:

- To upgrade and enhance 2062 MVA capacity of rural electrical distribution network by 30 June 2029 to meet-up increasing demand of electricity in the project areas.
- To access an un-interruptible, reliable, 'affordable & efficient power supply for 9.20 million existing consumers by reducing 2.50% system loss and 15% SAIDI.

93. The broad objective is, therefore, to provide more access to electricity, and thereby boost economic development and reduce poverty in the rural areas. This will also result in improving the financial soundness of the concerned PBS with increased income generation from new consumer connections. The project should contribute to the national economy through added production in the agriculture and industry sectors, with the expansion of industries and business, and by the creation of additional employment.

D. DESCRIPTION OF THE PROJECT ACTIVITIES

94. BREB Has planned to alleviate the overall condition of the whole eastern part of Bangladesh that is the division 100% uninterrupted insufficient electricity supply. With this in view 19 PBSs have been selected under division to move on tomorrow nice this part of Bangladesh with electricity supply. In earlier times due to lack of proper transport system and communication, load growth was not increased in this particular area. But presently in the course of time connectivity has taken a new model. The construction of Dhaka-Sylhet highway has greatly contributed to the communication advancement of Chattogram -Sylhet portion. Besides, the government is setting up 100 economic zones in the country to increase the employment and economic activity and external balance. So, we also have the water transport white opened up for ships and cargoes to carry on with work.

95. According to "Modernization and capacity enhancement plan for BREB network (Chattogram -Sylhet Division)" Project, the targets of the projects are as follows:

*	Construction of 33/11 kV new Sub-station	+1512	MVA	:	90	Nos.
*	33/11 kV Sub-station Augmentation	+550	MVA	:	49	Nos.
	Total Substation	**+2062**	**MVA**	:	**139**	**Nos.**
*	Construction of 33kV and bellow voltage line (New/Up-gradation)			:	12430	km
*	33kV underground/submarine cable			:	234	km
*	11kV underground/submarine cable			:	298	km
*	Installation of insulated conductor			:	4990	km
*	Conversion of LT to HT line			:	3320	km
*	Conversion of HT single Phase to HT three phase			:	4950	km
*	Reconstruction of line in flood prone area			:	3678	km
	Total Line			:	**29900**	**km**
*	Construction of River crossing Tower			:	11	set

*	Construction of Switching Stations	:	11	set
*	Installation of SCADA System for 15 substations at Chattogram PBS-1, Comilla PBS-3 & Hobiganj PBS.	:	3	set
*	Installation of Fault Locator	:	9000	set

96. The following are the Outcomes of the "Modernization and capacity augmentation plan for BREB network (Chattogram -Sylhet Division)" Project:

- Construction of new substations/ upgrading of existing substations, Construction of new line/ conversion of existing lines will reduce 2.50% system loss and 15% SAIDI and increase the 2062 MVA Capacity of distribution network.
- It will not be necessary to turn off the power supply in flood prone-area due to raise the water level during floods through rehabilitation of 3678 km existing line in flood prone-area.
- Installation of SCADA system and Fault locator will modernize the network as well as contribute to reducing the power interruptions.

97. The details of the proposed substations list are given in the following table:

Table III-1: Proposed Location of the Planned/ New Substations

No	Name of S/S	Voltage Level (KV)	Capacity (MVA)
Brahmanbaria PBS			
1	Sarail-1(Pakshimul)	33/11	10
2	Ashuganj-2(Lalpur)	33/11	10
3	Nasirnagar-2(Guniok)	33/11	10
4	Kasba-3(Pourosova)	33/11	10
5	Kasba-4(Kuti)	33/11	10
6	Kasba-5(Kasba west)	33/11	10
7	Nabinagar-5(Jinudpur)	33/11	10
8	Nabinagar-6(Pourosova)	33/11	20
9	Sadar-1(Brahmanbaria)	33/11	20/30
10	Nasirnagar-1(Nasirnagar)	33/11	25/30
11	Akhaura-1(Pourosova)	33/11	20/30
12	Bijoynagar- 1(Chandura)	33/11	15/20
		Total:	**170/200**
Chandpur PBS-1			
1	Kochua-4(Ashrafpur)	33/11	10
2	Haziganj-5(Razargaon)	33/11	10
3	Haziganj-6(Randunimura)	33/11	20
4	Haziganj-3(Kalocho)	33/11	10
5	Kochua-1(Koya)	33/11	20
		Total:	**70**
Chandpur PBS-2			
1	Faridgonj-4 (Rupsha),	33/11	10
2	Faridgonj-3 (Gredhokalindia),	33/11	10
3	Matlab North-3 (Baganbari)	33/11	10
4	Madab South 2 (Aswinpur)	33/11	10
5	Chandpur-4 (Nanupur),	33/11	10
6	Madab North-2 (Shujatpur)	33/11	10
7	Chandpur-3 (Balia),	33/11	10
8	Haimchar Upakendro	33/11	10
		Total:	**80**
Chattogram PBS-1			
1	Chandnaish-1(Bagichahat)	33/11	25
2	Anowara-1(Rostomhat)	33/11	20
3	Chandnaish-2(BGC Trust)	33/11	10

No	Name of S/S	Voltage Level (KV)	Capacity (MVA)
4	Anowara-4(parki)	33/11	20
5	Anowara-5(Kaliganj)	33/11	10
6	Anowara-6(Gohira)	33/11	10
7	Patiya-3 (Dholghat)	33/11	10
8	Lohagara-3 (Chunoti)	33/11	10
9	Bashkhali-5 (Gondamara)	33/11	20
10	Bashkhali-6 (Chanpur)	33/11	10
11	Satkania-3 (Bajalia)	33/11	10
		Total:	**155**
Chattogram PBS-2			
1	Raozan-6(Amirhat)	33/11	10
2	Fatikchari-7(kanchannagar)	33/11	10
3	Rangunia-5(Rajarhat bazar)	33/11	10
4	Fatikchari-8(Kajirhat Bazar)	33/11	10
5	Raozan-2(goribullahpara)	33/11	15
6	Fatikchari-2(Bhoktopur)	33/11	15
7	Rangunia-1(Ghochra)	33/11	15
		Total:	**85**
Chattogram PBS-3			
1	Hathajari-4(University, Fotehpur)	33/11	10
2	Hathajari-5(South Madrasa)	33/11	10
3	Mirshorai-8(Tekerhat)	33/11	20
4	Mirshorai-9(Chorsharat)	33/11	20
5	Shitakundu, shibpur	33/11	10
6	Mirshorai-1(Mithachora)	33/11	20
		Total:	**90**
Cumilla PBS-1			
1	Kutumbopur, Chandina	33/11	20
2	Choto Tulgao, Borura	33/11	10
3	Moddhonagar, Muradnagar	33/11	20
4	East Aliyabad, Debiddar	33/11	10
5	Baniyachang, Chandina	33/11	10
		Total:	**70**
Cumilla PBS-2			
1	Mirpur, Brahmanpara	33/11	10
2	Aganagar, Burichong	33/11	10
3	Nankora, Chouddogram	33/11	10
4	Pipuliya, Cumilla Sadar South	33/11	10
5	Lalmai, Lalmai	33/11	20
6	Baburchi bazar, Chouddogram	33/11	10
7	Horishchor, Lalmai	33/11	20
8	Kalir Bajar, Adarsha Sadar-1	33/11	10
		Total:	**100**
Cumilla PBS-3			
1	Daudkandi-5(Khalisha)	33/11	10
2	Titash-2(Korikandi)	33/11	10
3	Bancharampur-3(Kodomtoli)	33/11	10
4	Gozaria-7(Noyanagar)	33/11	10
5	Titash, Puran Batakandi	33/11	10
6	Gozaria-4(Forazikandi)	33/11	10
7	Daudkandi-4(Raypur)	33/11	15
		Total:	**75**
Cumilla PBS-4			
1	Nangolkot-3(Doulkhar)	33/11	20
2	Nangolkot-4(Pouroshova)	33/11	10

No	Name of S/S	Voltage Level (KV)	Capacity (MVA)
3	Monohorganj-3(Upazila)	33/11	20
4	Monohorganj-4(Baishgao)	33/11	10
5	Monohorganj-1(Notherpetua)	33/11	25
		Total:	**85**
Cox's Bazar PBS			
1	Chakaria-3(Dulahazra)	33/11	10
2	Chakaria-4(Ilishia)	33/11	10
3	Chakaria-5(Betuyabazar)	33/11	10
4	Ukhiya-5(Durongkhali)	33/11	20
5	Ukhiya-6(Monkhali)	33/11	10
6	Pekuya-2(Toitang)	33/11	10
7	Ramu-3(Jowariyanala)	33/11	10
8	Moheshkhali-4(Matarbari)	33/11	20
9	Ukhiya-1(Malvitapara)	33/11	20
10	Moheshkhali-1(Kerantoli)	33/11	20
11	Chakaria- 1(Fashiyakhali)	33/11	25
		Total:	**165**
Feni PBS			
1	Feni-4(Loskorhat)	33/11	20
2	Chagalnaiya-4(Radhanagar)	33/11	20
3	Dagonvuiya-4(Boraiya)	33/11	10
4	Fulgazi-3(North Dharmapur)	33/11	10
5	Chagalnaiya-3(Latifpur)	33/11	10
6	Sonagazi-3(Kuthir kathi)	33/11	10
		Total:	**80**
Laxmipur PBS			
1	Ramgoti-2(Chor Afzal)	33/11	10
2	Raypur-4(Baludhum)	33/11	10
3	Lakshmipur-6(North Hamchadi)	33/11	10
4	Lakshmipur-7(South Mandari)	33/11	10
5	Komolnagar-2(Torabganj)	33/11	10
6	Raypur-3(Rakhalia)	33/11	10
7	Lakshmipur-3(Chor Mansha)	33/11	10
8	Komolnagar	33/11	10
		Total:	**80**
Noakhali PBS			
1	Begumganj-4(Sharifpur)	33/11	20
2	Shudharam-3(Andarchar)	33/11	10
3	Shubornochor-3(Karimganj)	33/11	10
4	Kabirhat-2(Dhanshiri)	33/11	10
5	Begumganj-5(Chayani)	33/11	10
6	Shudharam-4(Science & technology university)	33/11	10
7	Chatkhil-2(Nayanpur)	33/11	10
8	Shenbag-2(Birkot)	33/11	15
9	Shonaimuri-3(Amishapara)	33/11	10
		Total:	**85**
Hobigonj PBS			
1	Chunaraghat-3(Ranigao)	33/11	10
2	Madhovpur-5(Ratanpur)	33/11	10
3	Nabigabj-4(Paniumoda)	33/11	10
4	Madhovpur-1(Temunia)	33/11	20
5	Shayestagonj(Lengapara, Shayestagonj Pourashava)	33/11	20
6	Bahubul-2(Borogao)	33/11	10/14
7	Madhovpur-3(Madhovpur)	33/11	10/14
8	Nabigabj-2(Aushkandi)	33/11	10/14

No	Name of S/S	Voltage Level (KV)	Capacity (MVA)
		Total:	**100/112**
Sunamganj PBS			
1	Sadar- 2(Kathoir)	33/11	10
2	Sadar- 4(Neyamotpur)	33/11	10
3	Chatok-2(Koitak)	33/11	10
4	Dirai(Anwarpur)	33/11	10
5	Jamalganj(Jamalganj Sadar)	33/11	10
		Total:	**50**
Moulvibazer PBS			
1	Sreemangal-5(Bhagalpur)	33/11	10
2	Sreemangal-6(Radhanagar)	33/11	10
3	Rajnagar-4(Betahunja)	33/11	10
4	Borlekha-3(Nanduya)	33/11	10
5	Sreemangal-1/3(PBS Campus, Sreemangal)	33/11	30
6	Rajnagar-1/2(Kharpara)	33/11	25
7	Borolekha-1(Panidhar)	33/11	25
		Total:	**120**
Sylhet PBS-1			
1	Pachmile	33/11	10
2	Senanibash (Purbasha)	33/11	10
3	Sharifganj	33/11	10
4	Bisshonath-3(Kaliganj)	33/11	5
5	Jakiganj-1(Jakiganj)	33/11	10
6	Gopalganj-2(Gopalganj Zonal)	33/11	15
7	Biyanibazar-1(Sheola)	33/11	15
		Total:	**75**
Sylhet PBS-2			
1	Manikpur, Kanaighat	33/11	10
2	Companiganj-3 (Mitrimohol)	33/11	10
3	Sylhet-1(Badhaghat)	33/11	10
4	Gowainghat-1(Gowain)	33/11	10
		Total:	**40**

Table III-2: Proposed Location wise cost breakdown of the Planned/ New Substations

Serial No.	Division	District	Upazila/ Thana/ city corporation/ Pourosava	Major Items/ Components																			
				Name of PBS	33KV and bellow voltage line (New/ Upgradation) (km)	33 kV (km)		11kV (km)		Insulated Conductor (km)	LT to HT Conversion (km)	HT 1Ph to HT 3Ph Conversion (km)	Rehabilitation of line in flood prone area (km)	River Crossing Tower(set)	SCADA System (set)	Switching Station (Set)	33/11 kV Sub-Station						
																	New			Augmentation			
						Underground Cable	Submarine Cable	Underground Cable	Submarine Cable								No. (20 MVA)	No. (10 MVA)	Total (MVA)	No.	Existing MVA	Proposed MVA	Increased MVA
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			19			
1	Chattogram	Brahamanbaria	1 Akhaura	Brahamanbaria	1205	0	0	8	0	250	120	80	234	3	0	1	2	6	140	4	85	120	35
			2 Brahamanbaria																				
			3 Bijoynagar																				
			4 Kasba																				
			5 nobinagar																				
			6 Nasirnagar																				
			7 Sorail																				
			8 Ashuganj																				
2	Chattogram	Chandpur	1 Kochua	Chandpur-1	512	0	0	6	0	150	150	200	350	0	0		1	3	50	1	20	40	20
			2 Haziganj																				
			3 Sahrasti																				
			4 Monohorgonj (part)																				
3	Chattogram	Chandpur	1 Faridgonj	Chandpur-2	759	0	0	8	0	270	150	350	0	0			0	5	70	3	60	80	20
			2 Chandpur																				
			3 Haimcor																				
			4 Motlob (North)																				
			5 Motlob (South)																				
4	Chattogram	Chattogram	1 Boalkhali	Chattogram -1	794	43	3	60	4	350	225	370	1387	0	1	2	2	7	154	2	50	100	50
			2 Potia																				
			3 Chondonaish																				
			4 Satkania																				
			5 Lohagora																				
			6 Banshkhali																				
			7 Anowara																				

Serial No.	Division	District	Upazila/ Thana/ city corporation/ Pourosava	Major Items/ Components																			
				Name of PBS	33KV and bellow voltage line (New/ Upgradation) (km)	33 kV (km)		11kV (km)		Insulated Conductor (km)	LT to HT Conversion (km)	HT 1Ph to HT 3Ph Conversion (km)	Rehabilitation of line in flood prone area (km)	River Crossing Tower(set)	SCADA System (set)	Switching Station (Set)	33/11 kV Sub-Station						
																	New			Augmentation			
						Underground Cable	Submarine Cable	Underground Cable	Submarine Cable								No. (20 MVA)	No. (10 MVA)	Total (MVA)	No.	Existing MVA	Proposed MVA	Increased MVA
5	Chattogram	Chattogram	1 Fotikchori 2 Ranguria 3 Rauzan 4 Hathhazari (Part)	Chattogram -2	1003	50	0	8	3	166	0	0	0	0	0		0	4	56	3	45	60	15
6	Chattogram	Chattogram	1 Hathahazari 2 Mirsarai 3 Sitakundo	Chattogram -3	448	0	0	8	0	200	80	30	2	0	0	2	2	2	84	2	15	20	5
7	Chattogram	Cumilla	1 Chandina 2 Debidar 3 Muradnogor 4 Borura	Cumilla-1	442	0	0	12	0	300	260	110	0	0	0	1	2	1	70	2	20	40	20
8	Chattogram	Cumilla	1 Brahmanpara 2 Burichong 3 Chouddogram 4 Cumilla Sadar 5 Lalmai 6 Cumilla Sadar (South)	Cumilla-2	788	0	0	0	0	115	75	60	3	0	0		2	5	126	1	10	20	10
9	Chattogram	Cumilla B-baria	1 Daudkandi 2 Meghna 3 Titash 4 Homma 5 Bancharampur	Cumilla-3	627	18	0	15	0	130	140	114	141	2	1		0	4	56	3	55	100	45

Serial No.	Division	District	Upazila/ Thana/ city corporation/ Pourosava	Major Items/ Components																			
				Name of PBS	33KV and bellow voltage line (New/ Upgradation) (km)	33 kV (km)		11kV (km)		Insulated Conductor (km)	LT to HT Conversion (km)	HT 1Ph to HT 3Ph Conversion (km)	Rehabilitation of line in flood prone area (km)	River Crossing Tower(set)	SCADA System (set)	Switching Station (Set)	33/11 kV Sub-Station						
																	New			Augmentation			
						Underground Cable	Submarine Cable	Underground Cable	Submarine Cable								No. (20 MVA)	No. (10 MVA)	Total (MVA)	No.	Existing MVA	Proposed MVA	Increased MVA
		Munshiganj	6 Gojara																				
10	Chattogram	Cumilla	1 Laksam	Cumilla-4	404	0	0	8	0	34	45	30	0	0	0	1	2	2	84	1	30	40	10
			2 monohorgonj (Part)																				
			3 Nangolcoat																				
11	Chattogram	Cox' s Bazar	1 Chokoria	Cox' s Bazar	1082	0	0	96	0	685	140	600	72	2	0	1	2	6	140	3	75	100	25
			2 Cox's Bazar																				
			3 Moheshkhali																				
			4 Ramu																				
			5 Teknaf																				
			6 Pekua																				
			7 Lama (Part)																				
			8. Nangkhonchori (Part)																				
			9 Ukhiya																				
12	Chattogram	Feni	1 Feni	Feni	496	70	0	10	0	176	310	155	0	0	0	1	2	2	84	2	20	40	20
			2 Chagolnaiya																				
			3 Dagonbhuiya																				
			4 Fulgazi																				
			5 Porshuram																				
			6 Shongazi																				
13	Chattogram	Lakshmipur	1 Lakshmipur	Lakshmipur	394	8	0	8	0	400	500	620	400	0	0	0	0	5	70	3	30	40	10
			2 Raipur																				
			3 Ramgoti																				
			4 Komolnagar																				
			5 Ramgonj																				

Serial No.	Division	District	Upazila/ Thana/ city corporation/ Pourosava	Major Items/ Components																			
				Name of PBS	33KV and bellow voltage line (New/ Upgradation) (km)	33 kV (km)		11kV (km)		Insulated Conductor (km)	LT to HT Conversion (km)	HT 1Ph to HT 3Ph Conversion (km)	Rehabilitation of line in flood prone area (km)	River Crossing Tower(set)	SCADA System (set)	Switching Station (Set)	33/11 kV Sub-Station						
																	New			Augmentation			
						Underground Cable	Submarine Cable	Underground Cable	Submarine Cable								No. (20 MVA)	No. (10 MVA)	Total (MVA)	No.	Existing MVA	Proposed MVA	Increased MVA
14	Chattogram	Noakhali	1 Begumgonj	Noakhali	647	30	12	20	0	600	230	1283	0	2	0	2	1	5	98	3	30	60	30
			2 Catkhali																				
			3 Companigonj																				
			4 shenbag																				
			5 Sudharam																				
			6 Subornochor																				
			7 Shonaimuri																				
			8 Kobirhat																				
			9 Hatiya																				
			10 Nangolcoat																				
Sub- Total Chattogram Division(14 PBS)					9599	219	15	267	7	3826	2425	4002	2589	9	2	11	18	57	1302	33	545	860	315
15	Sylhet	Hobigonj	1 Hobigonj	Hobigonj	567	0	0	6	0	300	165	110	307	0	1		0	3	42	5	100	200	100
			2 Chunarughat																				
			3 Bahubol																				
			4 Madhobpur																				
			5 Nobigonj																				
			6 Baniachong																				
			7 Lakhai																				
			8 Ajmirigonj																				
			9 Jagannathpur (Part)																				
			10 Darai (Part)																				
			11 Shayestagonj																				
			12 Sulla (Part)																				
16	Sylhet	Moulvibazar	1 Sreemongol	Moulvibazar	782	0	0	6	0	381	105	120	65	1	0	0	0	4	56	3	80	140	60
			2 komolgonj																				
			3 Moulvibazar																				
			4 Rajnagar																				
			5 Kulaura																				
			6 Borolekha																				
			7 Juri																				
17	Sy	Su	1 Bisshorampur	S	485	0	0	6	0	85	150	100	153	1	0		0	3	42	2	25	40	15

Serial No.	Division	District	Upazila/ Thana/ city corporation/ Pourosava	Major Items/ Components																			
				Name of PBS	33KV and bellow voltage line (New/ Upgradation) (km)	33 kV (km)		11kV (km)		Insulated Conductor (km)	LT to HT Conversion (km)	HT 1Ph to HT 3Ph Conversion (km)	Rehabilitation of line in flood prone area (km)	River Crossing Tower(set)	SCADA System (set)	Switching Station (Set)	33/11 kV Sub-Station						
																	New			Augmentation			
						Underground Cable	Submarine Cable	Underground Cable	Submarine Cable								No. (20 MVA)	No. (10 MVA)	Total (MVA)	No.	Existing MVA	Proposed MVA	Increased MVA
			2 Chatok																				
			3 Derai																				
			4 Doarabazar																				
			5 Jagannathpur																				
			6 Jamalgonj																				
			7 Sulla																				
			8 Sunamgonj																				
			9 Dakkhin																				
			10 Taherpur																				
18	Sylhet	Sylhet	1 Balagonj	Sylhet-1	498	0	0	6	0	193	340	430	527	0	0	0	0	3	42	4	60	100	40
			2 Beanibazar																				
			3 Bissonath																				
			4 Fenchugonj																				
			5 Golapgonj																				
			6 Sylhet (Dakkhin)																				
			7 Jakigonj																				
			8 Osmaninagar																				
19	Sylhet	Sylhet	1 Companigonj	Sylhet-2	499	0	0	0	0	205	135	188	37	0	0		0	2	28	2	20	40	20
			2 Goanighat																				
			3 Jaintapur																				
			4 Sylhet																				
			5 Chatak (Part)																				
			6 Doarabazar (Part)																				
			7 Kanaighat																				
Sub- Total Sylhet Division(5 PBS)					2831	0	0	24	0	1164	895	948	1089	2	1	0	0	15	210	16	285	520	235
Grand Total Chattogram & Sylhet Div.(19 PBS)					12430	219	15	291	7	4990	3320	4950	3678	11	3	11	18	72	1512	49	830	1380	550

Table III-3: Status of land purchased of land

SL No.	Name of PBS	No. of Proposed substation	Location of the Proposed Sub-station	Status of Land Purchase		Types of Land
				Purchased completed	Land will be purchased	
1	Brahamanbaria PBS	8	• Sorail-1 • Ashugonj-2 • Nasirnagar-2 • Kasba-3 • Kasba-4 • Kasba-5 • Nobinagar-5 • Nobinagar-6	• Nobinagar-5 (40 Decimal) • Kasba-4(17 decimal)	• Sorail-1 (40 Decimal) • Ashugonj-2 (40 Decimal) • Nasirnagar-2 (40 Decimal) • Kasba-3 (100 Decimal) • Kasba-5 (122 Decimal) • Nobinagar-6 (38 Decimal)	-
Amount of Land				**57 Decimal**	**380 Decimal**	**-**
2	Chadpur PBS-1	4	• Kochua-4 • Hajiganj-5 • Hajiganj-6 • Hajiganj-3	• Kochua-4 (46 Decimal)	• Hajiganj-5 (51 Decimal) • Hajiganj-6 (40 Decimal) • Hajiganj-3 (40 Decimal)	(As per preliminary negotiation) • Barren Land • Barren Land • Barren Land • Barren Land
Amount of Land				**46 Decimal**	**131 Decimal**	**-**
3	Chadpur PBS-2	5	• Faridganj-4 • Faridganj-3 • Matlab North-3 (Ashwinpur) • Matlab South-2 • Chadpur-4	-	• Faridganj-4 (29 Decimal) • Faridganj-3 (54 Decimal) • Matlab North-3 ((Ashwinpur)- 70 Decimal • Matlab South-2- -52 Decimal • Chadpur-4 (31 Decimal)	-
Amount of Land				**-**	**-236 Decimal**	**-**
4	Chattogram PBS-1	9	• Chandanaish-2 • Anowara-4 • Anowara-5 • Anowara-6 • Patiya-3 • Lohagora-3 • Bashkhali-5 • Bashkhali-6 • Satkania-3	• Chandanaish-2 (45 Decimal) -	• Anowara-4 (45 Decimal) • Anowara-5 (45 Decimal) • Anowara-6 (45 Decimal) • Patiya-3 (45 Decimal) • Lohagora-3 (45 Decimal) • Bashkhali-5 (45 Decimal) • Bashkhali-6 (45 Decimal) • Satkania-3 (45 Decimal)	(As per preliminary negotiation) • Barren Land • Barren Land • Barren Land • Barren Land • Barren Land • Barren Land • Barren Land • Barren Land • Barren Land
Amount of Land				**-**	**405 Decimal**	**-**
5	Chattogram PBS-2	3	• Raozan-6 • Fatikchori-7 • Fatikchori-8	-	• Raozan-6 (40 Decimal) • Fatikchori-7 (40 Decimal) • Fatikchori-8 (40 Decimal)	(As per preliminary negotiation) • Agricultural Land/ Barren land • Agricultural Land/ Barren land • Agricultural Land/ Barren land • Agricultural Land/ Barren land
Amount of Land				**-**	**120 Decimal**	**-**

SL No.	Name of PBS	No. of Proposed substation	Location of the Proposed Sub-station	Status of Land Purchase		Types of Land
				Purchased completed	Land will be purchased	
6	Chattogram PBS-3	4	• Hathhazari-4 • Hathhazari-5 • Mirshorai-8 • Mirshorai-9	-	• Hathajari-4 (45 Decimal) • Hathajari-5 (39 Decimal) • Mirshorai-8 (88 Decimal) • Mirshorai-9 (41 Decimal)	-
Amount of Land				**-**	**168 Decimal**	**-**
7	Cumilla PBS-1	3	• Barura-4 • Chandina-5 • Muradnagar-5	• Barura-4 (Choto Tulagaon, Adda, Barura, Cumilla, 40 Decimal)-	• Chandina-5 • Muradnagar-5	(As per preliminary negotiation) • Barren Land • Barren Land • Barren Land
Amount of Land				**40 Decimal**	**80 Decimal**	**-**
8	Cumilla PBS-2	5	• Bagmara-2 • B-Para-3 • Chouddogram-5 • Chouddogram-6 • Sodor Dokkhin-3	•	• Bagmara-2 (40 Decimal) • B-Para-3 (40 Decimal) • Chouddogram-5(40 Decimal) • Chouddogram-6(40 Decimal) • Sodor Dokkhin-3 (40 Decimal)	• Barren land • Barren land
Amount of Land					**200 Decimal**	**-**
9	Cumilla PBS-3	4	• Daudkandi-5 • Titash-2 • Bancharampur-3 • Gozaria-7	-	• Daudkandi-5 (40 Decimal) • Titash-2 (40 Decimal) • Bancharampur-3 (40 Decimal) • Gozaria-7 (40 Decimal)	(As per preliminary negotiation) • Barren land • Barren land • Barren land • Barren land
Amount of Land				**-**	**160 Decimal**	**-**
10	Cumilla PBS-4	4	• Nangolkot-3 • Nangolkot-4 • Monohorganj-3 • Monohorganj-4	-	• Nangolkot-3 (40 Decimal) • Nangolkot-3 (47 Decimal) • Monohorganj-3 (70 Decimal) • Monohorganj-4 (40 Decimal)	-
Amount of Land				**-**	**197 Decimal**	**-**
11	Cox's Bazar PBS	8	• Chakaria-3 • Chakaria-4 • Chakaria-5 • Ukhiya-5 • Ukhiya-6 • Pekuya-2 • Ramu-3 • Moheshkhali-4	• Pekuya-2 (40 Decimal) • Chokoria-3 (45 Decimal)	• Chakaria-3 (45 Decimal) • Chakaria-4 (45 Decimal) • Chakaria-5 (45 Decimal) • Ukhiya-5 (45 Decimal) • Ukhiya-6 (45 Decimal) • Ramu-3 (45 Decimal) • Moheshkhali-4 (45 Decimal)	Null
Amount of Land				**85 Decimal**	**270 Decimal**	**-**
12	Feni PBS	4	• Feni-4 • Chagalnaiya-4 • Dagonvuiya-4 • Fulgazi-3	-	• Feni-4 (40 Decimal) • Chagalnaiya-4 (40 Decimal) • Dagonvuiya-4 (40 Decimal) • Fulgazi-3 (40 Decimal)	-
Amount of Land				**-**	**160 Decimal**	**-**
13	Lakshmipur PBS	5	• Ramgoti-2 • Raypur-4 • Lakshmipur-6	•	• Ramgoti-2 (40 Decimal) • Raypur-4 (90 Decimal)	• Agricultural Land • Agricultural Land

SL No.	Name of PBS	No. of Proposed substation	Location of the Proposed Sub-station	Status of Land Purchase		Types of Land
				Purchased completed	Land will be purchased	
			• Lakshmipur-7 • Komolnagar-2		• Lakshmipur-6 (48 Decimal) • Lakshmipur-7 (42.81 Decimal) • Komolnagar-2 (39 Decimal)	• Agricultural Land • Agricultural Land • Agricultural Land
Amount of Land					**259.81 Decimal**	**-**
14	Noakhali PBS	6	• Begumganj-4 (Sharifpur) • Begumgonj-5 (Choyani) • Kabirhat-2 (Dhansiri) • Shubornochor-3 (Karimbazar) • Sudharam-3 (Kaladuaraf) • Sudharam-4 (Dharmapur)	Begumgonj-5 (Choyani)- 32 Decimal. -	• Begumganj-4 (Sharifpur) • Kabirhat-2 (Dhansiri)- 45 Decimal • Shubornochor-3 (Karimbazar)- 39 Decimal • Sudharam-3 (Kaladuaraf)- 40 Decimal • Sudharam-4 (Dharmapur)- 52 Decimal	(As per preliminary negotiation) • Agricultural Land • Agricultural Land • Agricultural Land • Agricultural Land • Agricultural Land • Agricultural Land
Amount of Land				**32 Decimal**	**174 Decimal**	
15	Habiganj PBS	3	• Chunaraghat-3 • Madhovpur-5 • Nabigabj-4	-	• Chunaraghat-3 (45 Decimal) • Madhovpur-5 (45 Decimal) • Nabigabj-4(45 Decimal)	-
Amount of Land				**-**	**135 Decimal**	**-**
16	Moulvibazar PBS	4	• Sreemangal-5 • Sreemangal-6 • Rajnagar-4 • Borlekha-3	• Sreemangal-5 (30 Decimal) -	• Sreemangal-6 (45 Decimal) • Rajnagar-4 (40 Decimal) • Borlekha-3 (50 Decimal)	• Barren land • Barren land • Barren land • Barren land
Amount of Land				**30 Decimal**	**135 Decimal**	**-**
17	Sunamganj PBS	3	• Bishwamborpur-2 • Sadar- 2 • Sadar- 3	-	• Bishwamborpur-2 (40 Decimal) • Sadar- 2 (40 Decimal) • Sadar- 3 (40 Decimal)	(As per preliminary negotiation) • Agricultural Land • Agricultural Land • Agricultural Land
Amount of Land				**-**	**120 Decimal**	**-**
18	Sylhet PBS-1	3	• Golapganj-6 (Laxmipasha) • Jakiganj-3 (Sharifganj) • South Surma-4 (Cantonment	-South Surma-4 (Cantonment	• Golapganj-6 (Laxmipasha) (40 Decimal) • Jakiganj-3 (Sharifganj) (40 Decimal)	-
Amount of Land				**40**	**80 Decimal**	**-**
19	Sylhet PBS-2	2	• Salutikar • Sarker Bazar	-	• Salutikar (66 Decimal) • Sarker Bazar (40 Decimal)	-
Amount of Land				**-**	**106 Decimal**	**-**
Grand Total		**90**	**-**	**330 Decimal**	**3516.81 Decimal**	**-**

Table III-4: Details information of purchased land for Substation and Switching station

SL	PBS Name	Type	S/S Name	S/S Capacity	Latitude	Longitude	Address	Land Size (Decimal)
1	Brahmanbaria PBS	Sub-Station	Kasba-4	10	23.743370	91.074780	Kutibazar	17
2	Brahmanbaria PBS	Sub-Station	Nabinagar-5	10	23.818707	90.990121	Jinodpur	46
3	Chandpur PBS-1	Sub-Station	Kachua-4	10	23.263744	91.003136	Jagatpur, Kachua	46
4	Chattogram PBS-1	Sub-Station	Chandonaish -2	10	22.162340	92.032700	Chandonaish-2, BGC Trust, Chandonaish	45
5	Chattogram PBS-3	Switching Station	BEZA-2 Switching Station		22.736737	91.467989	BEZA	50
6	Cox's Bazar PBS	Sub-Station	Chokoria-3	10	21.665020	92.075451	Dulahazra	45
7	Cox's Bazar PBS	Sub-Station	Pekua-2	10	21.880760	91.973550	Toitong	40
8	Cumilla PBS-1	Sub-Station	Barura-4	10	23.331234	90.982890	Choto Tulagaon, Adda, Barura, Cumilla	40
9	Moulvibazar PBS	Sub-Station	Sreemangal-5 (Radhanagar)	10	24.30218	91.76651	Radhanagor, Sreemangal	30
10	Noakhali PBS	Sub-Station	Begumgonj-5 (Choyani)	10	22.89294	91.02274	Doalia, Begumgonj, Noakhali.	32
11	Sylhet PBS-1	Sub-Station	South Surma-4 (Cantonment)	10	24.80666	91.97331	Sylhet Cantonment, Sylhet	40

E. PROJECT LOCATION

98. The project consisting of Nineteen (19) Palli Bidyut Samity, is located in Chattogram - Sylhet Division. Bangladesh. Nineteen (19) Palli Bidyut Samity in Chattogram - Sylhet Division are Brahmanbaria PBS, Chandpur PBS-1, Chandpur PBS-2, Chattogram PBS-1, Chattogram PBS-2, Chattogram PBS-3, Cumilla PBS-1, Cumilla PBS-2, Cumilla PBS-3, Cumilla PBS-4, Cox's Bazar PBS, Feni PBS, Laxmipur PBS, Noakhali PBS, Hobigonj PBS, Sunamganj PBS, Moulvibazer PBS, Sylhet PBS-1, Sylhet PBS-2 in Chattogram -Sylhet Division.

99. The aforesaid Nineteen (19) Palli Bidyut Samity have their individual registered office in their own land in respective geographical location with provision of all required utilities like electricity, water, gas etc. for their own use. There is no major disaster risk of potential nature except regular monsoon weather as prevail in Bangladesh.

100. The proposed sites for substations are vacant at present and require development for power, water, access roads and drainage. The project site has to be raised to the level of 2 ft above. (above highest flood level) as preventing flood-related damage to substations also reduces the environmental impact associated with disposing of damaged equipment and the release of hazardous substances into floodwaters. Elevating substations is part of building a more resilient electrical grid. Resilience ensures that the grid can withstand and recover from disruptions, including natural disasters, more effectively. Raising the substation above flood levels is a proactive measure to mitigate the risk associated with extreme weather events, such as hurricanes, heavy rainfall, or storm surges. It reduces the likelihood of damage and minimizes the need for emergency repairs. The proposed project site is surrounded by a mix of agricultural land, Barren land, Ditches and small habitations. For new substations only Eleven (11) lands have been already purchased & maximum land will be purchased. In addition, one (01) land has been procured for the Switching station. No land will be acquired as per project scope and no land acquisition provision is incorporated into the DPP. As information from BREB, majority of the land will be purchased through "willing buyer and willing

seller" approaches. A total of Eleven (11) river crossing towers will be constructed having very minimal impact over the surrounding environment. The main reason for the minimal impact is, all of the river crossing tower will be constructed far away from the riverbank and there is no possibilities of flood and erosion. Some figure of the present situations of purchased lands (substations) locations are given below:

	
Taitong, Cox's Bazar PBS	***Lakshmipur-6 (Uttor Hamchadi) Lakshmipur sadar Upazila. Lakshmipur PBS***
	
Nabinagar-5 (Jinodpur; Nabinagar Upazila), Brahmanbaria PBS	***Laskarhat, Feni PBS***

Figure III-1: Present Situations of the Purchased lands (Substations)

Figure III-2: Project Location Map

F. PROJECT OPTIONS

101. Development planning in Bangladesh has a major focus on rural development through the creation of basic infrastructure facilities in the rural areas of the country. The Rural Electrification Program identified as a principal component of the overall rural infrastructures to achieve the goal of rural development in particular and that of national economy in general. The purpose of the Rural Electrification Program is to increase access to affordable and sustainable electricity services in rural and sub-urban areas of Bangladesh.

102. Though the performance of PBSs (distribution utilities under BREB) during the last several years has been found to be operated with better financial management, the financial condition of many of the PBSs continues to remain weak. Study conducted by Power Cell has indicated that financial condition of many of the PBSs are weak due to poor consumer mix and financial condition of many PBSs can be improved if small but concentrated load areas are transferred from PDB to PBS. Handovers in the past have proved that it improves the performance of both the handing over and taking over utility.

103. This chapter presents the evaluation of the available project options and the justifications for selecting the proposed project. This section outlines the available project options to address important issues regarding project intervention. The various project options being considered and evaluated were as follows:

1. Site Options
2. Technology Options

1. Site Options

104. In this project there are two major components such as Construction of substation and installation of distribution Line of different voltage levels. Various options were considered for selection of substation- locations. For new substations alternatives were analyzed as part of their selection of provisional sites. Type of substations were considered Outdoor (AIS)/Indoor Substation or mixed of both. In the case of Indoor Substation, it may again be of GIS or VCB breakers type. Substations site selection was analyzed for 2/3 alternatives sites based on environment and social aspects and technical requirements. Such analysis considered various site-specific parameters that include availability of infrastructure facilities such as access roads, distance from rail line, type of land (government/ private land); social impacts such as number of families getting affected. Care was also taken to avoid Ecologically Critical Areas (ECA), forest areas, homesteads, cultural sites etc., for substation site selection.

105. For Distribution Line alignments, for the sake of public safety, places such as schools, hospitals and places of worship were avoided as well as all public utilities wherever possible. In addition, care was also taken to avoid Ecologically Critical Areas (ECA), forest areas, homesteads, cultural sites etc. Keeping above in mind the routes of proposed lines under the project have been so aligned that it takes care of all the above factors.

2. Technology options

106. Like any other PBS in BREB Power Distribution Networking System, the 19 (Nineteen) PBS in Chattogram & Sylhet Division have the same basic technology and design features, where PBSs are to receive power at 33/11 kV sub-station from PGCB's 132/33 kV Grid Substation through 33 KV Source line, and then to deliver power in HT/LT through HT/ 11 kV feeder line and LT 0.4/0.23kV line to consumer end. PBSs thus purchase power in HT as available & deliver by PGCB /BPDB and sell power in HT/LT to consumer as per their demand. There are metering devices at power receiving point at PGCB's 132/33 KV grid Sub-Station for the Energy in Kilowatt per Hour (KWH) purchased and metering device at power receiving point for Energy in Kilowatt per Hour (KWH) sold at consumer end.

107. PBS's infrastructures in general is , therefore includes (a) power receiving station as 33/11 KV Sub-station (b) 33KV Source line connected from PGCB's 132/33 KV grid Sub-Station (c) 11 KV Feeder Line as backbone line (d) 11/0.4 KV sub-station (f) single phase/ three phase line (g) Metering device at power receiving point at PGCB's 132/33 KV grid Sub-Station (h) Metering device at power receiving point at consumer end PBSs' delivered power output as energy sale in KW per hour (KWH) basis and is measured through metering device (mostly Postpaid meter).

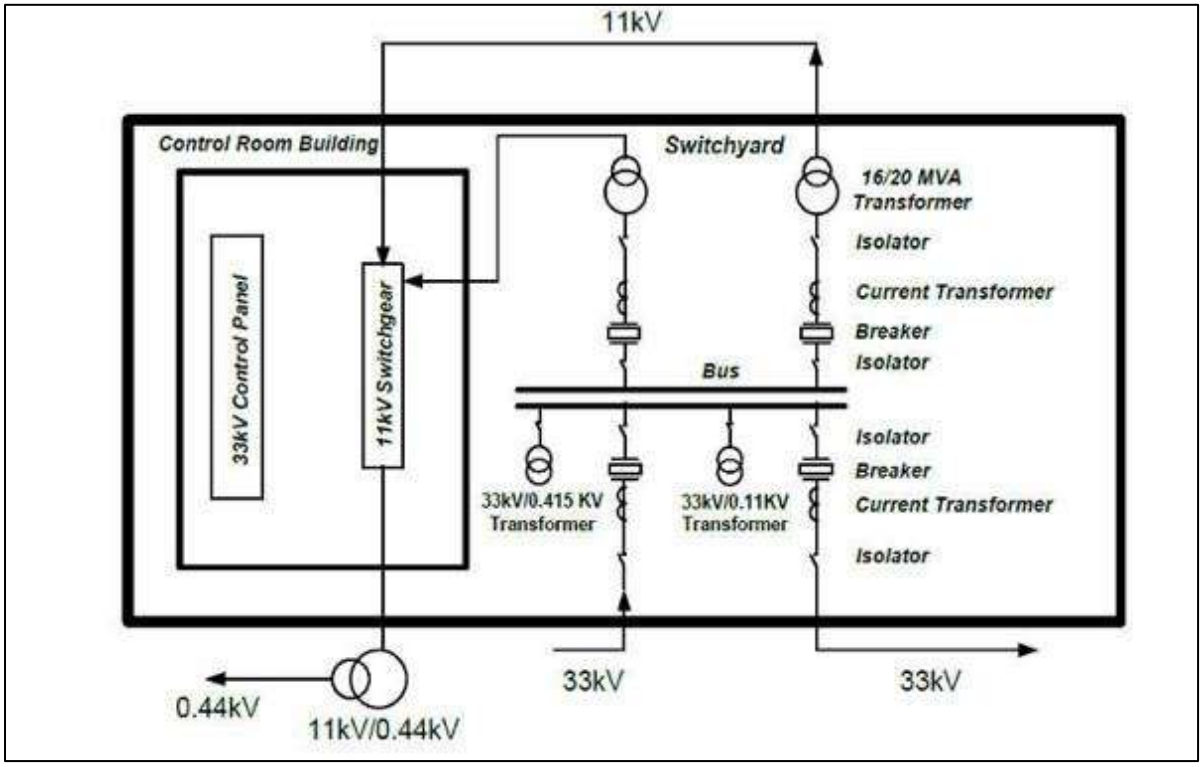


Figure III-3: Typical 33/11kV Outdoor sub-station

108. Temporary labor camps will be setup and equipment (distribution poles, lines and transformers) will be transported to the project construction site and temporary traffic diversions put in place. Digging of any foundation pits is done manually using auguring tools, concrete mixture for foundation is cast, and poles are unloaded for erection which is done using chain and pulley blocks. Then the pin insulators are mounted and stringing of new wires is done with correct sag to maintain prescribed ROW. Finally, for new lines the transformers are installed on single, double or four pole structures or ground mounted, for which earth works are required. The construction works for new distribution lines will involve minimal excavation and soil removal, to install new poles and any ground level transformers; new transformers and switchgear will however usually be pole mounted. There will be limited use of powered mechanical equipment other than cranes and trucks for equipment transportation. Much of the work will involve manual erection of equipment. The size of construction crew depends upon site conditions, the volume of work and techniques. Typically, a crew of 15 to 20 people will be employed, around 1-2 weeks of work will then be needed for the construction of a 1 km section of 33kV or 11 kV line.

G. TECHNOLOGY FEATURES

109. The power distribution system of the country is based on the power generation and transmission through the national grid, which eventually is fed into Substations capable of converting 33kV supply into 11kV and feeding the distribution system with the same.

1. New Substations

110. Under the project, there are 90 nos. new 33/11 kV substations to be installed by 2029 with modern equipment and technology. Most of the new substations will be of indoor type, which typically requires about 0.40-0.50 acres of land. A typical 33/11 kV substation involves installation of 10/14 or 20/28 MVA transformers, installation of 33 kV bays, a control room, and installation of associated 33/11 kV feeders.

111. Once the selection and purchase of land for the substation are done, subsoil investigations have to be carried out to assess the suitability of the soil for construction of the Substation and other infrastructure. The civil construction works include the construction of the control room (building) along with the construction of the foundations for different equipment, followed by the construction of the boundary wall and the guard room.

112. In summary, the following specific activities need to be considered for assessing environmental and social impacts during construction phase of a 33/11kV Substation:

- Purchase of land for Substation as per willing buyer and willing seller approach.;
- Mobilization of material and equipment.
- Land development.
- Civil works, including design and construction of foundation for structures, boundary walls, guard room, etc.
- Installation of electrical equipment, including 33kV and 11kV Auto reclosers
- Testing and commissioning of Substation.

a) Construction Phase of Substation (New & upgradation)

- **Materials**: Major material and equipment used in a substation are power transformers, breakers, CT. PT, Control panel, DC battery and charger, energy meters, relays, steel structure, Cable (Overhead & underground), metallic hardware, Bricks, stone, sand, cement, water, rod etc.
- **Civil construction works**: Construction of control building, Safety tank, transformer pad, gantry structure, internal road, drainage system, security room, etc.
- **Electrical works:** Installation and commissioning of power transformer, breakers, CT. PT, Control panel, DC battery and charger, energy meters, relays, etc.
- **Estimated timeline/ Work schedule:** Average timeline for substation construction is about 12 months per contract.
- **Labor requirements:** All together about 30 persons are required for installation and commissioning of each substation throughout the construction period.
- **Resource use**: material and manpower resources for construction is provided by the turnkey contractors and BREB will provide Financial and technical support.
- **Solid waste and water management:** BREB will ensure on-site temporary sanitary system and supply of pure water for the workers during construction period. These facilities are provided by the contractors.

b) Operation Phase of Substation (New & upgradation)

113. BREB conducts regular operations and maintenance (O&M) works to keep the substation running. A dedicated technical team of BREB is assigned for each substation's regular O&M activities. Necessary material, equipment, and manpower, as mentioned above, are provider from BREB's own fund.

2. Augmentation of Existing Substations

114. The project will upgrade/modernize the capacities of 49 nos. 33/11 kV existing substations. Upgrading work involves increasing the capacity of transformers by installation of new (or replacement of existing) transformers, installation of bays, construction and renovation of existing control rooms, and installation of associated feeders. All work will be done within the premises of the existing substations. Works for upgrading and modernizing of the existing substations will be limited within the boundary of the existing substation area and will be similar in nature to the works at new substations albeit limited in scope. Following repair and maintenance of existing substation components, the retired equipment will be dismantled, removed and disposed of. This will largely involve manual work supported by a mobile crane and trucks for transportation of old transformers, switchgear, lines and other waste lines to authorized third party vendor. Metal components will be delivered to recycling depots and non -recyclable waste disposed of by licensed contractors at registered landfills. The handling, transport, storage and disposal of old transformers by third party vendors will be subject to approval from the concerned authorities. Details PBS list of augmentation is given in the following table.

Table III-5: Details Technical information of augmented substation

PBS Name	Sourc Grid	S/S Name	S/S Cap	S/S Type	Longitude	Latitude	Address
Sylhet PBS-2	Sylhet (Kumargaon)	Bhadaghat	10	Outdoor	91.8020200	24.9438100	Bhadaghat Bazar
Sylhet PBS-2	Sylhet (Kumargaon)	Gowainghat-1	10	Outdoor	91.9768100	25.0927800	Gowainghat Sadar
Sylhet PBS-1	Sylhet (Kumargaon)	Biswanath-3	5	Outdoor	91.7344211	24.7901891	Kaligonj, Biswanath
Sylhet PBS-1	Beanibazar Grid	Zokigonj-1	15	Outdoor	92.3738550	24.9129000	Lamargram, Zokigonj
Sylhet PBS-1	Beanibazar Grid	Golapgonj-2	15	Outdoor	92.0092021	24.8539727	Kodomtoli, Golapgonj
Sylhet PBS-1	Beanibazar Grid	Beanibazar-2	20	Outdoor	92.1551397	24.8167952	Sunampur, Golapgonj
Sunamganj PBS	Sunamganj	Derai	10	Outdoor	91.3483476	24.7931568	Anwarpur, Derai
Sunamganj PBS	Sunamganj	Jamalganj	10	Outdoor	91.2357200	25.0018693	Jamalganj
Noakhali PBS	Chowmuhani Grid	Senbag-2	15	Outdoor	91.1921708	23.0406480	Kesharpar
Noakhali PBS	Ramganj Grid	Chatkhil-2	10	Outdoor	90.9900019	23.0084408	Nayonpur
Noakhali PBS	Chowmuhani Grid	Sonaimuri-3 (Amisapara)	10	Indoor	91.0336430	23.0070945	Meripara (Amishapara)
Moulvibazar PBS	Sreemongal	Sreemangal-3	5	Outdoor	91.7221410	24.3036672	Habiganj Road, Sreemangal
Moulvibazar PBS	Sreemongal	Sreemangal-1	20	Outdoor	91.7222000	24.3035768	Habiganj Road, Sreemangal
Moulvibazar PBS	Kulaura	Baralekha-1	25	Outdoor	92.1788707	24.6818104	Panidhar, Borolekha
Moulvibazar PBS	Fenchuganj Grid	Rajnagar-1	20	Outdoor	91.8531892	24.5310170	Kharpara, Rajnagar
Lakshmipur PBS	Chowmuhani Grid	Komolnagar	10	Indoor	90.8633887	22.7604334	Char Lawrence, Komolnagar
Lakshmipur PBS	Ramganj Grid	Laxmipur-3	10	Indoor	90.8586424	22.8565052	Bhobanigonj,Laxmipur
Lakshmipur PBS	Ramganj Grid	Raypur-3	10	Indoor	90.7791480	22.9916237	Rakhaliya, Raypur
Habiganj PBS	Shahjibazar	Madhabpur-1	20	Outdoor	91.3513084	24.1501839	Jogodishpur, Madhabpur
Habiganj PBS	Shahjibazar	Shaistagonj	20	Outdoor	91.4624540	24.2743097	Biramchor, Shaistagonj, Habiganj
Habiganj PBS	Sreemongal	Bahubal-2 (Mirpur)	10	Indoor	91.5499360	24.2926069	Borinou, Bhadeshwar, Bahubal
Habiganj PBS	Shahjibazar	Madhabpur-3 (East Madhabpur)	10	Indoor	91.3045553	24.1110571	Collagepara, Highway Road, Madhabpur
Habiganj PBS	Sreemongal	Nabiganj-2 (Aushkandi)	10	Indoor	91.5989820	24.5813795	Deoultail, Aushkandi, Nabiganj
Feni PBS	Feni Grid	Dagonbhuyan-3 (Latifpur)	10	Indoor	91.2905276	23.0076544	Latifpur, Rajapur, Dagonbhuiyan
Feni PBS	Barairhat Grid	Sonagazi-3 (Kutirhat)	10	Indoor	91.3761380	22.9256599	Baduria, Bagadana, Sonagazi
Coxs Bazar PBS	Cox's Bazar Grid	Ukhia-1 (HQ)	20	Outdoor	92.1355012	21.2481696	Malvita para, Raja palong, Ukhia.
Coxs Bazar PBS	Matarbari	Chakaria-1	25	Outdoor	92.0830700	21.7353400	Fashia Khali, Fashia Khali, Chakaria

PBS Name	Sourc Grid	S/S Name	S/S Cap	S/S Type	Longitude	Latitude	Address
Coxs Bazar PBS	Matarbari	Moheshkhali-1	10	Outdoor	91.9233774	21.5933839	Keruntoli, Whanok, Mohesh khali
Comilla PBS-4	Chowmuhani Grid	Monohorgonj-1	25	Outdoor	91.0940556	23.1116913	Poranpur, Monohorgong
Comilla PBS-3	Daudkandi Grid	Daudkandi-4	10	Indoor	90.8231940	23.5349293	Raypur
Comilla PBS-3	Daudkandi Grid	Titas	15	Outdoor	90.7785338	23.6244061	Purbo-Batakandi
Comilla PBS-3	Gazaria-1 Grid	Gazaria-4	10	Indoor	90.6891531	23.5286956	Dori-Bausia
Comilla PBS-2	Comilla North (Debpur) Grid	Adarshow Sadar-1	10	Outdoor	91.0932373	23.4475706	Dhonnakhola, Adarshow Sadar
Comilla PBS-1	Comilla North (Debpur) Grid	Chandina-4	10	Indoor	91.0037522	23.4375583	Baniachong, Atabarpur, Chandina
Comilla PBS-1	Comilla North (Debpur) Grid	Debidwar-2	10	Indoor	91.0391646	23.5773489	Hossenpur, Kalikapur, Debidwar
Chattogram PBS-3	Baroaulia Grid	Sitakunda (HQ)	10	Outdoor	91.6470614	22.6284972	Mohadebpur,Shitakunda,Ctg
Chattogram PBS-3	Barairhat Grid	Mirsarai-1(Mithachara)	20	Outdoor	91.5570076	22.8102664	Mitachara,Mirsarai,Ctg
Chattogram PBS-2	Madunaghat	Raozan-2	20	Outdoor	91.9313196	22.4457907	Kallumarartak, Noapara
Chattogram PBS-2	Madunaghat	Fatikchari-2	15	Outdoor	91.8518690	22.5980472	Bhoktopur, Azadibazar
Chattogram PBS-2	Chandraghona Grid	Rangunia-1	15	Outdoor	92.0134453	22.4575755	Gochra, Rangunia
Chattogram PBS-1	Shahamirpur	Anwara-2	15	Outdoor	91.8990758	22.2248789	Anwara
Chattogram PBS-1	Dohazari Grid	Chandanaish-1	20	Outdoor	92.0431659	22.1913220	Hasimpur, (Bagicharhat), Hasimpur, Chandanish
Chandpur PBS-2	Chandpur Grid	Chandpur-3	10	Indoor	90.6731084	23.1710317	Vill : Balia, P.O : Balia Bazar, Chandpur
Chandpur PBS-2	Chandpur Grid	Haimchar	10	Indoor	90.6766566	23.0981624	Vill: South Algi, P.O : Algi Bazar, Haimchar, Chandpur
Chandpur PBS-2	Chandpur Grid	Matlob North-2	10	Indoor	90.6920548	23.4034404	Vill: Sujatpur, P.O : Sujatpur Bazar, Matlab North, Chandpur
Chandpur PBS-1	Kachua	Kachua-1	20	Outdoor	90.8889053	23.3392328	Polashpur, Kowa/Charalkhil, Kachua pourasava, Chandpur
Brahmanbaria PBS	Brahmanbaria Grid	Brahmanbaria HQ (Sadar-1)	20	Outdoor	91.1072927	24.0063213	Suhilpur, Suhilpur, Brahmanbaria
Brahmanbaria PBS	Brahmanbaria Grid	Akhaura-1	20	Outdoor	91.2039447	23.8664671	Akaura, Akhaura, Akhaura
Brahmanbaria PBS	Brahmanbaria Grid	Bijoynagar-1 (Chandura)	15	Outdoor	91.2274007	24.0454813	Chandura, Chandura, Bijaynagar
Brahmanbaria PBS	Brahmanbaria Grid	Nasirnagar-1	20	Outdoor	91.1950195	24.1918144	Nasirnagar, Nasirnagar, Nasirnagar

3. New Distribution Lines

115. The project will involve construction/ conversion of 33 KV and below voltage lines like 29,900 km by June 2029. The 33 kV new lines will connect new/upgraded substations from existing substations, whereas 11kV new lines will be erected to connect new villages. The distribution line requires erection of poles, cables and other accessories. The new 33 kV and 11 kV lines will be mostly aligned along the ROW of existing rural roads although some sections may need to pass thorough agricultural or plantation areas; alignments will be determined following detailed line survey by contractors and design consultant.

116. New distribution line works will involve staging and transportation of equipment, installation of poles for new lines, unrolling of cables, and installation. The new distribution line work will start with detailed route surveys to identify and locate poles and transformers along the route alignment adhering to the national electricity rules and EHS Guidelines on Transmission and Distribution e.g., installation above or adjacent to residential properties or other locations intended for highly frequent human occupancy (e.g., schools or offices) will be avoided. This will be followed by surveys to ascertain the need to clear the RoW that may have vegetation to be trimmed etc.

Figure III.4: BREB's existing distribution line

117. Temporary labor camps will be setup and equipment (distribution poles, lines and transformers) will be transported to the project construction site and temporary traffic diversions put in place. Digging of any foundation pits is done manually using auguring tools, concrete mixture for foundation is cast, and poles are unloaded for erection which is done using chain and pulley blocks. Then the pin insulators are mounted and stringing of new wires is done with correct sag to maintain prescribed RoW. Finally, for new lines the transformers are installed on single, double or four pole structures or ground mounted, for which earth works are required. The construction works for new distribution lines will involve minimal excavation and soil removal, to install new poles and any ground level transformers; new transformers and switchgear will however usually be pole mounted. There will be limited use of powered mechanical equipment other than cranes and trucks for equipment transportation. Much of the work will involve manual erection of equipment. The size of construction crew depends upon site conditions, the volume of work and techniques. Typically, a crew of 15 to 20 people will be employed, around 1-2 weeks of work will then be needed for the construction of a 1 km

section of 33kV or 11 kV line. The standard width of the RoW is 10' from the center of the line to either side (both 33 kV and 11 kV lines). The land area that would be affected by the RoW will be finalized during the detailed design stage.

a) Construction phase of distribution line

- **Materials**: Major material and equipment used in a distribution line are pole, conductors, cross-arm, anchor-log, insulator, distribution transformer, capacitor, hardware, etc.
- **Civil construction works**: Installation of pole, staining of conductor, digging for anchor log, fittings of hardware, etc.
- **Electrical works:** distribution line energization, shut-down, load bi-furcation. etc.
- **Estimated timeline/ Work schedule:** Average timeline for construction of distribution line is about 02 weeks per km.
- **Labor requirements:** Altogether about 10-12 persons are required for construction of 1 km distribution line within the duration of 02 weeks.
- **Resource use**: Manpower resources/ labor for construction is provided by the line construction contractors and BREB will provide material, financial and technical support.
- **Solid waste and water management:** BREB will ensure on-site temporary sanitary system and supply of pure water for the workers during construction period. These facilities are provided by the contractors.

b) Operation phase of distribution line

118. BREB conducts regular operations and maintenance (O&M) works to keep the distribution line running. A dedicated technical team of BREB are assigned for each distribution feeder's regular O&M activities. Necessary material, equipment and manpower, as mentioned above, are provider from BREB's own fund. Here we have enclosed the existing and proposed 33 KV & 11 KV line for Moulovibazar PBS.

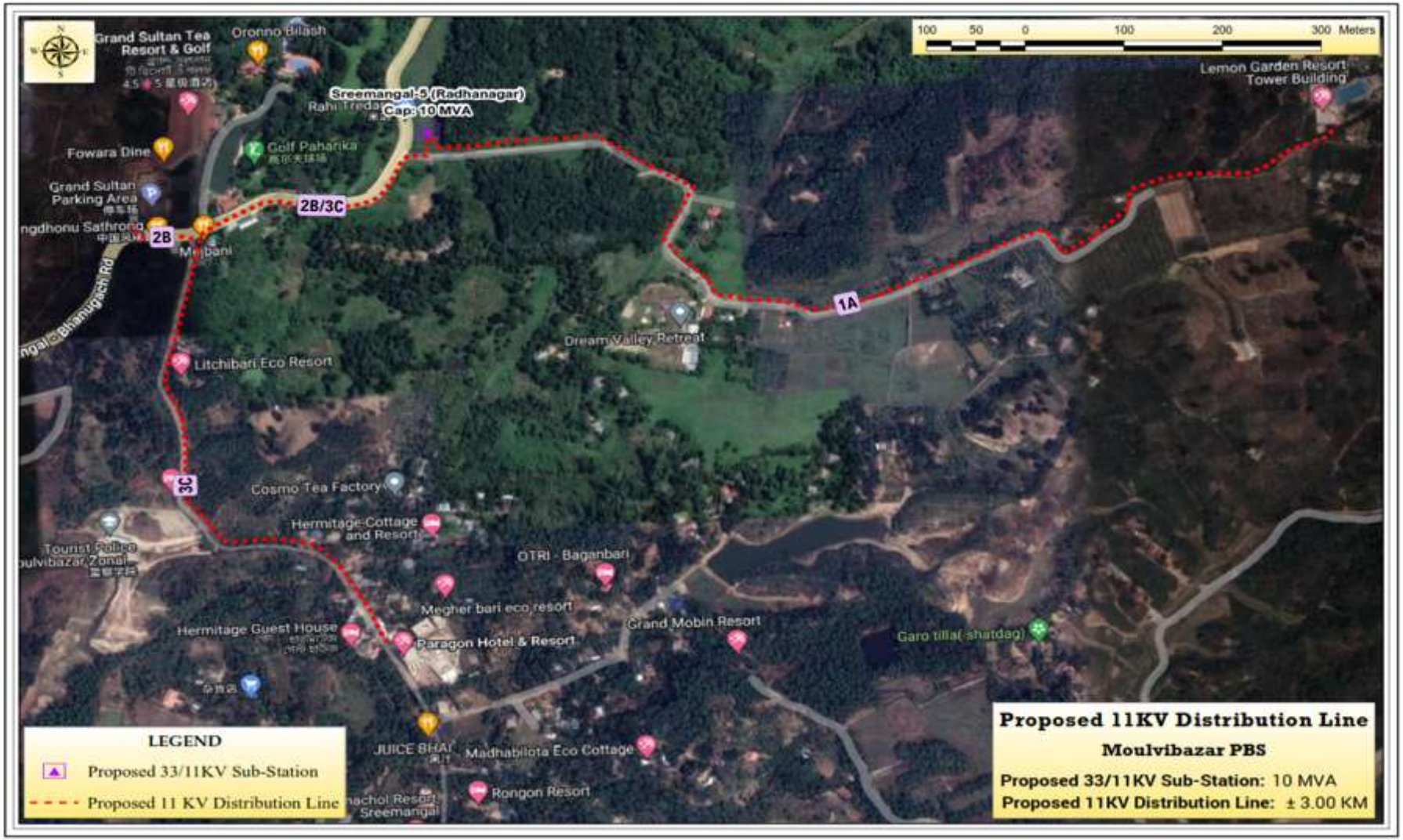


Figure III.5: Proposed 11 KV distribution line of Molovibazar PBS

Figure III.6:Existing & Proposed 33 KV distribution line of Molovibazar PBS

4. River Crossing Tower

119. A total of Eleven (11) river crossing towers will be constructed, having very minimal impact over the surrounding environment. The main reason for the minimal impact is that all of the river crossing towers will be constructed far away from the riverbank and there are no possibilities if flood and erosion. Generally, a river crossing tower is a set of four towers. Two are main suspension tower and the rest of the two are anchor tower.

Table III-6: River Crossing tower under the proposed project

PBS Name	River Name	Latitude	Longitude	Navigation Type	District Name	Upazila Name
Coxs Bazar PBS	Kohelia	21.6774922	91.8741528	Crossing Fishing Boat	Cox's Bazar	Maheshkhali
Coxs Bazar PBS	Kumarir Chora	21.7622714	91.9040021	Crossing Fishing Boat	Cox's Bazar	Pekua
Noakhali PBS	Small Feni River	22.7694871	91.3510294	No boats ply	Noakhali	Companiganj
Noakhali PBS	Chaprashi Khal	22.7754484	91.2517278	Small Boat (Troller)	Noakhali	Companiganj
Coumilla PBS-3	Fuldi River	23.5406964	90.6138130	Small Boat (Troller)	Munshiganj	Gazaria
Coumilla PBS-3	Gomti River	23.5499800	90.7082300	Small Boat (Troller)	Comilla	Daudkandi
Brahmanbaria PBS	Titas	23.8758470	91.0818883	Small Boat	Brahamanbaria	Nabinagar
Brahmanbaria PBS	Titas	23.8780757	91.0857612	Small Boat	Brahamanbaria	Brahmanbaria Sadar
Brahmanbaria PBS	Titas	24.0439500	91.1780100	Small Boat	Brahamanbaria	Sarail
Sunamganj PBS	Surma	25.0883730	91.4209730	Vessel, Boat	Sunamganj	Sunamganj Sadar
Sunamganj PBS	Surma	25.0934358	91.4186937	Vessel, Boat	Sunamganj	Sunamganj Sadar

120. The towers for the river crossing will be constructed far away from the riverbanks. So, there will have no impact on the aquatic resources and to avoid any impacts on river-based activities such as navigation activities like passenger and cargo transport, boats, ferries, fishing etc. To construct river crossing tower BREB always obtained navigation clearance from BIWTA (Bangladesh Inland Water Transport Authority). The clearance for the tower lines will be fixed upon considering river navigation class of BIWTA. In general, and earlier experience of BREB it has been anticipated that the four rivers are classified as Class 3 where vertical clearance is 12.19 meters and horizontal clearance is 30.48. BREB will get navigation clearance from BIWTA for this project also.

Figure III.7: Propose location on Kohelia river crossing (Cox's bazar PBS)

Table III-7: Detail Tower information

PBS Name	Tower Type	River Name	Address	Latitude	Longitude	Navigation Type	Division Name	District Name	Upazila Name	Union Name
Coxs Bazar PBS	Suspension Tower	Kohelia	Dholghata	21.6776100	91.8754300	Crossing Fishing Boat	Chattogram	Cox's Bazar	Maheshkhali	Dhalghata
Coxs Bazar PBS	Anchor Tower	Kohelia	Dholghata	21.6774922	91.8741528	Crossing Fishing Boat	Chattogram	Cox's Bazar	Maheshkhali	Dhalghata
Coxs Bazar PBS	Suspension Tower	Kohelia	Kalamar Chora	21.6788100	91.8821600	Crossing Fishing Boat	Chattogram	Cox's Bazar	Maheshkhali	Kalarmarchhara
Coxs Bazar PBS	Anchor Tower	Kohelia	Kalamar Chora	21.6789500	91.8836900	Crossing Fishing Boat	Chattogram	Cox's Bazar	Maheshkhali	Kalarmarchhara
Coxs Bazar PBS	Anchor Tower	Kumarir Chora	Ujantia	21.7622714	91.9040021	Crossing Fishing Boat	Chattogram	Cox's Bazar	Pekua	Magnama
Coxs Bazar PBS	Suspension Tower	Kumarir Chora	Ujantia	21.7629050	91.9039330	Crossing Fishing Boat	Chattogram	Cox's Bazar	Pekua	Magnama
Coxs Bazar PBS	Suspension Tower	Kumarir Chora	Ujantia	21.7654580	91.9035220	Crossing Fishing Boat	Chattogram	Cox's Bazar	Pekua	Magnama
Coxs Bazar PBS	Anchor Tower	Kumarir Chora	Ujantia	21.7660934	91.9034436	Crossing Fishing Boat	Chattogram	Cox's Bazar	Pekua	Magnama
Noakhali PBS	Suspension Tower	Small Feni River	Musapur	22.7694809	91.3505429	No boats ply	Chattogram	Noakhali	Companiganj	Musapur
Noakhali PBS	Suspension Tower	Small Feni River	Musapur	22.7694600	91.3488800	No boats ply	Chattogram	Noakhali	Companiganj	Musapur
Noakhali PBS	Anchor Tower	Small Feni River	Musapur	22.7694871	91.3510294	No boats ply	Chattogram	Noakhali	Companiganj	Musapur
Noakhali PBS	Suspension Tower	Chaprashi Khal	Char Elahi Brizde, Char Mondolia	22.7735152	91.2529758	Small Boat (Troller)	Chattogram	Noakhali	Kabirhat	Chaprashirhat
Noakhali PBS	Suspension Tower	Chaprashi Khal	Char Elahi Brizde, Char Mondolia	22.7751800	91.2519100	Small Boat (Troller)	Chattogram	Noakhali	Companiganj	Char Fakira
Coumilla PBS-3	Anchor Tower	Fuldi River	Sonali Market	23.5406964	90.6138130	Small Boat (Troller)	Dhaka	Munshiganj	Gazaria	Imampur
Coumilla PBS-3	Suspension Tower	Fuldi River	Sonali Market	23.5409400	90.6133400	Small Boat (Troller)	Dhaka	Munshiganj	Gazaria	Imampur
Coumilla PBS-3	Suspension Tower	Fuldi River	Rasulpur	23.5414100	90.6106000	Small Boat (Troller)	Dhaka	Munshiganj	Gazaria	Gazaria
Coumilla PBS-3	Anchor Tower	Fuldi River	Rasulpur	23.5416980	90.6100990	Small Boat (Troller)	Dhaka	Munshiganj	Gazaria	Gazaria
Coumilla PBS-3	Anchor Tower	Gomti River	Golaper Char	23.5493586	90.7049445	Small Boat (Troller)	Chattogram	Comilla	Daudkandi	Uttar Daudkandi
Coumilla PBS-3	Suspension Tower	Gomti River	Golaper Char	23.5494700	90.7055100	Small Boat (Troller)	Chattogram	Comilla	Daudkandi	Uttar Daudkandi
Coumilla PBS-3	Suspension Tower	Gomti River	Sonali Market	23.5499100	90.7077800	Small Boat (Troller)	Chattogram	Comilla	Daudkandi	Uttar Daudkandi
Coumilla PBS-3	Anchor Tower	Gomti River	Sonali Market	23.5499800	90.7082300	Small Boat (Troller)	Chattogram	Comilla	Daudkandi	Uttar Daudkandi

PBS Name	Tower Type	River Name	Address	Latitude	Longitude	Navigation Type	Division Name	District Name	Upazila Name	Union Name
Brahmanbaria PBS	Anchor Tower	Titas	Naroi	23.8758470	91.0818883	Small Boat	Chattogram	Brahamanbaria	Nabinagar	Kaitala
Brahmanbaria PBS	Suspension Tower	Titas	Naroi	23.8761530	91.0824200	Small Boat	Chattogram	Brahamanbaria	Nabinagar	Kaitala
Brahmanbaria PBS	Suspension Tower	Titas	Naroi	23.8777620	91.0852160	Small Boat	Chattogram	Brahamanbaria	Brahmanbaria Sadar	Sultanpur
Brahmanbaria PBS	Anchor Tower	Titas	Naroi	23.8780757	91.0857612	Small Boat	Chattogram	Brahamanbaria	Brahmanbaria Sadar	Sultanpur
Brahmanbaria PBS	Anchor Tower	Titas	Aoir-Kaoir	24.0045800	91.1161100	Small Boat	Chattogram	Brahamanbaria	Brahmanbaria Sadar	Dakshin Shuhilpur
Brahmanbaria PBS	Suspension Tower	Titas	Aoir-Kaoir	24.0045800	91.1166800	Small Boat	Chattogram	Brahamanbaria	Brahmanbaria Sadar	Char Islmapur
Brahmanbaria PBS	Suspension Tower	Titas	Gopinat pur	24.0045800	91.1191700	Small Boat	Chattogram	Brahamanbaria	Brahmanbaria Sadar	Char Islmapur
Brahmanbaria PBS	Anchor Tower	Titas	Gopinat pur	24.0045800	91.1195300	Small Boat	Chattogram	Brahamanbaria	Brahmanbaria Sadar	Char Islmapur
Brahmanbaria PBS	Anchor Tower	Titas	Shabajpur	24.0439500	91.1780100	Small Boat	Chattogram	Brahamanbaria	Sarail	Shahbazpur
Brahmanbaria PBS	Suspension Tower	Titas	Shabajpur	24.0442600	91.1780100	Small Boat	Chattogram	Brahamanbaria	Sarail	Shahbazpur
Brahmanbaria PBS	Suspension Tower	Titas	Shabajpur	24.0469200	91.1780100	Small Boat	Chattogram	Brahamanbaria	Sarail	Shahbazpur
Brahmanbaria PBS	Anchor Tower	Titas	Shabajpur	24.0472900	91.1780100	Small Boat	Chattogram	Brahamanbaria	Sarail	Shahbazpur
Sunamganj PBS	Suspension Tower	Surma	Dharargaon	25.0883730	91.4209730	Vessel, Boat	Sylhet	Sunamganj	Sunamganj Sadar	Rangar Char
Sunamganj PBS	Suspension Tower	Surma	Moinpur	25.0929690	91.4189050	Vessel, Boat	Sylhet	Sunamganj	Sunamganj Sadar	Rangar Char
Sunamganj PBS	Anchor Tower	Surma	Moinpur	25.0934358	91.4186937	Vessel, Boat	Sylhet	Sunamganj	Sunamganj Sadar	Rangar Char
Sunamganj PBS	Anchor Tower	Surma	Dharargaon	25.0879097	91.4211738	Vessel, Boat	Sylhet	Sunamganj	Sunamganj Sadar	Rangar Char
Noakhali PBS	Anchor Tower	Chaprashi Khal	Char Elahi Brizde, Char Mondolia	22.7754484	91.2517278	Small Boat (Troller)	Chattogram	Noakhali	Companiganj	Char Fakira
Noakhali PBS	Anchor Tower	Chaprashi Khal	Char Elahi Brizde, Char Mondolia	22.7732672	91.2531423	Small Boat (Troller)	Chattogram	Noakhali	Kabirhat	Chaprashirhat
Noakhali PBS	Anchor Tower	Small Feni River	Musapur	22.7694583	91.3484787	No boats ply	Chattogram	Noakhali	Companiganj	Musapur

a) Construction phase of River crossing Tower

- **Materials**: Major material and equipment used in a river crossing tower are steel bar, conductors, insulator, hardware, bricks, stone, sand, cement, water, rod etc.
- **Civil construction works**: Installation of anchor tower, suspension tower, staining of conductor, tower base foundation, fittings of hardware, etc.
- **Electrical works:** distribution line energization.
- **Estimated timeline/ Work schedule:** Average timeline for construction of river crossing tower is about 06 months per set.
- **Labor requirements:** Altogether about 30 persons are required for construction of each set of rivers crossing towers within the duration of 06 months.
- **Resource use**: Manpower resources/ labor for construction is provided by the river crossing tower construction contractors (turnkey) and BREB will provide material, financial and technical support.
- **Solid waste and water management:** BREB will ensure on-site temporary sanitary system and supply of pure water for the workers during construction period. These facilities are provided by the contractors.

Table III-8: Sensitive Receptor surrounding the river crossing tower

Tower Code	PBS Name	River Name	Latitude	Longitude	Sensitive Receptor
T-1	Comilla PBS-3	Fuldi	23.5406964	90.6138130	Upazilla complex Jame Mosque
T-2	Coxbazar PBS	Kohelia	21.6774922	91.8741528	Bannakera Govt. Primary School
T-3	Noakhali PBS	Chaprashi Khal	22.7754484	91.2517278	Jhalchera Agro Complex (Fish Farm)

b) Operation phase of River crossing Tower

121. BREB conducts regular operations and maintenance (O&M) works to keep the distribution line running. A dedicated technical team of BREB are assigned for each distribution feeder's regular O&M activities. Necessary material, equipment and manpower, as mentioned above, are provider from BREB's own fund. The details schematic map has been prepared for the proposed river crossing tower which have been given below:

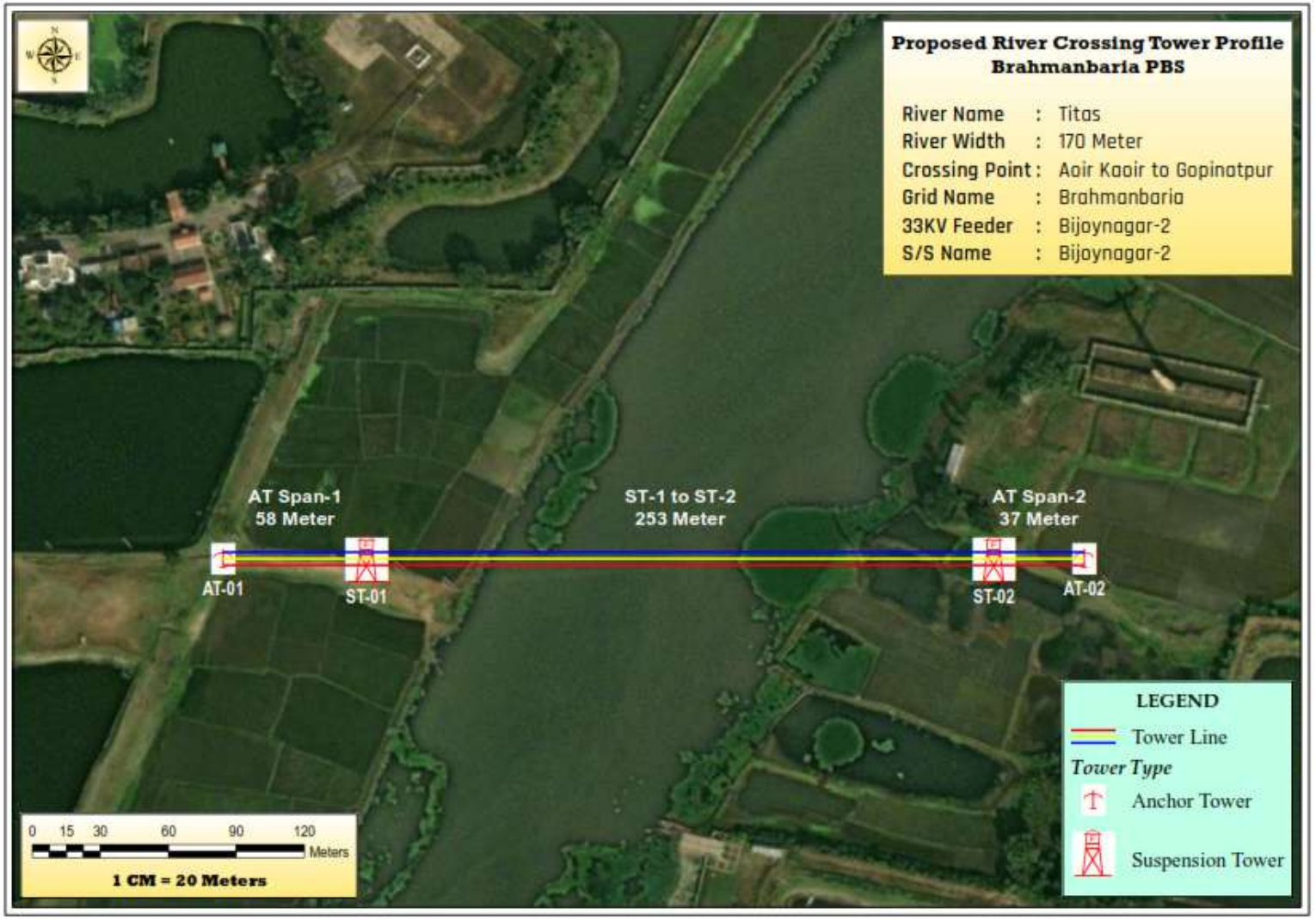


Figure III.8: Proposed Titas River Crossing Tower of Brahmanbaria PBS (Bijoynagar-2)

Figure III.9: Proposed Titas River Crossing Tower of Brahmanbaria PBS (Nabinagar-3 & Nabinagar-4)

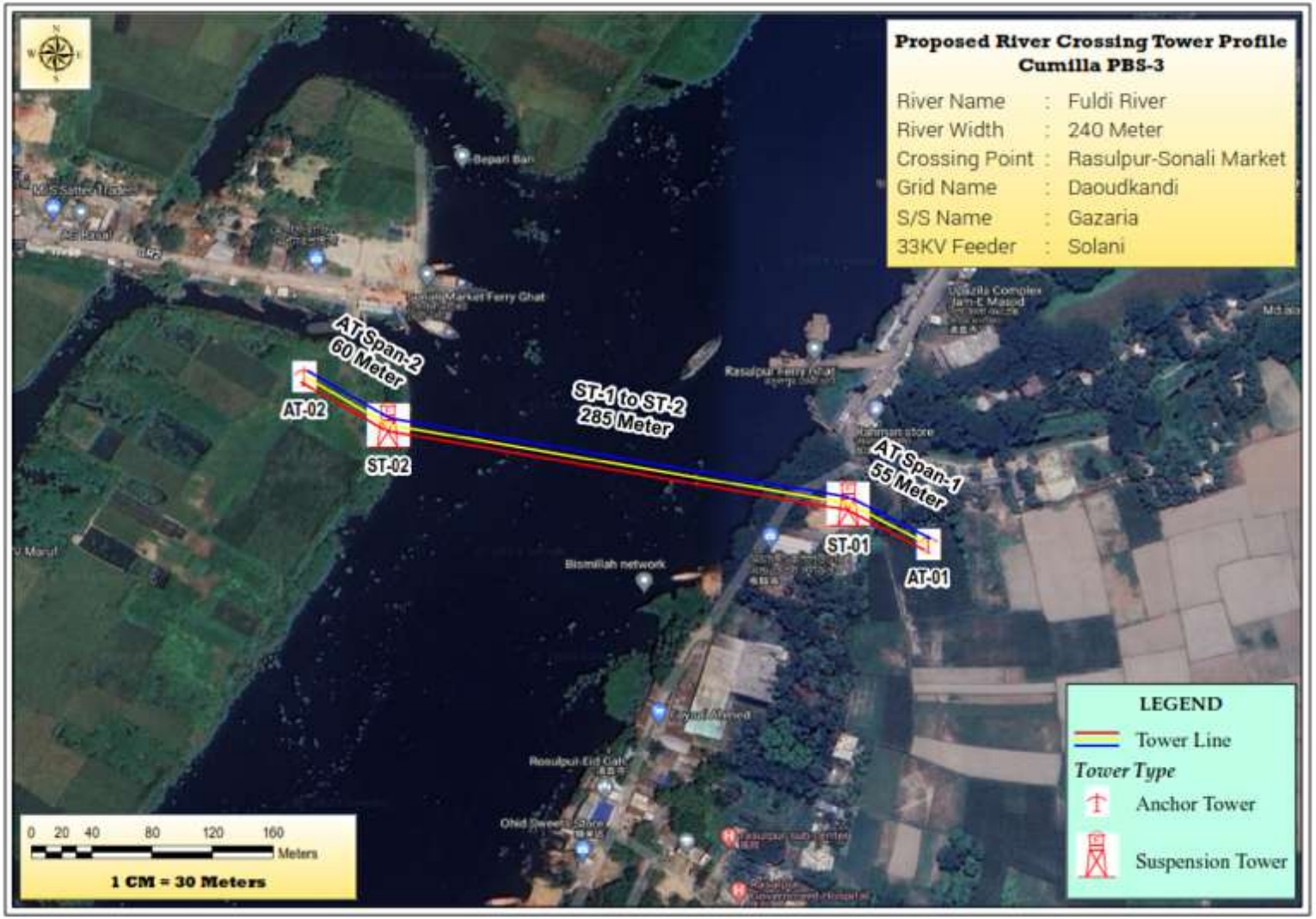


Figure III.10: Proposed Fuldi River Crossing Tower of Comilla PBS-3 (Solani)

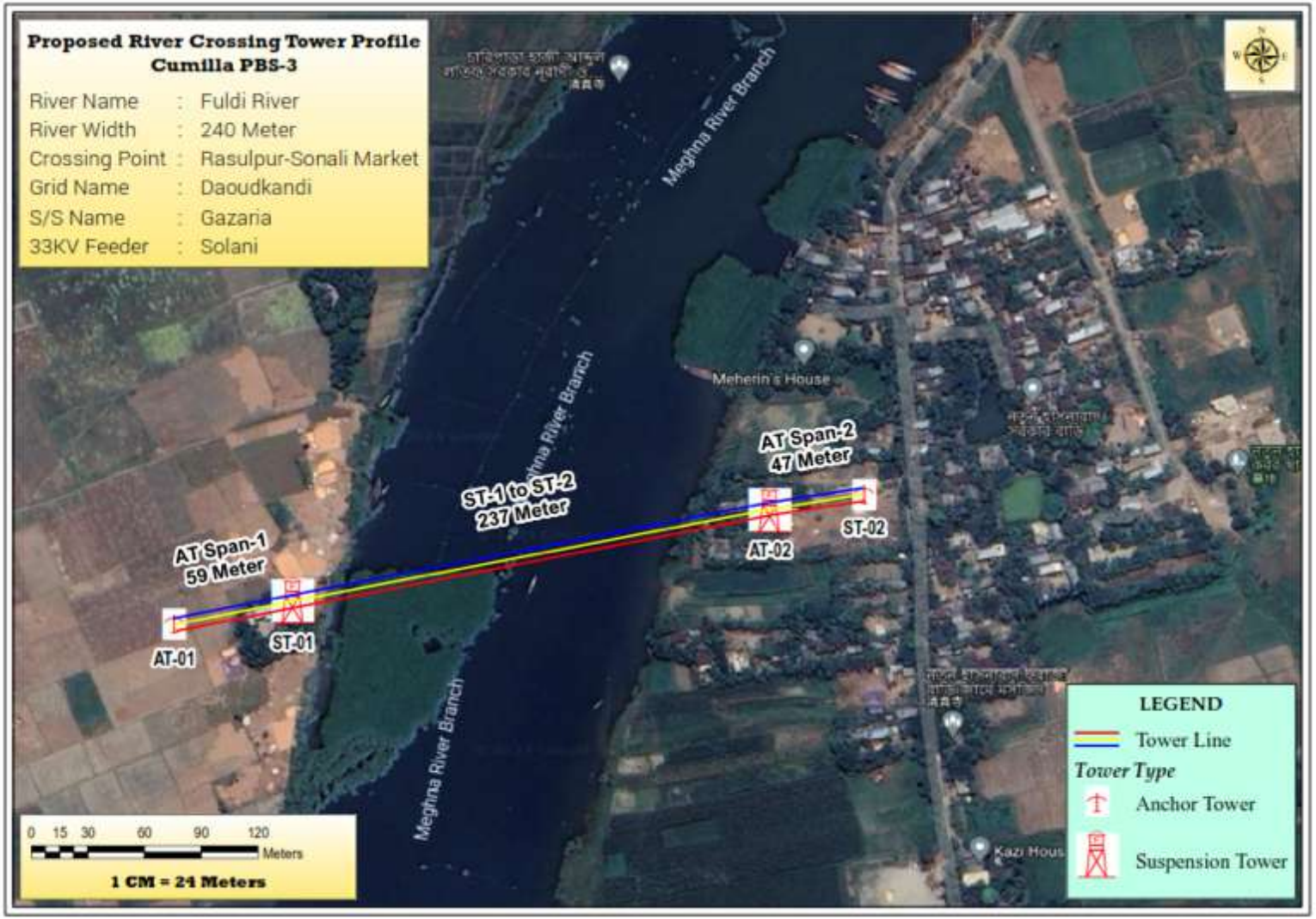


Figure III.11: Proposed Fuldi River Crossing Tower of Comilla PBS-3 (Solani)

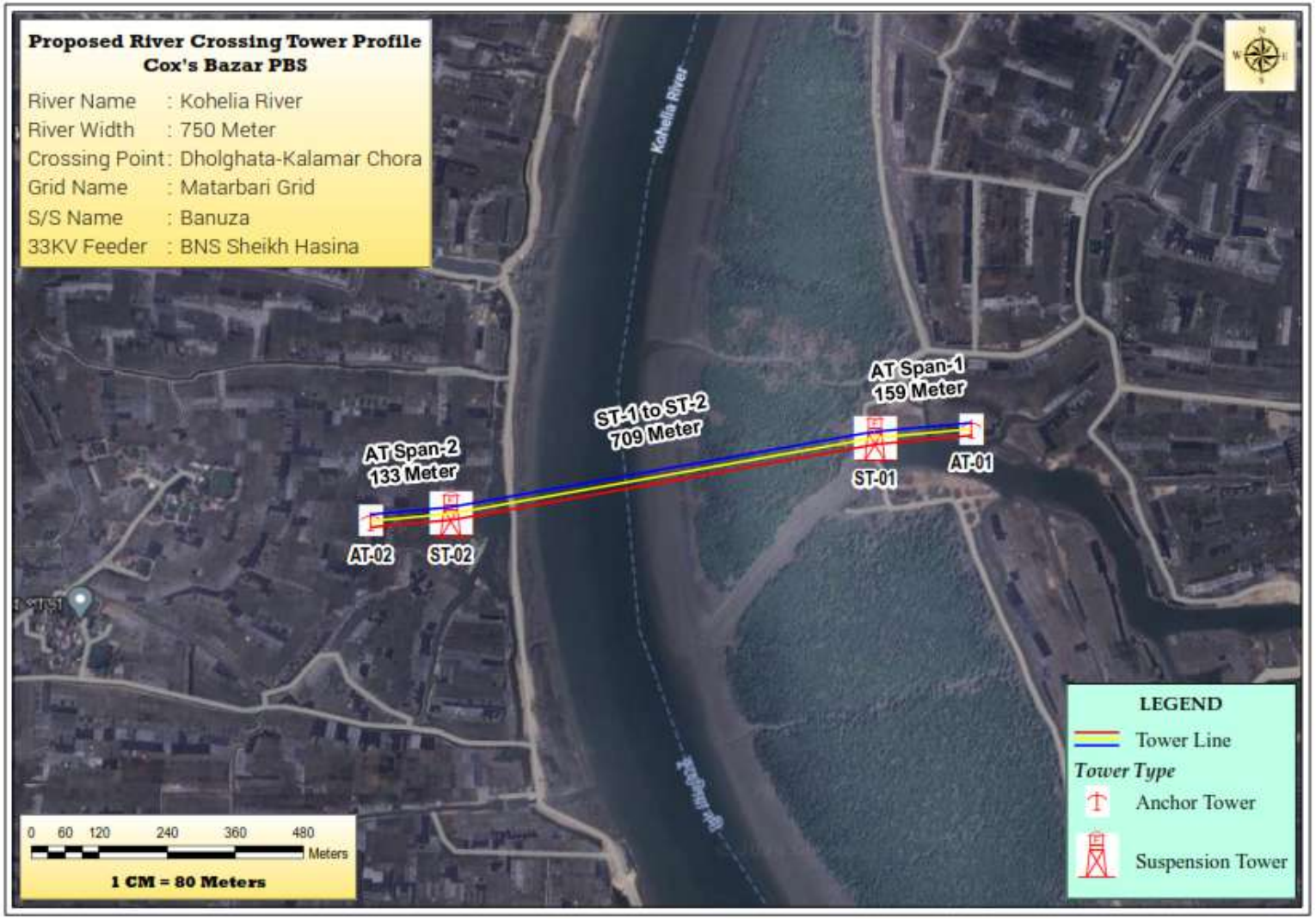


Figure III.12: Proposed Kohelia River Crossing Tower of Coxbazar PBS (BNS Seikh Hasina)

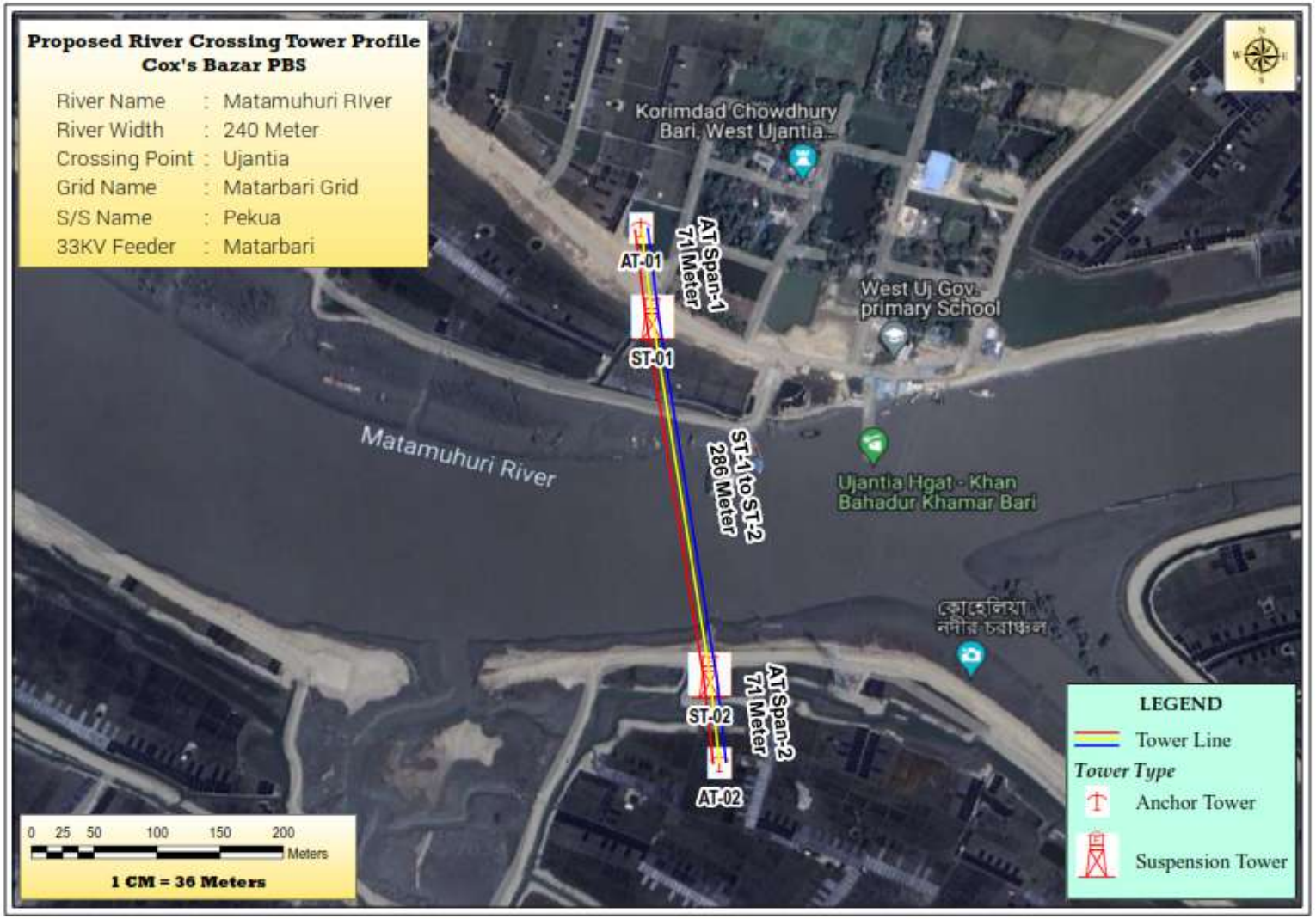


Figure III.13: Proposed Matamuhuri River Crossing Tower of Coxbazar PBS (Matarbari)

Figure III.14: Proposed Chaprashi Khal River Crossing Tower of Noakhali PBS (Companiganj)

Figure III.15: Proposed Small Feni River Crossing Tower of Noakhali PBS

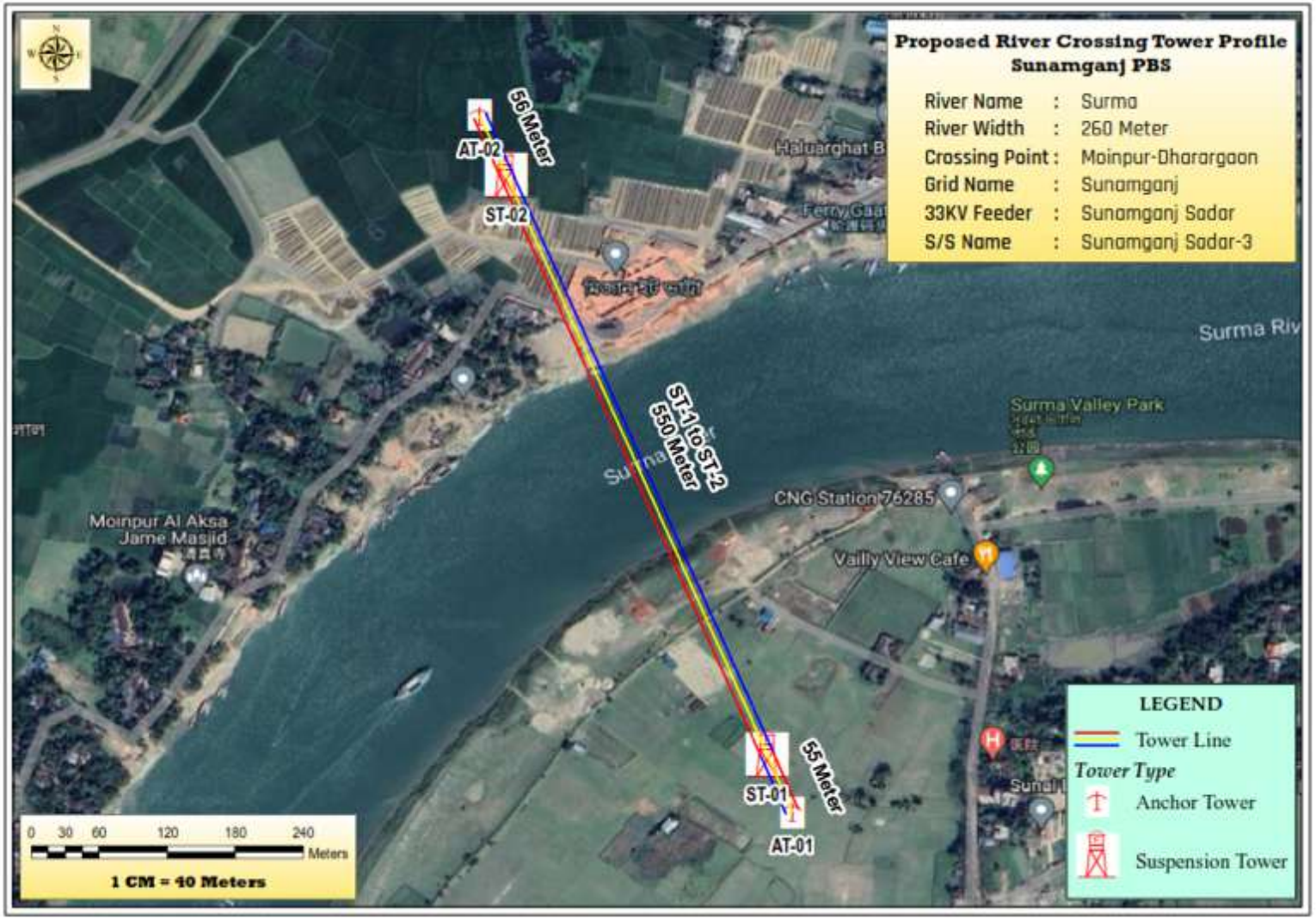


Figure III.16: Proposed Surma River Crossing Tower of Sunamganj PBS

5. Reconstruction of 3678 km line in flood prone area

122. Another important component of the project is to reconstruct 3678 Km line in flood prone areas. Under this component the major activity will be replacement of old pole by new pole by increasing pole height as well as using flood-resistant materials for poles, transformers, and other equipment enhances their ability to withstand floodwater exposure.

123. In addition, Use of additional pole to reduce the span length building robust network against cyclone/ storm. Others material (Hardware, insulator, x-arm, anchor log etc. except conductor) which is related to the additional pole use in flood prone area.

124. The detailed list of the flood prone areas under this project in the given table as well as a map of flood prone areas has been prepared for this proposed project.

Table III-9: Flood Prone area under the proposed project

Division	District	PBS Name	Affected Line (Km)
Chattogram	Brahmanbaria	Brahmanbaria	234
	Chadpur	Chadpur-1	350
	Chattogram	Chattogram-1	1387
	Chattogram	Chattogram-3	2
	Comilla	Comilla-2	3
	Comilla	Comilla-3	141
	Coxbazar	Coxbazar	72
	Laxmipur	Laxmipur	400
Sylhet	Habiganj	Habiganj	307
	Moulovibzar	Moulovibzar	65
	Sunamganj	Sunamganj	153
	Sylhet	Sylhet-1	527
		Sylhet-2	37

6. Construction of 33 KV and 11 KV Underground/Submarine Cable

125. Underground cable installation only applies to cables within the indoor S/S for internal connection. These are not underground distribution lines spanning kilometers across roads, private or public land. The provision of construction of new underground lines is considered only where overhead line is not possible at all to construct for energization purposes. Some pictures are given below. Under this project 219 km 33 KB underground cabling will be constructed and 11 km 33 KV Submarine cable will be constructed. In addition, for 11 KV, 291 km underground and 7 km submarine cable will be constructed.


Figure III.17 Underground cable passing through the slab to indoor S/S

Table III-10: Depth of cable installation

33 kV	1.0 m
11kV cable	1.0 m
Low voltage and control cable	0.6 m
Cable under road crossing	---- 1.0 m
Cable at railway crossings	--- 1.0 m

Table III-11: Clearance of cable installation

Power Cable to Power Cable	No restriction, more the distance better the current carrying capacity
Power Cable to Control Cable	0.2 m
Power Cable to Communication Cable	0.3 m
Power Cable to Gas and Water Main	0.3 m

7. Construction of Switching Station

126. Another major component for this project is to construct 11 switching stations. Switching stations allow BREB to control the flow of electricity across their network. This enables them to Isolate specific sections of the grid for maintenance or repairs without impacting the entire system. As demand for electricity in rural areas increases, BREB can use switching stations to integrate new power generation sources into the grid. For construction of switching stations, land purchase will be required and BREB has confirmed six land to purchase and among four land one land has already been purchased from BREB. Here we have mentioned the detai locations of the six switching statons. A schematic drawaing of switching staton also provided below:


Figure III.18 Proposed switching station location

Table III-12: Flood Prone area under the proposed project

SL No	PBS Name	S/S Name	Latitude	Longitude	Address	Land Size (Decimal)
A	B	D	F	G	H	H
1	Brahmanbaria PBS	Bijoynagar	24.076735	91.265446	Islampur	30
2	Chattogram PBS-1	Dohazari Switching Station	22.153060	92.071780	Dohazari	45
3	Chattogram PBS-1	Shamirpur Switching Station	22.268950	91.845690	Shamirpur, Karnafuli	45
4	Chattogram PBS-3	Baratakia Switching Station	22.761360	91.582180	Baratakia, Mirsharai	52
5	Chattogram PBS-3	BEZA-2 Switching Station	22.736737	91.467989	BEZA	50
6	Cox's Bazar PBS	Chokoria Switching Station	21.748920	92.036030	Rampur	80

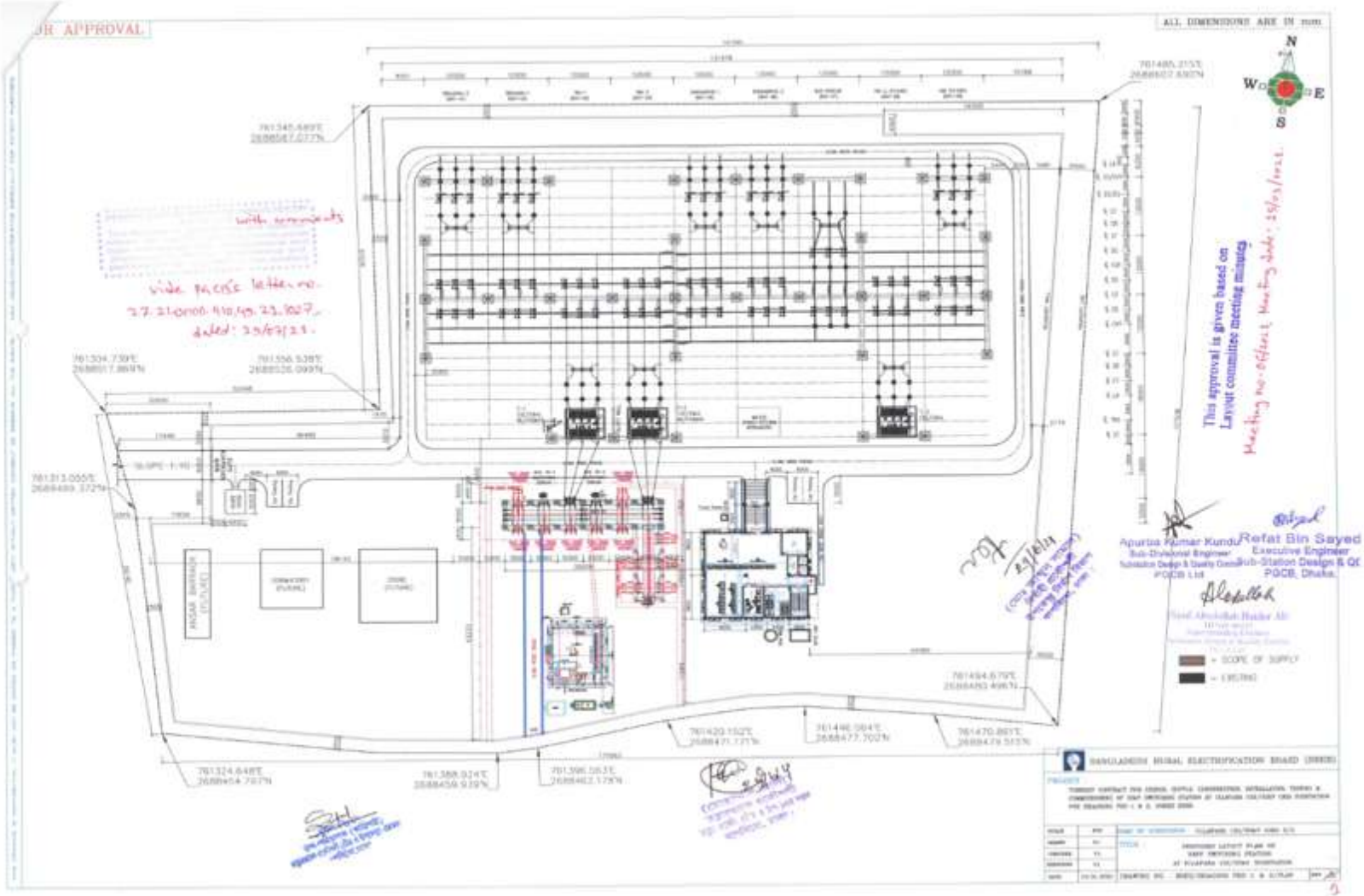


Figure III.19 A Schematic drawaing of a Switching station

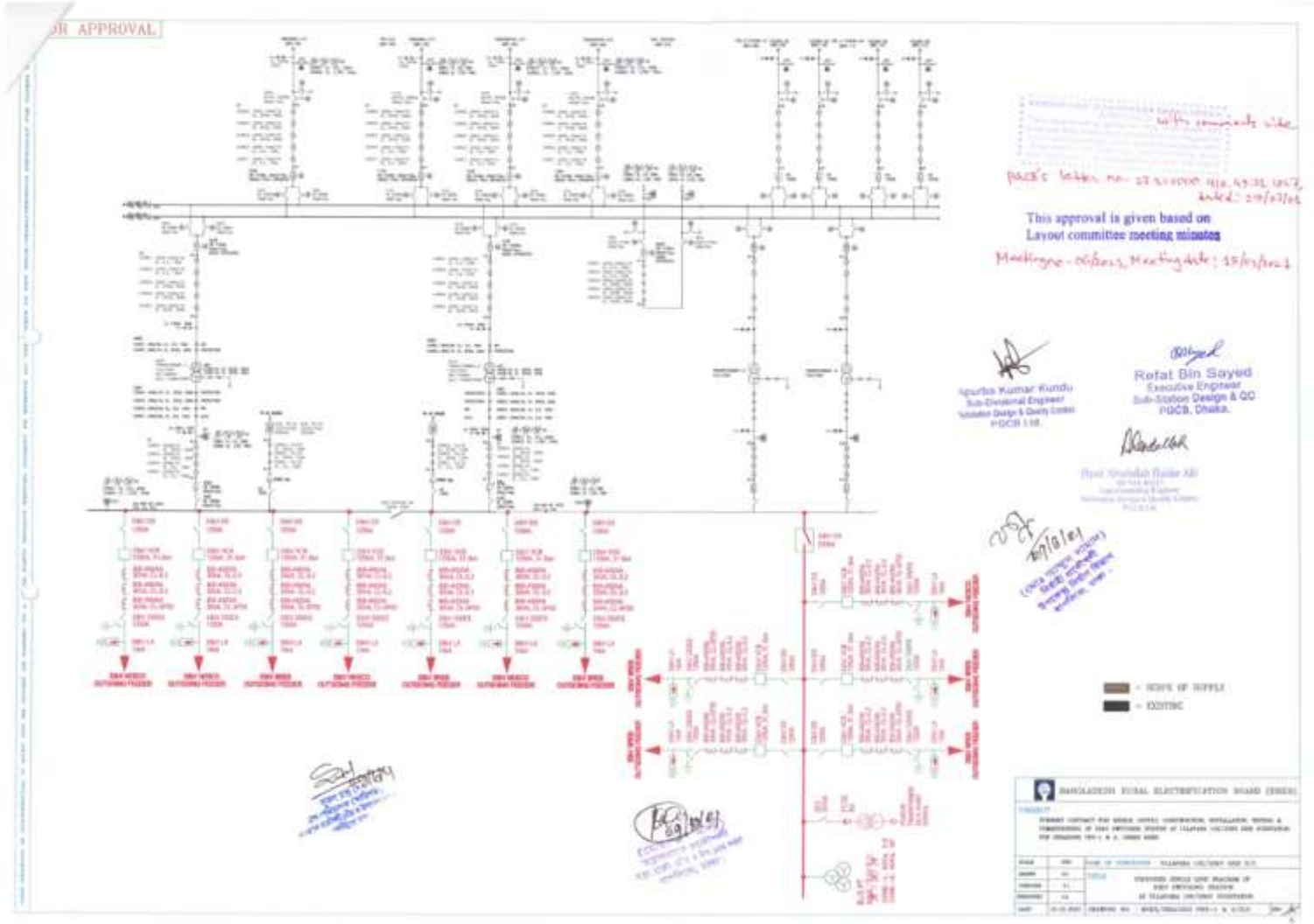


Figure III.20 A Schematic drawaing of a Switching station

H. PROJECT PLAN

127. BREB Has planned to alleviate the overall condition of the North-western part of Bangladesh that is the division 100% uninterrupted insufficient electricity supply. With this, in view 19 PBS has been selected under division to move on tomorrow nice this part of Bangladesh with electricity supply. In earlier times due to lack of proper transport system and communication, load growth was not increased in this particular area. But presently with time connectivity, BREB has adopted a new model.

128. Based on the information/ data as collected, summary statement was prepared on requirement of 33kV line and 11 kV & Below Voltage line, insulated conductor, LT to HT conversion, River crossing tower, 33/11 kV Sub-Station, Present Average/ peak Demand, Forecasted Average/ peak Demand up to 2025 & up to 2030 separately. Highlights on targeted BOQ in short are as here under:

- To construct 90 nos. of 33/11 kV new Sub-station (+1512MVA).
- Augmentation of 49 nos. of 33/11 kV existing sub-station (+550 MVA).
- To Construct 12430 km (New/Up-gradation) of 33kV and bellow voltage line
- To construct/purchase 234 km. of 33kV underground/submarine cable.
- To construct/purchase 298 km. of 11kV underground/submarine cable
- To Construct 4990 km. of insulated line.
- Conversion of 3320 km LT to HT line.
- Conversion of 4950 km HT 1-ph to HT 3-ph line.
- Reconstruction/ rehabilitation of 3678 km line in flood affected area.
- Construction of 11 sets River crossing Tower
- Construction of 11 sets Switching Stations
- 03 set SCADA System installation for fifteen substations incorporation in Chattogram PBS-1, Comilla PBS-3 & Hobiganj PBS.
- Fault Locator installation 9000 sets.

I. RESOURCES AND UTILITY DEMAND

1. Water

129. Water will be required for construction work and the same will be sourced from existing tube-well during augmentation work, wherever available. In case of non-availability of tube well, a contractor will procure water from a nearby source. During the construction of the new substation, the contractor will install a tube well for procuring water. In the case of construction of ground water abstraction units (tube wells) at Project site, then licenses will need to be obtained prior to installation of any tube-wells.

2. Land

130. Sufficient land is available at the fenced substation areas for augmentation of existing substations. In average total 0.40- 0.50 acres land will be required for each new substation construction. Out of 90 Nos. new substations, there is no provision for Land procurement in the proposed DPP. At present 11 pieces of land have been purchased for proposed substations. & this land has been purchased through willing buyer and seller approaches. The remaining substation's land will be purchased through willing buyer and seller approaches. According to the field survey and received data from PBS it is anticipated that BREB always intends to purchase land from landowner through "Willing Buyer and willing seller Approach" where two parties are benefited.

131. Another project component is that underground cable installation only applies to cables within the indoor S/S for internal connection. These are not underground distribution lines spanning kilometers across roads, private or public land.

3. Power Requirement

132. Power for construction work will be sourced from existing substations. Diesel generator set may also be used as backup power supply during construction phase of the project.

4. Material

133. BREB uses ordinary machinery for construction works such as forklifts, backhoe, tower cranes, roller, compactors, dump trucks, etc. and ordinary construction tools such as shovel, axe, saw, hammer, wire grip, four-wheel or chain wrist safety gears, conductor stringing equipment, etc. As well as BREB mainly sourced this earth, gravel etc from locally.

134. The main materials specified for the Project are as follows:

- Line Hardware
- Insulator
- Conductor & wire (Bare & others)
- Conductor & wire (Insulated & others)
- Conductor & wire (Underground cable)
- Conductor & Guy Accessories
- Distribution Transformer
- Sectionalizing devices
- Fuse Links
- Connector
- Guy & grounding wire
- 1-P Electronic Meter
- Power Transformer.
- 11 KV ACR
- CT/ PT
- 33 KV VCB with CT/PT & control Cable
- SPC Poles
- Wooden Pole
- Cross-arm
- Anchor log
- Sub-station Switch
- Copper Conductor
- Post Insulator
- Substation steel cross-arm
- Substation Hardware & connector

5. Dredge Material

135. BREB has no plan to use dredged materials as Dredged materials can vary significantly in composition, with some containing contaminants like heavy metals or organic matter. These contaminants could pose environmental risks or corrosion issues for substation equipment. In addition, Substation construction requires predictable and consistent material properties to ensure structural integrity. Dredged materials can be inconsistent, making it difficult to achieve the necessary level of control.

J. PROJECT'S STRENGTH, WEAKNESS & OPPORTUNITY

1. Strength

- The major construction materials to be used for the project such as power transformer, distribution transformer, poles, conductors, cables and other hardware materials are manufactured locally which are easily available for the project.

- Engineers, contractors and skilled work force are locally available for implementation of this distribution project.
- High demand for the product of the project i.e., electrical energy to be utilized for socioeconomic development.
- The objective of the project is in line with other national development perspectives.
- The project will create a significant and sustainable impact on poverty alleviation, which complies with Govt. Poverty Reduction Program of vision 2021. It will have potential impact on health, education, women empowerment.
- This project complies with the policy of the Government for improvement of power sector of the country.

2. Weakness

- Grid Connectivity in BREB Power System Network is not adequate as per requirement and not load centre based. The longer line length causes substantial voltage to drop and system loss in REB network system.
- Grid and Generation feature is not well coordinated, due to which generation and distribution system are sometimes mismatched with the localized demand.
- Maintenance of the power networking system is not adequate for the supply quality power at the consumer's end.

3. Opportunity

- Electricity plays a vital role in socio-economic development and poverty alleviation. It is considered as the driving force of all development activities. The Rural Electrification Program has been identified as a principal component of the overall rural infrastructure's development of national economy.
- The project will improve the quality of human life of the vast rural population. It will also accomplish continuous advancement to their socio-economic conditions through supply of stable and reliable electric power to the rural areas of the country as well as to fulfil the constitutional right of the people to have electricity.
- It is expected that the project will contribute a great extent to the national economy by the process of increased production in agriculture and industrial sectors, and business arena creating additional employment.
- The project has no adverse effect on environment The Project is expected to reduce indoor air pollution by replacing kerosene, firewood with electricity as energy source for lighting. This will deliver health impalements, particularly for women and young children, who spend much of their time indoors. The project will also reduce the use of diesel as an energy source for pumping, agriculture processing, light industry, and commerce and service delivery.
- The annual income of electrified households in found much higher than that of nonelectrified households. This distribution project will contribute to poverty alleviation/reduction.

K. SCHEDULE OF IMPLEMENTATION

136. The tentative commencement date of the project is 1st July 2024, and the date of completion is 30 June, 2029.

137. In BREB pre-construction activities are a) land purchase, b) Soil test, c) water test, d) Noise level and e) air quality test, etc. These activities require around 06 months before

starting the construction. Some construction activities of BREB are a) Site clearance, b) land development c) material test d) civil and electrical works, etc. These activities require around 12 months for the construction of each substation and 08 month for the distribution line. The implementation timeline for this project is estimated to be 05 years.

L. CAPITAL COST OF THE PROJECT

138. BREB was not directly involved in cost estimation precisely for each item of the project. It collected capital cost data from various documents and reports provided by BREB. However, we have reviewed some of the major cost items and found a few anomalies and revised the cost estimate accordingly. In carrying out financial analysis of the project, we mostly relied on secondary data provided by BREB. Collecting the data and information from the documents, total cost of the project is estimated, which is summarized below:

Table III-13: Estimated Cost of the Project (Taka in Lac)

Sector	COST (Taka in lac)
GOB	128284.56
P.A. (AIIB)	589410.00
Own Fund	185294.64
Others	0.00
Total	**9028989.20**

IV. BASELINE ENVIRONMENTAL AND SOCIAL DATA

A. GENERAL

139. In identifying, predicting and evaluating impacts, it is necessary to establish a baseline of environmental quality in the area of the project's site. For many components of the environment, the baseline environmental quality is assessed by conducting field investigations within an impact zone. The environmental and social assessment was based on findings field survey, environmental quality testing and public consultations and several focus group discussions (FGDs), secondary data from sources such as Population and Housing Census 2022 and Population and Housing Census 2011. Public consultation was held to discuss issues and concerns related to the environment and socio-economy. Social-survey and disclosure was conducted to carry out information on environmental and social risks and impacts of Projects.

140. For macro-environmental conditions like climate (temperature, rainfall, humidity, and wind speed), physiography, geology, etc., data were obtained mostly from secondary sources. During the feasibility study, only a limited amount of first-hand information was collected in order to document the micro-environmental characteristics inside and adjacent to the project corridors.

141. Most of the proposed substation's land has been finalized but not yet purchased. The proposed distribution route is also not fixed but as per the project scope a significant amount of distribution line will be upgraded. The lines will fall into agricultural land and mostly into barren land as expected. So, the SS and distribution lines will not fall within any restricted areas.

142. Given the nature and footprint of the project operations, the project's area of influence is defined as a radius of 1 km around substations and 500 m of alignments along the distribution line. The right of way along a distribution line is considered the area of direct effect. However, in terms of indirect effects on ecologically sensitive places, such as national protected area networks, the possible impact zone of substations and distribution line alignments is assessed up to a radius of 5 km. Based on these considerations and the available design data, the environmental & social baseline data have been collected.

143. The following section describes the baseline environment in three broad categories:

- **Physical Environment-** factors such climate, geology and hydrology.
- **Biological Environment-** factors related to life such as flora, fauna and ecosystem.
- **Socio-economic Environment-** anthropological factors like demography, income, land use and infrastructure.

B. Chattogram Division

1. Physical Environment

a) Climate

144. The Project area has a tropical monsoon climate with four seasons: dry or winter season (December–February); pre-monsoon or hot season (March–May); monsoon or rainy season (June–September); and post–monsoon or autumn season (October–November). Although less than half of Bangladesh lies within the tropics, the presence of the Himalaya Mountain range has created a tropical macroclimate across most of the east Bengal land mass. Bangladesh can be divided into seven climatic zones. According to the classification, the project areas of Chattogram division are located in the south-central and South- eastern region climatic zones (Figure IV-1).

145. **South-Central Zone:** In this zone, rainfall is abundant, being above 1,900 mm. The range of temperature is, as can be expected, much less than to the west, but somewhat more than in the Southeastern zone. This is a transitory zone between the Southeastern, Northwestern, and Southwestern zones and most of the severe hailstorms, north ‘westers and tornadoes are recorded in this area. some area of Sylhet division and Chattogram division is also fallen into South-Central Zone.

146. **South-eastern zone:** It comprises the Chattogram sub-region and a strip of land extending from southwest Sundarbans to the south of Comilla. The hills over 300m in height have a north-eastern zone climate. The rest of the area has a small range of temperature, rarely goes over a mean of 32°C and below a mean of 13°C. Rainfall is heavy, usually over 2,540 mm. In winter dew fall is heavy.

147. The climatic condition of the whole project area in Chattogram division may be considered same as reported as per Chandpur, Chattogram, Hatiya, Kutubdia and Sandwip stations of Bangladesh Meteorological Department (BMD) since these stations are within the project areas. The climatic diagrams are based on 35 years of weather model simulations. The weather models with historical data from 1987 to 2021 onwards and generated a continuous 35-year global history with hourly weather data.

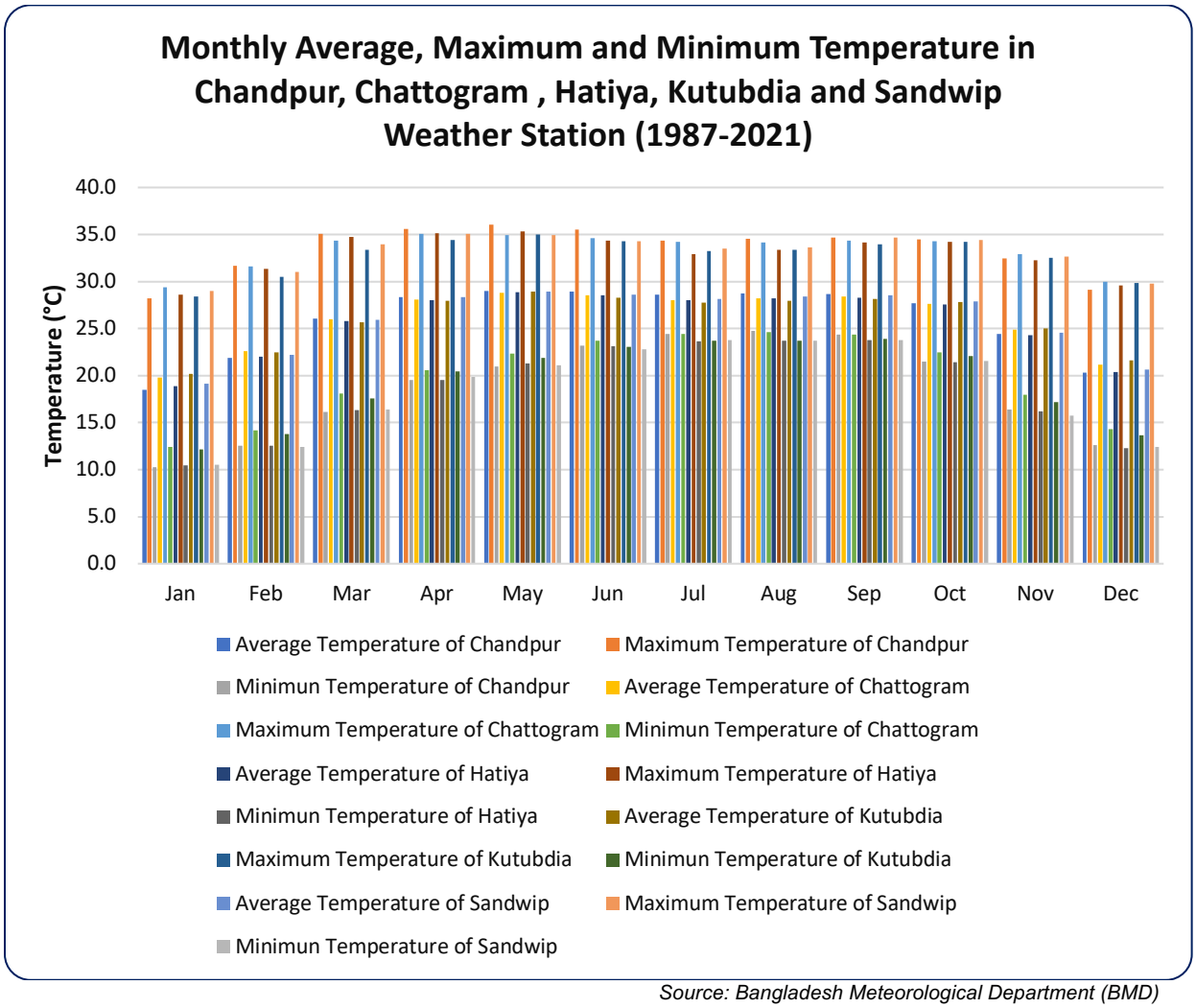
Figure IV-1: Climate Zone of study area

(i) Temperature

148. The climate is very warm according to the annual average Temperature but has few truly tropical and muggy months. Under the Köppen climate classification, Chattogram has a tropical monsoon climate (Am). The maximum mean temperature observed is about 35 to 36 °C from March to June and the minimum temperature recorded in January is about 10 to 12 °C. Figure IV-2 shows the detailed temperature pattern in the project areas.

149. Long-term average monthly temperature data (1987-2021) collected at Chandpur weather station of Bangladesh Meteorological Department. The monthly average maximum temperature in this weather station was near 36°C in both May and June. The monthly average minimum temperature was found in the month of January which was near 10°C. Both of the

average monthly temperature graphs show that this area faces high temperatures from April to October and lowest temperature during winter remains from December to February in the year.



Source: Bangladesh Meteorological Department (BMD)

Figure IV-2: Monthly Average, Maximum and Minimum Temperature of Chandpur Weather Station

150. Long-term average monthly temperature data (1987-2021) collected at Chattogram weather station of Bangladesh Meteorological Department. The monthly average maximum temperature in this weather station was near 35°C from the month of April to the month of June. The monthly average minimum temperature was found in the month of January which was 11.32°C. Both of the average monthly temperature graphs show that this area faces high temperature from April to October and lowest temperature during winter remains from December to February in the year.

151. Long-term average monthly temperature data (1987-2021) collected at Hatiya weather station of Bangladesh Meteorological Department. The highest average recorded temperature in this weather station was 35.34°C in May. The lowest average recorded temperature was found in the month of January, which was 10.03°C. Both of the average monthly temperature graphs show that this area faces high temperatures from April to September and lowest temperature during winter remains from December to February in the year.

152. Long-term average monthly temperature data (1987-2021) collected at Kutubdia weather station of Bangladesh Meteorological Department. The monthly average maximum temperature in this weather station was 35°C in May. The monthly average minimum temperature was found in the month of January which was 12.15°C. Both of the average

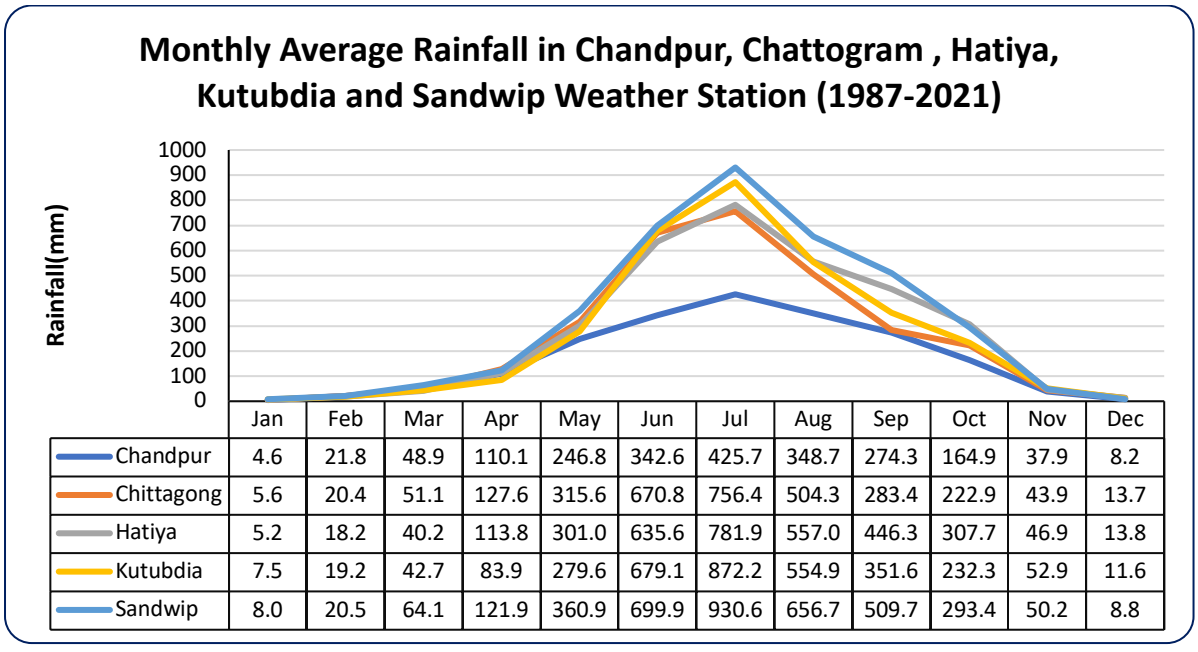
monthly temperature graphs show that this area faces high temperatures from April to October and lowest temperature during winter remains from December to February in the year.

153. Long-term average monthly temperature data (1987-2021) collected at Sandwip weather station of Bangladesh Meteorological Department. The monthly average maximum temperature in this weather station was near 35°C in April and May. The monthly average minimum temperature was found in the month of January which was 11°C. Both of the average monthly temperature graphs show that this area faces high temperature from April to october and lowest temperature during winter remains from December to February in the year.

(ii) Rainfall

154. Rainfall is the most dominant climatic element. Heavy rainfall is characteristic of Bangladesh frequently causing floods across the country or at a local scale. In Chattogram, precipitation amounts to 2890 millimeters (113.8 inches) per year: it is therefore very abundant. It ranges from less rainfall in the driest month (January) to huge rainfall in the wettest one (July). Whereas most parts of the country receive at least 2,300 mm (90.6 in) of rainfall per year. About 80% of Bangladesh's rain falls during the monsoon season. Seasonal results are based on monthly analysis. In the context of monthly variation, for all of the five weather stations, July is the highest month of rainfall while December is the lowest one. Rainfall shows significant variation across the year in the project area. from the month of May to the month of September generally shows the highest monthly average rainfall. The yearly rainfall figures are provided in Figure IV-3.

155. The rainfall data obtained from the Chandpur weather station (1987-2021) shows that the lowest rainfall occurs in December to January during winter season. From the Figure IV-7, the highest average recorded rainfall was 431.56 mm in July. The lowest average recorded rainfall was found in the month of January, which was 4.53 mm.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chandpur	4.6	21.8	48.9	110.1	246.8	342.6	425.7	348.7	274.3	164.9	37.9	8.2
Chittagong	5.6	20.4	51.1	127.6	315.6	670.8	756.4	504.3	283.4	222.9	43.9	13.7
Hatiya	5.2	18.2	40.2	113.8	301.0	635.6	781.9	557.0	446.3	307.7	46.9	13.8
Kutubdia	7.5	19.2	42.7	83.9	279.6	679.1	872.2	554.9	351.6	232.3	52.9	11.6
Sandwip	8.0	20.5	64.1	121.9	360.9	699.9	930.6	656.7	509.7	293.4	50.2	8.8

Source: Bangladesh Meteorological Department (BMD)

Figure IV-3: Average Monthly Rainfall in different Weather Station of Chattogram division

156. The rainfall data obtained from the Chattogram weather station (1987-2021) shows that the highest average recorded rainfall was 756 mm in July. The lowest average recorded rainfall was found in the month of January, which was 6.46 mm.

157. The rainfall data obtained from the Hatiya weather station (1987-2021) shows that the highest average recorded rainfall was 782 mm in July. The lowest average recorded rainfall was found in the month of January which was 5 mm.

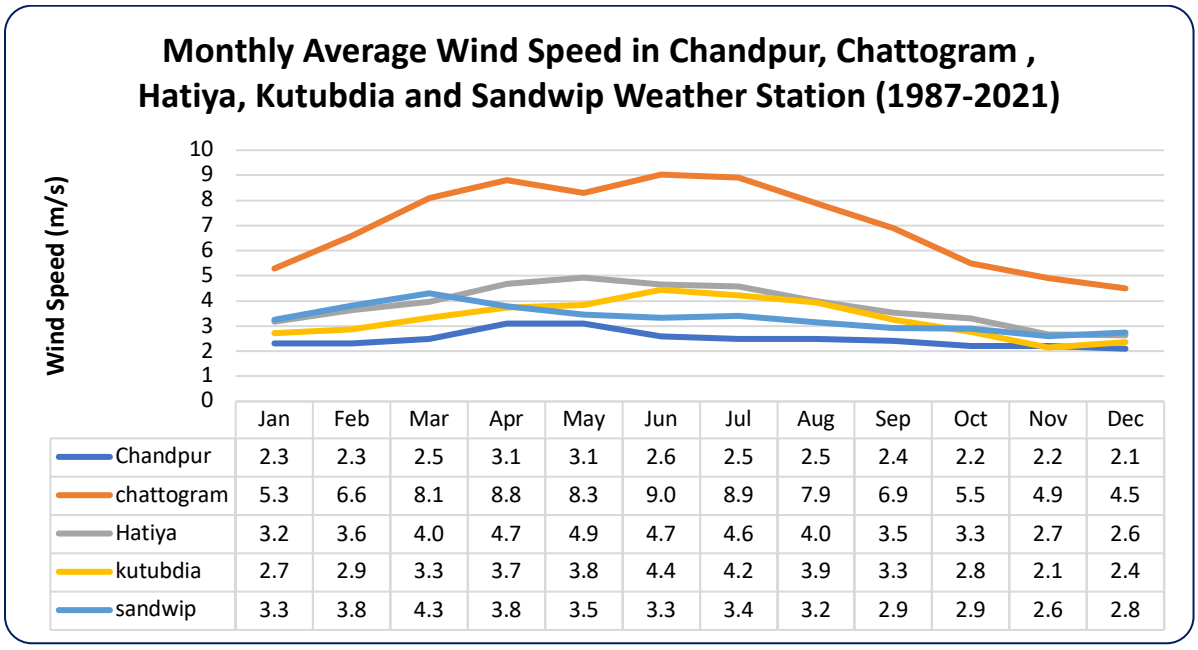
158. The rainfall data obtained from the Kutubdia weather station (1987-2021) shows that the lowest rainfall occurs in December to January during winter season. From the Figure IV-10, the highest average recorded rainfall was 872 mm in July. The lowest average recorded rainfall was found in the month of January, which was 8 mm.

The rainfall data obtained from the Sandwip weather station (1987-2021) shows that the highest average recorded rainfall was 931 mm in July. The lowest average recorded rainfall was found in the month of January, which was 8 mm.

(iii) Wind Speed and Direction

159. Wind speed data across the project area show different scenarios. Wind speed varies from location to location and is also dependent on the time of year. The windiest months of the year tend to be during the pre-monsoon period. Wind speeds stay high during the summer monsoon but gradually decrease until November which is usually the calmest month in the project area. For all the five weather stations, Figure IV-4 shows the days per month, during which the wind reaches a certain speed with certain direction. where the monsoon creates steady strong winds from December to April, and calm winds from June to October.

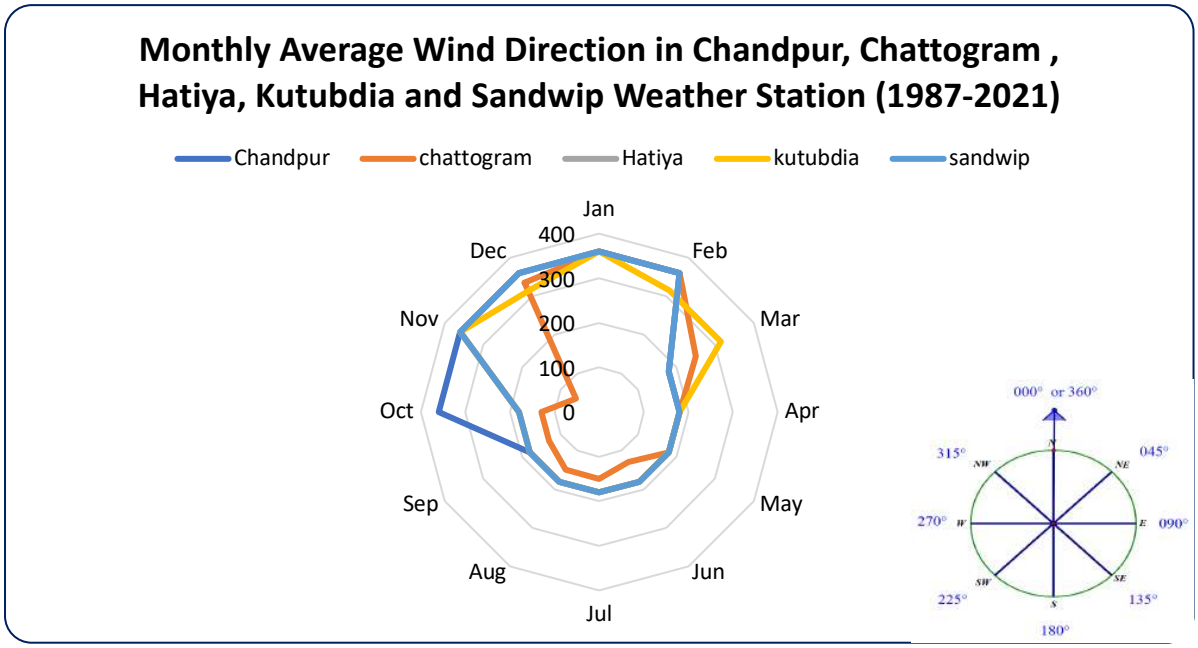
160. The statistical wind speed data (Figure IV-4) shows that average wind speed maximum value was more than 3 knots in April and May. The minimum wind speed value was 2.10 knots in the month of December in the area of Chandpur weather station. From Figure IV-13, it can be said that the region is predominantly characterized by wind flow from South & north direction.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chandpur	2.3	2.3	2.5	3.1	3.1	2.6	2.5	2.5	2.4	2.2	2.2	2.1
chattogram	5.3	6.6	8.1	8.8	8.3	9.0	8.9	7.9	6.9	5.5	4.9	4.5
Hatiya	3.2	3.6	4.0	4.7	4.9	4.7	4.6	4.0	3.5	3.3	2.7	2.6
kutubdia	2.7	2.9	3.3	3.7	3.8	4.4	4.2	3.9	3.3	2.8	2.1	2.4
sandwip	3.3	3.8	4.3	3.8	3.5	3.3	3.4	3.2	2.9	2.9	2.6	2.8

Source: Bangladesh Meteorological Department (BMD)

Figure IV-4: Monthly Average Wind Speed in different Weather Station of Chattogram division



Source: Bangladesh Meteorological Department (BMD)

Figure IV-5: Monthly Average Wind Direction in different Weather Station of Chattogram division

161. The statistical wind speed data shows that the average wind speed maximum value was 9.03 knots in June. The minimum wind speed value was 4.55 knots in the month of December in the area of Chattogram weather station. From the Figure, it can be said that the region is predominantly characterized by Southeast wind flow.

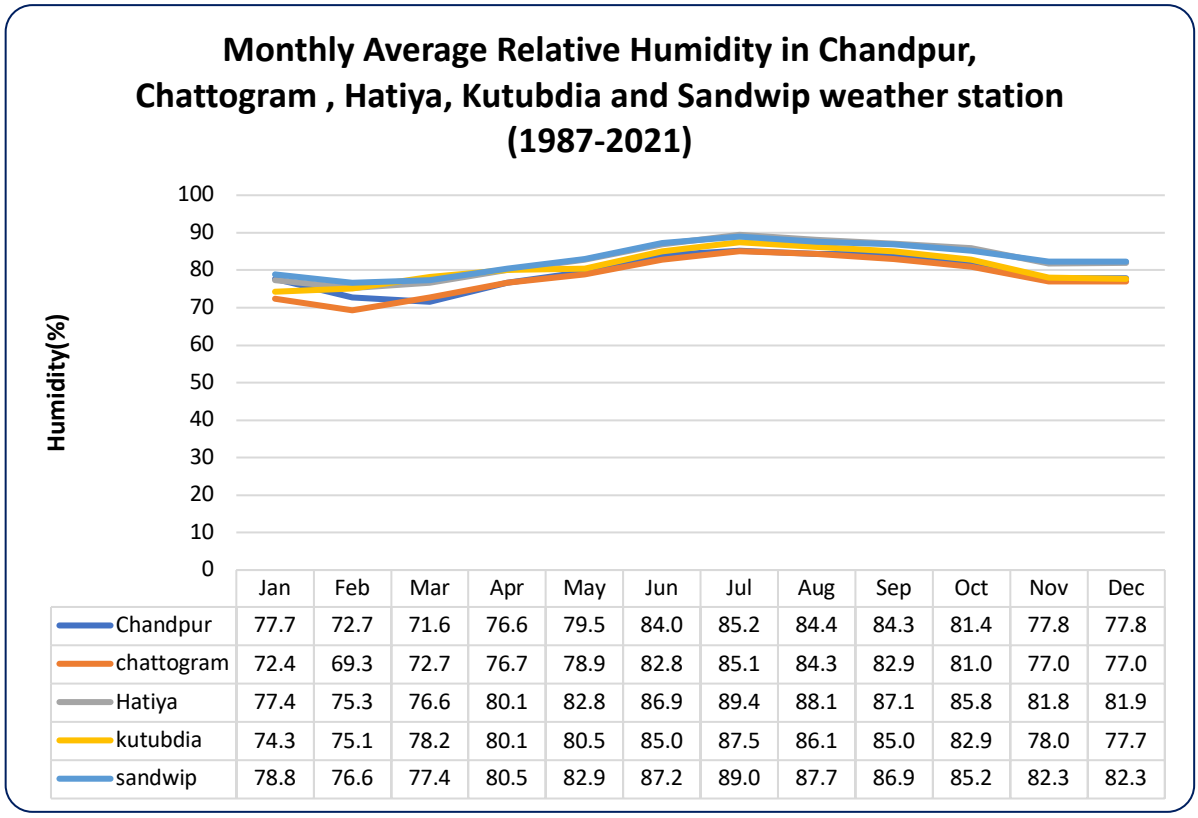
162. The statistical wind speed data shows that the average wind speed maximum value was 4.9 knots in May. The minimum wind speed value was 2.6 knots in the month of December in the area of Hatiya weather station. From the Figure, it can be said that the region is predominantly characterized by wind flow from south and North direction.

163. The statistical wind speed data shows that the average wind speed maximum value was 3.8 knots in both May and June. The minimum wind speed value was 1.88 knots in both December and January in the area of Sandwip weather station. From Figure IV-19, it can be said that the region is predominantly characterized by wind flow from south and North direction.

(iv) Relative Humidity

164. Humidity across the general project area shows similar variation during the year with the highest readings between June and October (Figures IV-6) in the height of the monsoon rains. Humidity is highest at Sandwip experience 89.23% in July. The lowest recorded average monthly humidity 69.79% in March at Chattogram. Humidity remains high in summer and comparatively low in winter season.

165. The statistical data of humidity from 1987 to 2021 indicates that humidity in the Chandpur Station area maximized in July in the year which is 85.30%. On the other hand, the lowest monthly average humidity is 71.64% in February during the winter season in the considered station area.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chandpur	77.7	72.7	71.6	76.6	79.5	84.0	85.2	84.4	84.3	81.4	77.8	77.8
chattogram	72.4	69.3	72.7	76.7	78.9	82.8	85.1	84.3	82.9	81.0	77.0	77.0
Hatiya	77.4	75.3	76.6	80.1	82.8	86.9	89.4	88.1	87.1	85.8	81.8	81.9
kutubdia	74.3	75.1	78.2	80.1	80.5	85.0	87.5	86.1	85.0	82.9	78.0	77.7
sandwip	78.8	76.6	77.4	80.5	82.9	87.2	89.0	87.7	86.9	85.2	82.3	82.3

Source: Bangladesh Meteorological Department (BMD)

Figure IV-6: Average Monthly Relative Humidity of Chandpur Weather Station

166. The statistical data of humidity from 1987 to 2021 indicates that humidity in the Chattogram Station area maximized in July in the year which is 85.36%. On the other hand, lowest monthly average humidity is 69.79% in February during the winter season in the considered station area.

167. The statistical data of humidity from 1987 to 2021 indicates that humidity in the Hatiya Station area maximized in July in the year which is 89.13%. On the other hand, lowest monthly average humidity is 74.55% in February during the winter season in the considered station area.

168. The statistical data of humidity from 1987 to 2021 indicates that humidity in the Sandwip Station area maximized in July in the year which is 89.23%. On the other hand, lowest monthly average humidity is around 77% in both February and march during the winter season in the considered station area.

169. The statistical data of humidity from 1987 to 2021 indicates that humidity in the Kutubdia Station area maximized in July in the year which is 87.65%. On the other hand, lowest monthly average humidity is 74.29% in January during the winter season in the considered station area.

b) Topography

170. Topography is the configuration of a land surface including its relief and contours, the distribution of mountains and valleys, the patterns of rivers, and all other features, natural and artificial, that produce the landscape. The Chattogram coastal region to the southeast has a narrow attachment to the bulk of the country. Small hill regions in the northeast and southeast are the only variations of the land's flat alluvial plains (flatlands containing deposits of clay,

silt, sand, or gravel deposited by running water, such as a stream or river). In general, the topography varies in altitude from the Lalmai Hills (30 msl) and the base of the Tripura Hills (7–8 msl) to the bank of the Meghna (1–2 msl). The floodplain varies from 1 msl to 5 msl. Tidal effects surges along the coast are generally up to 2 m above mean sea level, which in the on the floodplain are generally masked by rainfall-associated depth of river flooding.

c) Physiographic Features

171. The Chattogram division as well as the subprojects in this division comprises the following major physiographic units (Figure IV-7).

- **Middle Meghna Floodplain**
- **Lower Meghna floodplain-**
- **Old Meghna Estuarine floodplain-**
- **Young Meghna Estuarine Floodplain -**
- **Young Meghna Estuarine Floodplain**
- **Chattogram coastal plain**
- **Low Hill Ranges**
- **High hill or mountain ranges**

172. This High hill or mountain ranges unit covers most of Chattogram Hill Tracts. South of the Karnafuli, there are seven main mountain ranges within Bangladesh. The Muranja range rises out of the Chunoti hills 5 km east of Harbang and strikes in a southeasterly direction.

173. The Sitakunda range has a 32-km long ridge in the middle, which reaches 352m at Sitakunda peak. To the north, the high peaks on this range are Rajbari Tila (274m) and Sajidhala (244m). To the south, there is an abrupt fall and Chattogram city heights are less than 92m. In the Mara Tong range a height of only 113m is reached. Further northeast the hills are higher. The topography is deeply eroded and rounded; the valleys are curved, and almost isolated hillocks are common.

174. Chattogram coastal comprises gently sloping piedmont plains near the hills, river floodplains alongside the Feni, Karnafuli, Halda and other rivers, tidal floodplains along the lower courses of these rivers, a small area of a young estuarine floodplain in the north, adjoining sub-regional young Meghna estuarine floodplain, and sandy beach ridges adjoining the coast in the south.

Figure IV-7: Physiographic map within/around Project AOI

d) Geology

175. The generalized geological features of the project area are shown in the geological map of Bangladesh (Figure IV-8). The majority area of Chattogram division is under the Tripura Chattogram Fold Belt. However, some portions are also under Hatiya Trough, Barisal Gravity High, and Faridpur Trough.

Figure IV-8: Geologic zones of study area

The major geographic unit of the Chattogram region are:

- **Chattogram -Tripura Folded Belt:**
- **Hatiya Trough**
- **Barisal Gravity High**
- **Faridpur Trough**

176. Chattogram -Tripura Folded Belt is the youngest structural province along the western flank of the indo-burmaN ranges. This zone of sub-parallel, arcuate, elongated folds of meridional and sub meridional trending stretches from the Arakan coastal area in the south through the Chattogram hill tracts. The axis of Bengal Foredeep runs through the apex of Hatiya Trough. Shahbazpur (bhola), Kutubdia, Sangu and large number offshore structures are located here, of which Sangu is under production while Shahbazpur and Kutubdia are awaiting development.

177. A number of gravity anomalies are spread over this zone. A paleo-high stretching from Barisal Gravity High in the NE direction has been presumed and the ridge was interpreted to turn south of Barisal Gravity High in north-south direction merging with the Ninety east ridge. Chandpur, Laksmipur, munshiganj, and daudkandi are the main anticlinal structures of this zone. Faridpur Trough situated adjacent to Hinge Zone is characterised by a general gravity low with development of Neogene sequence.

e) Soil

178. Chattogram division falls ten different soil formation zones (Figure IV-9). The general soil types of the Chattogram division predominantly include the following:

- **Acid Sulphate Soils**
- **Brown Hill soils**
- **Calcareous Alluvium Soils (saline)**
- **Non-calcareous Alluvium**
- **Non-calcareous Dark Grey and Grey Floodplain soils**
- **Non-calcareous Dark Grey and Grey Floodplain soil**
- **Calcareous Dark Grey Floodplain and Brown Floodplain soils**
- **Calcareous Dark Grey Floodplain and Brown Floodplain soils**
- **Non-calcareous and Calcareous Brown Floodplain soils**
- **Non-calcareous Grey Floodplain and Acid Sulphate Soils**
- **Calcareous Grey and Non- calcareous deep brown**

179. Acid Sulphate Soils occurs predominantly on the Chattogram coastal plain and in minor areas of the Ganges tidal floodplain. These soils contain sulphidic material, which turns extremely acid if exposed to air. Brown Hill soils soils has been developed over consolidated or unconsolidated rocks, which are imperfectly to excessively drained. Non-calcareous Alluvium Similar to calcareous alluvium, except they are non-calcareous in soil profiles. Non-calcareous Grey Floodplain soils generally comprise a grey topsoil and a cambic B-horizon in the subsoil with a grey matrix or grey gleans, whereas Non-calcareous Dark Grey Floodplain soils have a cambic B-horizon, non-calcareous dark grey topsoil and subsoil.
Calcareous Grey Floodplain soils have grey matrix cambic B-horizon and lime in the profiles whereas non-calcareous deep Brown Floodplain soil class belongs to deep soils with dark coloured topsoil. Another class non-calcareous deep Brown soil is mainly shallow soils, lacking thick dark coloured topsoil.

Figure IV-9: Soil Map within/around Project AOI

f) Ambient Air Quality

180. Ambient air quality monitoring at the subproject sites was measured to verify the baseline quality of air as per DoE and international standards & the digital equipment's were used for air quality monitoring. Dispersal of pollutants depends upon factors like atmospheric stability, the height of the source, prevailing wind direction and other weather conditions. The air quality was done in 2021 as per geographical condition of the sites. In addition, most of the substation sites were not finalized in 2022. The air quality testing was performed at four (04) project locations in Chattogram divisions from 26 June 2022 to 30 November 2022 (see Figure IV-10). The monitored parameters were CO, NOx, SOx, $PM_{2.5}$ and PM_{10}. Ocenaus Portable Gas Detector OC-905 was used to measure SOx, NO_X, and CO. Ocenaus Portable Gas Detector OC-300 measured $PM_{2.5}$ & PM_{10} of gaseous pollutant. The weather was mostly sunny during the monitoring period. Proper Personal Protective Equipment (PPE) was used during the monitoring period. All the locations of sample collections are summarized in Table IV-1.

Electro-Chemical Sensor devices were calibrated before testing the relevant parameters. Results of the air quality monitoring at the subproject locations have been shown in Table IV-1. The sample site descriptions are provided in Table IV-2. The laboratory test result is given in Appendix 2 of the report.

Ghopal, Feni
Feni PBS

Ramu, Cox's Bazar
Cox's Bazar PBS

Fatikchari, Sitakunda
Chattogram PBS-3

Sadullahpur, Chandpur
Chandpur PBS-2

Figure IV-10: Ambient Air Quality Sampling in the project area

Table IV-1: Test Result of Ambient Air Quality Analysis

Locations	Sampling ID	GPS Coordinates	Date	Weather Condition	Parameters				
					$PM_{2.5}$ ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	SOx ($\mu g/m^3$)	NOx ($\mu g/m^3$)	CO (ppm)
Ghopal, Feni	AAQ_01	22.9169°N 91.5268°E	26 June 2022	Sunny	58	120	38	48	2
Ramu, Cox's Bazar	AAQ_02	21.4335°N 92.1536°E	23 August 2022	Mostly Sunny	40.82	69.92	33.92	28.93	1.93

Locations	Sampling ID	GPS Coordinates	Date	Weather Condition	Parameters				
					$PM_{2.5}$ ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	SOx ($\mu g/m^3$)	NOx ($\mu g/m^3$)	CO (ppm)
Fatikchari, Sitakunda	AAQ_03	22.707°N 91.6965°E	24 August 2022		34.93	59.92	38.39	41.93	2.86
Sadullahpur, Chandpur	AAQ_05	23.4953°N 90.6391°E	30 November 2022		21.72	56.35	60.43	14.93	1.52
Bangladesh Standard					65	150	80	80	5
Duration (hours)					24	24	24	24	8
Standard for Ambient Air Quality according to WHO guidelines, 2022					-	-	500	10	100
Method of Analysis					AEROQUAL series 500 portable air quality monitors				Lutron AQ 9901

Note:
**CO concentrations and standards are 8-hourly only.*
*** The Bangladesh National Ambient Air Quality Standards have been taken from Air Pollution Control Rules which was published in 26 July 2022*

Table IV-2: Description of the surrounding environment

Location	Sample Site Description
Ghopal, Feni **(AAQ_01)**	➢ A low amount of traffic was moving. ➢ A moderate amount of dust particles was present. ➢ The weather was mostly sunny. ➢ Vegetation was high. ➢ People movement was low. ➢ No sensitive receptor was found within the 500m buffer zone during our survey.
Ramu, Cox's Bazar **(AAQ_02)**	➢ The weather was sunny during the monitoring period. ➢ The project location is situated in a residential area. ➢ Visual dust particles were moderate. ➢ People's movement was moderate. ➢ Vehicle movement was moderate. ➢ No sensitive receptor was found within the 500m buffer zone during our survey.
Sitakunda, Chattogram **(AAQ_03)**	➢ A moderate amount of vehicle was moving. ➢ A moderate amount of dust particles was present. ➢ The weather was sunny. ➢ People movement was low. ➢ No sensitive receptor was found within the 500m buffer zone during our survey.
Sadullahpur, Chandpur **(AAQ_05)**	➢ The Weather was sunny ➢ Vehicle movement was low ➢ People movement was low ➢ Vehicle dust particle is low ➢ No sensitive receptor was found within the 500m buffer zone during our survey.

181. From the assessment of the ambient air quality of the project area it has been anticipated that all the parameters are within national standard according to the ECR-23.

g) Noise Level

182. Excessive noise is a potential issue for both human and biological receivers. It can cause a range of negative points, from mild annoyance and moderately elevated levels of aggression to patterns and temporary or permanent hearing loss in severe cases. Noise Level Measurement was analyzed from project boundaries in Chattogram divisions at seven (07) specific locations from 26 June 2022 to 30 November 2022 (figure IV-11). Results of the noise level monitored at the sampling locations have been shown in Table IV-3. The laboratory test result is given in Appendix 3 of the report.

Feni River Bridge, Feni
Feni PBS

Ramu-Naikhongchori Road, Ramu, Cox's Bazar(South)
Cox's Bazar PBS

Ramu-Naikhongchori Road, Ramu, Cox's Bazar(North)
Cox's Bazar PBS

Hazarikhil-Fatikchari Road, Fatikchari, Sitakunda (South)
Chattogram PBS-3

Hazarikhil-Fatikchari Road, Fatikchari, Sitakunda (North) Chattogram PBS-3	*Gopalkandi, Sadullahpur, Matlab-uttor, Chandpur Chandpur PBS-2*
	
Noyakandi, Sadullahpur, Matlab-uttor, Chandpur Chandpur PBS-2	

Figure IV-11: Noise Level Measurement in the Project Area

Table IV-3: Results of Noise Level Measurement

Location	Sample ID	GPS Location	Land Use Category	Date	Measurement Time		Noise Level (dBA)
					Start	End	
Feni River Bridge, Feni	NM_01	22.9169°N 91.5268°E	Mixed	26 June 2022	12:10 pm	12:40 pm	59.6
Ramu-Naikhongchori Road, Ramu, Cox's Bazar (South)	NM_02	21.4332ºN 92.1534ºE	Residential	23 August 2022	12.29 pm	12.59 pm	66.6
Ramu-Naikhongchori Road, Ramu, Cox's Bazar (North)	NM_03	21.4335ºN 92.1524ºE	Residential	23 August 2022	12.40 pm	01.10 pm	64.6
Hazarikhil-Fatikchari Road, Fatikchari, Sitakunda (South)	NM_04	22.7070ºN 91.6965ºE	Residential	24 August 2022	10.22 am	10.54 am	58.7
Hazarikhil-Fatikchari Road, Fatikchari, Sitakunda (North)	NM_05	22.7073ºN 91.6969ºE	Residential	24 August 2022	10.30 am	11.00 am	57.7
Gopalkandi, Sadullahpur, Matlab-uttor, Chandpur	NM_08	23.4936°N 90.6346ºE	Residential	30 November 2022	9.00am	10.00 am	51.4
Noyakandi, Sadullahpur, Matlab-uttor, Chandpur	NM_09	23.4961°N 90.6433ºE	Residential	30 November 2022	11:00am	12:00 am	59.2

Notes:

- Land use category is based on the classification provided in the Noise Pollution Control Rules (2006).
- The sound level standard for residential areas at day is 55 dBA.
- The sound level standard for Mixed area at day is 60 dBA.
- Noise Level is the average noise recorded over the duration of the monitoring period.
- According to IFC EHS guidelines, sound level standard for the Residential, institutional, and educational area at daytime is 55 dBA, and nighttime is 45 dBA.

Location	Sample ID	GPS Location	Land Use Category	Date	Measurement Time		Noise Level (dBA)
					Start	End	
▪ According to IFC EHS guidelines, sound level standard for the industrial and commercial area at daytime is 70 dBA, and nighttime is 70 dBA							

Table IV-4: Description of the surrounding environment

Sample Location and ID	Sample Site Description
Ghopal, Feni **(NM_01)**	➢ Low volume of traffic. ➢ Low people movement. ➢ Mixed Area.
Ramu-Naikhongchori Road, Ramu, Cox's Bazar (South) **(NM_02)**	➢ Moderate level of Vehicle movements ➢ Moderate level of People movements. ➢ The motor vehicle's movement and horn created most of the noise
Ramu-Naikhongchori Road, Ramu, Cox's Bazar (North) **(NM_03)**	➢ Moderate level of Vehicle movements ➢ Moderate level of People movements. ➢ The motor vehicle's movement and horn created most of the noise.
Hazarikhil-Fatikchari Road, Fatikchari, Sitakunda (South) **(NM_04)**	➢ Moderate level of Vehicle movements ➢ Moderate level of People movements.
Hazarikhil-Fatikchari Road, Fatikchari, Sitakunda (North) **(NM_05)**	➢ Vehicle movements were absent ➢ Moderate level of people movements
Gopalkandi, Sadullahpur, Matlab-uttor, Chandpur **(NM_08)**	➢ The Traffic and People Movement are low during the monitoring period ➢ Majority of the transportation in this area are battery driven three-wheeler, CNG auto Rickshaw and tractors etc.
Noyakandi, Sadullahpur, Matlab-uttor, Chandpur **(NM_09)**	➢ There are some Tinshed houses and markets situated nearby. ➢ The majority of the Transportation in this area are tractor and motorbike.

The result shows that the time-weighted average value of the sound monitored around the project slightly exceeded the standard set for Noyakandi, Sadullahpur, Matlab-uttor, Chandpur and both sampling locations of Cox's Bazar and sitakundu in the daytime. The exceedance might be because of people and vehicle movement along the project corridor during the monitoring time around the sampling locations. The level of exceedance revealed that the ambient noise is not much disturbing to the receptors within the project area. There were different types of interruptions during the monitoring period which are described in Table IV-4. Noise impacts should not exceed the levels stated or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site. In general, the noise level limit is represented by the background or ambient noise levels that would be present in the absence of the facility or noise source(s) under investigation (IFC EHS Guidelines 2007).

h) Water Resources and Hydrology

183. Water Resources of Bangladesh is endowed with plenty of surface and groundwater resources. The surface water resources comprise water available from flowing rivers and static water bodies as ponds, beels and haors.

184. The Chattogram division forms with several notable river systems. The Meghna, Matamuhuri, Titas, Dakatia, Gumti, Feni, Karnafuli, and Sangu are the major rivers of this division. Some of the rivers are among the longest river systems in the country and drain significant water of this area. The local population as a transport route, irrigation and for other livelihood activities uses these rivers extensively.

185. The hydrology of this division is dominated by the Sangu, Bagkhali, Matamuhuri, and Tributary of the Matamuhuri Rivers, all originating in India and Myanmar. These rivers, especially the Bagkhali, Matamuhuri and Sangu exhibit flash flooding during heavy monsoon rains. The Bagkhali, Matamuhuri and Sangu and its tributaries have no or less than 10% of normal flow during the dry season (November–April), due to withdrawal of water for irrigation by low-lift pumps. Generally, ponds remain unchanged from year to year due to rejuvenation during the rainy season.

Figure IV-12: Hydrological Network Map within/ around Project AOI

(i) Surface Water

186. The surface water samples were collected from 04 (four) locations in Chattogram divisions between 26 June 2022 to 2 December 2022 covering a total of 08 parameters. Surface water quality has been collected from nearest water bodies of proposed substation's location. The reason for choosing the waterbodies is if any construction yard or labor camp established near the water body during the construction period, the water body may be contaminated. Another reason for choosing the location was, during our survey in 2022 the 11 number of rivers crossing tower locations were not finalized. The locations with detailed addresses are summarized in Table IV-5. The locations of the sample collection are shown

on the map (Figure IV-13). The parameters measured were pH, Turbidity, Temperature, ORP, Electric Conductivity (EC), COD, BOD5, TDS, and DO. EZDO 8200 Multimeter was used to conduct pH, TDS, EC, and temperature tests. Lutron DO-5509 was used to conduct the test of Dissolved Oxygen (DO). The laboratory test result is given in Appendix 5 of the report.

Ghopal, Feni
Feni PBS

Ramu, Cox's Bazar
Cox's Bazar PBS

Fatikchari, Sitakunda
Chattogram PBS-3

Sadullahpur, Matlab, Chandpur
Chandpur PBS-2

Figure IV-13: Sampling of Surface Water in the Project Area

Table IV-5: Test Results of Surface Water Analysis

Parameters	Unit	SW_01 Ghopal, Feni 22.9268°N 91.5269°E 26 June 2022	SW_02 Ramu, Cox's Bazar 21.4337°N 92.1533°E 23 August 2022	SW_03 Fatikchari, Sitakunda 22.7071°N 91.6966°E 24 August 2022	SW_05 Sadullahpur, Matlab, Chandpur 23.5084°N 90.6358°E 2 December 2022	Standards for Inland Surface Water**	Analysis Method
pH*	-	7.75	8.62	8	8.13	6-9	Multimeter
ORP*	mV	5.9	-95.6	-63.5		NYS	
Electric Conductivity (EC)*	µs/cm	-107.5	240	272	135.2	NYS	
Total Dissolved Solids (TDS)*	mg/L	542	152	176	88.3	1000	
Temperature*	°F	29.7	29.2	30.2	23.3	NYS	
DO	mg/L	4.7	7.9	5.8	7.1	5 or more	DO meter
BOD	mg/L	7.75	4	1	2	6 or less	5 days Incubation
COD	mg/L	29.7	12	4	8	50	CRM

*Note: *On-site test Result*
*** Standards for Inland Surface Water and best practice for fishing is followed Environment Conservation Rules, 2023*
NYS- Not Yet Standardized

187. The surface water Quality standard is not yet developed in the ECR 2023 except for a few parameters. From the test result, it is seen that all parameters are within national standard except DO and BOD value of surface water in Ghopal, Feni and pH value of surface water in Ramu, Cox's Bazar. However, that pH value was 8.62 indicating slightly basic water. Moreover, Dissolved oxygen is necessary for many forms of life including fish, invertebrates, bacteria, and plants. As dissolved oxygen levels was 4.7 in surface water drop below 5.0 mg/l, aquatic life is put under stress. On the other hand, the BOD value was 7.75 as Higher BOD indicates more oxygen is required, which is less for oxygen-demanding species to feed on and signifies lower water quality.

(ii) Groundwater

188. Chattogram District is covered with Piedmonth and estuarine deposits. These deposits have transmisivity of 400 sqm/day. These deposits are not favorable aquifers for extensive withdrawal. Aquifer material is covered with 25-30 m thick zone of silt and clay. Clay thickness gradually increases towards the Bar. Sandy materials are predominantly medium to coarse. A shallow aquifer of about 20-50m thickness exists near the surface. Main aquifer is deep seated whose nature and extent are not known. Shallow aquifer exists at a depth of about 50m. The depth to the main aquifer is not precisely known. Aquifers are semi-confined to confine in nature. Transmissivity of the Chattogram district varies from 114-600 sq m/day. There is currently heavy use of groundwater for irrigation which is used to support the shortfall of surface water. Shallow groundwater is available within 2 to 4m below the ground surface in the project area but its quality is not good, and availability is variable. The groundwater is exploited by shallow tubewells for irrigation and deep tubewells with hand pumps for drinking water.

189. Constructing substations and distribution lines in Bangladesh can pose a threat to groundwater resources. Excavation activities during foundation laying and trenching for cables can disturb the soil, potentially allowing pollutants to seep into the groundwater. Though BREB always reduces the risks through minimizing excavation depths where possible. Use

trench shielding to prevent cave-ins and limit soil disturbance. Implement proper spoil handling practices to avoid stockpiling contaminated soil near water sources. In ESMP proper management plan including mitigation measures have been discussed to prevent soil and groundwater contamination.

190. Groundwater samples were collected from four (04) sampling locations along the project corridor from 26 June 2022 to 30 November 2022. The locations with detailed addresses are summarized in Table IV 6. A total of 5 Parameters were tested. All samples were collected with Kemmerer Bottle and then transferred in 1 litre plastic sampling bottles. The sampling bottles were washed by distilled water before sample collection. The sampling bottles were then kept in an ice cooler. Safety vests, hand Gloves and helmets were used during the surface water samples collection. EZDO 8200 Multimeter was used to conduct the on-site test of pH, Total Dissolved Solids (TDS), Electronic Conductivity (EC) and Temperature. Lutron DO-5509 was used to conduct the on-site test of Dissolved Oxygen (DO). The rest of the collected samples were then sent to Department of Public Health Engineering (DPHE) for analysis of remaining Parameters.

191. According to the test results, most of the criteria in the groundwater samples were determined to be within the national standard for Ground water in sampling locations except total Hardness as CaCO3 in all locations and Do value in Ghopal, Feni. From the result, it is seen that the hardness of the sample water is below national standards.

192. Total hardness is the sum of the calcium and magnesium concentrations, both expressed as calcium carbonate, in milligrams per liter (mg/L). Generally, the harder the water, the lower the toxicity of other metals in water. In hard water, some of the metal ions form insoluble precipitates and drop out of the solution and are not available to be taken in by the organism. Large amounts of hardness are undesirable mostly for economic or aesthetic reasons. The laboratory test result is given in Appendix 4 of the report.

Ghopal, Feni
Feni PBS

Ramu, Cox's Bazar
Cox's Bazar PBS

Fatikchari, Sitakunda
Chattogram PBS-3

Sadullahpur, Matlab, Chandpur
Chandpur PBS-2

Figure IV-14: Sampling of Groundwater in the Project Area

Table IV-6: Test Results of Groundwater Analysis

Parameters	Unit	GW_01 Ghopal, Feni 22.9161°N 91.5262°E 26 june 2022	GW_02 Ramu, Cox's Bazar 21.4301°N 92.1532°E 23 August 2022	GW_03 Fatikchari, Sitakunda 22.7073°N 91.6958°E 24 August 2022	GW_05 Sadullahpur, Matlab uttar, Chandpur 23.4952°N 90.6389°E 30 November 2022	Standards for Potable Water**	Standard for potable water [illegible] WHO	Analysis Method
pH*	-	7.24	7.79	6.88	7.53	6.5-8.5	NYS	Multimeter
Electric Conductivity (EC)*	µs/cm	-104	130	265	129	NYS	NYS	
Total Dissolved Solids (TDS)*	mg/L	178	265	172	86.7	1000	NYS	
DO	mg/L	5.8	6.1	7.8	6.3	NYS		DO meter
Total hardness as CaCO3	mg/L	-	21	12	120	500	300	Calmagite Method

*Note: *On-site test Result*
***Standard for Potable Water is followed from Schedule-2(B) of Environment Conservation Rules, 2023*
***As per Coastal Water standard from Schedule-2 (B) of Environment Conservation Rules, 2023, standard value of pH=6.5-8.5; DO=>5*
NYS- Not Yet Standardized

According to the test results, most of the criteria in the groundwater samples were determined to be within the national standard for Ground water in sampling locations except total Hardness as CaCO3 in all locations and Do value in Ghopal, Feni. From the result, it is seen that the hardness of the sample water is below national standards. Total hardness is the sum of the calcium and magnesium concentrations, both expressed as calcium carbonate, in milligrams per liter (mg/L). Generally, the harder the water, the lower the toxicity of other metals in water. In hard water, some of the metal ions form insoluble precipitates and drop out of the solution and are not available to be taken in by the organism. Large amounts of hardness is undesirable mostly for economic or aesthetic reasons.

i) Natural Hazards

193. Natural hazard events can be characterized by their magnitude or intensity, speed of onset, duration, and the area they cover. Hazards occur at different intensities (or magnitudes) over different time scales (sometimes known as temporal scales). The occurrence of hazards of different intensities in terms of probabilities or return periods, within the context of uncertainty. In general, the longer the return period the greater the intensity of the hazard. Because of these long return periods, some communities may have no memory of the potential threat of a high intensity hazard.

194. Natural hazards are naturally occurring physical phenomena. They can be: Geophysical: a hazard originating from solid earth (such as earthquakes, landslides and volcanic activity) Hydrological: caused by the occurrence, movement and distribution of water on earth (such as floods and avalanches).

(i) Seismicity

195. Bangladesh is situated in one of the most tectonically active regions in the world. Here is where three major plates meet (the Indian plate, the Tibet sub-plate, and the Burmese sub-plate). The project area is located over the Indian plate, which is moving north. On the basis of the distribution of earthquake epicenters and the morphotectonic behavior of different tectonic blocks, the Bangladesh National Building Code (BNBC) has divided our country into four (04) seismic zones. As per the seismic zone map (Figure IV-15), most of the Project area

from Chattogram division falls in zone II, zone III and zone IV. It means the project area is prone to all types of seismic intensity.

Table IV-7: Seismic zone within/around project AOI

Seismic Zone	Location	Seismic Intensity	Seismic Zone Coefficient, Z
1	Southwestern part including Barisal, Khulna, Jessore, Rajshahi	Low	0.12
2	Lower Central and Northwestern parts including Noakhali, Cumilla, Dhaka, Pabna, and Dinajpur, as well as the Southwestern corner including Sundarbans	Moderate	0.20
3	Upper Central and Northwestern parts including Chattogram Hill Tracts, Brahmanbaria, Sirajganj, Rangpur	Severe	0.28
4	Northeastern part including Sylhet, Mymensingh, Kurigram	Very Severe	0.36

Source: BNBC 2020

196. Each zone has a seismic zone coefficient (Z) which represents the maximum considered peak ground acceleration (PG) on very stiff soil/rock (site class SA) in units of g (acceleration due to gravity). The seismic coefficient is a measure of how strong an earthquake has the potential to be based on a combination of the mass of the plate & the seismic forces acting on it, as well as how frequently these quakes are likely to occur.

197. Seismic Zone II Include Palli Bidyut Samity from the location Such as Feni, Nokhali, Cumilla, Lakshmipur, Chandpur and Brahmanbaria, whereas zone III includes Palli Bidyut Samity from the location such as Chattogram, Cox's Bazar and Brahmanbaria. Moreover, Only Northern portion of Brahamanbaria District fall in zone IV.

198. As per the seismic zone classifications, the project areas of Chattogram Division fall in zone II, III, IV means moderate, severe and very severe seismic intensity respectively. As a result of seismic activity, a number of tremors have affected different parts of the country over the last few years. However, only one event has caused significant damage to life and/or property near the project location in old times. The 1997 Chattogram earthquake (also known as the Bandarban earthquake) occurred on 21 November in the Bangladesh-India-Myanmar border region. It had a magnitude of 6.1. The epicenter was located in southern Mizoram, India. The causality report was 23 dead and 200 people were injured during the disaster.

Figure IV-15: Seismic Zonation within/around project AOI

(ii) Flood

199. Floods are the most significant natural hazard in the country, causing extensive damage to human life and property. The country lies on the downstream part of three major river basins: Brahmaputra, Ganges and Meghna and thus is frequently flooded. The major floods that occurred in 1954, 1955, 1974, 1984, 1987, 1988, 1993, 1998, 1999, 2000 and 2007 have been very destructive and caused serious threliveo lives and economy. The flood damage potential in Bangladesh is increasing due to the possible causes of climate change, urban concentration in the three river basins, encroaching of settlements into flood prone

areas, and overreliance on the safety provided by flood control works such as levees, reservoirs.

200. Every year near about one -fifth of Bangladesh undergoes flood during the monsoon season. A flood season in Bangladesh may start as early as May and can continue until November. Floods of Bangladesh can be divided into below three categories:

- **Monsoon Flood** - seasonal, increases slowly and decreases slowly, inundate vast areas and causes huge loss to the life and property.
- **Flash Flood -** from sudden torrential flows, following a brief intense rainstorm or the bursting of a natural or manmade dam or levee; and
- **Tidal Flood -** short duration, height is generally 3-6m, prevents inland flood drainage. Floods are annual phenomena in Bangladesh.

201. There is no possibility of flash flooding as there is no Selected PBS in Chattogram Hill Tracts for this Project. The project areas are located in mixed areas like low river flooding, moderate river flooding, moderate tidal surge, severe tidal surge and non-floor prone areas.

202. The project area and their risk of flood is shown in (Figure IV-16). Risk of Flood are severe in Lakshimpur PBS, Chandpur PBS-2, Cumilla PBS-3, Brahmanbaria PBS whereas probability of flood is moderate in Cumilla PBS-2 and Cumilla PBS-4

203. The Flood Forecasting and Warning Centre (FFWC), under the Bangladesh Water Development Board (BWDB), provides real-time data on water levels and flood forecasts. Here are some water levels and danger levels for various rivers in the Chattogram division.

- Bandarban Water Level: 3.25 m (Danger Level: 14.80 m)
- Chiringa Water Level: 0.81 m (Danger Level: 5.80 m)
- Narayanhat Water Level: 9.38 m (Danger Level: 14.80 m)
- Ramgarh Water Level: 10.70 m (Danger Level: 16.90 m)

Figure IV-16: Flood Map within/ around Project AOI

2. Biological Environment

a) Bio-ecological Zones

204. IUCN Bangladesh in 2002 classified the country into twenty-five bio-ecological zones (Figure 4.17). The Subproject areas of Chattogram Division falls below the bio-ecological zone.

- **Meghna floodplain**
- **Kaptai Lake**
- **Chakaria Sundarbans**
- **The coastal plains**
- **Offshore islands**
- **Meghna estuarine floodplains**
- **Sandy beach/Sand dunes**
- **Chattogram Hills and the CHTs**
- **The Lalmai-Tipperah hills**

205. A major part of the Meghna floodplain was created by the deposition of sediments brought in by the old Brahmaputra River, before it changed its course. The rest of the sediments were laid down principally by the Meghna River itself and by some minor rivers draining from Tiperrah hills. Kaptai Lake is surrounded by evergreen forests. However, the aquatic diversity of this artificial lake is not well known. Aside from the immediate ecological damage such as inundating croplands, villages and forest, the lake that is created had far-reaching ecological consequences (IUCN, 2002f). Another wetland is The Chakaria Sundarbanss was used to be a mosaic of newly formed grassy islands, river channels, tidal creeks, aquaculture ponds, mangrove forests and intertidal mudflats, located in the estuarine system of Matamuhuri and several other minor rivers. Unfortunately, most of this ecosystem has been destroyed and cleared for shrimp culture (IUCN, 2002f).

206. Another major unit is Sandy beach/Sand dunes and a large number of marine turtle use this beach area as their breeding habitat (IUCN, 2002f).

Figure IV-17: Bio-ecological Zone within/around Project AOI

b) Biodiversity

207. The sub-project influence area (SPIA) is mixed with different vegetation. Crops, vegetables are cultivated in the surrounding mainly include rice, wheat, rabi crops and variety of homestead vegetables. A sizeable number of fruit trees with economic value have been observed in the SPIA. The fruit trees include jackfruit, mangoes, litchi, banana, coconut, blackberry etc. and timber trees include mehegoni, neem, koroi etc. A considerable number of trees and bushes in the SPIA site provide habitat for birds and other animals. The composition of plant community includes low growing grasses, trees, herbs and shrubs. The data collected from the field suggested that the predominant species are those of cultivated vegetables and trees.

Table IV-8: List of Terrestrial Flora available in the SPIA of Chattogram Division

Scientific Name	Local Name	English name	Habit	Habitat	IUCN Status
• **Fruit bearing tree**					
Phyllanthus emblica	Amloki	Gooseberry	T	HS	LC
Spondias mombin	Amra	Hog plum	T	HS	LC
Annona squamosa	Ata	Sugar apple	T	HS	NT
Aegle marmelos	Bel	Wood Apple	T	HS	NT
Ardisia solanacea	Bon Jam	Shoebutton ardisia	T	HS	-
Ziziphus mauritiana	Boroi	Jujube	T	HS, RS	LC
Dillenia indica	Chalta	Elephant apple	T	HS	LC
Artocarpus lacucha	Dewa	Monkey Jack	T	HS	-
Syzygium cumini	Jam	Black berry	T	HS	LC
Citrus maxima	Jambura	Pomelo	T	HS	LC
Syzygium samarangense	Jamrul	Wax Apple	T	HS	LC
Olea europaea	Jolpai	Olive tree	T	HS	NE
Averrhoa carambola	Kamranga	Chinese Gosseberry	T	HS	-
Terminalia catappa	Kat Badam	Tropical-almond	T	HS	LC
Artocarpus heterophyllus	Kathal	Jackfruit	T	HS	NE
Phoenix sylvestris	Khejur	Date palm	T	HS, RS	-
Musa acuminata	Kola	Banana	H	HS	LC
Litchi chinensis	Litchu	Litchi	T	HS	NE
Cocos nucifera	Narikel	Coconut	T	HS	NT
Carica papaya	Pepe	papaya	T	HS	DD
Psidium guajava	Peyara	Guava	T	HS	LC
Moringa oleifera	Sajina	Drumstick tree	T	HS	LC
Areca catechu	Supari	Areca palm	T	HS	DD
Borassus flabellifer	Tal	Palm trees	T	HS, RS	EN
Tamarindus indica	Tetul	Tamarind	T	HS	LC
Citrus auranticola	Lebu	Lemon	S	HS	C
• **Fuelwood tree**					
Acacia auriculiformis	Akash Moni	Ear-pod Wattle	T	RS	LC
Albizia recardiana	Chamble	Gogonsirir	T	RS	-
Eucalyptus globulus	Eucalyptus	blue gum	T	RS	LC
Acacia mangium	Mengium	Wattle	T	RS	LC
Mallotus nudiflora	Pitoli	Latim Tree	T	RS	-
Dalbergia sissoo	Sishoo	North Indian rosewood	T	RS	LC
• **Ornamental tree**					
Polyalthia longifolia	Debdaru	Ashoka tree	T	HS	-

Scientific Name	Local Name	English name	Habit	Habitat	IUCN Status
Casuarina equisetifolia	Jhau	Australian Oak	S	HS	LC
Neolamarckia cadamba	Kadam	Burflower tree	T	HS	-
Carissa carandas	Koromcha	Bengal currant	T	HS	-
Erythrina ovalifolia	Mandar	Indian Coral Tree	T	HS	-
Streblus asper	Shaora	Tooth brush tree	T	HS, RS	LC
• Woody tree					
Albizia lebbeck	Kalo Koroi	Fry Wood	T	RS	LC
Bambusa balcooa	Bash	Bamboo	S	HS	-
Ficus benghalensis	Bot	Banyan Tree	T	RS	-
Swietenia macrophylla	Mahagoni	Spanish Mahagoni	T	HS, RS	VU
Albizia procera	Shil Koroi	White Siris	T	HS, RS	LC
• Medicinal					
Terminalia arjuna	Arjun	Arjun tree	T	HS	-
Lagerstroemia speciosa	Jarul	Queen Flower	T	HS	-
Azadirachta indica	Neem	Neem	T	HS, RS	LC
Ceiba pentandra	Sada Shimul	Java cotton	T	HS	LC

Source: Field level survey, 2022. Note: LC- Least Concern, VU- Vulnerablee, EN- Endangered, NT: Near Threatened; Habit: T=Tree, H= Herb, S=Shrub, G=Grass; Habitat: HS=Homestead, RS-Road side;

208. Primary and secondary mode was adopted for identification of fauna. Most of the birds are identified through direct observation rather than from people. Most of the Amphibians, Reptiles and Mammals were identified by using books and descriptions of the local people during the field survey.

Table IV-9: List of Faunal Species Available in the SPIA of Chattogram Division

Scientific Name	English name	Local Name	IUCN Status
Class: Mammalia			
Suncus murinus	Asian house shrew	Chika	LC
Pteropus giganteus	Indian flying fox	Baro Badur	LC
Scotophilus kuhlii Leach	Bat	Choto Holdey Chamchika	LC
Cuon alpinus	Dog	Kukur	NT
Felis chaus Schreber	Jungle cat	Bon Biral	NT
Herpestes edwardsi	Indian grey mongoose	Boro Beji	LC
Callosciurus pygerythrus	squirrel	Badami Kathbirali	LC
Bandicota bengalensis	Lesser bandicoot rat	Metho-idur	LC
Rattus rattus	Black rat	Idur	LC
Hystrix indica Kerr	Indian crested porcupine	Shojaru	LC
Canis aureus	Golden jackal	Pati Shial	LC
Long-tailed Macaque	Crab-eating macaque	Lomba-leji banor,	CR
Elephas maximus	Asian elephant	Hati	CR
Class: Aves			
Aythya ferina	Common pochard	Pati Bhutihash	LC
Anas poecilorhyncha	Indian spot-billed duck	Meteyhash	LC
Streptopelia decaocto	Eurasian collared dove	Konthighughu	LC
Ardeola grayii	Indian pond heron	Kani Bok	LC
Alcedo atthis	Common kingfisher	Pati Macchranga	LC
Taphozous melanopogon	Black-bearded tomb bat	gore Badur,	DD
Columbidae Spilopelia chinensis	Spotted dove	Tila Ghughu	LC
Copsychus saularis	Oriental magpie-robin	Udoi Doel	LC
Tyto alba	Barn owl	Lokkhi Pecha	LC

Scientific Name	English name	Local Name	IUCN Status
Gracula religiosa	Common hill myna	Pati Moyna	LC
Acridotheres fuscus	Jungle myna	Jhuti Shalik	LC
Class: Reptilia			
Hemidactylus flaviviridis	House Gecko	Snake	LC
H. brookii	Spotted House Lizard	Tiktiki	-
Gekko gecko	Wall Gecko	Takkhak	VU
Calotis versicolor	Common Garden Lizard	Rokto-chosa	-
Varanus bengalensis	Bengal Monitor	Gui Shap	VU
Amphiesma stolatum	Stripped Keel back snake	Dhora-shap	LC
Class: Amphibia			
Hoplobatrachus tigerinus	Bull Frog	Kolabang	LC
Duttaphrynus melanostictus	Asian Common Toad	Kuno Bang	LC

Source: Field level survey, 2022. Note: LC- Least Concern, VU- Vulnerable, EN- Endangered, NT: Near Threatened, DD- Data Deficient.

209. Fish is the most important aquatic fauna of the subproject areas, along with other groups. The aquatic fauna includes Various Types of Fishes. According to the local people and fishermen's opinion, very rare species as Along (*Megarasbora elanga*), Kalibaus (*Labeo calbasu*), Pangas (*Pangasius pangasius*), Muribacha (*Clupisoma garua*), Baghair (*Bagarius bagarius*), Gang tengra (*Gagata cenia*) and Baim (*Mastacembelus armatus*) were available for at least 15-20 years ago. Now these species are facing an extremely high risk of extinction day by day. They also mentioned that this negative trend is due to overfishing, indiscriminate fishing of larvae and juveniles, siltation and pollution. The findings clearly represent the declining trends of fish diversity in the study area which warning the gradual declination of fish diversity of Bangladesh.

210. In addition, The Integrated Biodiversity Assessment Tool (IBAT) is a valuable resource for biodiversity conservation. It provides authoritative geographic information about global biodiversity, making it essential for informed decision-making in policy and practice. After screening from the site, this IBAT assessment provides more comprehensive information on priority species that are potentially found within 1km, 10km and 50km of the area of interest. It has also provided key biodiversity areas/ protected areas information which are found within 1 km and 10 km and 50 km of the area of interest. Here we have added some IBAT assessments of avians species which are endangered and critically endangered located within 1km, 10km and 50km of existing substations, proposed substations, river crossings tower locations and within the existing and proposed DL for Chattogram and Sylhet division.

Table IV-10: IBAT assessment for Proposed SS in Chattogram & Sylhet division

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
Chattogram PBS-1	Sub-Station	Anowara-4	PA-Chunati-50 km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-DudpukuriaDhopachari-50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Kaptai-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Patenga Beach-10 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Rampahar-Sitapahar Wildlife Sanctuary-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-1	Sub-Station	Anowara-5	PA-Chunati-50 km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-DudpukuriaDhopachari-50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Kaptai-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Patenga Beach-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Rampahar-Sitapahar Wildlife Sanctuary-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-1	Sub-Station	Anowara-6	PA-Chunati-50 km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-DudpukuriaDhopachari-50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			PA-Kaptai-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Patenga Beach-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Rampahar-Sitapahar Wildlife Sanctuary-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Brahmanbaria PBS	Sub-Station	Ashugonj	PA-Satchari-50 km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Sepahijala-50 km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
				Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cumilla PBS-2	Sub-Station	Bagmara-2	PA-Rudrasagar Lake-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Rudrasagar Lake-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Sepahijala-50 km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cumilla PBS-3	Sub-Station	Bancharampur-3	PA-Bhawal-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-National Botanical Garden-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-1	Sub-Station	Banshkhali-5	PA-Chunati-10 km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-DudpukuriaDhopachari-50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Fasiakhali-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Patenga Beach-50km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Sonadia Island-50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-1	Sub-Station	Banshkhali-6	PA-Chunati-50 km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-DudpukuriaDhopachari-50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Fasiakhali-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			PA-Kaptai-50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Patenga Beach-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Rampahar-Sitapahar Wildlife Sanctuary-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-3	Switching Station	Baratakia Switching Station	PA-Baraiyadhala-10km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Hajarikhil-10km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-10km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-10 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Moulvibazar PBS	Sub-Station	Barlekha-3 (Shahbajpur)	PA-Khadimnagar-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Madhabkunda-50km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
			PA-Ratargul-50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			PA-Tilagar-50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Barail Range-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Barail Range forests-50km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			KBA-Barail Wildlife Sanctuary-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Bauwwa Beel-50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Hakaluki Haor-50km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Innerline (West) and Katakhal Reserve Forests-50km	Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
			KBA-Innerline, Katakal and Barak Reserve Forests-50km	Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			KBA-Norpuh Reserve Forests-50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Saipung-50km					-	-
			KBA-Son Beel-50km					-	-
Cumilla PBS-1	Sub-Station	Barura-4	PA-Rudrasagar Lake-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Rudrasagar Lake-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Sepahijala -50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Noakhali PBS	Sub-Station	Begumgonj-5 (Choyani)	KBA-Ganges-Brahmaputra-Meghna delta-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Muhuri Dam-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-3	Switching Station	BEZA-2 Switching Station	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Hajarikhil-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Ganges-Brahmaputra-Meghna delta-1km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Muhuri Dam-10km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Brahmanbaria PBS	Switching Station	Bijoynagar	PA-Rema-Kalenga-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Satchari-50km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
			KBA-Hail Haor-50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Rema-Kalenga Wildlife Sanctuary-50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Sepahijala-50km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Sunamganj PBS	Sub-Station	Bishwamborpur-2	PA-Tanguar Haor-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Aila Beel-50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Balpakram Complex -50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Cherapunjee: cliffs, gorges and sacred groves-50km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			KBA-Tanguar Haor and Panabeel - 50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cumilla PBS-2	Sub-Station	B-Para-3	PA-Rudrasagar Lake-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Rudrasagar Lake-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Sepahijala -50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Feni PBS	Sub-Station	Chagolnaiya-4	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Hajarikhil-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Gumti Wildlife Sanctuary -50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cumilla PBS-1	Sub-Station	Chandina-5	PA-Rudrasagar Lake-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Rudrasagar Lake-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Sepahijala -50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-1	Sub-Station	Chandonaish-2	PA-DudpukuriaDhopachari-10 km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Chunati-50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Fasiakhali-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Kaptai-50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Patenga Beach-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Rampahar-Sitapahar Wildlife Sanctuary-50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chandpur PBS-2	Sub-Station	Chandpur-4 (Baghadi)	PA-Padma Setu-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
				Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
				Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cox's Bazar PBS	Switching Station	Chokoria Switching Station	PA-Fasiakhali-10km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Chunati-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			PA-Himchari -50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu -50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park-50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Northern Rakhine Yoma-50km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Sangu Matamuhari -50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Sonadia Island-50km					-	-
Cox's Bazar PBS	Sub-Station	Chokoria-3	PA-Fasiakhali-1Km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Medhakachhapia-10km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Sangu-1Okm	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Chunati-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Himchari-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			PA-Sheikh Jamal Inani-50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Himchari National Park-50km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Northern Rakhine Yoma-50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Sangu Matamuhari -50km					-	-
			KBA-Sonadia Island-50km					-	-
Cox's Bazar PBS	Sub-Station	Chokoria-4	PA-Chunati-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Fasiakhali-50Km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Himchari-50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			PA-Medhakachhapia-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu-5Okm	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park-50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Northern Rakhine Yoma-50km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Sangu Matamuhari -50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Sonadia Island-50km					-	-
Cox's Bazar PBS	Sub-Station	Chokoria-4 (Salt Office)	PA-Chunati-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Fasiakhali-50Km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Himchari-50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu-5Okm	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park-50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Northern Rakhine Yoma-50km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Sangu Matamuhari -50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Sonadia Island-50km					-	-
Cox's Bazar PBS	Sub-Station	Chokoria-5	PA-Fasiakhali-10Km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Chunati-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-DudpukuriaDhopachari-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Himchari-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			PA-Sangu-5Okm	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Himchari National Park-50km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Northern Rakhine Yoma-50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Sangu Matamuhari -50km					-	-
			KBA-Sonadia Island-50km					-	-
Cox's Bazar PBS	Sub-Station	Chokoria-5 (AdjacentGrid)	PA-Fasiakhali-10Km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Chunati-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-DudpukuriaDhopachari-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Himchari-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			PA-Sangu-5Okm	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Himchari National Park-50km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Northern Rakhine Yoma-50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Sangu Matamuhari -50km					-	-
			KBA-Sonadia Island-50km					-	-
Cox's Bazar PBS	Sub-Station	Chokoria-5 (Suarfari)	PA-Fasiakhali-10Km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Chunati-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-DudpukuriaDhopachari-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Himchari-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			PA-Sangu-5Okm	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Himchari National Park-50km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Northern Rakhine Yoma-50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Sangu Matamuhari -50km					-	-
			KBA-Sonadia Island-50km					-	-
Cumilla PBS-2	Sub-Station	Chouddogram-5	PA-Rudrasagar Lake-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Rudrasagar Lake-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Sepahijala -50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cumilla PBS-2	Sub-Station	Chouddogram-6	PA-Rudrasagar Lake-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Rudrasagar Lake-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Sepahijala -50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Habiganj PBS	Sub-Station	Chunarughat-3	PA-Lawachara -50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-RemaKalenga -50km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
			PA-Satchari -50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Hail Haor -50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Lawachara / West Bhanugach Reserved Forest -50km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Rajkandi Reserved Forest - 50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Rema-Kalenga Wildlife Sanctuary -50km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Feni PBS	Sub-Station	Dagonvuya-4	PA-Hajarikhil-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Baraiyadhala-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Gumti Wildlife Sanctuary - 50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cumilla PBS-3	Sub-Station	Daudkandi-5	PA-Padma Setu-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-1	Switching Station	Dohazari Switching Station	PA-DudpukuriaDhopachari-10 km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Chunati-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Fasiakhali-50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			PA-Kaptai-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu-5Okm	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Patenga Beach-50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Rampahar-Sitapahar Wildlife Sanctuary-50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chandpur PBS-2	Sub-Station	Faridganj-3 (Rupsha)	PA-Padma Setu-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
				Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
				Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-2	Sub-Station	Fatikchari-7 (Kanchannagar)	PA-Hajarikhil-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Baraiyadhala-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Kaptai-50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Pablakhali-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Patenga Beach -50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Rampahar-Sitapahar Wildlife Sanctuary-50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-2	Sub-Station	Fatikchari-8 (Kazirhat)	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Hajarikhil-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Nijhum Dweep-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Nijhum Dwip Marine Reserve/Marine Protected Area-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Muhuri Dam-50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Patenga Beach -50 km					-	-
Feni PBS	Sub-Station	Feni-4	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Hajarikhil-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Feni PBS	Sub-Station	Fulgazi-3	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Hajarikhil-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Rudrasagar Lake-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Gumti Wildlife Sanctuary -50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Muhuri Dam-50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Rudrasagar Lake-50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km					-	-
Cumilla PBS-3	Sub-Station	Gazaria-7	PA-National Botanical Garden-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Padma Setu-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Sylhet PBS-1	Sub-Station	Golapganj-6 (Laxmipasha)	PA-Khadimnagar-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Madhabkunda-50km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
			PA-Ratargul-50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			PA-Tilagar-50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Cherapunjee: cliffs, gorges and sacred groves-50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			KBA-Hail Haor-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Hakaluki Haor 50 km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			KBA-Norpuh Reserve Forests-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Son Beel -50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chandpur PBS-1	Sub-Station	Hajigonj-3	PA-Rudrasagar Lake-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
				Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chandpur PBS-1	Sub-Station	Hajigonj-5	PA-Padma Setu-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
				Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
				Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chandpur PBS-1	Sub-Station	Hajigonj-6	PA-Rudrasagar Lake-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
				Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-3	Sub-Station	Hathazari- 4	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-DudpukuriaDhopachari-50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Hajarikhil-50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Kaptai-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Patenga Beach -50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Rampahar-Sitapahar Wildlife Sanctuary -50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-3	Sub-Station	Hathazari- 5	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-DudpukuriaDhopachari-50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Hajarikhil-50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Kaptai-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Patenga Beach -50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Rampahar-Sitapahar Wildlife Sanctuary -50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
Sylhet PBS-1	Sub-Station	Jakiganj-3 (Sharifganj)	KBA-Ganges-Brahmaputra-Meghna delta-50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Noakhali PBS	Sub-Station	Kabirhat-2 (Dhanshri)	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Hajarikhil-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chandpur PBS-1	Sub-Station	Kachua-4	PA-Rudrasagar Lake-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Rudrasagar Lake-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Sepahijala-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
Brahmanbaria PBS	Sub-Station	Kasba-3	PA-Rudrasagar Lake-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Satchari-50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Rudrasagar Lake-50km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			KBA-Sepahijala-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Brahmanbaria PBS	Sub-Station	Kasba-4	PA-Rudrasagar Lake-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Rudrasagar Lake-50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Sepahijala-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Brahmanbaria PBS	Sub-Station	Kasba-5	PA-Rudrasagar Lake-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Rudrasagar Lake-50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Sepahijala-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Lakshmipur PBS	Sub-Station	Komolnagar-2	KBA-Ganges-Brahmaputra-Meghna delta-50 km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
				Tringa guttifer	Spotted Greenshank	EN	Full Migrant	-	-
				Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Lakshmipur PBS	Sub-Station	Lakshmipur-6	KBA-Ganges-Brahmaputra-Meghna delta-50 km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
				Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Lakshmipur PBS	Sub-Station	Lakshmipur-7	KBA-Ganges-Brahmaputra-Meghna delta-50 km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
				Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
Chattogram PBS-1	Sub-Station	Lohagara-3	PA-Chunati-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-DudpukuriaDhopachari-10 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Fasiakhali-50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu-5Okm	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Patenga Beach -50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Sangu Matamuhari-50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Habiganj PBS	Sub-Station	Madhabpur-5	PA-Lawachara-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Rema-Kalenga-50km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
			PA-Satchari-50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Hail Haor-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Lawachara / West Bhanugach Reserved Forest-50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			KBA-Rema-Kalenga Wildlife Sanctuary-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chandpur PBS-2	Sub-Station	Matlab Dakshin-2 (Ashshinpur)	PA-Padma Setu-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
				Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
				Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chandpur PBS-2	Sub-Station	Matlab Uttar-3 (Baganbari)	PA-National Botanical Garden-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Padma Setu-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-3	Sub-Station	Mirsharai- 8	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Hajarikhil-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-3	Sub-Station	Mirsharai- 9	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Hajarikhil-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cox's Bazar PBS	Sub-Station	Moheshkhali-4-1	PA-Chunati-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Fasiakhali-50Km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Himchari-50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu-5Okm	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Sangu Matamuhar-50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Sonadia Island-50km					-	-
Cox's Bazar PBS	Sub-Station	Moheshkhali-4-2	PA-Chunati-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Fasiakhali-50Km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Himchari-50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu-5Okm	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Sangu Matamuhar-50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Sonadia Island-50km					-	-
Cox's Bazar PBS	Sub-Station	Moheshkhali-4-3	PA-Chunati-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Fasiakhali-50Km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Himchari-50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu-5Okm	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Sangu Matamuhar-50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Sonadia Island-50km					-	-
Cumilla PBS-4	Sub-Station	Monohorgong-3	PA-Rudrasagar Lake-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cumilla PBS-4	Sub-Station	Monohorgong-4	KBA-Ganges-Brahmaputra-Meghna delta-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Muhuri Dam-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cumilla PBS-1	Sub-Station	Muradnagar-5	PA-Rudrasagar Lake-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Rudrasagar Lake-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Sepahijala-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Habiganj PBS	Sub-Station	Nabigonj-4	PA-Lawachara-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Rema-Kalenga-50km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
			PA-Satchari-50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Hail Haor-10 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Hakaluki Haor-50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			KBA-Lawachara / West Bhanugach Reserved Forest-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Rajkandi Reserved Foresta-50km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			KBA-Rema-Kalenga Wildlife Sanctuary-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Brahmanbaria PBS	Sub-Station	Nabinagar-5	PA-Rudrasagar Lake-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Rudrasagar Lake-50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Sepahijala-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Brahmanbaria PBS	Sub-Station	Nabinagar-6	KBA-Sepahijala-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
				Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
				Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cumilla PBS-4	Sub-Station	Nangolkot-3	PA-Rudrasagar Lake-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cumilla PBS-4	Sub-Station	Nangolkot-4	PA-Rudrasagar Lake-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Muhuri Dam-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Rudrasagar Lake-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Brahmanbaria PBS	Sub-Station	Nasirnagar-2	PA-Rema-Kalenga-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Satchari-50km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
			KBA-Hail Haor-50 km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Rema-Kalenga Wildlife Sanctuary-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
				Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-1	Sub-Station	Patiya-3	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Chunati -50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-DudpukuriaDhopachari-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Hajarikhil-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Kaptai-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Patenga Beach -50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Rampahar-Sitapahar Wildlife Sanctuary -50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cox's Bazar PBS	Sub-Station	Pekua-2	PA-Chunati-10km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-DudpukuriaDhopachar-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Fasiakhali-50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Himchari-50Km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			PA-Sangu-5Okm	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Patenga Beach -50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Sangu Matamuhar-50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Moulvibazar PBS	Sub-Station	Rajnagor-4 (Mukambazar)	PA-Khadimnagar-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Lawachara -50km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
			PA-Madhabkunda-50Km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			PA-Ratargul-50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-RemaKalenga-50km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			PA-Tilagar-5Okm	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Hail Haor-50 km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			KBA-Hakaluki Haor-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Lawachara / West Bhanugach Reserved Forest-50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Rajkandi Reserved Foresta-50km	Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Lakshmipur PBS	Sub-Station	Ramgoti-2	KBA-Ganges-Brahmaputra-Meghna delta-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Muhuri Dam-50km	Tringa guttifer	Spotted Greenshank	EN	Full Migrant	-	-
				Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cox's Bazar PBS	Sub-Station	Ramu-3	PA-Himchari-10Km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Chunati-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Fasiakhali-50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu-5Okm	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			PA-Sheikh Jamal Inani-5Okm	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			PA-Teknaf-50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park-50 km					-	-
			KBA-Sangu MatamuharI-50 km					-	-
			KBA-Sonadia Island-50km					-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Teknaf Game Reserve -50km					-	-
Cox's Bazar PBS	Sub-Station	Ramu-3 (BKSP)	PA-Himchari-10Km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Chunati-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Fasiakhali-50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu-5Okm	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			PA-Sheikh Jamal Inani-5Okm	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			PA-Teknaf-50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park-50 km					-	-
			KBA-Northern Rakhine Yoma-50 km					-	-
			KBA-Sangu Matamuharl-50 km					-	-
			KBA-Sonadia Island-50km					-	-
			KBA-Teknaf Game Reserve -50km					-	-
Cox's Bazar PBS	Sub-Station	Ramu-3 (Uttor)	PA-Himchari-10Km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Chunati-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Fasiakhali-50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Medhakachhapia-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu-5Okm	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			PA-Sheikh Jamal Inani-5Okm	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			PA-Teknaf-50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park-50 km					-	-
			KBA-Northern Rakhine Yoma-50 km					-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Sangu Matamuharl-50 km					-	-
			KBA-Sonadia Island-50km					-	-
			KBA-Teknaf Game Reserve -50km					-	-
Chattogram PBS-2	Sub-Station	Raozan-6 (Amirhat)	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Hajarikhil-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Nijhum Dweep-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Nijhum Dwip Marine,Reserve/Marine,Protected Area-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-1 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Patenga Beach -50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Lakshmipur PBS	Sub-Station	Raypur-4	KBA-Ganges-Brahmaputra-Meghna delta-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
				Tringa guttifer	Spotted Greenshank	EN	Full Migrant	-	-
				Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Sunamganj PBS	Sub-Station	Sadar-2	PA-Tanguar Haor-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Aila Beel -50 km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Balpakram Complex-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Cherapunjee: cliffs, gorges and sacred groves-50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Tanguar Haor and Panabeel-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Sunamganj PBS	Sub-Station	Sadar-3	PA-Tanguar Haor-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Aila Beel -50 km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Balpakram Complex-50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Cherapunjee: cliffs, gorges and sacred groves-50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			KBA-Mawphlang Sacred Grove-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Tanguar Haor and Panabeel-50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Sylhet PBS-2	Sub-Station	Salutikar	PA-Ratargul-10km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Khadimnagar-50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			PA-Tilagar 50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Cherapunjee: cliffs, gorges and sacred groves-50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			KBA-Hakaluki Haor-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Mawphlang Sacred Grove-50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Norpuh Reserve Forests50km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Brahmanbaria PBS	Sub-Station	Sarail-1	PA-Tilagar-10km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Khadimnagar-50km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
			PA-Madhabkunda-50Km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			PA-Ratargul-50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Cherapunjee: cliffs, gorges and sacred groves-50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			KBA-Hail Haor-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Hakaluki Haor-50 km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Sylhet PBS-2	Sub-Station	Saraker Bazar	PA-Khadimnagar-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Madhabkunda-50Km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			PA-Ratargul-50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Tilagar-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Barail Range -50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			KBA-Barail Range forests -50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Barail Wildlife Sanctuary-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Bauwwa Beel-50km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Hakaluki Haor -50km	Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
			KBA-Innerline (West) and Katakhal Reserve Forests-50 km	Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			KBA-Norpuh Reserve Forests -50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Saipung -50 km					-	-
			KBA-Son Beel -50km					-	-
Chattogram PBS-1	Sub-Station	Satkania-3	PA-DudpukuriaDhopachari-10Km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Chunati-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Fasiakhali-50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Kaptai -50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu-5Okm	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Patenga Beach -50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chattogram PBS-1	Switching Station	Shamirpur Switching Station	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Chunati-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-DudpukuriaDhopachari-50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Hajarikhil-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Kaptai -50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Patenga Beach -10 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Hazarikhil Wildlife Sanctuary-50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			KBA-Rampahar-Sitapahar Wildlife Sanctuary-50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Noakhali PBS	Sub-Station	Sirajpur Switching Station	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Hajarikhil-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Ganges-Brahmaputra-Meghna delta-50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Hazarikhil Wildlife Sanctuary-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cumilla PBS-2	Sub-Station	Sodor Dokkhin-3	PA-Rudrasagar Lake-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Rudrasagar Lake-50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Sepahijala-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			KBA-Trishna Wildlife Sanctuary-50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Sylhet PBS-1	Sub-Station	South Surma-4 (Cantonment)	PA-Khadimnagar-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Madhabkunda-50Km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
			PA-Ratargul-50Km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			PA-Tilagar-50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Cherapunjee: cliffs, gorges and sacred groves-50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Hail Haor-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Hakaluki Haor-50 km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			KBA-Norpuh Reserve Forests-50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			KBA-Son Beel -50km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Moulvibazar PBS	Sub-Station	Sreemangal-5 (Radhanagar)	PA-Lawachara-1km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Rema-Kalenga-50Km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
			PA-Satchari-50Km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Lawachara / West Bhanugach Reserved Forest-1 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Hail Haor-10 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			KBA-Hakaluki Haor-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Rajkandi Reserved Forest-50km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			KBA-Rema-Kalenga Wildlife Sanctuary 50km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Moulvibazar PBS	Sub-Station	Sreemangal-6 (Kalapur)	PA-Lawachara-10km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Rema-Kalenga-50Km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
			PA-Satchari-50Km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			KBA-Hail Haor-1km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			KBA-Lawachara / West Bhanugach Reserved Forest-10 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			KBA-Hakaluki Haor-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			KBA-Rajkandi Reserved Forest-50km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			KBA-Rema-Kalenga Wildlife Sanctuary 50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
				Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Noakhali PBS	Sub-Station	Subarnachar3 (Karimbazar)	KBA-Ganges-Brahmaputra-Meghna delta-50 km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Muhuri Dam-50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Noakhali PBS	Sub-Station	Sudharam-3 (Kaladuaraf)	KBA-Ganges-Brahmaputra-Meghna delta-50 km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			KBA-Muhuri Dam-50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
				Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
Noakhali PBS	Sub-Station	Sudharam-4 (Dharmapur)	KBA-Ganges-Brahmaputra-Meghna delta-50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			KBA-Muhuri Dam-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cumilla PBS-3	Sub-Station	Titas-2	PA-Padma Setu-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			PA-Rudrasagar Lake-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
				Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
				Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
				Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
				Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
				Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Cox's Bazar PBS	Sub-Station	Ukiya-5-1	PA-Teknaf -1km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Sheikh Jamal Inani -10Km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Himchari -50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Saint Martin -50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Teknaf Game Reserve -1km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park -10 km					-	-
			KBA-Northern Rakhine Yoma-50 km					-	-
			KBA-Sangu Matamuhari -50km					-	-
			KBA-Sonadia Island -50km					-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
Cox's Bazar PBS	Sub-Station	Ukiya-5-2	PA-Teknaf -1km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Sheikh Jamal Inani -10Km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Himchari -50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Saint Martin -50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Teknaf Game Reserve -1km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park -10 km					-	-
			KBA-Northern Rakhine Yoma-50 km					-	-
			KBA-Sangu Matamuhari -50km					-	-
			KBA-Sonadia Island -50km					-	-
Cox's Bazar PBS	Sub-Station	Ukiya-5-3	PA-Teknaf -1km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Sheikh Jamal Inani -10Km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Himchari -50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Saint Martin -50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			KBA-Teknaf Game Reserve -1km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park -10 km					-	-
			KBA-Northern Rakhine Yoma-50 km					-	-
			KBA-Sangu Matamuhari -50km					-	-
			KBA-Sonadia Island -50km					-	-
Cox's Bazar PBS	Sub-Station	Ukiya-6-1	PA-Himchari -10km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Sheikh Jamal Inani -10Km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Fasiakhali -50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			PA-Medhakachhapia -50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu -50Km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			PA-Teknaf -50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park -10 km					-	-
			KBA-Northern Rakhine Yoma-50 km					-	-
			KBA-Sangu Matamuhari -50km					-	-
			KBA-Sonadia Island -50km					-	-
			KBA-Teknaf Game Reserve -50km					-	-
Cox's Bazar PBS	Sub-Station	Ukiya-6-2	PA-Himchari -10km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Sheikh Jamal Inani -10Km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Fasiakhali -50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Medhakachhapia -50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
			PA-Sangu -50Km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			PA-Teknaf -50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park -10 km					-	-
			KBA-Northern Rakhine Yoma-50 km					-	-
			KBA-Sangu Matamuhari -50km					-	-
			KBA-Sonadia Island -50km					-	-
			KBA-Teknaf Game Reserve -50km					-	-
Cox's Bazar PBS	Sub-Station	Ukiya-6-3	PA-Himchari -10km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			PA-Sheikh Jamal Inani -10Km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			PA-Fasiakhali -50Km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			PA-Medhakachhapia -50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-

PBS Name	Type	S/S Name	1 km – KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
				Scientific Name	Common Name	Category	Movement Pattern		
			PA-Sangu -50Km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			PA-Teknaf -50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
			KBA-Himchari National Park -10 km					-	-
			KBA-Northern Rakhine Yoma-50 km					-	-
			KBA-Sangu Matamuhari -50km					-	-
			KBA-Sonadia Island -50km					-	-
			KBA-Teknaf Game Reserve -50km					-	-
								-	-

211. The table outlines the Critically Endangered (CR) and Endangered (EN) species found within a 1, 10, and 50 km buffer zone of the proposed new substation and switching stations, which will be constructed under the Bangladesh Rural Electrification Board (BREB). This analysis, performed using the IBAT Toolbox, showed the potentially available species based on global data, but local and regional data varies significantly. Field observations provide more precise data for biodiversity assessment. According to the IBAT analyses, the proposed locations are within 50 Km of 26 Protected Areas and 31 KBA (Key Biodiversity Area). Among them some substation and switching are within 1 km of Protected Areas such as lawachara, Fasiakhali, Teknaf, and Key biodiversity areas such as Ganges-Brahmaputra-Meghna delta, Hail Haor, Lawachara / West Bhanugach Reserved Forest, Teknaf Game Reserve. The IBAT analysis lists the following species as Critically Endangered: Calidris pygmaea (Spoon-billed Sandpiper), Calidris tenuirostris (Great Knot), Perdicula manipurensis (Manipur Bush-quail), Asarcornis scutulata (White-winged Duck), Rynchops albicollis (Indian Skimmer), Haliaeetus leucoryphus (Pallas's Fish-eagle), Houbaropsis bengalensis (Bengal Florican), Aquila nipalensis (Steppe Eagle), Gyps bengalensis (White-rumped Vulture), Aythya baeri (Baer's Pochard), Emberiza aureola (Yellow-breasted Bunting), Sterna acuticauda (Black-bellied Tern), Laticilla cinerascens (Swamp Grass-babbler), Ardea insignis (White-bellied Heron), Sarcogyps calvus (Red-headed Vulture), Gyps tenuirostris (Slender-billed Vulture), and Tringa guttifer (Spotted Greenshank). Additionally, Aquila nipalensis (Steppe Eagle) are common in every station-based analysis. These species are critically endangered and endangered due to various natural and anthropological reasons. Increased human activity and infrastructure development can result in noise and light pollution, further disturbing these sensitive species. Additionally, there is a risk of electrocution for large birds such as vultures and eagles due to power lines. To mitigate these risks, it is essential to implement comprehensive environmental management plans and consider alternative measures to minimize the project's impact on local wildlife. Conservation measures should prioritize habitat protection and restoration, pollution control, and anti-poisoning initiatives. Engaging local communities in conservation efforts and raising awareness about the importance of these species are also crucial steps. Training and workshops for conserving these species from hunting and trapping should be conducted for workers and local people. Training workers and staff to avoid accidents during construction and managing electric line activity (e.g., turning off or lowering power supply when necessary) is also important. Regular monitoring and research are necessary to assess the effectiveness of these measures and to inform data-driven decisions. Immediate actions are required to mitigate these risks and protect the biodiversity within the buffer zone of those proposed substations.

Table IV-11: IBAT assessment for existing SS which will be augmanted in Chattogram & Sylhet division

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
Adarshow Sadar-1		PA- Rudrasagar Lake-50KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		KBA- Rudrasagar Lake-50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		KBA- Sepahijala-50KM	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
		KBA- Trishna Wildlife Sanctuary-50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Akhaura-1	Brahmanbaria PBS	PA- Rema-Kalenga- 50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Rudrasagar Lake-50KM	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		PA- Satchari- 50KM	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA- Sepahijala-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Rudrasagar Lake-50KM	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
		KBA- Rema-Kalenga Wildlife Sanctuary-50KM	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Anwara-2	Chittagong PBS-1	KBA- Ganges-Brahmaputra-Meghna delta -50KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA- Chunati- 50KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		PA- Dudpukuria-Dhopachari- 50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		PA- Kaptai- 50KM	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		KBA-Patenga Beach-50KM	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
		KBA- Rampahar-Sitapahar Wildlife Sanctuary- 50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Bahubal-2 (Mirpur)	Habiganj PBS	PA- Rema- Kalenga-50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Satchari- 50KM	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		PA- Lawachara- 50KM	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA- Hail Haor- 50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA- Lawachara / West Bhanugach	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		Reserved Forest-50KM						
		KBA- Rajkandi Reserved Forest-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA - Rema-Kalenga Wildlife Sanctuary-50KM	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
		PA- Madhabkunda-10KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Khadimnagar-50KM	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		PA- Ratargul - 50 km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		PA- Tilagar- 50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA- Hakaluki Haor-10 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		KBA- Barail Range- 50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA- Barail Wildlife Sanctuary- 50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Bauwwa Beel-50 km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
Baralekha-1	Moulvibazar PBS	KBA- Hail Haor- 50KM	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		KBA- Innerline (West) and Katakhal Reserve Forests- 50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
		KBA- Innerline, Katakal and Barak Reserve Forests- 50 km	Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
		KBA- Norpuh Reserve Forests- 50 km	Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
		KBA- Rajkandi Reserved Forest- 50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
		KBA- Son Beel- 50 km					-	-
		PA- Madhabkunda-50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Khadimnagar-50KM	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		PA- Ratargul - 50 km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		PA- Tilagar- 50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA- Barail Range- 50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		KBA- Barail Wildlife Sanctuary- 50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA- Bauwwa Beel-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Son Beel- 50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
		KBA- Norpuh Reserve Forests- 50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
Beanibazar-2	Sylhet PBS-1	KBA- Hakaluki Haor-50 km	Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		KBA- Barail Range Forests- 50 km	Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
		PA- Khadimnagar- 50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Ratargul - 50 km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		PA- Tilagar- 50 km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA- Norpuh Reserve Forests- 50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA- Hakaluki Haor- 50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA- Cherapunjee: cliffs, gorges and sacred groves- 50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
Bhadaghat	Sylhet PBS-2		Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
		PA- Rema-Kalenga- 50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
Bijoynagar-1 (Chandura)	Brahmanbaria PBS	PA- Satchari- 50KM	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		KBA- Sepahijala-50KM	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA- Rema Kalenga Wildlife Sanctuary-50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
		PA- Khadimnagar-50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Ratargul - 50 km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		PA- Tilagar- 50 km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		PA- Lawachara- 50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA- Aila Beel- 50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA- Cherapunjee: cliffs, gorges and sacred groves- 50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
Biswanath-3	Sylhet PBS-1	KBA- Hail Haor- 50KM	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		KBA- Hakaluki Haor- 50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
		KBA- Lawachara / West Bhanugach Reserved Forest- 50KM	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Brahmanbaria HQ (Sadar-1)	Brahmanbaria PBS	PA- Satchari- 50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		KBA- Sepahijala-50KM	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
			Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chakaria-1	Coxs Bazar PBS	PA-Fasiakhali- 10km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA- Medhakachhapia- 10 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		PA- Sangu- 10 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		PA-Chunati-50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		PA- Himchari- 50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Himchari National Park - 50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
		KBA- Northern Rakhine Yoma- 50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
		KBA-Sangu Matamuhari- 50km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
		KBA- Sonadia Island- 50 km					-	-
Chandanaish-1	Chittagong PBS-1	PA-Dudpukuria Dhopachari- 10km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA-Chunati-10 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		PA- Kaptai- 10 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA-Ganges-Brahmaputra-Meghna delta- 50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		KBA-Patenga Beach- 50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA-Rampahar-Sitapahar Wildlife Sanctuary- 50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chandina-4	Comilla PBS-1	PA-Rudrasagar Lake- 50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		KBA-Rudrasagar Lake- 50 km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		KBA-Sepahijala-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
		KBA-Trishna Wildlife Sanctuary- 50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chandpur-3	Chandpur PBS-2	PA-Padma Setu-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Chatkhil-2	Noakhali PBS	KBA-Ganges-Brahmaputra-Meghna delta- 50 km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		KBA-Muhuri Dam -50 km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		KBA-Trishna Wildlife Sanctuary- 50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Dagonbhuyan-3 (Latifpur)	Feni PBS	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA-Hajarikhil- 50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		KBA-Ganges-Brahmaputra-Meghna delta- 50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		KBA-Hazarikhil Wildlife Sanctuary- 50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
		KBA-Muhuri Dam -50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA-Trishna Wildlife Sanctuary- 50km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Daudkandi-4	Comilla PBS-3	PA-Padma Setu-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA-Rudrasagar Lake-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
		KBA-Sepahijala- 50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Debidwar-2	Comilla PBS-1	PA-Rudrasagar Lake-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		KBA-Rudrasagar Lake-50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		KBA-Sepahijala-50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA-Trishna Wildlife Sanctuary- 50km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Derai	Sunamganj PBS	PA-Tanguar Haor-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		KBA-Aila Beel - 50 km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		KBA-Hail Haor-50 km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA-Tanguar Haor and Panabeel - 50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
Fatikchari-2	Chittagong PBS-2	PA-Baraiyadhala-50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA-Dudpukuria Dhopachar- 50km	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		PA-Hajarikhil- 50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		PA-Kaptai- 50km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		KBA-Ganges-Brahmaputra-Meghna delta- 50 km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
		KBA-Hazarikhil Wildlife Sanctuary- 50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA-Muhuri Dam -50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
		KBA-Patenga Beach-50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
		KBA-Rampahar-Sitapahar Wildlife Sanctuary- 50 km	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Gazaria-4	Comilla PBS-3	PA-National Botanical Garden- 50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA-Padma Setu-50km	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Golapgonj-2	Sylhet PBS-1	PA-Khadimnagar-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		PA-Madhabkunda-50km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		PA-Ratargul- 50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		PA-Tilagar- 50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA-Cherapunjee: cliffs, gorges and sacred groves- 50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		KBA-Hazarikhil Wildlife Sanctuary- 50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA-Muhuri Dam -50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA-Patenga Beach-50 km	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
		KBA-Rampahar-Sitapahar Wildlife Sanctuary- 50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Gowainghat-1	Sylhet PBS-2	PA-Ratargul- 10km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA-Khadimnagar-50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		PA-Tilagar- 50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		KBA-Barail Range- 50 km	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		KBA-Barail Wildlife Sanctuary - 50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA-Cherapunjee: cliffs, gorges and sacred groves- 50 km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA-Hakaluki Haor- 50 km	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
		KBA-Mawphlang Sacred Grove- 50 km	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
		KBA-Norpuh Reserve Forests- 50 km	Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Haimchar	Chandpur PBS-2	PA-Padma Setu- 50km	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			Tringa guttifer	Spotted Greenshank	EN	Full Migrant	-	-
			Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Jamalganj	Sunamganj PBS	PA-Tanguar Haor- 50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		KBA-Aila Beel - 50 km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA-Balpakram Complex- 50 km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA-Cherapunjee: cliffs, gorges and sacred groves- 50 km	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA-Tanguar Haor and Panabeel - 50km	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Kachua-1	Chandpur PBS-1	PA- Rudrasagar Lake-50KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		KBA- Rudrasagar Lake-50KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		KBA- Trishna Wildlife Sanctuary-50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Komolnagar	Lakshmipur PBS		Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		KBA- Ganges-Brahmaputra-Meghna delta-50KM	Tringa guttifer	Spotted Greenshank	EN	Full Migrant	-	-
			Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Laxmipur-3	Lakshmipur PBS	KBA- Ganges-Brahmaputra-Meghna delta-50KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			Tringa guttifer	Spotted Greenshank	EN	Full Migrant	-	-
			Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Madhabpur-1	Habiganj PBS	PA- Satchari-10KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Lawachara-50KM	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		PA- Rema-Kalenga-50KM	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA- Hail Haor-50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		KBA- Lawachara / West Bhanugach Reserved Forest-50KM	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA- Rema-Kalenga Wildlife Sanctuary-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Madhabpur-3 (East Madhabpur)	Habiganj PBS	PA- Rema-Kalenga-50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Satchari-50KM	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		KBA- Hail Haor-50KM	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA- Rema-Kalenga Wildlife Sanctuary-50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Matlob North-2	Chandpur PBS-2	PA- Padma Setu-50KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
			Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Mirsarai-1(Mithachara)	Chittagong PBS-3	PA-Baraiyadhala10KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA- Hajarikhil-10KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		KBA- Muhuri Dam-10KM	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		KBA- Ganges-Brahmaputra-Meghna delta-50KM	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
		KBA- Hazarikhil Wildlife Sanctuary-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Trishna Wildlife Sanctuary-50KM	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Moheshkhali-1	Coxs Bazar PBS	PA- Chunati-50KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA- Fasiakhali-50KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		PA- Himchari-50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		PA- Medhakachhapia-50KM	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		PA-Sangu-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		PA- Sheikh Jamal Inani-50KM	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
		KBA- Sonadia Island-10KM	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
		KBA- Himchari National Park-50KM					-	-
		KBA- Northern Rakhine Yoma-50KM					-	-
		KBA- Sangu Matamuhari-50KM					-	-
Monohorgonj-1	Comilla PBS-4	PA- Rudrasagar Lake-50KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		KBA- Ganges-Brahmaputra-Meghna delta-50KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		KBA- Muhuri Dam-50KM	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
		KBA- Rudrasagar Lake-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Trishna Wildlife Sanctuary-50KM	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
Nabiganj-2 (Aushkandi)	Habiganj PBS	PA- Lawachara-50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Rema-Kalenga-50KM	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		PA- Tilagar-50KM	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA- Aila Beel-50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA- Hakaluki Haor-50KM	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA- Lawachara / West Bhanugach Reserved Forest-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Rajkandi Reserved Forest-50KM	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
		KBA- Rema-Kalenga Wildlife Sanctuary-50KM	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Nasirnagar-1	Brahmanbaria PBS	PA- Rema-Kalenga-50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Satchari-50KM	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		KBA- Hail Haor-50KM	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA- Rema-Kalenga Wildlife Sanctuary-50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Rajnagar-1	Moulvibazar PBS	PA- Khadimnagar-50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Lawachara-50KM	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		PA- Madhabkunda-50KM	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		PA- Rema-Kalenga-50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		PA- Tilagar-50KM	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA- Hail Haor-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Hakaluki Haor-50KM	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
		KBA- Lawachara / West Bhanugach	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		Reserved Forest-50KM						
		KBA- Rajkandi Reserved Forest-50KM	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
		KBA- Rema-Kalenga Wildlife Sanctuary-50KM	Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Rangunia-1	Chittagong PBS-2	PA- Baraiyadhala-50KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA- Chunati-50KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		PA- Dudpukuria-Dhopachari-50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		PA- Hajarikhil-50KM	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		PA- Kaptai-50KM	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
		KBA- Ganges-Brahmaputra-Meghna delta-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Hazarikhil Wildlife Sanctuary-50KM	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
		KBA- Patenga Beach-50KM	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
		KBA- Rampahar-Sitapahar Wildlife Sanctuary-50KM	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Raozan-2	Chittagong PBS-2	PA- Baraiyadhala-50KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-

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			Scientific name	Common name	Category	Movement Pattern		
		PA- Chunati-50KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		PA- Dudpukuria-Dhopachari-50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		PA- Hajarikhil-50KM	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		PA- Kaptai-50KM	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
		KBA- Ganges-Brahmaputra-Meghna delta-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Hazarikhil Wildlife Sanctuary-50KM	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
		KBA- Patenga Beach-50KM	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
		KBA- Rampahar-Sitapahar Wildlife Sanctuary-50KM	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Raypur-3	Lakshmipur PBS	KBA- Ganges-Brahmaputra-Meghna delta-50KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
			Tringa guttifer	Spotted Greenshank	EN	Full Migrant	-	-
			Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
			Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Senbag-2	Noakhali PBS	PA- Rudrasagar Lake-50KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-

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			Scientific name	Common name	Category	Movement Pattern		
		KBA- Ganges-Brahmaputra-Meghna delta-50KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		KBA- Muhuri Dam-50KM	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		KBA- Trishna Wildlife Sanctuary-50KM	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Shaistagonj	Habiganj PBS	PA- Lawachara-50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Rema-Kalenga-50KM	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		PA- Satchari-50KM	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA- Hail Haor-50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA- Lawachara / West Bhanugach Reserved Forest-50KM	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA- Rajkandi Reserved Forest-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Rema-Kalenga Wildlife Sanctuary-50KM	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Sitakunda (HQ)	Chittagong PBS-3	PA- Baraiyadhala-10KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA- Hajarikhil-10KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		KBA- Ganges-Brahmaputra-Meghna delta-10KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA- Hazarikhil Wildlife Sanctuary-10KM	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		KBA- Muhuri Dam-50KM	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
		KBA- Patenga Beach-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Sonagazi-3 (Kutirhat)	Feni PBS	PA- Baraiyadhala-50KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA- Hajarikhil-50KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		KBA- Ganges-Brahmaputra-Meghna delta-50KM	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		KBA- Hazarikhil Wildlife Sanctuary-50KM	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		KBA- Muhuri Dam-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Trishna Wildlife Sanctuary-50KM	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Sonaimuri-3 (Amisapara)	Noakhali PBS	KBA- Ganges-Brahmaputra-Meghna delta-50KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		KBA- Muhuri Dam-50KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		KBA- Trishna Wildlife Sanctuary-50KM	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Sreemangal-1	Moulvibazar PBS	PA- Lawachara-10KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Rema-Kalenga-50KM	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		PA- Satchari-50KM	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA- Hail Haor-1KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA- Lawachara / West Bhanugach Reserved Forest-10KM	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA- Hakaluki Haor-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-

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			Scientific name	Common name	Category	Movement Pattern		
		KBA- Rajkandi Reserved Forest-50KM	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
		KBA- Rema-Kalenga Wildlife Sanctuary-50KM	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Sreemangal-3	Moulvibazar PBS	PA- Lawachara-10KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Rema-Kalenga-50KM	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		PA- Satchari-50KM	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA- Hail Haor-1KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA- Lawachara / West Bhanugach Reserved Forest-10KM	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA- Hakaluki Haor-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Rajkandi Reserved Forest-50KM	Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
		KBA- Rema-Kalenga Wildlife Sanctuary-50KM	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Titas	Comilla PBS-3	PA- National Botanical Garden-50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Padma Setu-50KM	Rynchops albicollis	Indian Skimmer	EN	Full Migrant	-	-
			Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Ukhia-1 (HQ)	Coxs Bazar PBS	PA- Sheikh Jamal Inani-10KM	Calidris pygmaea	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA- Fasiakhali-50KM	Calidris tenuirostris	Great Knot	EN	Full Migrant	-	-
		PA- Himchari-50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		PA- Medhakachhapia-50KM	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		PA- Sangu-50KM	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
		PA- Teknaf-50KM	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
		KBA-Himchari National Park-10KM					-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats--List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		KBA- Northern Rakhine Yoma-50KM					-	-
		KBA- Sangu Matamuhari-50KM					-	-
		KBA- Sonadia Island-50KM					-	-
		KBA- Teknaf Game Reserve-50KM					-	-
Zokigonj-1	Sylhet PBS-1	PA- Khadimnagar-50KM	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA- Madhabkunda-50KM	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		PA- Ratargul-50KM	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
		PA- Tilagar-50KM	Asarcornis scutulata	White-winged Duck	EN	Not a Migrant	-	-
		KBA- Barail Range-50KM	Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA- Barail Range forests-50KM	Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA- Barail Wildlife Sanctuary-50KM	Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
		KBA- Bauwwa Beel-50KM	Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
		KBA- Hakaluki Haor-50KM	Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
		KBA- Innerline (East) and Barak Reserve Forests-50KM	Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
		KBA- Innerline (West) and Katakhal Reserve Forests-50KM	Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
		KBA- Innerline, Katakal and Barak					-	-

SS_Name	PBS Name	1 km - KBA, Protected Area/PA 10 km - KBA, Protected Area/PA 50 km - KBA, Protected Area/PA	Aves (birds) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific name	Common name	Category	Movement Pattern		
		Reserve Forests-50KM						
		KBA- Norpuh Reserve Forests-50KM					-	-
		KBA- Saipung-50KM					-	-
		KBA- Son Beel-50KM					-	-

212. The table lists the species that are considered to be Critically Endangered (CR) and Endangered (EN) that are located within a buffer zone of 1, 10, and 50 km around the current substation stations. This area will be expanded as part of the Bangladesh Rural Electrification Board (BREB). Although local and regional statistics differ greatly, this analysis—which was carried out using the IBAT Toolbox—showed the possibly available species based on worldwide data. More accurate data are obtained from field observations for the assessment of biodiversity. The suggested locations are within 50 kilometers of 20 protected areas and 28 KBAs (Key Biodiversity Areas), per the IBAT analysis. Some of these substations and switching are located less than a kilometer from important wildlife hotspots like Hail Haor. thoungh The IBAT study found lists of the following species as Critically Endangered and Endangered, but it did not find any in 1 km KBA: Calidris pygmaea (Spoon-billed Sandpiper), Calidris tenuirostris (Great Knot), Perdicula manipurensis (Manipur Bush-quail), Asarcornis scutulata (White-winged Duck), Rynchops albicollis (Indian Skimmer), Haliaeetus leucoryphus (Pallas's Fish-eagle), Houbaropsis bengalensis (Bengal Florican), Aquila nipalensis (Steppe Eagle), Gyps bengalensis (White-rumped Vulture), Aythya baeri (Baer's Pochard), Emberiza aureola (Yellow-breasted Bunting), Sterna acuticauda (Black-bellied Tern), Laticilla cinerascens (Swamp Grass-babbler), Ardea insignis (White-bellied Heron), Sarcogyps calvus (Red-headed Vulture), Gyps tenuirostris (Slender-billed Vulture), and Tringa guttifer (Spotted Greenshank). Aquila nipalensis, sometimes known as the Steppe Eagle, is also frequently found in all station-based analyses. These species face severe threats to their survival from both natural and human-caused causes. These delicate animals may be further disturbed by noise and light pollution brought on by growing infrastructure and human activity. Large birds like eagles and vultures also run the risk of electrocuting themselves from power lines. Implementing thorough environmental management plans and taking into account alternate options to reduce the project's impact on nearby animals are crucial steps in mitigating these hazards. Pollution reduction, anti-poisoning campaigns, and habitat preservation and restoration should be the top priorities for conservation measures. Important actions also include educating the public about the significance of these species and involving local populations in conservation initiatives. Workers and locals should participate in courses and training aimed at protecting these species from hunting and trapping. It's crucial to teach employees how to manage electric line activities, such as cutting off or lowering the power supply when needed, and to prevent mishaps during construction. To evaluate the efficacy of these interventions and to support data-driven decision-making, ongoing research and monitoring are required. To reduce these threats and save the biodiversity in the area around those electric substations, quick action is needed.

Table IV-12: IBAT assessment for 33 KV & 11 KV line in Chattogram & Sylhet division

Line Name	1 km - KBA , Protected Area/PA 10 km - KBA , Protected Area/PA 50 km - KBA , Protected Area/PA	Aves (birds) list out (CR, EN,) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN,) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
		Scientific_Name	Common Name	Category	Movement Pattern		
33 kv Line	PA-Lawachara-10km	*Aythya baeri*	Baer's Pochard	CR	Full Migrant	-	-
	PA-Rema-Kalenga-10km	*Ardea insignis*	White-bellied Heron	CR	Not a Migrant	-	-
	PA-Satchari-50km	*Emberiza aureola*	Yellow-breasted Bunting	CR	Full Migrant	-	-
	KBA-Hail Haor-1km	*Perdicula manipurensis*	Manipur Bush-quail	EN	Not a Migrant	-	-
	KBA-Lawachara / West Bhanugach Reserved Forest-10km	*Sterna acuticauda*	Black-bellied Tern	EN	Not a Migrant	-	-
	KBA-Hakaluki Haor-50km	*Haliaeetus leucoryphus*	Pallas's Fish-eagle	EN	Full Migrant	-	-
	KBA-Rajkandi Reserved Forest -50km	*Laticilla cinerascens*	Swamp Grass-babbler	EN	Not a Migrant	-	-
	KBA-Rema-Kalenga Wildlife Sanctuary - 50km	*Gyps bengalensis*	White-rumped Vulture	CR	Nomadic	-	-
		Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
		Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
		Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
11 kv Line	PA-Lawachara-1km	*Aythya baeri*	Baer's Pochard	CR	Full Migrant	-	-
	PA-Rema-Kalenga-10km	*Ardea insignis*	White-bellied Heron	CR	Not a Migrant	-	-
	PA-Satchari-50km	*Emberiza aureola*	Yellow-breasted Bunting	CR	Full Migrant	-	-
	KBA-Hail Haor-1km	*Perdicula manipurensis*	Manipur Bush-quail	EN	Not a Migrant	-	-
	KBA-Lawachara / West Bhanugach Reserved Forest-1km	*Sterna acuticauda*	Black-bellied Tern	EN	Not a Migrant	-	-
	KBA-Hakaluki Haor-50km	*Haliaeetus leucoryphus*	Pallas's Fish-eagle	EN	Full Migrant	-	-
	KBA-Rajkandi Reserved Forest -50km	*Laticilla cinerascens*	Swamp Grass-babbler	EN	Not a Migrant	-	-
	KBA-Rema-Kalenga Wildlife Sanctuary - 50km	*Gyps bengalensis*	White-rumped Vulture	CR	Nomadic	-	-
		Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
		Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
		Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-

213. According to the IBAT assessments, the recommended locations are within 50 km of three protected areas and five key biodiversity areas (KBAs). Some of the substations and switching stations are within 1 km of Protected Areas like Lawachara and Key Biodiversity Areas like Hail Haor. The IBAT analysis classifies the following bird species as Critically Endangered and Endangered: Perdicula manipurensis (Manipur Bush-quail), Haliaeetus leucoryphus (Pallas's Fish-eagle), Aquila nipalensis (Steppe Eagle), Gyps bengalensis (White-rumped Vulture), Aythya baeri (Baer's Pochard), Emberiza aureola (Yellow-breasted Bunting), Sterna acuticauda (Black-bellied Tern), Laticilla cinerascens (Swamp Grass-babbler), Ardea insignis (White-bellied Heron), Sarcogyps calvus (Red-headed Vulture), and Gyps tenuirostris (Slender-billed Vulture). Furthermore, Aquila nipalensis (Steppe Eagle) is present in all station-based analyses. These species are critically endangered or endangered due to a variety of natural and anthropological factors. Increased human activity and infrastructure development can cause noise and light pollution, further disrupting these delicate species. Additionally, electricity wires provide a risk of electrocution to huge birds such as vultures and eagles. To mitigate these hazards, detailed environmental management plans must be implemented, along with alternative strategies to reduce the project's impact on local animals. Conservation efforts should focus on habitat protection and restoration, pollution management, and anti-poisoning actions. Getting local populations involved in conservation efforts and creating awareness about the importance of these species are other critical tasks. Workers and locals should receive training and workshops on how to protect these animals from hunting and trapping. It is also critical to train workers and personnel to avoid mishaps during construction, as well as to manage electric line activities (for example, cutting off or lowering power supplies as needed). Regular monitoring and research are required to evaluate the success of these interventions and make data-driven decisions. Immediate action is required to reduce these dangers and protect biodiversity within the lines' buffer zones.

Table IV-13: IBAT assessment for proposed River Crossing Tower (RCT) in Chattogram & Sylhet division

PBS Name	RCT Name	1 km - KBA , Protected Area/PA 10 km - KBA , Protected Area/PA 50 km - KBA , Protected Area/PA	Aves (birds) list out (CR, EN,) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN,) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific_Name	Common Name	Category	Movement Pattern		
Brahmanbaria PBS	Titas Aoir Kaoir	PA-Satchari-50km	*Aythya baeri*	Baer's Pochard	CR	Full Migrant	-	-
		KBA-Sepahijala-50km	*Emberiza aureola*	Yellow-breasted Bunting	CR	Full Migrant	-	-
			Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Brahmanbaria PBS	Titas Naroi	PA-Rudrasagar Lake-50km	*Aythya baeri*	Baer's Pochard	CR	Full Migrant	-	-
		PA-Satchari-50km	*Emberiza aureola*	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA-Rudrasagar Lake-50km	*Sterna acuticauda*	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA-Sepahijala -50km	*Haliaeetus leucoryphus*	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Brahmanbaria PBS	Titas Shabajpur	PA-Rudrasagar Lake-50km	Aythya baeri	Baer's Pochard	CR	Full Migrant	-	-
		PA-Satchari-50km	Ardea insignis	White-bellied Heron	CR	Not a Migrant	-	-
		KBA-Rema-Kalenga Wildlife Sanctuary-50km	Emberiza aureola	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA-Sepahijala -50km	Perdicula manipurensis	Manipur Bush-quail	EN	Not a Migrant	-	-
			Sterna acuticauda	Black-bellied Tern	EN	Not a Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Coumilla PBS-3	Fuldi Rasulpur	PA-National Botanical Garden-50km	*Aythya baeri*	Baer's Pochard	CR	Full Migrant	-	-
		PA-Padma Setu-50km	*Rynchops albicollis*	Indian Skimmer	EN	Full Migrant	-	-
			Haliaeetus leucoryphus	Pallas's Fish-eagle	EN	Full Migrant	-	-
			Laticilla cinerascens	Swamp Grass-babbler	EN	Not a Migrant	-	-
			Houbaropsis bengalensis	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-

PBS Name	RCT Name	1 km - KBA , Protected Area/PA 10 km - KBA , Protected Area/PA 50 km - KBA , Protected Area/PA	Aves (birds) list out (CR, EN,) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN,) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific_Name	Common Name	Category	Movement Pattern		
Coxs Bazar PBS	Cohelia Kalamar Khola	PA-Chunati-50km	*Calidris pygmaea*	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA-Fasiakhali -50km	*Calidris tenuirostris*	Great Knot	EN	Full Migrant	-	-
		PA-Himchari-50km	*Perdicula manipurensis*	Manipur Bush-quail	EN	Not a Migrant	-	-
		PA-Medhakachhapia-50km	*Asarcornis scutulata*	White-winged Duck	EN	Not a Migrant	-	-
		PA-Sangu-50km	*Haliaeetus leucoryphus*	Pallas's Fish-eagle	EN	Full Migrant	-	-
		PA-Sheikh Jamal Inani-50km	*Houbaropsis bengalensis*	Bengal Florican	CR	Full Migrant	-	-
		KBA-Himchari National Park -50km	*Aquila nipalensis*	Steppe Eagle	EN	Full Migrant	-	-
		KBA-Northern Rakhine Yoma-50km					-	-
		KBA-Sangu Matamuhari-50km					-	-
		KBA-Sonadia Island-50km					-	-
Coxs Bazar PBS	KumajirChoraUmantia	PA-Chunati-50km	*Calidris pygmaea*	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA-Fasiakhali -50km	*Calidris tenuirostris*	Great Knot	EN	Full Migrant	-	-
		PA-Himchari-50km	*Perdicula manipurensis*	Manipur Bush-quail	EN	Not a Migrant	-	-
		PA-Medhakachhapia-50km	*Asarcornis scutulata*	White-winged Duck	EN	Not a Migrant	-	-
		PA-Sangu-50km	*Haliaeetus leucoryphus*	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA-Himchari National Park -50km	*Houbaropsis bengalensis*	Bengal Florican	CR	Full Migrant	-	-
		KBA-Sangu Matamuhari-50km	*Aquila nipalensis*	Steppe Eagle	EN	Full Migrant	-	-
		KBA-Sonadia Island-50km					-	-
Noakhali PBS	Chaprasi Khal	PA-Baraiyadhala-50km	*Calidris pygmaea*	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA-Hajarikhil -50km	*Calidris tenuirostris*	Great Knot	EN	Full Migrant	-	-
		KBA-Ganges-Brahmaputra-Meghna delta-10km	*Asarcornis scutulata*	White-winged Duck	EN	Not a Migrant	-	-
		KBA-Hazarikhil Wildlife Sanctuary-50km	*Rynchops albicollis*	Indian Skimmer	EN	Full Migrant	-	-
		KBA-Muhuri Dam-50km	*Haliaeetus leucoryphus*	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA-Trishna Wildlife Sanctuary -50km	*Houbaropsis bengalensis*	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Noakhali PBS	Small Feni Musapur	PA-Baraiyadhala-50km	*Calidris pygmaea*	Spoon-billed Sandpiper	CR	Full Migrant	-	-
		PA-Hajarikhil -50km	*Calidris tenuirostris*	Great Knot	EN	Full Migrant	-	-
		KBA-Ganges-Brahmaputra-Meghna delta-10km	*Asarcornis scutulata*	White-winged Duck	EN	Not a Migrant	-	-
		KBA-Hazarikhil Wildlife Sanctuary-50km	*Rynchops albicollis*	Indian Skimmer	EN	Full Migrant	-	-
		KBA-Muhuri Dam-50km	*Haliaeetus leucoryphus*	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA-Trishna Wildlife Sanctuary -50km	*Houbaropsis bengalensis*	Bengal Florican	CR	Full Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-
Sunamganj PBS		PA-Tanguar Haor-50km	*Aythya baeri*	Baer's Pochard	CR	Full Migrant	-	-

PBS Name	RCT Name	1 km - KBA , Protected Area/PA 10 km - KBA , Protected Area/PA 50 km - KBA , Protected Area/PA	Aves (birds) list out (CR, EN,) and Identify Full migrant, nomadic, not migrant)				Class: Mammals - Order: Chiroptera (bats) list out (CR, EN,) and Identify Full migrant, nomadic, not migrant)	Except for Birds and Bats-- List all CR, EN if have KBA / PA within 1 km (identify biome is terrestrial or freshwater)
			Scientific_Name	Common Name	Category	Movement Pattern		
	Surma	KBA-Aila Beel-50km	*Emberiza aureola*	Yellow-breasted Bunting	CR	Full Migrant	-	-
		KBA-Balpakram Complex-50km	*Perdicula manipurensis*	Manipur Bush-quail	EN	Not a Migrant	-	-
		KBA-Cherapunjee: cliffs, gorges and sacred groves-50km	*Sterna acuticauda*	Black-bellied Tern	EN	Not a Migrant	-	-
		KBA-Mawphlang Sacred Grove -50km	*Haliaeetus leucoryphus*	Pallas's Fish-eagle	EN	Full Migrant	-	-
		KBA-Tanguar Haor and Panabeel -50km	*Houbaropsis bengalensis*	Bengal Florican	CR	Full Migrant	-	-
			Gyps bengalensis	White-rumped Vulture	CR	Nomadic	-	-
			Sarcogyps calvus	Red-headed Vulture	CR	Not a Migrant	-	-
			Gyps tenuirostris	Slender-billed Vulture	CR	Not a Migrant	-	-
			Aquila nipalensis	Steppe Eagle	EN	Full Migrant	-	-

214. The projected RCT, which will be built under the Bangladesh Rural Electrification Board (BREB), is surrounded by buffer zones of 1, 10, and 50 km, and the table shows the species that are considered Critically Endangered (CR) and Endangered (EN). Local and regional data differ greatly from worldwide data used in this research (conducted with the help of the IBAT Toolbox), which indicated the potentially available species. More accurate data are obtained from field observations for the assessment of biodiversity. The suggested locations are within 50 kilometers of 12 protected areas and 16 KBAs (Key Biodiversity Areas), per the IBAT studies. A few of these substations and switching are located within a kilometer of key biodiversity areas like the Ganges-Brahmaputra-Meghna delta, Lawachara / West Bhanugach Reserved Forest, Teknaf Game Reserve, and Protected Areas like Lawachara, Fasiakhali, and Teknaf. The following species are classified as Endangered and Critically Endangered by the IBAT analysis: Calidris pygmaea (Spoon-billed Sandpiper), Calidris tenuirostris (Great Knot), Perdicula manipurensis (Manipur Bush-quail), Asarcornis scutulata (White-winged Duck), Gyps bengalensis (White-rumped Vulture), Aythya baeri (Baer's Pochard), Emberiza aureola (Yellow-breasted Bunting), Sterna acuticauda (Black-bellied Tern), Ardea insignis (White-bellied Heron), Sarcogyps calvus (Red-headed Vulture), and Gyps tenuirostris (Slender-billed Vulture). Aquila nipalensis, sometimes known as the Steppe Eagle, is also frequently found in all station-based analyses. These species face severe threats to their survival from both natural and human-caused causes. These delicate animals may be further disturbed by noise and light pollution brought on by growing infrastructure and human activity. Large birds like eagles and vultures also run the risk of electrocuting themselves from power lines. Implementing thorough environmental management plans and taking into account alternate options to reduce the project's impact on nearby animals are crucial steps in mitigating these hazards. Pollution reduction, anti-poisoning campaigns, and habitat preservation and restoration should be the top priorities for conservation measures. Important actions also include educating the public about the significance of these species and involving local populations in conservation initiatives. Workers and locals should participate in courses and training aimed at protecting these species from hunting and trapping. It's crucial to teach employees how to manage electric line activities, such as cutting off or lowering the power supply when needed, and to prevent mishaps during construction. To evaluate the efficacy of these interventions and to support data-driven decision-making, ongoing research and monitoring are required. To reduce these hazards and save the biodiversity in the area around the RCTs, quick action is needed.

c) Ecologically Critical Area (ECA)

215. In 1995 after the enactment of the ECA, 1995 the Government is empowered to declare an area which is enriched with unique biodiversity and environmentally significant and shall need protection or conservation from destructive activities as ECA. In this regard, the GoB after considering the human habitat, ancient monument, archaeological site, forest sanctuary, national park, game reserve, wild animals' habitat, wetland, mangrove, forest area, biodiversity and other relevant factors of the area can declare a s ECA. As per the legal mandate, in Chattogram -Sylhet region the significant ECA's are Himchari National Park, Lawachora National Park, Nijhum Dwep, Medha Kachapia, Satchari National Park, Khadimnagar National Park, Chunati Wildlife Sanctuary, Rema-Kalenga Wildlife Sanctuaries etc. The map of Ecological Critical areas is given in following figures (Figure IV-14)

216. The protected area refers to an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity and natural and associated cultural

resources and managed through legal or other effective means i.e. protected area is predominantly a natural area established and managed in perpetuity, through legal or customary regimes, primarily to conserve their natural resources. According to the Wildlife (Conservation and Security) Act, 2012, types of protected areas are National Park (18), Wildlife Sanctuary (23), Eco Park (10), Safari Park (2), Marine Protected Area (2), Special Biodiversity Conservation Areas (2), Botanical Garden, Community Conservation Area, Kunjaban etc. The sub-project areas of Chattogram currently have 12 protected areas (Table IV-14). Among them, there are five National Parks and seven Wildlife Sanctuaries.

Table IV-14: Protected areas of Chattogram Division within areas

A) National Parks				
Sl.No.	**National Parks**	**Location**	**Area (ha)**	**Established**
1.	Himchari National Park	Cox's Bazar	1729.00	15-2-1980
2.	Nijhum Dweep National Park	Noakhali	16352.23	08-04-2001
3.	Kaptai National Park	CHT	5464.00	9-9-1999
4.	Medhakachhapia National Park	Cox's Bazar	395.92	8-8-2008
5.	Baroiyadhala National Park	Chattogram	2933.61	06-04-2010
B) Wildlife Sanctuaries				
Sl.No	**Wildlife Sanctuaries**	**Location**	**Area (ha)**	**Established**
1.	Pablakhali	Chattogram Hill Tracts	42087.00	20-9-1983
2.	Chunati	Chattogram	7763.97	18-3-1986
3.	Fashiakhali	Cox's Bazar	1302.43	11-4-2007
4.	Dudpukuria-Dhopachari	Chattogram	4716.57	6-4-2010
5.	Hajarikhil	Chattogram	1177.53	6-4-2010
6.	Sangu	Bandarban	2331.98	6-4-2010
7.	Teknaf	Cox's Bazar	11615.00	24-03-2010

Figure IV-18: Ecological Critical Areas within/Around Project AOI

3. Socio-economic Environment

217. It is essential for every development project, whether small or large, to understand the social, human and economic aspects of the primary stakeholders, i.e., people living in and around the project site. The following tools and techniques were used to collect the relevant data/information on the social and economic aspects of affected people:

- Literature review.
- Group discussion; and
- Informal meetings with various professionals.

218. In addition, data obtained from secondary sources were compared with the primary data/information gathered during the study.

219. Data on population, age/sex composition, household patterns, and sources of drinking water, sanitation facility, and ownership of agricultural land were enumerated from the latest community series census published by the Bangladesh Bureau of Statistics (BBS).

a) Administrative Structures

220. Bangladesh is divided into eight administrative Divisions. Each Division is divided into Districts/Zilas; there are 64 Districts within Bangladesh. Districts/ Zila's are subdivided into Upazilas (there are 483 Upazilas in Bangladesh), which consist of a number of Union Parishads. Union Parishads of which there are 4486 in Bangladesh are the locally elected governments at the village level.

221. The Project consists of several components under fourteen PBSs of Eight districts within Chattogram division of Bangladesh. The study area covers 78 Upazilas and 841 unions as presented in Table IV-15.

Table IV-15: Administrative areas under 13 PBS

District	Upazila/ Thana/ City Corporation/ Pourashava	Unions
BrahamanBaria	Brahmanbaria Sadar Upazila	11
	Kasba Upazila	10
	Akhaura Upazila	5
	Ashuganj Upazila	8
	Bancharampur Upazila	13
	Bijoynagar Upazila	10
	Nasirnagar Upazila	13
	Nabinagar Upazila	21
	Sarail Upazila	9
Sub-total	**9**	**100**
Cumilla	Cumilla Sadar Upazila	6
	Cumilla Sadar Dakshin Upazila	14
	Brahmanpara Upazila	8
	Barura Upazila	13
	Burichong Upazila	9
	Chandina Upazila	13
	Chauddagram Upazila	13
	Daudkandi Upazila	15
	Debidwar Upazila	15
	Homna Upazila	9
	Laksam Upazila	8
	Lalmai Upazila	9
	Monohorgonj Upazila	11
	Meghna Upazila	8
	Muradnagar Upazila	22
	Nangalkot Upazila	16
	Titas Upazila	9
Sub-total	**17**	**198**
Chandpur	Chandpur Sadar Upazila	14
	Faridganj Upazila	15
	Haimchar Upazila	6
	Hajiganj Upazila	12
	Kachua Upazila	12
	Matlab Dakshin Upazila	6
	Matlab Uttar Upazila	14

District	Upazila/ Thana/ City Corporation/ Pourashava	Unions
	Shahrasti Upazila	10
Sub-total	**8**	**89**
Lakshimpur	Lakshmipur Sadar Upazila	21
	Ramganj Upazila	10
	Raipur Upazila	10
	Ramgati Upazila	8
	Kamalnagar Upazila	9
Sub-total	5	58
Noakhali	Noakhali Sadar Upazila	13
	Begumganj Upazila	16
	Chatkhil Upazila	9
	Companiganj Upazila	8
	Senbagh Upazila	9
	Hatiya Upazila	11
	Kabirhat Upazila	7
	Sonaimuri Upazila	10
	Suborno Char Upazila	8
Sub-total	**9**	**91**
Feni	Feni Sadar	12
	Fulgazi	6
	Parshuram	3
	Daganbhuiyan	8
	Chhagalnaiya	5
	Sonagazi	7
Sub-total	**6**	**41**
Chattogram	Anwara	11
	Banshkhali	14
	Boalkhali	9
	Chandanaish	9
	Fatikchhari	17
	Hathazari	14
	Lohagara	9
	Mirsharai	16
	Patiya	17
	Rangunia	15
	Raozan	14
	Sandwip	14
	Satkania	17
	Sitakunda	9
	Karnaphuli	5
Sub-total	**15**	**188**
Cox’s Bazar	Cox's Bazar Sadar Upazila	10
	Chakaria Upazila	18
	Kutubdia Upazila	6
	Maheshkhali Upazila	8
	Ramu Upazila	11
	Teknaf Upazila	6
	Ukhia Upazila	5
	Pekua Upazila	7
	Eidgaon Upazila	5
Sub-total	**9**	**76**
Total	**78**	**841**

b) Quality of Life Indicator

(i) Population & Households

222. Population densities in Bangladesh are relatively high throughout the country. In the Chattogram division, the average sex ratio is 93.38; the total population is about 33.1 million; female 51.71%, male 48.29%; Average population density is 979 persons per km^2. In the Project area of Chattogram Division, Noakhali district has the lowest population density in the project area and Cumilla district has the highest with more than 1974 persons per km^2.

Table IV-16: Demographic Characteristics within/Around SPIA in Chattogram Division

District	Household	Population	Male	Female	Sex Ratio	Area (km^2)	Persons/ (km^2)
Brahamanbaria	712613	3,306,559	1,537,743	1,767,766	86.99	1881.2	1758
Chandpur	635458	2,635,748	1,228,774	1,405,682	87.41	1645.32	1602
Chattogram	2143958	9,169,464	4,584,582	4,597,076	99.32	5282.92	1736
Cumilla	1407396	6,212,216	2,908,218	3,310,416	87.56	3146.3	1974
Cox's Bazar	587127	2,823,265	1,432,864	1,388,086	103.23	2491.85	1133
Feni	377189	1,648,896	784,186	868,124	89.86	990.36	1665
Lakshimpur	459381	1,938,111	912,932	1,024,669	89.1	1440.39	1346
Noakhali	776034	3,625,252	1,737,061	1,839,604	91.39	3685.87	984
Chattogram	7099156	31359511	15126360	16201423	93.38	33908.55	979

Source: Population and Housing Census 2022

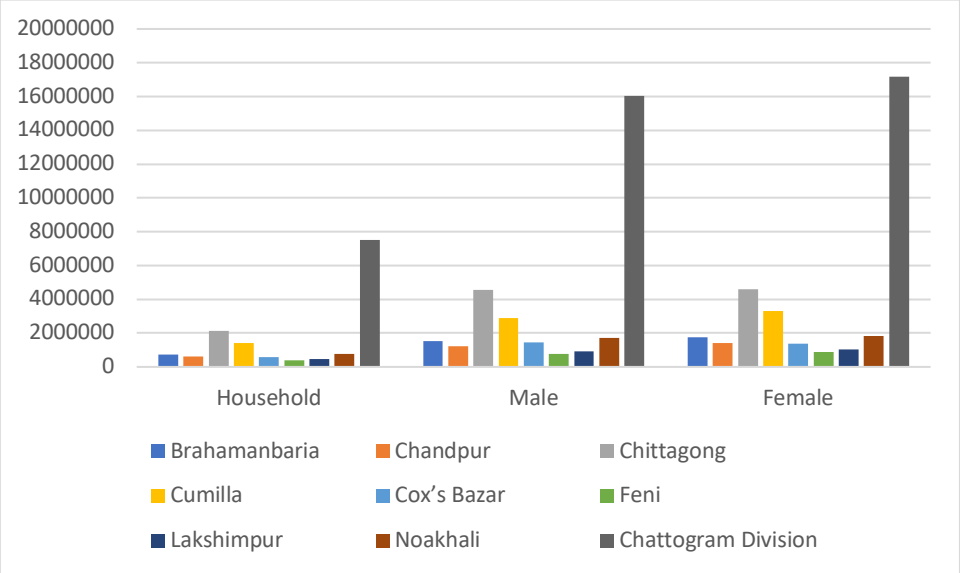


Figure IV-19: Demographic Characteristics within/Around SPIA in Chattogram Division

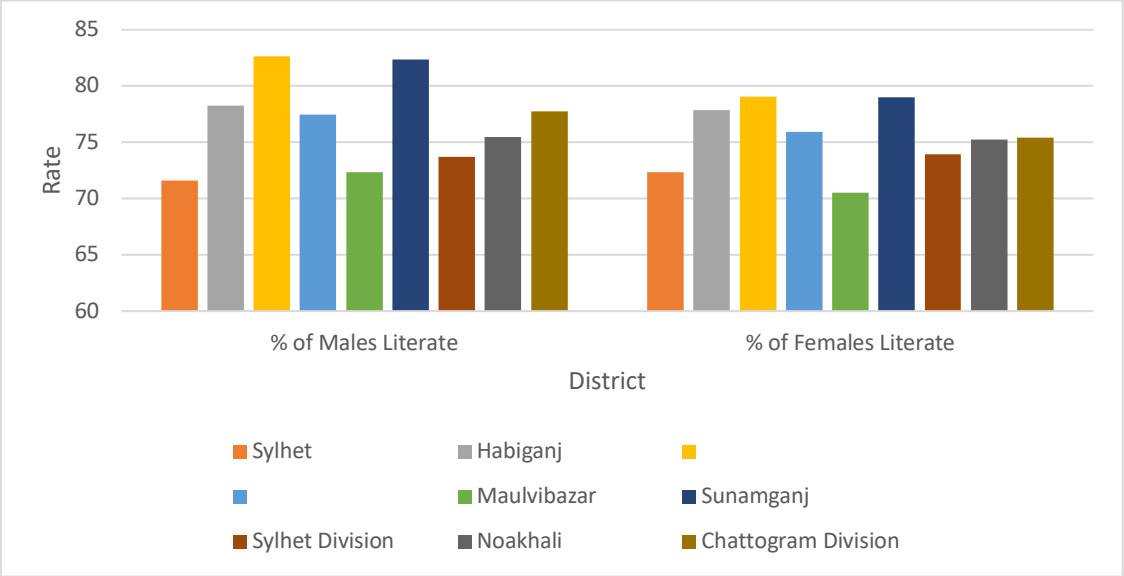
(ii) Literacy

223. The literacy rate for the population 7 years and above in the project area is 76.53% which is higher than the national literacy rate of 74.66%. Similarly, each male and female literacy rate in the project area is higher than the national literacy rate. Chattogram district shows the highest literacy rates at 82.66% for males and 79.07% for females. While Cox's Bazar has the lowest rates at 72.37% for males and 70.50% for females.

Table IV-17: Literacy Rates within/Around SPIA in Chattogram Division

District	Population		Male		Female	
	Total Population	% of Total Literate	Total Male Population	% of Males Literate	Total Female Population	% of Females Literate
Brahamanbaria	3,306,559	72.01	1,537,743	71.63	1,767,766	72.33
Chandpur	2,635,748	78.05	1,228,774	78.26	1,405,682	77.86
Chattogram	9,169,464	80.85	4,566,039	82.66	4,608,582	79.07
Cumilla	6,212,216	76.51	2,908,208	77.45	3,318,068	75.91
Cox's Bazar	2,823,265	71.45	1,442,629	72.37	1,388,086	70.50
Feni	1,648,896	80.59	780,065	82.37	880,124	79.02
Lakshimpur	1,938,111	73.84	912,932	73.72	1,024,669	73.95
Noakhali	3,625,252	75.36	1,740,664	75.48	1,849,480	75.26
Chattogram Division	31359511	76.53	15,117,054	77.74	16,242,457	75.43

Source: Population and Housing Census 2022



Figuree IV-20: Literacy Rates within/Around SPIA in Chattogram Division

(iii) Age Structure of the project area

224. Population and housing census (2011) showed that age structure in the project area covers 24% of the total population are children (ages up to 9 years) and 19% are young (10 to 19 years), 42.8% of working-age i.e., between 20 to 59 years, which is considered as the active workforce. Table IV 18 Shows the population distribution by different age groups in the project area.

Table IV-18: Age structure within/Around SPIA in Chattogram Division

District	Percentage of Population in Each Age Group (%)								
	0-9	10–19	20-29	30-39	40-49	50-59	60-69	70-79	80+
Brahmanbaria	29.7	21.6	15.7	11.2	8.5	5.6	4.1	2.3	1.3
Chandpur	24.1	22.9	16.5	11.9	9.4	6.3	4.8	2.7	1.5
Chattogram	21.9	23.0	20.5	13.6	9.3	5.6	3.6	1.7	0.9
Comilla	25.6	22.9	17.1	11.6	8.9	5.8	4.3	2.4	1.4
Cox's Bazar	29.1	24.1	18.1	11.6	7.4	4.6	2.9	1.5	0.7
Feni	23.0	23.7	18.1	12.0	8.9	6.0	4.5	2.4	1.4

District	Percentage of Population in Each Age Group (%)								
	0-9	10–19	20-29	30-39	40-49	50-59	60-69	70-79	80+
Lakshmipur	26.5	22.7	16.5	11.8	8.7	5.7	4.3	2.4	1.3
Noakhali	27.2	23.6	16.6	11.4	8.3	5.4	4.1	2.2	1.3

Source: Population and Housing Census 2011

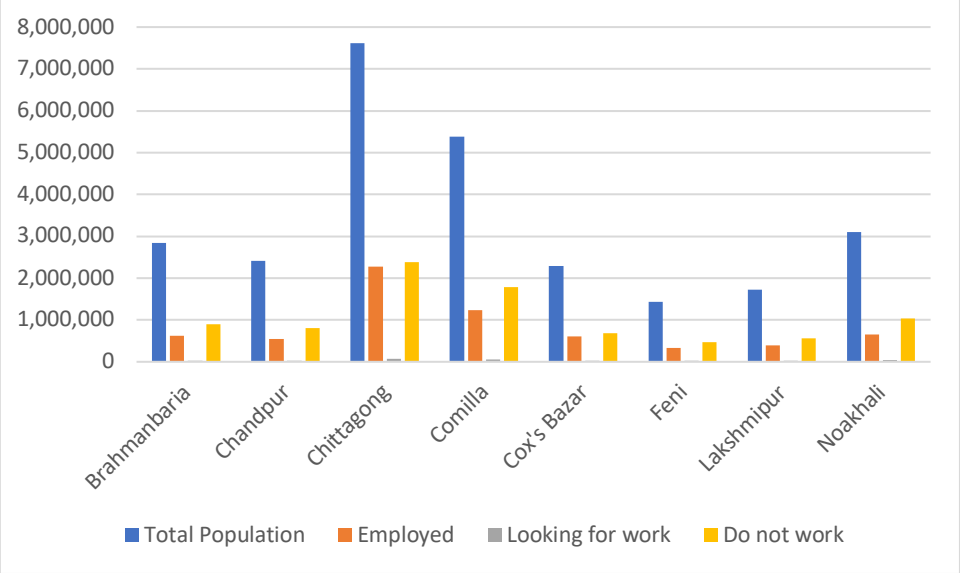
(iv) Occupations & Livelihood

225. According to the Population and Housing Census of Bangladesh (2011), approximately 27.8% of the total population in the study area are employed whereas 1.3% of peoples have no work. Also, 31.3% are involved in household work and 39.6% of the total population do not work.

Table IV-19: Occupation and Livelihood within/Around SPIA in Chattogram Division

District	Total Population	Employed	Looking for work	Household work	Do not work
Brahmanbaria	2,840,498	624,575	23,384	726,402	891,521
Chandpur	2,416,018	551,910	22,720	640,294	811,974
Chattogram	7,616,352	2,281,387	76,021	1,758,821	2,381,734
Comilla	5,387,288	1,236,783	50,578	1,388,849	1,786,506
Cox's Bazar	2,289,990	608,244	22,885	531,758	684,668
Feni	1,437,371	327,370	20,420	392,856	473,237
Lakshmipur	1,729,188	387,911	19,758	457,282	556,025
Noakhali	3,108,083	654,866	43,383	803,604	1,035,824

Source: Population and Housing Census 2011



Figuree IV-21: Occupation and Livelihood pattern in Chattogram Division

(v) Housing Conditions

226. The subprojects areas are mainly located at an open place like the subprojects of Chattogram division. Agricultural lands are found in all the sides of the subproject's location. However, there are some households and bazar take places near the site. The subprojects influence area is predominantly kutcha, semi pucca and pucca houses found in the semi-urban or village area. The dwelling households by type of structure were found that pucca and semi-pucca household structures remain higher in urban area comparing to the rural area and upazila.

Table IV-20: Housing Condition within/Around SPIA in Chattogram Division

Administrative Unit	Percentage of Type of Structure			
	Pucca	Semi-pucca	Kancha	Jhupri
Brahamanbaria	8.2	13.7	77.0	1.1
Chandpur	7.3	8.8	83.3	0.6
Chattogram	25.0	20.6	48.3	6.1
Cumilla	9.9	15.7	73.0	1.3
Lakshimpur	7.6	7.4	82.6	2.4
Noakhali	7.6	7.6	80.6	4.2
Cox's Bazar	6.15	11.63	68.95	13.27
Feni	16.62	7.82	64.30	1.26

Source: Population and Housing Census 2011

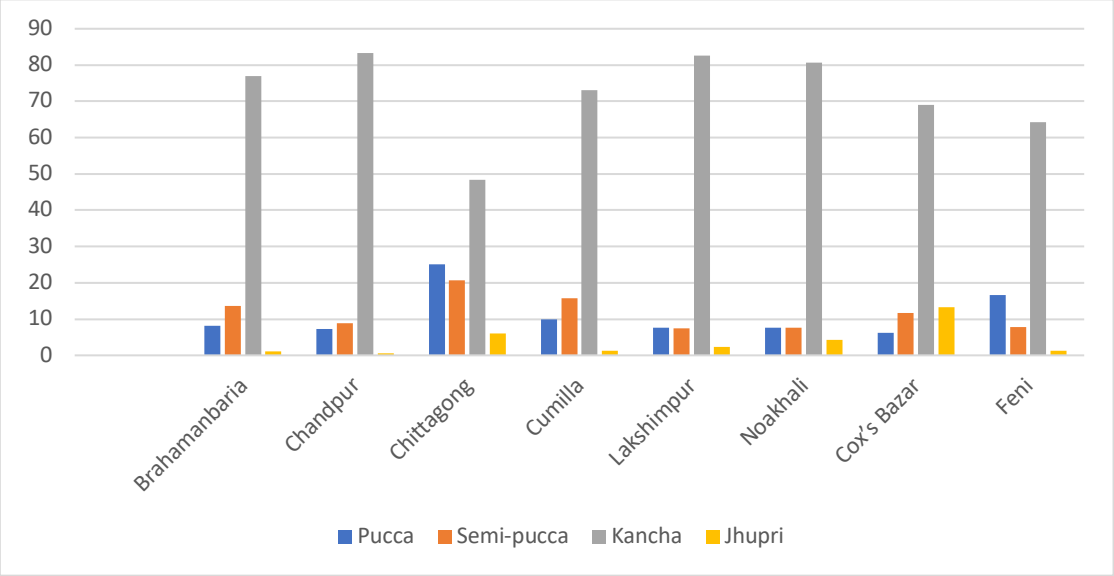


Figure IV-22: Housing Condition within/Around SPIA in Chattogram Division

(vi) Disability

227. Rates of disability provide an indication of social condition and wellbeing. Table 4.9 shows that the overall disability rate in the project area is 1.54%. Six categories are defined in the Census i.e., disability in speech, vision, hearing, physical, mental and autism. Among all districts in Chandpur the rate of disability is most significant at 1.9%.

Table IV-21: Distribution of Population by Type of Disability within/Around SPIA in Chattogram Division

District	Total Population	Type of Disability (%)						
		Total	Speech	Vision	Hearing	Physical	Mental	Autism
Brahmanbaria	2,840,498	1.18	0.2	0.23	0.11	0.42	0.15	0.07
		33,518	5,681	6,533	3,125	11,930	4,261	1,988
Chandpur	2,416,018	1.90	0.20	0.40	0.10	0.90	0.20	0.10
		46,146	4,857	9,715	2,429	21,859	4,857	2,429
Chattogram	7,616,352	1.23	0.15	0.21	0.09	0.49	0.19	0.1
		93,681	11,425	15,994	6,855	37,320	14,471	7,616
Comilla	5,387,288	1.30	0.20	0.20	0.10	0.50	0.20	0.10
		72,190	11,106	11,106	5,553	27,765	11,106	5,553
Cox's Bazar	2,289,990	1.46	0.2	0.3	0.14	0.54	0.17	0.11
		33,434	4,580	6,870	3,206	12,366	3,893	2,519
Feni	1,437,371	1.34	0.2	0.18	0.08	0.6	0.17	0.11

District	Total Population	Type of Disability (%)						
		Total	Speech	Vision	Hearing	Physical	Mental	Autism
		19,261	2,875	2,587	1,150	8,624	2,444	1,581
Lakshmipur	1,729,188	1.30	0.20	0.20	0.10	0.50	0.20	0.10
		21,269	3,272	3,272	1,636	8,180	3,272	1,636
Noakhali	3,108,083	1.33	0.22	0.24	0.09	0.54	0.14	0.1
		41,338	6,838	7,459	2,797	16,784	4,351	3,108

Source: Population and Housing Census 2011

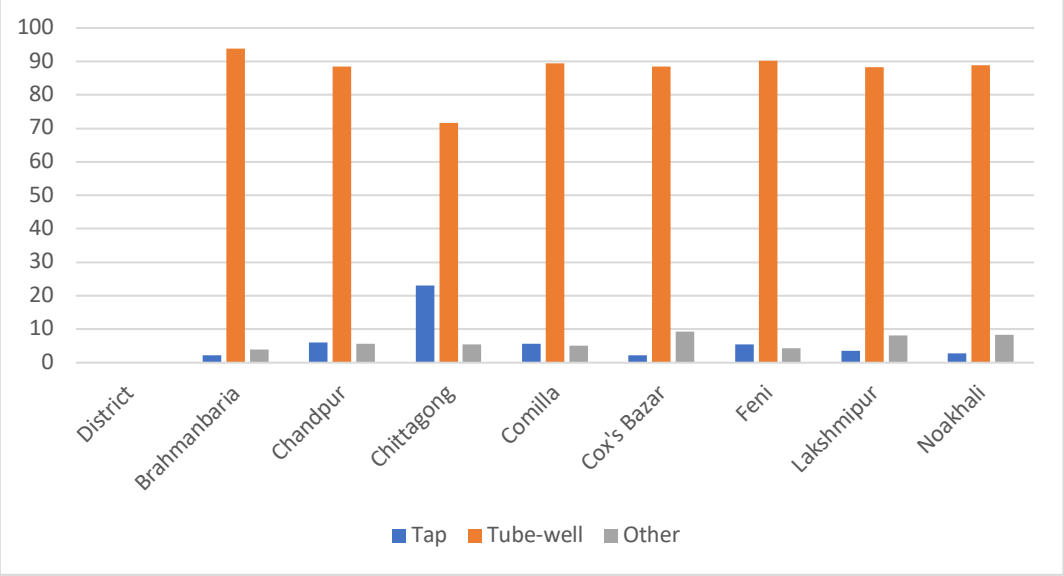
(vii) Water

228. Within the project areas, the major source of drinking water is a tube -well where about 87.41% of the population use tube-well water. On the other hand, only 6.34% of people have access to tap water. Another 6.25% of people have access to neither tube-well nor tap water and consequently have to rely on nearest surface water sources i.e., river, pond, or canal.

Table IV-22: Water Access within/Around SPIA in Chattogram Division

District	No. of HH	Source of Drinking Water (%)		
		Tap	Tube-well	Other
Brahmanbaria	536,600	2.17	93.91	3.92
Chandpur	506,600	6.02	88.39	5.59
Chattogram	1,523,000	22.99	71.63	5.38
Comilla	1,045,700	5.58	89.35	5.08
Cox's Bazar	417,700	2.29	88.44	9.27
Feni	276,800	5.41	90.28	4.31
Lakshmipur	364,100	3.54	88.37	8.09
Noakhali	590,800	2.73	88.93	8.34

Source: Population and Housing Census 2011



Figuree IV-23: Water Access within/Around SPIA in Chattogram Division

(viii) Fuel Sources

229. In the sub-project area of Chattogram division, most of the households have natural gas connection for cooking purposed but Chattogram hill tracts area doesn't have that much natural gas connection. They depend on fuel wood, but fuel wood is costly. Field survey work

indicated that households using leaves, cow dung, wood/straw for cooking purposes. In some households within urban areas using LPG gas for cooking purposes.

(ix) Electricity

230. Electricity is an important indicator for measuring the quality of life. BREB has already completed 100% electrification in 462 sub-districts across Bangladesh under BREB command area. Therefore, 100% of the population of Chattogram divisions under BREB command areas are getting electricity service. The project will be implemented in Chattogram -Sylhet divisions to ensure uninterrupted and quality power supply. Households, as well as irrigation, industry & commercial consumers in the project area, will benefit directly.

(x) Transport & Communication

231. The proposed subprojects are located near national highways, Upazila roads, or near village roads. The common types of transport is bus, truck, microbus, car, CNG, motorcycle, van, and rickshaw. Mobile and wire telephone services are available in most of the areas. During the field survey, it was found that there are several kinds of vehicles are running on the adjacent roads to the subprojects.

(xi) Poverty Level

232. In Chattogram Division, the overall HCR is 18.4%, with significant variations across districts. The hill districts, such as Bandarban (63.2%), Khagrachari (55.8%), and Rangamati (48.5%), face severe poverty, far exceeding the divisional average. Conversely, districts like Feni (8.5%), Brahmanbaria (10.3%), and Chattogram (13.7%) show relatively lower poverty rates, reflecting better economic conditions. Average Poverty rate accordance with the HIES 2016 given below showing the upper poverty level as per head count ratio method.

Table IV-23: Upper poverty level in Chattogram DIvision

Division/District	HCR Upper (%)
Chattogram Division	18.4
Cox's Bazar District	19.2
Cumilla District	13.5
Brahmanbaria District	10.3
Feni District	8.5
Lakshmipur District	20.2
Noakhali District	13.4

Source: HIES, 2016

(xii) Gender & Employment

233. The district-wise employment statistics from Population of Housing Census-2022 for Chattogram and Sylhet divisions highlight the gender disparities in the workforce. In the Chattogram division, Chattogram district has the highest number of employed individuals with 2,528,200, where 83.87% are male and 16.13% are female. The Bandarban district has the highest percentage of male employment at 85.50%, while Chattogram district shows the highest female employment percentage at 16.13%.

Table IV-24: Employment rate in Chattogram DIvision

District	Total Employed	Male Employed	Female Employed	% Male	% Female
Brahmanbaria	938,200	800,000	138,200	85.28	14.72
Chandpur	579,300	497,100	82,200	85.82	14.18
Chattogram	2,528,200	2,120,000	408,200	83.87	16.13
Cumilla	1,158,400	990,000	168,400	85.45	14.55
Cox's Bazar	668,700	573,100	95,600	85.71	14.29
Feni	411,500	351,100	60,400	85.32	14.68
Lakshmipur	505,400	430,500	74,900	85.18	14.82
Noakhali	756,800	643,200	113,600	84.96	15.04

Source: BBS 2024, Population and Housing census-2022

(xiii) Gender & Earning

234. In the Chattogram division, the daily average wage rates in industrial zones for various labor categories show a diverse range. For instance, painters earned between 515 to 530 Taka, while electricians' wages ranged from 580 to 590 Taka. Brick breaking laborers received around 1133 to 1164 Taka per 100 cubic feet, and the fitting charges for situ mosaic tiles ranged around 63 to 77 Taka per square foot.

235. The daily average wage rates for agricultural laborers in the Chattogram division reveal a noticeable gender disparity. In the Chattogram division, Cox's Bazar recorded the highest male wage rate at 766 Taka without food, significantly higher than the rates in other districts such as Lakshmipur, which had the lowest at 440 Taka. Female wage rates were generally lower, with Cox's Bazar again leading at 468 Taka, while many districts, including Chandpur and Noakhali, did not report any female wage data.

Table IV-25: Earning rate in Chattogram Division

District	Male	Female
Chattogram	656	440
Cox's Bazar	766	468
Cumilla	557	390
Chandpur	575	-
Brahmanbaria	532	453
Noakhali	656	-
Lakshmipur	440	-
Feni	632	-

Source: Monthly Statistical Bulletin-Bangladesh, Dec- 2023

(xiv) Women Rights

236. In Chattogram Division, Bangladesh, the status of women's rights reflects a complex interplay of cultural, social, and economic factors. Despite significant strides towards gender equality, women in Chattogram Division still face various forms of discrimination and inequality, with traditional gender roles and cultural norms often limiting their participation in decision-making processes within families and society at large. Efforts to improve girls' access to education have resulted in an increase in female literacy rates, yet disparities persist, particularly in rural areas. According to statistics, a gender gap favoring boys in primary and secondary school enrollment by 5.2% and 8.9%, respectively. Access to healthcare services remains essential for women's well-being, but issues such as maternal mortality and reproductive healthcare access persist due to cultural taboos and limited awareness. The maternal mortality rate in Chattogram Division is reported at 143 deaths per 100,000 live births, with a contraceptive prevalence rate of 60% among married women and antenatal care coverage of 76%. Economic empowerment initiatives, including microfinance programs and skills development training, aim to promote women's participation in the workforce; however, challenges such as wage disparities and limited access to resources persist. With a female

labor force participation rate of 32.5% and a gender wage gap of 17.8%, women still earn less than men for similar work. In conclusion, while progress has been made, significant challenges remain in advancing women's rights in Chattogram Division. Addressing these challenges necessitates a comprehensive approach that tackles underlying social, cultural, and economic factors, prioritizing efforts to promote gender equality and empower women to contribute to the region's overall development.

(xv) Decision Making

237. Gender decision-making dynamics in Chattogram Division, Bangladesh, unveil a tapestry woven with tradition, education, employment, and economic disparities. Rooted in cultural norms, household decision-making predominantly rests in the hands of men, as revealed by a 2023 survey where 65% of respondents identified men as primary decision-makers, leaving women with a marginal 35% involvement.

238. Education and employment serve as pivotal determinants of decision-making prowess. Despite strides in educational accessibility, a gender gap persists, with 72% of men attaining secondary education or higher compared to 56% of women. This schism reverberates through economic realms, where 82% of households are headed by men, holding sway over financial decisions, per the Bangladesh Bureau of Statistics.

239. Healthcare, a cornerstone of well-being, witnesses a dichotomy in decision-making. While women bear the mantle of caregiving, they often lack agency in healthcare decisions, especially in rural pockets. A staggering 60% of women concede that men dictate healthcare choices for the family, underscoring the entrenched gender hierarchy.

c) Community Property Resources

240. Throughout the world there are assets that are neither private nor state property, but common property. The term denotes a class of institutions that govern the ownership and rights-of-access to assets. Common property assets are to be distinguished from "public goods," in that, unlike the latter, use by someone of a unit of a common property asset typically reduces the amount available to others by one unit (in economic terminology, such an asset is rivalrous in use). The institution of common property creates and harbors reciprocal externalities. As some of the most interesting examples of common property assets are natural resources, this entry is restricted to them. Social Institutions, Khals, Playgrounds can be referred to as common property resources. Hats, bazars and fairs are social institutions or at least the mechanism of not only trade but also social interaction.

d) Conflict of interest and law and order situation

241. Police Station have been established in every Upazila to maintain the law and order of the Upazila. The project sites are under the jurisdiction of this model Police Station (PS). An officer in charge (OC) rank of Bangladesh Police is in Charge of the PS. DC office also in aware of the project.

e) Historical, Cultural, and Archaeological Sites

242. New substation sites are located in semi-urban/rural areas on land owned by government or private individuals. Mostly the identified substation locations are on cultivated land with standing crops, a few trees and vegetation growth of mainly shrubs and grasses. There are some archaeological sites such as Shalban Vihara, Bariura Old Bridge and Pandit Vihara etc in Chattogram Division. However, during the baseline and census studies, those archaeological sites have been found to be located far away from the identified substation sites or the alignments. No historical, cultural or archaeological sites will be affected by the proposed project activities.

4. Substation's Site-Specific Baseline (Chattogram Division)

243. When the survey was conducted, all of the substation's locations were not yet fixed that's why the survey team surveyed the project location on sample basis where most of the land are purchased. Detailed information based on survey outcomes are described in the following table.

Table IV-26: Site-specific information of surveyed substation's location

Name of PBS	Proposed Substation Location	Baseline condition of the existing substations	Picture
Cox's Bazar PBS	Toitong	This substation site is lying in agricultural land. Total amount of the land is 40 decimals. A local road passing through the substations site. Vegetation Cover is moderate. There is no household and resettlement within 200 meters of the project location. Moreover, there is no person that will be displaced by the project. Nearest health centre is situated approximately 800 meters away from the site.	
Lakshmipur PBS	Lakshmipur-6; Village: Uttor Hamchadi; Uttor Hamchadi Union; Lakshmipur sadar Upazila.	This substation site is basically a low farmland, which is located beside a local pucca road. Total presence of land is 30 decimals in this site. There is no presence of residential, Industrial and Commercial activity. Presence of any hospitals/health care centre is Ma O Shishu Hospital within 0.5 Km. Moreover, this project activity in that land didn't displace any person. Further land use change won't create any impact on Economic and social condition.	
Brahmanbaria PBS	Nabinagar-5; Village: Jinodpur; Jinodpur Union; Nabinagar Upazila	Land of this substation site is basically a low-lying land. Currently, soil will be filled up in this land. Total amount of the land is 40 decimals. A local road passing through the substations site. There is no impact on residential land and Agricultural Activity. Moreover, there is no person whose income will be disrupted by the project. Nearest health centre is situated approximately 2 kilometres away from the site.	

C. SYLHET DIVISION

1. Physical Environment

a) Climate

244. According to the classification, the Sylhet division is located in the Northern part of the Southern region and the North-western climatic zone (Figure IV-1). The Project area has a tropical monsoon climate with four seasons: dry or winter season (December–February); pre-

monsoon or hot season (March–May); monsoon or rainy season (June–September); and post–monsoon or autumn season (October–November).

245. **North-Eastern Zone:** This zone includes most of east and south Sylhet and a wedge-shaped strip south of the Meghalaya Plateau. Here too, the mean maximum temperature is rarely above 32°C but mean minimum is 10°C and below. Average humidity is even more than in southeastern zone. In this zone, winter rain is appreciable. Fog is very common in winter. This is the cloudiest part of Bangladesh. The higher hills and mountains of the Chattogram sub-region can also be classified under this zone. Most of the area of Sylhet division is located in the North-Eastern Zone.

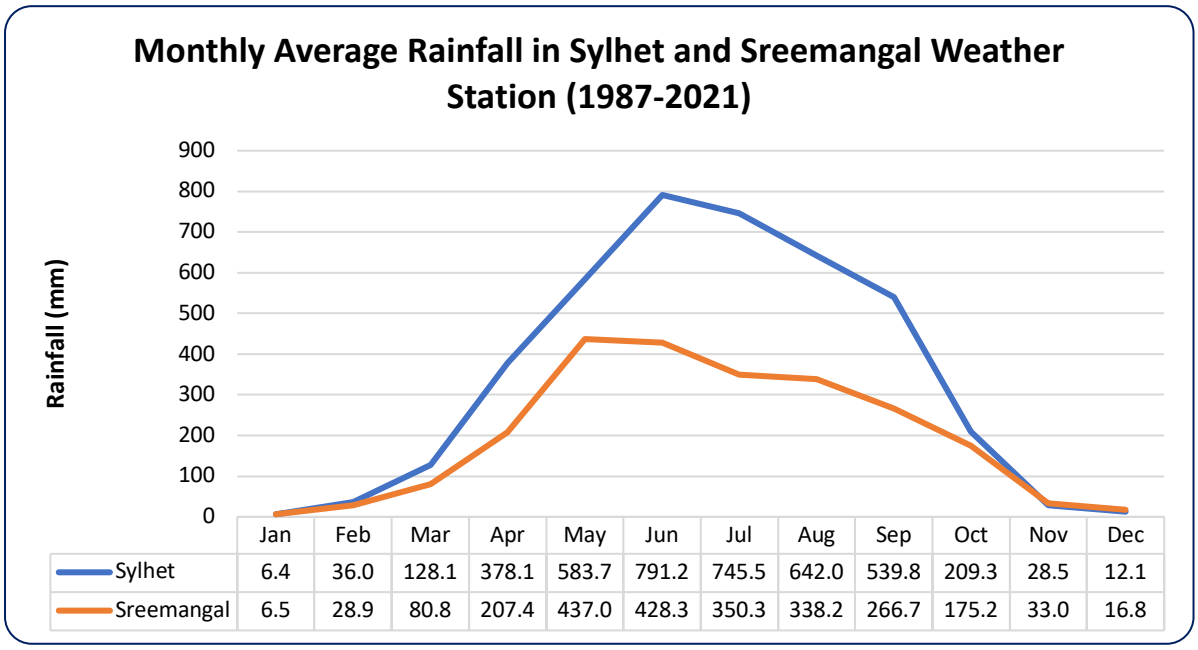
246. **South-Central Zone:** In this zone, rainfall is abundant, being above 1,900 mm. The range of temperature is, as can be expected, much less than to the west, but somewhat more than in the Southeastern zone. This is a transitory zone between the Southeastern, Northwestern, and Southwestern zones and most of the severe hailstorms, north ‘westers and tornadoes are recorded in this area. some area of Sylhet division and Chattogram division is also fallen into South-Central Zone.

247. The climatic condition of the whole project area may be considered the same as reported as per Sylhet, and Sreemangal weather stations of Bangladesh Meteorological Department (BMD) since these stations are within the project areas. The climatic diagrams are based on 35 years of weather model simulations. The weather models with historical data from 1987 to 2021 onwards and generated a continuous 35-year global history with hourly weather data.

(i) Temperature

248. The temperature of the country is related to the period of rainfall. In general, cool seasons coincide with the period of lowest rainfall. Figure IV-25 shows the details temperature pattern in the project areas.

249. Long-term average monthly temperature data (1987-2021) collected at Sylhet weather station of Bangladesh Meteorological Department. The monthly average maximum temperature in this weather station ranges from 35°C to 36°C in March to October. The monthly average minimum temperature was found in the month of January which was 9.42°C. Both of the average monthly temperature graphs show that this area faces high temperatures from March to October and lowest temperature during winter remains from December to February in the year.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sylhet	6.4	36.0	128.1	378.1	583.7	791.2	745.5	642.0	539.8	209.3	28.5	12.1
Sreemangal	6.5	28.9	80.8	207.4	437.0	428.3	350.3	338.2	266.7	175.2	33.0	16.8

Source: Bangladesh Meteorological Department (BMD)

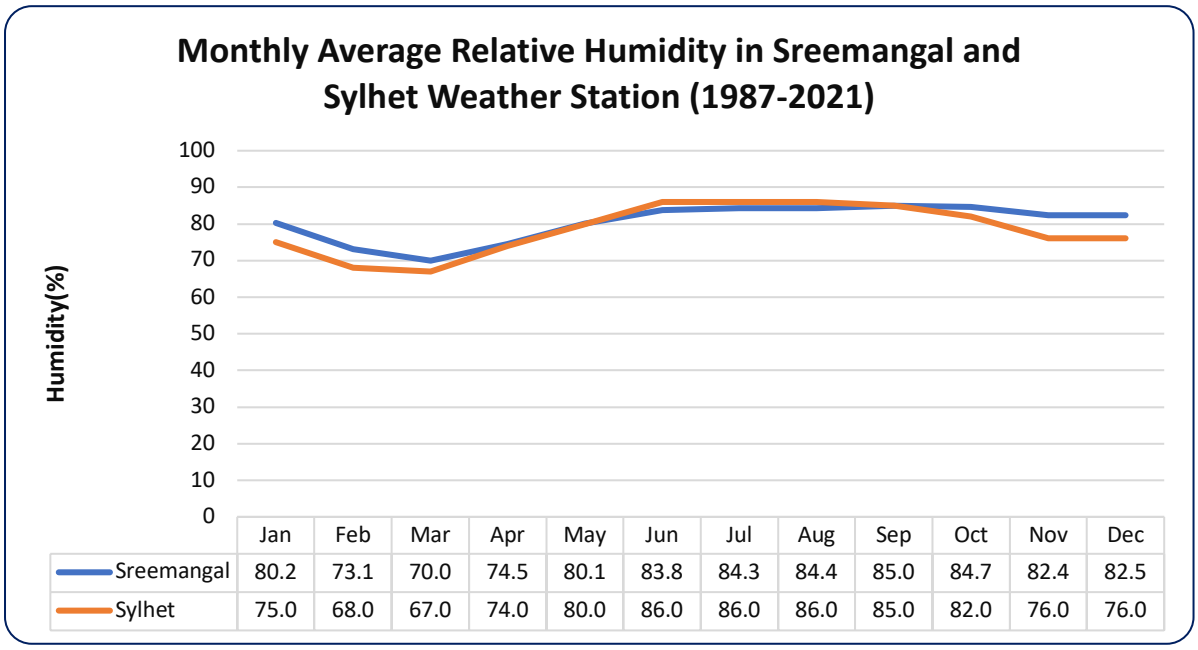
Figure IV-24: Monthly Average, Maximum and Minimum Temperature in different Weather Station in Sylhet division

250. Long-term average monthly temperature data (1987-2021) collected at Sreemangal weather station of Bangladesh Meteorological Department. The monthly average maximum temperature in this weather station was 36.09°C in April. The monthly average minimum temperature was found in the month of January which was 6.06°C. Both of the average monthly temperature graphs show that this area faces high temperature from April to September and lowest temperature during winter remains from December to February in the year.

(ii) Rainfall

251. Rainfall shows significant variation across the year in the project area and May, June, July, August and September generally show the highest monthly average rainfall. The yearly rainfall figures are provided in Figure IV-25 Sylhet rainfall is not abundant, being above 1900 mm. The range of temperature is, as can be expected, much less than to the west, but somewhat more than in North-eastern zone.

252. The rainfall data collected from the above stated station represents that maximum rainfall occurs during June to August and the lowest rainfall occurs in November to February during winter season. Statistical data of 1987 to 2021 shows that Sylhet experience average more than 600 mm rainfall during monsoon. In the month of December and January of winter season around 6-12 mm rainfall occurred in the region of Sylhet weather station.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sreemangal	80.2	73.1	70.0	74.5	80.1	83.8	84.3	84.4	85.0	84.7	82.4	82.5
Sylhet	75.0	68.0	67.0	74.0	80.0	86.0	86.0	86.0	85.0	82.0	76.0	76.0

Source: Bangladesh Meteorological Department (BMD)

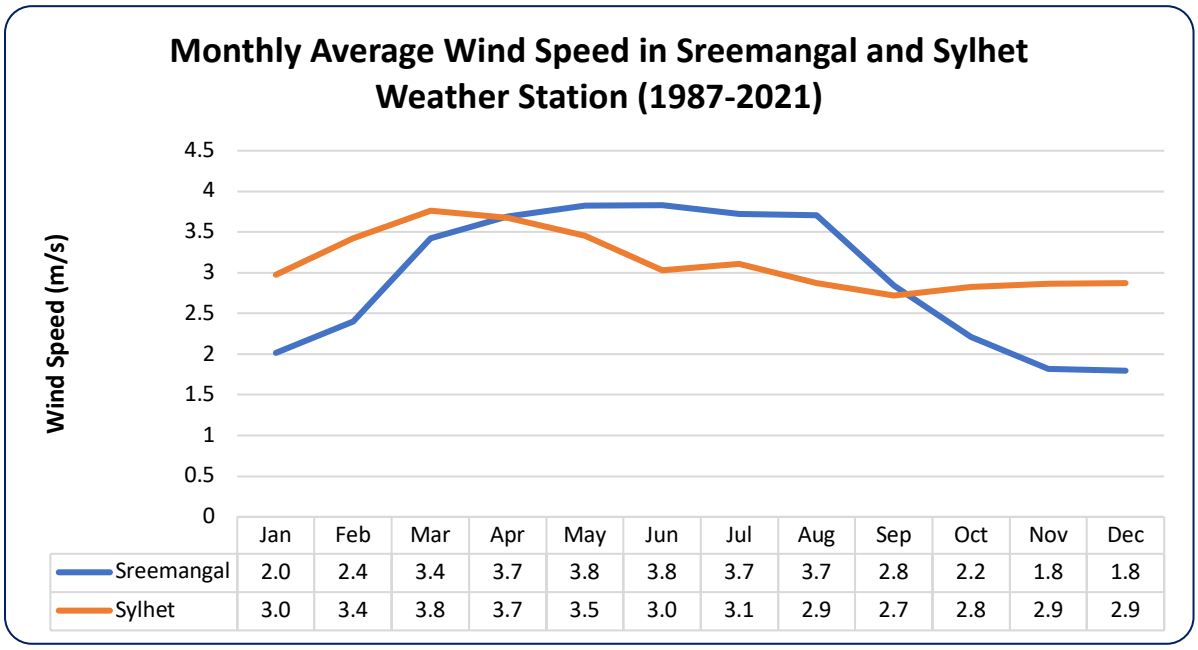
Figure IV-25: Average Monthly Rainfall in different Weather Station in Sylhet division

253. The rainfall data collected from the Sreemangal station represents that maximum rainfall occurs during May to August and the lowest rainfall occurs in November to March during winter season. Statistical data of 1987 to 2021 shows that Sreemangal station experience more than 335 mm rainfall during monsoon. In the month of December and January of winter season around 6-17 mm rainfall occurred in the region of Sreemangal weather station.

(iii) Wind Speed and Direction

254. Wind speed data across the project area show variation from location to location and is also dependent on the time of year. The windiest months of the year tend to be during the pre-monsoon period. Wind speeds stay high during the summer monsoon but gradually decrease until November which is usually the calmest month in the project area. Figure IV-26 to IV-28 shows the details Wind speed pattern in the project areas.

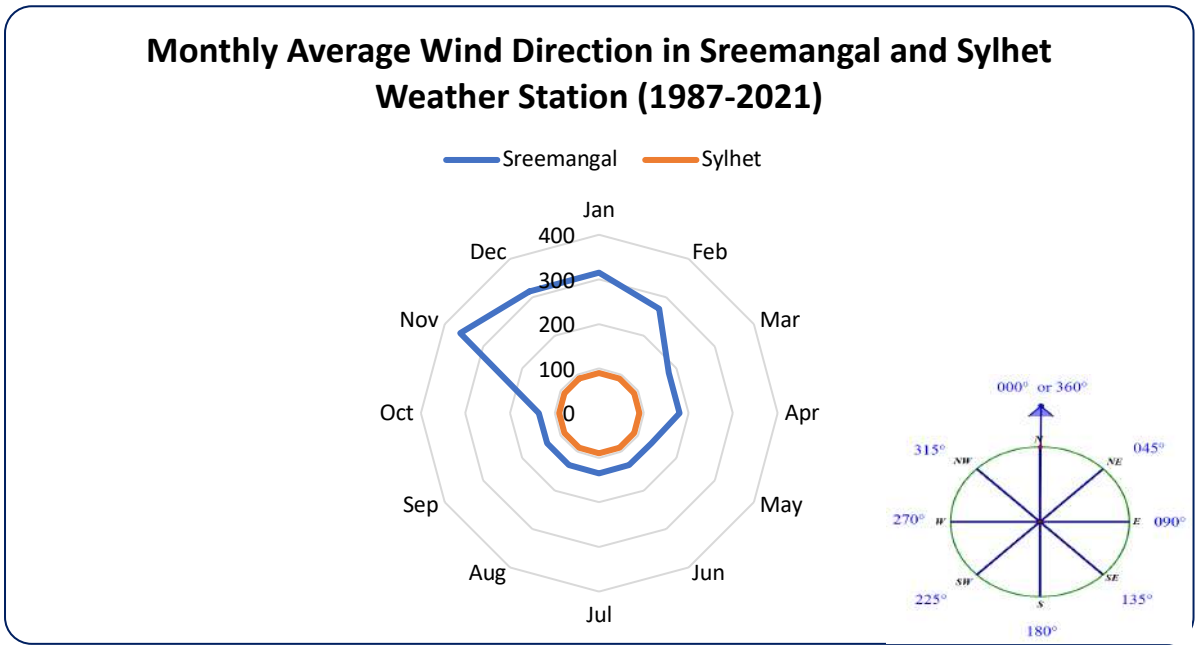
255. The statistical wind speed data (Figure IV-27) shows that average wind speed maximum value was 3.85 knots in March. The minimum wind speed value was 2.72 knots in the month of September in the area of Sylhet weather station.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sreemangal	2.0	2.4	3.4	3.7	3.8	3.8	3.7	3.7	2.8	2.2	1.8	1.8
Sylhet	3.0	3.4	3.8	3.7	3.5	3.0	3.1	2.9	2.7	2.8	2.9	2.9

Source: Bangladesh Meteorological Department (BMD)

Figure IV-26: Average Monthly Wind Speed in different Weather Station in Sylhet division



Source: Bangladesh Meteorological Department (BMD)

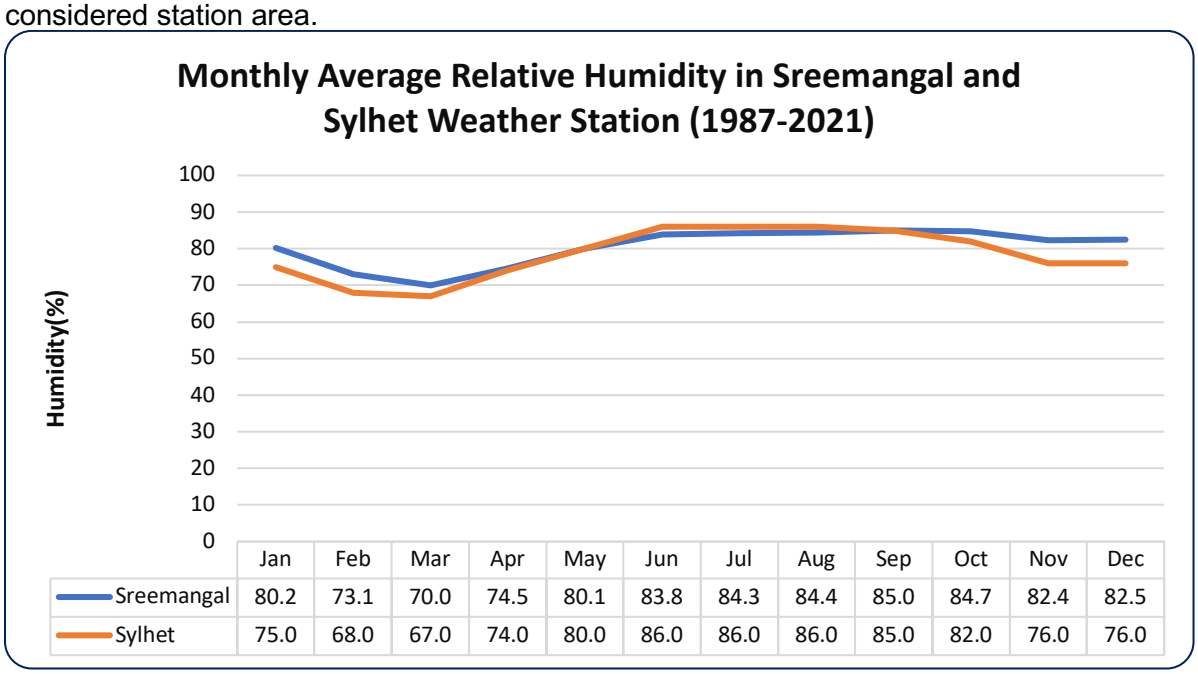
Figure IV-27: Average Monthly Wind Direction idifferent Weatherer Station in Sylhet division

256. The statistical wind speed data shows that the average wind speed maximum value was 4.43 knots in March. The minimum wind speed value was 2.71 knots in the month of November in the area of Sreemangal weather station.

(iv) Relative Humidity

257. Humidity across the general project area shows similar variation during the year with the highest readings between June and September (Figure IV-28) in the height of the monsoon rains. Humidity is highest at Sreemangal experiences 87% humidity in July. The lowest recorded average monthly humidity 67% in March at Sreemangal.

258. Humidity remains high in summer and comparatively low in winter season. The statistical data of humidity from 1989 to 2021 indicates (Figure IV-28) that humidity in the Srimangal Station area maximized in September in the year which is 85.03%. On the other hand, lowest monthly average humidity is 69.77% in March during the winter season in the considered station area.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sreemangal	80.2	73.1	70.0	74.5	80.1	83.8	84.3	84.4	85.0	84.7	82.4	82.5
Sylhet	75.0	68.0	67.0	74.0	80.0	86.0	86.0	86.0	85.0	82.0	76.0	76.0

Source: Bangladesh Meteorological Department (BMD)

Figure IV-28: Average Monthly Relative Humidity of Sreemangal Weather Station

259. The statistical data of humidity from 1989 to 2019 indicates (Figure IV-48) that humidity in the Sylhet Station area maximized in July in the year which is 87%. On the other hand, lowest monthly average humidity is 67% in March during the winter season in the considered station area.

b) Topography

260. Topography of a land surface includes its relief and contours, the distribution of mountains and valleys, the patterns of rivers, and all other features, natural and artificial, that produce the landscape. Although Bangladesh is a small country, it has considerable topographic diversity. It has three distinctive features: (i) a broad alluvial plain subject to frequent flooding, (ii) a slightly elevated relatively older plain, and (iii) a small hill region drained by flashy rivers.

261. The alluvial plain is part of the larger plain of Bengal, which is sometimes called the Lower Gangetic Plain. Elevations of the plains are less than 10m above the sea level; elevation furthers decline to a near sea level in the coastal south. The hilly areas of the northeastern hills of Sylhet and highlands in the north and northwest are of low elevations. Topographic features of each of the subproject area are illustrated below.

262. The sub-project areas mainly comprise of plain agricultural land and almost flat with few undulations, natural khals, low land and almost haor area. Organic clay and peats dominate the depressions and canals. Most depression and canals are tectonically controlled. According to the information collected through public consultation, some areas are not considered as a flood affected area but submerge into water during rainy season.

c) Physiographic Features

263. The Sylhet division as well as the subprojects in this division comprises the following physiographic units:

- **Haor Basin**
- **Surma-Kushiyara Floodplain**
- **Old Meghna Estuarine floodplain**
- **Northern and Eastern Piedmont Plains**
- **Low Hill Ranges**
- **High hill or mountain ranges**

264. In addition to the hills located along the southern spur of the Shillong Massif, a number of hillocks, locally known as tila, form minor but morphologically distinct, ranges around Sylhet in northeastern Bangladesh. These elevations, as for instance Kailas Tila, Dupi Tila and the tilas at Beanibazar, east of Sylhet, are generally built up of Plio-Pleistocene clastic sediments and reach maximum elevations of about 60m above MSL. It is regularly flooded during the monsoon. Surma-Kushiyara Floodplain comprises of Surma and Kushiyara rivers draining from the eastern border towards the Sylhet Basin (Haor Basin). This area is subject to flash floods in the pre-monsoon, monsoon and post-monsoon seasons, so the extent and depth of flooding can vary greatly within a few days. Normal flooding is mainly shallow on the ridges and deep in the basins.

265. In the Sylhet region, there are four main hillocks in the northern zone and six-hill ranges project into the south of Sylhet district from the Indian state of Tripura.

266. High hill or mountain ranges unit covers some small parts of southern Habiganj, and the south and eastern borders of Moulvibazar. All the mountain ranges of the Hill Tracts are almost hogback ridges. They rise steeply, thus looking far more impressive when their height would imply, and extend in long narrow ridges, whose tops are barely 30m wide. Most of the ranges have scarps in the west, with cliffs and waterfalls.

d) Geology

267. According to geological map of Bangladesh (Figure IV-28), the majority area of Sylhet division is under the Surma Basin. However, some portions are also under Faridpur Trough and Tripura Chattogram Fold Belt.

268. Surma Basin occupying the northeastern part of the country is the prime gas producing province of Bangladesh. The River surma, the right bank tributary of the Barak originating from Manipur and Mizoram of India, passes along Sylhet town and joins the kushiyara west of Baniachong, the combined flow of which is the mighty meghna river. In the border belt of greater Sylhet district, there are outcrops of Palaeocene Tura Sandstone's (Takerghat), Eocene Limestone (Bagali Bazar Lamakata, Charagaon, Lalghat, Bhangarghat and Jafflong), Upper Eocene Kopili Shale (Dauki) and Oligocene Barail sediments (Jenam/ Renji) has limited development in Jafflong-Tamabil-Jaintiapur area.

e) Soil

269. Sylhet division falls four different soil formation zones. The general soil types of the Sylhet division predominantly include the following:

- **Acid Basin Clays and Non-Calcareous Grey**
- **Non-calcareous Alluvium**
- **Non-calcareous and Calcareous Brown Floodplain soils**
- **Non-calcareous Dark Grey and Grey Floodplain soils**

270. Acid Basin clays occupy basin sites in some old floodplain landscapes, mainly in the eastern-Kushiyara floodplain, Sylhet Basin and its piedmont basins whereas, non-calcareous Grey Floodplain soils They extensively occupy Tista, Karatoya-Bangali, Jamuna, middle

Meghna and eastern Surma-Kushiyara floodplains. However, in Non-calcareous Dark Grey Floodplain, there are considerable regional differences in the proportions occupied by individual soil textures. Silty clays are predominant in the Ganges tidal floodplain and in the Surma-Kushiyara floodplain.

271. Calcareous Brown Floodplain soils comprise pale brown to olive brown, friable, loamy and clay soils occurring on the upper parts of ridges on the Ganges River floodplain and on the river bank of the Ganges tidal floodplain whereas, non-calcareous Brown Floodplain soils Occur largely on the Old Himalayan Piedmont Plain, mostly on the ridges.

f) Ambient Air Quality

272. The baseline air quality testing was performed at one (01) project location in Sylhet division as per DoE and international standards & the digital equipment's were used for air quality monitoring. (see Figure IV-49). The monitored parameters were CO, NO_x, SO_2, $PM_{2.5}$ and PM_{10}. Oceanus Portable Gas Detector OC-905 was used to measure SO2, NOX, and CO. Oceanus Portable Gas Detector OC-300 measured $PM_{2.5}$ & PM_{10} of gaseous pollutants. All the locations of sample collections are summarized in Table IV-27. Electro-Chemical Sensor devices were calibrated before testing the relevant parameters. Results of the air quality monitoring at the subproject locations. The sample site descriptions are provided in Table IV.28. The laboratory test result is given in Appendix 2 of the report.

Umednagar, Habiganj
Habiganj PBS

Chatak, Sunamganj
Sunamganj PBS

Figure IV-29: Ambient Air Quality Sampling in the Project Area

Table IV-27: Test Result of Ambient Air Quality Analysis

Locations	Sampling ID	GPS Coordinates	Date	Weather Condition	Parameters				
					$PM_{2.5}$ ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	SOx ($\mu g/m^3$)	NOx ($\mu g/m^3$)	CO (ppm)
Umednagar, Habiganj	AAQ_04	24.39745°N 91.40929°E	26 September 2022	Sunny	58.22	110.45	60.01	71.07	<1

Locations	Sampling ID	GPS Coordinates	Date	Weather Condition	Parameters				
					$PM_{2.5}$ ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	SOx ($\mu g/m^3$)	NOx ($\mu g/m^3$)	CO (ppm)
Chatak, Sunamganj	AAQ_06	25.029605°N 91.666902°E	03 January 2023	Sunny	60.41	96.73	26.91	18.63	1
Bangladesh Standard**					65	150	80	80	5
Duration (hours)					24	24	24	24	8
Standard for Ambient Air Quality according to WHO guidelines, 2022					-	-	500	10	100
Method of Analysis					AEROQUAL series 500 portable air quality monitors				Lutron AQ 9901

Note:
**CO concentrations and standards are 8-hourly only.*
*** The Bangladesh National Ambient Air Quality Standards have been taken from Air Pollution Control Rules which was published in 26 july 2022*

Table IV-28: Description of the surrounding environment

Sample Location & ID	Sample Site Description
Umednagar, Habiganj **(AAQ_04)**	➢ A low amount of traffic was moving. ➢ A moderate amount of dust particles was present. ➢ The weather was mostly sunny. ➢ People's movement was low. ➢ No sensitive receptor was found within the 500m buffer zone during our survey.
Chatak, Sunamganj **(AAQ_06)**	➢ Visual Dust particles were low. ➢ People's movement was moderate. ➢ Vehicle's movement was low ➢ No sensitive receptor was found within the 500m buffer zone during our survey.

273. From the assessment of the ambient air quality of the project area, it has been anticipated that all the parameters are within national standard according to the Bangladesh Standard.

g) Noise level

274. Noise Level Measurement was analyzed from project boundaries at One (01) specific location in Sylhet divisions from at 26 September 2022 (figure IV-30). Results of the noise level monitored at the sampling locations have been showing in Table IV-29. The laboratory test result is given in Appendix 3 of the report.

Umednagar, Habiganj
Habiganj PBS

Puran Munsif Road, Habiganj
Habiganj PBS

Baghbari, Chatak, Sunamganj
Sunamganj PBS

Beside Chatak pourashava, Sunamganj
Sunamganj PBS

Figure IV-30: Noise Level Measurement in the Project Area

Table IV-29: Results of Noise Level Measurement

Location	Sample ID	GPS Location	Land Use Category	Date	Measurement Time		Noise Level (dBA)
					Start	End	
Umednagar, Habiganj	NM_06	24.39762°N 91.40857°E	Commercial	26 September 2022	01:57 pm	02:27 pm	62.49
Puran Munsif Road, Habiganj	NM_07	24.38486°N 91.41349°E			04:07 pm	04:37 pm	59.40
Baghbari, Chatak, Sunamganj	NM_10	25.029195°N 91.666492°E	Residential	03 January 2023	12:35 pm	01:05 pm	53.31
Beside Chatak pourashava, Sunamganj	NM_11	25.029487°N 91.667081°E			02:20 pm	02:50 pm	53.25

Notes:

- Land use category is based on the classification provided in the Noise Pollution Control Rules (2006).
- The sound level standard for commercial area at day is 70 dBA.
- Noise Level is the average noise recorded over the duration of the monitoring period.
- According to IFC EHS guidelines, sound level standard for the Residential, institutional, and educational area at daytime is 55 dBA, and nighttime is 45 dBA.
- According to IFC EHS guidelines, sound level standard for the industrial and commercial area at daytime is 70 dBA, and nighttime is 70 dBA

Table IV-30: Description of the surrounding environment

Sample Location and ID	Sample Site Description
Umednagar, Habiganj **(NM_06)**	➢ Vehicle movements were absent ➢ Moderate level of people movements ➢ No sensitive receptor was found within the 500m buffer zone during our survey.
Puran Munsif Road, Habiganj **(NM_07)**	➢ Vehicle movements were absent ➢ Moderate level of people movements ➢ No sensitive receptor was found within the 500m buffer zone during our survey.
Baghbari, Chatak, Sunamganj **(NM_10)**	➢ People's movement was moderate ➢ Vehicle movement was low ➢ No sensitive receptor was found within the 500m buffer zone during our survey.
Beside Chatak pourashava, Sunamganj **(NM_11)**	➢ People's movement was moderate ➢ Vehicle movement was low ➢ No sensitive receptor was found within the 500m buffer zone during our survey.

275. The result table shows that the time-weighted average value of the sound monitoring in the sampling locations is within the national standard. Noise impacts should not exceed the levels stated or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site. In general, the noise level limit is represented by the background or ambient noise levels that would be present in the absence of the facility or noise source(s) under investigation (IFC EHS Guidelines 2007.

h) Water Resources and Hydrology

276. Water Resources of Bangladesh is endowed with plenty of surface and groundwater resources. The surface water resources comprise water available from flowing rivers and static water bodies as ponds, beels and haors.

277. The Sylhet division forms the Surma-Meghna-Kushiara River system. The Surma-Meghna-Kushiara River System is one of the three major river systems of Bangladesh (the other two being the Ganges-Padma and the Brahmaputra-Jumuna-Tista). It is the longest river system in the country (669 km) and drains one of the world's heaviest rainfall areas.

278. The most significant waterway within the Study Area is the Surma River which flows through the center in an east-west direction. The Surma River originates in the hills of Shillong and Meghalaya of India. The main source is the Barak River, which has a considerable catchment in the ridge and valley terrain of the Naga-Manipur hills bordering Myanmar. The Barak River separates into two branches at Amalshid in the northeast border of Zakiganj Upazila of Sylhet district. The northwest arm is the Surma River, and the southwestern arm forms the Kushiara River. The Kushiara River rejoins with the Surma River at Markuli in Ajmiriganj Upazila.

279. The Surma River flows through the Sylhet and Sunamganj districts and bisects the City of Sylhet. It receives municipal as well as domestic wastes through these areas from numerous sources including paper mills, cement factories, sewage treatment plants and direct deposition of wastes in the river by local residents.

280. It is flood-prone in the monsoon, with the flood season generally occurring from late May / early June to the middle of October. The mean discharge in this period is about 30,000 cubic feet per second (cusec) and the sub-project site specific high flood level (HFL) for last 30 years.

281. The other major river within the area is the Sri Gowain River which flows in a north-south direction along the western boundary. This river is used extensively by the local population as a transport route, and this includes a ferry terminal (ghat) in the north-east of the Gowainghat Upazila.

282. The Study Area also contains numerous large wetlands (seasonal and perennial) which are an important fisheries resource and source of food for the local population.

(v) Surface Water

283. Surface water originates mostly from rainfall and is a mixture of surface run-off and ground water. It includes larges rivers, ponds and lakes, and the small upland streams which may originate from springs and collect the run-off from the watersheds.

284. The surface water samples were collected from 01 (one) locations in Sylhet division on 26 September 2022 covering a total of 08 parameters. The following surface water quality has been collected from nearest water bodies of proposed substation's location. The reason for choosing the waterbodies is if any construction yard or labor camp established near the water body during the construction period, the water body may be contaminated. Another reason for choosing the location was, during our survey in 2022 the rivers crossing tower location were not finalized. The locations with details addresses are summarized in Table IV-27. The parameters measured were pH, Turbidity, Temperature, ORP, Electric Conductivity (EC), COD, BOD5, TDS, DO, Sulphates. EZDO 8200 was used to conduct pH, TDS, EC, and temperature tests. Lutron DO-5509 was used to conduct the test of Dissolved Oxygen (DO). The laboratory test result is given in Appendix 4 of the report.

Umednagar, Habiganj
Habiganj PBS

Chatak, Sunamganj
Sunamganj PBS

Figure IV-31: Sampling of Surface Water in the Project Area

Table IV-31: Test Results of Surface Water Analysis

Parameters	Unit	SW-04	SW_06	Standards for Inland Surface Water**	Analysis Method
		Umednagar, Habiganj	Chatak, Sunamganj		
		24.385016°N 91.41327°E	25.024928°N 91.668913°E		
		26 September 2022	3 January 2023		
pH*	-	6.88	8.0	6-9	Multimeter
ORP*	mV	-28	-134	NYS	
Electric Conductivity (EC)*	µs/cm	521	458	NYS	

Parameters	Unit	SW-04	SW_06	Standards for Inland Surface Water**	Analysis Method
		Umednagar, Habiganj	Chatak, Sunamganj		
		24.385016°N 91.41327°E	25.024928°N 91.668913°E		
		26 September 2022	3 January 2023		
Total Dissolved Solids (TDS)*	mg/L	296	620	1000	
Temperature*	°F	23.4	29.2	NYS	
DO	mg/L	6.1	5.2	5 or more	DO meter
BOD	mg/L	-	3	6 or less	5 days Incubation
COD	mg/L	-	12	50	CRM

*Note: *On-site test Result*
*** Standards for Inland Surface Water and best practice for fishing is followed Environment Conservation Rules, 2023*
NYS- Not Yet Standardized

285. The surface water quality standard is not yet developed in the ECR 2023 except for a few parameters. From the test result, it is seen that all the parameters are within national standards.

(vi) Ground Water

286. Groundwater is an important part of the water cycle. Groundwater is the part of precipitation that seeps down through the soil until it reaches rock material that is saturated with water. Water in the ground is stored in the spaces between rock particles (no, there are no underground rivers or lakes). Groundwater slowly moves underground, generally at a downward angle (because of gravity), and may eventually seep into streams, lakes, and oceans.

287. In the study area, there is limited information that is available or accessible in the aquifer systems. The main aquifer in the north-eastern region varies from semi-confined to confined types. A prospective aquifer in the north-eastern hills is the highly weathered alluvial sands of the Dupi Tila formation. These sands are fine to medium grained and crop out in small hillocks in Sylhet and Moulvibazar districts and in some parts of Habiganj district. However, the permeability of these sands is lower than that of the alluvial deposits. The young gravelly sands also form a potential aquifer, although they are poorly sorted and contain large amounts of gravel and pebbles, making it difficult to use low-cost drilling techniques.

288. At present Groundwater is considered as the most important source of water supply in Bangladesh [25]. As a part of regular monitoring work by the Bangladesh Water Development Board (BWDB), the depths to groundwater are measured in piezometric observation wells situated in different parts of the study area. There are 27 observation wells in the study area which are considered in this study in order to determine the trend of groundwater depth. The observed variations are due to regional groundwater flow, head.

289. Groundwater samples were collected from one (01) sampling locations in Sylhet divisions along the project corridor from 26 September 2023. The locations with detailed addresses are summarized in (Table IV-32). A total of 05 Parameters were tested. All samples were collected with Kemmerer Bottle and then transferred in 1 litre plastic sampling bottles. The sampling bottles were washed by distilled water before sample collection. The sampling bottles were then kept in an ice cooler. Safety vests, hand Gloves and helmets were used during the surface water samples collection. EZDO 8200 Multimeter (Figure IV-32) was used to conduct the on-site test of pH, Total Dissolved Solids (TDS), Electronic Conductivity (EC) and Temperature. Lutron DO-5509 was used to conduct the on-site test of Dissolved Oxygen

(DO). Collected samples were then sent to the Department of Public Health Engineering (DPHE) for analysis of remaining Parameter. The laboratory test result is given in Appendix 4 of the report.

Table IV-32: Test Results of Groundwater Analysis

Parameters	Unit	GW-04 Umednagar, Habiganj 24.39746°N 91.40916°E 26 September 2022	GW_06 Chatak, Sunamganj 25.029041°N 91.666807°E 03 January 2023	Standards for Inland Surface Water**	Standard for potable water according to WHO	Analysis Method
pH*	-	6.79	8.2	6.5-8.5	NYS	Multimeter
Electric Conductivity (EC)*	µs/cm	115	402	NYS	NYS	
Total Dissolved Solids (TDS)*	mg/L	287	302	1000	NYS	
DO	mg/L	7.1	6.1	NYS	NYS	DO meter
Total hardness as CaCO3	mg/L	81	-	500	5	Calmagite Method

*Note: *On-site test Result*
***Standard for Potable Water is followed from Schedule-2(B) of Environment Conservation Rules, 2023*
***As per Coastal Water standard from Schedule-2 (B) of Environment Conservation Rules, 2023, standard value of pH=6.5-8.5; DO=>5*
NYS- Not Yet Standardized

Umednagar, Habiganj
Habiganj PBS

Chatak, Sunamganj
Sunamganj PBS

Figure IV-32: Sampling of Groundwater in the Project Area

290. According to the test results, most of the criteria in the groundwater samples were determined to be within the national standard for drinkable water in sampling locations except total Hardness as CaCO3

i) Natural Hazards

291. Natural hazard events can be characterized by their magnitude or intensity, speed of onset, duration, and the area they cover. Hazards occur at different intensities (or magnitudes) over different time scales (sometimes known as temporal scales). The occurrence of hazards of different intensities in terms of probabilities or return periods, within the context of uncertainty. In general, the longer the return period the greater the intensity of the hazard. Because of these long return periods, some communities may have no memory of the potential threat of a high intensity hazard.

292. Natural hazards are naturally occurring physical phenomena. They can be: Geophysical: a hazard originating from solid earth (such as earthquakes, landslides and volcanic activity) Hydrological: caused by the occurrence, movement and distribution of water on earth (such as floods and avalanches).

(i) Seismicity

293. Bangladesh has been divided into four seismic zones. The north-eastern part of Bangladesh is in the most active seismic zone and has experienced earthquakes of moderate/high intensity. The great earthquake of 1897, which had its epicenter in Shilong Plateu in India, caused widespread damages. Two major earthquakes – the Bengal earthquake of 1885 and Srimangal earthquake of 1918 – caused severe damage to limited areas surrounding their epicenters. Earthquakes with magnitudes between 7.0 and 8.7 on the Richter scale have been experienced, but they are rare events

294. The most hazardous division in Bangladesh is Sylhet division. Northern and southern sections could expect to have maximum peak ground acceleration (PGA) ranging between 0.28g to 0.36g. As per the seismic zone classifications, the project area of Sylhet Division falls in Zone 4 means high seismic intensity. Because of seismic activity, a number of tremors have affected different parts of the country over the last few years. However, only one event has caused significant damage to life and/or property near the Project site in recent times. On 8 May 1997 the Sylhet earthquake (magnitude of 5.6) struck, with its epicenter in northeastern Sylhet, near Jaintiapur. Several buildings were damaged in and around Sylhet during the earthquake. These included the Sylhet Airport building, a college near Jaintiapur and the Grameen Bank building near Barlekha. Another earthquake occurred on July 8, 1918, in the Balisera Valley, south of Shreemongol. Although this earthquake measured 7.6 on the Richter scale, no significant loss of life was recorded. The project area and their risk of Seismicity is showing in (Figure IV-35).

(ii) Flood

295. The project area is vulnerable to flash floods resulting from rainstorms in the Indian hills. These hills include places with the world's highest recorded rainfall (Cherrapunji in Meghalay asham annual average rainfall of 11,430 millimeters, and nearby Mawsynram has an average of 11,873 millimeters). Cherrapunji holds two worlds' records-the maximum amount of rainfall in a single year: 22,987 millimeters in 1860-1 and the maximum amount of rain fall in a single month: 9,300millimeters in July1861. Flash floods resulting from torrential rain in the pre-monsoon season cause extensive losses to the main crop grown in the area (dry season boro paddy). Farmers reckon that they may lose one crop in four, and so only apply low levels of input. The project area is vulnerable to Flash Flooding and starting from the pre-monsoon season, the area remains flooded during the entire monsoon seasons (generally from May to September of each year. The project areas are located in low river flooding, moderate river flooding, moderate tidal surge, severe tidal surge and not flood prone areas.

296. The Flood Forecasting and Warning Centre (FFWC), under the Bangladesh Water Development Board (BWDB), provides real-time data on water levels and flood forecasts. Here are some water levels and danger levels for various rivers in the Sylhet division.

- Sherpur-Sylhet Water Level: 8.30 m (Danger Level: 8.55 m)
- Sunamganj Water Level: 7.18 m (Danger Level: 7.80 m)
- Sylhet Water Level: 10.35 m (Danger Level: 10.80 m)

2. Biological Environment

a) Bio-ecological Zones

297. Within a relatively small geographic boundary, Bangladesh enjoys a diverse array of ecosystems. Being a low-lying deltaic country, seasonal variation in water availability is the major factor, which generates different ecological scenarios of Bangladesh. Temperature, rainfall, physiographic variations in soil and different hydrological conditions play vital roles in the country's diverse ecosystems. The ecosystems of Bangladesh could be categorized into two major groups, i.e. (i) land based and (ii) aquatic. The land-based ecosystems include forest and hill ecosystems, agro-ecosystems and homestead ecosystems; while seasonal and perennial wetlands, rivers, lakes, coastal mangroves, coastal mudflats and chars, and marine ecosystems fall into the aquatic category.

298. Each of the ecosystems has many sub-units with distinct characteristics as well. IUCN Bangladesh in 2002 classified the country into twenty-five bio-ecological zones. The project area falls below the bio-ecological zone.

- **Himalayan Piedmont Plain**
- **Surma-Kushiyara floodplain**
- **The Haor basin**

299. The Himalayan Piedmont Plain occupies parts of Sylhet district. The area is composed of numerous smooth but irregular-shaped ridges with broad and braided rivers. Being the ecotone between hill forests and low land swamps, ecologically this zone is very rich and diverse. Reeds and grasslands are the characteristic vegetation of this zone. Wildlife species of this zone are also diverse.

300. The Surma-Kushiyara floodplain comprises of river draining from the Northeastern borders towards the Sylhet basin. The relief is generally smooth, comprising broad ridges and basins, but it is locally irregular alongside river channels. The zone is abounded with diverse wetlands, small and medium beels and channels, secondary rivers and huge seasonally inundated lands where locals do fishing in wet season and cultivate rice in dry season.

301. The haor basin is an internationally important wetland ecosystem, which is also situated in Sunamganj, Habiganj, Sylhet districts. It is a mosaic of wetlands habitats, including numerous rivers, streams, and irregular canals.

b) Biodiversity

302. The Subproject areas are located at mostly haor basin and the wetlands floral are the major plant species in these areas. Wetland flora plays a vital role for biodiversity conservation. The wetland habitat is characterized by anaerobic conditions, which inhibits normal plant growth. The cluster supports two types of wetlands e.g., (a) Permanent wetland and (b) Seasonal wetland. The permanent wetland includes rivers and perennial water bodies. This wetland provides refuge and shelter for most of the aquatic flora. The seasonal wetland serves as the cultivated land. Aquatic flora in the cluster can be divided into communities based on a set of environmental conditions. The communities are as follows: Free-floating plants, Sub merged floating plants, Rooted floating plants, Sedges and meadows, Marginal vegetation

303. Due to continuous submergence, wetland habitat is characterized by anaerobic conditions which inhibit normal plant growth apart from a group of plants known as hydrophytes that are adapted to withstand these conditions. The Haor Basin is the only region in Bangladesh where remnant patches of freshwater swamps and reed lands still exists. Once extensive forests of Hijal in the area used to provide an important source of firewood, but these

forests are now almost completely destroyed. In recent times, various herbs and aquatic plants are being collected for use as fuel. On top of that, aquatic plants are also being collected for use as fertilizers. Only a few patches remain of the swamp forests that once dominated the area, featuring flood tolerant trees like Hijal (Barringtonia acutangula) and Koroch (Ponogamia pinnata).

304. A sizeable number of fruits, timber, fuel and medicinal trees with economic value have been observed in the SPIA areas. These trees provide a habitat for birds and some other animals. The composition of plant community includes low growing grasses, herbs, shrubs and trees. A detailed list of terrestrial floral species found in the SPIA of sub-projects is given in the following Table IV-33

Table IV-33: List of Terrestrial Flora available in the SPIA

Scientific Name	Local Name English Name)	Habit	Habitat	Status
• **Timber/Wood Trees**				
Dalbergia sisoo	Shishu	T	RS, HS	C
Bambosa spp.	Bash (Bamboo)	S	HS	C
Samanea saman	Raintree	T	RS, HS	C
Bombax ceiba	Shimul (Cotton Tree)	T	RS, HS	LC
Ficus infectoria	Pakur	T	HS	LC
Polyalthia longifolia	Debdaru	T	RS	LC
Acacia aurculiformios	Akashmoni	T	RS, HS	C
Tectona grandis	Shegun	T	RS, HS	LC
Teominalia arjunna	Arjun	T	HS,RS	LC
• **Fruit Trees**				
Musa sapientum	Kalagash (Banana)	H	HS	C
Moringa oleifera	Sajna	T	HS	LC
Zizyphusm auritiana	Boroi	T	HS	LC
Citrus grandis	Jambura/Badam	S	HS	C
Aegle marmelos	Bel	T	HS	C
Feronia limonia	Kodbel	T	HS	LC
Phoenix sylvestris	Date Tree (Khejur)	T	HS,RS	C
Areca catechu	Supari (Betel Nut/Nut)	T	HS	C
Carica papaya	Pepe (Papya)	T	HS	C
Citrus aurantifolia	Labu (Lemon)	S	HS	C
Annona reticulate	Atafal	T	HS	C
Averrhoa carambola	Kamranga	T	HS	C
Punica granatum	Dalim	S	HS	LC
Manilkara sapota	Sobeda	T	HS	LC
Dellenia indica	Chalta	T	HS	LC
• **Fruit cum Timer Trees**				
Artocarpus heterophyllus	Kathal (Jackfruits)	T	HS	LC
Borassusflabellifer	Tal (Palm Tree)	T	RS	LC
Elaeocarpus robustus	Jolpai (Olive)	T	HS	LC
Diospyros peregrina	Gub	T	HS,RS	LC
• **Medicinal Trees**				
Azadirachta indica	Neem	T	HS	C
Teominalia arjunna	Arjun	T	HS,RS	LC
	Bohera	T	HS	LC
	Tejpata	T	HS	LC
Ocimum canum	Tulshi	H	HS	LC
Coccinea cordifolia	Telakachu	S	HS	C

Scientific Name	Local Name English Name)	Habit	Habitat	Status
• **Fuel Trees**				
	Paiya	T	HS	C
Ficus benghalensis	Bot(Banyan Tree)	T	RS	LC
Acacia nilotica	Babla	T	HS	C
Ricinus communes	Venna	T	HS	C
Lannea coromandelica	Ziga	T	HS, RS	C
	Bonziga	T	HS	C
Ficushispida	Dumoor	T	RS	C
Anthocephalus cadamba	Kadom	T	HS	C
	Shewra	T	HS	C
	Bakul	T	HS	LC
• **Aesthetic**				
Delonix regia	Krisnochura	T	HS	LC
Cassia fistula	Sonalu	T	HS	LC
Codiaeum variegatum	Patabahar	S	HS	LC
Lawsenia inermis	Mehendi	S	HS	C
Gardenia coronaria	Gandha raj	S	HS	C
Casuarina littorea	Jaw	T	HS	LC
Nymphaea nouchalli	Shapla	H	WL	C

Source: Field level survey, 2017. Note: C-Common, LC- Less Common, UC- Uncommon, CU- Cultivated Habit: T=Tree, H= Herb, S=Shrub, G=Grass; Habitat: HS=Homestead, RS-Road side

305. While most of the aquatic plant species of the subproject areas are subject to seasonal water level fluctuations, the abundance of wetlands supports a wide variety of aquatic biota. The common aquatic plants are Helencha (Enhydrofluctuans) Kalmi (Ipomoea aquatica), DholKalmi (Ipomaoafistulosa), Cheicha (Scirpusarticulatus), Kochuripana (Eichorinacrassipes), Shapla (Nymphaeanouchali), Ducbweed (Spiredella sp.), Khudipana (Lemna minor), and Topapana (Pistia stratiotes).

306. The subproject areas are enriched with aquatic fauna as the subproject areas are physiographycally located in Haor Basin area. Fresh water fish habitat such as river, haor, beel pond and ditches exist in and around the cluster, which provide shelter, feeding, and spawning ground for different types of freshwater fish species (such as carp, catfish, mrigel, taki, shoel, tengra, bain, baila, boal etc.). Large-scale human intervention for catching freshwater fishes from their natural habitat. The reproduction, breeding and multiplication of aquatic fishes are very finely tuned and adjusted to the rhythm and amplitude of monsoon flooding in and around the proposed cluster. There are many fishermen within the cluster whose income source is mainly fishing from the haor and beel as well as natural canals.

307. Pankauri (Indian Cormorant), Dhushor Bok (Grey Heron), Maachranga (Kingfisher), and Gangchil (Gull-billeded Tern) are the birds commonly found during field visit in the subproject areas. Leaving aside the other common birds like crows, sparrows, shaliks, cuckoos etc. and some domestic cattle, no other wild animals inhabit the area. The wildlife that fully depends on the terrestrial land throughout their whole life, their existence, shelter, food, nesting, breeding and producing own offspring is called terrestrial fauna. Core components of the terrestrial fauna are amphibians, reptile, birds, and mammals.

308. A number of avian species were observed in the area. These species are typical inhabitants of urban fringes and considered common on both at local and regional levels. In addition to the avian species, the area is habitat to a variety of reptiles, mammals and invertebrates. These include foxes, rodents, snakes, etc. A detailed list of faunal species found in the subproject area is presented in the Table IV-30.

309. Fresh water fish habitat such as river, haor, pond and ditches exist in and around the subproject areas, which provide shelter, feeding, and spawning ground for different types of

freshwater fish species (such as carp, catfish, mrigel, taki, shoel, tengra, bain, baila, boal etc.). There are several natural habitats for aquatic flora and fauna in the SPIA. The reproduction, breeding, and multiplication of aquatic fishes are very finely tuned and adjusted to the rhythm and amplitude of monsoon flooding in and around the proposed cluster. There are many fishermen within the cluster in subproject areas whose income source is mainly fishing from the rivers.

310. Most of the funal spieces such as (Avians, Amphibians, Reptiles, and Mammals) were identified in the SPIA of the subproject areas by using books and description of the local people during the field survey which are given in the following Table IV-34

Table IV-34: List of Faunal Species Available in the SPIA of the Subprojects

Scientific Name	English Name	Local Name	Local Status
Class: Amphibia			
Bufo melanostictus	Common Toad	Kuno bang	NO
Rana temporalis	Bull Frog	Kola bang	NO
R. pipens	Grass Frog	Sona bang	NO
Class: Reptilia			
Varanus salvator	Ring lizard	Kalo gui	EN
Xenochrophis piscator	Checkered keelback	Dhora shap	NO
Amphiesma stolata	Stripped keelback	Dora shap	NO
Enhydris enhydris	Common smooth water snake	Paina shap	NO
Coluber mucosus	Rat snake	Daraj shap	VU
Ahaetulla nasutus	Common vine snake	Laodoga shap	VU
Atretium schistosum	Olive keelback	Maitta shap	NO
Naja naja	Monocellate cobra/ Spectacled cobra	Khoia gokhra	EN
Class: Aves			
Nycticorax nycticorax	Black-crowned night heron	Nishi bok	NO
Ixobrychus cinnamomeus	Cinnamon Bittern	Lal bok	NO
Anastomus oscitans	Asian Openbill	Shamuk-khol	NO
Haliastur indus	Brahminy kite	Shankho chil	NO
Milvus migrans	Black kite	Bhubon chil	NO
Actitis hypoleucos	Common sandpiper	Kada Khocha	--
Streptopelia chinensis	Spotted dove	Tila Ghughu	NO
Streptopelia decaocto	Eurasian collared dove	Raj Ghughu	NO
Psittacula krameri	Rose-ringed parakeet	Tia	NO
Amaurornis phoenicurus	White-breasted waterhen	Dahuk	NO
Eudynamys scolopacea	Asian cuckoo	Kokil	NO
Centropus sinensis	Greater coucal	Kanakua	NO
Cuculus micropterus	Indian cuckoo	Bou-kotha-kao Pakhi	NO
Athene brama	Spotted owlet	Khuruley Pencha	NO
Alcedo atthis	Common kingfisher	Choto Maachranga	NO
Halcyon smyrnensis	White-throated kingfisher	Sada buk Maachranga	NO
Ceryle rudis	Pied kingfisher	Pakra Maachranga	NO
Megalaima haemacephala	Coppersmith barbet	Choto Basanta Bauri	NO
Oriolus xanthornus	Black-headed oriole	Holdey Pakhi	NO
Corvus splendens	House crow	Pati Kak	NO

Scientific Name	English Name	Local Name	Local Status
Dicrurus macrocercus	Black drongo	Fingey	NO
Copsychus saularis	Oriental magpie robin	Doel	NO
Acridotheres fuscus	Jungle myna	Jhuti Shalik	NO
A. tristis	Common myna	Bath Shalik	NO
A. ginginianus	Bank myna	Gang Shalik	NO
Sturnus contra	Asian pied starling	Gobrey Shalik	NO
S. malabaricus	Chestnut-tailed starling	Kath Shalik	NO
Pycnonotus cafer	Red-vented bulbul	Bulbuli	NO
Turdoides striatus	Jungle babbler	Satbhai	NO
Orthotomus sutorius	Common tailorbird	Tuntuni	NO
Passer domesticus	House sparrow	Charui	NO
Ploceus philippinus	Baya weaver	Babui	NO
Upupa epops	Eurasian Hoopoe	Hudhud Pahkhi	
Class: Mammalia			
Pteropus giganteus	Flying Fox	Badur	NO
Pipistrellus coromandra	Indian Pipistrelle	--	NO
Megaderma lyra	Greater False Vampire	Badur	NO
Herpestes edwarsi	Common Mongoose	Bara benji	VU
H. auropunctatus	Small Indian Mongoose	Benji	NO
Vulpes bengalensis	Bengal Fox	Khek shial	VU
Rattus rattus	Common House Rat	Idur	NO
Bandicota indica	Bandicoot Rat	Bara idur	NO
B. bengalensis	Lesser Bandicoot Rat	Idur	NO
Mus musculus	House Mouse	Nengri idur	NO
Suncus murinus	House Shrew	Chicka	NO

Source: Baseline Environmental Survey, 2018 and Literature Review and IUCN Red Data Book (2003). Notes: EN – Endangered, VU – Vulnerable, NO – Not Threatened

311. Fish is the most important aquatic fauna of the subproject areas, along with other groups. The aquatic fauna includes Prawns (Macrobrachium spp.), crabs, snails (Pila, Vivipara, Lymna etc.), freshalater mussels (Lamellidens sp.) etc. Kolabang (Rana tigrina), Guishap (Varanusbengalensis) and Matia sap (Enhydrisenhydris) are common. The aquatic birds are – Pancowri (Phalacrocoraxcarto), Kanibok (Ardeolagrayii), Sadabok (Egrettagarzetta), Borobok (Egrettaalba), Machranga (Halcyon pileata), Dahuk (Gallicrexcinerea), and winter migratory birds – Balihash (Dendrocygnajavanica) and Chakha (Tadornaferruginea).

312. Fish is the most important aquatic fauna of the subproject areas, along with other groups. The aquatic fauna includes Prawns (Macrobrachium spp.), crabs, snails (Pila, Vivipara, Lymna etc.), freshalater mussels (Lamellidens sp.) etc. Kolabang (Rana tigrina); Guishap (Varanusbengalensis) and Matia sap (Enhydrisenhydris) are common. The aquatic birds are – Pancowri (Phalacrocoraxcarto), Kanibok (Ardeolagrayii), Sadabok (Egrettagarzetta), Borobok (Egrettaalba), Machranga (Halcyon pileata), Dahuk (Gallicrexcinerea), and winter migratory birds – Balihash (Dendrocygnajavanica) and Chakha (Tadornaferruginea).

Table IV-35: List Common Fish Species in the SPIA of the Subprojects

Sl. No.	Local Name	Scientific Name	English Name	Local Status
1	Tengra	Batasio batasio	Tista Batasio	NO

Sl. No.	Local Name	Scientific Name	English Name	Local Status
2	Pabda	Ompok pabo	Pabo catfish	EN
3	Puti	Puntius sophore	Spotfin Swamp Barb	NO
4	Darkina	Esomus danricus	Flying barb	DD
5	Dhela	Osteobrama cotio	Cotio	EN
6	Chela	Salmostoma acinaces	Silver Razorbelly Minnow	DD
7	Rui	Labeo sp.		DD
8	Catla	Catla catla	Catla	NO
9	Mrigal	Cirrhinus mrigala	Mrigal	NO
10	Ayre	Aorichthus aor	Longwhiskered Catfish	VU
11	Chital	Notopterus chitala	Humped Featherback	EN
12	Boyal	Wallago attu	Freshwater	NO
13	Pungus	Pangasius pangasius	Pungas	CR
14	Elish	Tenualosa ilisha	Hilsha	NO
15	Bele	Awaous gutum		NO
16	Foli	Notopterus notopterus	Grey featherback	VU
17	Koi	Anodontosoma chachunda	Chachunda	NO
18	Mola	Amblypharyngodon mola	Pale carplet	NO
19	Chapila	Gonialosa manmina	Ganges River	NO
20	Baim	Mactacembalus armatus	Tire truck spineel	EN
21	Gajar	Channa marulius	Giant snakehead	EN
Note: EN= Endangered, VU= Vulnerable, CR= Critically Endangered, NO= Not Threatened, DD= Data Deficiet				

Source: Baseline Environmental Survey, 2022 and Literature Review and IUCN Red Data Book (2003)

313. In addition, an IBAT assessment has been carried out to determine the Endangered and critically Endendangered species specially Aves and bats are specially considered for assessment as these may be affect during construction of SS, augmentation of SS, line construction and river crossing tower construction. The details assessment from the IBAT analysis has been illustrate in table IV.10 to table IV.13

c) Ecologically Critical Area (ECA)

314. One Hakaluki Haor in Sylhet and one in Tanguar Haor at Sunamganj have been notified as Ramsar Convention Sites. The historical sites and structures, cultural structures, archaeological sites and national monuments are also the declared protected sites. The MoEF and other Ministries also declared some sites as protected through notification. According to the Wildlife (Conservation and Security) Act, 2012, the project areas currently have 3 protected areas (Table IV-32). Among them, there are two National Parks and one Wildlife Sanctuaries.

Table IV-36: Protected areas of Bangladesh within the Project Areas

A) National Parks				
Sl.No.	**National Parks**	**Location**	**Area (ha)**	**Established**
2.	Lawachara National Park	Moulavibazar	1250.00	7-7-1996
6.	Satchari National Park	Habigonj	242.91	15-10-2005
B) Wildlife Sanctuaries				
Sl.No	**Wildlife Sanctuaries**	**Location**	**Area (ha)**	**Established**
1.	Rema-Kalenga	Hobigonj	1795.54	7-7-1996

315. Based on information obtained to date there are two designated Forestry areas that the road passes through (Figure IV-38). There is no environmentally sensitive location within 1km radius of the project influenced area.

3. Socio-economic Environment

316. It is essential for every development project, whether small or large, to understand the social, human and economic aspects of the primary stakeholders, i.e., people living in and around the project site. The following tools and techniques were used to collect the relevant data/information on the social and economic aspects of affected people:

- Literature review;
- Group discussion; and
- Informal meetings with various professionals.

317. In addition, data obtained from secondary sources were compared with the primary data/information gathered during the study.

318. Data on population, age/sex composition, household patterns, and sources of drinking water, sanitation facility, and ownership of agricultural land were enumerated from the latest community series census published by the Bangladesh Bureau of Statistics (BBS).

a) Administrative Structure

319. The Project consists of several components under Five PBSs of four districts within Sylhet division of Bangladesh. The study area covers 41 Upazilas and 342 unions as presented in Table IV-33.

Table IV-37: Administrative areas under 5 PBS

District	Upazila/ Thana/ City Corporation/ Pourashava	Unions
Sylhet	Sylhet Sadar	8
	Beanibazar	10
	Bishwanath	8
	Companiganj	6
	Dakshin Surma	10
	Fenchuganj	5
	Golapganj	11
	Gowainghat	9
	Jaintiapur	6
	Kanaighat	9
	Osmani Nagar	8
	Zakiganj	9
	Balaganj	6
Sub-total	**13**	**105**
Maulvibazar	Moulvibazar Sadar	12
	Kamalganj	9
	Kulaura	13
	Rajnagar	8
	Sreemangal	9
	Barlekha	10
	Juri	6
Sub-total	**7**	**67**
Habiganj	Habiganj Sadar	8
	Baniachang	15

District	Upazila/ Thana/ City Corporation/ Pourashava	Unions
	Bahubal	7
	Chunarughat	10
	Ajmiriganj	5
	Lakhai	6
	Madhabpur	11
	Nabiganj	13
	Shaistaganj	3
Sub-total	**9**	**78**
Sunamganj	Sunamganj Sadar	9
	Chhatak	13
	Shantiganj	8
	Derai	9
	Dharamapasha	10
	Dowarabazar	9
	Jagannathpur	8
	Jamalganj	6
	Sullah	4
	Bishwamvarpur	5
	Tahirpur	7
	Moddonagar	4
Sub-total	**12**	**92**
Total	**41**	**342**

b) Quality of Life Indicator

(i) Population & Households

320. The average sex ratio among all districts is 95.28. Population densities in Bangladesh are relatively high throughout the country. Sunamganj district has the lowest population density in the project area and Sylhet district has the highest population with highest population density.

Table IV-38: Demographic Characteristics within/Around SPIA in Sylhet Division

District	Household	Population	Male	Female	Sex Ratio	Area (km^2)	Persons/ (km^2)
Sylhet	746,867	3857037	1,894,232	1,959,054	96.69	3452.07	1,117
Habiganj	491,886	2,358,886	1,143,541	1,214,429	94.16	2636.59	895
Maulvibazar	446,354	2,123,445	1,020,312	1,102,247	92.57	2799.38	759
Sunamganj	528,550	2,695,495	1,322,590	1,371,517	96.43	3747.18	719
Sylhet Division	2,213,657	11,034,863	5,380,675	5,647,247	95.28	12635.24	873

Source: Population and Housing Census 2022

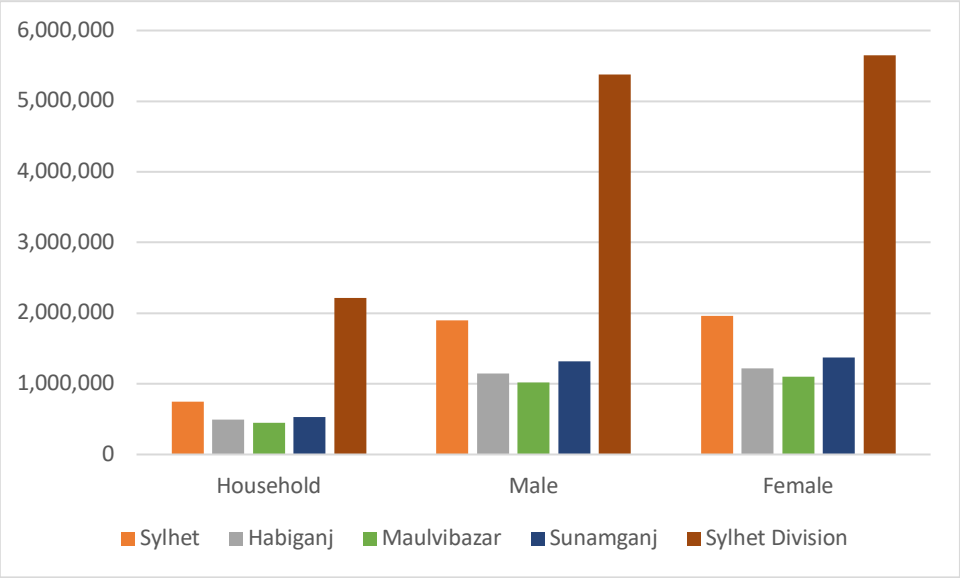


Figure IV-33: Demographic Characteristics within/Around SPIA in Sylhet Division

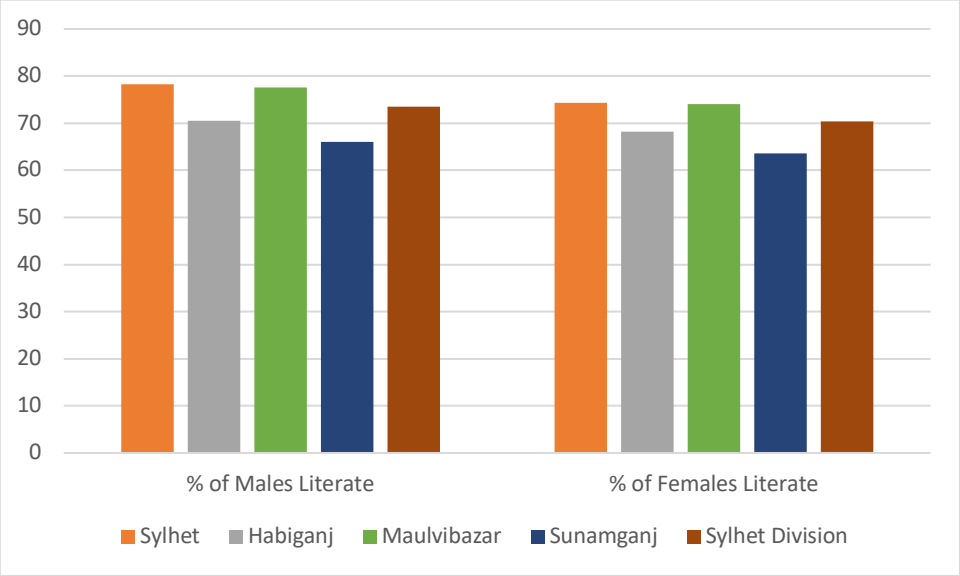
(ii) Literacy

321. The highest literacy rate for the project area is 76.26% in Sylhet. On the other hand, lowest literacy rate is in Sunamganj which is 64.77%

Table IV-39: Literacy Rates within/Around SPIA in Sylhet Division

District	Total Literacy		Male Literacy		Female Literacy	
	Total Population	% of Total Literate	Total Male Population	% of Males Literate	Total Female Population	% of Females Literate
Sylhet	3857037	76.26	1,894,232	78.32	1,959,054	74.29
Habiganj	2,358,886	69.32	1,143,541	70.50	1,214,429	68.22
Maulvibazar	2,123,445	75.74	1,020,312	77.58	1,102,247	74.08
Sunamganj	2,695,495	64.77	1,322,590	66.00	1,371,517	63.61
Sylhet Division	11,034,863	76.26	5,380,675	73.54	5,647,247	70.39

Source: Population and Housing Census 2022



Figuree IV-34: Literacy Rates within/Around SPIA in Sylhet Division

(iii) Age Structure of the project Area

322. Population and housing census (2011) shows that age structure in the project area covers 27.6% of the total population are children (ages up to 9 years) and 21.6% are young (10 to 19 years), 43.3% of working-age i.e., between 20 to 59 years, which is considered as the active workforce. Table IV-36 Shows the population distribution by different age groups in the project area.

Table IV-40: Age structure within/Around SPIA in Sylhet Division

District	Percentage of Population in Each Age Group (%)								
	0-9	10–19	20-29	30-39	40-49	50-59	60-69	70-79	80+
Habiganj	28.7	20.9	16.2	12.0	8.9	5.7	4.0	2.2	1.3
Maulavibazar	25.2	22.4	16.9	12.8	9.6	5.9	4.0	2.1	1.1
Sunamganj	30.2	20.9	15.7	11.8	8.6	5.4	3.9	2.2	1.3
Sylhet	26.4	23.4	17.7	12.1	8.7	5.3	3.5	1.8	1.1

(iv) Occupations & Livelihood

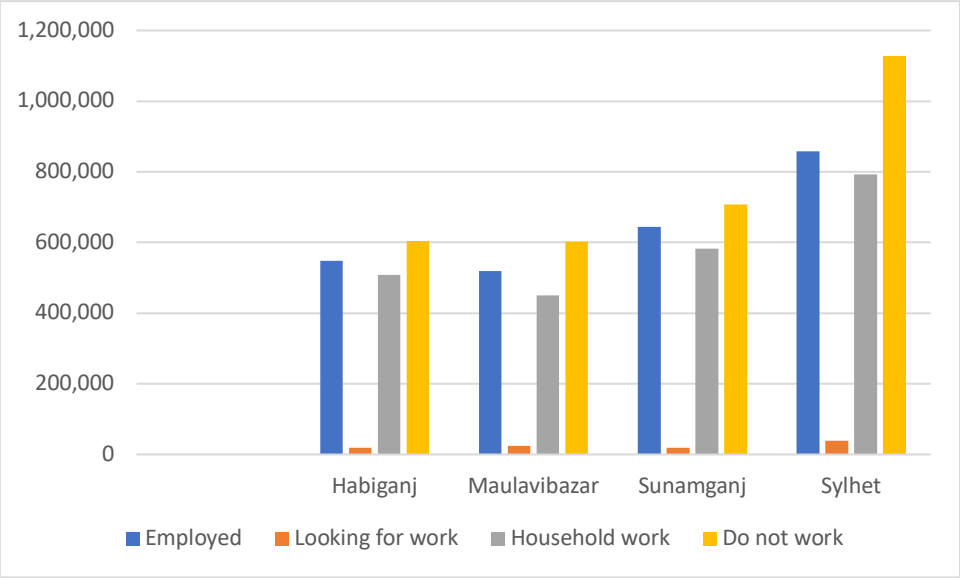
323. According to the 2011 census, the main sources of income of the airshed area are agriculture/forestry and livestock, agriculture labour, non-agriculture labour, handloom, industry, business, hawker, transport, construction, religious, service, rent, remittance, and others.

324. According to the Population and Housing Census of Bangladesh (2011), approximately 31.9% of the total population in the study area are employed whereas 1.3% of peoples have no work. Also, 29% are involved in household work and 37.8% of the total population do not work.

Table IV-41: Occupation and Livelihood within/Around SPIA in Sylhet Division

District	Total Population	Employed	Looking for work	Household work	Do not work
Habiganj	2,089,001	547,770	19,487	508,393	604,896
Maulavibazar	1,919,062	519,066	25,149	449,887	602,280
Sunamganj	2,467,968	643,622	18,965	581,984	707,365
Sylhet	3,434,188	858,712	39,770	793,150	1,128,960

Source: Population and Housing Census 2011



Figuree IV-35: Occupation and Livelihood pattern in Sylhet Division

(v) Housing Conditions

325. Settlement patterns observed during field visits reflected the rural nature of the subproject areas in most cases, with scattered villages surrounded by agricultural fields that are seasonally surrounded by floodplains. In the villages, a homestead is often occupied by an extended family and typically consists of a few houses and outbuildings, surrounded by fruit trees.

326. The subproject areas range from the very urbanized Sylhet City, one of the largest cities in Bangladesh, to small villages encompassing less than ten houses. Larger villages and market areas within the Upazila are often located at the intersections of village access roads.

327. Houses within the subproject survey areas vary in terms of the style and the types of building materials used for construction. Data for housing types for Sylhet division shows that most people in the subproject areas live in a kacha house, followed by semi-pucca, then pucca and lastly jhupri.

Table IV-42: Housing Condition within/Around SPIA in Sylhet Division

Administrative Unit	Percentage of Type of Structure			
	Pucca	Semi-pucca	Kancha	Jhupri
Sylhet Zila	21.7	31.2	44.9	2.1
Sunamganj Zila	6.6	11.7	77.5	4.2
Maulvibazar Zila	12.1	29.2	56.3	2.5
Habiganj zila	5.4	18.3	73.0	3.3

Source: Population and Housing Census 2011

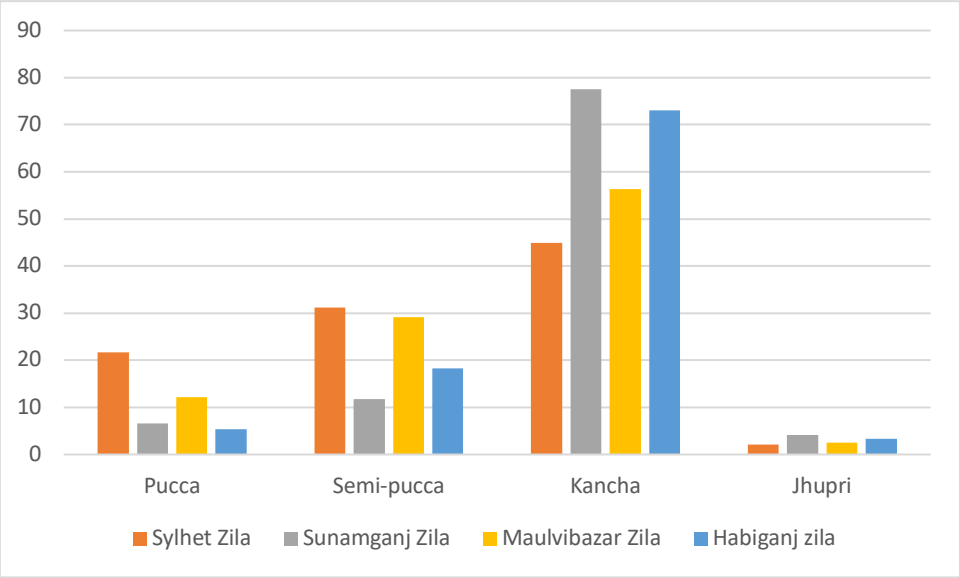


Figure IV-36: Housing Condition within/Around SPIA in Sylhet Division

(vi)Disability

328. Rates of disability provide an indication of social condition and wellbeing. Table IV-39 shows that the overall disability rate in the project area is 1.54%. Six categories are defined in the Census i.e., disability in speech, vision, hearing, physical, mental and autism. Among all districts in Sunamganj the rate of disability is most significant which is 1.6%.

Table IV-43: Distribution of Population by Type of Disability within/Around SPIA in Sylhet Division

District	Total Population	Type of Disability (%)						
		Total	Speech	Vision	Hearing	Physical	Mental	Autism
Habiganj	2,089,001	1.54	0.2	0.35	0.14	0.57	0.16	0.12
		32171	4178	7312	2925	11907	3342	2507
Maulvibazar	1,919,062	1.52	0.2	0.3	0.14	0.56	0.22	0.10
		28978	3812.89	5719.34	2669.03	10676.11	4194.18	1906.45
Sunamganj	2,467,968	1.60	0.20	0.40	0.20	0.50	0.20	0.10
		37020	4627.5	9255	4627.5	11568.75	4627.5	2313.75
Sylhet	3,434,188	1.43	0.2	0.25	0.12	0.56	0.19	0.11
		49452	6916.36	8645.45	4149.82	19365.82	6570.55	3804.00

(vii) Transport & Communication

329. The proposed subprojects are located near national highways, upazila roads or near village roads. The common types of transport is bus, truck, microbus, car, CNG, motorcycle, van and rickshaw. Mobile and wire telephone services are available in most of the areas. During the field survey, it is found that there are several kinds of vehicles are running on the adjacent roads to the subprojects

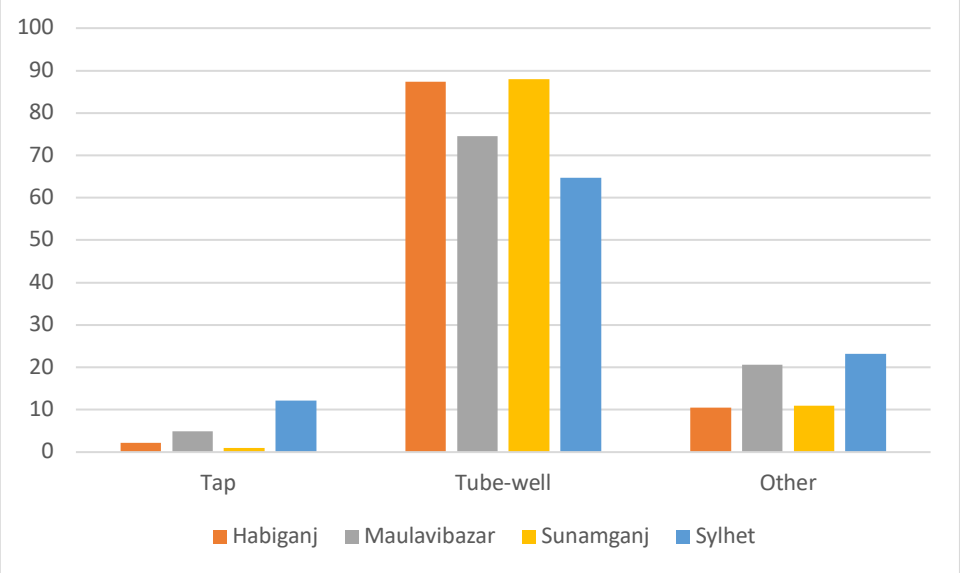
(viii) Water

330. Within the project areas, the major source of drinking water is tube-well where about 78.7% of populations use tube-well water. On the other hand, only 5.1% of people have access to tap water. Another 16.3% of people have access to neither tube-well nor tap water and consequently have to rely on nearest surface water sources i.e., river, pond, or canal.

Table IV-44: Water Access within/Around SPIA in Sylhet Division

District	No. of HH	Source of Drinking Water (%)		
		Tap	Tube-well	Other
Habiganj	391,100	2.15	87.29	10.57
Maulavibazar	358,700	4.90	74.56	20.54
Sunamganj	439,500	1.02	88.01	10.97
Sylhet	596,000	12.15	64.74	23.11

Source: Population and Housing Census 2011



Figuree IV-37: Water Access within/Around SPIA in Sylhet Division

(ix) Fuel Sources

331. In Sylhet division there is available natural gas connection at households' level. Urban People depend on fuel wood, but fuel wood is costly. Field survey work indicated that households using leaves, cow dung, wood/straw for cooking purposes. In some households within urban areas using LPG gas for cooking purposes.

(x) Electricity

332. The availability of electricity is a crucial measure of life quality. In the 462 sub-districts in Bangladesh that fall under the BREB command region, 100% electrification has already been accomplished. As a result, the whole population of Sylhet divisions under BREB command areas has access to power. The project will be carried out in the Chattogram -Sylhet divisions to provide a steady supply of high-quality power. In the project region, households, as well as irrigation, industry, and commercial consumers, will immediately benefit.

(xi) Poverty Level

333. Sylhet Division has a slightly lower overall HCR of 16.23%, with Sunamganj (31.0%) being the poorest district. In contrast, Moulvibazar (8.8%), Sylhet (10.4%), and Habiganj (14.3%) exhibit better economic conditions, indicative of lower poverty levels. Average Poverty rate accordance with the HIES 2016 given below showing the upper poverty level as per head count ratio method.

Table IV-45: Upper poverty level in Sylhet DIvision

Division/District	HCR Upper (%)
Sylhet Division	16.23
Habiganj District	14.3
Moulvibazar District	8.8
Sunamganj District	31
Sylhet District	10.4

Source: HIES, 2016

(xii) Gender & Employment

334. In the Sylhet division, Sylhet district leads with 1,329,648 employed individuals, with males constituting 83.86% and females 16.14%. Sunamganj district has the highest female employment percentage at 17.90%, although it still reflects a significant gender gap.

Table IV-46: Employment rate in Sylhet DIvision

District	Total Employed	Male Employed	Female Employed	% Male	% Female
Habiganj	489,500	411,000	78,500	83.94	16.06
Moulvibazar	481,200	399,600	81,600	83.04	16.96
Sunamganj	636,700	522,700	114,000	82.1	17.9
Sylhet	1,329,648	1,115,132	214,516	83.86	16.14

Source: BBS 2024, Population and Housing census-2022

(xiii) Gender & Earning

335. In the Sylhet division, the daily average wage rates in industrial zones similarly exhibited a range of earnings across different labor categories. Painters' wages were varying from 508 to 525 Taka. Electricians earned between 475 to 490 Taka. For brick breaking, the wages were around 1070 to 1022 Taka per 100 cubic feet. The fitting charges for situ mosaic tiles remained consistent at about 63 to 77 Taka per square foot. These figures indicate the specific economic conditions and labor demand in Sylhet's industrial zones.

336. In the Sylhet division, the daily average wage rates for male agricultural laborers ranged from 472 Taka in Sunamganj to 499 Taka in Sylhet district. Female laborers earned less, with Sunamganj reporting the lowest rate at 353 Taka and Maulavi Bazar the highest at 385 Taka. The wage rates across the districts highlight the economic conditions and labor market characteristics specific to the Sylhet division, showing a consistent pattern of lower wages for female laborers compared to their male counterparts.

Table IV-47: Earning rate in Sylhet Division

District	Male	Female
Sylhet	499	375
Maulavi Bazar	484	385
Sunamganj	472	353
Habiganj	475	375

Source: Monthly Statistical Bulletin-Bangladesh, Dec- 2023

(xiv) Women Rights

337. Women's rights are pivotal for societal progress and development in Sylhet Division, Bangladesh, where traditional gender roles and societal norms often confine women to domestic spheres, hindering their participation in decision-making processes. Despite efforts to enhance girls' education, challenges such as poverty and cultural barriers persist, reflected in gender gaps favoring boys in primary and secondary school enrollment by 4.8% and 7.3%, respectively. Access to healthcare remains crucial, yet issues like maternal mortality and reproductive health persist, with a maternal mortality rate of 155 deaths per 100,000 live births

and a contraceptive prevalence rate of 55% among married women. Economic empowerment initiatives aim to promote women's participation in the workforce; however, challenges such as a female labor force participation rate of 29.8% and a gender wage gap of 16.5% persist. Despite progress, significant efforts are needed to address these challenges, requiring collaboration from government, civil society, and the private sector to ensure equitable access to education, healthcare, and economic opportunities for women in Sylhet Division. {Bangladesh Demographic and Health Survey, Labour Force Survey, Bangladesh Bureau of Statistics)

(xv) Decision Making

338. The fabric of decision-making in Sylhet Division, Bangladesh, is intricately woven with gender dynamics, reflecting entrenched socio-cultural norms and disparities. Our exploration unveils a landscape where traditional roles often dictate household decisions, with men typically assuming leadership roles. Surveys conducted in 2023 underscore this, revealing that approximately 70% of households identify men as primary decision-makers, leaving women with limited influence.

339. Education and employment serve as pivotal determinants of decision-making power. Despite strides in educational accessibility, gender disparities persist, with 65% of men attaining secondary education or higher compared to 50% of women. This imbalance extends to employment, where men predominantly occupy formal sectors, thereby wielding greater decision-making authority.

340. Economic decision-making mirrors these disparities, with men overwhelmingly holding control over financial matters. Data indicates that 80% of households in Sylhet Division are led by male heads who make key economic decisions, perpetuating gender inequalities and restricting women's agency.

341. Healthcare decision-making reflects broader gender dynamics, with women often shouldering caregiving responsibilities. However, their decision-making autonomy is curtailed, particularly in rural areas. Survey findings suggest that 60% of women defer healthcare decisions to men, highlighting entrenched gender norms.

c) Community Property Resources

342. Throughout the world there are assets that are neither private nor state property, but common property. The term denotes a class of institutions that govern the ownership and rights-of-access to assets. Common property assets are to be distinguished from "public goods," in that, unlike the latter, use by someone of a unit of a common property asset typically reduces the amount available to others by one unit (in economic terminology, such an asset is rivalrous in use). The institution of common property creates and harbors reciprocal externalities. As some of the most interesting examples of common property assets are natural resources, this entry is restricted to them. Social Institutions, Khals, Playgrounds can be referred as common property resources. Hats, bazars and fairs are social institution or at least the mechanism of not only trade but also social interaction.

d) Conflict of interest and law and order situation

343. Police Station have been established in every Upazila to maintain the law and order of the Upazila. The project sites are under the jurisdiction of this model Police Station (PS). An officer in charge (OC) rank of Bangladesh Police is in Charge of the PS. DC office also in aware of the project.

e) Historical, Cultural and Archaeological Sites

344. New substation sites are located in semi-urban/rural areas on land owned by government or private individuals. There are some archaeological sites such as Ghayebi Dighi Masjid, Shankarpasha Shahi Masjid, Jaintia Rajbari etc in Chattogram Division. However, during the baseline and census studies, those archaeological sites have been found to be located far away from the identified substation sites or the alignments.

4. Substation's Site-Specific Baseline (Sylhet Division)

345. When the survey was conducted, all of the sub-station's locations were not fixed that's why the survey team surveyed the project location on sample basis where most of the land are purchased. The Project consists of several components under five PBSs of four districts within Sylhet division of Bangladesh.There is no provision for Land procurement in proposed DPP. Substation's land has been purchased through willing buyer seller approaches. The remaining substation's land will be purchased through willing buyer willing seller approaches. According to the field survey and received data from PBS it is anticipated that BREB always intend to purchase land from landowner through "Willing Buyer and willing seller Approach" where two parties are benefited. Detailed information based on survey outcomes could be described in final draft report if any land will be acquired later.

V. ANALYSIS OF ALTERNATIVE

A. GENERAL

346. Analysis of alternatives means an analytical comparison of the operational effectiveness, cost, and risks of proposed materiel solutions to gaps and shortfalls in operational capability. According to the AIIB ESF-2022 It Examine, all in a comparative manner: (a) alternatives to the proposed Project that are relevant to the stage of the Project's development; and (b) their potential environmental and social risks and impacts; and document the rationale for selecting the particular alternative proposed. Depending on the type of Project, alternatives examined may include: (a) investment alternatives to address the development objective; and (b) technical alternatives, including Project location, design, technology and operation. As part of examining alternatives, consider and document the "without Project" alternative. Assess the alternatives' feasibility of mitigating environmental and social risks and impacts, capital and recurrent costs, suitability under local conditions and their institutional training and monitoring requirements. Examine Project alternatives to avoid or minimize Involuntary Resettlement and impacts on Indigenous Peoples. For existing Projects, the scope of alternatives may be limited.

B. NO PROJECT ALTERNATIVES

347. Alternative's analysis included consideration of the no project alternative. The no project alternative would have no direct negative environmental impacts since no construction works would be involved. However, it will result in further deterioration of the financial state of BREB caused by high AT&C losses from the distribution network as well as aged distribution assets and subsidized tariffs for poor and agricultural consumers. Indirectly this could increase demand for wood and other non-renewable fuels due to poor supply of electricity to meet the power demands of the population. The project will strengthen the areas of Chattogram & Sylhet rural distribution network, reduce AT&C losses, improve the power quality and reduce outages in the Chattogram & Sylhet Region of Bangladesh. Therefore, the 'with' project alternative was preferred over the no project alternative.

C. LOCATION ALTERNATIVES

348. BREB investigated alternate locations as part of its selection process for the new substations. An existing distribution service is linked to individual residential and commercial customers in a project. As a result, throughout the planning and preliminary design stages, a variety of different paths were examined in order to maximize the number of customer connections. Long distribution lines were avoided by specifying only short expansions of around 100 meters or less in order to reduce costs. A sufficient right of way and access to the facility through overhead distribution lines were preferred over lines traversing open farmland, which would have required crossing open farmland. PBS and subcontractors preferred locations with short distances to all-weather highways and easy access for PBS and subcontractor equipment. In addition, sites distant from flood plains and other environmentally sensitive areas were preferred. For the protection of public safety, public utilities such as schools, hospitals, and houses of worship were avoided wherever possible when installing distribution lines. The principle that has (and will be) adopted for the selection and design of new equipment is to comply with national requirements as well as considering international good practice per the IFC EHS Guidelines particularly with respect to avoiding the use of PCB oils in the purchase of transformers and the use of all asbestos containing materials in new construction.

D. BEST OPTION FOR THE PROJECT

349. For the existing and proposed sub-station within the geographical area of every PBS, the 33 KV source line is proposed, and it will be approved by SE&D. For selection of optimum route of distribution lines some points are taken into consideration: as well as river crossing

towers, the following points are taken into consideration: (i) The route of the proposed DL does not involve any human rehabilitation. (ii) Any monument of cultural or historical importance is not affected by the route (ii)The proposed route of DL does not affect any public utility services like playgrounds, schools, other establishments etc. (v)The line route does not pass through any sanctuaries, National Park etc. (vi) The line route does not infringe with the area of natural resources. In addition, care is also taken to avoid Ecologically Critical Areas (ECA), critical areas, forest areas, homesteads, cultural sites etc. Keeping above in mind the routes of proposed lines under the project have been so aligned that it takes care of the above factors. However, during the design phase, different route alignment will be studied for the selection or finalization of DL route. Detail impact assessment of different line routes will be assessed then.

E. DESIGN ALTERNATIVES

350. In this project there are two major components such as Construction of substation and installation of distribution Line of different voltage levels. Various options were considered for selection of substation- locations. For new substations alternatives were analyzed as part of their selection of provisional sites. Type of substations were considered Outdoor (AIS)/Indoor Substation or mixed of both. In case of Indoor Substation, it may again be of GIS or VCB breakers type. Substations site selection was analyzed for 2/3 alternatives sites based on environment and social aspects and technical requirements. Such analysis considered various site-specific parameters that include availability of infrastructure facilities such as access roads, distance from rail line, type of land (government/ private land); social impacts such as number of families getting affected. Care was also taken to avoid Ecologically Critical Areas (ECA), forest area, homesteads, cultural sites etc., for substation site selection.

351. In case of distribution line (33,11KV & 0.4/.23 KV), following options were considered:

1. Overhead bare Lines
2. Insulated Overhead Line
3. Underground Cable
4. Submarine cables or overhead river crossing towers

F. ASSOCIATED FACILITIES

352. According to the AIIB ESS1, associated facilities (Associated Facilities) are activities that are not included in the description of the project set out in the agreement governing the Project, but which, following consultation with the Client, the Bank determines are: (a) directly and materially related to the Project; (b) carried out, or planned to be carried out, contemporaneously with the Project; and (c) necessary for the Project to be viable and would not be constructed or expanded if the Project did not exist. No adverse impact on the associated facilities is noticed.

353. There are no associated facilities for the project as project will only provide modernization and capacity enhancement of existing BREB network in 19 PBSs and strengthening electricity distribution system in Chattogram - Sylhet division.

VI. EVALUATION OF ENVIRONMENTAL AND SOCIAL RISKS, IMPACTS & MITIGATION MEASURES

A. General

354. This chapter presents the potential impacts on the environment and social and recommends solutions for environmental & social mitigation to deal with unfavorable effects. The environmental & social impacts are structured into three phases as (i) detailed design and pre-construction phase; (ii) construction phase; and (iii) operational phase of the project. It is based on the assessment of the locations earmarked for the 90 new substation sites and provisional routing alignments for sample 33/11 kV distribution lines connecting the new substations with existing substations. For new distribution lines, alignments will be determined following detailed route surveys. Therefore, following the finalization of the locations of the remaining substations and distribution line route alignments, further assessment will need to be undertaken in accordance with the ESMP to confirm the impacts and risks in the ESIA report.

355. In view of the project activities' nature and footprint, the area of effect and the influence area of the project is regarded 1 km of radius around substations and 500 m of alignments along the distributive line. The distribution lines' right of way is regarded as the area of direct effect along the line. However, in terms of indirect effects on ecologically sensitive regions such as national protected areas networks, the potential impact zone is evaluated up to a radius of 5 km of substations and distribution line alignments. Based on these considerations and the available design data, the possible consequences and risks of the project were assessed. Major permanent physical impacts of the project will take place by the construction of proposed new substations and installation of 33kV and 11kV new distribution lines.

356. The following sections present the potential environmental & social impacts and mitigation measures of the project during various phases of project implementation.

B. Anticipated Potential Impacts

1. Pre-construction Stage

357. Following is a brief description of impacts envisaged during the pre-construction Phase:

a) Water Resources

358. Within the project's right-of-way, there are a few waterbodies. Construction activities may pollute the water supply, resulting in ecological imbalance.

b) Land Resources

359. New substations are situated in semi-urban and rural locations, on land held by the government or private individuals. The identified new substations are located in rural areas mostly on the open land available on the outskirts of villages; and the alignments of the 33kV and 11 kV distribution lines mostly follow the alignment of existing roads.

360. Around the identified substation sites or along the alignments of the 33kV distribution lines, there are some archaeological sites such as Ghayebi Dighi Masjid, Shankarpasha Shahi Masjid, Jaintia Rajbari, Shalban Vihara, Bariura Old Bridge and Pandit Vihara etc in Chattogram and Sylhet Division. However, during the baseline and census studies, those archaeological sites have been found to be located far away from the identified substation sites or the alignments.

361. The proposed sites for substations are vacant at present and requires development for power, water, access roads and drainage. The project site has to be raised to the level of 2 ft. (above highest flood level) as preventing flood-related damage to substations also reduces the environmental impact associated with disposing of damaged equipment and the release of hazardous substances into floodwaters. Elevating substations is part of building a more resilient electrical grid. Resilience ensures that the grid can withstand and recover from disruptions, including natural disasters, more effectively. Raising the substation above flood levels is a proactive measure to mitigate the risk associated with extreme weather events, such as hurricanes, heavy rainfall, or storm surges. It reduces the likelihood of damage and minimizes the need for emergency repairs. There will be no major impacts & risks raising the site level on the surroundings areas as the required land for substation is very small and there will be no possibilities of inundation, crop damage and access to common properties. In addition, the substation requires a very small land area, the overall change in drainage patterns might be minimal. The Chattogram & Sylhet division area are not at risk of flooding from nearby water bodies, so raising the level wouldn't significantly impact existing drainage.

362. However, it's crucial to address these aspects thoroughly during the planning phase. Designing the substation site with proper drainage features is essential to prevent flooding and erosion.

363. The identified new substations are located in rural areas mostly on the open land available on the outskirts of villages. During site visits, no threatened species were found in the project area, and community consultations revealed no evidence of the presence of any species of concern. During survey work for the distribution lines, any locally important receptors (e.g., trees and physical cultural resources) would be avoided as much as possible.

364. Under this project the total length of overhead distribution line to be constructed/ upgradation/ conversion is 12,430 km. Those lines will be installed on demand basis during the implementation phase. Since the proposed distribution lines and its route is not finalized at this stage. So, the survey work couldn’t be possible for new distribution lines. However, the consultant has assessed the generic impact of construction of DL as per BREB’s earlier experiences and according to BREB’s experience most of the DL route passes through the vacant land. Any monument of cultural or historical importance and public utilities are not affected by the route. On the otherhand Laying 234 km of 33 underground cables and 298 km of 11 KV underground cables requires sufficient space alongside the route to substations. This might be a challenge in densely populated areas.

365. The main impact of distribution lines on biodiversity is the electrocution of animals especially monkeys and birds but the cases are very rare. The typical electrocution rate for birds can be reduced by 85 percent by preventing them from perching on the pole and by establishing a barrier to prevent them from touching the live cables. It is relatively affordable to implement and requires no additional maintenance.

366. This project prioritizes minimizing its environmental impact by carefully selecting routes. Land acquisition will focus on utilizing government land, leases, or already-developed private land. Stakeholder input will be considered in managing any remaining land needs. PBS will prioritize a "willing buyer willing seller" approach for land purchases, with additional support offered to vulnerable groups. To ensure environmental safety, existing substations will undergo a Phase 1 Environmental Site Assessment.

c) Proximity of Sensitive Receptors/ Indigenous Community

367. Some of the selected substation locations are within 50 m and 100 m meters of sensitive receptors such as residential buildings, schools, and mosques may create some impact as sensitive receptors.

368. Within 100m of some of the substation locations, there are residential houses, schools and mosque. When internationally recognized design and environmental health and safety standards are applied, as they will be in this project, such close proximity to nearby residences of less than 50m is acceptable.

369. For residential areas, the maximum allowable Community Noise, World Health Organization (WHO), 1999 guidelines (1-hour LAeq) noise levels are 55dBA during the day (0700–2200hrs) and 45dBA at night (2200 - 0700hrs).IFC EHS Guidelines (2007) for noise indicated that the noise levels should not exceed these values OR result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site.

370. Since most of the equipment installed at substations is static, transformers should be placed at least 10m from the site boundary in order to reduce noise levels. Once substations are operational, transformers will also need to be well-maintained. To achieve 45-55 dBA at 1m, transformers with power levels of 2.5 MVA and 10 MVA will be required. Sound pressure levels from transformers will drop by at least 3 dBA for every doubled distance, according to IEEE Standard 1127. In other words, if the noise level of the transformer is measured at a distance of 10 m from the source, this gives attenuation in the noise level by at least 20 dBA.

371. Trans-formators will be replaced with modern, low-noise equipment at 35 of the existing 33/11 kV substations to be augmented, which will reduce noise levels. Furthermore, the substation sites to be augmented are mostly located at distances well away from residential areas and other noise-sensitive receivers such that noise impacts will be negligible.

372. In the case of the 33/11 kV feeder lines, the statutory horizontal clearance distances from buildings will be maintained. As a result of the greater vulnerability of children, new distribution lines will be routed away from schools and playgrounds during survey work.

373. After screening the proposed and existing substations locations as well as river crossing tower, it has been identified that in our project area most of the sensitive receptors are far from the project boundaries.

374. Chttaogram and Sylhet division are enriched with some indigenous community. In Chattogram division eleven indigenous communities of the Chittagong Hill Tracts (CHT) primarily reside in three districts within the division. However, in our project area there is no indigenous people in Chattogram zone as most of the indigenous people resided over hill tratct district in Chattogram division (Rangamati, Bandarban, Khagrachari). Besides in the Sylhet Division of Bangladesh is predominantly Bengali, with Bengali Muslims forming the majority and Bengali Hindus a significant minority. However, the region also boasts a rich tapestry of indigenous communities, making up roughly 1.5% of the population. These indigenous communities are distinct from the Bengali population in terms of language, culture, and traditional practices.

375. In Sylhet division, Khasia, Manipuri, Garo: These communities are primarily found in Moulvibazar district, particularly in areas like Kamalganj, Sreemongal, Kulaura, and Baralekha. Some may also be present in the bordering areas of Sunamganj district near the Indian border. Another IP community is Patro, and they are likely scattered across various districts, possibly including Sylhet district itself. Due to this project, IP communities will be more benefited as Nnew or upgraded substations could lead to improved access to electricity for nearby indigenous communities. This can improve living standards, power homes and appliances, and potentially open up new economic opportunities.

376. On the other hand, substation construction and operation can disrupt traditional cultural practices and sacred sites if not carefully planned. Land acquisition led to loss of traditional hunting grounds, agricultural land, or access to natural resources for the indigenous

communities. However, BREB and PBS have not purchased or acquired any land for the IP communities. In future BREB will always try to avoid the purchase of land inherent by IP community. An influx of workers might also lead to social friction if not properly managed.

377. To minimizing the impact BREB will prepare Indigenous People Plan (IPP) and Indigenous People Plan Framework (IPPF) that covers the various factors like project design, community engagement, and mitigation measures implemented. Some measures are as follows:

- Free, Prior, and Informed Consent (FPIC): Obtain FPIC from the affected indigenous communities before proceeding with any construction activities. This involves transparent communication, ensuring communities understand the project's potential impacts and have a say in the decision-making process.
- Provide employment opportunities for members of the indigenous communities during construction, promoting local economic development.
- Explore alternatives to minimize land acquisition from indigenous communities.
- Appoint a community liaison officer to act as a bridge between the project team and the indigenous communities, addressing concerns and ensuring effective communication.
- Respect the cultural practices and traditions of the indigenous communities and avoid activities that might disrupt them.

d) Ecosystem

378. Tree felling for site preparation of sub-station will affect timber and bio-mass production potential directly at local level. Ecological impacts can be reversed planting site specific tree species as per the directives of Social Forestry Act (2004). Any loss of trees will impact on other flora and may affect wildlife, particularly birds and mammals that rely on trees for their food source. In addition, the loss of tree may increase soil erosion from rain cut. Apart from trees and undergrowth other vegetation affected will be agricultural crops, bamboo bush and other native vegetation.

379. On a local level, tree felling has a direct impact on the production of wood and biomass. As per the directives of the Social Forestry Act, ecological impacts can be reversed by planting site specific tree species (2004). If trees are cut down, they will have an impact on other flora, as well as on wildlife. Any loss of trees will impact other flora and may affect wildlife, particularly birds and mammals that rely on trees as their food source. Besides, the loss of trees may increase soil erosion from rain cuts. Apart from trees and undergrowth other vegetation affected will be crops, bamboo bush, and other native vegetation. No major changes in the hydrological regime will occur in the proposed project area due to the absence of devastating floods, cyclones and severe storms. One of the regular programs to maintain the integrity of the distribution lines is the trimming of tall trees and vegetation along the RoW. Loss of standing crops (if any), grass and bushes of substation sites and construction camp sites.

380. In prior to construction, Biodiversity Screening Framework and detail biodiversity screening assessment should be carried out after finalization of all DL route and detail design to identify potential impacts on biodiversity early in the planning stage. The screening process helps identify the presence of protected or endangered flora and fauna. This allows for specific measures to be taken to avoid disturbing or harming these species, ensuring compliance with environmental regulations.

381. The project prioritizes minimizing tree disturbance by strategically choosing routes that avoid areas with dense vegetation. Tree cutting or trimming will only occur when absolutely necessary to ensure safety clearances. If fruit-bearing trees of economic value are impacted, compensation will be provided according to the project's Resettlement Plan. Additionally, tree cutting activities will be scheduled outside bird breeding seasons to minimize ecological

disruption. Replanting efforts will focus on native species to restore the habitat for both flora and fauna, and landowners will be adequately compensated for any necessary vegetation clearing before work begins.

382. The proposed project area is free from devastating flood/cyclone/storm surge and the project activities are to development of existing project alignment therefore, no major changes in hydrological regime will occur.

e) Changes of Local Hydrology/Drainage Pattern

383. Climate change and impermeable surfaces will be taken into consideration when developing drainage systems for new substation infrastructure. As a result, natural flow rates and routes of stormwater runoff across surrounding land will be little altered. The management of stormwater shall be in accordance with government agency regulation. Due to the project's 33/11kV feeder line components, there will be no or minimal impacts on water drainage patterns.

384. In addition, to mitigate the arisen impact BREB will keep the provision to design a drainage system for the raised substation site to manage stormwater runoff effectively and prevent ponding. Integrate this system with the existing drainage network to minimize disruption. By prioritizing responsible construction practices, effective drainage design, and environmental restoration efforts, the project can achieve its desired outcome while minimizing the risks and negative consequences on the surrounding area.

f) Construction of Access Roads

385. In terms of traffic, existing access roads to substations will be utilized to the greatest degree feasible. The majority of new substation locations are accessible from existing village roads or state highway paved highways at distances ranging from 50 to 100 meters. Some of the existing village roads are in disrepair, and unpaved access roads utilized for construction traffic and operational access will be (re) surfaced with concrete or asphalt to connect the substations to existing paved roads. BREB's regular practice is to construct substations close to adjacent road. In previous experience of BREB, there isn't needed to construct separate road for accessing into substation. However, there is a provision for access roads which will be implemented within the project budget.

386. There will be no need for new access roads for distribution lines because all lines will be linked to existing roadways within 50-100m access lengths.

g) Interference with other Utilities and Traffic

387. Before beginning construction, BREB will seek approval from agencies such as the Forest Service, the Department of Railways, the Department of Roads, the Department of Telecommunications, and, if necessary, the Department of Aviation. Because all new substations will be built on PBS-owned land, no significant interference with other utilities or traffic is expected, but necessary clearances for distribution lines will be obtained. No reserve forest land will be traversed based on current routing practices, so forest clearance may not be required. In the event the alignment of the distribution lines passes through reserve forest land, forest clearance would need to be obtained before the commencement of the work in forest areas.

388. A contractor's traffic management plan will be developed under the project EMP and approved by BREB before work begins to minimize risks from interference with existing roads at construction sites and used for haulage. Before any work begins, the contractor will prepare a traffic management plan in consultation with the appropriate local authorities for approval. Additionally, the project will obtain necessary clearances from relevant Bangladeshi government utilities potentially impacted by the construction (electricity, water,

telecommunications, etc. In addition, the TMP will cover the river traffic as six river crossing tower will be installed though there will be no impact on river traffic and navigation.

389. There's a risk of accidentally damaging existing underground utilities like water pipes or gas lines during excavation for laying the underground cabling. If underground cables are damaged, repairs can be more complex and time-consuming compared to overhead lines.

h) Hazardous Material, Waste Management & Potential Legacy Contamination

390. Liquid petroleum fuels may be used and stored for vehicles and other equipment. Besides PCB is only dangerous if leaked and Since PCBs are toxic and bio accumulative, unless transformers have been certified PCB free all workers working with existing transformers must avoid all exposure to skin and eyes and avoid any potential for accidental ingestion by wearing suitable chemical and/or oil-resistant gloves, goggles, and protective clothing during sampling processes and under normal working conditions.

391. Leakage of transformers release toxic liquid into the environment. Disposal of old transformers will be required to follow the national regulations on hazardous waste management for transport, storage, and disposal of potentially PCB oil containing transformers. BREB always abandoned PCB containing materials in their construction materials.

392. As per the compliance issues, BREB always tests the oil which is used in the transformer to check PCB containing material (Annex- 16) BREB always uses PCB, TPH and VOC free materials and equipment. Transformers are also located on concrete pad platforms with oil liners for any potential leakage.

393. There will be no procurement and use of transformer oil with PCB for this project, and all transformer oil bought will be tested for PCBs as part of BREB's internal procedure.

394. In a typical indoor substation, soak well is used to collect water which is produced for both of Wastewater and storm water. The details of sewerage and wastewater management system for indoor substations will be incorporated by the design consultant during implementation.

395. The most common type of oil which BREB used in transformers is mineral oil. Mineral oil is not hazardous. This oil boasts high dielectric strength, which means it effectively resists electrical current flow, preventing unwanted shorts and breakdowns within the transformer. Due to its widespread use, there's a wealth of knowledge and established practices for maintaining transformers filled with mineral oil. Technicians are familiar with its properties and can effectively monitor its condition to ensure continued safe operation. BREB does not store any transformer oil for maintenance purposes. BREB operates regularly scheduled maintenance activities for substations. When transformer oil is needed to be refilled then the BREB collect new oil from the supplier and dispatch the old transformer oil to the centrifuging agency.

396. Generally, transformer oil does not spill from the power transformer. In atypical case, if their linkages are found in transformer and oil spills from the leakages, they stored in the concrete basement titled as "Transformer Pad", which prevents the oil to contaminate the soil.

397. However, a proper stormwater management plan is essential, which need to prepare by the contractor. This could involve installing drainage channels, detention ponds, or using permeable materials to allow water infiltration. If the substation generates any domestic wastewater (e.g., from toilets or sinks), a septic system or connection to a municipal sewer system might be needed, depending on local regulations. A plan for handling any potential

leaks of transformer oil or other contaminants should be in place. This might involve spill containment measures and proper disposal procedures.

Table VI-1: Signboard on PCB free transformers of exiting substations

i) Disaster Risk

398. The Chattogram and Sylhet regions of Bangladesh face several natural disasters due to their geographical location and topography. Both regions are part of the vast Ganges-Brahmaputra-Meghna delta, making them highly susceptible to flooding, especially during the monsoon season (June-September). In 2022, Sylhet and Sunamganj districts experienced devastating flash floods due to heavy monsoon rains and upstream overflows. Chattogram, being a major port city on the Bay of Bengal, faces a significant risk from cyclones and storm surges. As well as the Sylhet region lies close to the Dauki Fault, making it prone to earthquakes. Rising sea levels and changing weather patterns could exacerbate existing disaster risks in the region. Considering the flood affected area there is a provision in this project is to reconstruct of line in 3678 km flood affected area.

399. Due to some substations and distribution lines being located in floodplain areas, the detailed design will include measures to reduce disaster risk. Details of climate change adaptation measures will be considered in the detailed design. These include raising the transformer platforms in substations up to 2 ft above the highest flood level, among other things. This project component activity will involve replacing existing poles with higher ones and, if necessary, rerouting the lines to avoid flood zones. The raised site can disrupt natural drainage patterns, leading to waterlogging in nearby fields. Raised sites may encroach on common grazing land for livestock, impacting the livelihoods of farmers who depend on it. Raising the site level could damage or disrupt existing underground utilities like cables or pipelines. These impacts are not significant as BREB's early experience.

400. The proposed project area in Chattogram division is prone to cyclone and flood impacts as well as landslide, but the proposed substations site will be free from these types of risk. Sylhet is also prone to flood and flash flood.

j) Community Health & Safety

401. The substation itself carry risks as it controls power. There is always a risk of accident and shock. Although people do not know about risks in new substation locations, they imagine that power can cause accidents if there is no proper management. Furthermore, according to them, the substation may bring risks of explosion if they are not managed during the

environmental disasters. In old substations, most of the people reported no accident or harm driven by the substations. In only one old substation, an accidental case was identified, where people constructed their house close to the overhead cable. In principle, this cable is not covered. A member of that household came to the contact of the cable while walking and talking over phone on the rooftop. This was not fatal rather just experienced sudden shock. According to the household members, they perceived accidental risk from uncovered cable and insulator burst.

402. To mitigate potential impacts to the health and safety of villagers, the contractor will be required to develop a community health and safety risk assessment and plan (specific attention will be given to Covid-19 and other infectious diseases risks and mitigations) for approval before construction works that incorporate good international practices and recognized standards such as emergency response and preparedness procedures, communication systems and protocols to report any emergency, including interaction with the commune and provincial emergency and health authorities. IFC EHS General Guidelines, Section 3 on Community Health and Safety, and those on Electric Power Transmission and Distribution will be followed in developing the community health and safety plan by the contractor. The risk assessment should be undertaken through a facilitated risk assessment workshop involving the contractors, BREB, and PIU. Community health and safety measures e.g., fencing and signage will be incorporated into detailed design. Construction sites typically lack proper fencing and security, allowing unauthorized access. Children, curious individuals, or those under the influence might enter the site, risking electrical shock, falls, or injuries from equipment though during construction stage, every PBS will ensure the security of community.

k) Occupational Health & Safety

403. The construction of substations and 33 and 11 kV distribution lines pose some risk to the health and safety of workers. There will be workers' campsites at the new and existing substations and therefore the detailed design must ensure adequate sanitation and welfare facilities are incorporated into the labour camps. According to the guidance notes by IFC and the EBRD (2009), the following standards need to take attention for housing of workers:

- Minimum space allocated per person or per family (floor area; cubic volume; or size and number of rooms)
- Supply of safe water in the workers' dwelling in such quantities as to provide for all personal and household uses
- Adequate sewage and garbage disposal systems
- Appropriate protection against heat, cold, damp, noise, fire, and disease-carrying animals, and, in particular, insects
- Adequate sanitary and washing facilities, ventilation, cooking and storage facilities and natural and artificial lighting
- A minimum degree of privacy both between individual persons within the household and for the members of the household against undue disturbance by external factors
- Suitable separation of rooms devoted to living purposes from quarters for animals.

404. There are some additional requirements and standards which need to take consider for workers which are given below:

- Garbage containers will be provided for the disposal of garbage created by workers, as rubbish burning will be forbidden.
- Indoor food preparation and a clean eating space, a sufficient supply of non-wood fuel for cooking.
- For any BREB stationed at the substation (typically little more than 2 or 3 people), a drinking water supply that satisfies drinking water requirements must be supplied.

- Toilets with hand washing facilities and a private bathing area linked to a sewage system or septic tank.

405. To mitigate this risk, the installation contractor will be required to prepare and implement an occupational health and safety risk assessment and plan for approval before construction works. The risk assessment should be undertaken through a facilitated risk assessment workshop involving the contractor, BREB, and project implementation agency. The occupational health and safety plan should follow the health and safety hierarchy including measures set out in the IFC EHS General Guidelines, Section 2 on Occupational Health and Safety, and those on Electric Power Transmission and Distribution.

2. Construction Stage

406. Following is a brief description of impacts envisaged during the construction Phase:

a) Water Resources

407. During construction, greywater generates from the base camp location and may contaminate local water body and soil if mixed into irrigation canal and local waterbodies. Spillage of any kind of oil or lubricant during construction activity may hamper soil and ground water quality.

408. In the case of construction of ground water abstraction units (tube wells) at Project site, then licenses will need to be obtained prior to installation of any tubewell.

409. For the river crossing tower as the tower is far from the riverbank and not within the navigation channel, there should be no impact on river traffic. As well as there will be no pile driving activities occurring in the river. Each RCT consists of two anchor towers and two suspension towers. The construction of these towers will avoid the water channel. So, there will be no impact to the aquatic resources and to avoid any impacts on river-based activities such as navigation activities like passenger and cargo transport, boats, ferries, fishing etc. the clearance for the tower line will be fixed upon considering navigation clearance. The clearance will be given by BIWTA (Bangladesh Inland Water Transport Authority). The BIWTA has the classification, and the 4 rivers are classified as Class 3 where vertical clearance is 12.19 meters and horizontal clearance is 30.48 meters. So, there will be no impact on navigation due to the stringing activities. It has been mentioned in the report for reference as well as a sample navigation clearance certificate obtained by BREB which has been given in the Annex. A minor impact will occur during stringing operation of power line. These may disturb birds and other wildlife, particularly during breeding seasons. So, to mitigate the adverse impact avoiding construction during breeding seasons or establishing buffer zones around critical habitat areas.

410. The project prioritizes responsible waste management and pollution control. Adequate sanitation facilities, like septic tanks or portable toilets, will prevent untreated sewage from contaminating nearby water sources. A designated construction waste collection and disposal system will ensure proper handling of waste materials. To minimize the risk of water pollution, equipment servicing, refueling, and washing will occur at least 50 meters from water sources, with oil and grease traps filtering runoff before discharge into a settling pond for final treatment. Regular maintenance of construction equipment will further reduce the risk of leaks or spills. These measures combined demonstrate the project's commitment to minimizing its environmental footprint.

411. A waste management plan has been developed to guide contractors regarding the management of solid and hazardous waste & the final versions of all plans to be prepared by contractor and will check by PBS and BREB as requirement prior to mobilization on the site.

b) Biodiversity

412. The main impact of distribution lines on biodiversity is the electrocution of animals, especially monkeys and birds but the cases are very rare. Birds have special ability which prevent them from getting electric shock, however during rainy period by touching positive and negative wire together they may get shocked and be killed. The typical electrocution rate for birds can be reduced by 85 percent by preventing them from perching on the pole and by establishing a barrier to prevent them from touching the live cables. It is relatively affordable to implement and requires no additional maintenance.

413. To safeguard wildlife during construction, this project will clearly mark work areas and establish buffer zones around sensitive habitats to minimize vegetation clearing. Additionally, security measures like fencing, patrols, and controlled access will deter unauthorized entry and poaching activities. The project will also engage local communities to raise awareness about biodiversity conservation and encourage their involvement in protecting wildlife.

414. In additions some additional mitigative measures like avoiding mass clearing, avoiding clearing along creeks and drainage lines, retaining vegetation along gullies and steep slopes, implementing pest management plans, implementing a vegetation program, tagging hollow-bearing trees, deploying personnel during construction, and maintaining microhabitats to minimize impacts on species and habitats. If workers encounter wildlife, especially protected species, stop work immediately. Depending on the species and situation, contact the relevant wildlife agency (e.g., forestry department) for guidance or assistance. Do not allow workers to handle wildlife themselves and finally for some species, relocation by trained personnel might be necessary.

c) Land Resources

415. The topography of the project area may slightly be changed as a result of project activity. For substation building, a few pond/ditch excavations for filling materials may have an impact on surrounding agricultural land though most of the purchased lands are located at vacant land. Trimming plants from the RoW will alter the landscape's look temporarily. However, these effects are only brief and have a small negative influence.

416. New lines will be constructed for the newly constructed Sub-station’s 33kv source and supply side 11kv backbone which is a very small amount in comparison to the total line to be constructed. It should be mentioned that in selecting the line route for 33kv & 11kv lines considering the operation and maintenance ease we prefer distribution line along the roadside which is generally public property. For 33kv & 11kv lines very few cases or a very small portion of total line may go through the private agricultural land. Based online type generally 25 to 32 numbers of pole required in per km distribution line construction work, each pole costed on average 2’-2’ area of land and the land area affected by RoW is 10’ from the center of the line either side (both for 33kv & 11kv line). For the exixting line upgradation, the height of the pole and line will never change. Since most of the lines will go through public land there will not be any mentionable permanent and temporary economical/ physical displacements.

417. Land-use changes along the newly constructed and augmented sub-stations area are anticipated. These shall bring about little change in the characteristic of new land. Temporary and negative in nature, this impact is minor.

- As a result of construction, topography of the project area will be changed. Cutting and dismantling of existing infrastructure will be one of the most important activities during construction and will have an impact on the topography of Project Area.
- Further, excavation of ponds/ditches for filling materials may affect nearby agricultural land, which is prone to flooding.

- Trimming vegetation from the right-of-way (RoW) will change the landscape's appearance.

418. The construction and maintenance of distribution line rights-of way, especially those aligned through forested areas, may result in alteration and disruption to terrestrial habitat, including impacts to avian species and an increased risk of forest fires.
419. According to the site visit at the proposed river crossing tower's location it has been anticipated that the riverbank is far away from the proposed project. Construction activities could cause minimal vegetation removal or disruption of wildlife movement patterns. Given the distance from the river, this impact is likely very small.

420. While converting LT lines to HT lines offers economic and technical advantages, the environmental and social benefits are less direct. In some cases, converting existing LT lines to HT lines might require less additional right-of-way compared to building entirely new power lines. This could minimize the need for land acquisition and potential habitat disruption.

421. To minimize the impact on land resources, follow design drawings and implement careful construction practices to avoid damage to existing structures (e.g., buildings) and roads, crops, bunds, canals and drains and defining the work zone and preventing incursions outside the agreed-upon impact corridor.

d) Loss of topsoil

422. The impact will however be minimal as the area to be disturbed is small.

- For the erecting of poles of the distribution lines, significant areas of land will be used. Construction of the lines might open up areas that could be exposed to soil erosion.

- The variability in soil texture in the study area entails those certain sections of the route could be exposed without any serious threat to water induced erosion. For instance, clayey topsoils are highly prone to water induced erosion once exposed.

e) Agricultural Resources

423. Construction activity may have an impact on agricultural land and crop production, though most of it will be for temporary periods only. In case of road unavailability in the proposed substation, some agricultural land may be affected for a limited time period. Project vehicle movements in dusty areas may infect tree leaves by depositing dust and smoke and affect the photosynthesis rate until sprayed with water properly.

424. Reducing the project's impact on agriculture is its top priority. Construction will prioritize non-agricultural areas over rich farmland whenever feasible. In order to maintain its potential for agriculture, topsoil will be piled up. In order to manage water resources and guarantee agricultural viability, appropriate drainage systems will be implemented both during construction and in the long run. To increase crop productivity all year round, irrigation can be accomplished with both deep and shallow tube wells. In order to secure the continuous flow of animals and agricultural equipment, the project will investigate including cow passages and endeavor to uphold clean construction methods.

f) Fisheries

425. There are some impacts on fisheries. These are given below:

- Loss of floodplain areas and burrow pits/ponds with consequent loss of aquatic fauna and flora

- Earth/sand filling activities may produce fine dust particles which affect the physiological functioning of plants and animals, in addition to respiratory disturbances to humans.

426. This project emphasizes protecting water quality and aquatic life. Construction crews are strictly prohibited from discarding any garbage, toxic or otherwise, into nearby water bodies. If a section of a river or stream containing fish is temporarily blocked for construction, a thorough inspection will be conducted to ensure all fish are safely relocated to nearby healthy habitats. These measures demonstrate the project's commitment to minimizing its impact on aquatic ecosystems.

g) Burrow Pit

427. Earth and gravel are fundamental materials in construction for several reasons and BREB mainly sourced this earth, gravel etc from locally. Burrow pit is essentially a hole or excavation dug to remove specific materials like gravel, sand, or soil. These materials are then used as fill at another construction location. Since the borrow pit locations are not finalized, it's crucial to consider the potential risks and impacts before selecting sites.

- Borrow pits can disrupt natural habitats and displace wildlife, especially if located in ecologically sensitive areas.
- Improper excavation and management of borrow pits can lead to soil erosion, sedimentation of waterways, and loss of fertile topsoil.
- Borrow pit activities can pollute nearby water sources through dust, runoff containing pollutants, or accidental spills.

428. The material removed from the borrow pit is often used to create embankments, build roads, or fill in other areas where additional material is needed. As this project scope is limited to construction new indoor substations where substation building areas will not be large in infrastructure. So, a significant level of borrow pit will not be required for this project. If any borrow pit will require than PBSs will find suitable locations avoiding any disruption.

h) Ecosystem

429. At various locations, project implementation activities will invariably require the removal of trees and vegetation in order to upgrade, widen, and improve the geometry of the project corridor.

430. The project implementation activities, at different locations, will invariably involve trees and vegetation to be removed for the upgrade, widening, and geometric improvement of the project corridor.

431. All of the trees on both sides of the proposed project alignment that are affected by the proposed project's alignment are of equal economic, ecological and aesthetic importance. In addition, the removal of any trees will have a negative impact on the surrounding environment as well as birds, animals and other fauna. Particularly, the wildlife that lives near the damaged trees will lose the ecological benefits provided by those trees for the rest of its existence. Destruction of mature trees will cause ecological loss to the environment.

432. The project alignment of the 33/11 kV distribution lines may go over some trees and vegetation which may also be affected and would need to be cut or trimmed in order to achieve the standard safety clearances for distribution power lines. As part of the comprehensive route alignment surveys, the number of trees to be chopped or trimmed will be determined. The

position of the concrete poles within the road reserve can be easily modified during the finalization of the line route's position to minimize tree damages.

433. The combination of the height of river crossing towers and distribution poles and the electricity carried by distribution lines can pose potentially fatal risk to birds and bats through collisions and electrocutions. Avian collisions with power lines can occur in large numbers if located within daily flyways or migration corridors, or if groups are traveling at night or during low light conditions (e. G. Dense fog). In addition, bird and bat collisions with power lines may result in power outages and fires.

434. This project prioritizes protecting ecologically sensitive areas and minimizing tree loss. Construction will avoid protected areas, reserved forests, and sacred groves. Mature trees will be identified and spared whenever possible. Work zones will be clearly demarcated to prevent encroachment. Tree cutting or trimming will only occur when absolutely necessary to meet safety clearances, as outlined in design plans. Unavoidable loss of fruit trees with economic value will be compensated according to the project's Resettlement Plan. Public trees (being removed due to the construction activity) will be replaced with native species chosen in consultation with the forest department. To protect wildlife, tree cutting will be scheduled outside bird nesting and breeding seasons, and ecological surveys will be conducted for critically endangered species before construction begins in their habitat. Finally, all tree removal, including public trees, will require prior approval from the forest department, and compensatory afforestation will be implemented to offset any losses. These measures demonstrate the project's commitment to minimizing its environmental impact.

i) Nuisance to Nearby Properties

435. During construction, the following items may cause annoyance to nearby properties:

- Noise and vibration from construction equipment and heavy vehicles transporting materials to the sites.
- As a result of the excavation and transportation of materials, dust is created.
- Exhaust gases are responsible for air pollution.
- Welding creates gaseous emissions.

436. Over a short period of time, mechanical equipment will be used for temporary and intermittent purposes. The majority of the work will be done by hand. The main noise and dust-generating activities will be associated with excavation for construction platform preparation of substations and periodic transportation of materials and equipment to the sites. All of these activities will have only a minor and intermittent impact on nearby communities in terms of noise, dust nuisance and air pollution. Nevertheless, the contract documents shall specify good construction practices to minimize these temporary construction impacts.

437. As per Community Noise, World Health Organization (WHO) guideline, 1999 in residential areas, the maximum allowable noise levels are 55 dB (A) during daytime hours (0700-2200hrs) and 45 dB (A) during nighttime hours (2200-0700hrs), which are equivalent to the WHO noise guidelines of 1-hour LAeq. Because the project will only be completed during the day, the contractor will be required to adhere to a 55 dBA noise limit. Noise impacts should not exceed the levels stated or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site. In general, the noise level limit is represented by the background or ambient noise levels that would be present in the absence of the facility or noise source(s) under investigation (IFC EHS Guidelines 2007.

438. During the construction of the project, periodic noise monitoring (at least twice during the construction period) will be carried out during noisy construction activities at substations such as excavation for platform preparation and delivery of equipment to sites. When the nearest residence is less than 100 meters from the construction site or access road, monitoring points will be placed on the facade of that residence. If noise levels exceed the allowable standard during noise monitoring, the contractor will be required to take additional noise mitigation measures, such as changing his working methods or erecting temporary noise barriers/fences, to ensure that noise levels do not exceed the allowable standard.

439. Mitigation measures for noise at substations and on distribution lines will be in accordance with national regulations and the IFC EHS General Guidelines and will include:

- All activities will be scheduled only during normal working hours (8 a.m. to 6 p.m.); any work outside of these hours will only be done with the consent of the local community and residents within 100 meters.
- Avoiding noisy works on the weekends, public holidays, religious festivals, and for work in proximity to schools, during exam periods ─ any noisy works within these periods to only be undertaken with the agreement of local community and residents within 100m.
- Use of low noise generating equipment, such as sound pressure levels of less than 55dBA at 1m.
- Construction machinery and vehicles should be maintained to keep noise to a minimum and in accordance with any national noise standards.
- Where sensitive receptors are within 50m of construction works temporary acoustic noise fence to be used.

440. Mitigation measures for dust/air pollution at substations and on distribution lines will be in accordance with national regulations and the IFC EHS General Guidelines and will include:

- Access roads to substations that are in poor condition or are unpaved must be resurfaced before any excavation or other earthworks at the substation can begin.
- Remove existing vegetation and topsoil as little as possible and as soon as possible.
- Any areas where excavation and other earthworks are performed should be replanted with native species or resurfaced.
- Water to be sprayed to suppress dust during works are in the vicinity of communities; water should be sprayed at least twice a day at substations and on unpaved access roads to distribution lines but more often if needed during excavations, earthworks, and windy conditions that enable dust to be easily mobilized.
- Vehicles delivering construction materials shall be covered.
- Vehicles and construction equipment should be regularly serviced and well maintained.
- Vehicles and construction equipment shall comply with statutory emission standards.
- Tarpaulin will be used to cover stockpiles of soil and other dust-producing materials.
- Providing workers with dust masks to be worn when dust-generating activities take place.
- Construction-related waste will not be allowed to be burned openly.

j) Interference with blockage of access ways

441. Most new substation locations are accessible from existing village roads or state highway paved roads at distances ranging from 50 to 100 meters. In the case of poor conditions and unpaved access roads used for construction traffic and operational access, the roads will be surfaced with concrete or asphalt to connect the substations with existing paved

roads. Construction traffic to and from the sites will be small and intermittent, however big trucks will be necessary for plant and equipment transfer.

442. To safeguard the traveling public and its workers, the contractors will display warning signs and control traffic flows. They will also ensure drivers respect road regulations and travel at a reasonable pace considering the nature of local roads and the number of vehicles involved, among other things. Two weeks before the commencement of the substation access road and distribution line construction, road safety and warning signs must be erected at 500m, 100m, and immediately in advance to alert the public to turn vehicles and the temporary restriction of one lane during pole installation operations.

443. It may be necessary to temporarily interrupt traffic along existing roads in order for electric poles to be delivered to the site from outside. Electric poles and other supplies will be transported via village roads, which are quite narrow. This might create temporary blockage and inconvenience to local residents. Roads with a single or two lanes will be crossed by some portions of the 33 kV wires. Vehicles, such as motorbikes, automobiles, and vans, travel the roadways in residential neighborhoods, posing a particular problem. As the area has limited space for the temporary storage of the concrete poles and materials, the contractor may park trucks carrying these materials on streets. In such a case, there is potential to cause traffic congestion and hazards to commuters using the said road and flagmen should be utilized to warn road users of the situation. All traffic management will need to be done in consultation with the affected communities to ensure they are well aware of likely disruption. In case there is a need for temporary storage, locations to be agreed and any impacts on private land and assets to be compensated in line with the resettlement plan.

444. Scaffolds will be installed to safeguard people, vehicles (and the conductor itself) from potential harm or damage during conductor stringing if road or river traffic is at danger. Public and private facilities will need to be accessible during the construction phase.

445. To minimize adverse impacts of the project on traffic, the contractor will be required to properly plan and execute a traffic management plan in accordance with national regulations and the IFC General EHS Guidelines that is supported by good site supervision.

k) Occupational Health and Safety

446. According to the guidance notes by IFC and the EBRD (2009), the construction of workers' accommodation and its potential impact on communities should be managed in the same way as for construction of the project itself. Impacts need to be identified and may include health and safety, disturbance issues arising from construction, including traffic (dust, noise and vibration), and involuntary resettlement issues (including physical and economical displacement) when the erecting of workers' accommodation entails land acquisition.

447. Ensuring good standards in living facilities is important in order to avoid safety hazards and to protect workers from diseases and/or illness resulting from humidity, bad/stagnant water (or lack of water), cold, spread of fungus, proliferation of insects or rodents, as well as maintaining a good level of morale. The location of the facilities is important to prevent exposure to wind, fire, flood and other natural hazards. It is also important that workers' accommodation is unaffected by the environmental or operational impacts of the worksite (for example noise, emissions or dust) but is sufficiently close that workers do not have to spend undue amounts of time travelling from their accommodation to the worksite. Living facilities should be built using adequate materials and should always be kept in good repair, clean and free from rubbish and other refuse.

448. Requirements on health and safety are often an important part of building standards and might include provisions on occupation density, minimal air volumes, ventilation, the quality of the flooring (slip-resistant) or security against intrusion.

449. Moderate danger is created to worker's health and safety during the construction of substations and distribution lines of 33 and 11 kV. A health and safety strategy (including Covid-19 hazards) will be developed and implemented by the installation contractor in order to minimize this risk. In situations where dangers cannot be avoided, personal protection equipment (PPE) such as hard helmets and safety gloves/boots should be provided as a last option. While working at heights personal safety measures such as harnesses, tool bags, ropes, etc. will need to be provided. All workers will receive health and safety induction and those working with live electricity and at heights will attend specialist health and safety training to do so following medical check. Untrained workers will not be permitted to work with live electricity or at height. Live lines will be deactivated and properly grounded before work is performed on, or near, to the lines and this will be checked and certified in writing by the contractor's EHS Officer in advance.

450. To accommodate the number of employees on-site, all construction sites must have access to restrooms and handwashing facilities, a hygienic eating space, and covered rest areas. If canned water is not given by an approved provider, the source must be routinely tested to assure it fulfills the drinking water requirements of the state. Existing BREB facilities can be used or, if they are not available, temporary facilities must be provided. Although a construction camp may be necessary, it should be adequately equipped with toilets and handwashing facilities as well as a food preparation area and clean eating area. If the contractor is unable to provide adequate accommodation, existing accommodation facilities should be used as much as possible.

451. When there is an emergency, health facilities may not be able to handle extra patients from the construction crew. First-aid supplies will be provided to employees throughout construction and an ambulance will be ready in case of more serious injuries.

452. The COVID-19 pandemic and other infectious illnesses must be considered while performing H&S risk assessment and planning. A surge in COVID-19 infections will require adequate sanitation and welfare facilities including hand washing and personal protective equipment to be provided both on-site and at the accommodation, as well as consideration for the community's ability to comply with protective measures like regular handwashing. Given the transitory nature of work, particular consideration must be made to workforce accommodation in order to prevent the transmission of any virus among workers and between workers and communities. Given the specialized nature of reacting to COVID-19, public health officials/experts should be contacted during the risk assessment and management planning process.

453. Construction workers' exposure to noise should not exceed the levels set out in the General EHS Guidelines on Occupational Health and Safety otherwise hearing protection is to be provided.

l) Community Health & Safety

454. The development of the project may have negative impacts on community health and safety, such as the falling of concrete poles, construction traffic and accidents, and emergency spills of liquid chemicals, as well as the transmission of COVID-19 illnesses. It will be advisable to avoid standing water owing to the risk of vector-borne illness. To reduce these possible consequences on the health and safety of villagers, the contractor will be expected to implement the approved community health and safety plan (including COVID-19 measures), respond swiftly to any grievances, and raise community knowledge of any risks involved. It is the contractor's responsibility to inform impacted communities in advance of any emergency or accident relating to the project, and to involve them in their mock exercises, if suitable, due to the proximity of the project to any of these communities. The contractor's staff will also be

given awareness rising in infectious diseases including COVID-19 and code of conduct at work.

455. Expanding electricity access to rural areas may involve overhead lines traversing farms, villages, and community spaces, increasing the risk of accidental contact. Existing infrastructure might be outdated or damaged, posing potential electrocution hazards if not properly maintained and upgraded. Electrocution can cause severe injuries with lasting consequences, including burns, organ damage, and neurological impairments. Accidental contact with energized lines due to damaged infrastructure, improper access, or lack of awareness can lead to electrocution, impacting individuals and families. BREB is always cautios about thsese potential community health & safety issues so during upgradation works or construction activities exiting electricity will be shut down prior notice.

456. Installation of 4990 km Insulated Conductor is part of the electrification modernization project. Bare conductors are risky for the community. Collisions with overhead power lines are a major threat to birds, particularly large raptors. The insulated conductor design might mitigate this risk compared to bare conductors, but some bird collisions might still occur.

457. Insulated conductors require less maintenance than bare conductors, as they are less susceptible to environmental factors like weather and pollution. Compared to bare conductors requiring a wider safety buffer zone, insulated conductors might allow for a slightly narrower right-of-way. So, the community will not possess with any risks for installation of insulated conductors.

458. During transportation of construction materials, some impact may arise for the community as these materials are carried through different types of small and large vehicles. Large trucks on narrow roads can cause congestion and safety hazards. Heavy vehicles can damage rural roads not designed for such loads. Transportation activities can create dust and noise pollution. For BREB's project in Bangladesh mostly seen that all the subprojects' activities are not started simultaneously, and the woks activities are in different contract packages and different components, so many vehicles are not required. PBS will coordinate deliveries to minimize traffic disruptions, like avoiding peak hours. In addition, PBSs choose the routes that avoid densely populated areas or using existing transportation corridors can lessen impact.

459. Rural communities may be vulnerable to the disruptions and impacts of construction due to limited resources and infrastructure. Construction activities around healthcare facilities can disrupt access to essential services for vulnerable individuals. Every PBS will do the construction activities with proper consultation with healthcare personnel and try to avoid any disruption around healthcare facilities during construction.

460. Unfortunately, gender-based violence and harassment (GBVH) are prevalent concerns in many infrastructure and construction projects, including those undertaken by the Bangladesh Rural Electrification Board (BREB). While bringing electricity access to rural communities offers significant benefits, it can also create situations where women and girls are vulnerable to GBVH. Women and girls may be subjected to verbal harassment, intimidation, and threats of violence. Women may be denied access to jobs, land, or other resources in exchange for sexual favors. Women may be excluded from decision-making processes or denied access to project benefits. Women may not feel safe reporting incidents of GBVH due to fear of retaliation or lack of trust in reporting mechanisms.

461. During construction, benefits to local people can be maximized if the contractor recruit's construction workers locally. However, precedence must be given to ensuring that all workers are appropriately skilled given the hazardous nature of distribution work and so local workers will be limited to few unskilled positions. Wherever possible, the contractor should not

discriminate and should proactively encourage the employment of suitably skilled women on the project.

m) Socio-economic Impact

462. As previously mentioned, most of the substation is located in barren land so conduction activity will have a less impact on the socio-economic environment. However, in the case of nearest residential area the normal lifestyle will be altered for a limited time period. Due to the loss of agricultural land and the rehabilitation of the households, income loss on a smaller scale will happen. Unplanned occupation of roadside land for habitation and commercial purposes could alter the land use of the project area beyond the project-acquired area.

463. During construction activities, local unemployed people will get employment and increase income. The immediate benefits to the poorest residents in the project impact areas include employment in construction activities, and increased income from the petty business during construction. It is also expected that during the construction phase several other employment opportunities with the contractor's office would be available for local people.

464. The SCADA-ADMS installation system in 15 substations of Chattogram, Comilla & Habiganj PBSs will not hamper any household or any structure. As this is an automated system, only some cable works and tower installation inside the substation area will be conducted. So, there is no possibility of having socioeconomic loss.

n) Impact on Indigenous Community

465. During the construction phase of a substation can bring a mix of positive and negative impacts for nearby indigenous communities specially in Sylhet PBS-2 areas residing within a 1km radius. Here's a breakdown of some key areas to consider:

466. Land acquisition for construction could lead to the loss of traditional hunting grounds, agricultural land, or access to natural resources that the communities depend on for subsistence and income.

467. Construction activities can disrupt daily life with noise, dust, and increased traffic congestion. This can affect sleep patterns, social gatherings, and traditional activities.

468. Construction activities and presence of outsiders might disrupt traditional cultural practices and ceremonies, potentially impacting sacred sites or areas of cultural significance. by fostering open communication, implementing proper mitigation measures, and creating opportunities for the indigenous communities to benefit from the project, the construction phase can be managed in a way that minimizes negative impacts and promotes a more sustainable and equitable development process. The following mitigation measures should be considered for IP communities during the construction phase:

- Provide capacity-building programs for the indigenous communities to help them participate effectively in project decision-making and benefit from potential opportunities.
- Conduct a cultural heritage assessment to identify and protect any sacred sites or areas of cultural significance that might be affected by the project.
- Implement long-term monitoring program as identified in the IPP to assess the social impacts of the project on the indigenous communities.
- Careful project siting that minimizes land acquisition from indigenous communities and respects cultural sensitivities can significantly reduce negative impacts.

- Open communication, obtaining Free, Prior, and Informed Consent (FPIC), and involving the communities in decision-making can help mitigate disruption and build trust.
- Implementing measures like dust control, noise reduction, and scheduling construction activities outside peak hours can minimize disturbance to the communities.

469. Unfortunately, gender-based violence and harassment (GBVH) are prevalent concerns in many infrastructure and construction projects, including those undertaken by the Bangladesh Rural Electrification Board (BREB). While bringing electricity access to rural communities offers significant benefits, it can also create situations where women and girls are vulnerable to GBVH. Women and girls may be subjected to verbal harassment, intimidation, and threats of violence. Women may be denied access to jobs, land, or other resources in exchange for sexual favors. Women may be excluded from decision-making processes or denied access to project benefits. Women may not feel safe reporting incidents of GBVH due to fear of retaliation or lack of trust in reporting mechanisms.

During construction, benefits to local people can be maximized if the contractor recruit's construction workers locally. However, precedence must be given to ensuring that all workers are appropriately skilled given the hazardous nature of distribution work and so local workers will be limited to a few unskilled positions. Wherever possible, the contractor should not discriminate and should proactively encourage the employment of suitably skilled women on the project.

o) Hazardous Material, Waste Management & Potential Legacy Contamination

470. It is possible to use and store liquid petroleum fuels for vehicles and other equipment. The IFC General EHS Guidelines (2007) will be followed for the prevention and control of hazards associated with spill prevention, emergency response, clean-up, and contaminated soil remediation. Specifically, IFC EHS Guidelines for Electricity Transmission and Distribution (2007) will be followed for hazardous material and waste management.

471. In accordance with national regulations and the IFC EHS Guidelines for Electricity Transmission and Distribution (2007), the management of waste will be carried out. Per good practice, prior to final disposal, retired transformers and equipment should be stored on a concrete pad with curbs sufficient to contain the liquid contents of these containers should they be spilled or leaked. The storage area should also have a roof to prevent precipitation from collecting in the storage area. Disposal should involve facilities capable of safely transporting and disposing of hazardous waste. After reaching the BREB stores, scrap metal and equipment can be recycled. Existing transformers are stored on open ground. Old conductors will be stored in regional stores and sold to third-party vendors for further recycling, according to BREB policies. On-site storage of solid and hazardous waste generated during construction will be limited. A licensed waste management operator will recycle or dispose of it in a specially designed and licensed waste management facility, as directed by the contractor. The contractor will keep records of materials used, generated waste, and third-party waste transfers.

472. As a result of the lack of test data, the contractor must assume that all transformers at existing substations or those that will be disturbed by the distribution work contain some hazardous substances. Unified Nations Environment Protection Agency (UNEP) Guidelines for the identification of PCBs and materials containing PCBs, and a health and safety risk assessment and plan to refer to UNEP (2002) PCB transformers and capacitors: From management to reclassification, are the only ways to determine this. If PCB comes into contact with the skin, immediately rinse the affected area with large amounts of running water. Since the practice of using PCB in transformers are already avoided in BREB.

473. If asbestos is discovered at any of the existing facilities and is in danger of being disturbed by construction work, exposing workers to asbestos dust, it must be removed safely and treated as hazardous waste. Details Asbestos-Containing Material Management Plan (ACMMP) are given in Appendix 11.
In BREB service, there is no provision for recycle of wooden pole according to PBS instruction 300-52[4] as well as Treated wood products shall never be burned according to PBS instruction 100-5. BREB will use chromated copper arsenate (CCA) for preservation of wood, but the quantity is less. Instead of this, BREB will use these wooden poles for different purposes as treated wood. For reuse there is some guideline for reused of wooden poles such as

- Large size wooden poles can be separated from waste parts to make small size poles, logs, and transformer re-winding.
- Before disposal/demolition, the good part of the spoiled and unusable wooden poles can be used as fencing/boundary in different areas of the PBS.
- As well as a letter has been issued from BREB to all PBSs on proper handling, storage and uses of poles which have been given in the Annex.

474. BREB has its own instruction manual (PBS INSTRUCTION: 100-29 & 100-30) for Substation/ Distribution network Operation, Inspection and Maintenance. In additions BREB always follows a training manual/guideline of safety working procedure for distribution network operation. As well as in every tender document BREB is strictly prohibited PCB, SF6 and other hazardous materials.

p) Chance Find Procedures PCRs

475. A chance find procedure is a Project-specific procedure which will be followed if previously unknown cultural resources are encountered during Project activities. Such procedure generally includes a requirement to notify relevant authorities of found objects or sites by cultural resources experts; to close off the area of finds or sites to avoid further disturbance; to assess found objects or sites by cultural resources experts; to identify and implement actions consistent with the requirements of ESS 1 and national law; and to train Project workers on chance find procedures.

476. According to a survey within the project area no sensitive receptor or archeological site have been identified. If any person discovers a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction phase. The distribution line also does not cross through any reserve forest or sanctuaries.

477. If the chance find will have major cultural value, this may entail consequent changes in the lay-out particularly if the discovery is considered or assessed as remains of cultural or archeological importance that is not removable. Mitigation measures for these issues are described in the ESMP.

478. All construction personnel working on the project site, including employees, subcontractors, and their workers will be targeting audience for the encountering archaeological or cultural heritage sites during construction as well as emphasizing the importance of protecting the find and stopping work in the vicinity.

479. Upon discovering a potential chance find, workers should stop working and report it immediately to the site supervisor or designated personnel. These individuals should immediately notify the project manager or environmental officer. They should immediately

[4] PBS Instruction 100-53, BREB Instruction 500-22

contact the PIU and report the findings. The PIU will have E&S consultant who will finally be responsible for handling chance finds and communication with Department of Archaeology or other cultural heritage agencies.

3. Post-Construction Stage

480. Following is a brief description of impacts envisaged during the Post-Construction Phase:

a) Water Resources

481. The project might accelerate urbanization in the project region, particularly along proposed additional substations and minor route alternatives. The availability of groundwater in the project region will be stressed as a result.

b) Socio-economic Impact

482. On the socio-economic front, the projected electricity distribution project will have a positive influence. Improving rural communities' access to reliable power would spur economic growth, especially in the eight districts of Chattogram -Sylhet. When the new 33/11kV substations are operational, BREB can optimize the advantages to local residents by hiring locals for unskilled occupations such as substation cleaning.

483. According to estimates, the planned project will have a favorable impact on poverty reduction over the long run. All project locations are projected to see an increase in power supply, resulting in direct and indirect socio-economic benefits for the people who live in those areas.

c) Ecosystem

484. One of the regular programs to maintain the integrity of the distribution lines is the trimming of tall trees and vegetation in the project area. This is being done to maintain the necessary conductor clearance of the line.

485. As part of the required conductor clearance distance, private and communal trees and plants up to 3 m in height will be removed or trimmed inside the right-of-way (RoW)[5]. Other big trees within 3 m of the pole bases are being deliberately removed or trimmed during construction to decrease the risk that they will fall and damage the poles, as well. To prevent trees from falling and impacting the lowest conductor, tree clearance or trimming will also be done directly outside the RoW.

486. In order to maintain the integrity of distribution lines, trimming tall trees and vegetation along the right-of-way (RoW) is a regular program. Conductor clearance of the line must be maintained at all times, which is why this is required.

487. There will be a 3 m clearing distance for conductors by removing or trimming private and municipal trees and plants inside the right of way (RoW). During operation, big trees within 3 m of the base of the poles will be selectively removed or cut to limit their propensity to fall and damage these buildings. To prevent trees from falling and impacting the lowest conductor, tree clearance or trimming will also be undertaken immediately outside the RoW.

488. Local residents may experience slight inconvenience as a result of the vegetation care efforts, they may be inconvenient by the vegetation care efforts. By limiting the use of existing roads or tracks to access the distribution lines and alerting the locals to the maintenance plan in advance through village heads, this problem may be addressed to a degree. Workers who will be cutting vegetation should take care not to intrude on the rice or crops of the locals. On

[5] https://www.osha.gov/etools/electric-power/overhead-line-work/line-clearance-tree-trimming-operations

completion of cutting and trimming activities, cut vegetation will need to be stored away from human habitation, and any that is not given over to the landowner will need to be disposed of by a licensed waste management operator.

489. Herbicides and insecticides will not be allowed to be used to restrict vegetation growth. Also prohibited is the use of fire to manage vegetation along the Right-of-Way (RoW).

d) Risks to Worker's Health and Safety

490. Workers specially engaged with the operation of transformers and other electrical equipment will be affected. Those workers are exposed to dangers such as live power lines, heights, and electromagnetic fields when operating substations or distribution lines. Other accidents that may occur during and after maintenance include lightning, fire, and explosion, in addition to electrocution, flames, and explosion. However, PBSs will always turn off power during maintenance or upgrades to ensure public safety.

491. Potential impacts related to operation and maintenance will be avoided by BREB through the implementation of the following mitigation measures:

- Personnel from BREB's various field offices are the only ones qualified to operate and maintain the distribution lines, substations, and transformers.
- All substations are maintained by BREB-trained staff. All workers on substation sites and responsible for maintenance of distribution lines will receive training through this program.
- When working on power line facilities, BREB should follow the "Environmental, Health, and Safety Guidelines – Electric Power Transmission and Distribution" (IFC) dated 30 April 2007.
- There will be a risk assessment, occupational health and safety plan for substation workers, and maintenance of the distribution lines.
- The risks associated with the COVID-19 pandemic and other communicable viral diseases will receive adequate attention.

492. Some of the prevention and control measures when working with live power lines are:
    - Professionals licensed and trained to work on electrical equipment are the only person who should be able to access electronic systems.
    - Electrical safety regulations must be followed at all times.
    - During maintenance work or if operating close to live power lines, ensure proper grounding and deactivation of the wires.
    - Provision of personal protective equipment (PPE) for employees, safety instructions, personal safety devices such as harnesses, tool bags, ropes, etc., and other safeguards are among the safety measures that are required.
    - Working along electrical lines, workers will need to follow standards for minimum approach distances when using equipment, vehicles and performing other operations.

493. Working at Heights: Accidents may happen when working in heights. Some of the prevention and control measures when working with live power lines are: (i) Restricting working at height only by workers who are trained and certified to do so, and (ii) Testing of structural integrity before proceeding with the work and the use of fall protection measures such as harnesses, tool bags, ropes, etc.

e) Community Health and fire Safety

494. Electrical equipment and conductors, as mentioned above, might cause security concerns. Project communities will be subjected to health and safety campaigns by BREB, as part of its regular health and safety processes, prior to energizing lines. BREB is always aware on construction of the substation in an area, and the practice is to construct the substations

remotely where the intervention of local people and any households are limited. So, there is no possibility of constructing a substation within 50 m from the residential area. If any houses lie within 50m of the substations and along the corridor distribution lines will get posters, pamphlets and safety guides, as well as face-to-face orientation in the villages. In addition to the posters and safety pamphlets, BREB offers a number of internal health and safety programs. Disaster and emergency preparedness plans will also be established and presented not just to BREB personnel but also to the local populations living near the substations and distribution lines, according to the company. In addition to information campaigns, mock drills should engage nearby communities. Power supply is expected to be enhanced in all project locations, giving rise to direct and indirect socio-economic advantages for the people living there.

495. The social and economic effects of the proposed power distribution project will be favorable. This would assist in boosting economic growth, especially in rural regions of the 13 districts of Chattogram & Sylhet. It would be most beneficial if BREB recruited locals for unskilled roles, such as substation housekeeping for new 33/11 kV substations, throughout construction and during operation. It is predicted that the planned initiative would have a substantial impact on poverty alleviation.

f) Poly Chlorinated Biphenyls (PCBs), SF6, and Asbestos

496. Emission of greenhouse gases from insulators, which use SF6 in high voltage equipment, is a major concern. SF6 has a global warming potential 23,900 times greater than CO2, which needs to be controlled. However, given that the project involves low to medium voltage components and substations are air insulated it is most unlikely that SF6 will be present in the project components. The use of SF6 in fire extinguishers provided at substations should also be avoided.

497. Since PCBs have a high heat capacity and are not flammable, they were widely employed as insulators in capacitors and transformers until the mid - 1990's. They are non-biodegradable and hazardous, thus their usage as insulation materials in electrical equipment has been prohibited across the world. In accordance with the foregoing, BREB has also forbidden the acquisition of equipment (transformers and capacitors as per international good practice) that uses PCBs. To ensure that workers and the public are not exposed to any ongoing hazards, BREB additionally gets confirmation from the transformer supplier at the time of the bid-offer that the provided transformers are free of PCBs. If any PCB-containing transformers remain in-situ, maintenance workers must follow the procedures outlined in the construction section for work involving PCB-containing transformers. Since the practice of using PCB in transformers are already avoided in BREB.

g) Trimming of Trees

498. To maintain the integrity of distribution lines, big trees and plants are routinely trimmed along the right-of-way. The line must be kept free of the conductor. Within the right-of-way, trees and vegetation up to 3 m in height will be removed or pruned in order to meet the required conductor clearance distance. During construction, trees with a diameter more than 3 meters will be removed or pruned to reduce the chance that they may fall and harm the poles. Outer-of-the-row, trees will be removed to prevent them from falling over the lowest conductor

499. The vegetation maintenance activities may cause minor disturbance to local people. This can be mitigated by limiting use to already existing roads or tracks to reach the distribution lines and informing the locals in advance through the village heads on the schedule of the maintenance works. Care should be observed to avoid encroachment into rice or cropland of villagers by workers who will undertake vegetation trimming. Cut vegetation will need to be

stored away from habitation and any not handed over to the landowner immediately disposed using appropriately licensed waste management operator on the completion of cutting and trimming activities.

500. BREB will not allow the use of herbicides and pesticides to control vegetation growth. Burning to control vegetation along the RoW is also prohibited.

h) Impact on Poverty

501. The poverty rates in Chattogram and Sylhet divisions can have a significant impact on the BREB network modernization and capacity enhancement project, affecting both the project's implementation and its potential benefits.

Impacts on Project Implementation:

- **Limited Labor Availability:** Skilled labor for construction and maintenance of the modernized network might be scarce in rural areas with high poverty rates. The project might need to consider training programs or attracting workers from outside the region.
- **Social Conflict:** Lack of proper communication and grievance redress mechanisms can lead to social conflict with communities who feel their land or livelihoods are negatively affected by the project.

Impacts on Project Benefits:

- **Limited Affordability:** Even with a modernized network, low-income households might struggle to afford connection fees or the cost of electrical appliances, hindering their ability to fully benefit from improved electricity access.
- **Limited Capacity to Utilize Electricity:** Rural communities with limited access to markets, storage facilities, or value-added processing might not be able to fully utilize electricity for income generation activities.
- **Exacerbating Inequality:** If the project primarily benefits wealthier households or businesses that can readily afford connection and utilize electricity for productive activities, it could exacerbate existing inequalities within the community.

Potential Solutions:

- **Subsidy Programs:** Consider implementing subsidized connection fees or post-paid electricity schemes for low-income households to make electricity access more affordable.
- **Livelihood Support:** Integrate livelihood development programs alongside network expansion. This could involve training on utilizing electricity for small businesses, promoting efficient agricultural practices that rely on electricity, or establishing cold storage facilities to reduce post-harvest losses.
- **Community Ownership:** Explore models for community ownership or participation in managing the electricity network, fostering a sense of ownership and ensuring benefits are shared more equitably.

C. Climate Vulnerability Assessment

502. Climate change is one of the significant factors considered in the Environmental/Ecological Assessment. Climate change assessment is done for the current assessment process with the objective to provide assurance that climate change implications are being appropriately considered in the design of the proposed project. The specific objectives are to:

- Support the project authority manage or reduce the potential risk posed by the impacts of climate change to the project and contribute to climate change action;
- Provide project managers of the co-financiers with information that will assist their broader climate change action; and
- Help decision makers to address climate change implications in a risk management context.

503. The current assessment is conducted climate change related investigation based on globally and nationally published climate change prediction reports focusing particularly on the variability of rainfall intensity, temperature changes, sea level rise. These variables are directly related to the functionality and durability of the proposed project.

504. To conduct the assessment literature review has been conducted available from different national climate change relevant agencies, such as Department of Disaster Management, Department of Environment and Bangladesh Meteorological Department. International and National Climate Change Communication reports, especially the 5th Intergovernmental Panel on Climate Change IPCC Assessment report has been reviewed for relevant major sources of information for impact and vulnerability projection on global and regional temperature, sea level rise, rainfall fluctuation and their impacts on proposed infrastructures. This climate change projection information will help in making the proposed project climate resilient.

505. A climate vulnerability assessment for substations and distribution projects in Bangladesh is crucial given the country's susceptibility to climate change impacts, including sea-level rise, extreme weather events, and changing precipitation patterns. Such an assessment involves evaluating the potential risks and vulnerabilities associated with climate change and developing strategies to mitigate these risks. Chattogram & Sylhet divisions are also prone to cyclone, landslide and flooding etc. However, there is no climate vulnerability in these locations due to the proposed project interventions. Project based climate vulnerability assessment and adaptation measures are taken as important considerations during project preparation. Climate vulnerability assessment for the proposed project is given in the following table:

Table VI-2: Possible Climatic hazard for the proposed project

SL	Possible Climate Hazard	Exposure of distribution network	Preventative measures	Vulnerability
1	River Flood	• 3678 km electric distribution line in flood prone area. • Substations.	• There are few floods prone area where we have 3678 km electric line that will be reconstructed under this project • Formation Ground Level (FGL) will be kept adequately above the Highest Flood Level (HFL).	Very low
2	Erosion	11 sets river crossing tower	BREB constructed the river crossing tower in the stable location of the river to avoid the erosion.	Very low
3	Lightening	Line & Substation	Adequate Grounding will be done	Very low
4	Landslide	Substation Distribution line	Use of higher sized conductor & increasing pole height.	Very low
5	Extreme cold	N/A	-	-

SL	Possible Climate Hazard	Exposure of distribution network	Preventative measures	Vulnerability
6	Drought	N/A	-	-
7	Rainfall variability	N/A	-	-

1. Climate Change Impact Considerations

506. The impacts consideration assessed the hydro-meteorological parameters that are directly and indirectly exposed to climate change phenomenon for facilitating the detail design and environmental impact assessment process. Projecting the impact of global climate change on any infrastructure/related natural resources requires representation of climate processes on a variety of spatial scales, from global down to local level. In this regard, under the current scope of works, neither any climatic models nor any hydro-dynamic simulation was newly conducted; rather raw data available from different existing climate and hydro-metric observations and regional projections from different sources were used. The assessment provides some recommendation/potential solutions/mitigation for climate resilient structures based on the findings of the literature review.

a) Climate Projections: Temperature

507. The IPCC 5th assessment report (AR5) indicates that the global mean temperatures will continue to rise over the 21stcentury if greenhouse gas (GHG) emissions continue unabated. Global surface temperature change for the end of the 21stcentury is likely to exceed 2.5°C relative to 1986 to 2005 for all RCP (Representative Concentration Pathway) scenarios except RCP2.6, and warming will continue beyond 2100 under all RCP scenarios except RCP2.6. Table VI-4 shows the projected change in global mean surface air temperature.

Table VI-3 Projected Change in Global Mean Surface Temperature (Likely Range)

Time Period (Base Year 1986 to 2005)	Temperature (°C)			
	RCP 2.6	RCP 4.5	RCP 6.0	RCP 8.5
2046-2065	0.4 to 1.6	0.9 to 2.0	0.8 to 1.8	1.4 to 2.6
2081-2100	0.3 to 1.7	1.1 to 2.6	1.4 to 3.1	2.6 to 4.8

508. On the other hand, for South Asia the report projections indicate that, compared to the average in the 20th century, average annual temperatures could rise by more than 2°C over land in most of South Asia by the mid-21st century and exceed 3°C, up to more than 6°C over high latitudes, by the late 21st century under a high-emissions scenario (RCP8.5); while under a low-emissions scenario (RCP 2.6) average temperatures could rise by less than 2°C in the 21st century, except at higher latitudes, which could be up to 3°C warmer.

509. Even though, IPCC assessment report does not provide any country level projections, under the Comprehensive Disaster Management Programme (CDMP II) of Department of Disaster Management (Ministry of Disaster Management & Relief) acclimate model PRECIS (Providing Regional Climates for Impacts Studies) is used to get climate change scenario for Bangladesh. Table VI-5 shows the projected temperature change for Bangladesh under CC scenario.

Table VI-4 Projected Temperature Change for Bangladesh under CC Scenario

Time Period	Temperature (°C)		
	Annual	Monsoon (Jun-Sep)	Winter (Dec-Feb)
(Base Year 1961-1990, Mean)	24.6	31.83	16.2
2071-2100	4.34	3.43	5.37
2011-2041	1.49	1.50	1.80

b) Climate Projections: Precipitation

510. AR5 reports that, in the long term, global precipitation will increase with increased global mean surface temperature. Global mean precipitation will increase at a rate per degree Celsius smaller than that of atmospheric water vapor. It will likely increase by 1 to 3% / °C for scenarios other than RCP2.6, for RCP2.6 the range increase will be 0.5 to 4% / °C at the end of the 21st century.

511. In the South Asian region AR5 projections indicate that under a high-emissions scenario more rainfall will be very likely at higher latitudes by the mid-21stcentury and over southern areas of the late 21st century. Under a low-emissions scenario, more rainfall at higher latitudes is likely by mid-century but no likely substantial changes in rainfall patterns at low latitudes. More frequent and heavy rainfall days are projected over parts of South Asia. (IPCC, 2007)

512. Analysis of past trend of rainfall by (CDMP II, 2013) study reveals that all-Bangladesh annual normal rainfall has not changed much in Bangladesh. For a period of 30 years (1980-2009), the annual normal rainfall is found to be 2,306 mm, such rainfalls were 2,298 and 2,314 mm during 1960-1989 and 1970-1999, respectively. On the other hand, Bangladesh normal rainfalls in different seasons show some mixed trend. Pre-monsoon (March-May) and post-monsoonal (October-November) normal rainfalls have increased and the monsoonal (June-September) normal rainfall has decreased over the three time periods (1960-89, 1970-99 & 1980-2009). The winter (December-February) normal rainfall has increased in the last two periods compared to the first period. The change in projected precipitation for Bangladesh, as found by PRECIS run (CDMP II report) is presented in the following Table VI-6.

Table VI-5 Projected Precipitation Change for Bangladesh under CC Scenario

Time Period	Precipitation (mm/day)		
	Annual	Monsoon (Jun-Sep)	Winter (Dec-Feb)
(Base Year 1961-1990, Mean)	3.5	7.24	0.59
2071-2100	0.90	1.43	0.03
2011-2041	0.64	1.40	-0.05

c) Climate Projections: Sea Level Rise

513. AR5 predicted, it is very likely that the rate of global mean sea level rise during the 21st century will exceed the rate observed during 1971–2010 for all Representative Concentration Pathway (RCP) scenarios due to increases in ocean warming and loss of mass from glaciers and ice sheets Table VI-7.

Table VI-6 Global Mean Sea Level Rise (Values Shown as Median and Likely Range)

Time Period (Base Year 1986-2005)	Sea Level Rise (m)			
	RCP 2.6	RCP 4.5	RCP 6.0	RCP 8.5
2020	0.08	0.08	0.08	0.08

	[0.06 to 0.10]	[0.06 to 0.10]	[0.06 to 0.10]	[0.06 to 0.11]
2050	0.22 [0.16 to 0.28]	0.23 [0.17 to 0.29]	0.22 [0.16 to 0.28]	0.25 [0.19 to 0.32]
2080	0.35 [0.24 to 0.48]	0.41 [0.28 to 0.54]	0.40 [0.28 to 0.53]	0.50 [0.37 to 0.67]
2100	0.44 [0.28 to 0.61]	0.53 [0.36 to 0.71]	0.55 [0.38 to 0.73]	0.74 [0.53 to 0.98]

514. It is very likely that in the 21st century and beyond, sea level change will have a strong regional pattern, with some places experiencing significant deviations of local and regional sea level change from the global mean change. However, no local level SLR data could be found for Bangladesh based on the AR5 by the current assessment. The potential impact of SLR on the infrastructures of the proposed project described in the following section based on available literature.

2. Potential Climate Impact of the Project

515. To assess potential climate impacts of the proposed project region we have used a web-based tool name 'ThinkHazard[6] to analyzes and presents the likelihood of various natural hazards like earthquakes, floods, landslides, cyclones, and droughts. The tool incorporates data on how climate change might alter the frequency and intensity of natural hazards in the future. This tool has classified the hazard into four categories: High, Medium, Low, Very Low

Table VI-7 Types of hazards and their magnitude

Type of Hazard	Chattogram	Sylhet
River Flood	High	High
Urban Flood	High	High
Coastal Flood	High	Low
Cyclone	High	Medium
Extreme Heat	High	High
Wildfire	High	High
Earthquake	Medium	Medium
Tsunami	Medium	Low
Landslide	High	Low
Water Scarcity	Medium	Medium

a) Extreme Heat

516. In the Chattogram & Sylhet region extreme heat hazard is classified as high based on modeled heat information currently available to this tool. This means that prolonged exposure to extreme heat, resulting in heat stress, is expected to occur at least once in the next five years. According to the most recent assessment report of the Intergovernmental panel on Climate Change (IPCC, 2013), continued emissions of greenhouse gases will cause further warming, and it is virtually certain that there will be more frequent hot temperature extremes over most land areas during the next fifty years. Warming will not be regionally uniform. In the area you have selected, the temperature increase in the next fifty years will be slightly lower than the worldwide average, but still significant. It would be prudent to design projects in this area to be robust to global warming in the long-term.

b) River Flood

517. In Chattogram & Sylhet region river flood hazard is classified as high based on modeled flood information currently available to this tool. This means that potentially damaging

[6] https://thinkhazard.org/en/report/580-bangladesh-sylhet/EH

and life-threatening river floods are expected to occur at least once in the next 10 years. Model projections are inconsistent in their estimates of changes in rainfall. The present hazard level may increase in the future due to the effects of climate change. It would be prudent to design projects in this area to be robust to river flood hazard in the long-term.

c) Cyclone

518. In Chattogram region, cyclone (also known as hurricane or typhoon) hazard is classified as high according to the information that is currently available. & Moderate in Sylhet region.

d) Landslide

519. In Chattogram region landslide is classified as high & Sylhet region, landslide susceptibility is classified as low according to the information that is currently available. This means that this area has rainfall patterns, terrain slope, geology, soil, land cover and (potentially) earthquakes that make localized landslides an uncommon hazard phenomenon. Climate change is likely to alter slope and bedrock stability through changes in precipitation and/or temperature.

520. In addition, a rapid screening assessment has been also carried out for disaster & climate risk screening which has been given in the Annex. Climate and Disaster Risk Screening is a process for identifying short- and long-term climate and disaster risks to build resilience in development projects, policies, and programs. Identifying risks and proactively incorporating resilience measures – at an early stage of project design – can help projects achieve their development objectives and this tool is very popular tools by World Bank to asses the risk in preliminary stage of the project.

D. Risk Asessment

521. This section identifies the potential impacts that the various elements of the proposed Project may have on aspects of the physical, biological, and socio-economic environment. The identification of the potential impacts will be considered for pre-construction, construction and post-construction phase. The activities undertaken during each of these Project stages form the basis for potential impact identification and analysis.

1. Methodology for Risk Assessment

522. All socio-economic and environmental impact assessment methods, including risk assessment, incorporate a degree of inherent uncertainty. This is largely due to the unavoidable variations and uncertainties characterized by natural, social and economic systems. However, the use of risk assessment allows analysis of risks (or potential impacts) to be classified on an empirical scale. Such a scale is useful because it limits the inherent subjective and interpretive nature of impact assessment. Further accuracy in risk assessment results is driven by the workshop approach to hazard categorization and through the application of experienced expert knowledge.

523. Certain impacts identified in this section have the potential to be significant. The determination of whether a given potential impact is significant depends on several factors:

- The potential for on-site and off-site impacts.
- The potential for direct and indirect impacts.
- The frequency and duration of a potential impact.
- The geographic area affected by a potential impact
- The period of time affected by any potential impact.
- The sensitivity of the receiving environment; and
- The degree of confidence with which the potential impacts of the action/activity are known and understood.

524. Measures of potential impact significance as part of the Project planning and assessment phase presented in this IEE have been determined using a risk-based model. The risk-based model is a two-dimensional matrix of 'magnitude of impact' and 'likelihood'. Both are assigned score between 1 and 5 based on severity or probability and multiplied to obtain the 'risk band'.

525. The 'magnitude of impact' is a 5-point based scale set by expert's judgment. The scale and its explanation are given in below Table IV-1.

Table VI-8: Explanation and Assignment of Scores to 'Magnitude of Impact'

Color Band	Incidental	Minor	Moderate	Major	Severe/catastrophic
Score	Score: 1	Score: 2	Score: 3	Score: 4	Score: 5
Explanation	Impacts such as localized or short-term effects on habitat, species or environmental media.	Localized, longterm degradation of sensitive habitat or widespread, short-term impacts to habitat, species or environmental media	Impacts such as localized but irreversible habitat loss or widespread, long-term effects on habitat, species or environmental media	Widespread and persistent changes in habitat, species or environmental media	Persistent reduction in ecosystem function on a landscape scale or significant disruption of a sensitive species.

526. The 'likelihood' is also a 5-point based scale set by expert's judgment. The scale and its explanation are given below

Table VI-9: Explanation and Assignment of Scores to 'Likelihood'

Color Band	Rare	Unlikely	Seldom	Occasional	Likely
Score	Score: 1	Score: 2	Score: 3	Score: 4	Score: 5
Explanation	Rare or unheard of	Reasonable to expect that the consequence will not occur during this project though has occurred several times	Exceptional conditions may allow consequences to occur within the project lifetime	Conditions may allow the consequence to occur during the project lifetime, or the event has occurred within similar projects	Consequence can reasonably be expected to occur in the project lifetime

527. Therefore, "Risk" factor is derived from the following equation:

Risk = Magnitude x likelihood

528. The score of 'Risk' ranges from 1 to 25. The score is classified in 3 classes. The explanation is given in Table VI-3. The score matrix for risk assessment has been used to identify the priority environmental impact and their mitigation plan.

Table VI-10: Two-Dimensional Risk Assessment Matrix

Impact			Magnitude Of Impact				
			Incidental	Minor	Moderate	Major	Severe/cats.
			Score: 1	Score: 2	Score: 3	Score: 4	Score: 5
LIKELIHOOD	Rare	Score: 1	1	2	3	4	5
	Unlikely	Score: 2	2	4	6	8	10
	Seldom	Score: 3	3	6	9	12	15
	Occasional	Score: 4	4	8	12	16	20
	likely	Score: 5	5	10	15	20	25

2. Risk Assessment Matrix

529. Based on the above methodology, risk assessment has been carried out for this project which is presented in the below Table IV-4.

Table VI-11: Risk Assessment Matrix of the proposed project

Ref. No.	Issues & Impacts	Risk Assessment		Risk Factor	Mitigation & Monitoring Required		Duration of Impact	Required Controls	Comparison with Regulation
		Magnitude	likelihood		Yes	No			
1.0 Pre-construction Phase									
1.1	Site clearance	3	3	9	X		Long term	Mitigation measures are already given in the ESMP.	• National Land Use Policy, 2001
1.2	Land acquisition/ Purchase	4	1	4	X		Long Term	Mitigation measures are already given in the ESMP.	• The Acquisition and Requisition of Immovable Property Act, 2017
1.3	Public Utility	1	1	1	X		Short Term	Mitigation measures are already given in the ESMP.	• • National Land Use Policy, 2001
2.0 Construction Phase									
2.1	Dust Pollution	2	2	4	X		Short Term	Mitigation measures are already given in the EMP. Soil quality test is proposed for monitoring.	• USEPA office of solid waste and emergency response, hazardous waste land treatment, SW-874 (April 1983, page 273)
2.2	Surface Water resource	1	2	2	X		Short Term	Mitigation measures are already given in the EMP. Water quality test is proposed for monitoring along with sediment quality	• Environment Conservation Rules, 1997 • Bangladesh Water Act, 2013 • Bangladesh Water Rules, 2018 • Bangladesh Water Development Board Act, 2000 • National Water Policy, 1999 • Water Resource Planning Act, 1992 • National Water Management Plan, 2001 • (Approved in 2004) • National Water Bodies Protection Act,
2.2	Groundwater resource	1	3	3	X		Short Term		• Groundwater Management Ordinance,
2.3	Air quality	1	2	2	X		Long Term	Mitigation measures are already given in the ESMP. Air quality test is proposed for monitoring.	• Environment Conservation Rules, 1997
2.4	Noise generation	2	2	4	X		Long Term	Mitigation measures are already given in the EMP. Noise level measurement is proposed for monitoring.	• Sound pollution (control) Rules, 2006

Ref. No.	Issues & Impacts	Risk Assessment		Risk Factor	Mitigation & Monitoring Required		Duration of Impact	Required Controls	Comparison with Regulation
		Magnitude	likelihood		Yes	No			
2.5	Waste generation	2	2	4	X		Long Term	Mitigation measures are already given in the ESMP.	• National 3R Strategy for Waste Management, 2010 • Bangladesh Standards and Guidelines for Sludge Management, 2015
2.6	Ecosystem	3	3	9	X		Short Term	Mitigation measures are already given in the ESMP.	• Environment Conservation Rules, 1997 • National Environmental Policy, 2018 • Bangladesh Biodiversity Act, 2017 • Wildlife Conservation (Protection and Safety) Act, 2012 • National Biodiversity Strategy & Action Plan, 2004 • Biosafety Guidelines of Bangladesh (2007)
2.7	Traffic congestion	2	3	6	X		Short Term	Mitigation measures are already given in the ESMP.	• The Vehicle Act, 1927
2.8	Socio-economic status	3	3	9	X		Short Term	BREB will be maintain this issue.	• The Acquisition and Requisition of Immovable Property Act, 2017 • Bangladesh Labor Act, 2006(as amended through July 22, 2013) • Bangladesh Labor Rules, 2015 • National Human Rights Commission Act, 2009
2.9	Community Health and Safety	2	2	4	X		Short Term	Mitigation measures are already given in the ESMP.	• Bangladesh National Building Code (BNBC), 2015 • Standing Orders on Disaster, 2010 • Biosafety Guidelines of Bangladesh (2007) • Bangladesh Labor Act, 2006(as amended through July 22, 2013) • Bangladesh Labor Rules, 2015 • National Human Rights Commission Act, 2009
2.10	Workers Health and Safety	3	3	9	X		Short Term	Mitigation measures are already given in the ESMP.	• Bangladesh National Building Code (BNBC), 2015 • Standing Orders on Disaster, 2010 • Biosafety Guidelines of Bangladesh (2007) • Bangladesh Labor Act, 2006(as amended through July 22, 2013) • Bangladesh Labor Rules, 2015 • National Human Rights Commission Act, 2009
2.11	Fire Safety	1	1	1	X		Long Term	Mitigation measures are already given in the ESMP.	• Bangladesh National Building Code (BNBC), 2015 • Fire Prevention and Extinction Act, 2003 • Fire Prevention and Extinction Rules, 2014 • Bangladesh Labor Act, 2006
2.12	GBV and SH	2	2	4	X		Short	Mitigation measures are already given in the	• Women and Children Act 2000

Ref. No.	Issues & Impacts	Risk Assessment		Risk Factor	Mitigation & Monitoring Required		Duration of Impact	Required Controls	Comparison with Regulation
		Magnitude	likelihood		Yes	No			
	Issues						Term	EMP.	• Bangladesh Labor Rules, 2015 • National Human Rights Commission Act, 2009
					3.0 Operation Phase				
3.1	Water resource	2	4	8	**X**		Long Term	Mitigation measures are already given in the ESMP.	• Environment Conservation Rules, 1997 • Bangladesh Water Act, 2013 • Bangladesh Water Rules, 2018 • Bangladesh Water Development Board Act, 2000 • National Water Policy, 1999 • Water Resource Planning Act, 1992 • National Water Management Plan, 2001 (Approved in 2004) • National Water Bodies Protection Act, 2000 • Groundwater Management Ordinance, 1985
3.2	Agriculture	2	4	8	X		Long Term	Mitigation measures are already given in the ESMP.	• National Agriculture Policy, 2013
3.3	Ecosystem	2	4	8	**X**		Long Term	Mitigation measures are already given in the ESMP. Tree Plantation is suggested	• Environment Conservation Rules, 1997 • National Environmental Policy, 2018 • Bangladesh Biodiversity Act, 2017 • Wildlife Conservation (Protection and Safety) Act, 2012 • National Biodiversity Strategy & Action Plan, 2004 • Biosafety Guidelines of Bangladesh (2007)
3.4	Waste Management	3	3	9	**X**		Long Term	Mitigation measures are already given in the ESMP.	• National 3R Strategy for Waste Management, 2010 • Bangladesh Standards and Guidelines for Sludge Management, 2015
3.5	Health & Safety	3	3	9	**X**		Long Term	Mitigation measures are already given in the ESMP.	• Standing Orders on Disaster, 2010 • Biosafety Guidelines of Bangladesh (2007) • Bangladesh Labor Rules, 2015 • National Human Rights Commission Act, 2009
3.6	Fire Safety	1	1	1	**X**		Long Term	Mitigation measures are already given in the ESMP.	• Bangladesh National Building Code (BNBC), 2015 • Fire Prevention and Extinction Act, 2003 • Fire Prevention and Extinction Rules, 2014 • Bangladesh Labor Act, 2006

VII. LABOR AND OCCUPATIONAL SAFETY, HEALTH, AND ENVIRONMENT (OSHE)

A. General

530. The primary objective of ESS-1 as per AIIB on "Environmental & Social Assessment & Management" is to promote sound labour management relationships and enhance the development benefits of a project by treating workers in the project fairly while also providing them with safe and healthy working conditions. Moreover, BREB is awarded with ISO 45001 certification of occupational health and safety management systems which ensures organizational practice of occupational health and safety measures, reduced work-related injuries and illnesses, and create safe working environments. In this regard BREB always bound to comply health and safety issues in workplace.

1. Impacts on labor

531. The construction of proposed project will entail employment of a huge number of manpower especially during construction stage. The majority percent of labor will be locally hired, with the exception of skilled workers who may not be found in the program areas. For the proposed lines, labor requirements are expected to be low and the demand are expected to be filled by local labors. However, health hazards, bad living conditions, and unintentional hazardous risks are all possible dangers faced by both hired trained and non-skilled employees, particularly during the building phase. So special attention will be taken by contactor to reduce such issues.

532. The use of locally available labors is cost effective and socially viable. Local labors create minimum environmental and social risks such as gender-based violence, theft, price hiking of daily used products etc. This also saves local community from transmitting of any kind of disease. Child labors are strictly prohibited as per GoB's law. BREB will ensure the law of GOB to be enforced properly. The local law enforcement agency is also always aware to stop any kind of violence and social risks.

533. A Labor Management Plan (LMP) and Occupational Health and Safety (OHS) Plan will be prepared by the respective contractor for proper management of the labors and workers.

534. Potential labor risks:

- Safety issues while at work like injuries/accidents/ fatalities leading to even death, while at work.
- Inadequate accommodation facilities at work force camps, including inadequate sanitation and health facilities
- Inadequate facilities for pregnant women and lactating mothers
- Short terms effects due to exposure to dust and noise levels, while at work
- Non-payment of wages by Employer.
- Non-payment of benefits (compensation, bonus, maternity benefits etc.) by Employer
- Discrimination in Employment (e.g. abrupt termination of the employment, working conditions, wages or benefits etc.)
- Engagement of child labor.
- Health risks of labor relating to HIV/AIDS and other sexually transmitted diseases
- Unclear terms and conditions of employment
- Discrimination and denial of equal opportunity in hiring and promotions/incentives/training opportunities
- Denial for workers' rights to form workers organizations, etc.
- Absence of a grievance mechanism for labor to seek redressal of their grievances/issues.

535. To reduce these impacts on labor, few mitigation measures will be adopted through respective authorities and contractor. The following mitigation measures are given below:

- Reduce labor influx into the project area by sourcing all unskilled labor from within and around the sub-project area. If skilled labor is not available locally, it will be imported from outside the sub-project region, either inside or beyond the district.
- Prepare a Workers' Camp Management Plan by the BREB or Contractor that addresses specific aspects of the setup and operation of workers' camps, such as differentiating labor camps from material storage locations.
- Conduct awareness campaigns on HIV/AIDS, STDs, COVID-19, and other communicable diseases.
- Develop a project framework for addressing labor-related concerns.
- Provide information about the Contractor's policies and Worker Code of Conduct to the communities in the sub-project area host communities.

2. GBV Labor Influx

536. Though project will create substantial number of working opportunities, it is expected that labor influx will not be significant as the construction will be over the period. As all the construction will be conducted in the rural areas, it is expected that skilled and unskilled labors will be hired locally. The contractor will be responsible for the accommodation of the stay in labor and ensuring labor travel from off site. Some accommodation on site, water supply and sanitation services, etc. will be provided by the contractor. A Labor Management Plan (LMP) and Occupational Health & Safety (OHS) Plan will be prepared by contractors for each project site. However, this labor influx may raise many complex issues, particularly regarding potential transmission risks for COVID-19 both within the worksite and for nearby communities. These risks are not only from workers that are mobilized from abroad or returning from abroad, but also workers moving from other regions, where it is likely that a very few migrant workers are expected to work on the project. Adverse social Impacts due to labor influx can be identified as follows:

- Risk of Social conflict between labors and community people
- Increased risk of illicit behavior and crime
- Influx of additional population and burden on public services
- Increased risk of communicable disease and burden on local health services
- Local inflation of price and increased pressure on accommodation and rent
- Increased of traffic and related accident

B. REQUIREMENTS OF LABOR AND SAFETY, HEALTH, AND ENVIRONMENT (OSHE)

1. Health and Safety

a) Gov't Policies on Labour Management

537. The landscape of labour management in Bangladesh is guided by a framework of policies, laws, and regulations. The central piece of this framework is the Bangladesh Labour Act, 2006, which outlines comprehensive standards for working conditions, wages, and employee rights. This act is supplemented by the Bangladesh Labour Rules, 2015, which provide detailed guidance on implementing the act's provisions. Additionally, the Occupational Health and Safety Policy, 2013, safeguards workers' well-being by setting standards for safe work environments.

538. Further regulations come from the Public Procurement Rule, 2008, which ensures fair treatment of labourers in government-funded projects, and the National Child Labour Elimination Policy, 2010, which tackles the critical issue of child labour. These policies and

laws are enforced by various government bodies, including the Department of Labour, and non-governmental organizations play a crucial role in advocating for worker rights and raising awareness.

539. It's important to note that while this framework exists, challenges remain in ensuring its effective implementation and consistent enforcement across all sectors. Nonetheless, these policies and laws lay the foundation for protecting worker rights and fostering a more positive labour management landscape in Bangladesh

b) BREB's Internal Health and Safety Policy

540. BREB is awarded with ISO 45001 certification of occupational health and safety management systems which ensures organizational practice of occupational health and safety measures, reduces work-related injuries and illnesses, and create safe working environments. In this regard BREB is always bound to comply health and safety issues in workplace.

c) Health and Safety of Workers and Communities.

541. Community health and safety impacts during the construction and decommissioning of substations and distribution power lines are common to those of most large industrial facilities. These impacts include, among others, dust, noise, and vibration from construction vehicle transit, and communicable diseases associated with the influx of temporary construction labor.

542. Analyze Project workers' labor and working facilities, as well as health and safety threats to populations in the project's vicinity. Implement efforts to provide Project workers with safe and healthy working conditions, as well as measures to prevent Project-related accidents, injuries, and disease. Apply to the Project the necessary occupational health and safety regulations of internationally recognized standards, such as the EHSGs and, where applicable, industry-specific EHSGs. Accidents, infections, and occurrences should be documented and reported. Set up procedures for Project workers to report work circumstances that they believe are unsafe or unhealthy. Put in place preventative and emergency readiness and response measures to avoid, or when avoidance is not possible, to reduce the Project's negative risks and consequences on local residents' health and safety. Set up a system for reviewing occupational safety and health performance as well as the working environment on a regular basis. The Client may, at its discretion, apply appropriate International Labor Organization Labor Standards in accordance with this Agreement's requirements.

- Construction camps will be located at least 500 m away from the communities. Entry of the site personnel in the local communities will be minimized to the extent possible/appropriate.
- The contractor will prepare and implement an Occupational Health and Safety (OHS) Plan that will also cover communities' health and safety aspects.
- The contractor will prepare and implement a Traffic Management Plan that will also address traffic safety for communities.
- The community will be informed about the nature of construction activities and the associated health and safety risks; awareness raising of the communities will be carried out for this purpose with the help of training sessions, posters, signage, and other similar means.
- Awareness raising of communities will be carried out, in a culturally sensitive manner, about the communicable diseases including sexually transmitted infections.
- Regular safety monitoring will be carried out at the sensitive receptors
- The construction sites will be fenced as appropriate to minimize entry of the local communities particularly children in the work areas.
- Liaison with the community will be maintained.
- GRM will be established to address community grievances related to health and safety aspects. Residual Impacts even after implementing the above-listed mitigation

measures, the health and safety impacts on local communities cannot be fully mitigated. Strict monitoring will be required to ensure that mitigation measures are effectively and strictly enforced.

2. Labor and Working Conditions

a) Labor Management Relationships

543. Provide a sound labor management relations system for project workers, which includes the following, consistent with relevant national law:

- Clear and understandable written terms of employment made available to project workers in an accessible manner at the time of hiring and when any changes are made to the terms.
- Timely payment for project work.
- Adequate periods of rest.
- Timely written notice of termination of the working relationship.
- Employment based on the principles of equal opportunity, fair treatment and nondiscrimination with respect to any aspect of the employment relationship.
- Compliance with national law relating to workers' organizations and collective bargaining.
- An accessible, understandable and transparent GRM for raising Project workplace concerns, including gender-related concerns, that: (a) does not impede access to other judicial or administrative remedies that might be available under law or through existing arbitration or mediation procedures, or substitute for grievance mechanisms provided through workers unions or collective agreements; (b) involves an appropriate level of management and addresses concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned, without any retaliation; (c) is proportional to the nature and scale and the potential risks and impacts of the Project; and (d) allows for confidential complaints to be raised and addressed, including GBV-related complaints; and (e) provides measures to protect against retaliation; and
- A suitable system designed to inform project workers of the GRM at the time of hiring, and which is made easily accessible to them.

b) Child Labor and Forced Labor

(i) Child Labor

544. In order to protect children from jeopardy to their health, safety and morals, take all measures required so that children under the age of 18 are not employed for work under the Project. However, if the laws or regulations of the Member in whose territory the Project is located provide, in conformity with the International Labor Organization's Minimum Age Convention, 1973, that children at least 16 years of age may be employed for such work on condition that their health, safety and morals are fully protected and that they have received adequate specific instruction or vocational training in the relevant branch of activity, such children may be employed, but only in conformity with these laws and regulations. In such cases of employment of children under the age of 18 under the Project, conduct an appropriate risk assessment, together with regular monitoring, of their health, safety, working conditions and hours of work.

(ii) Forced Labor

545. Take all measures required in connection with the Project so that no work or service not voluntarily performed is exacted from an individual under threat of force or penalty (including any kind of forced or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements, or labor by trafficked persons).Assess the risks of

forced labor under the Project, and if applicable, include measures in the ESMP (or other Bank-approved document) to address such risks in accordance with this Section.

546. If cases of or forced labor are identified, take immediate steps to correct them, to prevent similar occurrences in the future, and to facilitate the rehabilitation of victims.

C. OVERVIEW OF LABOR USE ON THE PROJECT

547. For this project, direct workers and contracted workers are the most applicable, as at this stage, significant community labor is not envisioned for the project. The following are the key categories of workers that would be engaged under the project, including groups of workers that are specifically at risk in the COVID-19 context and thus require special attention.

1. Project Implementation Unit (PIU)

548. The PIU will be constituted by direct project workers who will either be government civil servants engaged in the project or those that will be recruited for the purposes of the project. Specifically, the PIU will comprise: Project Director, Project Coordinator, Procurement Specialist, Financial Management Specialist, Environment specialist, Social Specialist, Monitoring and Evaluation Specialist.

- The Project Director will oversee the project team on the overall day-to-day management and coordination and implementation of the subcomponents of the project.
- The Project Director will also closely liaise with the Task Team from the AIIB and other stakeholders. The Project Coordinator will assist Project Director to ensure that the works are in line with the objectives of the project and is carried out according to the terms of reference.
- The Financial Management Specialist will assist the project team to lead the financial management activities of the project and coordinate with the technical teams and stakeholders assigned to implement the subcomponents.
- The Procurement Specialist will lead the procurement activities of the project and coordinate with the technical teams and stakeholders assigned to implement the subcomponents. Specifically, the Procurement Specialist will work with the Environment and Social specialists to ensure that all the procurement documents adequately reflect environment and social issues, where relevant.
- The Monitoring and Evaluation Specialist will lead the monitoring and evaluation activities of the project and coordinate with the technical teams and stakeholders assigned to implement the subcomponents. The Monitoring and Evaluation Specialist will collect, process and manage data, including those relating to social and environment issues associated with the project, as appropriate, from various sources including health management information system, official documents, etc.
- The Social Specialist will lead the social activities of the project and coordinate with the technical teams and stakeholders assigned to implement the subcomponents. Together with the Environment Specialist, the Social Specialist will primarily be responsible for ensuring that project activities avoid or minimize negative social impacts; and where they cannot be avoided, that impacts are identified, and the necessary mitigation measures are developed and implemented following the relevant laws as well as the AIIB policies.
- The Environmental Specialist will lead the environmental activities of the project and coordinate with the technical teams and stakeholders assigned to implement the subcomponents. Together with the Social Specialist, the Environment Specialist will primarily be responsible for ensuring that project activities avoid and minimize negative environmental impacts; and where they cannot be avoided, that impacts are identified,

and the necessary mitigation measures are developed and implemented following the relevant laws as well as the AIIB's policies.

2. Direct Workers

549. A "direct worker" is a worker with whom the Program/ Project has a directly contracted employment relationship and specific control over the work, working conditions, and treatment of the project worker. Where government civil servants are working in connection with the project, whether full-time or part-time, they will remain subject to the terms and conditions of their existing public sector employment agreement or arrangement, unless there has been an effective legal transfer of their employment or engagement to the project. People employed or engaged directly by the BREB; or the Project Implementing Units (PIUs) on their respective behalf to work specifically in relation to the Project. Direct workers will include the Project Manager/s and respective Supervisors, who are employees of respective IAs, deployed for the BBIN MPA program. The estimated number of direct workers will be decided as per existing institutional arrangements and practices of the respective IA.

3. Contracted Workers

550. All workforce deployed by the Contractors and the Project Management Consultant (for all packages) will be considered contracted employees. The Contractor(s) may also hire multiple sub-contractors, and all employees of such sub-contractors will be considered contracted workers as well. Individual consultants with the PIU, people employed or engaged by consultant firms and contractors to perform work related to core function i.e., substations improvement, studies and policy development, engineering design, environmental and social management, training and capacity building, awareness campaigns, volunteer training, and minor infrastructure works, of locations.

4. Primary Supply Workers

551. A "primary supply worker" is a worker employed or engaged by a primary supplier, providing goods and materials to the project, over whom a primary supplier exercises control for the work, working conditions, and treatment of the person. There will be primary supply workers such as those providing aggregates and raw materials for the construction site. People employed or engaged by primary suppliers of the contractors who would, on a continuous basis supply goods for the core function of the project. The project will review the involvement of primary supply workers based on contractors' method of procuring construction inputs.

552. When primary supply workers are engaged, it must be ensured that no child and/or forced labor is involved and OHS requirements for the laborers are followed. Further, if security personnel are engaged in safeguarding project sites and material, the IAs will:

- Make reasonable inquiries to verify that the security personnel employed to provide security are not implicated in past abuses.
- Train them adequately (or determine that they are properly trained) in the use of force (and where applicable, firearms), and appropriate conduct toward workers and affected communities; and
- Require them to act within the applicable law and any requirements set out in the ESMP and there must be signed a Code of Conduct, in comprehensible local language, explained and understood including ramifications for non-compliance.

553. Government civil servants, who will provide support to the Project, will remain subject to the terms and conditions of their existing public sector employment agreement or arrangement unless there has been an effective legal transfer of their employment or engagement to the project.

5. Migrant Workers

554. Migrant workers may contribute to project activity in case of unavailability of experts and labour force in the native country. They often comprise a major part of workforce in Bangladesh, particularly where there is large scale construction/civil works. There is a possibility to have some migrant workers to be engaged in this project as contractors or sub-contractors to carry out civil works and electrical works. There is potential transmission risk of COVID19 both within the worksite and in nearby communities. These risks are not only from workers that are mobilized from abroad or returning from abroad, but also workers moving from other regions.

D. ASSESSMENT OF POTENTIAL LABOR RISKS

555. The labor risks for the project can be defined based on the nature and location where project activities will be carried out. Labor risks, including COVID-19 specific risks, in relation to the activities being carried out by the workers, are described below:

Labour influx	Modernization and enhancement of civil and restoration works are expected as part of the project. Because the project will only employ a small number of external workers, there will be little labor influx. Specific requirements to address hazards connected with labor influx, such as communicable diseases are expected to be modest and will be managed through contractual obligations, code of conduct, and training outlined in this LMP. Under the proposal, male and female workers, persons with disabilities, and other workers from vulnerable groups will be offered equal opportunities for employment, equal wages for equal work, or a standard.
Forced Labor	The "Prevention and Suppression of Human Trafficking Act, 2012" makes debt bondage and forced labor illegal. "Any person who unlawfully forces any other person to work against his or her will, compels to supply labor or services, or holds in debt-bondage to exact from the person any task by using force or other forms of coercion or by threat to do so," the law states. Forced labor, particularly that of local laborers or internal migrants, is a serious offense that must be prevented. The Project will conduct surprise and random inspections on a regular basis to guarantee safeguard compliance.
Labor Camp	Setting up labor camps in project regions might result in land encroachment; also, solid and liquid waste from the labor camp, as well as potential community health issues are the major concerns. During the selection of site for the establishment of the labor camp, it is recommended that it be built away from water bodies, productive land, and settlements. Solid and liquid waste shall not be dumped into bodies of water, and contractors will train staff to keep the camps clean. All employees will be subject to a Code of Conduct that will be strictly enforced. There will be a requirement to raise community awareness about the issue.
Occupational Health and Safety (OHS) and COVID-19 infections	The OHS of those involved in the project is a significant issue as COVID-19 is a highly contagious. Hazards include face-to-face interaction with the general public that increase pathogen exposure, long working hours, psychological distress, fatigue, occupational burnout, and physical and psychological stress. In addition, some infected people may not know that they have become infected and may contribute to the spread unknowingly. Exposure risks can increase for civil workers interacting with individuals with higher risks of contracting COVID-19 and for workers who have exposure to other sources of the virus in the course of their job duties. WHO's COVID-19 OHS Guidelines, AIIB's COVID-19 Considerations in Construction/Civil Works Projects and Public Consultations and Stakeholder Engagement will be referred to minimize the OHS hazards and risks.
Supply chain disruption	Supply of essentials as well as Project related goods and equipment may be hampered due to supply chain disruption due to COVID-19.

E. ASSESSMENT OF GBV RISKS IN RELATION TO LABOR CAMPS/ INFLUX

1. Gender Based Violence (GBV)

556. Gender-based violence (GBV), including Sexual Exploitation and Abuse (SEA), is a prevalent global challenge and manifestations likely exist in every environment where the Bank operates. Violence against women and children - and sometimes even against men - contributes to enduring physical and mental harm, while undercutting the ability of survivors, and often their families, to engage in meaningful, productive lives.

557. Finding solutions to reduce and respond to GBV is a critical development imperative, with implications for the productivity, agency and well-being of individuals and communities. Identifying and understanding the risk to women and children, as well as to other vulnerable populations, of SEA and GBV is challenging, yet critical. Risk factors are myriad and cut across multiple spheres, including at the individual, relationship, community, institutional and policy levels. Development projects, depending on their scope, can exacerbate existing risks or create new ones. Project-related risk factors include the size and scale of a project; the scale of labor influx; the extent to which a community has capacity to absorb labor influx or requires separate camp facilities; the inflow of income to workers, which can exacerbate already existing inequities between workers and community members; and the geographic location of project activities.

558. BREB has already form a complain committee to prevent sexual harassment in workplace. The committee include the following member:

- Director (Administration), Directorate of Investigation and Disciplinary, BREB
- Director (Administration), Directorate of Personnel Administration, BREB
- Deputy Director (Finance), Department of Accounts, BREB - member
- Deputy Director (Administration), Directorate of Public Investigation and Investigation-BREB.

The main responsibilities of the committee are.

- Opening the complaint box on the ground floor of the administrative building of the BREB to prevent sexual harassment of women in the workplace by the committee on the third Monday of every month.
- If a specific complaint is found in the complaint box established for the purpose of stopping sexual harassment of women at the workplace, hearing about the said complaint and taking investigation measures if necessary, settling it by the committee and sending monthly information according to the prescribed schedule.
- To send monthly related reports to the Ministry of Women and Child Affairs

2. Gender Analysis

a) Gender and Human Rights

559. BREB will emphasize equity and equality in its entire structure and processes. DoE will provide same facility to access and enjoy the same rewards, resources and opportunities regardless of whether they are women or men employees. BREB will prevent all forms of violence in workplace, including verbal, physical, or sexual harassment.

b) Gender In/Equality

560. BREB has a significant role and strategy to implement the project in line with gender aspect. BREB as a whole takes some remarkable steps to find and implement gender equality activities throughout the organization. We have more than 1200 female employees in almost every sector of work both managerial and operational positions. To ensure women's participation in nation-building we give full privilege to our working ladies. Almost 900 numbers of billing assistants all are female employees, make sure the balance of gender equality in the working environment. BREB also inaugurated a day-care center in its head office complex, to support a working mother. Two full-time doctors have been recruited to consult health-related problems for BREB employees. There is a fully independent committee for preventing women's harassment in office and protecting them from unpleasant working situations. BREB also endorse the objectives of World Bank's South Asia Gender and Energy Facility (SAGE) in its capacity as the Interim-Secretariat of the WePOWER Network and joining as an institutional partner. One of WePOWER's newest partnerships is with Bangladesh Rural Electrification Board (BREB), which serves 28 million people in the country, and provides energy to almost all of rural Bangladesh. BREB has 30,000 employees with around 5,000

female staff. Since BREB joined the WePOWER network, the rate of female employee participation has increased by 10% through recruitment, pensions and other benefits. Additionally, BREB has reserved the post of billing assistants for women. Enhancing job opportunities for female engineers is a priority for BREB's leadership There is a daycare center at the BREB's headquarters, lessening the burden on mothers in the workforce. At the institutional and policy level, BREB supports the participation of women employees in all technical assignments and capacity building opportunities.

c) Gender Data

561. This ESIA collect the sex-desegrated data within the 19 PBS. In Bangladesh both man and women are engaged in different project. Like other BREB project this project ensure the gender equity.

d) Gender Context

562. The Project document consider gender dimensions of Bangladeshi social, economic, legal and political contexts differentially affecting men, women, and sexual minorities that would for example highlight patriarchal decision-making structures.

e) Gender Access

563. The proposed project intends to create job opportunities for largely male skilled and unskilled people. It also provides access to woman and sexual minorities.

f) Gender and Care Work

564. This ESIA acknowledge that rural Bangladeshi women are overwhelmingly responsible for supplying household energy through their unpaid, time-consuming labor collecting firewood and other fuels for cooking and other energy needs. Without deliberate measures to alleviate time-consuming unpaid care, women are stymied from participating in income-earning opportunities.

g) Gender Inputs

565. As earlier project intervention by BREB, both man and women were involved in the project activities. So, it will be anticipated that both man and women will be involved in any activities at any stage of the Project cycle. This ESIA promogulated both women's and men's equal participation.

h) Recommendations

566. The Project should:

- Recognize and address Bangladeshi institutional structures that benefit men who have dominant decision-making roles.
- Target women with employment and training to promote Project-related income-generating opportunities.
- Address women's unpaid labor-intensive energy activities including firewood and other fuel collection and caring tasks by providing specific time-saving technology to free women's time up for income- earning activities.
- Include women and men equally in consultations before, during, and after implementation and convene separate consultations for each gender.
- Explicitly identify and address women's and men's differential Project roles and needs.

3. Essential Gender Analysis Checklist

567. This qualitative checklist reveals the extent to which gender-related issues are addressed from a rights-based approach. A Gender analysis checklist have been given in the Appendix 10

4. GBV Risk Assessment

568. When considering GBV risks, there are different "areas of impact" that influence both the nature of the risk, and the appropriate mitigation measures that a project can implement. However, due to the nature of the project, GBV risk is not expected.

569. These GBV risks will be assessed throughout the project's life by monitoring the situation, assessing the effectiveness of risk mitigation measures, and adapting them.

5. Action Plan for Gender Based Violence, Prevention and Response

570. The GBV action plan outlines the key measures for prevention, mitigation and response for:

a) The Potential GBV risks to women and adolescent girls (from adjoining communities) as a result of the influx of migrant labor and,
b) Women workers- All categories of project workers: Direct workers, Contracted workers, Migrant Workers, Community Workers and women staff.

571. In this project it is anticipated that the construction work will be executed by contractors whose workers may be local residents and also will come from outside districts. It is likely that the workers will come into contact with the community and vice versa. With varied cultural and economic backgrounds, the likely interactions between communities and workers may lead to potential women safety issues, making it pertinent to create awareness on gender issues, gender-based violence and risk mitigation, in particular. If not carefully managed, an influx of labor in the form of rapid migration and settlement of workers or locals can negatively impact a project area, especially in contexts with high prevalence and social acceptability of violence against women and girls. It is therefore essential to consider labor influxes and drivers of gender-based violence when designing risk assessment strategies and mitigation measures.

572. Robust measures be prepared and implemented to address the risk of gender-based violence in the project and adjoining communities. The purpose of the action plan is to identify the issues, stakeholders, possible service providers and assess their capacity and document the legal and institutional mechanisms that aid in accessing grievance redressal. The action plans will focus on sensitizing the communities and other stakeholders and strengthening their institutional capacities. This plan is intended for and applicable to all project implementing agencies, staff and adjoining communities throughout the project cycle.

6. GBV Training

573. To properly address GBV, the training and sensitizing of workers is essential. These workers include civil works contractors (including subcontractors and suppliers), supervision consultants, other consultants who may have a presence in the project adjoining communities - as well as the IAs. Projects can seek to embed training modules that incorporate GBV into the regular Occupational Health and Safety (OHS) 'toolbox' meetings with workers, official training and/or standalone training efforts. Linking the curriculum to actors outside the project such as health and education sector professionals may also be beneficial. Training on GBV should be thorough and proportional to the GBV risk. Respective PBS will be responsible for conducting this training.

574. At a minimum, training shall include:

- What GBV, particularly SEA and SH, is and how the project can exacerbate GBV risks.
- Roles and responsibilities of actors involved in the project (the standards of conduct for project-related staff captured in CoCs);
- GBV incident reporting mechanism, accountability structures, and referral procedures within agencies and for community members to report cases related to project staff.
- Services available for survivors of GBV; and,

- Follow-up activities to reinforce training content.

575. As projects are implemented, training on GBV should be made available to the project-affected communities so they can learn about the roles and responsibilities of actors involved in the project, processes for reporting incidents of project-related GBV, and the corresponding accountability structures. Training of both project-affected communities and project implementers allows all stakeholders to understand the risks of GBV, as well as appropriate mitigation and response measures.

F. CODE OF CONDUCT FOR WORKERS

576. A Workers Code of Conduct for this proposed project is essential to ensure the safety, efficiency, and professionalism of all personnel involved in the project. Construction of these substations and distribution line projects can involve various tasks, from wiring installations to maintenance and repairs. Here's a sample Workers Code of Conduct tailored for this proposed project are outlined here:

1. Safety First

- Prioritize safety at all times. Follow all safety procedures and guidelines.
- Use personal protective equipment (PPE) as required, including gloves, safety glasses, hard hats, and hearing protection.

2. Training and Certification

- Only perform tasks for which you are trained and certified.
- Keep your certifications up to date.

3. Electrical Codes and Regulations

- Adhere to local, state, and national electrical codes and regulations.
- Stay informed about any code updates or changes relevant to the project.

4. Quality Workmanship

- Perform work with precision and attention to detail to ensure the reliability and safety of electrical systems.
- Double-check all connections and wiring for accuracy.

5. Communication

- Maintain open and clear communication with team members, supervisors, and project stakeholders.
- Report any safety concerns or potential hazards immediately.

6. Tool and Equipment Care

- Properly use, store, and maintain tools and equipment.
- Report damaged or malfunctioning equipment to your supervisor.

7. Worksite Cleanliness

- Keep the worksite clean and organized to prevent accidents and tripping hazards.
- Dispose of waste materials and hazardous substances properly.

8. Emergency Procedures

- Know and understand emergency procedures, including how to shut off power in case of an electrical emergency.
- Follow evacuation plans and assembly points in case of fire or other emergencies.

9. Environmental Responsibility

- Dispose of hazardous materials in accordance with environmental regulations.
- Minimize waste and pollution.

10. Biodiversity Conservation

- During alignment of distribution line finalization, due consideration shall be given to minimize the loss of existing tree cover
- Tree felling, if unavoidable, shall be done only after compensatory plantation of at least two saplings for every tree cut is done.
- The species shall be identified in consultation with officials of forest department/local community, giving due importance to local flora, preferably same species as cut. It is recommended to plant mixed species in case of either avenue or cluster plantation.
- Design of plantation of fruit bearing trees and other suitable trees.
- It should be ensured that plantation is carried out only in areas where water can be made available during dry seasons and the plant can be protected during the initial stages of their growth.
- Place tower footprints away from creek beds and banks.
- Prepare and implement Pest management plan to prevemt pests from entering during construction and maintenance.
- Deploy personnel during construction to minimize disruption to inhabiting fauna.
- Preserve fallen woody material and litter for reptiles and small mammals.

11. Conflict Resolution - Address any conflicts or disputes in a professional and respectful manner. - Report conflicts to supervisors if necessary.

12. Reporting Violations - Report any violations of safety, ethical, or code standards to your supervisor or through the appropriate channels.

13. Professional Appearance - Maintain a professional appearance while on the job. - Wear clean and appropriate work attire.

14. Respect for Others - Treat all team members, clients, and stakeholders with respect and courtesy. - Avoid discrimination, harassment, or disrespectful behavior.

15. Alcohol and Substance Use - Do not consume alcohol or use non-prescribed drugs while on the job. - Be fit for duty at all times.

16. Continuous Improvement - Stay updated on industry best practices and technologies. - Seek opportunities for training and professional development.

17. Integrity - Act with honesty and integrity in all aspects of your work. - Avoid conflicts of interest and report any potential conflicts.

18. Documentation - Maintain accurate records of work performed, including diagrams, test results, and as-built drawings.

19. Accountability - Take responsibility for your actions and decisions. - Learn from mistakes and work to prevent them in the future.

20. Whistleblower Protection - Report any unethical behavior or safety violations without fear of retaliation.

21. Non-Discrimination:

- All project participants must treat each other with respect and dignity.
- Discrimination based on gender, race, religion, disability, or any other factor is strictly prohibited.
- Any discriminatory behavior will be addressed promptly.

22. GBV Prevention:

- We actively work to prevent GBV within the project.
- Awareness campaigns, training, and capacity-building programs will be conducted.
- Reporting channels for GBV incidents are established.

23. SEA and SH Prevention:

- Contractors, staff, and partners must adhere to strict guidelines regarding SEA and SH.
- A clear code of conduct will be communicated to all personnel.
- Reporting mechanisms for SEA and SH incidents are confidential and accessible.

24. Code of Conduct Acknowledgment - All personnel must read and acknowledge this Code of Conduct before starting work on the project.

Failure to comply with this Code of Conduct may result in disciplinary action, up to and including termination.

VIII. ENVIRONMENTAL & SOCIAL MANAGEMENT PLAN (ESMP)

A. GENERAL

577. Environmental mitigation measures and environmental monitoring requirements will be implemented through an Environmental and Social Management Plan (ESMP). The ESMP provides details of the environmental impacts, environmental mitigation measures, environment monitoring requirements, and environmental supervision responsibilities.

578. Its primary objective is to minimize, eliminate, or reduce negative environmental impacts through possible mitigation measures, while enhancing positive impacts through enhancement measures. The mitigation measures are designed either to prevent impacts or by mitigating those to reduce the negative impacts to an acceptable level that complies with the environmental guidelines of the DoE.

B. OBJECTIVES OF ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

579. Environmental and Social management plan (ESMP) is prepared for all the identified environmental impacts (as illustrated in Chapter VI) during pre-construction, construction and operation stages due to implementation of various Project activities and associated development. The ESMP includes mitigation plan, monitoring plan and environmental cost.

580. The aim of the ESMP is to ensure implementation of the recommended mitigation measures effectively. The mitigation measures are designed either to prevent impacts or by mitigating those to reduce the effect to an acceptable level that complies with the environmental guidelines of DoE and with the guidelines of the AIIB's ESF (2021) by adopting the most suitable techno-economic options. The ESMP also ensures that the positive impacts are conserved and enhanced. The main objectives of the ESMP for the project are:

- Define the responsibilities of the project proponents in accordance with the three project phases (design, construction and operation);
- Facilitate the implementation of the mitigation measures by providing the technical details of each project impact and proposing an implementation schedule of the proposed mitigation measures.
- Identify training requirements at various levels and provide a plan for the implementation of training sessions.
- Identify the resources required to implement the ESMP and outline corresponding financing arrangements; and
- Providing a cost estimate for all proposed ESMP actions.

C. ENVIRONMENTAL & SOCIAL MITIGATION MANAGEMENT PLAN

581. Mitigation measures for each of the impacts listed in Table IX-1. Responsible institutions/departments for the implementation and supervision of each of the environmental issues have also been illustrated. Mitigation measures have been suggested based on the knowledge of the Environmental Specialist, suggestions of the stakeholders collected during public consultation, and opinions from other relevant specialists. For the execution of this project, all the project components are enlisted into two contractcontracts, Oneone is turn-key contractcontract, and another one is line-contract. A turnkey contract is a comprehensive agreement where the contractor takes full responsibility for all aspects of a project. For complex projects like building a new substation, a turnkey contract might be preferable due to its simplified management approach. For this project the line contract belongs to BREBBREB, and the turn-key contract belongs to AIIB. The ESMP table has been spit out for turn-key contractor and for the line contractor.

582. In prior to detailed design, DED consultant will work with E&S consultant on these environmental & social issues identified in ESIA, then the DED will be finalized.

583. The mitigation measures will be considered successful when comply with the Environmental Quality Standards (EQS), policies, legal requirements set by DoE and other relevant GOB organizations. In absence of DoE's own EQS, other relevant international or other recognized organization's quality standard will have to be followed.

Table VIII-1 : Environmental and Social Management Plan for the for the Turn-key Contract

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
A	**Pre-construction Phase**					
A.1	**<u>Land purchase/Acquisition.</u>** ▪ Loss of Agricultural Land ▪ Cultural, historical and Aesthetic Loss ▪ Loss of sensible places ▪ Corruption and partiality during land purchase.	▪ Avoid the important environmental and social sensitive areas, such as protected forest reserves, settlements, archaeological and cultural sites etc. when route alignments are selected ▪ Place priority in selecting unencumbered land belonging to the government (located adjacent to the road) ▪ Avoid the important environmental and social sensitive areas, such as protected forest reserves, settlements, archaeological and cultural sites etc. when route alignments are selected ▪ Place priority in selecting unencumbered land belonging to the government (located adjacent to the road) ▪ Lease/purchase private land with the full consent of the landowners if such government land is not readily available. ▪ Maintain full transparency in private land transactions and ensure that land is leased/purchased with free and informed consent of the respective landowners. ▪ Ensure that negotiations with landowners and agreements reached to lease/purchase the land is monitored and documented by independent third party. ▪ Ensure that land prices are determined at prevailing market prices ▪ Provide additional assistance for vulnerable landowners.	Proposed Substation Land & RCT locations	Throughout the pre-construction period.	PBS/BREB	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		▪ In managing the remaining purchase land, relevant stakeholders will be consulted and engaged as proposed in the Stakeholder Engagement Plan. In addition, in cases of impacts on livelihood, rehabilitation through appropriate skill training/financial counselling would be required. ▪ Finally, most of the land will be purchased through "willing buyer willing seller method" by PBS. Concerns and the needs of vulnerable groups will be addressed through a mix of measures that includes additional assistance. ▪ Phase 1 Environmental Site assessment (ESA) should be conducted for all the existing substations, and any further recommendations arising from the findings of the Phase 2 ESA will be done by BREB. ▪ AIIB will provide input to the Phase 1 ESA Term of Reference, in choosing the consultant, and reviewing the Phase 1 ESA findings and recommendations which will be implemented by BREB.				
A.2	**Disruptions to other utility services and assets** ▪ Prior to construction, the BREB will obtain clearances and permits for power distribution infrastructure from agencies including the Forestry Dept., the Department of Railways & Roads & the Department of Telecommunications, as well as, if applicable, from aviation authorities.	▪ Upgrading of existing substations will be done within their existing premises; hence no additional land is required. ▪ Obtain necessary clearances consistent with the requirements of Government of Bangladesh from other utilities and asset owners such as Forestry Dept., the Department of Railways & Roads & the Department of Telecommunications, aviation authorities prior to the commencement of civil works. ▪ Relocate all public utilities (e.g., water pipes, gas pipes, power/telephone lines)	Proposed Substation Land & RCT locations	Throughout the pre-construction period.	PBS/BREB	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		that may be affected prior to the commencement of civil works ▪ Allocate sufficient funds for the relocation of utilities ▪ Prepare and obtain BREB's approval for the Traffic Management Plan for roads as well as for the river to avoid any disruption to existing road assets, vehicular movements and inconveniences to road commuters				
A.3	**Agricultural Resources** ▪ Construction activity may have an impact on agricultural land and crop production, though most of it will be for temporary period only ▪ Project vehicle movements in dusty areas may infect tree leaves by depositing dust and smoke and affect the photosynthesis rate until sprayed with water properly.	▪ Crop compensation will be provided if any crops will be affected. ▪ Provide compensation for crops and trees that will be affected by civil works ▪ Provide employment opportunities in civil works for families whose agricultural activities are temporarily disrupted due to civil works ▪ Avoid/minimize impacts of dust and smoke emissions on nearby crops, cultivations and trees.	Proposed Substation Land	Throughout the pre-construction period.	BREB	DSC/ BREB
A.4	**Cutting or trimming of trees and vegetation** **Loss of trees** ▪ Loss of standing crops (if any), grass and bushes of substation sites and construction camp sites	▪ Ensure that felling or trimming of any trees are undertaken only when it is essential such as for safety clearance requirements. ▪ Obtain prior approval from the Forest Department for felling/trimming trees around the protected or forest areas reserves ▪ Provide compensation for any loss of fruit-bearing trees that have economic value . ▪ Schedule the times for tree felling/trimming to avoid the breeding seasons of the birds. ▪ Ensure that any tree replanting programs are conducted without any disturbances to the project activities.	Affected substations land as per land audit	Throughout the pre-construction period.	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		▪ Select the plant species varieties that would restore the lost territorial flora and fauna habitats. ▪ Provide adequate compensation to the owners in a timely manner prior to the commencement of clearing the vegetation.				
A.5	**Flora and Fauna** ▪ Disturbance of wildlife specially birds due to project activities such as earthworks, moving of project equipment and transports.	▪ In prior to construction, Biodiversity Screening Framework and detail biodiversity screening assessment should be carried out after finalization of all DL route and detail design to identify potential impacts on biodiversity early in the planning stage. ▪ Providing training to the worker for maintaining the Code of Conduct for the workers.	Existing and Proposed Substations location	Throughout the pre-construction period.	BREB	DSC/ BREB
A.6	**Socio-economic conditions** ▪ Employment opportunities for the local people especially for PAPs.	▪ Provide employment for local people, specially PAPs for the project activities as much as possible. ▪ Utility infrastructure relocation will be considered in the design and budgeting process. ▪ Substations must be designed so that their noise levels do not exceed the statutory limits for residential areas, which are set by law.	Existing and Proposed Substations location	Throughout the pre-construction period.	Contractor	DSC/ BREB
A.7	**Encroachment into ecologically sensitive areas** ▪ The proposed project site is located in a plot area earmarked for Industrial development. There is no encroachment of sensitive habitats like protected forest areas or terrestrial wildlife sanctuary habitats.	▪ For tree cutting/trimming outside protected or forest areas obtain approvals from forest department as per national regulatory framework, approvals are required. ▪ Ensure that no work shall be undertaken, and no temporary or permanent project facilities are established within the designated protected areas, IBA, reserve forest area, or sacred grave etc.	Existing and Proposed Substations location/ RCT locations	Throughout the pre-construction period.	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
A.8	**Occupational Health & Safety** ▪ The construction of substations and river crossing tower pose some risk to the health and safety of workers.	▪ Conduct a workshop to assess the OHS risks with the participation of the contractor, BREB, and project implementation agency. ▪ The risk assessment should be undertaken through a facilitated risk assessment workshop involving the contractor, BREB, and project implementation agency. ▪ Place the garbage containers for the disposal of garbage generated by workers (as rubbish burning is forbidden). ▪ For any BREB stationed at the substation (typically little more than 2 or 3 people), a drinking water supply that satisfies drinking water requirements must be supplied.	Existing substations, Proposed substations, River Crossing Tower, Fault Locator	Beginning of construction period.	Contractor	DSC/ BREB
A.9	**Community Health & Safety** ▪ The substation itself carries risks as it controls power. There is always a risk of accident and shock. Although people do not know about risks in new substation locations, they imagine that power can cause accidents if there is no proper management.	▪ Prior to construction work, the contractor will be required to develop a community health and safety risk assessment and plan. ▪ The risk assessment should be undertaken through a facilitated risk assessment workshop involving the contractors. ▪ Community health and safety measures e.g., fencing and signage will be incorporated into the detailed design. ▪ Engagement of stakeholders for decision making and aware them about project components.	Proposed Substation, River Crossing Tower, Fault Locator	Beginning of construction period.	BREB/ Contractor	DSC/ BREB
A.10	**Drainage** ▪ Raising the transformer platforms in substations up to 2 ft above the highest flood level can create a barrier, potentially forcing floodwaters to divert to lower-lying areas downstream.	▪ Design a drainage system for the raised substation site to manage stormwater runoff effectively and prevent ponding. Integrate this system with the existing drainage network to minimize disruption. ▪ Integrate this system with the existing drainage network to minimize disruption.	Proposed substations and existing substations	During detailed design stage; always prior to construction	BREB/ Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
	▪ The raised site can disrupt the natural drainage patterns, leading to waterlogging in nearby fields.	▪ Implement soil conservation practices like topsoil stockpiling and proper compaction control to minimize soil damage during construction. ▪ Develop a plan for handling stormwater, domestic wastewater, and contaminated water according to local regulations.				
A.11	**Hazardous Material, Waste Management & Potential Legacy Contamination** ▪ Transformers are one of the most common forms of industrial hazardous waste, containing metals toxic to human health and the environment. ▪ Other equipment also releases chemicals and gases that are harmful to environment and Human health.	▪ A proper stormwater management plan is essential. This could involve installing drainage channels, detention ponds, or using permeable materials to allow water infiltration. If the substation generates any domestic wastewater (e.g., from toilets or sinks), a septic system or connection to a municipal sewer system might be needed, depending on local regulations ▪ Prepare a plan for handling any potential leaks of transformer oil or other contaminants. ▪ All transformer oil bought will be tested for PCBs as part of BREB's internal procedure.	Proposed substations and existing substations	During detailed design stage; always prior to construction	BREB/ Contractor	DSC/ BREB
A.12	**Proximity of Sensitive Receptors/ Indigenous Community** ▪ Substation construction and operation can disrupt traditional cultural practices and sacred sites if not carefully planned. ▪ Land acquisition led to loss of traditional hunting grounds, agricultural land, or access to natural resources for the indigenous communities	▪ Prepare Indigenous People Plan (IPP) and Indigenous People Plan Framework (IPPF) that covers the various factors like project design, community engagement, and mitigation measures implemented ▪ FPIC from the affected indigenous communities before proceeding with any construction activities. This involves transparent communication, ensuring communities understand the project's potential impacts and have a say in the decision-making process. ▪	Proposed substations and existing substations	During detailed design stage; always prior to construction	BREB/ Contractor	DSC/ BREB
B	**Construction Phase**					

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
B.1	**Land and agricultural resources.** ▪ Unanticipated impacts on the property including land and structures ▪ Loss of agricultural land causes a temporary disruption of farming activities, damage to crops, bunds, canals and drains.	▪ Follow design drawings and implement careful construction practices to avoid damage to existing structures (e.g., buildings) and roads, crops, bunds, canals and drains. ▪ Defining the work zone and preventing incursions outside the agreed-upon impact corridor. ▪ Avoid fertile land cultivated with two or more crops, or land with such potential. ▪ Place priority on selecting non-agriculture khash land if available. ▪ Retain the most productive lands in the surroundings where the soil conditions are suited for agriculture production. ▪ , Install a drainage system during the rainy season to drain surplus water. ▪ Restore the irrigation and drainage systems to ensure continuity of the agricultural activities. ▪ Encourage the farmers to use shallow and deep tube wells for irrigation to cultivate Boro rice and Rabi crops. ▪ Install deep tube wells for irrigation of winter cropping areas. ▪ Provide adequate spaces for the movement of cattle and agricultural machinery.	Proposed Substations, River Crossing Tower locations and construction camp	Throughout the construction period.	Contractor	DoE/ BREB
B.2	**Interference with traffic and accessways** ▪ Stockpiling of poles, spoil and cable reels can cause the block	▪ Maintain safe access to public and private properties and roads ▪ Provide alternative routes and accesses if there are temporary diversions or blockages. ▪ Ensure that stockpiling of poles, spoil and cable reels are located far away from public and private properties and only in designated areas	Construction areas and Route of material movements	Throughout the construction period.	Contractor	DoE/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
B.3	**Soil erosion** ▪ Soil erosion during substation construction & Tower construction.	▪ Ensure that excavations for substations are y carried out within the boundaries of the substation sites. ▪ Avoid/minimize unnecessary removal of existing vegetation and topsoil. ▪ Use the removed topsoil to restore the surface of excavated areas.	Proposed substations land and tower location/ Construction camp	Throughout the construction period	Contractor	DoE/ BREB
B.4	**Ecosystem /Cutting or trimming of trees.** ▪ Loss of Trees on substation land and tower location.	▪ No temporary or permanent projects shall be undertaken or established within a protected area, IBA, reserved forest area, or sacred grave etc. ▪ Avoid felling of mature trees As much as possible ▪ Demarcate of the working area and avoid encroachments outside the defined corridor of impact. ▪ Ensure that felling or trimming of trees are carried out only to meet the design requirements and for safety clearance requirements. ▪ Compensate for the unanticipated loss of fruit-bearing trees that have economic value f r ▪ Consult the Forest Department and obtain its approval prior to the removal of all public trees their replacement with native tree species. ▪ Ensure that contractor's EHS officer checks for presence of nesting birds or roosting bats. ▪ Avoid tree felling/trimming during bird nesting/breeding seasons. ▪ Inventorize trees to be felled or trimmed prior to beginning land clearing work at substation sites and along RCT locations. ▪ Compensate the affected public trees through compensatory afforestation in	Proposed substations land and tower location/ Construction camp	Tree plantation programme will be conducted quarterly	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		accordance with forest department rules. ▪ Conduct a Critical Habitat Assessment (CHA) prior to any construction activities in areas where CR and EN species were found.				
B.5	**Biodiversity** ▪ Clearing vegetation for construction can fragment wildlife habitats, disrupting animal movement and breeding patterns. ▪ Food scraps and waste from construction camps can attract scavenger animals, potentially increasing human-wildlife conflict. ▪ Disturb birds and other wildlife due to stringing operation of power line particularly during breeding seasons	▪ Clearly demarcate construction boundaries and establish buffer zones around sensitive habitats. Minimize vegetation clearing within these zones. ▪ If construction fragments habitats, consider creating wildlife corridors (e.g., green bridges over roads) to allow safe animal movement. ▪ Implement security measures like fencing, patrolling, and controlled access to prevent unauthorized entry and poaching activities. ▪ Work with local communities to raise awareness about the importance of biodiversity and encourage their participation in conservation efforts. ▪ Avoiding stringing of power line during breeding seasons or establishing buffer zones around critical habitat areas ▪ If workers encounter wildlife, especially protected species, stop work immediately. ▪ Depending on the species and situation, contact the relevant wildlife agency (e.g., forestry department) for guidance or assistance. Do not allow workers to handle wildlife themselves. ▪ For some species, relocation by trained personnel might be necessary. ▪ Utilize insulated conductors in high-risk areas for avian collisions, particularly near nesting or roosting sites. Insulated conductors reduce the risk of	In and around of proposed substation's location and River crossing tower locations	Throughout the construction period.	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		electrocution if a bird contacts both phases simultaneously. ▪ Maintain adequate spacing between conductors to prevent birds from bridging the gap and causing a short circuit.				
B.6	**Dust & air pollutions.** ▪ Emissions from construction related vehicles and machinery. ▪ Dust suspension due to frequent vehicle/trucks movement in roads & construction works. ▪ Health hazard to laborers and residents/ workers due to dust spreading.	▪ 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. ▪ Improve the conditions of unpaved access roads to substations before the commencement of any excavation or other earthworks at the substations. ▪ 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 sites. ▪ Minimize the removal of existing vegetation and topsoil. ▪ Prohibit burning of waste generated by project related activities. ▪ Prohibit burning of construction-related waste in open spaces	At all work sites, in the impact corridor	Throughout the construction period.	Contractor	DSC/ BREB
B.7	**Noise pollution** ▪ During construction on the land, noise levels produced by vehicles, machinery, concrete mixing, and other construction activities will exceed the applicable standards and may cause nuisance to local community. ▪ Hearing hazards to labors and residents.	▪ Introduce noise plugs for workers during the operation of heavy construction equipment. ▪ Do not allow any construction work during nighttime (9 PM to 6 AM) ▪ The layout of the substations will need to be designed to keep construction works and transformers as far away from the houses as possible, to ensure that noise generated from construction activities and during substation	Construction site, construction camp.	Throughout the construction period.	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		operation does not exceed these noise levels. ▪ Avoid using of construction equipment producing excessive noise at night. ▪ Construction activities should not be during nighttime. ▪ Avoid prolonged exposure to noise (produced by equipment) by workers; and ▪ Regulate use of horns and avoid use of hydraulic horns in project vehicles. ▪ Generator should be placed within room (concrete walls with roof). ▪ Monitoring of noise level at construction site, construction camp as and when required.				
B.8	**Occupational health and safety** ▪ Health & safety risks of construction workers during the construction period	▪ (During the COVID-19 pandemic), conduct temperature checks at the entry points to the worksite at the start of shift, and record all suspected and confirmed cases. ▪ Ensure that workers comply with the EHS Guidelines on construction and demolition. ▪ Ensure that workers are already qualified or else they are trained to operate on electrical equipment and working at heights. ▪ Take disciplinary action against workers who do not comply with the use of PPE ▪ Utilize properly anchored and maintained fall arrest systems (harnesses, lanyards, shock absorbers) for all workers deployed for the construction of towers and cables over the river crossings ▪ Implement double tie-off procedures to ensure redundancy and safety.	All construction site, labour camps	Regularly	Contractor	DoE/BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		▪ Use fixed ladders or walkways with guardrails for safe access and egress. ▪ Utilize temporary safety nets below work areas to catch potential falls. ▪ To prevent Electrocution, De-energize the lines or isolate work areas from live conductors whenever possible. ▪ Ground all tools and equipment used near live lines. ▪ Maintain safe working distances from energized conductors based on voltage and weather conditions. ▪ Wear electrically insulated gloves, boots, and coveralls for added protection. ▪ Provide workers with snake boots and long pants as PPE during construction activities in high-risk areas.				
B.9	**Release of toxic pollutants, chemicals and gases to receptors (air, water, land) from transformers and other project equipment** ▪ Transformers are one of the most common forms of industrial hazardous waste, containing metals toxic to human health and the environment. ▪ Other equipment also releases chemicals and gases that are harmful to environment and Human health.	▪ Provide training on handling of PCB hazards related to old transformers and as per the requirements of national laws and regulations for its phase out and environmentally sound disposal. ▪ Label the equipment purchased by BREB or Contractor as PCB & SF6 free. ▪ The oil must be sampled and analyzed following UNEP Guidelines for the identification of PCB and materials Containing PCB18 and in the absence of test data all transformers must be assumed by the Contractor to contain PCBs and a health and safety risk assessment and plan referring to the measures in UNEP (2002) PCB transformers and capacitors: From management to reclassification and disposal. ▪ Chemical and/or oil resistant gloves, goggles, and protective clothing need to	Existing substations which will be augmented/ Fault locator/ Transformer	Inspection and testing at Monthly	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		be available for workers to wear whilst sampling transformers. ▪ Required proper transport, storage, decontamination, and disposal of contaminated units to be assured by BREB; disposal should involve facilities capable of safely transporting and disposing of hazardous waste containing PCBs and SF_6. ▪ Obtain approval from relevant authorities for the handling, transport, storage and disposal of old transformers by third party vendors ▪ Surrounding soil exposed to oil leakage from equipment should be assessed by Contractor, and proper removal remediation measures should be implemented in accordance with the General EHS Guidelines. ▪ Transformers should be located on concrete pad platforms with oil liners for any potential leakage. ▪ A protocol in handling hazardous waste like lead acid batteries (if any), lubricants, etc. in their operations should be developed by BREB.				
B.10	**Water Resources** ▪ During construction, greywater generates from the base camp location and may contaminate local water body and soil if mixed into irrigation canal and local waterbodies. Spillage of any kind of oil or lubricant during construction activity may hamper soil quality.	▪ Provide 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 (the same requirement applies to any construction camps). ▪ Provide an appropriate construction waste collection and disposal system. ▪ Provide designated hard standing areas for equipment servicing, refuelling, and wash down at least 50m away from	Construction site, labour camp, Adjacent Pond to the substation.	Throughout the construction period	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		watercourses, springs, and wells, with drainage directed through oil and grease interceptors before being discharged into a settling pond before discharging offsite. ▪ Enforce good operation and maintenance practices for construction equipment. ▪ Store oil, fuels, and chemicals and mounting of the plant containing oil and diesel on drip trays to catch leaks. ▪ Place oil spill clean-up materials (sorbent pads, loose sorbent material, etc.) at the site. ▪ In case of construction of ground water abstraction units (tube wells) at Project site, obtain the prior to installation of any tubewell.				
B.11	**Fisheries** ▪ Loss of floodplain areas and burrow pits/ponds with consequent loss of aquatic fauna and flora	▪ Do not throw any garbage, toxic or otherwise, into neighbouring water bodies or the river. ▪ Any portion of a water body holding fish that has been temporarily isolated for the existence of fish must be inspected for the presence of fish, and all fish must be caught and returned uninjured in nearby fish habitat.	Adjacent fishpond near to the construction site and labour camps	Throughout the construction period	Contractor	DSC/ BREB
B.12	**Burrow pit** ▪ Borrowing pits can disrupt natural habitats and displace wildlife, especially if located in ecologically sensitive areas. ▪ Improper excavation and management of borrow pits can lead to soil erosion, sedimentation of waterways, and loss of fertile topsoil. ▪ Borrow pit activities can pollute nearby water sources through dust, runoff containing pollutants, or accidental spills.	If any borrow pit is required, then PBSs will find suitable locations avoiding any disruption. For Identification and selection of sites for disposal and borrow pit some criteria and mitigative measures should be considered as follows: ▪ Locations will not in ecological sensitive area (e.g. Protected Area or Key Biodiversity Area)	Proposed Burrow pit location	When required during construction period	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		▪ Locations will not in wetlands or riparian zones, i.e. at least 500 meters from river, lake etc. ▪ Above the 0.05 (5%) Annual Exceedance Probability flood line. ▪ Not on slope-land of more than 10%, to avoid erosion or landslid. ▪ Not in land with agricultural, spiritual, cultural, historical value, etc. ▪ Not where groundwater emerges, or a thick organic layer is present. Where possible existing borrow pits or spoil disposal sites shall be used. If new sites are needed, the contractor shall obtain approval from the relevant authorities and from PMU/PMC to ensure that sensitive habitats are avoided, and that appropriate mitigation and rehabilitation measures will be implemented. ▪ Obtain and document agreement with the landowner. ▪ Ensure minimization of vegetation and habitat loss and limit land clearance to only the land required for the borrow pit / spoil disposal.				
B.13	**Community health and safety (H&S)** ▪ Community health and safety such as the toppling of concrete poles, traffic and accidents, the emergency spill of materials, and access of villagers to dangerous working areas.	▪ Prevent stagnation of residual water to avoid breeding for mosquitoes and other insects. ▪ Display the site and office contacts in the event of a grievance during construction. ▪ 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. ▪ Provision for ensuring the cable's security to prevent vandalism.	All construction site, labour camps	Regularly	Contractor	DoE/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		▪ Lighting arrestors should be installed along all lines. ▪ Do not leave hazardous conditions (e.g., unlit open excavations without means of escape) overnight unless no access by the 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.				
B.14	**Fire safety.** ▪ Risk of fire hazard	▪ Provide appropriate types of firefighting equipment suitable for the construction camps. ▪ Display emergency contact numbers clearly and prominently at strategic places in camps. ▪ Firefighting equipment will be made available as required at construction sites, camp sites, and particularly near the fuel storage. ▪ Workers should be trained in emergency preparedness and response procedures and a manual on safety and emergency procedures during operation should be prepared and disseminated to workers on, e.g. extinguishing oil fires from transformers. ▪ Undertake overall responsibility for fire safety implementation, including appointing a fire safety officer, and ensure adequate resources, and regular training and drills. ▪ Ensure that workers understand fire safety procedures, know emergency escape routes, operate fire extinguishers, and participate in	Existing and proposed substations site, Labour camp and construction operation area	Monthly	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		training and drills. ▪ Install and maintain a fire alarm system in all buildings, with clear procedures for activating and responding to alarms. ▪ Install a sprinkler system in high-risk areas such as storage rooms and electrical panels and ensure that they are regularly inspected and maintained.				
B.15	**Risks of damages to sub-surface utilities and chance find of physical cultural resources during construction.** ▪ Damage or loss of sub-surface utilities. ▪ Damage to cultural heritages in the project area.	▪ Consult the relevant local authorities (electric, water, telecoms) on whether there are known pipes, cables, or other utility lines to identify any unknown underground utilities prior to excavation. ▪ Rehabilitate the damaged utilities to their original condition in conjunction with relevant local authorities at the cost tof the contractor. ▪	In and around of proposed substation's location and River crossing tower locations	Throughout the construction period.	Contractor	DSC/ BREB
B.16	**Labour Management** ▪ Risk of Social conflict between labors and community people ▪ Increased risk of illicit behavior and crime ▪ Due to migrant labour local inflation of price and increased pressure on accommodation and rent	▪ Reduce labor influx into the project area by sourcing all unskilled labor from within and around the sub-project area. If skilled labor is not available locally, it will be imported from outside the sub-project region. ▪ Prepare a Workers' Camp Management Plan by the BREB or Contractor that addresses specific aspects of the setup and operation of workers' camps, such as differentiating labor camps from material storage locations. ▪ Encourage use of flameproof material for the construction of labor housing / site office. Also, ensure that these houses/rooms are of sound construction and capable of withstanding windstorms/cyclones.	All construction sites & Labour camp	Throughout the construction period	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		▪ Construction camps will be located at least 500 m away from the communities. Entry of the site personnel in the local communities will be minimized to the extent possible/appropriate. ▪ Establish a Workers' GRM to report and resolve grievances related to health and safety aspects of the workers.				
B.17	**Gender-Based Violence and Harassment (GBVH)** ▪ Women and girls may be subjected to verbal harassment, intimidation, and threats of violence ▪ Women may be denied access to jobs, land, or other resources in exchange for sexual favors. ▪ Women may be excluded from decision-making processes or denied access to project benefits.	▪ Develop and implement a GBVH prevention and response policy. ▪ All project personnel, including workers, supervisors, and community members, should be trained on GBVH awareness, prevention, and response. ▪ Ensure gender balance in the workforce: Make efforts to recruit and hire women for construction and project-related jobs. ▪ Provide accessible and confidential channels for women to report incidents of GBVH and ensure that complaints are investigated and addressed promptly and fairly. ▪ Work with local organizations and community leaders to raise awareness about GBVH and develop culturally appropriate prevention strategies.	All construction sites & Labour camp	Throughout the construction period	Contractor	DSC/ BREB
B.18	**Impact on Indigenous Community** ▪ Land acquisition for construction could lead to the loss of traditional hunting grounds, agricultural land, or access to natural resources that the communities depend on for subsistence and income. ▪ Construction activities can disrupt daily life with noise, dust, and increased traffic congestion. This can affect sleep patterns, social gatherings, and traditional activities.	▪ Provide capacity-building programs for the indigenous communities to help them participate effectively in project decision-making and benefit from potential opportunities. ▪ Conduct a cultural heritage assessment to identify and protect any sacred sites or areas of cultural significance that might be affected by the project. ▪ Implement long-term monitoring program as identified in the IPP to assess the social impacts of the project on the indigenous communities.	At identified IP communities' area	Throughout the construction period	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		▪ Careful project siting that minimizes land acquisition from indigenous communities and respects cultural sensitivities can significantly reduce negative impacts. ▪ Open communication, obtaining Free, Prior, and Informed Consent (FPIC), and involving the communities in decision-making can help mitigate disruption and build trust. ▪ Implementing measures like dust control, noise reduction, and scheduling construction activities outside peak hours can minimize disturbance to the communities				
B.19	**Chance Find Procedures (PCRs)** ▪ According to survey within the project area no sensitive receptor or archeological site have been identified. If any person discovers a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction phase.	▪ In case PCR is encountered during excavation, construction activities including traffic within the project area will be stopped immediately by the contractor. ▪ The discovery will be reported by the site engineer or representative from the contractor to PIU, BREB environment staff (or Consultant. ▪ The Contractor can continue with excavation and construction works within the affected area after the DOA staff has given clearance.	All constructions site and camps	When identified action need to take immediately	Contractor	BREB/DOA
C	**Operation Phase**					
C.1	**Short Circuit/Accident** ▪ Due to the short circuit of the substation, disruption of power and accident will occur.	▪ For adequate power generation, O&M of the substations should be completed in a timely manner.	All completed substations	At all times	PBS	DoE/BREB
C.2	**Power Supply** ▪ Due to adequate reliability of power supply, social life and economic condition of the people will be improved	▪ For adequate power generation, O&M of the substations should be completed in a timely manner.	All the substation site	At all times	PBS	DoE/BREB
C.3	**Waste Management**	▪ A Waste Management plan need to develop for responding to an emergency	All new completed &	At all times	PBS	DoE/BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
	▪ Preservatives used to treat wooden poles, can leach into the soil and groundwater over time. These chemicals can be harmful to plants, animals, and even human health if exposure levels are high. ▪ Poor drainage system led to contaminate water body and soil by run-off and oil spills	for hazardous materials and oil spills will be developed. ▪ A suitable drainage system with sedimentation ponds and oil separators will be provided to prevent contamination by run-off and oil spills	augmented substations			
C.4	**Community health and safety** ▪ Community H&S nearby the substation site	▪ If possible, generators should be installed in a room that is closed. ▪ Introduce safety barriers and warning signs around the substation sites	All the substation site	At all times	PBS	DoE/BREB
C.5	**Safety & Security of workers** ▪ Risk to the continuous power supply and even damage of substation	▪ In collaboration with law enforcement authorities, ensure security of the substation. ▪ A complaint book should be kept in the substation for documenting people's grievances. ▪ For substation operations, ensure the availability of sufficient safety equipment. ▪ Restricting working at height only by workers who are trained and certified to do so. ▪ Provide personal protective equipment (PPE) for employees, safety instructions, personal safety devices such as harnesses, tool bags, ropes, etc., and other safeguards	All the substation site/ River crossing tower	At all times	PBS	DoE/BREB
C.6	**Socio-economic Impact** ▪ Once there is a reliable power supply, the area will benefit from a better economic development. As a result, there will be more employment opportunities as people plan to establish small-scale industries in the area.	▪ Reduce electricity theft and distribution losses and ensure financial savings for utilities and consumers. ▪ (BREB and PBS supporting community-based electrification projects and microgrids) shall empower the local communities by providing access to electricity for essential services (e.g., healthcare, education), and stimulating small-scale entrepreneurship.	All the PBSs	At all times	PBS	BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		▪ Ensure a swift response to restore power after disruptions				
C.7	**Impact on the local community** ▪ Disturbance to local community due to maintenance works	▪ During maintenance, works provide signage detailing site and office contacts in case of grievance. ▪ To safeguard the health and safety of maintenance employees and road users, implement traffic management measures during maintenance work using warning signs or flag personnel. ▪ Provide at least one-month advance notice to the local community through the village heads about the schedule of, location plan, and details of planned maintenance work. ▪ Carry out maintenance works only during daytime hours and on weekdays unless otherwise agreed with the village heads.	All the PBSs	At all times	PBS	DoE/BREB
C.8	**Fire Safety** ▪ Risk of fire hazard	▪ Make available firefighting equipment at the worker camps. ▪ Adopt safety precautions to transport, handle and store hazardous substances, such as fuel. ▪ Make available first aid kits will be available. ▪ Ensure the space and smooth operations for fire brigade and rescue vehicles during a fire broke out, earthquake, building slide or other disaster.	All the substations site	At all times	PBS	DoE/ BREB

Table VIII-2 : Environmental and Social Management Plan for the line contractor

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
A	**Pre-construction Phase**					
A.1	**DL route selection** ▪ Prior to the construction stage it is mandatory to select and finalize the route as the misspell of route selection can resulting into vegetation damages, habitat fragmentation, land use disruption and public health concern.	▪ In prior to detailed design, DED consultant needs to work with E&S consultant on these environmental & social issues identified in ESIA, then the DED will be finalized. ▪ During the design phase, different route alignment will be studied for the selection or finalization of DL route. ▪ Conduct environmental surveys to identify sensitive habitats (e.g., wetlands, old-growth forests) and avoid them if possible. ▪ Consider existing corridors (roads, pipelines) for co-location to minimize new disturbances. ▪ If crossing sensitive areas is unavoidable, minimize the width of the right-of-way. ▪ Utilize appropriate pole designs and materials that blend better with the surroundings. ▪ Consider underground cabling in areas with high bird collision rates.	Throughout the DL route	Throughout the pre-construction period	BREB	DSC/ BREB
A.2	**Interface with other utilities and traffic** Prior to construction, the BREB will obtain clearances and permits for power distribution infrastructure from agencies including the Forestry Dept., the Department of Railways & Roads & the Department of Telecommunications, as well as, if applicable, from aviation authorities.	▪ Prior to works, BREB will approve a traffic management plan for exiting road and river crossing point developed by the contractor in accordance with the project ESMP. This plan will help to minimize risks from interference with existing roads at construction sites and used for haulage during construction and after completion. ▪ 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.)	Throughout the underground DL route	Throughout the pre-construction period	BREB	DSC/ BREB
A.3	**Agricultural Resources** ▪ Construction activity may have an impact on agricultural land and crop production,	▪ Crop compensation will be provided if any crops will be affected due to pole construction & material movement for DL construction. ▪ The landowner also gets the proper value for that land.	Throughout the DL route	Throughout the pre-construction	BREB	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
	though most of it will be for temporary period only ▪ Project vehicle movements in dusty areas may infect tree leaves by depositing dust and smoke and affect the photosynthesis rate until sprayed with water properly.	▪ A compensation program for the creation of jobs for victim families, initiatives to reduce the negative impact on agricultural lands, and increased crop production from limited land will keep the loss at an agreeable limit.		period		
A.4	**Cutting or trimming of trees and vegetation** ▪ One of the regular programs to maintain the integrity of the distribution lines is the trimming of tall trees and vegetation along the ROW. **Loss of trees** ▪ Loss of standing crops (if any), grass and bushes of construction camp sites	▪ Ensure that felling or trimming of any trees are undertaken only when it is essential such as for safety clearance requirements. ▪ Obtain prior approval from the Forest Department for felling/trimming trees around the protected or forest areas reserves ▪ Provide compensation for any loss of fruit-bearing trees that have economic value. ▪ Schedule the times for tree felling/trimming to avoid the breeding seasons of the birds. ▪ Ensure that any tree replanting programs are conducted without any disturbances to the project activities. ▪ Select the plant species varieties that would restore the lost territorial flora and fauna habitats. ▪ Provide adequate compensation to the owners in a timely manner prior to the commencement of clearing the vegetation.	Throughout the DL route	Throughout the pre-construction period	Contractor	DSC/ BREB
A.5	**Socio-economic conditions** ▪ Employment opportunities for the local people especially for PAPs.	▪ Employ local people, especially PAPs, for the project activities as much as possible. ▪ Prior to the actual start of construction, all public utilities (e.g., water pipes, gas pipes, power/telephone lines) that may be affected by the proposed highway will be relocated; and ▪ Utility infrastructure relocation will be considered in the design and budgeting process.	Throughout the DL route	Throughout the pre-construction period	Contractor	DSC/ BREB
A.6	**Flora and Fauna**	▪ In prior to construction, Biodiversity Screening Framework and detail biodiversity screening assessment should be carried out after	Throughout the DL route	Throughout the pre-construction period.	BREB	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
	Disturbance of wildlife specially birds due to project activities such as earthworks, moving of project equipment and transports.	finalization of all DL route and detail design to identify potential impacts on biodiversity early in the planning stage. ▪ Providing training to the worker for maintaining the Code of Conduct for the workers.				
A.7	**Encroachment into ecologically sensitive areas** ▪ The proposed project site is located in a plot area earmarked for Industrial development. There is no encroachment of sensitive habitats like protected forest areas or terrestrial wildlife sanctuary habitats.	▪ For tree cutting/trimming outside protected or forest areas obtain approvals from forest department as per national regulatory framework, approvals are required. ▪ Within the designated protected area, IBA, reserve forest area, or sacred grove etc. No work shall be undertaken, and no temporary or permanent project facilities established. ▪ New lines will be designed, and existing lines will be retrofitted, to be ecologically sensitive for birds in accordance with international best practice, such as maintaining 1.5 meter spacing between energized components and grounded hardware or, where spacing is not possible, covering energized parts and retrofitting elevated perches, insulating jumper loops, placing obstructive perch deterrents, changing the location of conductors, and/or using raptor hood.	Throughout the DL route	Throughout the pre-construction period	Contractor	DSC/ BREB
A.8	**Occupational Health & Safety** ▪ The construction of 33 and 11 kV distribution lines poses some risk to the health and safety of workers.	▪ Contractor will be required to prepare and implement an occupational health and safety risk assessment and plan (including COVID-19 risks) for approval before construction works. ▪ The risk assessment should be undertaken through a facilitated risk assessment workshop involving the contractor, BREB, and project implementation agency. ▪ Before construction activities initiated, Garbage containers will be provided for the disposal of garbage created by workers, as rubbish burning will be forbidden. .	Throughout the DL route	Throughout the pre-construction period	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
B	**Construction Phase**					
B.1	**Land and agricultural resources** ▪ Unanticipated impacts on the property including land and structures ▪ Loss of agricultural land causes a temporary disruption of farming activities, damage to crops, bunds, canals and drains.	▪ Defining the work zone and preventing incursions outside the agreed-upon impact corridor. ▪ Fertile land with two or more crops growing now, or land with such potential, might be avoided. In the case that non-agriculture khash land becomes available, it should be prioritized. ▪ The most productive and suited for agriculture production soils on nearby property might be retained. ▪ Shallow and deep tube wells could be used for irrigation to cultivate Boro rice and Rabi crops. Winter cropping area may be increased by installing deep tube wells. ▪ Assure that construction activities are as clean as they possibly can be. ▪ There might have a provision of cattle passes at a regular interval, each width should be enough for cattle movement and agricultural machinery movement.	Throughout the DL route	Throughout the pre-construction period	Contractor	DoE/ BREB
B.2	**Interference with traffic and accessways** ▪ Stockpiling of poles, spoil and cable reels can cause the block	▪ Safe access to property and roads should be maintained and alternative routes and access provided where there are temporary diversions or blockages.	Construction areas and Route of material movements	Throughout the construction period.	Contractor	DoE/ BREB
B.3	**Soil erosion** ▪ Soil erosion during auguring/ excavation of pole foundation.	▪ Minimize removal of existing vegetation and topsoil to that which is necessary. ▪ To restore the surface of excavated areas, topsoil disturbed during site construction will be utilised. ▪ Excavation for poles will be limited to within the agreed corridor of impact, ideally road reserve.	Pole construction area	Construction areas and Route of material movements	Throughout the construction period.	DoE/ BREB
B.4	**Ecosystem /Cutting or trimming of trees** ▪ One of the regular programs to maintain the integrity of the distribution lines is the	▪ No temporary or permanent projects shall be undertaken or established within a protected area, IBA, reserved forest area, or sacred grove etc.	Along the DL route	Quarterly	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
	trimming of tall trees and vegetation along the RoW. ▪ Loss of Trees ▪ The project alignment of the 33/11 kV distribution lines may go over some trees and vegetation which may also be affected and would need to be cut or trimmed in order to achieve the standard safety clearances for distribution power lines.	▪ 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 is prohibited unless in accordance with design drawings in order to meet safety clearance requirements. ▪ Unanticipated loss of fruit-bearing trees that have economic value shall be compensated at the 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. ▪ Works requiring tree cutting/trimming outside the bird nesting/breeding season needs to be undertaken. ▪ Critical Habitat Assessment (CHA) needs to be done prior to any construction activities in areas where CR and EN species were found.				
B.5	**Biodiversity** ▪ Clearing vegetation for construction can fragment wildlife habitats, disrupting animal movement and breeding patterns. ▪ Food scraps and waste from construction camps can attract scavenger animals, potentially increasing human-wildlife conflict. ▪ Disturb birds and other wildlife due to stringing operation of power line particularly during breeding seasons	▪ Clearly demarcate construction boundaries and establish buffer zones around sensitive habitats. Minimize vegetation clearing within these zones. ▪ If construction fragments habitats, consider creating wildlife corridors (e.g., green bridges over roads) to allow safe animal movement. ▪ Implement security measures like fencing, patrolling, and controlled access to prevent unauthorized entry and poaching activities. ▪ Work with local communities to raise awareness about the importance of biodiversity and encourage their participation in conservation efforts.	Throughout the DL route	Throughout the construction period.	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		▪ Avoiding stringing of power line during breeding seasons or establishing buffer zones around critical habitat areas				
B.6	**Dust & air pollutions** ▪ Emissions from construction related vehicles and machinery. ▪ Dust suspension due to frequent vehicle/trucks movement in roads & construction works. ▪ Health hazard to laborers and residents/ workers due to dust spreading.	▪ 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. ▪ Remove existing vegetation and topsoil as little as possible and as soon as possible. ▪ Burning of waste generated by project related activities to be strictly prohibited. ▪ Construction-related waste will not be allowed to be burned openly.	Throughout the DL route	Throughout the construction period	Contractor	DSC/ BREB
B.7	**Noise pollution** ▪ During construction on the land, noise levels produced by vehicles, machinery, concrete mixing, and other construction activities will exceed the applicable standards and may cause nuisance to local community. ▪ Hearing hazards to labors and residents.	▪ Use of noise plug in heavy construction equipment. ▪ It is recommended that no construction should be allowed during nighttime (9 PM to 6 AM) ▪ Avoid using of construction equipment producing excessive noise at night; ▪ Construction activities should not be during nighttime ▪ Avoid prolonged exposure to noise (produced by equipment) by workers; and ▪ Regulate use of horns and avoid use of hydraulic horns in project vehicles. ▪ Generator should be placed within room (concrete walls with roof). ▪ Monitoring of noise level at construction site, construction camp as and when required.	Throughout the DL route and construction camp	Throughout the construction period	Contractor	DSC/ BREB
B.8	**Occupational health and safety** ▪ Health & safety risks of construction workers during the construction period	▪ During the COVID-19 pandemic, temperature checks to be carried out at the entrance of the worksite at the start of shift, and records of all suspected and confirmed cases to be kept. ▪ Require workers to observe the EHS Guideline on Construction and Demolition. ▪ Personnel must have a record of attending an appropriate course on electrical safety and working at height, and they must be	Along the DL route	Regularly	Contractor	DoE/BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		adequately trained and qualified to operate on electrical equipment and at height. ▪ No compliance with PPE standards will result in disciplinary action (e.g., immediate removal from site) ▪ To work over the river crossing tower utilize properly anchored and maintained fall arrest systems (harnesses, lanyards, shock absorbers) for all workers on the tower. ▪ Implement double tie-off procedures to ensure redundancy and safety. ▪ Use fixed ladders or walkways with guardrails for safe access and egress. ▪ Utilize temporary safety nets below work areas to catch potential falls. ▪ To prevent Electrocution, De-energize the lines or isolate work areas from live conductors whenever possible. ▪ Ground all tools and equipment used near live lines. ▪ Maintain safe working distances from energized conductors based on voltage and weather conditions. ▪ Wear electrically insulated gloves, boots, and coveralls for added protection. ▪ Provide workers with snake boots and long pants as PPE during construction activities in high-risk areas.				
B.9	**<u>Water Resources</u>** ▪ During construction, greywater generates from the base camp location and may contaminate local water body and soil if mixed into irrigation canal and local waterbodies. Spillage of any kind of oil or lubricant during construction activity may hamper soil quality.	▪ 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 (the same requirement applies to any construction camps). ▪ Provision of an appropriate construction waste collection and disposal system. ▪ Provision of designated hard standing areas for equipment servicing, refuelling, and wash	Construction site, labour camp,	Throughout the construction period	Contractor	DoE/BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		down at least 50m from watercourses, springs, and wells, with drainage directed through oil and grease interceptors before being discharged into a settling pond before discharging offsite. ▪ Implementation of good operation and maintenance practices for construction equipment. ▪ Storage of oil, fuels, and chemicals and mounting of the plant containing oil and diesel on drip trays to catch leaks. ▪ Oil spill clean-up materials (sorbent pads, loose sorbent material, etc.) should be stationed at the site.				
B.10	**Waste Management** ▪ Improperly disposed of wooden poles take up space in landfills and may release harmful chemicals if not treated correctly. ▪ Burning old poles for disposal can release air pollutants, contributing to respiratory problems and smog.	▪ Large size wooden poles should be separated from waste parts to make small size poles, logs, and transformer re-winding. ▪ Before disposal/demolition, the good part of the spoiled and unusable wooden poles can be used as fencing/boundary in different areas of the PBS. ▪ Treated wood products shall never be burned according to PBS instruction 100-5 ▪ For new installations, consider using poles made from more sustainable materials like concrete or composite materials with lower environmental impact at the end of their lifespan.	Warehouse/ Construction site	Throughout the construction period	Contractor/PBS	DoE/BREB
B.11	**Community health and safety (H&S)** ▪ Community health and safety such as the toppling of concrete poles, traffic and accidents, the emergency spill of materials, and access of villagers to dangerous working areas.	▪ Residual water must be avoided since it might serve as a breeding ground for mosquitoes and other insects. ▪ Provide signs detailing site and office contacts in the event of a grievance during construction. ▪ ISO 7010 Hazard Type: Electrical Symbol warning of the risk of electrocution. ▪ Provision for ensuring the cable's security to prevent vandalism.	All construction site, labour camps	Regularly	Contractor	DoE/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		▪ Lighting arrestors should be installed along all lines. ▪ Do not leave hazardous conditions (e.g., unlit open excavations without means of escape) overnight unless no access by the 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.				
B.12	**Fire safety** ▪ Risk of fire hazard	▪ Provide appropriate types of firefighting equipment suitable for the construction camps ▪ Display emergency contact numbers clearly and prominently at strategicplaces in camps. ▪ Firefighting equipment will be made available as required at construction sites, camp sites, and particularly near the fuel storage. ▪ Workers should be trained in emergency preparedness and response procedures and a manual on safety and emergency procedures during operation should be prepared and disseminated to workers on, e.g. extinguishing oil fires from transformers. ▪ Overall responsibility for fire safety implementation, including appointing a fire safety officer, ensuring adequate resources, and conducting regular training and drills ▪ Workers should understand fire safety procedures, know emergency escape routes, operate fire extinguishers, and participate in training and drills. ▪ Sprinkler system need to be Installed in high-risk areas such as storage rooms and	Along the DL route	Monthly	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		electrical panels, regularly inspected and maintained.				
B.13	**Risks of damages to sub-surface utilities and chance find of physical cultural resources during construction.** ▪ Damage or loss of sub-surface utilities ▪ Damage to cultural heritages in the project area.	▪ Relevant local authorities (electric, water, telecoms) are to be consulted whether there are known pipes, cables, or other utility lines to identify any unknown underground utilities prior to excavation. ▪ Damaged utilities will be rehabilitated to their original condition in conjunction with relevant local authorities at cost to the contractor. Chance finds procedures to be followed if physical cultural resources are found during construction works.	RoW of the underground cable	Throughout the construction period	Contractor	DSC/ BREB
B.14	**Labour Management** ▪ Risk of Social conflict between labors and community people ▪ Due to migrant labour local inflation of price and increased pressure on accommodation and rent	▪ Reduce labor influx into the project area by sourcing all unskilled labor from within and around the sub-project area. If skilled labour is not available locally, it will be imported from outside the sub-project region. ▪ Prepare a Workers' Camp Management Plan by the BREB or Contractor that addresses specific aspects of the setup and operation of workers' camps, such as differentiating labour camps from material storage locations. ▪ Encourage use of flameproof material for the construction of labor housing / site office. Also, ensure that these houses/rooms are of sound construction and capable of withstanding windstorms/cyclones. ▪ Construction camps will be located at least 500 m away from the communities. Entry of the site personnel in the local communities will be minimized to the extent possible/appropriate ▪ GRM for the labour will be established to address grievances related to health and safety aspects. Residual Impacts Even after implementing the above-listed mitigation measures	All construction sites & Labour camp	Throughout the construction period	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
B.15	**Gender-Based Violence and Harassment (GBVH)** ▪ Women and girls may be subjected to verbal harassment, intimidation, and threats of violence ▪ Women may be denied access to jobs, land, or other resources in exchange for sexual favors. ▪ Women may be excluded from decision-making processes or denied access to project benefits.	▪ Develop and implement a GBVH prevention and response policy. ▪ All project personnel, including workers, supervisors, and community members, should be trained on GBVH awareness, prevention, and response. ▪ Ensure gender balance in the workforce: Make efforts to recruit and hire women for construction and project-related jobs. ▪ Provide accessible and confidential channels for women to report incidents of GBVH and ensure that complaints are investigated and addressed promptly and fairly. ▪ Work with local organizations and community leaders to raise awareness about GBVH and develop culturally appropriate prevention strategies.	All construction sites & Labour camp	Throughout the construction period	Contractor	DSC/ BREB
B.16	**Chance Find Procedures (PCRs)** ▪ According to survey within the project area no sensitive receptor or archaeological site have been identified. If any person discovers a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction phase.	▪ The discovery will be reported by the site engineer or representative from the contractor to PIU, BREB environment staff (or Consultant. ▪ The Contractor can continue with excavation and construction works within the affected area after the DOA staff has given clearance.	All constructions site and camps	When identified action need to take immediately	Contractor	BREB/DOA
B.17	**Impact on Indigenous Community** ▪ Land acquisition for construction could lead to the loss of traditional hunting grounds, agricultural land, or access to natural resources that the communities depend on for subsistence and income. ▪ Construction activities can disrupt daily life with noise, dust, and increased traffic congestion. This can affect sleep patterns, social gatherings, and traditional activities.	▪ Provide capacity-building programs for the indigenous communities to help them participate effectively in project decision-making and benefit from potential opportunities. ▪ Conduct a cultural heritage assessment to identify and protect any sacred sites or areas of cultural significance that might be affected by the project. ▪ Implement long-term monitoring program as identified in the IPP to assess the social	At identified IP communities' area	Throughout the construction period	Contractor	DSC/ BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		impacts of the project on the indigenous communities. ▪ Careful project siting that minimizes land acquisition from indigenous communities and respects cultural sensitivities can significantly reduce negative impacts. ▪ Open communication, obtaining Free, Prior, and Informed Consent (FPIC), and involving the communities in decision-making can help mitigate disruption and build trust. ▪ Implementing measures like dust control, noise reduction, and scheduling construction activities outside peak hours can minimize disturbance to the communities				
C	**Operation Phase**					
C.1	**Short Circuit/Accident** ▪ Due to the short circuit at the distribution line, disruption of power and accident will occur.	▪ For adequate power generation, O&M of the distribution line should be completed in a timely manner.	All completed distribution line	At all times	PBS	DoE/BREB
C.2	**Power Supply** ▪ Due to adequate reliability of power supply, social life and economic condition of the people will be improved	▪ For adequate power generation, O&M of the distribution line should be completed in a timely manner.	All completed distribution line	At all times	PBS	DoE/BREB
C.3	**Community health and safety** ▪ Community H&S nearby the DL route.	▪ Install clear and informative signs in Bangla along the construction route highlighting safety risks and contact information for emergencies or complaints. ▪ Clearly mark underground utilities and conduct safety briefings for workers regarding electrical hazards. Require workers to wear appropriate Personal Protective Equipment (PPE) like gloves and boots.	All completed distribution line	At all times	PBS	DoE/BREB
C.4	**Safety & Security of workers** ▪ Risk to the continuous power supply and construction of overhead and underground distribution line.	▪ In collaboration with law enforcement authorities, ensure security of the distribution line. ▪ A complaint book should be kept in the site office and PBSs office for documenting people's grievances.	All completed distribution line	At all times	PBS	DoE/BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
		▪ Restricting working at height only by workers who are trained and certified to do so. ▪ Provision of personal protective equipment (PPE) for employees, safety instructions, personal safety devices such as harnesses, tool bags, ropes, etc., and other safeguards are among the safety measures that are required.				
C.5	**Socio-economic Impact** ▪ Once there is a reliable power supply, the area will benefit from a better economic development. As a result, there will be more employment opportunities as people plan to establish small-scale industries in the area.	▪ Modernization efforts often include measures to reduce electricity theft and distribution losses, which can lead to financial savings for utilities and consumers. ▪ BREB and PBS Supporting community-based electrification projects and microgrids can empower local communities, provide access to electricity for essential services (e.g., healthcare, education), and stimulate small-scale entrepreneurship. ▪ PBS play a crucial role to Ensure a swift response to restore power after disruptions is essential for community safety and recovery.	All completed distribution line	At all times	PBS	BREB
C.6	**Impact on the local community** ▪ Disturbance to local community due to maintenance works	▪ During maintenance, works provide signage detailing site and office contacts in case of grievance. ▪ To safeguard the health and safety of maintenance employees and road users, implement traffic management measures during maintenance work using warning signs or flag personnel. ▪ Provide at least one-month advance notice to the local community through the village heads about the schedule of, location plan, and details of planned maintenance work. ▪ Carry out maintenance works only during daytime hours and on weekdays unless otherwise agreed with the village heads.	All completed distribution line	At all times	PBS	DoE/BREB

SL	Environmental & Social Impacts	Mitigation Measures	Location	Timing/Duration	Implementation Agency	Supervision Agency
C.7	**Fire Safety** ▪ Risk of fire hazard	▪ Firefighting equipment will be made available at thecamps. ▪ First aid kits need to be available.	All completed distribution line	At all times	PBS	DoE/ BREB

D. COMPENSATION PLAN

584. A standard compensation plan has to be developed for the individuals or households who are affected due to proposed project and any injury, or diseases occur during construction or operation phase. It essentially needs to provide necessary compensation as per the law of land. No Resettlement Action Plan (RAP) is required in this project because there is no displacement due to the project development. Workers who develop any disease/injury during the construction or operational phase of the proposed project should be treated accordingly with ensuring necessary compensation by the responsible authority.

E. ENVIRONMENTAL & SOCIAL MONITORING PLAN

585. The aim of environmental & social monitoring during the pre-construction, construction and operation phases of the project is to compare the monitored data against the baseline condition collected during the study period (particularly during the detailed design stage) to assess the effectiveness of the mitigation measures and the protection of environmental components (e.g., air, water, soil, noise etc.) based on the national environmental standards (e.g., ECR 1997). Since the project is likely to have impact on various components of the environment, a comprehensive monitoring plan covering soil erosion, drainage congestion, tree plantation, air quality, water quality, noise, wildlife movement, workers' and community health and safety and so on need to be developed.

Objectives of the Environmental & Social Monitoring Plan

586. The objective of environmental & social monitoring during the construction and operation phases is to compare the monitored data against the baseline condition collected during the study period to assess the effectiveness of the mitigation measures and the protection of the ambient environment based on national standards. The main objectives of the pre-construction, construction and operation phase monitoring plans will be to:

- Make sure construction materials are properly disposed of in a secure manner'
- Monitor the rehabilitation of borrow areas and the restoration of construction campsites as described in the ESMP;
- Appraise the adequacy of the ESIA with respect to the project's predicted long-term impacts on the corridor's physical, biological and socio-economic environment;
- In case modifications are needed, evaluate and recommend the effectiveness of the mitigating measures provided in the ESMP.

587. An Environmental & Social Monitoring Plan (ESMoP) has been prepared (Table X-2) along with this ESIA for the execution as a means to mitigate or minimize the adverse impacts associated with construction and operational activities of the project on the natural and social environments.

F. MONITORING & REPORTING

588. The BREB and respective PBS will be in charge of monitoring project processes, outputs, outcomes, and impacts on a regular basis. They will put in place the institutional arrangements needed to monitor the implementation of the RP. Staff will assist the safeguard officers (one social and one environmental) in providing periodic progress reports on the status of safeguards implementation.

589. The BREB, with the assistance of the respective PBS, will develop separate monitoring plans, which will include key monitoring areas, methodologies, and relevant indicators, as well as plans for disclosing monitoring results well in advance of project implementation. The monitoring strategy will take into account both substations and distribution lines. The monitoring system will also emphasize the inclusion of all relevant stakeholders in the

monitoring processes, as well as the use of participatory processes. Individual/group meetings with APs and other stakeholders, as well as surveys and studies, are among the methodologies that would be used. The PBS will keep a database of all relevant project information, such as baseline survey/census data, and AP profile.

590. The BREB's safeguard officers will conduct regular field visits to project sites, communicate with APs, and ensure that consultations are conducted on a regular and effective basis. The monitoring process including ESMP implementation. It will also focus on the progress of the RP implementation, (ii) the level of compliance of project implementation with safeguards plans and measures provided in legal agreements, including payment of compensation and other resettlement assistance and mitigation of construction related impacts, (iii) disclosure of monitoring results to APs for substations and distribution lines, and other stakeholders, and (iv) the level of consultation. The monitoring and mitigation plan is mentioned in Table VIII-2.

Table VIII-3: Environmental & Social Monitoring Plan for the turn-key contractor

Environmental Issues/Parameters	Monitoring Parameters	Standards/ Guidelines	Means of Monitoring	Frequency	Location	Implementation Agency	Supervision Agency
Pre-construction stage							
Land purchases	▪ Negotiations for land are conducted in a transparent environment without coercion on the landowner	As per the AIIB's ESP on direct land purchases	Field inspection	During & after land purchases	Substation sites	BREB & PBSs	BREB & AIIB
Trimming of trees and vegetation	▪ Loss of standing trees, crops, grass and bushes of substation sites	DoE/FD	Inspection	Regular during tree felling and site clearing operations	Within ROW of substation & River Crossing Tower	Contractor/FD	DSC/BREB
Training	▪ Training and orientation provided by BREB to the contractor on ESMP Implementation .	Environmental Health & Safety Guideline	Obtain record of presentation	Prior to contractor mobilization	At BREB office/PBS office	BREB/PBS	DSC/PIU/BREB
Stakeholder consutations	▪ Project related information is shared with stakeholders and stakeholder feed back obtained and incorporated into project designs	As per the stakeholder engagement plan	Reports on stakeholder engagements and information disclosure	During pre-construction stage and thereafter quarterly	at project sites	Contractors & PBSs	BREB
Payments for land purchased	▪ Full settlement of all payments due to landowners for the land purchased	As per the AIIB ESP on direct purchases	Inspection & document reviews	Prior to commencement of construction work	Purchased land	Independent third party	BREB/PBS
GRM	▪ A multi-tier GRM is established	As per the proposed structure and standards provided in the ESIA & ESMP and RPF	GRM status reports	Monthly	Project sites	Contractors & PBSs	BREB
Construction Stage							
Dust Pollution	▪ Dust should be controlled by water spraying regularly specially during dry period.	DoE guidelines	Measurement	Regular	Substation sites, Construction camp and RCT locations	Contractor	DSC/BREB
Air Quality	▪ Oxides of Sulphur (SOx), Oxides of Nitrogen (NOx), Carbon Monoxide (CO), and Particulate Matter (PM10 & PM2.5).	DoE Standards	Sampling and Laboratory Analysis	Quarterly	Proposed substations land on sample basis and RCT locations	Contractor	DSC/BREB

Environmental Issues/Parameters	Monitoring Parameters	Standards/ Guidelines	Means of Monitoring	Frequency	Location	Implementation Agency	Supervision Agency
Noise Pollution	▪ Ambient noise level	dB(A)	Measurement	As & when required	At construction sites & camps	Contractor	DSC/BREB
Surface Water Quality	▪ Temperature, pH, Electric Conductivity (EC), Total Dissolved Solids (TDS), Dissolved Oxygen (DO), Biological Oxygen Demand (BOD), Chromium (Cr), Oxygen-Reduction Potential (ORP), Hardness, and Nitrite (NO2-). Furthermore, the parameters measured for groundwater were Temperature, pH, Electric Conductivity (EC), Dissolved Oxygen (DO), Salinity, Total Dissolved Solids (TDS), Calcium (Ca), Chloride (Cl-) Chromium (Cr), Hardness, Manganese (Mn), and Nitrite (NO2-).	DoE Standards	Sampling and Laboratory Analysis	Quarterly	Nearby Water bodies & RCT Location s	Contractor	DSC/BREB
Ground Water/Drinking Water Quality	▪ Extraction of excessive groundwater from the locality in the project area for construction work may decrease the level of groundwater table. ▪ pH, Color, Turbidity, Total Hardness as CaCO3, Iron (Fe), Manganese (Mn), Arsenic (As), Chloride (Cl-), Total Coliform (TC), Faecal Coliform (FC), and Total Dissolved Solids (TDS), TPH, VOC, etc.)	DoE Standards	Sampling and Laboratory Analysis	Quarterly	At the construction site & Labour camp	Contractor	DSC/BREB
Pollution due to Wastes	▪ Checking collection, storage, transportation, and disposal of hazardous waste; ▪ Waste from construction site to be collected and disposed safely to the designated sites; and	DoE guidelines	Inspection	Regular	Construction camps	Contractor	DSC/BREB

Environmental Issues/Parameters	Monitoring Parameters	Standards/ Guidelines	Means of Monitoring	Frequency	Location	Implementation Agency	Supervision Agency
	▪ Wastes from labour camp to be disposed properly at the designated sites.						
Felling of trees and clearing of vegetation	▪ Checking whether proper compensation as mentioned in RFP is received by PAPs.	DoE/FD	Inspection	Regular during tree felling and site clearing operations	Within RoW of substation	Contractor/FD	DSC/BREB
Fauna (Wildlife)	▪ Checking whether wildlife is disturbing/killing by the workers	DoE/FD	Inspection	Monthly	ROW of Route	Contractor/FD	DSC/BREB
Drainage Congestion/Flood	▪ Checking drainage congestion & top of substation site above HFL	Hydrological/ Drainage study	Inspection	Regular during earthworks	Substation site	Contractor	DSC/BREB
Traffic Congestion/ Road Accident	▪ Checking meeting point of existing road & access road	Local authority, Elected chairman, member of the Upazilla, Police station etc.	Inspection	Regular	Meeting point of existing road & access road	Contractor	DSC/BREB
Occupational health and safety	▪ Checking health, use of PPE & 1st aid facilities, drinking water quality, sanitation and accommodation	DoE/IFC guidelines	Inspection & testing of DWQ	Regular & twice	At construction sites and camps	Contractor	DSC/BREB
Community health and safety	▪ Awareness of local people and staying safely from the project activities ▪ Measures adopted to avoid/minimize adverse impacts on community including IP communities	DoE/IFC guidelines Provisions in the ESMP	Inspection and document review	Regular	At construction site and camps	Contractor & PBSs	DSC/BREB
GBV, SEA/SH	▪ Incidences reported on SEA and SH	DoE/IFC/AIIB guidelines Provisions in the ESMP	Site inspection and document review	As and when required	At construction site and camps	Contractor & PBSs	DSC/BREB
Human trafficking	▪ Deployment of child labor, forced/bonded labor and trafficked labor	DoE/IFC/AIIB guidelines Provisions in the ESMP	Site inspections	As and when required	At construction site and camps	Contractor & PBSs	DSC/BREB
Compensation for crop and income losses	▪ Compensation for affected crops and trees are paid ▪ Compensation for affected public and private structures are paid and restored to their	ARIPA 2017, Electricity Act-2018 Provisions in the ESMP	Site inspections & compensation payment records	Monthly	Within RoW of substation	Contractor/PBS	DSC/BREB

Environmental Issues/Parameters	Monitoring Parameters	Standards/ Guidelines	Means of Monitoring	Frequency	Location	Implementation Agency	Supervision Agency
	previous standard or to a higher standard,						
Grievance Redress	▪ No. Grievances reported ▪ No. grievances resolved ▪ No. grievances not resolved ▪ PAPs accessibility to GRM ▪ Efficiency and effectiveness of the GRM,	Provisions in the ESMP (proposed GRM) and SEP	Records of GRM proceedings	Monthly	Substation site, line route sites & PBS office	Contractor & PBSs	DSC/BREB
Community Stakeholder Consultation	▪ Type of information disclosed' ▪ No. stakeholder consultations conducted ▪ Type of feedback received ▪ Project's response to stakeholder feedback ▪ ▪	Stakeholder Engagement Plan	Reports on stakeholder engagement activities	Monthly	Project sites	PBSs & Contractor	DSC/BREB
Operation Stage							
Tree replantation	▪ Replanting of saplings and checking replacement of dead saplings & nursing (watering & fertilizer) of saplings for 2 years	FD	Inspection	As & when required	Access road within the substations	FD	BREB
Drainage congestion	▪ Checking drainage congestion in the substation sites during monsoon	Hydrological/Drainage study	Inspection	As & when required during monsoon	Substation sites & RCT locations	PBS	BREB
Community health and safety	▪ Community H&S nearby the substation site	DOE/IFC guidelines	Inspection	Regular	Substation sites & RCT locations	PBS	BREB
Safety & Security of Substation & workers	▪ Checking use of PPE & duty of security force	DOE/IFC guidelines	Inspection	Regular	Substation sites & RCT locations	PBS	BREB
Short circuit/ accident	▪ Safety	DOE guidelines	Inspection	Regular	Substation sites & RCT locations	PBS	BREB
Community Stakeholder Consultation	▪ Type of information disclosed' ▪ No. stakeholder consultations conducted ▪ Type of feedback received Project's responses to stakeholder feedback	Stakeholder Engagement Plan	Reports on stakeholder engagement activities	Quarterly	Project sites	PBSs & Contractor	DSC/BREB

Table VIII-4: Environmental & Social Monitoring Plan for the line contract

Environmental Issues/Parameters	Monitoring Parameters	Standards/ Guidelines	Means of Monitoring	Frequency	Location	Implementation Agency	Supervision Agency
Pre-construction stage							
Trimming of trees and vegetation	▪ Loss of standing trees, crops, grass and bushes along the DL route	DoE/FD	Inspection	Regular during tree felling and site clearing operations	Within RoW of distribution lines	Contractor/FD	DSC/BREB
D/L route alignments	▪ Impacts of route alignment on places of environmental and social significance e.g. settlements, archaeological and cultural sites, forest reserves, water bodies etc.	As per the AIIB's ESS1 of ESP	Route surveys and inventorization	After final designs are completed	Sites of D/Ls	BREB & PBSs	BREB & AIIB
Training	▪ Training for ESMP Implementation It is necessary to gain a better understanding of environmental safeguards and how they are to be implemented. This briefing must be provided by BREB to the contractor.	Environmental Health & Safety Guideline	Obtain record of presentation	Prior to contractor mobilization	At BREB office/PBS office	BREB/PBS	DSC/PIU/BREB
Stakeholder consultations	▪ Project related information is shared with stakeholders and stakeholder feedback obtained and incorporated into project designs	As per the stakeholder engagement plan	Reports on stakeholder engagements and information disclosure	During pre-construction stage and thereafter quarterly	at project sites	Contractors & PBSs	BREB
A multi-tier GRM is established	▪ As per the proposed structure and standards provided in the ESIA & ESMP and RPF	GRM status reports	Monthly	Project sites	Contractors & PBSs	BREB	
Construction Stage							
Dust Pollution	▪ Dust should be controlled by water spraying regularly specially during dry period.	DoE guidelines	Measurement	Regular	RoW of the DL route	Contractor	DSC/BREB
Noise Pollution	▪ Ambient noise level	dB(A)	Measurement	As & when required	At construction	Contractor	DSC/BREB

Environmental Issues/Parameters	Monitoring Parameters	Standards/ Guidelines	Means of Monitoring	Frequency	Location	Implementation Agency	Supervision Agency
					sites & camps		
Ground Water/Drinking Water Quality	▪ Extraction of excessive groundwater from the locality in the project area for construction work may decrease the level of groundwater table. ▪ pH, Color, Turbidity, Total Hardness as CaCO3, Iron (Fe), Manganese (Mn), Arsenic (As), Chloride (Cl-), Total Coliform (TC), Faecal Coliform (FC), and Total Dissolved Solids (TDS), TPH, VOC, etc.)	DoE Standards	Sampling and Laboratory Analysis	Quarterly	At the construction camps & labour camps	Contractor	DSC/BREB
Pollution due to Wastes	▪ Checking collection, storage, transportation, and disposal of hazardous waste; ▪ Waste from construction site to be collected and disposed safely to the designated sites; and ▪ Wastes from labour camp to be disposed properly at the designated sites.	DoE guidelines	Inspection	Regular	Construction camps	Contractor	DSC/BREB
Felling of trees and clearing of vegetation	▪ Checking whether proper compensation as mentioned in RFP is received by PAPs.	D0E/FD	Inspection	Regular during tree felling and site clearing operations	Within RoW of distribution lines	Contractor/FD	DSC/BREB
Fauna (Wildlife)	▪ Checking whether wildlife is disturbing/killing by the workers	DoE/FD	Inspection	Weekly	RoW of the distribution Route	Contractor/FD	DSC/BREB
Traffic Congestion/ Road Accident	▪ Checking meeting point of existing road & access road	Local authority, Elected chairman, member of the Upazilla, Police station etc.	Inspection	Regular	Meeting point of existing road & access road	Contractor	DSC/BREB
Occupational health and safety	▪ Checking health, use of PPE & 1st aid facilities, drinking	DoE/IFC guidelines	Inspection & testing of DWQ	Regular & twice	At construction	Contractor	DSC/BREB

Environmental Issues/Parameters	Monitoring Parameters	Standards/ Guidelines	Means of Monitoring	Frequency	Location	Implementation Agency	Supervision Agency
	water quality, sanitation and accommodation				sites and camps		
Community health and safety	▪ Awareness of local people and staying safely from the project activities	DoE/IFC guidelines	Inspection	Regular	At construction site and camps	Contractor	DSC/BREB
SEA/SH and security personnel	▪ Social monitoring	DoE/IFC/AIIB guidelines	Inspection	As and when required	At construction site and camps	Contractor	DSC/BREB
Human trafficking	▪ Social monitoring	DoE/IFC/AIIB guidelines	Inspection	As and when required	At construction site and camps	Contractor	DSC/BREB
Compensation for crop and income losses	▪ Monthly Monitoring	ARIPA 2017, Electricity Act-2018	Inspection	Monthly	Within RoW of distribution lines	Contractor/PBS	DSC/BREB
Grievance Redress	▪ Register Logbook,	ARIPA 2017, AIIB ESF 2022	Inspection	Daily	Construction camp, PBS office	Contractor	DSC/BREB
Community Stakeholder Consultation	▪ Awareness & Participation ▪ Focus Group Discussion	DoE/IFC/AIIB ESF 2023	Obtain record of presentation	Monthly	Project boundary	Contractor	DSC/BREB
Operation Stage							
Tree replantation	▪ Replanting of saplings and checking replacement of dead saplings & nursing (watering & fertilizer) of saplings for 2 years	FD	Inspection	As & when required	Access road within the DL	FD	BREB
Community health and safety	▪ Community H&S nearby the distribution line route	DOE/IFC guidelines	Inspection	Regular	DL route	PBS	BREB
Safety & Security of distribution line & workers	▪ Checking use of PPE & duty of security force	DOE/IFC guidelines	Inspection	Regular	DL route	PBS	BREB
Short circuit/ accident	▪ Safety	DOE guidelines	Inspection	Regular	Along the distribution Lines	PBS	BREB
Power Supply	▪ Access to electricity in the rural area on priority basis.	DOE/PDB guidelines	Inspection	During Construction and Operation	Along the distribution Lines	PBS	BREB and DoE

Environmental Issues/Parameters	Monitoring Parameters	Standards/ Guidelines	Means of Monitoring	Frequency	Location	Implementation Agency	Supervision Agency
Community Stakeholder Consultation	▪ Awareness & Participation ▪ Focus Group Discussion	DoE/IFC/AIIB ESF 2023	Obtain record of presentation	As & when required Monthly	Project boundary	PBS	DSC/BREB

G. BUDGET FOR THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

591. The monitoring costs for the project are to be included in the annual budgets of BREB and the PBS. The breakdown of the budget for the ESMP is given in Table IX-3. Funding will be made available for external monitoring of the Project. Also, to assist in building the capacity of the Environment and Social Management Unit at BREB and for PBS staff. ESMP budget delineate that the total budget for pre-construction phase & construction phase is BDT. 3,27,29,600 and this budget will derive from the project capital cost. In addition, the recurrent cost which will be considered for operation phase. For operation period the budget is prepared for yearly basis. This budget is derived from BREB's own fund. In addition, a provision for RP implementation and preparation is also incorporated in the report.

Table VIII-5: Budget for the Environmental & Social Management Plan

A. Consultancy Cost (Expert Remuneration)					
Sl.No.	Position	Person Man Month Remuneration		Time Input in Person/Month	Amount (BDT)
a.	Senior Environmental Specialist	250000		36	9000000
b.	Senior Social Development Specialist	200000		24	4800000
Sub-Total (a+b)				60	13800000
B. Pre-Construction Period					
1.	Landscape/Topography	Included in engineering cost			-
2.	Land Acquisition and Resettlement	Included in engineering cost			-
3.	Damage to Public Utilities	Included in engineering cost			-
4.	Drainage Congestion	Included in engineering cost			-
5.	Technical Capacity to undertake all environmental work (Workshop)	Lump-sum			100000
C. Construction Period					
Sl. No.	Environmental Components	Unit	Quantity	Rate (BDT)	Amount (BDT)
1.	Tree Plantation	No.	6632	300	1989600
2.	Noise Level	No.	120	8000	960000
3.	Air Quality	No.	120	40000	4800000
4.	Surface Water Quality	No.	100	32000	3200000
5.	Ground Water/Drinking Water Quality	No.	100	30800	3080000
6.	Soil Quality	No.	100	36000	3600000
7.	Occupational Health and Safety			Lump-sum	200000
Total Construction Cost:					17829600
D. Environmental Clearance Certificate (ECC) and it's Renewal fee (Reimbursable)					
Sl.No.	Tasks	Unit	Quantity	Amount (BDT)	
a	Renewal of Environmental Clearance Ceretificate (ECC) for 5 Years	Lump-sum (Government Fees)		1000000	
Grand Total(A+B+C+D)				32729600	

H. INSTITUTIONAL ARRANGEMENT FOR IMPLEMENTING THE ESMP

1. General

592. The Ministry of Power, Energy and Mineral Resources (MoPEMR) will take overall responsibility for ensuring the project implementation on behalf of the Government of Bangladesh. Bangladesh Rural Electrification Board (BREB) is executing an agency for the additional financing. The Project Implementation Units (PIUs) within the executing agency headed by a project director will implement the project.

2. Institutional Arrangements of BREB

593. BREB already has experience working on international donor-funded projects where substation construction and augmentation, as well as rehabilitation of lines, have been supported. To institutionalize the environment and social safeguards, BREB has already set up a formal Environment and Social Management Unit/Cell with qualified staff under the PIU.

594. The monitoring and supervision of the construction work at the field level will be entrusted to the respective PBSs. The General Manager and the Consultant Engineer of the PBSs will also be responsible for the implementation of the EMP, resolution of project-related grievances at field level, payment of compensation for any losses caused by the project.

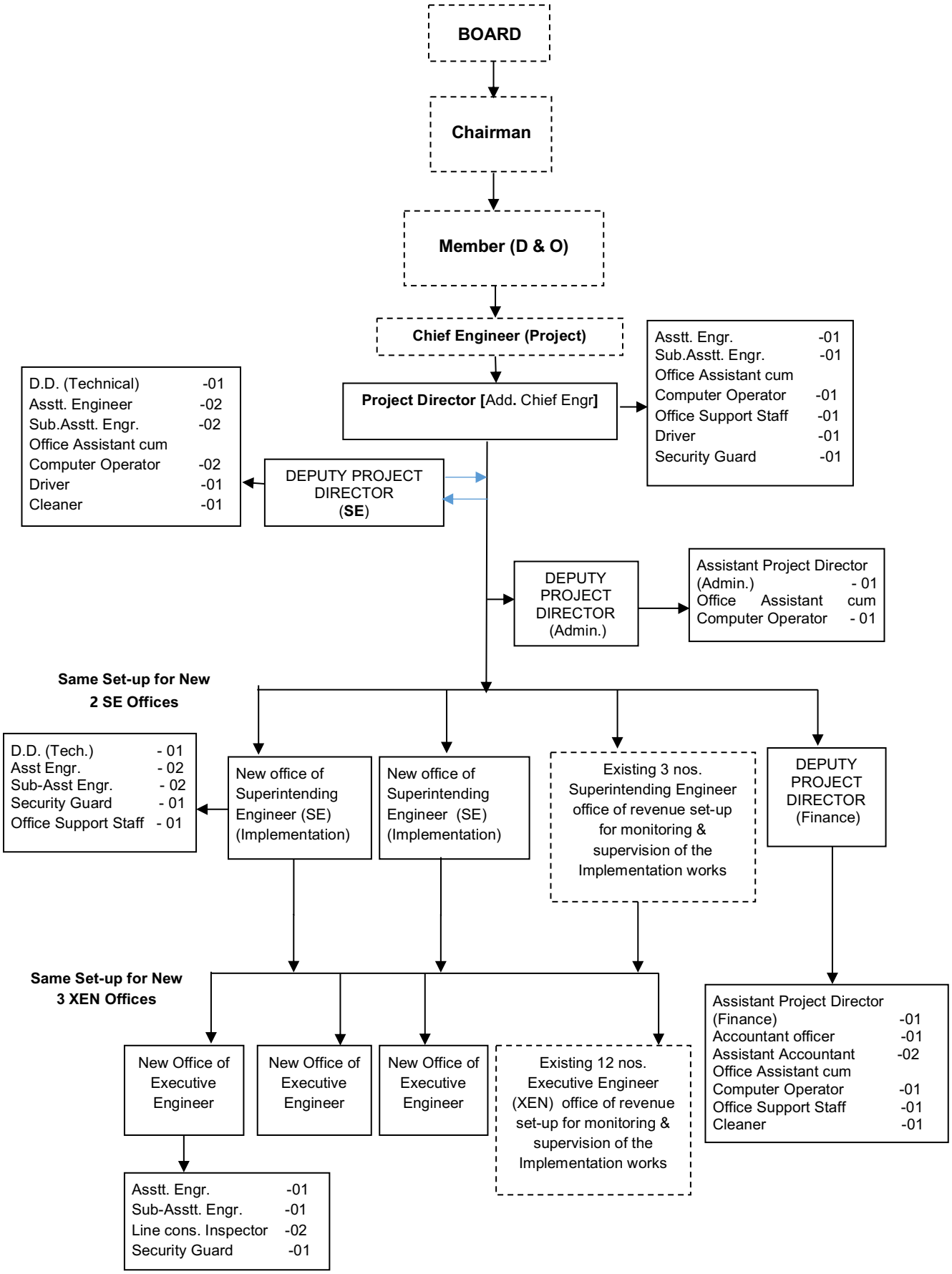


Figure VIII-1: Management Setup of BREB during Modernization and Capacity Enhancement of BREB network (Chattogram - Sylhet Division)

3. Department of Environment (DoE)

595. The designated institution for overseeing environmental management in Bangladesh is the Department of Environment (DoE). The DoE is responsible for ensuring that EA/EIA is carried out following the requirements of the Environment Conservation Act (1995) and Rules (1997). However, with some limitations, the DoE is a relatively new institution and has been inadequately resourced in the past. It has an institutional presence down to the district level (almost all the districts) and the divisional head office (six offices in Bogra, Sylhet, Chattogram, Rajshahi, Khulna, Rangpur) plus a combined headquarters in Dhaka. It thus falls to each of the government line agencies to ensure that their work abides by the environmental laws, rules and procedures, with the overall direction given by the DoE.

4. Forest Department (FD)

596. The Forest Department (FD) sometimes requires authorization for the cutting of trees, especially if they are in specially planted areas under their jurisdiction. Obtain the correct clearance documentation can be time-consuming, although with the proposed project tree planting programs there will be far more tree cover as a result of the project. It is thus vital to ensure that adequate time is made available to obtain the required clearance. As for the FD, it is vital to ensure that adequate time is made available in the program for obtaining any such clearance that may be required.

5. Retainer Engineer (RE)

597. The proposed framework for implementation of the project shall utilize consultancy services from Retainer Engineer (RE) for the overall design, management, and supervision of construction works of the subprojects under the project.

6. Contractor

598. The tender for the construction of the subproject would be national competitive bidding contractors. There will be a need for environmental awareness rising, particularly as it relates to direct construction impacts and especially site health and safety issues. The need to develop self-regulation of the contractors will have to be emphasized, with the consultants supervising role being to check on conformity with the relevant clauses in construction contracts as well as national and AIIB legislation and regulations.

7. Implementation Status and Capacity Building Requirement

599. In terms of environmental/social assessment and management, the BREB has a limited amount of experience. "Environmental/social screening" and "analysis of alternatives" will be the responsibility of the BREB, and instructions have been established in the ESMF for carrying out these tasks. As part of the proposed project, the BREB engineers/officials would benefit from basic training on regulatory requirements, environmental effects, and environmental assessment and management.

600. During the project's planning, the BREB will hire consultants to assist them with overall environmental/social management. BREB has E&S cell and their responsibility is to support the consultant. However, the BREB has overall responsibility for environmental & social management, they must guarantee that the consultants are doing their duties correctly. It is critical that BREB engineers/officials obtain extensive training in environmental management and monitoring for this reason. Such training will aid them in effectively managing the actions of the consultant involved in the proposed project's environmental management. In addition, The main role of ES is to ensure that ESMP is properly implemented and all environmental requirements stipulated in the ESMP are complied with while the role of SS is to ensure the proper implementation of the social provisions in the ESMP as well as the implementation of the RPF and the RPs developed for the project.

IX. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

A. Purpose of Public Consultation

601. The development and construction of any project will impact on the surrounding human and physical environment and will have beneficial or adverse effects. It is therefore essential that the community can fully understand the project, have the opportunity to express their views and to become directly involved in the project's overall decision-making process.

602. Public authority developers must take account of the community's views and include any useful suggestions to improve the project. This may include suggestions to help further develop environmental protection measures thereby reducing environmental pollution, reducing the loss of environmental resources and improve the project's environmental and social benefits, thus helping achieve more sustainable development.

603. In accordance with the requirements of the AIIB as described in the ESF 2021, the client will engage in meaningful consultation with relevant stakeholders during the Project's preparation and implementation, in a manner commensurate with the risks to and impacts on those affected by the Project. Consultation for this Category B Project should be undertaken in a manner proportional to its risks and impacts. AIIB may participate in consultation activities to understand the concerns of the affected people and to require the Client to address these concerns in the Project's design and ESMP or ESMPF or other Bank-approved documentation.

604. The following activities have therefore been carried out in his project in accordance with the AIIB requirements.

B. Information Disclosure

605. One of the requirements of the AIIB ESP is the disclosure of information by the client. The bank requires the client to ensure that relevant information about environmental and social risks and impacts of the project is made available in the project area in a timely and accessible manner, and in a form and language understandable to the project affected people, other stakeholders and the public, so they can provide meaningful inputs into the design and implementation of the project.

606. This documentation includes, as applicable, the following: draft, updated and final environmental and social assessment reports, ESMPs, ESMPFs, resettlement plans, RPFs, Indigenous Peoples plans and IPPFs, other approved forms of documentation and reports required to be prepared by clients under such plans.

607. The Bank also requires the client to disclose any material changes to the disclosed environmental and social information for the project as soon as they become available.

C. Approach & Methodology of Public Consultation & Disclosure Meeting

608. A participatory approach was followed in conducting the public consultation meeting (PCM). The study team first had a meeting with the BREB officials responsible for the project implementation to share with them the feasibility and ESIA process of the Modernization & Capacity Enhancement Project.

609. With support from the PBS officials, the union-level public representatives, as well as the key people, were contacted over the telephone and they were informed about the specific consultation meeting and requested them to be present in the meeting. In this process, the venue, date, and time of the consultation meetings were fixed. Later, the study team organized

meetings at the local level. Names, occupations, and addresses of the meeting participants were noted during the meeting.

610. A number of focus group discussions (FGDs) and several informal discussions were also carried out during the public consultation process. In order to conduct the FGD and informal discussions, five checklists were prepared covering various aspects including an overview of the proposed project, information on the ongoing ESIA process, and seeking information on the problems of the area with their potential solutions. The local needs and demands have been discussed by giving equal opportunity to all participants attending the meeting. During the consultation meeting, all relevant issues about water resources, land resources, socio-economic resources, and disaster aspects were discussed in detail.

611. During the FGDs and PCM, the ESIA team displayed maps of the project area, shared the initial concepts on proposed interventions, and facilitated the discussions to solicit responses from the participants. The stakeholders of the project were asked to share their needs, problems, possible sustainable solutions, and their views on the project interventions. The stakeholders' perceived views on important environmental and social components (IESCs) and the project's impacts on them, along with perceived benefits, risks, threats and demand from the project were identified through these discussions.

D. Consultations Details During Feasibility Stage

612. According to the EIA Guidelines of the DoE, consultation is essential for the ESIA study of every development project. BREB was unable to undertake broad consultations because of the COVID-19 epidemic. Affected people and other stakeholders were informed, consulted and permitted to engage actively in the project preparation process and were made aware of both the good and negative impacts of the project, as a result of the project's preparation. Through the course of the project cycle, consultations will be held with a variety of stakeholders, including the impacted individuals and departments such as the Revenue Department, Horticulture and Agriculture Departments, and local government.

1. Consultations with BREB Officials

613. The feedback received from consultations meeting will be used by the project executing agencies to carryout necessary revisions to the technical designs in order to minimize the resettlement impacts. The consultations were also held with several officials of the BREB as well as with the affected persons (APs) in the project areas during project preparation. Six (06) consultation meetings were conducted in different 6 PBS. The key objectives of the consultation meetings were to disclose the positive and negative impacts of the project to the community and stakeholders as well as to ensure inclusion of views and opinions from project affected persons about its impacts on their livelihood and wellbeing. Photos of consultation with BREB personnel are given below. The details and more pictures are given below:

Aukhil Kumar Saha(GM), Sunamganj PBS	***S M Hasnat Hossain (GM), Sylhet PBS***
	
Md Kamal Hossain (DGM_Technical), Sylhet PBS	***Md.Mustafizur Rahaman (GM), Comilla PBS-2***
	
Md.Mustafizur Rahaman (GM), Comilla PBS-2	
	
Md. Abu Taher (Senior Genaral Manager), Laxmipur PBS	***Md. Yusuf Ali (DGM_Technical), Comilla PBS-2***
	
Pankoj Chowdhury (DGM Technical, Chattogram PBS -3	***MD Kamruzzaman (DGM_Technical), Laxmipur PBS***

Meeting with BREB offcials and AIIB team at Sylhet PBS-1

Meeting with BREB offcials and AIIB team at Feni PBS

**GM-General Manager; DGM-Deputy General Manager; AGM- Assistant General Manager*

Figure IX-1: Consultations with BREB Officials

Table IX-1: Meeting with PBS Officials

SL	Locations	Date	Participant	
			Male	Female
1	Sylhet PBS	31/03/2021	3	0
2	Sunamganj PBS	01/04/2021	2	0
3	Comilla PBS-2	30/05/2021	3	0
4	Chattogram PBS-3	01/06/2021	2	0
5	Laxmipur PBS	31/05/2021	4	0
6	Feni PBS	02/06/2021	1	0

2. Consultations with Local People

614. The purpose of the Focus Group Discussion process was to identify any concerns that local communities or other stakeholders might have, as well as to detect any potential serious conflicts in the community. Early in the Project, appropriate mechanisms will be established that incorporate local decision-making traditions to facilitate dialogue and develop consensus on identified issues. A total eight (08) number of FGDs were conducted at the project area (Figure IX-3). The details of the consultations are given in the below Table IX-2.

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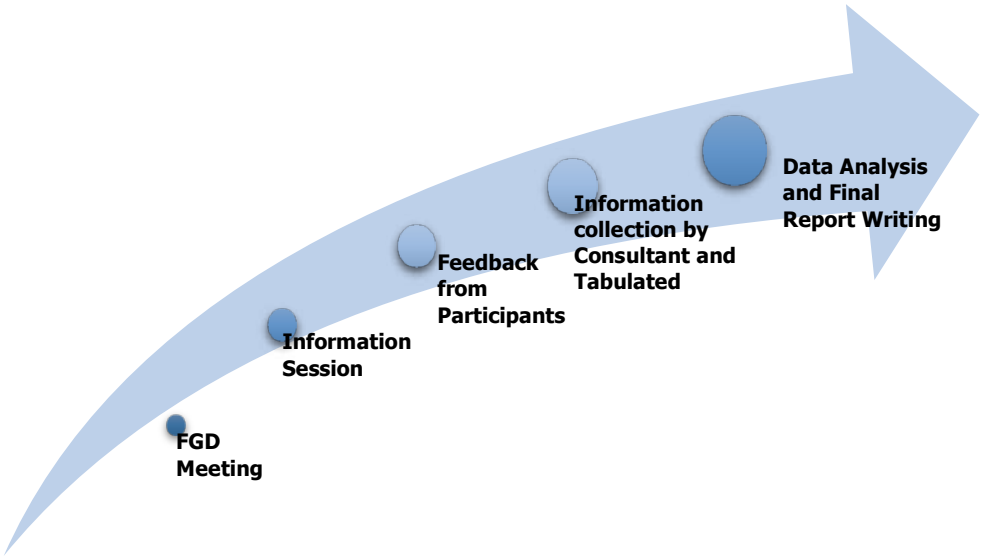


Figure IX-2: Consultation process with Local People

615. Due of the COVID-19 pandemic scenario, a huge number of participants were unable to attend the sessions. Public consultations were conducted with groups of people and their

community-based organizations in the project's impact areas in order to provide information about the proposed project and its various activities, as well as to solicit their opinions and concerns.

Table IX-2: Details of Consultations with Local People

Sl. No.	Location	Name of the sub-station	Date	Time	Participant	
					Male	Female
01	Amzader Bazar, Chowddogram Dist: Comilla	Cumilla PBS-2	06/06/2021	06:15pm to 07:30pm	9	0
02	Beside Barabkunda Railway Station, Sitakunda Dist: Chattogram	Chattogram PBS-3	07/06/2021	10:20am to 11:15am	9	0
03	Uttar Nolbila, Kalmachhora Dist: Cox's Bazar	Cox's Bazar PBS	05/06/2021	12:25pm to 01:30pm	10	0
04	Bogidhorpur, Baniachong, Dist: Hobiganj	Hobiganj PBS	02/04/2021	10:15am to 11:00am	10	0
05	Dewa, Dhormopasha Dist:Sunamganj	Sunamganj PBS	02/04/2021	03:45pm to 04:30pm	10	0
06	Putijuribazar, Dist: Habiganj	Hobiganj PBS	03/04/2021	11:20am to 12:30pm	10	0
07	Asrafpur Bazar, Dist: Laxmipur	Lakshmipur PBS	04/06/2021	10:45am to 11:30am	10	0
08	Sonagazi bus stand, Dist: Feni	Feni PBS	04/06/2021	11:05am to 12:10pm	10	0

Bogidhorpur, Baniachong, Hobiganj District.

Asrafpur Bazar, Laxmipur District.

Dewa, Dhormopasha, Sunamganj District

Putijuribazar, Habiganj District

Sonagazi bus stand, Feni District.

Amzader Bazar, Chowddogram, Comilla District

Beside Barabkunda Railway Station, Sitakunda Dist: Chattogram

Uttar Nolbila, Kalmachhora Dist: Cox's Bazar

Figure IX-3: Consultations with Local Peoples

3. Consultations with landowner

616. AIIB team conducted appraisal missions from 26 June 2024 to 29 June 2024 in Chattogram and Sylhet division for the planned substation location. During the mission, the consultant team, along with BREB officials and AIIB team, visited the proposed substation land which had been purchased under Feni PBS and Sylhet PBS-1 as well as consulted with the landowners.

Consultation with landowner at Feni PBS-

Consultation with landowner at Sylhet PBS-1

E. SUMMARY OF THE CONSULTATION MEETING

617. During the public participation of the proposed rural electrification and distribution project, the residents who were questioned highlighted the following issues. Most of the remarks were quite similar to each other. Table XI-4 provides an overview of the consultation meeting.

1. Positive Issues

Improvement of Local and National Economy

618. By boosting the gross domestic product, using locally accessible materials throughout the building phase of the planned subprojects will contribute to economic growth. The purchase of substation construction materials, as well as the eventual increased consumption of electricity, will attract taxes, such as VAT, which will be paid to the government, increasing government revenue, whereas the cost of raw materials will be paid directly to the producers, reducing government revenue.

Improved of Electricity Supply

619. The project aims to improve the distribution of electricity and retail sales. Power outages will be minimized, and residents won't be subjected to power rationing, the neighbors were confident. In addition, they believed that power fluctuations and surges would become obsolete. Because of these new sources of electricity, the country and local area are expected to attract more investment.

Boosting of the Informal Sector

620. It is expected that other businesses in the informal sector will thrive during the construction, operational, and decommissioning phases of the proposed subprojects. These include activities such as food vending, which will benefit directly from the construction, operational, and decommissioning staff members who will be purchasing food and other commodities from them. This will help the informal sector secure some temporary revenue and thus a livelihood.

Employment Opportunities

621. Most people close to the proposed project sites especially expected the project to create casual and permanent employment opportunities during the proposed project construction work, operation, and decommissioning phases. The employment opportunities could be either directly in the project or indirectly through associated businesses. One of the main positive impacts during projects construction phase will be the availability of job opportunities especially to casual workers and several other specialized workers.

622. Employment opportunities are of benefit both economically and in a social sense. In the economic sense, it means abundant unskilled labor will be used in construction hence economic production and circulation of money. In the social sense, the young and energetic labor force will be engaged in productive employment other than remaining idle that may lead them into social ills such as drug abuse and criminology. Several workers including casual laborers, masons, carpenters, joiners, electricians, and plumbers are expected to work on the site for a period that the project will start to the end. Apart from casual labor, semi-skilled and unskilled labor and formal employees are also expected to obtain gainful employment during the period of construction.

2. Negative Issues

Accidents during Construction

623. During the construction, implementation, and decommissioning of the project, several people feared that worker accidents may occur. However, they believed that safety measures

would be put in place to prevent accidents from occurring. Road safety measures and increased vigilance would be promoted among the carriers of the project materials to the project locations.

Increasing of Noise Level and Vibration

624. The likelihood of excessive noise and vibration levels on the project site as a result of construction activities was a cause of concern. However, the proponent must make reasonable efforts to reduce noise generation, such as ensuring that all construction equipment is in good working order.

Increasing of Emissions (Air Pollution)

625. During the construction and decommissioning phase of the proposed subprojects, there will be undesirable emissions that will be emitted, especially from heavy machines that could be used for construction and decommissioning. Dust will be emitted during the construction and decommissioning phases. Neighbors asked for air pollution control measures to be put in place, especially during construction.

Losses of Existing Vegetation

626. The construction of the proposed subprojects will involve clearing of the little existing vegetation cover.

Table IX-3: Summary Findings of the Public Consultation

Issues Discussed	People's Views and Perception	Feedback
General perception about the project	A large number of participants said that they had heard of the proposed project. General consensus was that the project was highly important for a regular and adequate power supply with correct voltage, as well as a regular and sufficient power supply. Students will profit from the initiative, since they will have access to power throughout the nighttime hours for studying.	General people are well aware of this project. They are expecting that this project will enhance the quality of power supply
Support of local people for the proposed project	All the participants decided to support the proposed project without hesitation, since it would address their electrical problems and make their lives a little tad better. During the consultation, participants noted that there are no small-scale enterprises in the region because of the inadequate power supply. Once there is a reliable power source, the area's economic development will improve. In the future, people will start thinking about building small-scale industries in the region.	These projects can booster the local and national economy as the electricity production will increase and the system loss will be reduced.
Support and participation during project implementation	All the participants during the consultation expressed that they will extend unconditional support to the project and participate during the implementation of the project as and when required.	Support from community level can increase the quality of the construction work
Critical issue and concern by the local people for the project	During the meeting, local residents raised a number of concerns about the project. One major concern expressed was the safety of the nearby residential population as a result of the substation installation. They highlighted the issue of timely construction of the proposed substation in some areas since there is a lot of dust and noise pollution for the local community during construction.	Most of the people raise their concern regarding environmental pollution like dust, noise during construction work. Mitigation measures will reduce the adverse effect.
Criteria to be considered during project design, construction, and operation stage	During the consultation, a small number of participants advised that the planned substation should be at least 3 to 4 kilometers away from the residential population. In certain places, individuals have stated that a fence surrounding the project site is necessary for safety, and that current techniques should be utilized to decrease noise pollution. Some proposed that for safety there should be a safety wall with a guard facility.	Most of the substation's site are far away from local community and BREB always conscious regarding these issues.
Environmental Issue	There is no environmental sensitivity at the project site, according to participants in the consultation. However, they were extremely optimistic about the project, since it will help the socio-economic growth in their region. During the	No sensitive receptor was identified throughout the project boundaries.

Issues Discussed	People's Views and Perception	Feedback
	building phase, they were concerned about noise and air pollution.	
Willing buyer and willing seller issues	On consultation, the majority of landowners said that they wanted financial compensation at market rate for land lost due to substation construction, while the majority of those stated not stated that desire. They asked for appropriate compensation for the loss of trees and crops and were granted their request. Some locals felt that in addition to monetary compensation, a member of each affected family should be provided labor or a job throughout the building period.	To construct substations some land may be needed. So, if the land owner willing to sell their land BREB shall buy these land at actual market price
Status of current electricity supply	During the consultation, the respondents stated that power is only accessible for 12 to 14 hours each day. Occasionally, there are power outages owing to load shading, and voltage fluctuation occurs. When there is a lot of wind and rain, the energy supply is quite low. Electricity is only accessible for 7 to 8 hours a day in certain regions, and during the rainy season, the supply is much less.	There is still system loss in the project areas. Modernization & Capacity Enhancement project will reduce the system loss
Perceived benefits from the project	As a result of new substations being constructed, the energy supply to villages is expected to rise and voltage fluctuations will be reduced, according to almost all of the consultation participants. They pointed out that, in the future, the enhanced electricity supply would be able to fulfill the power demand of small-scale companies, which in turn will generate jobs for local residents. In the evenings, students would benefit from having access to sufficient power for studying and other learning activities.	Increased and enhancement of electricity supply would be able to fulfill the power demand of small-scale companies, which in turn will generate jobs for local residents.
Perceived loss	Almost all the villagers felt that there are no such negative impacts from this proposed project. Though there are some perceived losses these are very minimal as they feel that there could be disruption of agricultural activities during stinging of feeder line or loss of crops if not avoided	As there is no major resettlement issues in this project, people of the project areas are feeling relax.
Safety issues	Almost all of the villages highlighted the problem of safety as a result of the substation building. The participants stated that there would always be dread in their minds while they are near the substation. Fencing surrounding the project site is essential for safety, and contemporary techniques should be utilized to decrease noise pollution. Some commenters recommended that a safety wall be built around the substation, complete with a guard post. It has been said that the substation perimeter would be continuously gated and that there will be no inflow of people within the s/s limit. The necessary safety measures will be implemented to ensure the safety of the local residents.	BREB, Contractors, PIU are always aware of the safety issues of the workers. Earlier all the project taken by BREB were meet the proper health safety guidelines. So, in this project it can be said that proper safety issues will be maintained in this proposed project.
Usefulness of consultation	Since Local residents had an opportunity to express their thoughts and concerns about the proposed project, they agreed that the discussions were extremely informative and useful. As a result, local residents need regular updates on the project's development.	Local people and all the stakeholders who have attended the consultation express their thoughts with consultants.
Labor management during COVID	As the construction period approaches, most participants are concerned about the migrant workers, who may spread the COVID virus to the workers. They advocated for as much use of local labor as feasible. To prevent the COVID virus from spreading, they have also advised the following: (1) controlling entry/exit to the site, securing the site's boundaries, and designating entry/exit points; (2) training security personnel on the (enhanced) system in place for securing the site and controlling entry and exit, the behaviors required of them in enforcing such system, and any COVID -19 specific considerations; (3) Worker fitness must be verified before workers access the site or begin work. Workers with underlying health concerns or who may be at risk should receive special attention; and (4) Temperatures of laborers and other persons entering the site should be checked and recorded; self-reporting is required before entering the site.	As COVID-19 strike throughout the world. It is mandatory to combat COVID-19 in workplace. So, all precautionary measures have to maintain in workplace.

F. Information Disclosure

627. Local people must be able to access, read and understand all subprojects, environmental impacts related to subprojects, suggested mitigation/enhancement measures, and the EMP for managing mitigation/enhancement measures. Information should be made available to the local people and to the relevant stakeholders of the respective subproject under the proposed project by the respective authority of the project (e.g., the BREB). The disclosure also published in BREB website as well as local newsprint and electric media.

628. As per the information disclosure processes, BREB has also arranged a workshop on 15 May 2024 through online platform regarding ESIA and RPF where total 82 participant including GM/SGM of all respective PBSs and other officials were present. The consultant presented specific findings along with suggestions on the environmental and social aspects of the RPF and ESIA which will lead to fruitful implementation of ESMP and RPF.

Figure IX.4: Workshop with each PBS & BREBs officials.

X. Stakeholder Engageent Plan (SEP) & Grievance Redress Mechanism (GRM)

A. General

629. Engagement and communication with stakeholders are an important tool for ensuring the transparency, accountability, and effectiveness of development projects. The overarching goal of this Stakeholder Engagement Plan (SEP) is to define a program for stakeholder engagement, including public information disclosure and consultation, throughout the proposed projects' construction, other project activities, and operation.

630. The Grievance redress mechanism described here refers to the mechanism related to the ESIA preparation, approval and implementation, and for construction activities. Grievance Redress for all resettlement and other social matters are covered separately in the Resettlement and Social reports. Nevertheless, the mechanisms described in this section will be compatible with and complementary to the Resettlement and Social mechanisms.

631. It is essential that the communities as whole and individual members of the community are given every opportunity to express their views, concerns and worries in connection with the expected and projected environmental impacts and construction impacts for each of the proposed projects. The support of the community is a key indicator of the success of a project, and it will therefore be essential that the communities are given the opportunity to express their views during the initial planning and design, during the construction phase and during operation of the projects.

632. It is essential that an effective and transparent mechanism is designed and established at the earliest opportunity for all members of the community to be able to lodge complaints and grievances.

1. Objectives of the SEP

633. The overall objective of this Stakeholder Engagement Plan (SEP) is to define a program for stakeholder engagement, including public information disclosure and consultation, throughout the construction and operation of the proposed projects. The SEP outlines the ways in which BREB, and contractors will communicate with stakeholders and includes a mechanism by which people can raise concerns, provide feedback, or make any complaints about project interventions, the contractors, and the project(s) themselves. The SEP is a useful tool for managing communications between BREB and its stakeholders.
The Key Objectives of the SEP can be summarized as follows:

- Identify key stakeholders that are affected, and/or able to influence the Project and its activities.
- Identify the most effective methods, timing and structures through which to share project information, and to ensure regular, accessible, transparent and appropriate consultation.
- Develops a stakeholder's engagement process that provides stakeholders with an opportunity to engage in project planning and design and its implementation.
- Provide guidance for stakeholder engagement such that it meets the standards of national and international best practices
- Establish formal grievance/resolution mechanisms.
- Define roles and responsibilities for the implementation of the SEP.
- Define reporting and monitoring measures to ensure the effectiveness of the SEP and periodical reviews of the SEP based on findings.

2. Purpose of stakeholder engagement plan

634. The current Stakeholder Engagement Plan's goal is to define a program for stakeholder engagement, including public information disclosure and consultation, throughout the proposed projects' construction and operation. The SEP outlines how Stakeholder Engagement will be practiced throughout the project and which methods will be used as part of the process, as well as the responsibilities of the BREB Authority and contractors in the implementation of Stakeholder Engagement activities. Indeed, while the project is not expected to result in any physical resettlement, land acquisition, and local population involvement are critical to the project's success, ensuring smooth collaboration between project staffs, workers, contractors, suppliers, and local communities, as well as minimizing and mitigating environmental and social risks.

3. Applicability

635. This Stakeholder Engagement Plan is developed for the current Project design and capacity and is designed to facilitate information disclosure, consultation and participation, grievance redress mechanism within the project area. The plan outlines the project provisions with regards to engaging with the community and also receiving feedback during the project operation.

B. Regulation & Requirement

1. National Requirements

636. Bangladesh has relevant and adequate law/regulation on right to information, information disclosure, transparency during decision making/public hearing etc. Relevant laws and regulations pertaining to these issues are given below:

a) Right to Information Act (RTIA) 2009

637. The Act makes provisions for ensuring free flow of information and people's right to information. Freedom of thought, conscience and speech is recognized in the Constitution as a fundamental right and the right to information is an alienable part of it. The right to information shall ensure that transparency and accountability in all public, autonomous and statutory organizations and in private organizations run by government or foreign funding shall increase, corruption shall decrease, and good governance shall be established.

638. This act provides a legal framework for citizens to access information held by public authorities, promoting transparency and information disclosure.

639. Article 154 of this article mandates the establishment of local government institutions. These institutions, such as Union Parishads and City Corporations, are expected to function with some level of public participation and consultation on local matters.

2. Requirements of the AIIB

640. As a partner in the delivery of this project, the AIIB's environmental safeguard requirements were carefully considered during the preparation of this ESIA. The description of a grievance redress mechanism (GRM) is not required under the GoB environmental legislation but is mandatory for any AIIB-funded project. To that end a step-by-step process is defined in this chapter.

641. The AIIB's ESP of 2022 consolidates the following requirements on information disclosure, consultation and grievance redress mechanism:

a) *Information disclosure*

642. In accordance with ESS1, the Bank requires the Client to disclose environmental and social information. Furthermore, to improve access to environmental and social information related to Projects, the Bank discloses the Client's documentation within the timeframe specified in Section 65 of ESP.

b) *Consultation*

643. The consultation covers Project design, mitigation and monitoring measures, project-specific sharing of development benefits and opportunities, and implementation issues. During the Project's preparation and implementation, the Bank expects the Client to engage in meaningful consultation with stakeholders. In the environmental and social assessment documentation, the Bank requires the Client to include a record of the consultations as well as a list of participants.

c) *Project-level Grievance Redress Mechanism.*

644. The Bank requires the Client to establish, in accordance with the ESP and applicable ESSs, a suitable project-level GRM to receive and facilitate resolution of the concerns and complaints of people who believe they have been adversely affected by the Project's environmental or social impacts, and to inform Project-affected people of its availability.

645. AIIB requires the BREB to establish, in accordance with the ESP and applicable ESSs, a suitable Project-level GRM to receive and facilitate resolution of the concerns or complaints of people who believe they have been adversely affected by the Project's environmental or social impacts, and to inform Project-affected people of its availability. The Bank also requires the Client to establish a GRM for contracted workers under the Project to address workplace concerns and reflect this in the tender documents for these contracts.

646. Grievance redress refers to the set of actions available to anyone negatively impacted by the project and not properly dealt with, ignored or overlooked the implementation of mitigative and monitoring measures defined in the ESIA. The overriding principle of any GRM is that it must be non-threatening, easily accessible, quick and impartial, delivering decisions to the complainant in an unbiased a-political manner. GRM's have been developed for many past donor-funded projects and have been accepted by the GoB and been reasonably successful in doing what they are supposed to do. The GRM described in this chapter builds on that success.

C. Stakeholder Identification and Analysis

647. In order to develop an effective Stakeholder Engagement Plan, it is necessary to determine who the stakeholders are and understand their needs and expectations for engagement, and their priorities and objectives in relation to the Project. People who have potential roles in a project or could be affected by the project and project activities or interested people of the project are considered as stakeholder. Stakeholders could be individuals, groups of people or local communities or organizations who may be affected by the project- directly or indirectly; positively or negatively.

648. In general, engagement is directly proportional to impact and influence, and as the extent of impact of a project on a stakeholder group increases, or the extent of influence of a particular stakeholder on a project increase, engagement with that particular stakeholder group shall intensify and deepen in terms of the frequency and the intensity of the engagement method used. All engagement shall proceed on the basis of what are culturally acceptable and appropriate methods for each of the different stakeholder groups targeted.

649. Immediate positive and negative impacts for this Modernization & Capacity Enhancement Project would be faced by surrounding peoples, petty businessmen, passerby, student, teacher and guardian of nearby school, worker and labour force. Community

representatives may provide helpful insight into the local settings and act as main conduits for dissemination of the Project-related information and as a primary communication/liaison link between the Project and targeted communities and their established networks. Appropriate stakeholder representatives for this project may be included the following key personnel's-

- BREB top management
- Elected officials of local government (UNO, AC Land)
- Community leaders or UP chairman and councilor
- Teachers and other respected persons in the local community's
- Non-elected leaders that have wide recognition within their community, such as chairpersons of local initiative groups, committees, local cooperatives etc.
- Leaders of community-based organizations, local NGOs and women's groups
- The elders and veterans within the affected community
- Religious leaders, including those representing traditional faiths
- Leaders representing local business associations
- Leaders representing working/ labour group

650. For the purposes of effective and tailored engagement, stakeholders of the proposed project(s) can be divided into the following core categories –

- **Affected Parties** – persons, groups and other entities within the Project Area of Influence (PAI) that are directly influenced (actually or potentially) by the project and/or have been identified as most susceptible to change associated with the project, and who need to be closely engaged in identifying impacts and their significance, as well as in decision-making on mitigation and management measures.
- **Other Interested Parties** – individuals/groups/entities that may not experience direct impacts from the Project but who consider or perceive their interests as being affected by the project and/or who could affect the project and the process of its implementation in some way.

1. Project-Affected Parties

651. Affected Parties include local communities, community members and other parties that may be subject to direct impacts from the project during development phase. Specifically, the following individuals and groups fall within this category –

- Affected Persons who are living nearby the project area
- The local population and local communities including the vulnerable group that include the elderly, physically and mentally disabled persons, single mothers, adolescent girls, minority transgender community and the children who are moving or leaving in the close proximity of the project area
- Residents, business entities, and individual entrepreneurs in the area of the project who are adversely affected owing to the widening of approach road, and others that can benefit from the employment, training and business opportunities offered due to implementation of the project.
- The BREB authority can take the lead in disseminating information about the proposed project to the local communities during the construction activities. Besides local NGOs, having considerable capacity, may tap for disseminating the information and raising awareness of the planned activities among the potentially affected communities in the project area.

2. Other Interested Parties

652. The projects' stakeholders also include parties other than the directly affected communities, including -

- Residents of the other rural settlements within the project area that can benefit from employment and training opportunities stemming from the project;
- Civil society groups and NGOs on the regional, national and local levels, which pursue environmental and socio-economic interests and may become partners of the project.
- Community-based groups and non-governmental organizations (NGOs) working on Gender issues including GBV and Human Rights in the locality that work for and represent local residents and other local interested groups, and act on their behalf.
- GoB officials, permitting and regulatory agencies at the national and regional levels, including environmental, technical, social protection and labor authorities.
- GoB officials at the district level and below including DoE: local Union Parishad, Upazila Parisad in the project area, village administrations; local etc.
- Business owners and providers of services, goods and materials within the project area that will be involved in the project's wider supply chain and transportation business or may be considered for the role of project suppliers in the future.
- Mass media and associated interested groups including District and local Press Club, local, regional and national print and broadcasting media, digital/web-based entities, and their associations.

3. Vulnerable Groups

653. Persons who may be disproportionately impacted or further disadvantaged by the project as compared with any other groups due to their vulnerable status [7], and that may require special engagement efforts to ensure their equal representation in the consultation and decision-making process associated with the project. Engagement with all identified stakeholders will help ensure the greatest possible contribution from the stakeholder parties toward the successful implementation of the project and will enable the project to draw on their pre-existing expertise, networks and agendas. It will also facilitate both the community's and institutional endorsement of the project by various parties. Access to the local knowledge and experience also becomes possible through the active involvement of stakeholders.

D. Stakeholder Identification and Consultation Methods

654. There are a variety of engagement techniques that shall be used to build relationships with stakeholders, gather information from stakeholders, consult with stakeholders, and disseminate project information to stakeholders. When selecting an appropriate consultation technique, culturally appropriate consultation methods, and the purpose for engaging with a stakeholder group shall be considered. Techniques in this Project are:

Table X-1: Summary Findings of the Public Consultation

Engagement Technique	Appropriate Application of the Technique
Correspondences (Phone, Emails)	Distribute information and invite stakeholders: Local governments, News agencies, BREB headquarter, PBS Office, Project Office, Local leaders, Educational Institutions, Religious leaders and. Invite stakeholders to meetings and follow-up
One-on-one meetings	Seeking views and opinions Enable stakeholder to speak freely about sensitive issues Build personal relationships Record meetings
Formal meetings	Present the Project information to a group of stakeholders

[7] Vulnerable status may stem from an individual's or group's race, national, ethnic or social origin, color, gender, language, religion, political or other opinion, property, age, culture, literacy, sickness, physical or mental disability, poverty or economic disadvantage, and dependence on unique natural resources.

Engagement Technique	Appropriate Application of the Technique
	Allow group to comment – opinions and views Build impersonal relation with high level stakeholders Disseminate technical information Record discussions
Public meetings	Present Project information to a large group of stakeholders, especially communities Allow the group to provide their views and opinions Build relationship with the communities, especially those impacted Distribute non-technical information Facilitate meetings with presentations, PowerPoint, posters etc. Record discussions, comments, questions.
Focus group meetings	Present Project information to a group of stakeholders Allow stakeholders to provide their views on targeted baseline information Build relationships with communities Record responses
Public Notice	Public notice published on daily newspaper for inviting people regarding the ESIA Public consultation. Print an Electric media coverage.
Project leaflet	Brief project information to provide regular update Site specific project information.

E. Stakeholder Engagement To Date

655. The survey team surveyed the project areas with support from the Project Sponsor conducted consultations with BREB officials, and village levels through formal meetings with local authorities, informal interviews and consultation with affected communities' representatives through key informant interviews (KIIs), focus group discussions (FGDs). Objectives of the stakeholder engagement activities were to:

- Update about Project progress.
- Obtain information related to socio-economic conditions of the proposed project areas.
- Gather information on the compensation, resettlement and support of the Project to AP in the community.
- Get acceptance and support from the People's Committee to conduct the survey in the area.

656. A summary of the activities is presented in Table X-2 and summary of discussions, concerns, and recommendations generated during the sections below.

Table X-2: Summary of Stakeholder Engagement for this modernization project

Types of engagement	Stakeholders	Contents covered in the meetings
Meetings with PBS authorities	➢ GM/DGM/AGM ➢ Line man ➢ Electrician	➢ Update about Project progress. ➢ Gain information related to purchasing land for substations, distributions line routes ➢ Grievance redress activities
Focused group discussion	➢ Indigenous people ➢ Vulnerable people ➢ Women ➢ Economical displacement community ➢ Host community	➢ Main livelihoods in this community ➢ Vulnerable status (i.e., gender, ethnicity, age, physical or mental ➢ disability, economic disadvantage, or social status that may be more adversely affected by the Project development); ➢ Support from authorities, other organizations for local community (type of support); ➢ Perception on the Project and any concerns linked to the Project development; and ➢ Cultural activities/local traditions in this community

Types of engagement	Stakeholders	Contents covered in the meetings
Key informant interviews	➢ Union Chairman ➢ Upazila Chairman ➢ Teacher ➢ Businessman ➢ Govt officials	➢ Historical demographic information of the affected villages. ➢ Infrastructure and services status. ➢ Main livelihoods in the area and income from those livelihoods. ➢ Public security and health status of local community. ➢ Education and employment status. ➢ Available unions in the area and role of women as well as youth in local activities. ➢ Advantages and disadvantages of local community and support from authorities, other organizations for them

F. Planned Stakeholder Engagement Activities

657. Stakeholder engagement activities will need to provide stakeholder groups with relevant information and opportunities to voice their views on topics that matter to them. Below table presents the stakeholder engagement activities for this project. BREB will undertake for their project(s). The activity types and their frequency are adapted to the three main project stages: project preparation (including design, procurement of contractors and supplies), construction, and operation and maintenance.

G. Feedback Mechanism

658. BREB has 27 customer service numbers. As well as BREB has emergency call center. Everyone can easily access the number & these number are 24/7 operational. In addition in every PBSs have complait register log book. Anyone can register his complaint. Despite these all facilities BREB will follow some distict mechanism which are as foloows

- **Comment boxes:** Place comment boxes at public meetings and information centers for written feedback.
- **Suggestion hotline:** Establish a toll-free hotline where stakeholders can voice their concerns and suggestions.
- **Online feedback form:** Create an online feedback form on the project website for convenient and anonymous feedback.
- **Grievance redress mechanism (GRM):** Establish a clear and accessible GRM for stakeholders to report any issues or grievances related to the project.

Addressing Feedback:

- **Acknowledge Feedback:** Acknowledge all feedback received, even if it's negative.
- **Analyze Feedback:** Analyze the feedback to identify common themes and concerns.
- **Respond to Feedback:** Provide timely and clear responses to feedback, explaining how it's being considered or addressed. Regularly communicate how feedback is being incorporated into the project.

Table X-3: Planned Stakeholder Engagement Activities

Stage	Target Stakeholders	Topic(s) of Engagement	Method(s) Used	Location/Frequency	Responsibilities
STAGE 1: PROJECT PREPARATION (PROJECT DESIGN, SCOPING, RESETTLEMENT PLANNING, RPF/SEP DISCLOSURE)	**Project Affected People:** - People residing near project area - Petty businessmen around the approach road - School teacher, guardians and students	- ESIA, ESMP, RPF, SEP disclosures - Assistance in gathering official documents for authorized land uses - Land Purchase Documents - Project scope and rationale - Project E&S principles - Grievance mechanism process	- Public meetings, separate meetings for women and vulnerable - Face-to-face meetings - Mass/social media communication (as needed) - Disclosure of written information - Grievance mechanism - BREB's newsletter and website	- Disclosure of ESIA, RPF, SEP, - At beginning of the construction work, all PBS area - Continuous communication through mass/social media and routine interactions	- BREB/PIU
	Other Interested Parties (External) - Union Parishad and UNO of Commanding Upazilla - Representative of Local people and community	- ESIA, ESMP, RPF, SEP disclosures - Land Purchase process - Identification of land /plots - Project scope, rationale and E&S principles - Grievance mechanism process	- Face-to-face meetings - Joint public/community meetings with local government - Public Disclosure	- Project launch meetings in BREB headquarter and PBS Office - Meetings in nearby school or college or as an when demanded by the affected community - Disclosure meetings in respective PBS.	- BREB/PIU - Socially responsible for the project
	Other Interested Parties (External) - Press and media - NGOs - Businesses and business organizations - Worker and Contractors - Workers' organizations - Academic institutions - National Government Ministries - General public, tourists, jobseekers	- ESIA, ESMP, RPF, SEP disclosures - Grievance mechanism - Project scope, rationale and E&S principles	- Public meetings, trainings/workshops (separate meetings specifically for women and vulnerable as needed) - Mass/social media communication - Disclosure of written information - Grievance mechanism - Notice board for employment recruitment	- Project launch meetings at BREB headquarter and PBS office - Meetings in project area as needed - Communication through mass/social media (as needed) - Information desks with brochures/posters in affected villages (continuous)	- BREB/PIU
	Other Interested Parties (External) - Other Government Departments including DoE from which	- Legal compliance issues - Project information scope and rationale and E&S principles - Coordination activities - Land acquisition process	- Face-to-face meetings - Invitations to public/community meetings - Submission of required reports	- Disclosure meetings - Reports as required	- BREB Team & management

Stage	Target Stakeholders	Topic(s) of Engagement	Method(s) Used	Location/Frequency	Responsibilities
	permissions/clearances are required; - Other project developers, donors	- Grievance mechanism process - ESIA/ESMP/RPF/SEP disclosures			
STAGE 2: CONSTRUCTION AND MOBILIZATION ACTIVITIES	**Project Affected People** - People potentially affected for the construction activities - People residing nearby project area	- Grievance mechanism - Health and safety impacts (EMF, community H&S, community concerns) - Employment opportunities - Project status	- Public meetings, open houses, trainings/workshops - Separate meetings as needed for women and vulnerable - Disclosure of written information - Grievance mechanism - BREB newsletter and website	- Quarterly meetings during construction seasons - Communication through mass/social media as needed - Notice boards updated weekly - Routine interactions	- BREB/PIU - Contractor/sub-contractors
	Other Interested Parties (External) - Press and media - NGOs - Businesses and business organizations - Workers' organizations - Academic institutions - National Government Ministries - Local Government Departments - General public, tourists, jobseekers	- Project information - scope and rationale and E&S principles - Project status - Health and safety impacts - Employment opportunities - Environmental concerns - Grievance mechanism process	- Public meetings, open houses, trainings/workshops - Disclosure of written information: brochures, posters, flyers, website, Information boards in BREB - Notice board(s) at construction sites - Grievance mechanism	Same as for PAPs	- BREB/PIU - Contractor/sub-contractors
	Other Interested Parties (Internal) - Other BREB's staff - Supervision Consultants - Contractor, sub-contractors, service providers, suppliers and their workers	- Project information: scope and rationale and E&S principles - Training on ESIA/ESMP requirements and other sub-management plans - Worker grievance mechanism	- Face-to-face meetings - Trainings/workshops - Invitations to public/community meetings	Daily, as needed	- BREB/PIU

Stage	Target Stakeholders	Topic(s) of Engagement	Method(s) Used	Location/Frequency	Responsibilities
STAGE 3: OPERATION AND MAINTENANCE	**Project Affected People:** - People residing nearby project area	- Satisfaction with engagement activities and GRM - Grievance mechanism process - Damage claim process	- BREB website - Grievance mechanism - BREB's newsletter	- Outreach as needed - Meetings in with local community as needed - Monthly (newsletter)	- BREB/PIU
	Other Interested Parties (External) - Press and media - NGOs - Businesses and business organizations - Workers' organizations - Academic institutions - Local Government Departments - General public, tourists	- Grievance mechanism process - Issues of concern - Status and compliance reports	- Grievance mechanism - BREB website - Face-to-face meetings - Submission of reports as required	As needed	- BREB/PIU

H. Grievance Redress Mechanism

1. Formation and Operation of GRM

659. If the local/affected people have concerns or complaints about the EMP or its general components/activities, they may be referring to those issues. A strategy that acknowledges, evaluates and corrects these issues is taken. For the social and environmental performance of the project a grievance redress mechanism (GRM) will be set up to receive, assess & assist in the settlement of impacted people's concerns, complaints and grievances. In addition, the GRM is intended to be an effective means of addressing impacted people's issues, as well as a trustworthy approach to communicate and resolve project-related problems.

660. Public awareness campaigns will be conducted by the Project Implementation Unit (PIU) of the BREB to raise the public's knowledge of the GRM. Publicize the contact phone number of the respective PBS in the media and on notice boards outside their offices and at building sites so that it may be used as complaints hotline. The project information booklet will include information on the GRM and will be widely disseminated within the project region by the PBS/RE. Members of the PBS/RE may register grievances in writing or by smartphone. Figure XI.1 shows how GRM will be applied for the project.

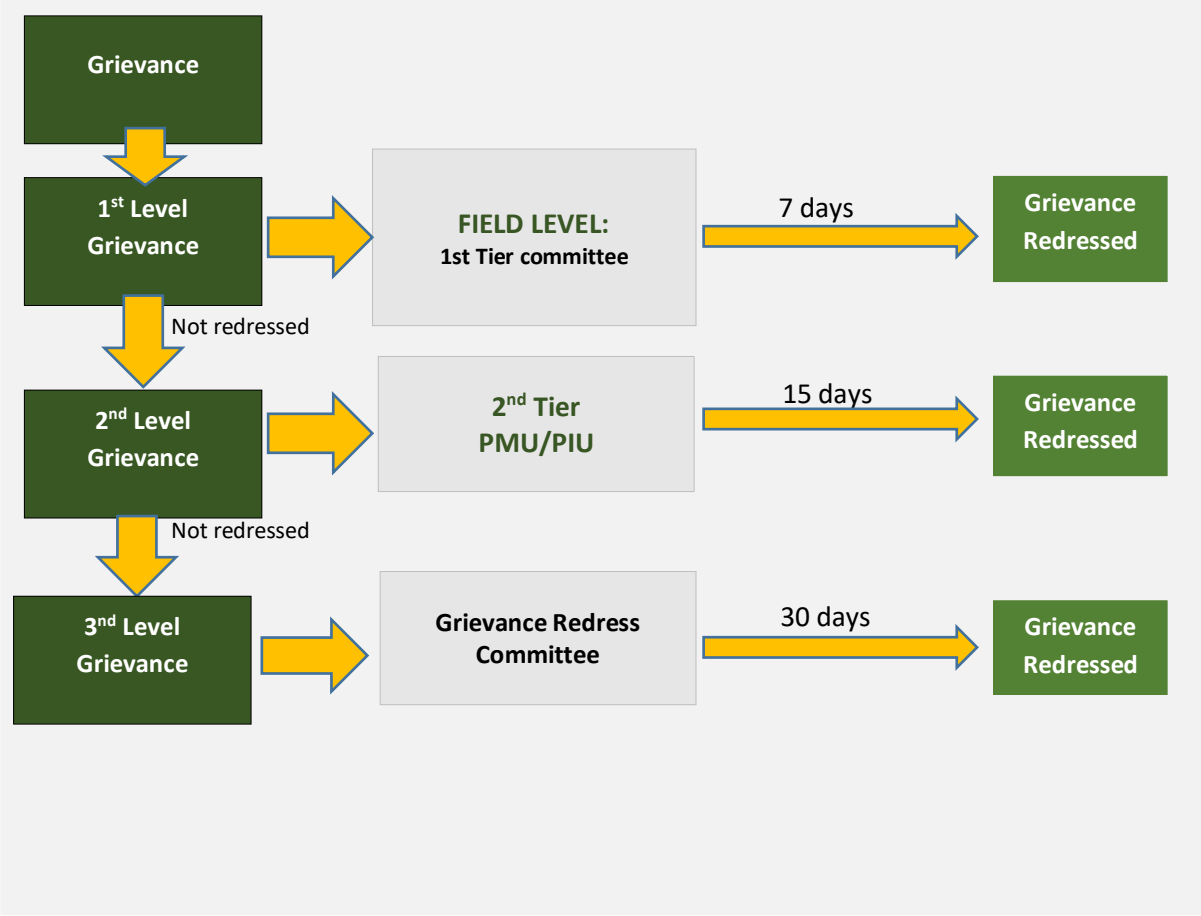


Figure X-1: Grievance Redress Mechanism of the Project

2. Steps to a Solutions

661. **First Tier of GRM:** For grievance redressal, the Local PBS authorities of the BREB and Contractors with assistance from PISCC should be responsible (1st tier). Within 7 working days, concerns will be resolved. Visits to the site and meetings with relevant stakeholders will be part of the grievance investigation process (e.g., affected persons, contractors, traffic police, etc.) In the event that anonymity is desired, grievances will be logged and personal

information (name, address, date of complaint, etc.) will be provided. Each grievance should be issued a tracking number that includes the following elements:

- When the complaint is registered, the complainant receives an acknowledgment of receipt along with the initial grievance document (which includes the description of the issue);
- Grievance monitoring sheet, mentioning actions taken (investigation, corrective measures); and
- One copy of the closure sheet will be given to the complainant once he or she has signed off on the resolution.

662. The updated register of grievances and complaints will be available to the public at the PBS office, construction site, and other key public offices along the project area. Should the grievance remain unresolved, it will be elevated to the second tier.

Table X-4: Grievance Redress Committee at PBS (1st Tier)

Sl. No.	Members	Designation	Responsibility
1	Concern PBS's Sr.GM/GM	Convener	Organize a monthly or quarterly meeting
2	Concern Executive Engineer (XEN)	Member	Summarized the grievances relating to environmental and social issues, construction-related issues, OHS and community health and safety issues and Gender-Based Violence, etc.
3	Assistant Engineer of concern office of the XEN		Record all issues and circulate among the Interested people.
4	AGM (MS) of concern PBS	Member secretary	Recorded all issues and circulated among the Interested people.
5	A Female member from AGMs or above officials of concern PBS	Member Secretary	Record all issues and circulate among the Interested people. If no female official is available, then AGM (MS) will be appointed at her charge.
6	Member from Consultant of concern PBS	Member	Note discussions and decisions of the meeting and disseminate the information about GRM and taking follow-up actions.

663. **Second Tier of GRM:** Unresolved issues will be forwarded on to the second layer of GRM by the Project director who is convenor of the committee. (with written documentation). The PIU of BREB should establish the GRC before the start of site works. A hearing will be called with the GRC, if necessary, where the affected person can present his or her concerns and issues. The process will facilitate resolution through mediation. The local GRC will meet as necessary when there are grievances to be addressed. The local GRC will suggest corrective measures at the field level and assign clear responsibilities for implementing its decision within 15 working days. The contractor will have observer status on the committee. If unsatisfied with the decision, the existence of the GRC shall not impede the complainant's access to the government's judicial or administrative remedies. These issues are detailed in the table X-5.

Table X-5: Grievance Redress Committee at Project Level (2nd Tier)

Sl. No.	Members	Designation	Responsibility
1	Project Director	Convener	To address the unsolved issues, He call for a general meeting with the respective committee members.
2	Deputy Project Director (Tech)	Member	Note discussions and decisions of the meeting and disseminate the information about GRM and taking follow-up actions.
3	Deputy Project Director (Admin)	Member	Record all issues and circulate among the Interested people.
4	Deputy Director (Finance)	Member	Note discussions and decisions of the meeting and disseminate the information about GRM and taking follow-up actions.

664. **Third Tier of GRM:** If the grievance could not solve by the 2nd tier, then it move into 3rd tier committee where Chief Engineer (Project) of BREB will act as convener of the committee. He addresses the unsolved issues; He call for a general meeting with the respective committee members. The all-committee member is shown in table X-5

Table X-6: Grievance Redress Committee at Project Level (3rdd Tier)

Sl. No.	Members	Designation	Responsibility
1	Chief Engineer (Project)	Convener	To address the unsolved issues, He call for a general meeting with the respective committee members.
2	Additional Chief Engineer (Operation, Maintenance & Distribution)	Member	Note discussions and decisions of the meeting and disseminate the information about GRM and taking follow-up actions.
3	Director (Programme Planning)	Member	Record all issues and circulate among the Interested people.
4	Superintendent Engineer (E&S) Cell.	Member secretary	Record all issues and circulate among the Interested people.
Committee may co-opt additional member, if required.			

665. The functions of the local GRC are as follows: (i) resolve problems and provide support to affected persons arising from various environmental issues, including dust, noise, utilities, power and water supply, waste disposal, traffic interference, and public safety, as well as social issues such as land acquisition, asset acquisition, and eligibility for entitlements, compensation, and assistance; (ii) reconfirm grievances of displaced persons, categorize and prioritize them, and aim to provide solutions within a month; and (iii) report to the aggrieved parties about developments regarding their grievances and decisions of the GRC. The SE, PIU will be responsible for processing and placing all papers before the GRC, maintaining the database of complaints, recording decisions, issuing minutes of the meetings, and monitoring to see that formal orders are issued, and the decisions carried out.

3. Construction Workers Grievance

666. Laborers and other unskilled hired employees of the contractor have little recourse when their living circumstances deteriorate, they are not paid according to agreement, or basic necessities, such as drinking water, are not provided at construction sites, work camps, or on-the-job. The contract or letter of assignment for the job will contain the name and contact information of a BREB and/or the RE's employee for the worker to contact under this contract as part of the written agreement with each hiring. A second statement will be included in the letter/agreement, stating that the contractor will not penalize the worker for filing a complaint, and that if this happens, the contract will be fined an amount equal to the duration of the employee's contract from the time of the incident to the end of the contract period. The complainant will receive that sum. The contractor will provide a complaint box, which will be sealed and collected by the PBS, allowing construction workers to file complaints with the PBS directly.

The GRCs dealing with labor grievances/complaints will have members directly and indirectly associated with the construction and other works under the individual contract packages. Each GRC will have 5 members:

- Project Implementing Agency (BREB) the official who is in charge of all construction and other activities at individual worksites will act as convener.
- A male worker representing the workers.
- A female worker representing the workers.
- Resident engineer of the Construction Supervision Consultant.
- A PIU official, designated by the Project Director, is not associated with the construction activities in the field but a member of the PIU.

4. Gender-based Violence, Sexual Exploitation and Workplace Sexual Harassment

667. BREB/PIU will, with support from consultants, identify institutions and services provides who are actively engaged in the prevention of gender-based violence, sexual exploitation and workplace sexual harassment to establish a manual for referencing any potential survivors. BREB/PIU, the project unit and the contractor are not equipped to handle complaints or provide relevant services to survivors but will refer any person to relevant service providers, including health facilities, law enforcement's gender unit or others, as relevant using the information on available services. Grievances related to gender-based violence be reported through the project/contractor, the nature of the complaint will be recorded along with the age of the complainant and relation to the project will be recorded but the issue will be referenced to relevant institutions. Also, the ESIA may identify additional mitigation measures related to gender and such measures will be reflected in site-specific ESMPs, including the contractors ESMP or contractors specific Labour Management Plans, where required. This will include engagement with communities on gender-related risks, grievance and response measures available, as identified in the manual.

5. Communication & Awareness Raising on GRM

668. The final processes and procedures for the GRM will be translated into local language (i.e., Bangla) and disseminated at all project locations. These shall be made available (in both leaflet and poster format) to all project locations with the staff on site and in the offices at Villages, Upazila, District and Municipality. The affected persons and their communities will be informed of the project's grievance mechanism in open meetings at important locations and in PAP group meetings. Bangla translations of the RPF in the form of information brochures will be distributed among the affected persons. The PAPs will also be briefed on the scope of the GRC, the procedure for lodging grievances cases and the procedure of grievance resolution at the project level.

6. Grievance Redress Mechanism at Project Level & PBS

669. For Bangladeshi citizens facing electricity issues, understanding the right channel for complaint registration is crucial. For areas under BREB jurisdiction, a national hotline 1699 offers a centralized approach. Callers can explain their concerns to representatives who will register the complaint and potentially initiate resolution. As well as BREB has 27 number under customer service where any consumer can contact their any complain. Unlike BREB, PBSs function at the district level. Each individual PBS office manages its own complaints. Each PBSs has separate complain booth for male and female. Every PBSs and substation area's all the compalin and grieveance are always registered in complain register. In construction stage, separate register and logbook will be followed for construction related complain and grievance.

Figure X.2: Commplain Center at Sylhet PBS-2

670. A three-tier project specific Grievance Redress Mechanism (GRM) will be followed in this project. BREB has successfully completed some GoB funded projects [8]as well as donor funded projects like ADB[9] and WB. They have followed the same formats of GRM, and they are good at dealing with such types of grievances.

671. BREB will follow this mechanism for all upcoming projects. At this level, the grievances are reported to field officers of the complainant centers at each service area of the 19 PBSs in Chattogram -Sylhet division. Any issues and grievances of technical, environmental health and safety, or involuntary resettlement nature such as compensation, land purchase-related issues, cutting down trees, distribution lines crossing over houses or home gardens, safety issues electricity breakdowns, public health and safety, power fluctuations, defects in meter readings, electricity-related thefts, etc. can be raised to the field officers. PBS's Grievance Redress Committee (GRC) is the second level of resolution for concerns that cannot be handled by field officers within 7 days. An investigation committee was formed by BREB to consider a possible resolution. It interacts with local residents on behalf of BREB to ensure that difficulties are handled peacefully. The GRC is comprised of 5 members including PBS GM/SGM (convenor), members from the office of executive engineer, BREB, a member from PBS, a member from the consulting firm (in case of safeguard issue, safeguard consultant will attend), and a member from the contractor. The GRC normally provides a solution within 15 days of receiving the grievance from the field officers.

I. Project-Affected People's Mechanism on Grievance Redress Activity

672. When project-related concerns cannot be satisfactorily addressed through Project-level GRMs or the Bank's management processes, people who believe they have been or will be adversely affected by the Bank's failure to implement the ESP may submit complaints to the AIIB's PPM in accordance with the Policy on the PPM. The Bank requires all Clients to notify Project-affected individuals about the PPM's availability. The Client's (or beneficiary's) Project-related website includes information on the availability of the PPM in an accessible and understandable manner in locally appropriate language(s).

J. Monitoring & Reporting

673. ESS1 requires disclosure of the ESIA, including documentation of the consultation process and the results of the social impact assessment in a timely manner in accordance with the applicable provisions of ESS 1. Adequate documented evidence of such engagement should be provided.

[8] 1.5 million Consumer Connection through Rural Electrification Expansion Project", "Distribution Network Expansion for 100% Rural Electrification (Dhaka, Mymensingh, Chattogram and Sylhet Divisions) Project
[9] Modernization & Capacity Enhancement of BREB Network (Khulna Division)-Ongoing

674. The SEP will be periodically revised and updated by the Social Specialists as necessary in the course of Modernization & Capacity Enhancement project planning and implementations in order to ensure that the information presented herein is consistent and is the most recent, and that the identified methods of engagement remain appropriate and effective in relation to the project context and specific phases of the development. Any major changes to the project related activities and to its schedule will be duly reflected in the SEP.

675. Monthly summaries and internal reports on public grievances, enquiries and related incidents, together with the status of implementation of associated corrective/preventative actions will be collated by responsible staff and referred to the senior management of the project(s). The monthly summaries will provide a mechanism for assessing both the number and the nature of complaints and requests for information, along with the Project's ability to address those in a timely and effective manner.

676. The project director, with the support of social and environment specialist will share the progress and results of the stakeholder engagement activities to the AIIB quarterly and annually where Stakeholder related activities will be described broadly. These reports will also include detailed reports on the GRM effectiveness, including a list of grievances received, addressed and the pending ones.

XI. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusion

677. Bangladesh Rural Electrification Board (BREB) has already achieved 100% electrification by December 2021. Currently, rural economic activities are increasing through being set up of large industrial plants and economic zones along with cottage, small and medium industries in the operational area of BREB. So, overall electricity demand is increasing day by day. At this stage it is necessary to ensure uninterrupted and quality power supply and for this purpose plans have been taken to undertake division wise projects for modernization and capacity building. Accordingly, this project is proposed for Chattogram -Sylhet divisions.

678. As described in the previous sections of this ESIA report, the project's environmental impacts and risks have been assessed. Nature and the socio-cultural environment will not be adversely affected by construction or operation of the project thanks to the detailed ESIA. No further studies are required for the renewal of the approval, but environmental clearance certificates (ECC) are required from the Department of Environment (DoE). Government of Bangladesh aims to provide everyone with access to a foldable and reliable electricity supply. Bangladesh will not be able to achieve its national goals if it does not improve access to electricity, especially in rural areas. As a result, this project has contributed to achieving Ministry/Division and Implementing Agency goals in terms of vision, mission, and priorities.

679. Construction of the proposed new substations and the installation of new 33kV and 11kV distribution lines will have short-term physical implications on the project. As per the guideline of AIIB in line with GoB laws, the possible mitigation measures have been suggested such as to control water pollution, noise and air pollution, waste management etc.

680. The construction of substations and 33 and 11 kV distribution lines pose a moderate risk to the health and safety of workers. To mitigate this risk, the installation contractor will be required to prepare and implement an occupational health and safety risk assessment and plan (including COVID-19 risks) for approval before construction works.

681. The best thing about this project, in terms of its environmental effects, is that it reduced carbon (greenhouse gas) emissions by loss reduction. It reduced burn oil, reduced toxic waste by decreasing energy loss of over-aged substations. Indeed, the only pollutants which factor into this project are those involved in the construction and transportation of its parts and right of way for new line. Implementing modern substations on a large scale would reduce energy loss and contribute towards a better efficient power distribution system by an environmentally friendly approach.

682. It will not be necessary to turn off the power supply in flood prone-area due to raise the water level during floods through rehabilitation of 3678 km existing line in flood prone-area. There are plans to build climate change tolerance and sustainable networks to ensure quality and uninterrupted power supply.

683. Before the operation phase, a plan for responding to an emergency for hazardous materials and oil spills will be developed. A suitable drainage system with sedimentation ponds and oil separators will be provided to prevent contamination by run-off and oil spills.

684. This ESIA report is a live document & BREB will continuously update when all the detail design is completed as well as any further details information will be available to identify the risks and impacts and provide mitigation measures.

685. However, no infrastructure development can be anticipated to be without environmental consequences. Before the operation phase, a plan for responding to an emergency for hazardous materials and oil spills will be developed. A suitable drainage system

with sedimentation ponds and oil separators will be provided to prevent contamination by run-off and oil spills. The environmental analysis has revealed that the project can be set up according to the proposed design and configuration in the proposed site and location. The environmental impacts are of limited nature, whereas the benefits of the project are many.

B. Recommendation

686. A review of the Environmental & Social Impact Assessment (ESIA) reveals the following recommendations for enhancing Project performance and sustainability:

- Electrical system safety and proper grounding must be given priority. Grounding as per electrical norms & procedure of IEC/ANSI/BS should be followed in all electrical sub-stations, source lines & backbone lines as a safeguard against electrical hazards & unsafe operations. This will protect the insulator, cross arms, and lightning arrestors, especially in extreme weather conditions.
- Flood and other natural calamities in Bangladesh's South-Central zone, South-Eastern Zone and North-Eastern zone, such as Chattogram and Sylhet, have prompted the Power Ministry to specify and approve fitting fixtures and hardware, such as insulators, cross arms, and lightning arrestors, for use in substations, source lines, and backbone lines. Furthermore, line-span could be reduced in this area to withstand extreme weather conditions. In addition, in those hazardous/cyclone-prone areas, an indoor Gas Insulated Substation (GIS) of type 33/11 kV will be built.
- In order to increase the amount of greenery along embankment slopes and toes, native mixed trees should be planted wherever possible.
- Substation will be augmented in the existing same piece of land. For this, there has to be some arrangement to keep the power supply un-interruption. Then sequentially other work will be done. So, upgradation works have to be done carefully as existing substation is on operation beside. It is also suggested that 33kV& 11kV feeders are needed to shift making available space before starting the augmentation works.
- As the delay of project implementation and increase the cost of raw materials exceeds contingency and inflation forecasts. To complete the project work within the scheduled time, sufficient fund allocation, strong efforts, and proper shutdown of existing lines are needed during operating the project
- Phase 1 Environmental Site assessment (ESA)* should be conducted after approval for all the existing substations, and any further recommendations arising from the findings of the Phase 2 ESA will be done by BREB.
- A consulting firm should be commissioned by BREB to conduct the Phase- 1 ESA for all the existing substations, and any further recommendations arising from the findings of the Phase 1 ESA will be made by BREB.
- No construction of old S/S is cleared to have no legacy issue on contamination or corresponding recommended remediation is done for any contamination identified.

APPENDICES

Appendix 1: Detailed of Proposed Sub Station Locations

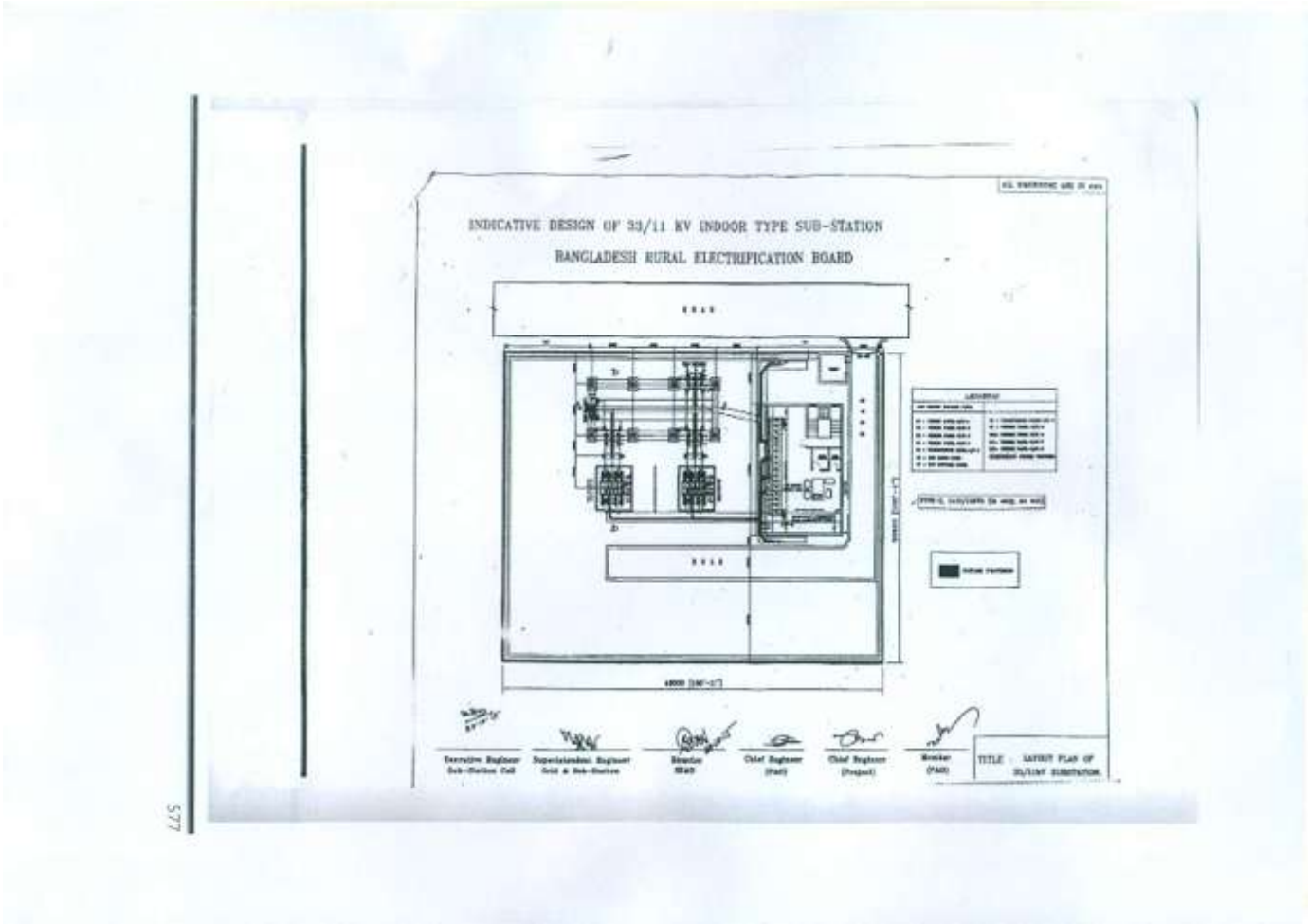
No	Name of S/S	Voltage Level (KV)	Capacity (MVA)
Brahmanbaria PBS			
1	Sarail-1(Pakshimul)	33/11	10
2	Ashuganj-2(Lalpur)	33/11	10
3	Nasirnagar-2(Guniok)	33/11	10
4	Kasba-3(Pourosova)	33/11	10
5	Kasba-4(Kuti)	33/11	10
6	Kasba-5(Kasba west)	33/11	10
7	Nabinagar-5(Jinudpur)	33/11	10
8	Nabinagar-6(Pourosova)	33/11	20
9	Sadar-1(Brahmanbaria)	33/11	20/30
10	Nasirnagar-1(Nasirnagar)	33/11	25/30
11	Akhaura-1(Pourosova)	33/11	20/30
12	Bijoynagar- 1(Chandura)	33/11	15/20
		Total:	**170/200**
Chandpur PBS-1			
1	Kochua-4(Ashrafpur)	33/11	10
2	Haziganj-5(Razargaon)	33/11	10
3	Haziganj-6(Randunimura)	33/11	20
4	Haziganj-3(Kalocho)	33/11	10
5	Kochua-1(Koya)	33/11	20
		Total:	**70**
Chandpur PBS-2			
1	Faridgonj-4 (Rupsha),	33/11	10
2	Faridgonj-3 (Gredhokalindia),	33/11	10
3	Matlab North-3 (Baganbari)	33/11	10
4	Madab South 2 (Aswinpur)	33/11	10
5	Chandpur-4 (Nanupur),	33/11	10
6	Madab North-2 (Shujatpur)	33/11	10
7	Chandpur-3 (Balia),	33/11	10
8	Haimchar Upakendro	33/11	10
		Total:	**80**
Chattogram PBS-1			
1	Chandnaish-1(Bagichahat)	33/11	25
2	Anowara-1(Rostomhat)	33/11	20
3	Chandnaish-2(BGC Trust)	33/11	10
4	Anowara-4(parki)	33/11	20
5	Anowara-5(Kaliganj)	33/11	10
6	Anowara-6(Gohira)	33/11	10
7	Patiya-3 (Dholghat)	33/11	10
8	Lohagara-3 (Chunoti)	33/11	10
9	Bashkhali-5 (Gondamara)	33/11	20
10	Bashkhali-6 (Chanpur)	33/11	10
11	Satkania-3 (Bajalia)	33/11	10
		Total:	**155**
Chattogram PBS-2			
1	Raozan-6(Amirhat)	33/11	10
2	Fatikchari-7(kanchannagar)	33/11	10
3	Rangunia-5(Rajarhat bazar)	33/11	10
4	Fatikchari-8(Kajirhat Bazar)	33/11	10
5	Raozan-2(goribullahpara)	33/11	15
6	Fatikchari-2(Bhoktopur)	33/11	15

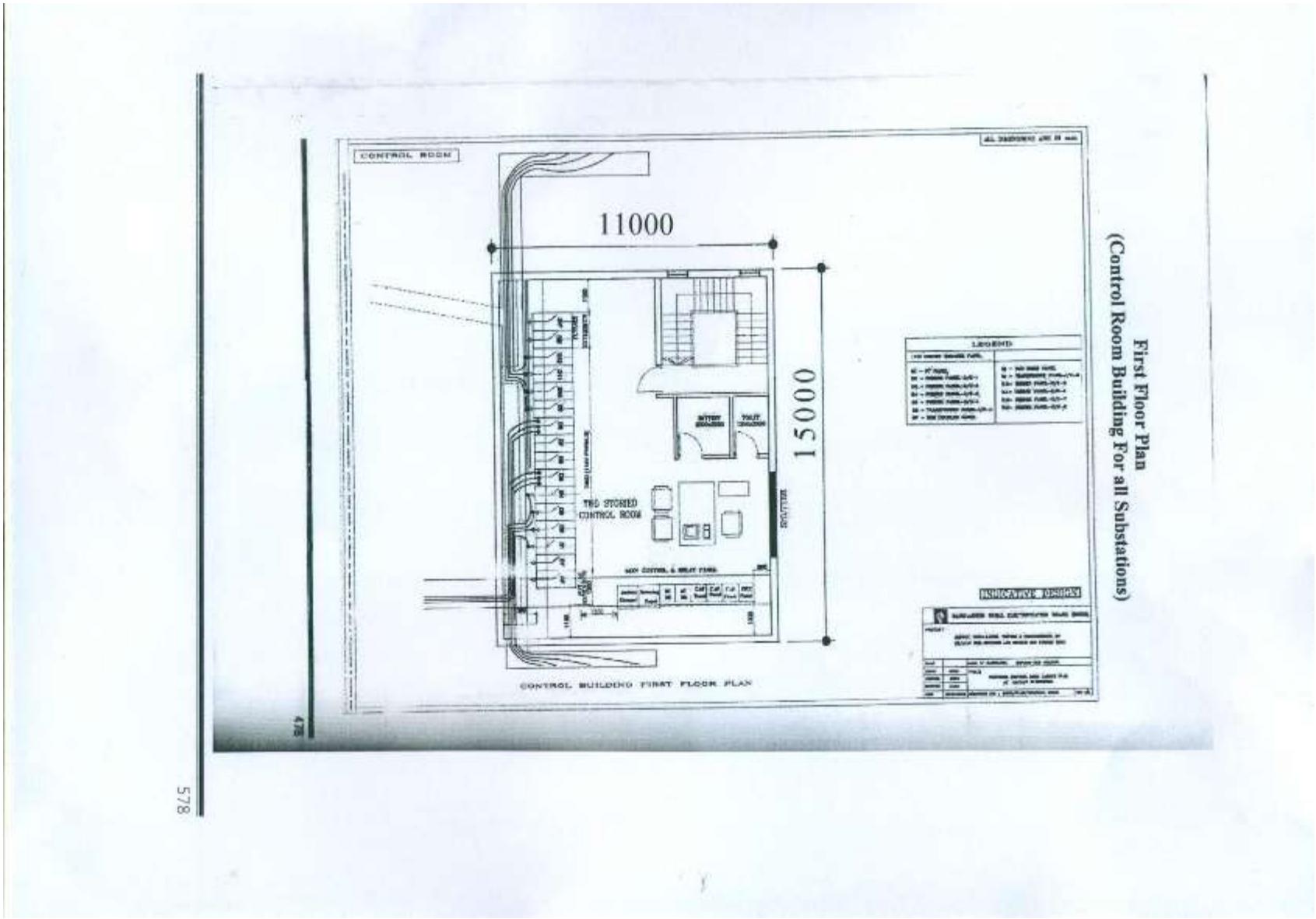
No	Name of S/S	Voltage Level (KV)	Capacity (MVA)
7	Rangunia-1(Ghochra)	33/11	15
		Total:	**85**
Chattogram PBS-3			
1	Hathajari-4(University, Fotehpur)	33/11	10
2	Hathajari-5(South Madrasa)	33/11	10
3	Mirshorai-8(Tekerhat)	33/11	20
4	Mirshorai-9(Chorsharat)	33/11	20
5	Shitakundu, shibpur	33/11	10
6	Mirshorai-1(Mithachora)	33/11	20
		Total:	**90**
Cumilla PBS-1			
1	Kutumbopur, Chandina	33/11	20
2	Choto Tulgao, Borura	33/11	10
3	Moddhonagar, Muradnagar	33/11	20
4	East Aliyabad, Debiddar	33/11	10
5	Baniyachang, Chandina	33/11	10
		Total:	**70**
Cumilla PBS-2			
1	Mirpur, Brahmanpara	33/11	10
2	Aganagar, Burichong	33/11	10
3	Nankora, Chouddogram	33/11	10
4	Pipuliya, Cumilla Sadar South	33/11	10
5	Lalmai, Lalmai	33/11	20
6	Baburchi bazar, Chouddogram	33/11	10
7	Horishchor, Lalmai	33/11	20
8	Kalir Bajar, Adarsha Sadar-1	33/11	10
		Total:	**100**
Cumilla PBS-3			
1	Daudkandi-5(Khalisha)	33/11	10
2	Titash-2(Korikandi)	33/11	10
3	Bancharampur-3(Kodomtoli)	33/11	10
4	Gozaria-7(Noyanagar)	33/11	10
5	Titash, Puran Batakandi	33/11	10
6	Gozaria-4(Forazikandi)	33/11	10
7	Daudkandi-4(Raypur)	33/11	15
		Total:	**75**
Cumilla PBS-4			
1	Nangolkot-3(Doulkhar)	33/11	20
2	Nangolkot-4(Pouroshova)	33/11	10
3	Monohorganj-3(Upazila)	33/11	20
4	Monohorganj-4(Baishgao)	33/11	10
5	Monohorganj-1(Notherpetua)	33/11	25
		Total:	**85**
Cox's Bazar PBS			
1	Chakaria-3(Dulahazra)	33/11	10
2	Chakaria-4(Ilishia)	33/11	10
3	Chakaria-5(Betuyabazar)	33/11	10
4	Ukhiya-5(Durongkhali)	33/11	20
5	Ukhiya-6(Monkhali)	33/11	10
6	Pekuya-2(Toitang)	33/11	10
7	Ramu-3(Jowariyanala)	33/11	10
8	Moheshkhali-4(Matarbari)	33/11	20
9	Ukhiya-1(Malvitapara)	33/11	20
10	Moheshkhali-1(Kerantoli)	33/11	20
11	Chakaria- 1(Fashiyakhali)	33/11	25

No	Name of S/S	Voltage Level (KV)	Capacity (MVA)
		Total:	**165**
Feni PBS			
1	Feni-4(Loskorhat)	33/11	20
2	Chagalnaiya-4(Radhanagar)	33/11	20
3	Dagonvuiya-4(Boraiya)	33/11	10
4	Fulgazi-3(North Dharmapur)	33/11	10
5	Chagalnaiya-3(Latifpur)	33/11	10
6	Sonagazi-3(Kuthir kathi)	33/11	10
		Total:	**80**
Laxmipur PBS			
1	Ramgoti-2(Chor Afzal)	33/11	10
2	Raypur-4(Baludhum)	33/11	10
3	Lakshmipur-6(North Hamchadi)	33/11	10
4	Lakshmipur-7(South Mandari)	33/11	10
5	Komolnagar-2(Torabganj)	33/11	10
6	Raypur-3(Rakhalia)	33/11	10
7	Lakshmipur-3(Chor Mansha)	33/11	10
8	Komolnagar	33/11	10
		Total:	**80**
Noakhali PBS			
1	Begumganj-4(Sharifpur)	33/11	20
2	Shudharam-3(Andarchar)	33/11	10
3	Shubornochor-3(Karimganj)	33/11	10
4	Kabirhat-2(Dhanshiri)	33/11	10
5	Begumganj-5(Chayani)	33/11	10
6	Shudharam-4(Science & technology university)	33/11	10
7	Chatkhil-2(Nayanpur)	33/11	10
8	Shenbag-2(Birkot)	33/11	15
9	Shonaimuri-3(Amishapara)	33/11	10
		Total:	**85**
Hobigonj PBS			
1	Chunaraghat-3(Ranigao)	33/11	10
2	Madhovpur-5(Ratanpur)	33/11	10
3	Nabigabj-4(Paniumoda)	33/11	10
4	Madhovpur-1(Temunia)	33/11	20
5	Shayestagonj(Lengapara, Shayestagonj Pourashava)	33/11	20
6	Bahubul-2(Borogao)	33/11	10/14
7	Madhovpur-3(Madhovpur)	33/11	10/14
8	Nabigabj-2(Aushkandi)	33/11	10/14
		Total:	**100/112**
Sunamganj PBS			
1	Sadar- 2(Kathoir)	33/11	10
2	Sadar- 4(Neyamotpur)	33/11	10
3	Chatok-2(Koitak)	33/11	10
4	Dirai(Anwarpur)	33/11	10
5	Jamalganj(Jamalganj Sadar)	33/11	10
		Total:	**50**
Moulvibazer PBS			
1	Sreemangal-5(Bhagalpur)	33/11	10
2	Sreemangal-6(Radhanagar)	33/11	10
3	Rajnagar-4(Betahunja)	33/11	10
4	Borlekha-3(Nanduya)	33/11	10
5	Sreemangal-1/3(PBS Campus, Sreemangal)	33/11	30
6	Rajnagar-1/2(Kharpara)	33/11	25
7	Borolekha-1(Panidhar)	33/11	25

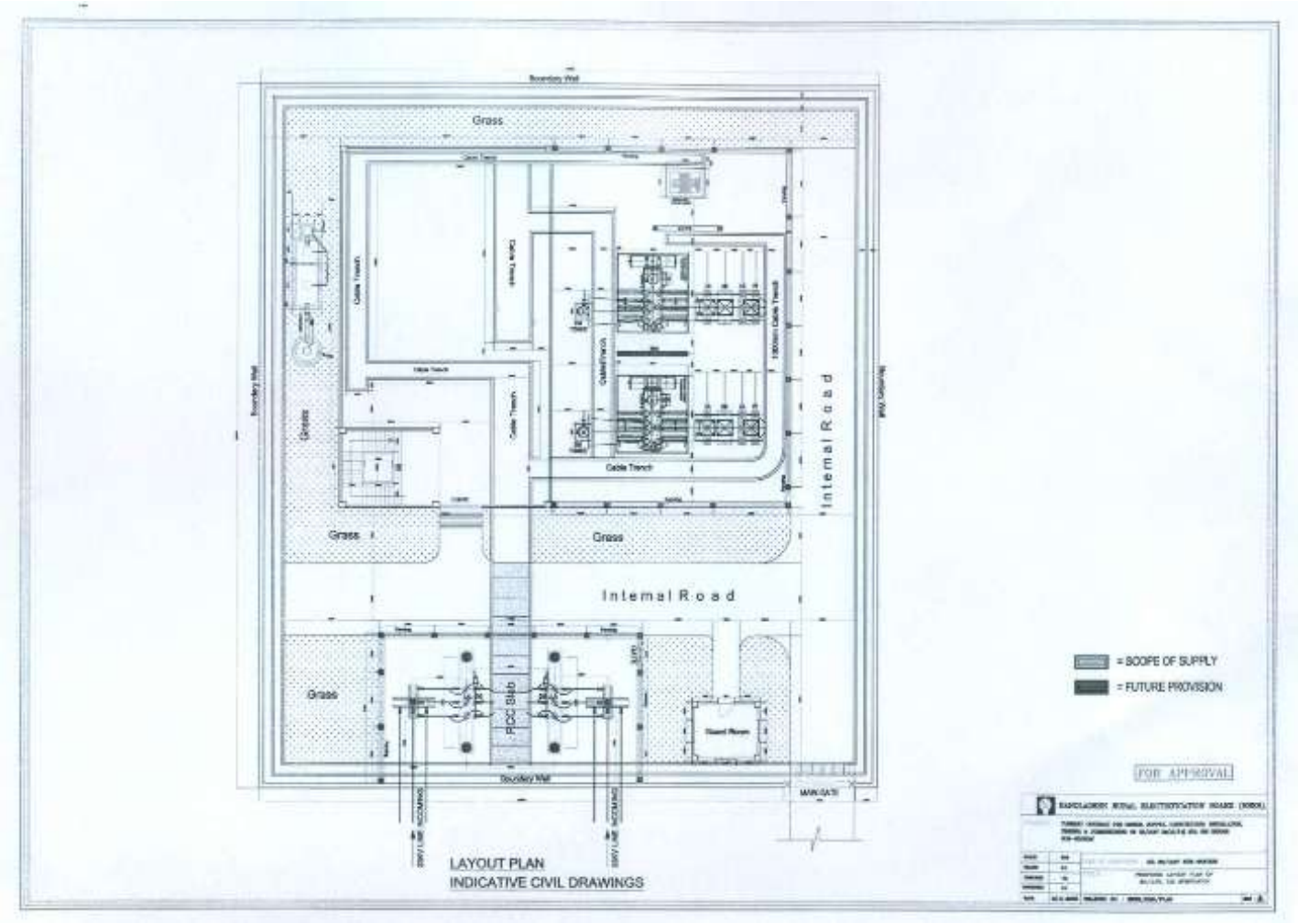
No	Name of S/S	Voltage Level (KV)	Capacity (MVA)
		Total:	**120**
Sylhet PBS-1			
1	Pachmile	33/11	10
2	Senanibash (Purbasha)	33/11	10
3	Sharifganj	33/11	10
4	Bisshonath-3(Kaliganj)	33/11	5
5	Jakiganj-1(Jakiganj)	33/11	10
6	Gopalganj-2(Gopalganj Zonal)	33/11	15
7	Biyanibazar-1(Sheola)	33/11	15
		Total:	**75**
Sylhet PBS-2			
1	Manikpur, Kanaighat	33/11	10
2	Companiganj-3 (Mitrimohol)	33/11	10
3	Sylhet-1(Badhaghat)	33/11	10
4	Gowainghat-1(Gowain)	33/11	10
		Total:	**40**

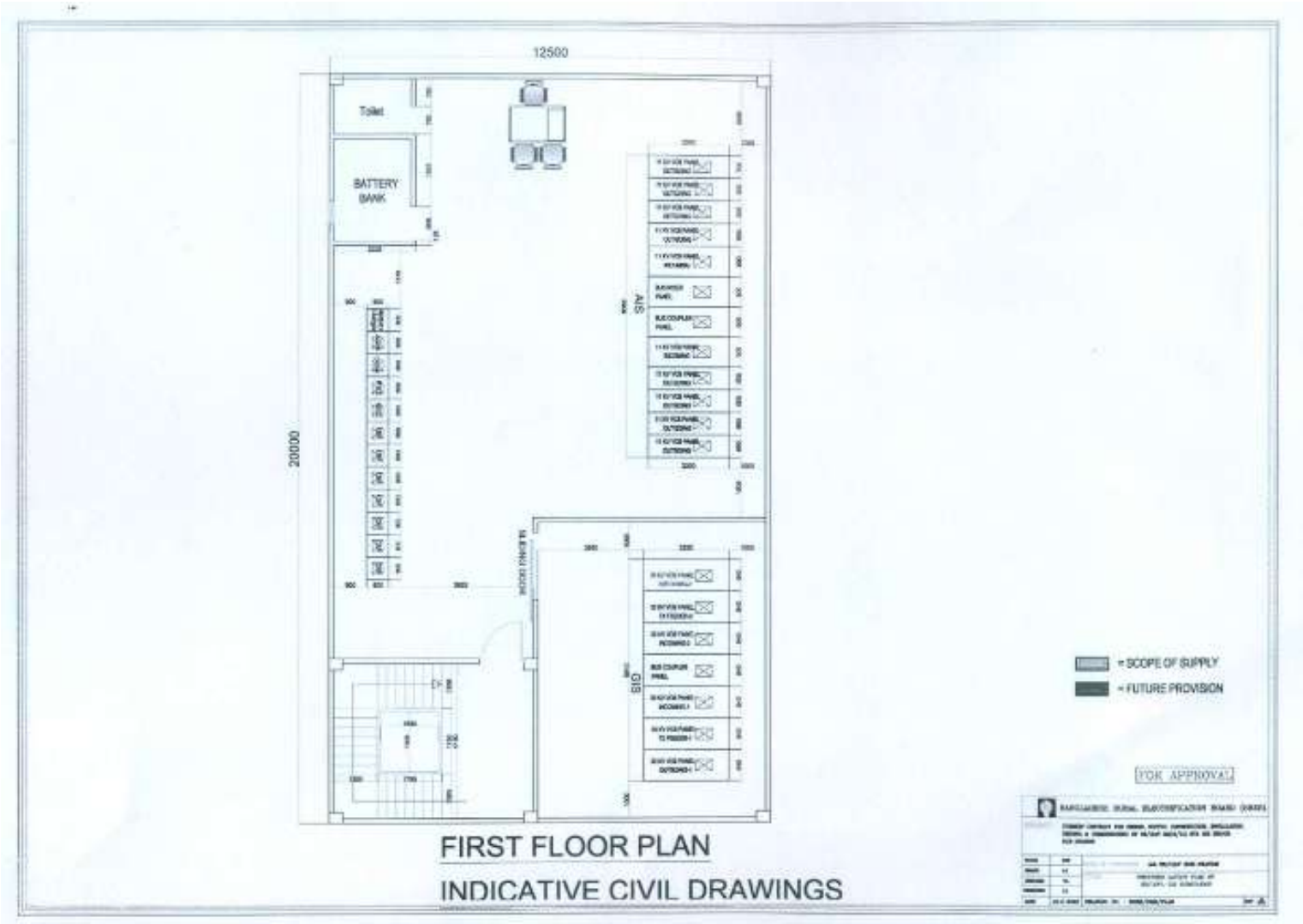
Appendix 2: Indicative Design of 33/11 KV AIS Substation




CONTROL ROOM
11000
15000
TWO STORIED
CONTROL ROOM
CONTROL BUILDING FIRST FLOOR PLAN
LEGEND
First Floor Plan
(Control Room Building For all Substations)

Appendix 3: Indicative Design of a 33/11 KV GIS Substations




12500
Toilet
BATTERY BANK
20000
= SCOPE OF SUPPLY
= FUTURE PROVISION
FOR APPROVAL
FIRST FLOOR PLAN
INDICATIVE CIVIL DRAWINGS

Appendix 4: Test Result of Air Quality Measurement

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DSCL Environmental Laboratory

Name of the Project	Modernization and Capacity Enhancement Project of BREB Network (Chittagong-Sylhet Division)
Description of Sample	Ambient Air Quality
Sample Collector	Collected by DSCL Personnel

Test Result of Ambient Air Quality Analysis

Sampling ID	Locations	GPS Coordinates	Date	Weather Condition	Parameters				
					$PM_{2.5}$ ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	SOx ($\mu g/m^3$)	NOx ($\mu g/m^3$)	CO (ppm)*
AAQ_01	Ghopal, Feni	22.916958°N 91.526805°E	26 June 2022	Sunny	58	120	38	48	2
AAQ_02	Ramu, Cox's Bazar	21.4335°N 92.1536°E	23 August 2022	Mostly Sunny	40.82	69.92	33.92	28.93	1.93
AAQ_03	Fatikchari, Sitakunda.	22.707°N 91.6965°E	24 August 2022		34.93	59.92	38.39	41.93	2.86
AAQ_04	Umednagar, Habiganj	24.39745°N 91.40929°E	26 September 2022	Sunny	58.22	110.45	60.01	71.07	<1
AAQ_05	Sadullahpur, Chandpur	23.495309°N 90.639134°E	30 November 2022	Mostly Sunny	21.72	56.35	60.43	14.93	1.52
AAQ_06	Chatak, Sunamganj	25.029605°N 91.666902°E	03 January 2023	Sunny	60.41	96.73	26.91	18.63	1
Bangladesh Standard**					65	150	80	80	5
Duration (hours)					24	24	24	24	8
Method of Analysis					AEROQUAL series 500 portable air quality monitors				Lutron AQ 9901

Note: *CO concentrations and standards are 8-hourly only.
** The Bangladesh National Ambient Air Quality Standards have been taken from Air Pollution Control Rules which was published in 26 July 2022

Sample site Description

Location	Sample Site Description
Ghopal, Feni **(AAQ_01)**	➢ Low amount of traffic was moving. ➢ Moderate amount of dust particles was present. ➢ Vegetation was high. ➢ People movement was low.
Ramu, Cox's Bazar **(AAQ_02)**	➢ The project location is situated in a residential area. ➢ Visual dust particles were moderate. ➢ People's movement was moderate. ➢ Vehicle movement was moderate.
Sitakunda, Chattogram **(AAQ_03)**	➢ Moderate amount of vehicle was moving. ➢ Moderate amount of dust particles was present. ➢ People movement was low.
Umednagar, Habiganj **(AAQ_04)**	➢ Low amount of traffic was moving. ➢ Moderate amount of dust particles was present. ➢ People movement was low.

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Location	Sample Site Description
Sadullahpur, Chandpur **(AAQ_05)**	➢ Vehicle movement was low. ➢ People movement was low. ➢ Visual dust particle was low.
Chatak, Sunamganj **(AAQ_06)**	➢ Visual Dust particles were low. ➢ People's movement was moderate. ➢ Vehicle's movement was low

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Test Performed by:
Md. Fojlur Rahman Abir
Jr. Environmental Specialist

Checked By:
Pinon Nath
Deputy Manager

Approved by:
Rajib Roy
Manager

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Appendix 5: Test Result of Noise Level Measurement

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DSCL Environmental Laboratory

Name of the Project	Modernization and Capacity Enhancement Project of BREB Network (Chittagong-Sylhet Division)
Description of sample: Noise Level Measurement	**Sample Collector:** Collected by DSCL Personnel

Test Result of Noise Level Measurement

Location	Sample ID	GPS Location	Land Use Category	Date	Measurement Time		Noise Level (dBA)	Bangladesh Standard (dBA)
					Start	End		
Feni River Bridge, Feni	NM_01	22.916958°N 91.526805°E	Mixed	26 June 2022	12:10 pm	12:40 pm	59.6	60
Ramu-Naikhongchori Road, Ramu, Cox's Bazar(South)	NM_02	21.4332°N 92.1534°E	Residential	23 August 2022	12.29 pm	12.59 pm	66.6	55
Ramu-Naikhongchori Road, Ramu, Cox's Bazar (North)	NM_03	21.4335°N 92.1524°E	Residential	23 August 2022	12.40 pm	01.10 pm	64.6	
Hazarikhil-Fatikchari Road, Fatikchari, Sitakunda (South)	NM_04	22.7070°N 91.6965°E	Residential	24 August 2022	10.22 am	10.54 am	58.7	
Hazarikhil-Fatikchari Road, Fatikchari, Sitakunda (North)	NM_05	22.7073°N 91.6969°E	Residential	24 August 2022	10.30 am	11.00 am	57.7	
Umednagar, Habiganj	NM_06	24.39762°N 91.40857°E	Commercial	26 September 2022	01:57 pm	02:27 pm	62.49	70
Puran Munsif Road, Habiganj	NM_07	24.38486°N 91.41349°E	Commercial	26 September 2022	04:07 pm	04:37 pm	59.40	
Gopalkandi, Sadullahpur, Matlab-uttor, Chandpur	NM_08	23.493686°N 90.634638°E	Residential	30 November 2022	9.00am	10.00 am	51.4	55
Noyakandi, Sadullahpur, Matlab-uttor, Chandpur	NM_09	23.496101°N 90.643342°E	Residential	30 November 2022	11:00am	12:00 am	59.2	
Baghbari, Chatak, Sunamganj	NM_10	25.029195°N 91.666492°E	Residential	03 January 2023	12:35 pm	01:05 pm	53.31	
Beside Chatak pourashava, Sunamganj	NM_11	25.029487°N 91.667081°E	Residential	03 January 2023	02:20 pm	02:50 pm	53.25	

Notes:

- Land use category is based on the classification provided in the Noise Pollution Control Rules (2006).
- The sound level standard for residential area at day is 55 dBA.
- The sound level standard for commercial area at day is 70 dBA.
- The sound level standard for Mixed area at day is 60 dBA.
- Noise Level is the average noise recorded over the duration of the monitoring period.

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Sample site Description

Sample Location and ID	Sample Site Description	Sample Location and ID	Sample Site Description
Ghopal, Feni **(NM_01)**	➢ Low volume of traffic. ➢ Low people movement. ➢ Mixed Area.	Umednagar, Habiganj **(NM_06)**	➢ Vehicle movements were absent ➢ Moderate level of people movements
Ramu-Naikhongchori Road, Ramu, Cox's Bazar(South) **(NM_02)**	➢ Moderate level of Vehicle movements ➢ Moderate level of People movements. ➢ The motor vehicle's movement and horn created most of the noise	Puran Munsif Road, Habiganj **(NM_07)**	➢ Vehicle movements were absent ➢ Moderate level of people movements
Ramu-Naikhongchori Road, Ramu, Cox's Bazar (North) **(NM_03)**	➢ Moderate level of Vehicle movements ➢ Moderate level of People movements. ➢ The motor vehicle's movement and horn created most of the noise.	Gopalkandi, Sadullahpur, Matlab-uttor, Chandpur **(NM_08)**	➢ The Traffic and People Movement are low during the monitoring period ➢ Majority of the transportation in this area are battery driven three wheeler, CNG auto Rickshaw and tractors etc.
Hazarikhil-Fatikchari Road, Fatikchari, Sitakunda (South) **(NM_04)**	➢ Moderate level of Vehicle movements ➢ Moderate level of People movements.	Noyakandi, Sadullahpur, Matlab-uttor, Chandpur **(NM_09)**	➢ There are some Tinshed houses and markets situated nearby. ➢ The majority of the Transportation in this area are tractor and motorbike.
Hazarikhil-Fatikchari Road, Fatikchari, Sitakunda (North) **(NM_05)**	➢ Vehicle movements were absent ➢ Moderate level of people movements	Baghbari, Chatak, Sunamganj **(NM_10)**	➢ People's movement was moderate ➢ Vehicle movement was low
Beside Chatak pourashava, Sunamganj **(NM_11)**	➢ People's movement was moderate ➢ Vehicle movement was low		

Test Performed by:
Md. Fojlur Rahman Abir
Jr. Environmental Specialist

Checked By:
Pinon Nath
Deputy Manager

Development Solutions Consultant Limited * DSCL *

Approved by:
Rajib Roy
Manager

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Appendix 6: Test Result of Groundwater Quality

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DSCL Environmental Laboratory

Name of the Project	Modernization and Capacity Enhancement Project of BREB Network (Chittagong-Sylhet Division)
Description of sample: Groundwater Quality Test	**Sample Collector:** Collected by DSCL Personnel

Test Result of Groundwater Quality

Parameters	Unit	GW_01 Ghopal, Feni	GW_02 Ramu, Cox's Bazar	GW_03 Fatikchari, Sitakunda	GW_04 Umednagar, Habiganj	GW_05 Sadullahpur, Matlab uttar, Chandpur	GW_06 Chatak, Sunamganj	Standards for Portable Water**	Analysis Method
		22.9161°N 91.5262°E	21.4301°N 92.1532°E	22.7073°N 91.6958°E	24.3974°N 91.4091°E	23.4952°N 90.6389°E	25.0290°N 91.6668°E		
		26 June 2022	23 August 2022	24 August 2022	26 September 2022	30 November 2022	03 January 2023		
pH*	-	7.24	7.79	6.88	6.79	7.53	8.2	6.5-8.5	Multimeter
Electric Conductivity (EC)*	µs/cm	104	130	265	115	129	402	NYS	
Total Dissolved Solids (TDS)*	mg/L	178	265	172	287	86.7	302	1000	
DO*	mg/L	5.8	6.1	7.8	7.1	6.3	6.1	NYS	DO meter

Note: *On-site test Result
**Standard for Potable Water is followed from Schedule-2(B) of Environment Conservation Rules, 2023
NYS- Not Yet Standardized

Test Performed by:
Md. Fojlur Rahman Abir
Jr. Environmental Specialist

Checked By:
Pinon Nath
Deputy Manager

Approved by:
Rajib Roy
Manager

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Appendix 7: Test Result of Surface Water Quality

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DSCL Environmental Laboratory

Name of the Project	Modernization and Capacity Enhancement Project of BREB Network (Chittagong-Sylhet Division)
Description of sample: Surface water Quality Test	**Sample Collector:** Collected by DSCL Personnel

Test Result of Surface water Quality

Parameters	Unit	SW_01	SW_02	SW_03	SW-04	SW_05	SW_06	Standards for Inland Surface Water** (Best fishing practice)	Analysis Method
		Ghopal, Feni	Ramu, Cox's Bazar	Fatikchari, Sitakunda	Umednagar, Habiganj	Sadullahpur, Matlab, Chandpur	Chatak, Sunamganj		
		22.926888°N 91.526979°E	21.4337°N 92.1533°E	22.707161°N 91.69661°E	24.385016°N 91.41327°E	23.50843°N 90.63581°E	25.024928°N 91.668913°E		
		26 June 2022	23 August 2022	24 August 2022	26 September 2022	2 December 2022	3 January 2023		
pH*	-	7.75	8.62	8	6.88	8.13	8.0	6-9	Multimeter
ORP*	mV	-5.9	-95.6	-63.5	-28	-110	-134	NYS	
Electric Conductivity (EC)*	µs/cm	107.5	240	272	521	135.2	458	NYS	
Total Dissolved Solids (TDS)*	mg/L	542	152	176	296	88.3	620	1000	
Temperature*	°C	29.7	29.2	30.2	28.4	23.3	29.2	NYS	
DO*	mg/L	4.7	7.9	5.8	6.1	7.1	5.2	5 or more	DO meter

Note: *On-site test Result
**Standard for Inland Surface Water is Followed from Schedule-2(A) of Environment Conservation Rules, 2023
NYS- Not Yet Standardized

Test Performed by:
Md. Fojlur Rahman Abir
Jr. Environmental Specialist

Checked By:
Pinon Nath
Deputy Manager

Development Solutions Consultant Limited * DSCL *

Approved by:
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Manager

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Appendix 8: Photographs of Existing Substations

Baniachong 33/11 KV Substation, Hobiganj

Transformers platform without spill control at Sunamganj PBS

Transformers platform without spill control at Moulovibazar PBS

Old Transfomers at Sunamganj PBS

PBS compound at Sylhet PBS

Lowlying material at Sylhet PBS

SItakunda 33/11 KV substations, Chattogram PBS-3

Store house at PBS compund, Noakhali PBS

Laxmipur Sador 33/11 KV substation, Laxmipur PBs

Electric Pole lying in PBS Compund, Laxmipur PBS

Old Transformers at Feni PBS

Electric wire ,wraping materials at Comilla PBS-3

Appendix 9: Photographs of Purchased land for Substations




Pekua-2 (Toitong), Cox's Bazar PBS-2



Lakshmipur-6 (Uttor Hamchadi) Lakshmipur sadar Upazila. Lakshmipur PBS



Nabinagar-5 (Jinodpur; Nabinagar Upazila), Brahmanbaria PBS




Sreemangal-5 (Radhanagar), Moulovibazar PBS

Appendix 10: Attendance List of FGD

বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড

BANGLADESH RURAL ELECTRIFICATION BOARD

ISO 9001, ISO 14001, ISO 45001 Certified

Modernization and Capacity Enhancement of BREB network Project

List of Participants for Focus Group Discussion

Address: Vill: Asrafpur, Dist: Laxmipur,

GPS Location:

Date: 04/6/21 Time: 10.45.

SL No.	Participant's Name	Age	Occupation	Telephone No.	Signature
1	[illegible]	[illegible]	ব্যবসায়ী	0155161678	Ah
2	[illegible]	[illegible]	কৃষক	0171746174	[illegible]
3	[illegible]	[illegible]	চাকুরী	[illegible]	—
4	[illegible]	[illegible]	চাকুরী	0155212416	Dm
5	[illegible]	[illegible]	চাকুরী	0198261211	[illegible]
6	[illegible]	[illegible]	কৃষক	0161621561	·
7	[illegible]	[illegible]	ব্যবসায়ী	·	Am
8	[illegible]	[illegible]	চাকুরী	0198156483	Jm
9	[illegible]	[illegible]	কৃষক	01961321673	·
10	[illegible]	[illegible]	কৃষক	01906018312	·
11					
12					
13					
14					
15					

Facilitated By: Saiful Islam

Signature: [illegible]

Organized by DSCL

IIFC

Focus Group Discussion-1

Date: 04 june 2021 **Location:** Ashrafpur Bazar, Laxmipur

Time: 10:45 am **GPS Location:**

Information/ Questions from the project team	Important Questions/ Reply/Comments of the Participants	Remarks
Mr. Saiful Islam (Facilitator) thanks all participants those attended this meeting. Electrical Sub-station will be constructed and augmented by BREB for ensuring uninterrupted, reliable and quality power supply. Now we are conducting the consultations as part of the project preparation in your area. By this meeting, overall impact of the project on the people will be assessed. Based on the assessment, an environmental assessment will be prepared to mitigate negative impacts. People will face several problems due to this project. Consequently, people may suffer. Additionally, the construction activities will create several environmental pollutions that may affect the local ecology. This is why I am here to learn about your problems and how to solve the problem that may occur from project activities. The location is almost finalized by a team of BREB professionals based on engineering point of view. However, people's opinion will be taken in to account. People's opinion will be brought into the notice of the project authority for further consideration.		
Do you know about this project? If yes, what are they?	Most of the Participants know about the project work except two persons in that session of Ashrafpur Bazar, Laxmipur. Mr. Akbar Mia (Businessman): Yes, first we heard from our politicians and some elite people. After attending this meeting, we would know much about that project. Mr. Ahad Mia (Farmer): No, I didn't hear about the project before. Mr. Nikhil Ranjan (Farmer): Yes, I heard about the project some days before. Mr. Jaker Mia (Job Holder): Yes, first we heard from our Local leaders and religious institutions.	
Do you have electricity in your house?	Mr. Akbar Mia (Businessman): I have an electricity Connection in my house. Mr. Nikhil Ranjan (Farmer): I have a solar power panel in my house	
What kind of facility will you expect after implementing the project?	Mr. Toiyabur Rahman (Farmer): I Hope, this project task generates job opportunities for local employees. Mr. Amanullah (Businessman): Hope this project will change our economic condition.	
What kind of problem do you think that you might face for this project?	Mr. Jaker Mia (Job holder): A lot of migrant workers & visitors will come for this. So, we will see overcrowding in every place.	The survey team will inform project authority to include different activities to mitigate the social

Information/ Questions from the project team	Important Questions/ Reply/Comments of the Participants	Remarks
	Mr. Akbar Mia (Businessman): Connection of electricity will be hampered due to installing new electric line and pole. Mr. Jamal Laskar (Job holder): After completion of Construction work, some people will be jobless as usual. Mr. Toiyabur Rahman (Farmer): Local Women harassment could be happened by incoming migrant people	problems following the social management system.
Will the project affect your social and economic sector? If yes, how?	Mr. Siraj Laskar (Job holder): There would be a scope of work for increasing their monthly income for working on the project work. It will help our economic development and better communication. People can work here during the Construction period. Mr. Ahad Mia (Farmer): There would be an opportunity to enhance peoples' income due to the project's influence. Mr. Daud (Job holder): Social livelihood would be better due to the project's influence.	Good Observation
Is wildlife (birds, snakes, crabs, foxes, etc.) available in the area? If yes, mention their name. Among them which are endangered?	Mr. Nikhil Ranjan (Farmer): There is no wild animals around this location. Some birds in the project area could be observed.	The survey team will inform the project authority to take proper action to address this problem and solve the problem with the Environmental Baseline.
Is any Sensitive Area (School, College, Madrasa, Church, Mosque) located nearby the construction area of the project? If yes, where & how far from the project?	Mr. Siraj Laskar (Job holder): No sensitive area exists in our locality. Mr. Nikhil Ranjan (Farmer): No sensitive area exists in our locality Mr. Shukhur Laskar (Farmer): I think, If there is any sensitive area, the project implementation process won't be passed by the government.	Okay
Any impact on local livelihood due to the project activities? If yes, how to mitigate it?	Mr. Jaker Mia (Job holder): Population would be increased, and livelihood areas could be compromised due to the project's influence. Mr. Amanullah (Businessman): More migrant labour would come due to starting project work, and some social impact will occur during construction time. Mr. Aslam (Driver): Woman harassment could occur during the construction stage.	The survey team will inform Project authority to analyze the social management system's mitigating action to mitigate the issues.
Are you in favour of this project? Why?	Mr. Akbar Mia (Businessman): Yes, we are in favour of this project. This project will aid our economic development. Mr. Jamal Laskar (Job holder): This project would be a milestone for this community. Income-generating activities would be increased. Moreover, social lifestyles could be good after the implementation of the project.	

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বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড

BANGLADESH RURAL ELECTRIFICATION BOARD

Modernization and Capacity Enhancement of BREB network Project

List of Participants for Focus Group Discussion

Address Sonagazi Bus Stand, Dist. Feni.

GPS Location

Date 04/6/21 **Time** 11.05

SL No.	Participant's Name	Age	Occupation	Telephone No.	Signature
1	[illegible]	[illegible]	ব্যবসায়ী	01680981[illegible]	
2	[illegible]	[illegible]	ব্যবসায়ী	01881[illegible]	
3	[illegible]	[illegible]	ব্যবসায়ী	01[illegible]	
4	[illegible]	[illegible]	কৃষিকাজ	01881211[illegible]	
5	[illegible]	[illegible]	কৃষক		
6	[illegible]	[illegible]	চাকুরী	01952[illegible]	
7	[illegible]	[illegible]	ব্যবসায়ী	01680[illegible]	
8	[illegible]	[illegible]	কৃষিকাজ	:	
9	[illegible]	[illegible]	কৃষিকাজ		
10	[illegible]	[illegible]	কৃষিকাজ	01307[illegible]	
11					
12					
13					
14					
15					

Facilitated By Mottashed

Signature

IIFC

Organized by DSCL

Focus Group Discussion-2

Date: 04 june 2021 **Location:** Sonagazi Bus stand, Feni District

Time: 11:05 am **GPS Location:**

Information/ Questions from the project team	Important Questions/ Reply/Comments of the Participants	Remarks
Mr. Saiful Islam (Facilitator) thanks all participants those attended this meeting. Electrical Sub-station will be constructed and augmented by BREB for ensuring uninterrupted, reliable and quality power supply. Now we are conducting the consultations as part of the project preparation in your area. By this meeting, overall impact of the project on the people will be assessed. Based on the assessment, an environmental assessment will be prepared to mitigate negative impacts. People will face several problems due to this project. Consequently, people may suffer. Additionally, the construction activities will create several environmental pollutions that may affect the local ecology. This is why I am here to learn about your problems and how to solve the problem that may occur from project activities. The location is almost finalized by a team of BREB professionals based on engineering point of view. However, people's opinion will be taken in to account. People's opinion will be brought into the notice of the project authority for further consideration.		
Do you know about this project? If yes, what are they?	Mr. Mujibur Mollah (Businessman): Yes, first we heard from our local Elite Persons and Govt. officials. After attending this meeting, we would know much about that project. Mr. Alamgir Chowdhury (Job Holder): No, I didn't hear about the issue.	
Do you have electricity in your house?	Mr. Motaleb kha (Businessman): Yes, I have an electricity connection in my home. Mr. Shahabuddin (Farmer): Almost most of the presented people have an electric connection in their house.	
What kind of facility will you expect after implementing the project?	Mr. Akram Kha (Businessman): As this Project will ensure electricity supply more than before, we will expect that load shedding will reduce. Mr. Ayub Ali (Businessman): We will expect enough electricity connection in all houses in this locality. Mr. Nannu Haji (Farmer): Hope, we will get electricity at a low cost rather than the present condition.	The survey team will inform the expected facility of local people & suggest project authority for giving the best possible opportunities to local people.
What kind of problem do you think that you might face for this project?	Mr. Sahabuddin (Farmer): Due to the coming of migrant labour there would be a possibility to hamper social livelihood in the project area. Mr. Junnu Haji (Farmer): Due to migrant workers, pressure will be created on our local resources.	It seems to the survey team that most of the suspected problem is related to social issues. Project authorities are always aware of the negative impacts occurred by project influence and we

Information/ Questions from the project team	Important Questions/ Reply/Comments of the Participants	Remarks
	Md. Alamgir Chowdhury (Job Holder): If the project authority won't follow management rules appropriately, then some problems could have appeared.	hope that they will try to take steps so that the contractor will arrange an awareness program during the construction period.
Will the project affect your social and economic sector? If yes, how?	Mr. Alamgir Chowdhury (Job Holder): Yes, I think so. it will help our economic development regionally as well as nationally and communication and networking would be enriched. People can work here during the Construction period. Mr. Akram kha (Businessman):Yes, I also think so. New job opportunities would be raised. Mr. Ayub Ali (Businessman): Due to the coming of migrant labour, there would be a possibility to hamper social livelihood in the project area. Mr. Mujibur Mollah (Businessman): Community behaviour and human livelihood would be developed.	The survey team will inform the project authority to conduct different activities to lessen the negative impacts and mitigate the social problems following the social parameters and social management system.
Is wildlife (birds, snakes, crabs, foxes, etc.) available in the area? If yes, mention their name. Among them which are endangered?	Mr. Alamgir Chowdhury (Job Holder): Nowadays birds and foxes are not seen as much as in past days.	The survey team will inform the project authority to take a proper Environmental management plan to solve the problem.
Is any Sensitive Area (School, College, Madrasa, Church, Mosque) located nearby the construction area of the project? If yes, where & how far from the project?	Mr. Mujibur Mollah (Businessman): No sensitive area exists in our locality. So, this question is not applicable in our locality. Mr. Sahabuddin (Farmer): No sensitive area exists in our locality.	okay
Any impact on local livelihood due to the project activities? If yes, how to mitigate it?	Mr. Kamal Kha (Farmer): Yes, I think so. As more migrant labour would come due to starting project work, some social impact will occur during construction time. Mr. Alamgir Chowdhury (Job Holder): Overpopulation would be seen in the project area. The price hike would be seen in the locality. New job opportunities could be generated also.	The survey team will inform Project authority to analyze the social management system's mitigating action to mitigate the issues.
Are you in favour of this project? Why?	Mr. Ayub Ali (Businessman): Yes, we are in favour of this project. This project will aid our economic development. Mr. Nannu Haji (Farmer): Yes. I Do.	

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BANGLADESH RURAL ELECTRIFICATION BOARD
Modernization and Capacity Enhancement of BREB network Project

List of Participants for Focus Group Discussion

Address Bogidhonepur, Baniachong, Habiganj.

GPS Location

Date 02/04/21. **Time** 10.20 am

SL No.	Participant's Name	Age	Occupation	Telephone No.	Signature
1	[illegible]	৬২	[illegible]	01716[illegible]	[illegible]
2	[illegible]	৫০	কৃষক	01552[illegible]	[illegible]
3	[illegible]	৫২	কৃষক	01321569[illegible]	[illegible]
4	[illegible]	৪৬	[illegible]	01885[illegible]	[illegible]
5	[illegible]	৪৮	[illegible]	01604[illegible]	[illegible]
6	[illegible]	৫২	[illegible]	01726[illegible]	[illegible]
7	[illegible]	৫৮	কৃষক	01406[illegible]	[illegible]
8	[illegible]	৪৫	কৃষক	01680[illegible]	[illegible]
9	[illegible]	২৪	ছাত্র	01711[illegible]	[illegible]
10	[illegible]	২৬	ছাত্র	01732[illegible]	
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Focused Group Discussions- 03

Date: 03 April 2021 **Location:** Bogidhorpur, Baniyachong, Habiganj District

Time: 10:20 am **GPS Location:**

Information/ Questions from project team	Important Questions/ Reply/Comments of the Participants	Remarks
Mr. Saiful Islam (Facilitator) thanks all participants those attended this meeting. Electrical Sub-station will be constructed and augmented by BREB for ensuring uninterrupted, reliable and quality power supply. Now we are conducting the consultations as part of the project preparation in your area. By this meeting, overall impact of the project on the people will be assessed. Based on the assessment, an environmental assessment will be prepared to mitigate negative impacts. People will face several problems due to this project. Consequently, people may suffer. Additionally, the construction activities will create several environmental pollutions that may affect the local ecology. This is why I am here to learn about your problems and how to solve the problem that may occur from project activities. The location is almost finalized by a team of BREB professionals based on engineering point of view. However, people's opinion will be taken in to account. People's opinion will be brought into the notice of the project authority for further consideration		
Do you know about this project? If yes, what are they?	Most of the Participants didn't know about the project work in that session of Bogidhorpur, Baniyachong, Habiganj District. Mr. Halim Mia (Farmer): No, we are not aware of the project work. Mr. Yusuf Ali (Businessman): Sometimes, some electrician comes to fix up electric line when load-shedding occur after blasting sound of transformer. But we didn't hear about this project. Nevertheless, we are not aware of the project work. Mr. shohag (Student): No, we are not aware of the project work.	
Do you have electricity in your house?	Mr. Rezaul (Farmer): Yes I have a solar panel in my house Mr. Liton (Student): Yes, I have electricity in my house. I am not sure that connection comes from palli bidyut.	
What kind of facility will you expect after implementing the project?	Mr. Moazzam (Job Holder): I will expect an electricity connection at a low price in every house. Mr. Abul Kalam (Farmer): I will expect that this project may take employees from our Child.	Noted down.

Information/ Questions from project team	Important Questions/ Reply/Comments of the Participants	Remarks
What kind of problem do you think that you might face for this project?	Mr. Rezaul (Farmer): I think, overcrowding will increase in every place due to migrant workers Mr. Halim Mia (Farmer): If construction material for this project will stack on farmland for long time, it would be a problem for us.	Project Authority is always aware of the negative impacts occurred by project influence and the survey team hopes that they will try to take a step so that the contractor will do work in accordance with the Environmental and Social Baseline.
Will the project affect your social and economic sector? If yes, how?	Mr. Liton (Student): If the project authority gives us a job, then we can able to improve our lives economically. Mr. Kazi Mohibor (Businessman): This project will contribute to the local and regional economies. The lifestyle of our people would be better and developed.	The survey team will inform Project Authority to conduct different activities to lessen the negative impacts and mitigate the social problems following the social parameters and social management system.
Is wildlife (birds, snakes, crabs, foxes, etc.) available in the area? If yes, mention their name. Among them which are endangered?	Mr. Moazzam (Job holder): we had seen fox, fishing cat in past days. But now-a-days, those animals haven't seen.	The survey team will inform project authority to take proper action to address this problem and solve the problem.
Is any Sensitive Area (School, College, Madrasa, Church, Mosque) located nearby the construction area of the project? If yes, where & how far from the project?	Mr. Rezaul (Farmer): No sensitive area exists in our locality. Mr. shohag (Student): No, school & college are situated at a long distance from this area.	Okay. Noted down
Any impact on local livelihood due to the project activities? If yes, how to mitigate it?	Mr. Yusuf ali (Businessman): People could get a chance to work in the project area. Their income would be greater than now.	okay
Are you in favour of this project? Why?	Mr. Halim Mia (Farmer): If this project gives us a good thing, then we support it obviously.	Thank you. The survey team will inform the project authority to take actions in accordance with the Environmental and Social Baseline so that this project will become favorable to everyone.

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BANGLADESH RURAL ELECTRIFICATION BOARD

Modernization and Capacity Enhancement of BREB network Project

List of Participants for Focus Group Discussion

Address Vill: Dewa, UPZ: Dharmpopasha, Dist: Sonamganj

GPS Location

Date 2/4/2021 **Time** 03:45 pm

SL No.	Participant's Name	Age	Occupation	Telephone No.	Signature
1	[illegible]	৬২	কৃষিক	01552348186	
2	[illegible]	৪০	ব্যবসায়ী	01940126811	
3	[illegible]	৪৫	ব্যবসায়ী	01575903116	Selim
4	[illegible]	৪২	ব্যবসায়ী	01818269617	
5	[illegible]	৫৮	কৃষিক		
6	[illegible]	৬২	ব্যবসায়ী	01321549849	
7	[illegible]	৪২	ব্যবসায়ী	01759191282	Habib
8	[illegible]	৫০	কৃষিক	01717972157	
9	[illegible]	৪৭	কৃষিক	-	Mhamed
10	[illegible]	৬২	ব্যবসায়ী	01882061712	
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Focused Group Discussions- 04

Date: 03 April 2021 **Location:** Putijuribazar, Habiganj

Time: 03:45 pm **GPS Location:**

Issue/Questions	Responses from Project Team/ Participants	Response by the Survey Team
Mr. Saiful Islam (Facilitator) thanks all participants those attended this meeting. Electrical Sub-station will be constructed and augmented by BREB for ensuring uninterrupted, reliable and quality power supply. Now we are conducting the consultations as part of the project preparation in your area. By this meeting, overall impact of the project on the people will be assessed. Based on the assessment, an environmental assessment will be prepared to mitigate negative impacts. People will face several problems due to this project. Consequently, people may suffer. Additionally, the construction activities will create several environmental pollutions that may affect the local ecology. This is why I am here to learn about your problems and how to solve the problem that may occur from project activities. The location is almost finalized by a team of BREB professionals based on engineering point of view. However, people's opinion will be taken in to account. People's opinion will be brought into the notice of the project authority for further consideration.		
Are you aware about the activities of the project? If yes, what are they?	Few of them know about the project in Dewa, Dhormopasha, Sunamganj.	
Any air pollution due to the project activities? If yes, how to mitigate?	Mr. Robiul Islam (Job Holder): There is a possibility of air pollution during construction period.	Your opinion will be provided by BREB so that they will take the initiative to mitigate air pollution during project implementation period.
Is wildlife (birds, snakes, crabs, fox etc.) available in the area? If yes, mention their name. Among them which are endangered?	Mr. Murad Kha (Farmer): Yes, some wild animal lives in our locality such as different types of birds.	Thank You. This information will assist in the protection of animal habitats
Is the proposed area inundated during flood? If yes, how much?	Mr. Fazar Kha (Job Holder): No, as a local, in my whole lifetime, I won't face it. Mr. Maruf (Businessman): Flood won't happen here. Sometimes we face northwester during season of mango and jackfruit.	
Is any Environmental Protected Area (EPA)/Environmental Sensitive Area located nearby the project? If yes, where & how far from the project?	Mr. Selim Mollah (Job Holder): No sensitive areas in the location.	
Will the project affect your social and economic sector? If yes, how?	Mr. Habib (Businessman): Yes, it will improve our trade and industry.	Your opinion will be greatly appreciated by BREB.

Issue/Questions	Responses from Project Team/ Participants	Response by the Survey Team
	People can work here during construction period. Mr. Johur Kha (Farmer): If electric pole, line and machine will be electrified by accidental leakage during construction, it could hamper animal movement.	

বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড

BANGLADESH RURAL ELECTRIFICATION BOARD

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Modernization and Capacity Enhancement of BREB network Project

List of Participants for Focus Group Discussion

Address: Vill:- Potigunj. UP: Bahubol. Dist: Habiganj

GPS Location

Date: 03/9/21.

Time: 03/4/21.

SL No.	Participant's Name	Age	Occupation	Telephone No.	Signature
1	নূরুল ইসলাম	৬৮	কৃষাণী	01551211712	[illegible]
2	মোস্তাফিজুর রহমান	৬৬	কৃষাণী	01865321641	[illegible]
3	[illegible] বিবি	৫৮	কৃষাণী	01721465205	[illegible]
4	[illegible] (মোল্লা)	৬৪	কৃষক	01406016684	[illegible]
5	[illegible] (মোল্লা)	৪৭	কৃষক	01726269702	[illegible]
6	[illegible] (মোল্লা)	৫০	চাকুরী		Hasan
7	[illegible] বিবি	৪৫	চাকুরী	01557095312	[illegible]
8	[illegible] বিবি	৫২	চাকুরী	01301260446	[illegible]
9	[illegible] বিবি	৬৫	কৃষক	01680564992	.
10	[illegible]	২৬	ছাত্র	01715212775	[illegible]
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Facilitated By: Saiful Islam

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Focused Group Discussions- 05

Date: 03 April 2021 **Location:** Putijuribazar, Habiganj

Time: 04:10 pm **GPS Location:**

Issue/Questions	Responses from Project Team/ Participants	Response by the Survey Team
Mr. Saiful Islam (Facilitator) thanks all participants those attended this meeting. Electrical Sub-station will be constructed and augmented by BREB for ensuring uninterrupted, reliable and quality power supply. Now we are conducting the consultations as part of the project preparation in your area. By this meeting, overall impact of the project on the people will be assessed. Based on the assessment, an environmental assessment will be prepared to mitigate negative impacts. People will face several problems due to this project. Consequently, people may suffer. Additionally, the construction activities will create several environmental pollutions that may affect the local ecology. This is why I am here to learn about your problems and how to solve the problem that may occur from project activities. The location is almost finalized by a team of BREB professionals based on engineering point of view. However, people's opinion will be taken in to account. People's opinion will be brought into the notice of the project authority for further consideration.		
Are you aware about the activities of the project? If yes, what are they?	Most of the people even don't know about the project in Putijuribazar, Habiganj.	
Any air pollution due to the project activities? If yes, how to mitigate?	Mr. Mokhlesur Rahman (Businessman): There is a possibility of air pollution during construction period when construction vehicle will be operated here.	Thank you. The survey team will inform BREB so that if the project were implemented, BREB will take step by contractor to mitigate the air pollution.
Any impact on local soil and noise due to the project activities? If yes, how to mitigate	Mr. Foysal (Student): Some noise impact will be found during construction time. Construction vehicle will create noise. Mr. Bhashan Mia (Businessman): If burying activity occur for installing new electric pole by machine, it could create noise and shake surrounding land. It could create impact on animal movement. Mr. Alim Mollah (Farmer): If electric equipment stacked on farmland for a long time, we couldn't cultivate that land.	BREB will be informed about that issues and will suggest them to look up for solutions about this problem.

Issue/Questions	Responses from Project Team/ Participants	Response by the Survey Team
Any impact on the surface water body (river, pond, khal, beel, canal etc.) and ground water? If yes, how to mitigate?	Mr. Abu Mia (Farmer): Sometimes the surface water will become polluted, if construction waste will fall into nearby pond.	The survey team will suggest BREB to arrange awareness program by contractor that will be guided by BREB to mitigate the water pollution.
Is wildlife (birds, snakes, crabs, fox etc.) available in the area? If yes, mention their name. Among them which are endangered?	Mr. Foysal (Student): Yes, some wild animal lives in our locality such as different types of birds, crabs.	Thank You. The information will be helpful for protection of the animal habitat
Is any Environmental Protected Area (EPA)/Environmental Sensitive Area located nearby the project? If yes, where & how far from the project?	Mr. Nurul Islam (Businessman): No sensitive areas in the location. Mr. Hassan Mollah (Job Holder): School, madrasa and mosque is situated approximately 2 km away from this location	
Are you in favor of this project? Why?	Mr. Nurul Islam (Businessman): Yes, we are in favor of this project after construction work finished it will change our whole economic condition. We request project authority to engage local labor during construction period. Mr. Foysal (Student): If this construction work gives us employment, the why don't we support this project. Mr. Hamed Mollah(Farmer): I am in favor of this project because I believe that this project could give us relief from Load shedding.	
Any other Issue?	Most of the comments came from audience side was the employment opportunities for the local people. They believe that the local young people and other people will get employment opportunities during the construction phase. Different local business would emerge. Livelihood will be disturbed.	The survey team will appreciate your opinion on behalf of BREB. Thank you

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BANGLADESH RURAL ELECTRIFICATION BOARD

Modernization and Capacity Enhancement of BREB network Project

List of Participants for Focus Group Discussion

Address Amzadee Bazar, Chouddogram, Comilla.

GPS Location 23.16785N, 91.32053DE

Date 5 June 2021 **Time** 4.10 Pm,

SL No.	Participant's Name	Age	Occupation	Telephone No.	Signature
1	[illegible]	8৫	[illegible]	01680564985	[illegible]
2	[illegible]	৩৮	[illegible]	01727572311	[illegible]
3	[illegible]	২৬	[illegible]	01952393343	[illegible]
4	[illegible]	৬২	[illegible]	01882627886	[illegible]
5	[illegible]	২০	[illegible]	01557132612	[illegible]
6	[illegible]	২৮	[illegible]	01406216185	[illegible]
7	[illegible]	৩৬	[illegible]	01887124511	Alamgir
8	[illegible]	৩০	[illegible]	01852951372	[illegible]
9	[illegible]	২৮	[illegible]	01714965216	Ashraful
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Focused Group Discussions- 06

Date: 05 June 2021 **Location:** Amzader Bazar, Chowddogram, Cumilla.

Time: 04:10 pm **GPS Location:** 23.167851 N, 91.320530 E

Issue/Questions	Responses from Project Team/ Participants	Response by the Survey Team
Mr. Saiful Islam (Facilitator) thanks all participants those attended this meeting. Electrical Sub-station will be constructed and augmented by BREB for ensuring uninterrupted, reliable and quality power supply. Now we are conducting the consultations as part of the project preparation in your area. By this meeting, overall impact of the project on the people will be assessed. Based on the assessment, an environmental assessment will be prepared to mitigate negative impacts. People will face several problems due to this project. Consequently, people may suffer. Additionally, the construction activities will create several environmental pollutions that may affect the local ecology. This is why I am here to learn about your problems and how to solve the problem that may occur from project activities. The location is almost finalized by a team of BREB professionals based on engineering point of view. However, people's opinion will be taken in to account. People's opinion will be brought into the notice of the project authority for further consideration.		
Are you aware about the activities of the project? If yes, what are they?	Maximum people even don't know about the project in the session of Amzader Bazar, Chowddogram, Cumilla.	
Any air pollution due to the project activities? If yes, how to mitigate?	Mr. Md. Moslem (Businessman): There is a possibility of air pollution due to construction activity during construction period. Mr. Aziz Mollah (Job Holder): As lots of vehicle related with this project come here, it will increase dust amount in road.	BREB will be informed so that they will include the tree plantation program in the Environmental Management System.
Any impact on local soil and noise due to the project activities? If yes, how to mitigate	Mr. Narayan Chandra Das (Shop owner): Some noise impact will be found during construction time. Mr. Md. Baten Mollah (Imam): Land can be polluted from the heavy vehicles oil and grease that can affect our crop production.	BREB will be informed to take proper action to address this problem.
Any impact on the surface water body (river, pond, khal, beel, canal etc.) and ground water? If yes, how to mitigate?	Mr. Md. Motin Sheikh (Businessman): There is no possibility of ground water pollution. Mr. Md. Alamgir (Student): In response to save surface water from pollution, management of dumping anything in nearby pond/river will be needed	Survey team will inform BREB about this problem so that when the project will be implemented, the BREB will take step to reduce the Surface Water pollution.
Is wildlife (birds, snakes, crabs, fox etc.) available in the area? If yes, mention their name. Among them which are endangered?	Mr. Narayan Chandra Das (Shopkeeper): Yes, some wild animal lives in our locality such as different types of birds, fox, monitor lizards, snake, crabs are available in our area and sometime migratory birds come to our area.	The information will be helpful to BREB for implementing this project.

Issue/Questions	Responses from Project Team/ Participants	Response by the Survey Team
Is any Environmental Protected Area (EPA)/Environmental Sensitive Area located nearby the project? If yes, where & how far from the project?	Mr. Md. Baten Mollah (Imam): No Environmental protected Area in our locality. Mr. Johir Mollah (Van Driver): No idea about this question	
Will the project affect your social and economic sector? If yes, how?	Md. Motin Sheikh (Businessman): Yes, it will improve economic condition of local people. Our children can work here during construction period. Mr. Ajij mollah (Job Holder): If this project material is stacked in any farming land or road for a long time, it will affect land owner and public respectively.	
Are you in favor of this project? Why?	Mr. Md. Alamgir (Businessman): Yes, we are in favor of this project after construction work finished it will change our whole economic condition. We request project authority to engage local labor during construction period Mr. Md. Baten Mollah (Imam): Yes, I am in favor of this project. But I point out to complete this project with in scheduled time.	Thank You for your response. Your information will be helpful for BREB regarding the Environmental Management.

বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড

BANGLADESH RURAL ELECTRIFICATION BOARD

Modernization and Capacity Enhancement of BREB network Project

List of Participants for Focus Group Discussion

Address: Beside- Barobkundu Railway Station, Barobkundu,

GPS Location: Mirshanai, Chittagong.

Date: 06 June 2021, Time: 5.40 Pm.

SL No.	Participant's Name	Age	Occupation	Telephone No.	Signature
1	আনোয়ার হোসেন	২৭	চাকুরী	01820459310	আনো
2	কাসেম আলী	৩৬	কৃষক	01855257820	কাসেম,
3	মির কামালউদ্দীন	৪৫	কৃষক	01715280612	কামা,
4	হাসান	৩৯	দোকানদার	0135406123	Hasan.
5	সোলেমান	৩৫	কৃষক	01408021152	সোলেমান
6	রেহমত মিয়া	৫১	ব্যবসায়ী	0195239338	রেহমত,
7	নুরে আলম ভূঁইয়া	৬০	অবসরপ্রাপ্ত	01955140612	Nur
8	কামরুল আহমেদ	৩২	চাকুরী	013124012	কামরু.
9	মাহমুদুর রহমান	২৮	চাকুরী	0172124123	Nhuman
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Signature: Saiful

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Focused Group Discussions-07

Date: 06 June 2021 **Location:** Beside Barabkunda Railway Station, Sitakundu, Chattogram District

Time: 05:40 pm **GPS Location:**

Information/ Questions from the project team	Important Questions/ Reply/Comments of the Participants	Remarks
Mr. Saiful Islam (Facilitator) thanks all participants those attended this meeting. Electrical Sub-station will be constructed and augmented by BREB for ensuring uninterrupted, reliable and quality power supply. Now we are conducting the consultations as part of the project preparation in your area. By this meeting, overall impact of the project on the people will be assessed. Based on the assessment, an environmental assessment will be prepared to mitigate negative impacts. People will face several problems due to this project. Consequently, people may suffer. Additionally, the construction activities will create several environmental pollutions that may affect the local ecology. This is why I am here to learn about your problems and how to solve the problem that may occur from project activities. The location is almost finalized by a team of BREB professionals based on engineering point of view. However, people's opinion will be taken in to account. People's opinion will be brought into the notice of the project authority for further consideration.		
Do you know about this project? If yes, what are they?	Mr. Azmol Hossain (Job Holder): No, I don't hear about this project. Mr. Hekmot Miah (Businessman): I think that no-one is aware about this project.	
Do you have electricity in your house?	Mr. Hekmot Miah(Businessman): Yes, I have an electricity connection in my home. Mr. Kashem Ali (Farmer): Almost most of the presented people have an electric connection in their house.	
What kind of facility will you expect after implementing the project?	Mr. Kalam Ahmed (Job holder): I hope, Load shedding will be reduced after implementation of this project from palli bidyut. Mr. Nur-a-alam Bhuiyan (Warehouse Owner): we will also expect that electricity bill will also reduce with implementation of this project.	The survey team will inform the expected facility of local people & suggest project authority for giving the best possible opportunities to local people.
What kind of problem do you think that you might face for this project?	Mr. Mir Komoltoli (Farmer): Disruption of electricity could happen due to Construction work on electric Line. Moreover, stacking of electric line, machine, transformer and pole in roadside for longtime could hamper our movement.	It seems to the survey team that most of the suspected problem is related to social issues. Project authorities are always aware of the negative impacts occurred by project influence and we hope that they will try to take steps so that the contractor will arrange an awareness program

Information/ Questions from the project team	Important Questions/ Reply/Comments of the Participants	Remarks
		during the construction period.
Will the project affect your social and economic sector? If yes, how?	Mr. Azmal Hassan (Job Holder): Due to the coming of migrant labour, there would be a possibility to hamper social livelihood in the project area. Local people have to face gathering in every place due to maigrant workers and engineer.	The survey team will inform the project authority to conduct different activities to lessen the negative impacts and mitigate the social problems following the social parameters and social management system.
Is wildlife (birds, snakes, crabs, foxes, etc.) available in the area? If yes, mention their name. Among them which are endangered?	Mr. Azmal Hassan (Job Holder): Nowadays birds and foxes are not seen as much as in past days. Only crows and sparrow are seen, I think.	The survey team will inform the project authority to take a proper Environmental management plan to solve the problem.
Is any Sensitive Area (School, College, Madrasa, Church, Mosque) located nearby the construction area of the project? If yes, where & how far from the project?	Mr. Hekmot mia (Businessman): I didn't see any sensitive area near this place. Mr. Mir Komoltoli (Farmer): No sensitive area exists in our locality.	okay
Any impact on local livelihood due to the project activities? If yes, how to mitigate it?	Mr. Kashem Ali (Farmer): Yes, I think so. As more migrant labour would come due to starting project work, some social impact will occur during construction time. Mr. Naimur Rahman (Job Holder): Overpopulation would be seen in the project area. The price hike would be seen in the locality. New job opportunities could be generated also.	The survey team will inform Project authority to analyze the social management system's mitigating action to mitigate the issues.
Are you in favour of this project? Why?	Mr. Kalam Ahmed (Job holder): Yes. I Do. Mr. Noor-a-alam Bhuiyan (Warehouse Owner): I think, No-one will should refuse in supporting of this project. Because, this is on the way of enlighten our golden Bangladesh	

বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড

BANGLADESH RURAL ELECTRIFICATION BOARD

Modernization and Capacity Enhancement of BREB network Project

List of Participants for Focus Group Discussion

Address: Vill: [illegible] Moi Bila, Uni: Kalamanchora, Upz: Moheshkhali.

GPS Location: Dist: Coxsbazar (21.7122230N, 91.9280908E)

Date: 05/06/2021.

Time: 11.20 am

S. No.	Participant's Name	Age	Occupation	Telephone No.	Signature
1	[illegible]	৪২	শিক্ষক	01738967346	[illegible]
2	[illegible]	৪৬	শিক্ষক	0181507[illegible]	[illegible]
3	[illegible]	৪২	শিক্ষক	018858[illegible]	[illegible]
4	[illegible]	৪৭	শিক্ষক	01720 228[illegible]	[illegible]
5	[illegible]	৪৭	শিক্ষক	[illegible]	[illegible]
6	[illegible]	৬২	ব্যবসায়ী	0183526[illegible]	[illegible]
7	[illegible]	৪৮	ব্যবসায়ী	0165233[illegible]	[illegible]
8	[illegible]	২৬	[illegible]	0140602[illegible]	Azim
9	[illegible]	৬৫	[illegible]	01661[illegible]	[illegible]
10	[illegible]	৬৮	[illegible]	0132510[illegible]	Solai
11					
12					
13					
14					
15					

Facilitated By: Saiful Islam Imran.

Signature: [illegible]

Organized by

Focused Group Discussions-08

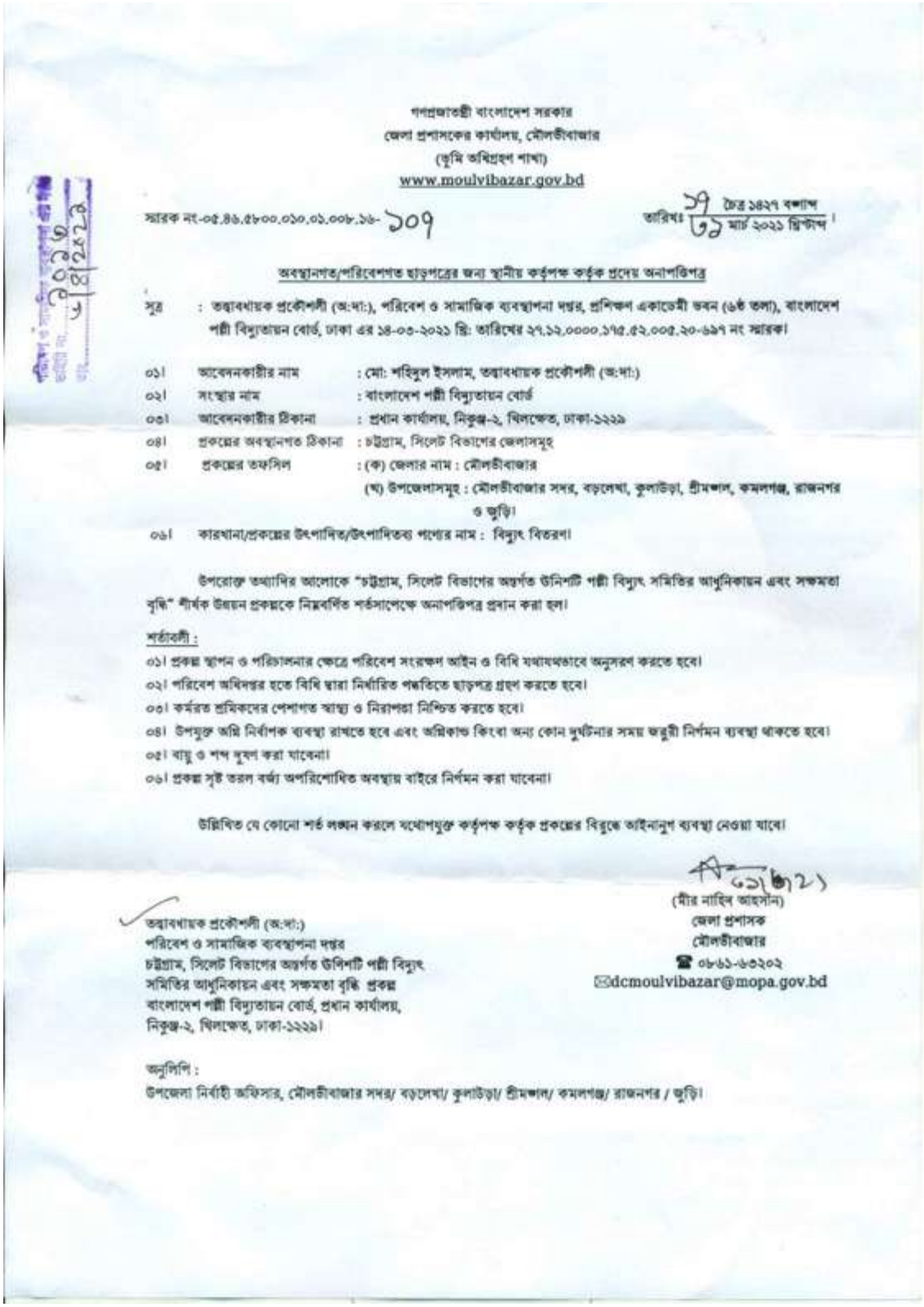
Date: 05 June 2021 **Location:** Uttar Nolbila, Kalmachhora, Cox's Bazar District

Time: 12:20 pm **GPS Location:** 22.466961 N, 92.059330 E

Information/ Questions from the project team	Important Questions/ Reply/Comments of the Participants	Remarks
Mr. Saiful Islam (Facilitator) thanks all participants those attended this meeting. Electrical Sub-station will be constructed and augmented by BREB for ensuring uninterrupted, reliable and quality power supply. Now we are conducting the consultations as part of the project preparation in your area. By this meeting, overall impact of the project on the people will be assessed. Based on the assessment, an environmental assessment will be prepared to mitigate negative impacts. People will face several problems due to this project. Consequently, people may suffer. Additionally, the construction activities will create several environmental pollutions that may affect the local ecology. This is why I am here to learn about your problems and how to solve the problem that may occur from project activities. The location is almost finalized by a team of BREB professionals based on engineering point of view. However, people's opinion will be taken in to account. People's opinion will be brought into the notice of the project authority for further consideration.		
Do you know about this project? If yes, what are they?	Most of the Participants know about the project work except two persons in that session of Uttar Nolbila, Kalmachhora, Cox's Bazar District.	
Do you have electricity in your house?	Most of the participants have an electricity Connection in their house.	
What kind of facility will you expect after implementing the project?	Mr. Amin (Student): Hope we won't have to face load-shedding in future. Mr. Saidur Rahman (Teacher): Hope we will export our electricity in other country after fulfilling our demand with upcoming new electric sub-station. Mr. Jin Ratan Barua (Teacher): Hope more industries will be established around cox's bazar, as power supply will be increasing in future.	
What kind of problem do you think that you might face for this project?	Mr. Solaiman Sheikh (Job holder): if load shedding will happen for long time due to construction purpose, it could hamper us. Mr. A K M Azad (Shopkeeper): A lot of migrant workers & visitors will come for this. So, we will see overcrowding in every place. Mr. Amin (Student): I didn't see any problem.	The survey team will inform project authority to include different activities to mitigate the social problems following the social management system.
Will the project affect your social and economic sector? If yes, how?	Mr. Siraj Laskar (Job holder): There would be a scope of work for increasing their monthly income for working on the project work. People can work here during the Construction period.	Good Observation

Information/ Questions from the project team	Important Questions/ Reply/Comments of the Participants	Remarks
	Mr. Solaiman Sheikh (Job Holder): as electricity supply will increase, it must create a way to establishing lots of industries.	
Is wildlife (birds, snakes, crabs, foxes, etc.) available in the area? If yes, mention their name. Among them which are endangered?	Mr. A K M Azad (Shopkeeper): There were some birds and animals in the project area before. Those are not seen now.	The survey team will inform the project authority to take proper action to address this problem and solve the problem with the Environmental Baseline.
Is any Sensitive Area (School, College, Madrasa, Church, Mosque) located nearby the construction area of the project? If yes, where & how far from the project?	Mr. S Faridul Alam (Teacher): No sensitive area exists in our locality. Mr. Amin (Student): No sensitive area exists in our locality Mr. Salauddin (Businessman): I think, If there is any sensitive area, the project implementation process won't be passed by the government.	Okay
Are you in favour of this project? Why?	Mr. S Faridul Alam (Teacher): Yes, we are in favour of this project. This project will aid our economic development. Mr. Salauddin (Businessman): This project would be a milestone for this community. Income-generating activities would be increased. Moreover, social lifestyles could be good after the implementation of the project.	

Appendix 11: No Objection Certificates (NOCs) from Local Authority



গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
জেলা প্রশাসকের কার্যালয়, মৌলভীবাজার
(ভূমি অধিগ্রহণ শাখা)
www.moulvibazar.gov.bd

স্মারক নং-০৫.৪৬.৫৮০০.০১০.০১.০০৮.১৬- ১০৭

তারিখঃ ১৯ চৈত্র ১৪২৭ বঙ্গাব্দ / ৩১ মার্চ ২০২১ খ্রিস্টাব্দ।

অবস্থানগত/পরিবেশগত ছাড়পত্রের জন্য স্থানীয় কর্তৃপক্ষ কর্তৃক প্রদেয় অনাপত্তিপত্র

সূত্র : তত্ত্বাবধায়ক প্রকৌশলী (অ:দা:), পরিবেশ ও সামাজিক ব্যবস্থাপনা দপ্তর, প্রশিক্ষণ একাডেমী ভবন (৬ষ্ঠ তলা), বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড, ঢাকা এর ১৪-০৩-২০২১ খ্রি: তারিখের ২৭.১২.০০০০.১৭৫.৫২.০০৫.২০-৬৯৭ নং স্মারক।

০১। আবেদনকারীর নাম : মো: শহিদুল ইসলাম, তত্ত্বাবধায়ক প্রকৌশলী (অ:দা:)
০২। সংস্থার নাম : বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড
০৩। আবেদনকারীর ঠিকানা : প্রধান কার্যালয়, নিকুঞ্জ-২, খিলক্ষেত, ঢাকা-১২২৯
০৪। প্রকল্পের অবস্থানগত ঠিকানা : চট্টগ্রাম, সিলেট বিভাগের জেলাসমূহ
০৫। প্রকল্পের তফসিল : (ক) জেলার নাম : মৌলভীবাজার
(খ) উপজেলাসমূহ : মৌলভীবাজার সদর, বড়লেখা, কুলাউড়া, শ্রীমঙ্গল, কমলগঞ্জ, রাজনগর ও জুড়ি।
০৬। কারখানা/প্রকল্পের উৎপাদিত/উৎপাদিতব্য পণ্যের নাম : বিদ্যুৎ বিতরণ।

উপরোক্ত তথ্যাদির আলোকে "চট্টগ্রাম, সিলেট বিভাগের অন্তর্গত উনিশটি পল্লী বিদ্যুৎ সমিতির আধুনিকায়ন এবং সক্ষমতা বৃদ্ধি" শীর্ষক উন্নয়ন প্রকল্পকে নিম্নবর্ণিত শর্তসাপেক্ষে অনাপত্তিপত্র প্রদান করা হল।

শর্তাবলী :
০১। প্রকল্প স্থাপন ও পরিচালনার ক্ষেত্রে পরিবেশ সংরক্ষণ আইন ও বিধি যথাযথভাবে অনুসরণ করতে হবে।
০২। পরিবেশ অধিদপ্তর হতে বিধি দ্বারা নির্ধারিত পদ্ধতিতে ছাড়পত্র গ্রহণ করতে হবে।
০৩। কর্মরত শ্রমিকদের পেশাগত স্বাস্থ্য ও নিরাপত্তা নিশ্চিত করতে হবে।
০৪। উপযুক্ত অগ্নি নির্বাপক ব্যবস্থা রাখতে হবে এবং অগ্নিকান্ড কিংবা অন্য কোন দুর্ঘটনার সময় জরুরী নির্গমন ব্যবস্থা থাকতে হবে।
০৫। বায়ু ও শব্দ দূষণ করা যাবেনা।
০৬। প্রকল্প সৃষ্ট তরল বর্জ্য অপরিশোধিত অবস্থায় বাইরে নির্গমন করা যাবেনা।

উল্লিখিত যে কোনো শর্ত লঙ্ঘন করলে যথোপযুক্ত কর্তৃপক্ষ কর্তৃক প্রকল্পের বিরুদ্ধে আইনানুগ ব্যবস্থা নেওয়া যাবে।

৩১/৩/২১
(মীর নাহিদ আহসান)
জেলা প্রশাসক
মৌলভীবাজার
☎ ০৮৬১-৬৩২০২
dcmoulvibazar@mopa.gov.bd

তত্ত্বাবধায়ক প্রকৌশলী (অ:দা:)
পরিবেশ ও সামাজিক ব্যবস্থাপনা দপ্তর
চট্টগ্রাম, সিলেট বিভাগের অন্তর্গত উনিশটি পল্লী বিদ্যুৎ
সমিতির আধুনিকায়ন এবং সক্ষমতা বৃদ্ধি প্রকল্প
বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড, প্রধান কার্যালয়,
নিকুঞ্জ-২, খিলক্ষেত, ঢাকা-১২২৯।

অনুলিপি :
উপজেলা নির্বাহী অফিসার, মৌলভীবাজার সদর/ বড়লেখা/ কুলাউড়া/ শ্রীমঙ্গল/ কমলগঞ্জ/ রাজনগর / জুড়ি।

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
জেলা প্রশাসকের কার্যালয়, নোয়াখালী
ভূমি অধিগ্রহণ শাখা
www.noakhali.gov.bd

স্মারক নম্বর: ০৫.৪২.৭৫০০.০২৩.৩৫.০০১.২০.৫৫ তারিখ: ১৮ জ্যৈষ্ঠ ১৪২৮
০১ জুন ২০২১

বিষয়: **"চট্টগ্রাম-সিলেট বিভাগের অন্তর্গত উনিশটি পল্লী বিদ্যুৎ সমিতির আধুনিকায়ন এবং সক্ষমতা বৃদ্ধি" প্রকল্প বাস্তবায়নের লক্ষ্যে পরিবেশগত ছাড়পত্রের জন্য অনাপত্তি পত্র প্রেরণ**

সূত্র: তত্ত্বাবধায়ক প্রকৌশলী (অ:দা:), পরিবেশ ও সামাজিক ব্যবস্থাপনা দপ্তর, প্রশিক্ষণ একাডেমি ভবন (৬ষ্ঠ তলা), নিকুঞ্জ-২, খিলক্ষেত, ঢাকা-১২২৯ এর স্মারক নং-২৭.১২.০০০০.১৭৫.৫২.০০৫.২০-৬৯৩, তারিখ: ১৪/০৩/২০২১ খ্রি.

১. আবেদনকারীর নাম: মোঃ শহিদুল ইসলাম, তত্ত্বাবধায়ক প্রকৌশলী (অ:দা:)
২. আবেদনকারীর ঠিকানা: প্রধান কার্যালয়, নিকুঞ্জ-২, খিলক্ষেত, ঢাকা-১২২৯
৩. সংস্থার নাম: বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড, ঢাকা
৪. প্রকল্পের অবস্থানগত ঠিকানা: চট্টগ্রাম-সিলেট বিভাগের জেলাসমূহ
৫. প্রকল্পের তফসিল: নোয়াখালী জেলা
৬. কারখানা/প্রকল্পের উৎপাদিত/উৎপাদিতব্য পণ্যের নাম: বিদ্যুৎ বিতরণ

উপর্যুক্ত তথ্যাদির আলোকে "চট্টগ্রাম-সিলেট বিভাগের অন্তর্গত উনিশটি পল্লী বিদ্যুৎ সমিতির আধুনিকায়ন এবং সক্ষমতা বৃদ্ধি" প্রকল্পের জন্য পরিবেশগত ছাড়পত্র প্রাপ্তির নিমিত্ত নিম্নবর্ণিত শর্তসাপেক্ষে অনাপত্তি প্রদান করা হলো:

১. প্রকল্প স্থাপন ও পরিচালনার ক্ষেত্রে পরিবেশ সংরক্ষণ আইন ও বিধি যথাযথভাবে অনুসরণ করতে হবে।
২. পরিবেশ অধিদপ্তর হতে বিধি দ্বারা নির্ধারিত পদ্ধতিতে ছাড়পত্র গ্রহণ করতে হবে।
৩. কর্মরত শ্রমিকদের স্বাস্থ্যসম্মত পরিবেশ ও নিরাপত্তা নিশ্চিত করতে হবে।
৪. উপযুক্ত অগ্নি নির্বাপক ব্যবস্থা রাখতে হবে এবং অগ্নিকান্ড কিংবা অন্য কোনো দুর্ঘটনার সময় জরুরি নির্গমন ব্যবস্থা থাকতে হবে।
৫. বায়ু, মাটি, পানি ও শব্দ দূষণ করা যাবে না।
৬. প্রকল্প সৃষ্ট তরল বর্জ্য অপরিশোধিত অবস্থায় বাইরে নির্গমন করা যাবে না।
৭. স্থানীয় প্রশাসনের সাথে সমন্বয় করে প্রকল্প স্থাপন ও পরিচালনা করতে হবে।
৮. মানুষ, কৃষি ও জীব বৈচিত্রের জন্য হুমকিস্বরূপ কোনো কাজ করা যাবে না।
৯. প্রকল্প স্থাপন ও পরিচালনার ক্ষেত্রে রাষ্ট্রীয় কোনো সম্পদের ক্ষতি করা যাবে না।
১০. আপাতত বলবৎ কোনো আইন লঙ্ঘন করা যাবে না।

উল্লিখিত যে কোনো শর্ত লঙ্ঘন করলে অনাপত্তি পত্রটি বাতিল বলে গণ্য হবে ও সংশ্লিষ্টদের বিরুদ্ধে আইনানুগ ব্যবস্থা গ্রহণ করা যাবে।

১

১-৬-২০২১
মোহাম্মদ খোরশেদ আলম খান
জেলা প্রশাসক
ফোন: ০৩২১-৬১০২১
ফ্যাক্স: ০৩২১-৬১০৬২
ইমেইল: dcnoakhali@mopa.gov.bd

তত্ত্বাবধায়ক প্রকৌশলী (অ:দা:), পরিবেশ ও সামাজিক ব্যবস্থাপনা দপ্তর চট্টগ্রাম, সিলেট বিভাগের অন্তর্গত উনিশটি পল্লী বিদ্যুৎ সমিতির আধুনিকায়ন এবং সক্ষমতা বৃদ্ধি প্রকল্প বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড, প্রধান কার্যালয়, নিকুঞ্জ-২, খিলক্ষেত, ঢাকা-১২২৯

স্মারক নম্বর: ০৫.৪২.৭৫০০.০২৩.৩৫.০০১.২০.৫৫/১(১০)

তারিখ: ১৮ জ্যৈষ্ঠ ১৪২৮
০১ জুন ২০২১

সদয় অবগতি ও কার্যার্থে প্রেরণ করা হলো:
১) বিভাগীয় কমিশনার, চট্টগ্রাম
২) উপজেলা নির্বাহী অফিসার, বেগমগঞ্জ, নোয়াখালী
৩) উপজেলা নির্বাহী অফিসার, নোয়াখালী সদর, নোয়াখালী
৪) উপজেলা নির্বাহী অফিসার, কবিরহাট, নোয়াখালী
৫) উপজেলা নির্বাহী অফিসার, সেনবাগ, নোয়াখালী
৬) উপজেলা নির্বাহী অফিসার, চাটখিল, নোয়াখালী
৭) উপজেলা নির্বাহী অফিসার, সোনাইমুড়ী, নোয়াখালী
৮) উপজেলা নির্বাহী অফিসার, কোম্পানীগঞ্জ, নোয়াখালী
৯) উপজেলা নির্বাহী অফিসার, সুবর্ণচর, নোয়াখালী
১০) জেনারেল ম্যানেজার, নোয়াখালী পল্লী বিদ্যুৎ সমিতি

১-৬-২০২১
মোহাম্মদ খোরশেদ আলম খান
জেলা প্রশাসক

২

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
জেলাপ্রশাসকের কার্যালয়, ব্রাহ্মণবাড়িয়া
(সাধারণ শাখা)
www.brahmanbaria.gov.bd

নং-০৫.৪২.১২০০.০০৮.৩১.০০৬.১৯-২০/ ১২৯

তারিখ : ১৫ বৈশাখ ১৪২৮ / ২৯ এপ্রিল ২০২১

অনাপত্তি পত্র

১।	আবেদনকারীর নাম	ঃ	জনাব মোঃ শহিদুল ইসলাম, তত্ত্বাবধায়ক প্রকৌশলী (অঃদায়)
২।	সংস্থার নাম	ঃ	বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড
৩।	আবেদনকারীর ঠিকানা	ঃ	প্রধান কার্যালয় নিকুঞ্জ-২, খিলক্ষেত, ঢাকা-১২২৯
৪।	প্রকল্পের অবস্থানগত ঠিকানা	ঃ	চট্টগ্রাম-সিলেট বিভাগের জেলা সমূহ
৫।	প্রকল্পের তফসিল		

জেলার নাম	থানা / উপজেলার নাম
ব্রাহ্মণবাড়িয়া	ব্রাহ্মণবাড়িয়া সদর, আশুগঞ্জ, সরাইল, নাসিরনগর, বিজয়নগর, আখাউড়া, কসবা, নবীনগর ও বাঞ্ছারামপুর।

৬। কারখানা/প্রকল্পের উৎপাদিত/উৎপাদিতব্য পণ্যের নাম ঃ বিদ্যুৎ বিতরণ

উপরোক্ত তথ্যাদির আলোকে চট্টগ্রাম-সিলেট বিভাগের অন্তর্গত ১৯(উনিশ)টি পল্লী বিদ্যুৎ সমিতির আধুনিকায়ন এবং সক্ষমতা বৃদ্ধি শীর্ষক উন্নয়ন প্রকল্পকে নিম্নবর্ণিত শর্তসাপেক্ষে অনাপত্তি পত্র প্রদান করা হলো।

শর্তবলী ঃ

১। প্রকল্প স্থাপন ও পরিচালনার ক্ষেত্রে পরিবেশ সংরক্ষণ আইন ও বিধি যথাযথভাবে অনুসরণ করতে হবে।

২। পরিবেশ অধিদপ্তর হতে বিধি দ্বারা নির্ধারিত পদ্ধতিতে ছাড়পত্র গ্রহণ করতে হবে।

৩। কর্মরত শ্রমিকদের পেশাগত স্বাস্থ্য ও নিরাপত্তা নিশ্চিত করতে হবে।

৪। উপযুক্ত অগ্নি নির্বাপক ব্যবস্থা রাখতে হবে এবং অগ্নিকান্ড কিংবা অন্য কোন দূর্ঘটনার সময় জরুরী নির্গমন ব্যবস্থা থাকতে হবে।

৫। বায়ু ও শব্দ দূষণ করা যাবে না।

৬। প্রকল্প সৃষ্ট তরল বর্জ্য অপরিশোধিত অবস্থায় বাহিরে নির্গমন করা যাবে না।

৭। সড়ক, রেলপথ ও নৌপথ বাধাগ্রস্থ করা যাবে না।

উল্লিখিত যে কোন শর্ত লঙ্ঘন করলে যথোপযুক্ত কর্তৃপক্ষ কর্তৃক প্রকল্পের বিরুদ্ধে আইনানুগ ব্যবস্থা নেয়া যাবে।

29/04/2021

(হায়াত-উদ-দৌলা খাঁন)
জেলাপ্রশাসক
ব্রাহ্মণবাড়িয়া
ফোন : ০৮৫১-৫৭৭১২
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তত্ত্বাবধায়ক প্রকৌশলী (অঃদায়)
পরিবেশ ও সামাজিক ব্যবস্থাপনা দপ্তর
চট্টগ্রাম-সিলেট বিভাগের অন্তর্গত উনিশটি পল্লী বিদ্যুৎ সমিতির
আধুনিকায়ন এবং সক্ষমতা বৃদ্ধি প্রকল্প
বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড
প্রধান কার্যালয়, নিকুঞ্জ-২, খিলক্ষেত, ঢাকা-১২২৯।

উন্নয়নের গণতন্ত্র
শেখ হাসিনার মূলমন্ত্র

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

০২ নং দক্ষিন হামছাদী ইউনিয়ন পরিষদ কার্যালয়

পোঃ দালাল বাজার, সদর, লক্ষীপুর।

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স্মারক ঃ

তারিখ ঃ ৩১-০৫-২০২১ খ্রি.

স্মারক নংঃ

তারিখঃ

অবস্থানগত/পরিবেশগত ছাড়পত্রের জন্য স্থানীয় কর্তৃপক্ষ কর্তৃক প্রদেয় অনাপত্তি পত্রের ছক

১। আবেদনকারীর নামঃ মোঃ শহিদুল ইসলাম, তত্ত্বাবধায়ক প্রকৌশলী (অঃ দাঃ)
২। সংস্থার নামঃ বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড
৩। আবেদনকারীর ঠিকানাঃ বাপবিবো, নিকুঞ্জ-২ ঢাকা-১২২৯।
৪। প্রকল্পের অবস্থানগত ঠিকানাঃ চট্টগ্রাম-সিলেট বিভাগের আওতাধীন ১১টি অন্তর্গত জেলা সমূহ
৫। প্রকল্পের তফসিলঃ

জেলার নাম	থানার নাম	ইউনিয়ন/ ওয়ার্ডের নাম
লক্ষীপুর	সদর লক্ষীপুর	দক্ষিন হামছাদী

৬। কারখানা/প্রকল্পের উৎপাদিত/উৎপাদিতব্য পন্যের নামঃ বিদ্যুৎ বিতরণ

উপরোক্ত তথ্যাদির আলোকে "চট্টগ্রাম-সিলেট বিভাগের আওতাধীন ১১টি জেলায় উনিশটি পল্লী বিদ্যুৎ সমিতির আধুনিকায়ন এবং সক্ষমতা বৃদ্ধি প্রকল্প" শীর্ষক উন্নয়ন প্রকল্পকে নিম্নবর্ণিত শর্তসাপেক্ষে অনাপত্তিপত্র প্রদান করা হল।

শর্তাবলী

১। প্রকল্প স্থাপন ও পরিচালনার ক্ষেত্রে পরিবেশ সংরক্ষণ আইন ও বিধি যথাযথভাবে অনুসরণ করতে হবে।
২। পরিবেশ অধিদপ্তর হতে বিধি দ্বারা নির্ধারিত পদ্ধতিতে ছাড়পত্র গ্রহণ করতে হবে।
৩। কর্মরত শ্রমিকদের পেশাগত স্বাস্থ্য ও নিরাপত্তা নিশ্চিত করতে হবে।
৪। উপযুক্ত অগ্নি নির্বাপক ব্যবস্থা রাখতে হবে এবং অগ্নিকান্ড কিংবা অন্য কোন দুর্ঘটনার সময় জরুরী নির্গমন ব্যবস্থা থাকতে হবে।
৫। বায়ু ও শব্দ দূষণ করা যাবেনা।
৬। প্রকল্প সৃষ্ট তরল বর্জ্য অপরিশোধিত অবস্থায় বাইরে নির্গমন করা যাবেনা।

উল্লিখিত যে কোনো শর্ত লঙ্ঘন করলে যথোপযুক্ত কর্তৃপক্ষ কর্তৃক প্রকল্পের বিরুদ্ধে আইনানুগ ব্যবস্থা নেওয়া যাবে।

বীর শাহ আলম
চেয়ারম্যান
স্থানীয় কর্তৃপক্ষের স্বাক্ষর ও সীলঃ

Appendix 12: Gender Analysis Checklist

1.	Approaches gender issues from a human rights perspective (**gender and human rights**);
2.	Acknowledges and seeks to redress inequalities between men and women, boys and girls; explicitly promotes equality between men and women, boys and girls (**gender in/equality**);
3.	Provides and analyzes sex-disaggregated data as part of the background/justification for the project's existence and design; includes sex-disaggregated indicators for project monitoring purposes (including data on gender participation in planning, implementation and monitoring and evaluation (**gender data**);
4.	Evaluates situations where gender-based violence (GBV) may be more likely to occur and proposes methods to prevent GBV in affected households, communities and among project workers (**gender-based violence**);
5.	Analyzes gender relations, dynamics and inequalities within relevant political, legal, geographic, economic, historical and/or social contexts to be considered throughout the project cycle (**gender in context**);
6.	Examines how gender inequalities uniquely affect men and women/boys' and girls' abilities to participate in the project cycle and benefit from project outputs and outcomes, including whether user fees and other harmful conditions promoted through the project may differentially affect access to services for men and women, boys and girls (**gender access**);
7.	Identifies and seeks to value men's and women's differential unpaid time devoted to traditionally feminine care work, including cooking, cleaning, child care, and water and fuel collection (**gender and care work**);
8.	Promotes the equal opportunity for those who are directly or indirectly affected by the project to participate throughout the project cycle—from planning to implementation to monitoring and evaluation—including women, marginalized men, and other vulnerable groups, as appropriate; collect data on participation by gender (**gender inputs**);
9.	Plans project outputs and outcomes that accommodate and respond to the differential needs of men and women, boys and girls (**gender outputs**); and
10.	Considers the differential longer-term impacts of projects and/or IFI-endorsed policies on women and men, boys and girls (**gender impact**).

Appendix 13: Asbestos-Containing Material Management Plan (ACMMP)

1. Introduction
This Asbestos-Containing Material Management Plan (ACMMP) has been developed for the proposed modernization and capacity enhancement project in Chattogram-Sylhet division. The purpose of this plan is to ensure the safe and effective management of asbestos-containing materials (ACMs) that may be present during the project, protecting the health of workers, communities, and the environment.

2. Scope of Work
The scope of this ACMMP includes:

- Identifying and locating potential ACMs within the project area, including existing structures, infrastructure, and materials transported for construction.
- Assessing the condition and risk of identified ACMs.
- Developing a plan for the safe handling, removal, and disposal of ACMs, minimizing disturbance and fiber release.
- Implementing the ACMMP during all construction and maintenance activities.
- Monitoring and documenting ACMMP activities.

3. Regulatory Requirements
The following Bangladeshi regulations and guidelines apply to the management of ACMs:

- The Environment Protection Act, 1995
- The Bangladesh National Building Code (BNBC)
- The Department of Environment (DoE) Guidelines for Asbestos Management

4. Roles and Responsibilities
The following roles and responsibilities are defined for the implementation of this ACMMP:

- Project Manager: Overall responsibility for the implementation of the ACMMP.
- Contractor: Responsible for implementing the ACMMP during construction activities.
- Site Supervisors: Ensure work follows ACMMP procedures and oversee worker safety.
- Workers: Trained in safe work practices for handling ACMs and wear appropriate PPE.

5. ACM Identification and Assessment

- Prior to project: Desktop research and analysis of historical building materials and infrastructure records to identify potential ACM presence.
- Field Survey: A qualified asbestos consultant will conduct a visual inspection of all project areas, including existing buildings, electrical poles, wires, and any imported materials. Sampling and analysis of suspected ACMs will be conducted if necessary.
- Risk Assessment: Based on the findings of the identification and assessment, the consultant will establish a risk classification for each ACM based on its condition, friability, and potential for disturbance.

6. ACM Management Plan
Based on the identified ACMs and risk assessment, a detailed ACM management plan will be developed specific to the project:

- Work Scope: Define the extent of ACM removal, encapsulation, or isolation needed based on risk and cost considerations.
- Safe Work Practices: Outline specific procedures for ACM handling, including demolition, removal, transportation, and disposal, according to DoE guidelines and BNBC requirements.
- Decontamination Procedures: Establish protocols for decontaminating equipment, work areas, and potentially exposed personnel.

- Waste Disposal Procedures: Specify authorized disposal facilities for ACM waste, ensuring compliance with environmental regulations.
- Emergency Response Procedures: Define protocols for accidental ACM release, including containment, notification, and evacuation.

7. Training

All personnel involved in the project, including supervisors, workers, and relevant community members, will receive training on:

- Identifying ACMs and recognizing potential risks.
- Health risks associated with asbestos exposure.
- Safe work practices for handling ACMs according to the plan.
- Personal protective equipment (PPE) requirements and proper use.
- Emergency response procedures for accidental ACM release.

8. Implementation

- All work with ACMs will be conducted only by qualified and authorized personnel under the supervision of the asbestos consultant.
- Work permits will be issued for each ACM activity, specifying required procedures and PPE.
- Continuous monitoring of dust levels and air quality will be conducted during ACM handling to ensure worker safety and regulatory compliance.
- Decontamination procedures will be strictly followed after each ACM activity.
- Proper disposal of ACM waste will be documented with authorized disposal certificates.
- Emergency response procedures will be readily available and practiced with local authorities.

9. Monitoring and Documentation

- The project manager and Environmental consultant will monitor the implementation of the ACMMP regularly.
- All ACMMP activities, including permits, monitoring results, waste disposal records, and training logs, will be documented and maintained for future reference and regulatory compliance.

10. Review and Revision

This ACMMP will be reviewed and revised as necessary throughout the project, especially if new information about ACMs is discovered or the project scope changes. Regular consultations with the asbestos consultant and relevant authorities will be conducted.

11. Community Engagement

- Local communities potentially affected by project activities involving ACMs will be informed about the presence and management of ACMs in a clear and understandable manner.
- Communication channels will be established to address community concerns and provide updates on ACMMP implementation.

12. Conclusion

This ACMMP is an important document that outlines the safe and effective management of ACMs during the project implementation. By following the procedures outlined in this plan, we can protect the health and safety of workers and the public from the risks of asbestos exposure.

Appendix 14: Safe Working Procedure by BREB

1. Safe Working Procedure

Each employee must accept responsibility for his own safety as well as safety to fellow- workers and the public. Safe operating conditions shall be maintained at all times. Poor "housekeeping" cannot be tolerated since it generally leads to accidents. The rules set forth in the BREB Safety Manual shall be observed.

2. Tools and Construction Equipment

All tools and construction equipment shall be kept in good working order. Tools or construction equipment found to be broken or damaged shall be reported immediately and replaced or repaired to good working condition before they are again used. Workmen's climbing tools and equipment that will be issued to individuals must be maintained in good condition. An office order shall be issued for distribution of tools for individuals. The person to whom the equipment or tool is assigned shall be responsible for proper care of such tools or equipment. Damaged or broken tools and construction equipment can cause serious accidents. These accidents can be prevented by a "common sense" approach to safety in using tools and construction equipment. Tools and construction equipment shall be used only for the function for which they were designed. Do not use tools or equipment those are unfamiliar. Before using an unfamiliar tools, one must know how to use the tools or equipment. PBS must retain adequate tools and equipment for operation and maintenance of its Electrical Distribution System. The functionality and capacity of each tool and equipment must be checked before

3. PERSONAL SAFETY

Working in the vicinity of electric facilities can be performed safely if good judgement is used. Linemen, when properly trained, can work safely on a pole. Short cuts, however, cause accidents. No one's personal safety shall be jeopardized to allow for short cuts or unsafe acts. Personal protective equipment shall be used at all times, hard hats, gloves, safety belts, long sleeved shirts, long pants and safety glasses.

When line personnel are working above ground, special hazards are introduced, not only to the men on the pole, but also to the men working on the ground. Falling tools or other objects constitute such hazards. Hand lines shall be used for raising or lowering material from the pole. Do not throw material up (or down) the pole. Hard hats shall be worn when working in the area of activity.

4. TRANSPORTATION EQUIPMENT

Transportation equipment presents some special hazards when operated in congested areas or on rough roads or terrain. Every effort shall be made to keep the equipment properly maintained and in good working order. The person assigned to operate the equipment shall be responsible for its safe operation. Speeding, rough handling, or other abuse of equipment shall not be allowed. Any equipment defect shall be promptly reported and repaired. To operate mechanical vehicle/transport, license from BRTA (Bangladesh Road Transport Authority) must be obtained, when required and should be updated timely. Unsafe, improperly maintained equipment shall not be used on the PBS systems.

Appendix 15: Emergency Plan by BREB

5.0 EMERGENCY PROCEDURES

5.1 GENERAL

Emergencies may arise occasionally requiring quick action to prevent undue equipment damage, or to protect the public or employees. Careful prior thought and contingency planning must be given in regard to the actions to be taken in order to prevent excessive damage. Again, "Think then Switch"

5.2 EMERGENCY PLANS

Emergency plans for a substation depend on the type and magnitude of expected problems. The following considerations should be made before attempting to correct an emergency.

1. Stay calm. Maintain a positive attitude.
2. If the person designated to perform switching or other operating functions is not familiar with the substation, he/ she should review the substation single line diagram before performing emergency switching.
3. Perform the necessary switching to clear (de-energize) the distressed equipment.

The substation's emergency plans must be an integral part of the overall system emergency plan when system emergencies exist. (This topic will be further discussed. in the Distribution Operation Manual).

5.3 ABNORMAL SUBSTATION CONDITIONS

Substations may experience abnormal conditions at various times for various causes.

1. Violent failures, faults or excessive overload conditions: These cause an emergency condition in the substation. These conditions may cause severe damage to substation equipment. Depending upon the severity of the condition, the condition may warrant disconnecting the device(s) that are being overloaded or otherwise over-stressed until the condition that caused the problem can be corrected. Emergency switching procedures should be followed.
2. Moderate overload conditions: In case of moderate overload, where approximately normal voltage is maintained, indications of distress may be difficult to detect and an interruption of the power supply may not occur for an extended period of time or perhaps not at all. Careful observation of the meters in the substation and temperature indicators on equipment is recommended to ensure that the equipment is not being harmed by this overload condition. Normal or emergency switching procedures may be followed as determined necessary and appropriate.
3. Transmission line abnormal conditions: The existence of transmission line trouble such as broken or faulted conductors or insulators will be evident in the various substations. An

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(Debasish Chakraborty) PD TAPP BREB

(Kamrul Ahsan Mollik) Asst. Secy. (Board), BREB.

operator may be able to obtain some idea of the kind of trouble affecting the substation voltages and/or currents and it may be necessary to disconnect equipment temporarily until the abnormal transmission line condition is corrected. Switching by either normal or emergency procedure should be followed as determined necessary from analysis of the transmission line trouble.

4. Bulletins on Emergency Procedures: From time to time BREB System Operations will issue Substation Emergency Procedure Bulletins. These bulletins will provide detailed actions to take for specific recurring emergencies that have been shared by various PBS's. These bulletins should be maintained in a readily accessible file of fastened loose-leaf pages and copies amended to this instruction as they are issued. Emergency Procedure bulletins are described in Sections 5.1, 5.2 & 5.3.

5.4 GUIDELINE TO ISOLATE AND RE-ENERGIZE THE SUBSTATION AFTER TRIPPING THE 33 KV INCOMING LINE

When there is complaint from the Power Supplier that the 33 KV line trips due to the presence of faults in the distribution system of PBS, the PBS Engineer should isolate and re-energize the sub-station according to the following procedure:

1. Immediately open: a) Isolator Switch No. 199 or ACR/ OCR/ Breaker No. 99
   b) Bus and Feeder ACR/ OCR/ Breakers
2. Request Power Supplier to 'SWITCH ON' the 33 KV line.
3. If the 33 KV line trips again, the fault is in the 33 KV line, then -
   a) Keep Isolator Switch No. 199 or ACR/ OCR/ Breaker No. 99 'OPEN'
   b) Request Power Supplier to remove the fault from the 33 KV line.
4. If the 33 KV line does not trip after its energization, there may be a fault in the PBS substation.
   a) Observe the readings of the pressure gauge, the winding temperature gauge, the oil temperature gauge and the oil level gauge attached to the power transformer body.
   b) Check for the presence of any visible external fault of the HT and LT bushings, lightning arrester vents, pressure relief device flag, oil from around the pressure relief device or grounds.
5. If any unusual condition is observed as mentioned above, immediately inform the System Operation Directorate.
6. If everything is 'NORMAL' as checked in step 4, then close Isolator Switch No. 199 or ACR/ OCR/ Breaker No. 99.
7. If the 33 KV line or ACR/ OCR/ Breaker No. 99 trips then -

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a) Immediately open the Isolator Switch No. 199 or ACR/ OCR/ Breaker No. 99

b) Again request BPDB/ Power provider to switch 'on' the 33 KV line.

c) Perform the Insulation Resistance Test on the transformers and regulators Communicate to the BREB System Operation Directorate and zonal Superintending Engineer all the details about the Insulation Resistance Test result, the pressure gauge reading, temperature readings of transformer winding and transformer oil and evidence of oil on the top of the transformers or regulators.

8. If the power transformer operates normally after closing the Isolator Switch No. 199 or ACR/ OCR/ Breaker No. 99 then -

a) Close Isolator switch 166 if opened previously

9. If the ACR/ OCR/ Breaker does not trip, it means that the voltage regulators are okay. If ACR/ OCR/ Breaker No. 99 trips, then the voltage regulators, bus, arresters, or one of the feeder ACRs is most likely faulty.

a) Take the necessary steps to determine the faulty piece of equipment then remove it from service.

b) Set the good regulators to the 'NEUTRAL' position if possible. If there is no power to the station then it will not be possible to run the regulators to the neutral position until a separate power source is brought in. DO NOT BYPASS THE REGULATORS until they can be put to the neutral position or they can be re-energized with the switches in the normal in-service position.

c) Immediately inform the BREB System Operation Directorate and zonal Superintending Engineer of the problem giving all relative details.

10. If after closing the source ACR/ OCR/ Breaker 99, the system does not show any fault, then energize the 11 KV feeders one by one. Consider the 33 KV fault as temporary.

5.5.1 GUIDELINE TO RE-ENERGIZE THE SUBSTATION AFTER THE FAILURE OF A LIGHTNING ARRESTER

Before re-energizing a substation where either the 11KV LT or 33KV HT lightning arrester has failed, the following steps are to be strictly observed.

1. Determine the reasons of the lightning arrester failure and contact the BREB System Operation Directorate and zonal Superintending Engineer.

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(Md. Mozammel Haq) Consultant, TAPP/BREB

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(Md. Ahsanul Haque) Consultant TAPP BREB

(Debasish Chakraborty) PO TAPP BREB

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2. Check the HT and LT bushing connections, the grounding connections and all transformer gauges and pressure relief device.

3. Perform an insulation resistance test of the power transformers and lightning arresters.

4. If after thorough checking everything is found satisfactory, the damaged lightning arrester should be replaced.

5. Having changed the lightning arrester, obtain clearance from the System Operation Directorate to re-energize the substation.

*** NOTE - If an LT lightning arrester is not readily available, one 9 KV distribution lightning arresters may be installed as per Figure 5-1. Within a maximum of 7 (seven) days, the proper size station class lightning arrester must be installed.

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(Md. Abdul Khaleque)

(Kamrul Ahsan Mollik)
Asst. Secy. (Board), TAPP

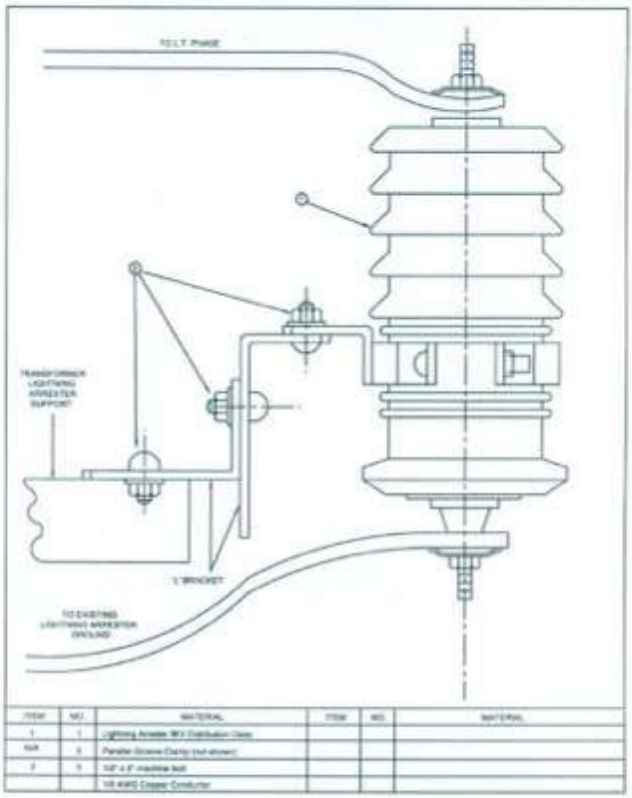

Figure 5-1

Emergency Lighting Arrester Substitution

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5.6 FAULT INDICATOR INSTRUCTIONS

5.6.1 General

Linam Type EHR automatic-reset fault indicators are magnetically tripped, electrostatically reset, and require no electrical connections. They are epoxy encapsulated and are completely waterproof and weatherproof. The trip level is factory calibrated and needs no further adjustment. The trip-current rating is printed on the indicator.

5.6.2 Operation

The trip circuit operates only when the line current exceeds the factory-set trip level of the indicator (within 10 percent). The indicator face shows all white in the un-tripped position; when tripped, the reflective red target rotates in view (Sub-figure 3 of Figure 5-3).

Resetting is automatically accomplished by the discharge of a capacitor through the reset coil. The capacitor is charged by the electrostatic voltage gradient between the line and a nearby ground plane. The indicator should be located near a ground plane to assure proper reset action. The indicator requires approximately a three-minute charging period after installation before it will operate correctly.

If current flow is interrupted (for example when an OCR opens due to a fault), the indicator target remains in the position it was in when current was interrupted. The target position cannot be mechanically changed due to a magnetic-balance principle.

Installation

1. Attach a shotgun-type switch stick to the indicator, using the installation eye on the indicator (Sub-figure 3 of Figure 5-3).
2. Position the indicator on the underside of the conductor (Sub-figure 1 of Figure 5-3).
3. Push the indicator onto the conductor with an upward - and slightly forward - motion. This causes the spring clamp to securely hold the cable against the indicator yoke(Sub-figure 2 of Figure 5-3).
4. Adjust the position of the indicator for maximum target visibility and remove the switch-stick (Figure 5-2).

5.6.3 Application

The automatic resetting fault indicators are to be used in substations where three-phase ACRs are the sectionalizing devices used for feeder protection. The use of the fault

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indicator will facilitate phase identification in the detection of single phase faults on the three phase feeders. The fault indicator should be placed on the horizontal bend or sweep of the load-side jumper between the ACR and load side disconnect switch (see Figure 5-2). This location will facilitate installation and reading of the indicator.

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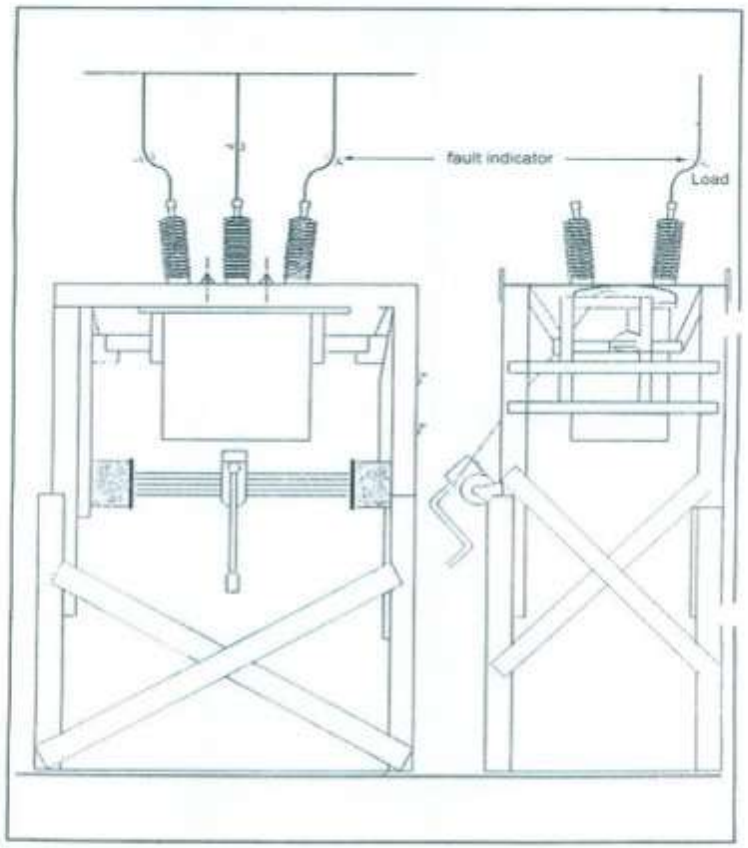
Figure 5-2: Location of fixing Fault Indicator



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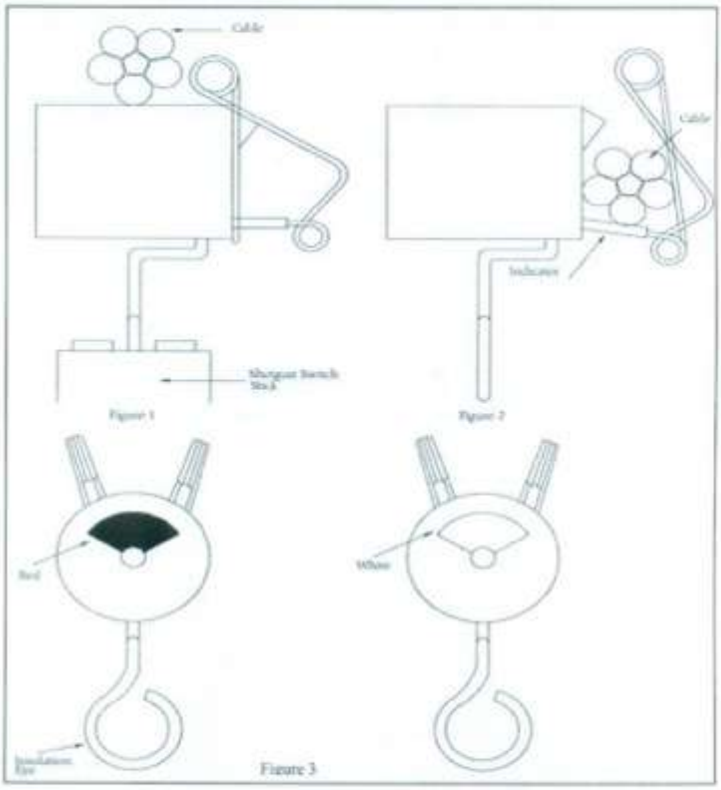
(Kamrul Alam Mollik) Asst. Secy. (Tech.) BREB.

Figure 5-3: Fault Indicator Details



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Consultant, TAPP, BREB
Consultant TAPP BREB
Consultant TAPP BREB
(Debasish Chakraborty)
PD TAPP BREB

Appendix 16: PCB Test Report

Sampling Report

Company:	Habiganj PBS
Address/City:	Habiganj-2, Unit-1
Site/Substation:	Habiganj-1
Description of location:	
GPS coordinates:	

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ ....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☑ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ ....
Analysis on site: (field screening)	☐ CLOR-N-SOIL	☐ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ ....

Photo:

Scheme:

Responsible person / signature: ....

Date : ....

19.05.24

Shafiqul Islam
AGM (E&C)
Habiganj PBS

10.5.2024
Md. Golam Kawsar Talukder
DGM (Hq-Tech)
Habiganj PBS

CamScanner

01432

Bangladesh Rural Electrification Board

Date :

Form B: Information related to the potentially PCB containi

B	*Information related to the potentially PCB-containing equipment* (repeat this section on a separate Section B form for each additional piece of equipment)		
1	Identification number:		01432
2	Name of location:		Habigonj PBS
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		Power Transformer
4	Type:		-
5	Name of manufacturer and country of origin:		Energypac
6	Serial number:		052
7	Power rating: (kVA, kVAr, V)		10 MVA
8	Date of fabrication:		2016
9	Weight:	Equipment (dry weight in kg)	
		Oil/liquid (l or kg)	6330 kg
		Total weight (kg)	27300 kg
	Size of equipment:	Height, width, lenght (m)	
10	Name of liquid and or insulating oil/coolant, etc.		PYRANOL
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	-
		No (according to plaque)	NO
		Not known	-
		Equipment emptied of liquid	-
12	PCB analyses already performed? If yes, by whom, which method and when?		Yes, DGM-Tech, Habigonj PBS
13	Source of the above Information (e.g. plaque or name plate on the equipment		Name plate
14	Operational status of equipment:	In use: yes/since	Yes
		On stand-by	-
		Decommissioned	-
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good
		Leaking?	NO
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	open air
16	Maintenance of equipment	Retrofilled?	NO
		If yes, last retrofill when?	N/A
		By which company?	N/A
		With which replacement liquid /insulating oil?	N/A
		Repaired?	NO
		By which company and when?	N/A
		When the next maintenance is planned for?	December-24
17	Other observations:	overall condition is Good.	
18	Fill in:	Name and Surname	Signature	Date

10.5.2024

Shafiqul Islam
AGM (E&C)
Habiganj PBS

Md. Golam Kawsar Talukder
DGM (Hq-Tech)
Habigonj PBS

CamScanner

Sampling Report

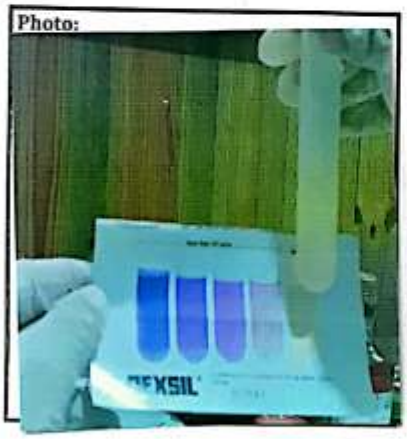
Company:	Sylhet Palli Bidyut Samity – 1
Address/City:	Golapganj
Site/Substation:	Golap - 2
Description of location:	Kadamtali, Golapganj, Sylhet.
GPS coordinates:	

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ .....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☑ PE container 250 ml	☐ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ .....

Analysis on site: (field screening)	☐ CLOR-N-SOIL	☐ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ .....

Photo:



Scheme:

Responsible person / signature: Md. Shah Alam Aan (ubm) GEO

Date : .....

12.05.24

22/05/24

01441
Bangladesh Rural Electrification Board
Date :

Form B: Information related to the potentially PCB containing equipment

8	*Information related to the potentially PCB-containing equipment* (repeat this section on a separate Section II form for each additional piece of equipment)		
1	Identification number:		01441
2	Name of location:		Golapganj office, Golapganj-2, 10MVA
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		Transformer.
4	Type:		ONAN / ONAF
5	Name of manufacturer and country of origin:		Energypac, Bangladesh.
6	Serial number:		30/12.5 — 96
7	Power rating: (kVA, kVAr, V)		33/11.55
8	Date of fabrication:		2019
9	Weight:	Equipment (dry weight in kg)	23,100
		Oil/liquid (l or kg)	7140 kg
		Total weight (kg)	30240 kg
	Size of equipment:	Height, width, lenght (m)	—
10	Name of liquid and or insulating oil/coolant, etc.		Pyrand
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	—
		No (according to plaque)	No
		Not known	—
		Equipment emptied of liquid	—
12	PCB analyses already performed? If yes, by whom, which method and when?		YES, XEN BREB SOW, Sylhet. DGM (Tech) Sylhet PBS-2
13	Source of the above information (e.g. plaque or name plate on the equipment		Name Plate
14	Operational status of equipment:	In use: yes/since	YES
		On stand-by	+
		Decommissioned	
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good
		Leaking?	No
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	Open Air
16	Maintenance of equipment	Retrofilled?	No
		If yes, last retrofill when?	N/A
		By which company?	N/A
		With which replacement liquid /insulating oil?	N/A
		Repaired?	No
		By which company and when?	N/A
		When the next maintenance is planned for?	December-24
17	Other observations:	Overall condition is good.	
18	Fill in:	Name and Surname: Md. Luthfur Rahman JE (O&M)	Signature: [signature] / Date:

22.05.24 22/05/24

Label for sa

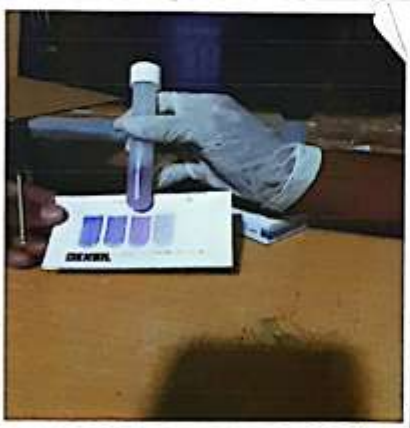
Sampling Report

Company:	Sylhet PBS-2
Address/City:	Gowainghat Sub Zonal
Site/Substation:	Gowainghat - 1
Description of location:	
GPS coordinates:	

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ .....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☐ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ .....

Analysis on site: (field screening)	☐ CLOR-N-SOIL	☑ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ .....



Scheme:

Responsible person / signature: .....

Date : .....

CamScanner

01464

Bangladesh Rural Electrification Board

Date:

Form B: Information related to the potentially PCB containing equipment

#	*Information related to the potentially PCB-containing equipment* (repeat this section on a separate Section B form for each additional piece of equipment)		
1	Identification number:		01964
2	Name of location:		Gowainghat -1
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		power x-former
4	Type:		Cho-IL sung up, Korea
5	Name of manufacturer and country of origin:		260046
6	Serial number:		1.667 MVA
7	Power rating: (kVA, kVAr, V)		2006
8	Date of fabrication:		2100 kg
9	Weight:	Equipment (dry weight in kg)	1510 kg
		Oil/liquid (l or kg)	6300 kg
		Total weight (kg)	
	Size of equipment:	Height, width, lenght (m)	
10	Name of liquid and or insulating oil/coolant, etc.		Minaral oil
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	-
		No (according to plaque)	No
		Not known	-
		Equipment emptied of liquid	-
12	PCB analyses already performed? If yes, by whom, which method and when?		DGM (Tech) Sylhet PBS-2
13	Source of the above information (e.g. plaque or name plate on the equipment		Name plate
14	Operational status of equipment:	In use: yes/since	yes
		On stand-by	-
		Decommissioned	-
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good
		Leaking?	No
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	Open Air
16	Maintenance of equipment	Retrofilled?	
		If yes, last retrofill when?	
		By which company?	
		With which replacement liquid /insulating oil?	
		Repaired?	
		By which company and when?	
		When the next maintenance is planned for?	Dec-2024
17	Other observations:		Overall condition is good
18	Fill in:	Name and Surname	Signature / Date

28.8.24
AGM (O&M)
Gowainghat

28/08/24
প্রার্থ চক্রবর্তী
ডিজিএম (কারিগরী)
সিলেট পবিস-২

Sampling Report

Company:	Sylhet PBS-2
Address/City:	Kanaighat S/S-1
Site/Substation:	
Description of location:	Kanaighat Sylhet PBS-2
GPS coordinates:	

Sampling details

Sample: ☑ Single sample ☐ Column sample

Consistency: ☐ Solid ☑ Liquid ☐ ....

Container(s): ☐ Bucket with lid 10 lt ☐ Bucket with lid 20 lt ☐ PE container 750 ml ☐ PE container 500 ml ☐ PE container 250 ml ☐ Glass vial, 30 ml ☐ Glass vial, 500 ml ☐ .... ☐ ....

Analysis on site: (field screening) ☐ CLOR-N-SOIL ☑ CLOR-N-OIL ☐ L2000 DX ☐ .... ☐ .... ☐ ....

Scheme:

Responsible person / signature: ....

Date : ....

28/8/23

মোঃ তাজ উদ্দিন
সহঃ জুনিঃ ইঞ্জিঃ (ও এন্ড এম)
সিলেট পল্লী বিদ্যুৎ সমিতি-২

CamScanner

01458
Bangladesh Rural Electrification Board
Date:

Form B: Information related to the potentially PCB containing equipment

B	*Information related to the potentially PCB-containing equipment* (repeat this section on a separate Section B form for each additional piece of equipment)		
1	Identification number:		01458
2	Name of location:		Kanaighat S/S-1 SPDS-2
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		power transformer
4	Type:		
5	Name of manufacturer and country of origin:		Techno Venture
6	Serial number:		0134
7	Power rating: (kVA, kVAr, V)		1667
8	Date of fabrication:		2012
9	Weight:	Equipment (dry weight in kg)	
		Oil/liquid (l or kg)	945
		Total weight (kg)	5450
	Size of equipment:	Height, width, lenght (m)	
10	Name of liquid and or insulating oil/coolant, etc.		
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	
		No (according to plaque)	
		Not known	
		Equipment emptied of liquid	
12	PCB analyses already performed? If yes, by whom, which method and when?		Yes - BXN - BREB - Sylhet DGM (Tech) SPDS-2
13	Source of the above information (e.g. plaque or name plate on the equipment		Name plate
14	Operational status of equipment:	In use: yes/since	yes
		On stand-by	—
		Decommissioned	—
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good
		Leaking?	NO
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	Oper Air
16	Maintenance of equipment	Retrofilled?	NO
		If yes, last retrofill when?	N/A
		By which company?	N/A
		With which replacement liquid /insulating oil?	N/A
		Repaired?	NO
		By which company and when?	N/A
		When the next maintenance is planned for?	December-2024
17	Other observations:		Over all condition is good
18	Fill in:	Name and Surname	Signature / Date

28/8/24

Sampling Report

Company:	Comilla PBS-1
Address/City:	Chandina, Comilla.
Site/Substation:	Chandina-1
Description of location:	Belashohor, Chandina, Comilla
GPS coordinates:	

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ ....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☑ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ ....

Analysis on site:	☐ CLOR-N-SOIL	☑ CLOR-N-OIL	☐ L2000 DX
(field screening)	☐	☐	☐ ....

Photo:

Scheme:

Responsible person / signature:	....
Date :	....

21.5.24
মোঃ কাইয়ুম কবির
সহঃ জুনিয়র ইঞ্জিনিয়ার
কুমিল্লা পবিস-১

21-5-24
Md. Faysal Chy
AGM (O&M)
Cumilla PBS-1

21/5/24

CamScanner

B: Information related to the potentially PCB containing equipment

Information related to the potentially PCB-containing equipment
(repeat this section on a separate Section B form for each additional piece of equipment)

	Identification number:		1341
	Name of location:		Chandina, Belashor
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		Transformer
4	Type:		Outdoor
5	Name of manufacturer and country of origin:		Energypac, Bangladesh
6	Serial number:		39
7	Power rating: (kVA, kVAr, V)		10/12.5 MVA
8	Date of fabrication:		2013
9	Weight:	Equipment (dry weight in kg)	17770
		Oil/liquid (l or kg)	5175
		Total weight (kg)	22945
	Size of equipment:	Height, width, lenght (m)	–
10	Name of liquid and or insulating oil/coolant, etc.		Mineral
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	–
		No (according to plaque)	No
		Not known	–
		Equipment emptied of liquid	–
12	PCB analyses already performed? If yes, by whom, which method and when?		Yes, DGM (tech), AGM (O&M), AGE (E&I), Cumilla PBS-1
13	Source of the above information (e.g. plaque or name plate on the equipment		Name plate
14	Operational status of equipment:	In use: yes/since	Yes.
		On stand-by	–
		Decommissioned	–
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good
		Leaking?	No.
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building: school, hospital, etc.)	Open air
16	Maintenance of equipment	Retrofilled?	No.
		If yes, last retrofill when?	N/A
		By which company?	N/A
		With which replacement liquid /insulating oil?	N/A
		Repaired?	No
		By which company and when?	N/A
		When the next maintenance is planned for?	Dec/24
17	Other observations:	overall condition is good.	
18	Fill in:	Name and Surname	Signature	Date

21.5.24
মোঃ কাইয়ুম কবির

21-5-24
Md. Faysal Chy
AGM (O&M)
Cumilla PBS-1

21/5/24

CamScanner

ID-01300

Sampling Report

Company:	CTG PBS-2
Address/City:	RAN-S/S-02
Site/Substation:	Ranguniia Zonal office.
Description of location:	
GPS coordinates:	

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ .....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☑ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ .....

Analysis on site: (field screening)	☐ CLOR-N-SOIL	☐ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ .....

Responsible person / signature: .....

Date : .....

01300

Bangladesh Rural Electrification Board

Date :

Form B: Information related to the potentially PCB containing equipment

	Information related to the potentially PCB-containing equipment (repeat this section on a separate Section B form for each additional piece of equipment)		
1	Identification number:		01300
2	Name of location:		RAN-S/S-02
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		Power transformer
4	Type:		Out-door / 33/11KV
5	Name of manufacturer and country of origin:		Energypack
6	Serial number:		0154
7	Power rating: (kVA, kVAr, V)		3.33 MVA
8	Date of fabrication:		2012
9	Weight:	Equipment (dry weight in kg)	5785 (kg)
		Oil/liquid (l or kg)	1260 (kg)
		Total weight (kg)	7045 (kg)
	Size of equipment:	Height, width, lenght (m)	—
10	Name of liquid and or insulating oil/coolant, etc.		—
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	—
		No (according to plaque)	NO
		Not known	—
		Equipment emptied of liquid	—
12	PCB analyses already performed? If yes, by whom, which method and when?		D.G.M (T) CTG-2
13	Source of the above information (e.g. plaque or name plate on the equipment		Name plate
14	Operational status of equipment:	In use: yes/since	Yes
		On stand-by	—
		Decommissioned	—
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good
		Leaking?	NO
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building.: school, hospital, etc.)	open area.
16	Maintenance of equipment	Retrofilled?	NO
		If yes, last retrofill when?	N/A
		By which company?	"
		With which replacement liquid /insulating oil?	"
		Repaired?	NO
		By which company and when?	N/A
		When the next maintenance is planned for?	January, 2025
17	Other observations:		Overall condition is good
18	Fill in:	Name and Surname	Signature / Date

30-03-2024

মোঃ সিরাজুল ইসলাম
জুনিয়র ইঞ্জিনিয়ার (ওভারহেড)
চট্টগ্রাম পাবস-২

30.3.24

প্রকৌশলী মোঃ খুলাফেদ
এজিএম (ইএন্ড সি)
চট্টগ্রাম পবিস-২।

28/03/24

Engr. Jewel Das
DGM (Technical)
Ctg PBS-2

Sampling Report

Company:	CUMILLA PBS-2
Address/City:	CHODYAGRAM-2 (MIA BAZAR)
Site/Substation:	CHODYAGRAM-2 MIA BAZAR
Description of location:	CHODYAGRAM-2 MIA-BAZAR
GPS coordinates:	

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ .....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☑ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ .....
Analysis on site: (field screening)	☐ CLOR-N-SOIL	☑ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ .....

Photo:

Scheme:

Responsible person / signature: .....

Date : 02.04.24 .....

02.04.24
মোঃ সাখাওত হোসেন
লাইন টেকনিশিয়ান
কুমিল্লা পবিস-২

02/04/24
মোঃ মানিক মিয়া
সহঃ জুনিয়র ইঞ্জিনিয়ার
কুমিল্লা পবিস-২

02/08/24
মোঃ মাহমুদুল হক
এজিএম (ইএন্ডসি)
কুমিল্লা পবিস-২

02/08/24

0 1 3 6 4
Bangladesh Rural Electrification Board
Date:

Form B: Information related to the potentially PCB containing equipment

B	*Information related to the potentially PCB-containing equipment* (repeat this section on a separate Section B form for each additional piece of equipment)		
1	Identification number:		01364
2	Name of location:		[illegible]-2 ([illegible])
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		POWER TRANSFORMER
4	Type:		1Ø – ONAN/ONAF
5	Name of manufacturer and country of origin:		ENERGYPACK, BANGLADESH
6	Serial number:		110
7	Power rating: (kVA, kVAr, V)		3333 KVA
8	Date of fabrication:		N/A
9	Weight:	Equipment (dry weight in kg)	6575
		Oil/liquid (l or kg)	1625
		Total weight (kg)	8200
	Size of equipment:	Height, width, lenght (m)	2.5, 1.8, 1.5
10	Name of liquid and or insulating oil/coolant, etc.		MIN. OIL
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	–
		No (according to plaque)	NO
		Not known	–
		Equipment emptied of liquid	–
12	PCB analyses already performed? If yes, by whom, which method and when?		YES (i) MD. MAHMUDUL HAQUE – AGM (E&C) (ii) MD. MANIK MIA – AJE
13	Source of the above information (e.g. plaque or name plate on the equipment		NAME PLATE
14	Operational status of equipment:	In use: yes/since	YES, 2012
		On stand-by	–
		Decommissioned	–
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	GOOD
		Leaking?	NO
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	OPEN AIR
16	Maintenance of equipment	Retrofilled?	NO
		If yes, last retrofill when?	N/A
		By which company?	N/A
		With which replacement liquid /insulating oil?	N/A
		Repaired?	NO
		By which company and when?	N/A
		When the next maintenance is planned for?	DEC. 2023
17	Other observations:	Very Good, & PCB Free	
18	Fill in:	Name and Surname	Signature	Date

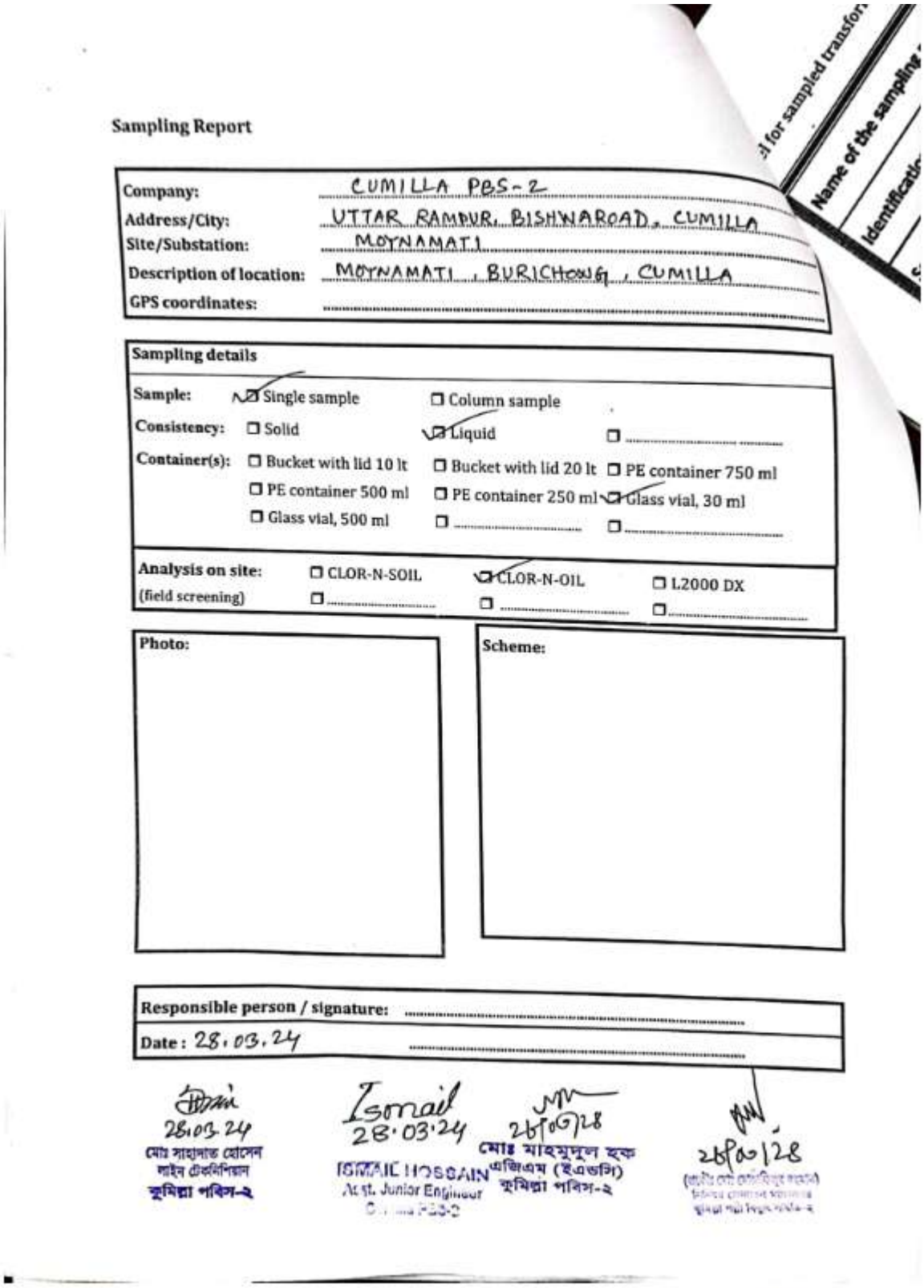
02/04/24
মোঃ সাহাদাত হোসেন
লাইন টেকনিশিয়ান
কুমিল্লা পবিস-২

02.04.24
মোঃ মানিক মিয়া
সহঃ জুনিয়র ইঞ্জিনিয়ার
কুমিল্লা পবিস-২

02/08/28
মোঃ মাহমুদুল হক
এজিএম (ইএন্ডসি)
কুমিল্লা পবিস-২

02/08/28
(প্রকৌঃ মোঃ মোস্তাফিজুর রহমান)
সিনিয়র জেনারেল ম্যানেজার
কুমিল্লা পল্লী বিদ্যুৎ সমিতি-২

CS CamScanner



Sampling Report

Company:	CUMILLA PBS-2
Address/City:	UTTAR RAMPUR, BISHWAROAD, CUMILLA
Site/Substation:	MOYNAMATI
Description of location:	MOYNAMATI, BURICHONG, CUMILLA
GPS coordinates:	

Sampling details

Sample: ☑ Single sample ☐ Column sample

Consistency: ☐ Solid ☑ Liquid ☐ .....

Container(s): ☐ Bucket with lid 10 lt ☐ Bucket with lid 20 lt ☐ PE container 750 ml
☐ PE container 500 ml ☐ PE container 250 ml ☑ Glass vial, 30 ml
☐ Glass vial, 500 ml ☐ ..... ☐ .....

Analysis on site: ☐ CLOR-N-SOIL ☑ CLOR-N-OIL ☐ L2000 DX
(field screening) ☐ ..... ☐ ..... ☐ .....

Photo:

Scheme:

Responsible person / signature: .....

Date : 28.03.24

28.03.24
মোঃ সাহাদাত হোসেন
লাইন ইঞ্জিনিয়ার
কুমিল্লা পবিস-২

Ismail
28.03.24
ISMAIL HOSSAIN
Asst. Junior Engineer

28/03/24
মোঃ মাহমুদুল হক
এজিএম (ইএন্ডসি)
কুমিল্লা পবিস-২

28/03/24

01353
Bangladesh Rural Electrification Board
Date:

rm B: Information related to the potentially PCB containing equipment

nformation related to the potentially PCB-containing equipment (repeat this section on a separate Section B form for each additional piece of equipment)			
	Identification number:		01353
	Name of location:		Moynamoti
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		Power Transformer
4	Type:		ONAN / ONAF
5	Name of manufacturer and country of origin:		VE (India)
6	Serial number:		358401
7	Power rating: (kVA, kVAr, V)		3.33 MVA
8	Date of fabrication:		N/A
9	Weight:	Equipment (dry weight in kg)	5850
		Oil/liquid (l or kg)	1750
		Total weight (kg)	7600
	Size of equipment:	Height, width, lenght (m)	2.5, 1.8. 1.5
10	Name of liquid and or insulating oil/coolant, etc.		Mineral Oil
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	–
		No (according to plaque)	NO
		Not known	–
		Equipment emptied of liquid	–
12	PCB analyses already performed? If yes, by whom, which method and when?		YES. (i) MD. MAHMUDUL HAQUE AGM(E&C) (ii) MD. ISMAIL HOSAIN - AJE
13	Source of the above information (e.g. plaque or name plate on the equipment		Name plate
14	Operational status of equipment:	In use: yes/since	Yes, 1997
		On stand-by	–
		Decommissioned	–
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good
		Leaking?	NO
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	Open Air
16	Maintenance of equipment	Retrofilled?	N/A
		If yes, last retrofill when?	N/A
		By which company?	N/A
		With which replacement liquid /insulating oil?	N/A
		Repaired?	NO
		By which company and when?	N/A
		When the next maintenance is planned for?	DEC, 2023
17	Other observations:	Very Good. XF PCB Free	
18	Fill in:	Name and Surname / Signature / Date	

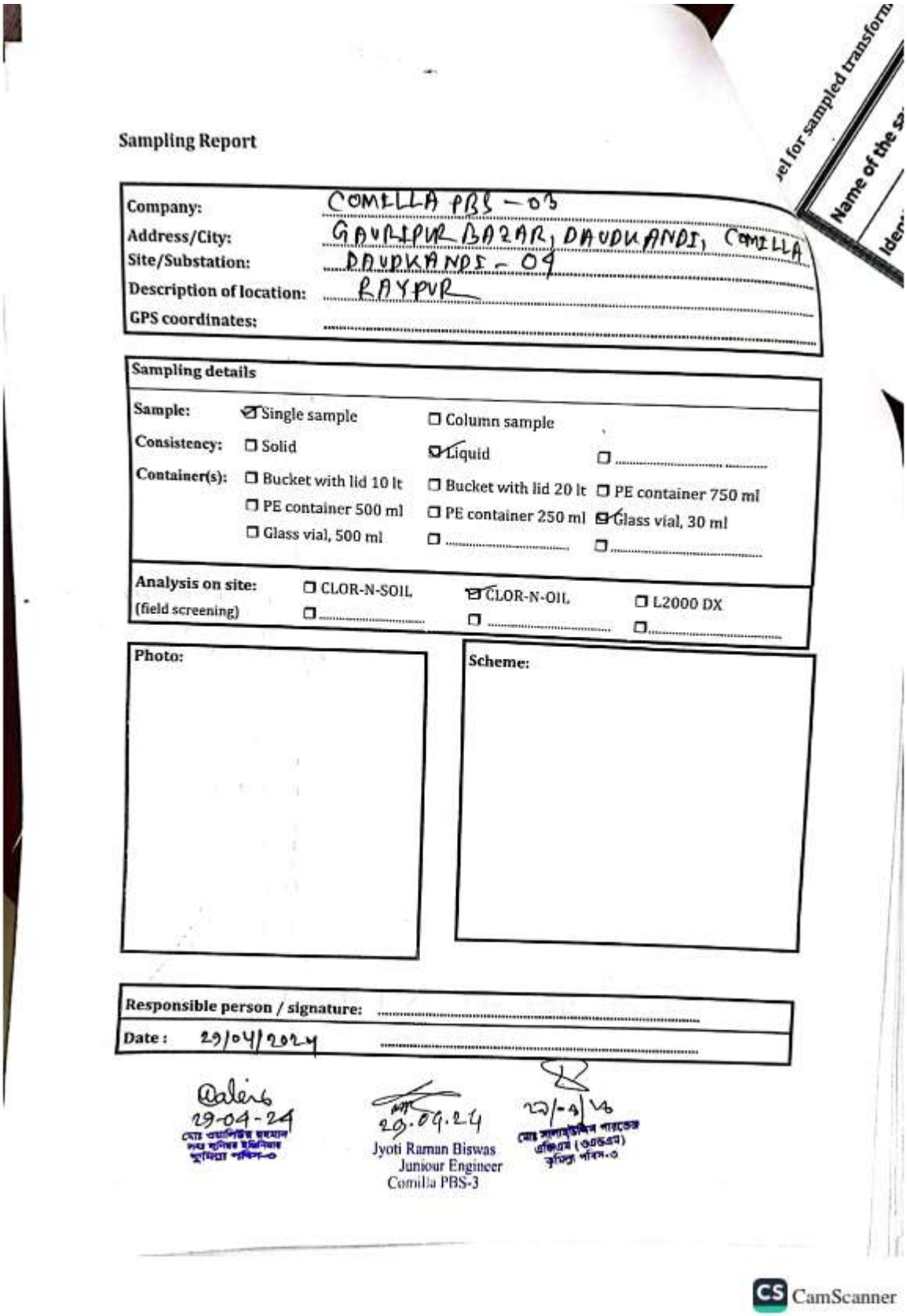
28.03.24
মোঃ সাহাদাত হোসেন
লাইন টেকনিশিয়ান
কুমিল্লা পবিস-২

Ismail 28.03.24
ISMAIL HOSSAIN
Asst. Junior Engineer

28/03/24
মোঃ মাহমুদুল হক
এজিএম (ইএন্ডসি)
কুমিল্লা পবিস-২

28/03/24

CamScanner



Sampling Report

Company: COMILLA PBS – 03
Address/City: GAURIPUR BAZAR, DAUDKANDI, COMILLA
Site/Substation: DAUDKANDI – 04
Description of location: RAYPUR
GPS coordinates:

Sampling details

Sample: ☑ Single sample ☐ Column sample
Consistency: ☐ Solid ☑ Liquid ☐ .....
Container(s): ☐ Bucket with lid 10 lt ☐ Bucket with lid 20 lt ☐ PE container 750 ml
☐ PE container 500 ml ☐ PE container 250 ml ☑ Glass vial, 30 ml
☐ Glass vial, 500 ml ☐ ..... ☐ .....

Analysis on site: (field screening) ☐ CLOR-N-SOIL ☑ CLOR-N-OIL ☐ L2000 DX
☐ ..... ☐ ..... ☐ .....

Photo:

Scheme:

Responsible person / signature: .....
Date: 29/04/2024

29-04-24
29.04.24
Jyoti Ranjan Biswas
Junior Engineer
Comilla PBS-3

01375
Bangladesh Rural Electrification Board

Form B: Information related to the potentially PCB containing equipment

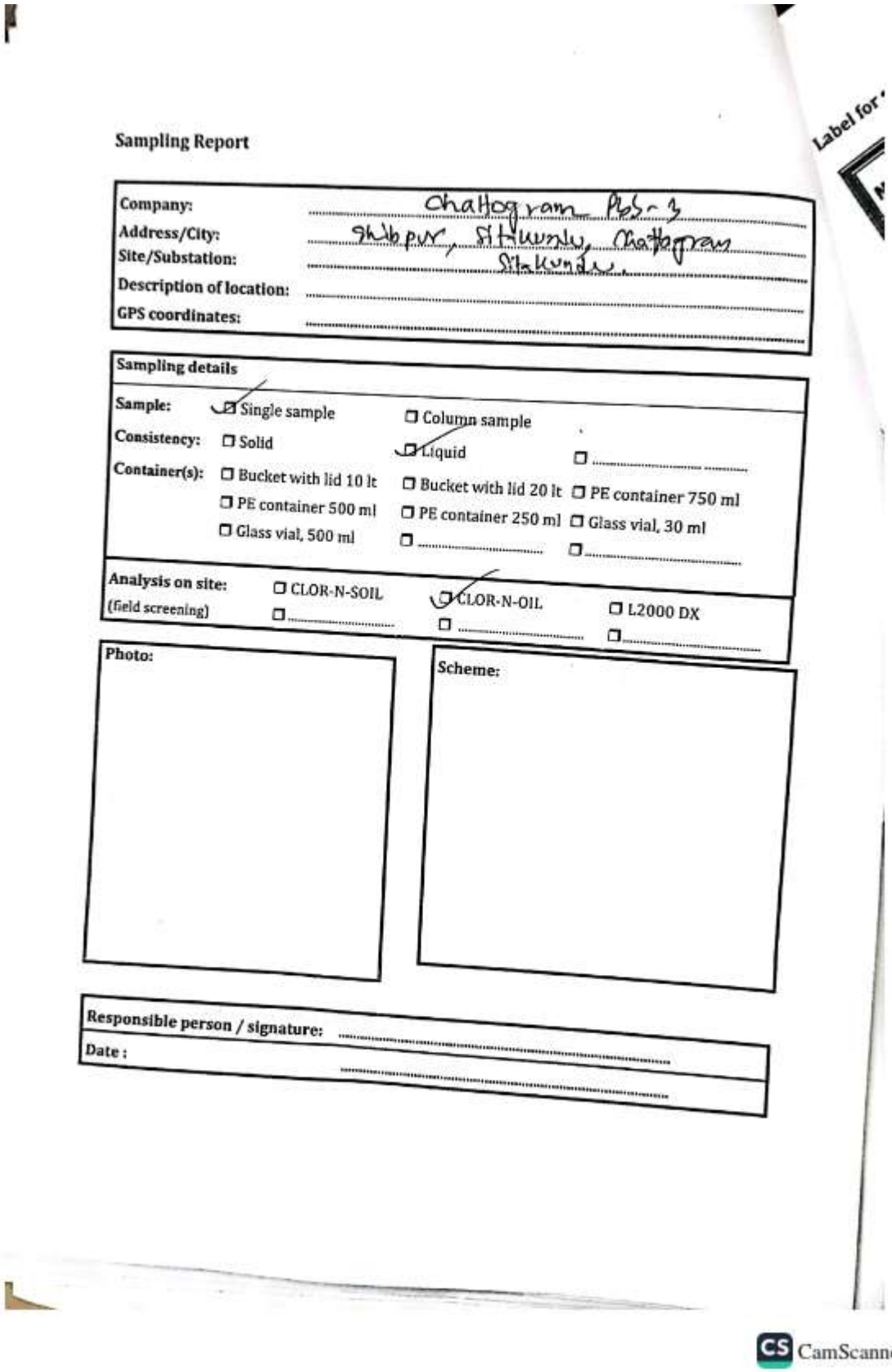
	Information related to the potentially PCB-containing equipment (repeat this section on a separate Section B form for each additional piece of equipment)		
1	Identification number:		01375
2	Name of location:		[illegible]-০৪ ([illegible])
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		POWER X-F
4	Type:		3φ (ONAN/ONAF)
5	Name of manufacturer and country of origin:		TS, BANGLADESH
6	Serial number:		014
7	Power rating: (kVA, kVAr, V)		5000 / 6250 kVA
8	Date of fabrication:		N/A
9	Weight:	Equipment (dry weight in kg)	6460 kg
		Oil/liquid (l or kg)	2970 L
		Total weight (kg)	11050 Kg
	Size of equipment:	Height, width, lenght (m)	2.53, 2.99, 3.78
10	Name of liquid and or insulating oil/coolant, etc.		MIN-OIL
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	–
		No (according to plaque)	NO
		Not known	–
		Equipment emptied of liquid	–
12	PCB analyses already performed? If yes, by whom, which method and when?		YES, MD. SALAHUDDIN PARVEZ, Pcm/ IE JYOTI RAMAN BISWAS, JE MD. WALIUR RAHMAN AJE
13	Source of the above information (e.g. plaque or name plate on the equipment		NAME PLATE
14	Operational status of equipment:	In use: yes/since	YES, 2019
		On stand-by	–
		Decommissioned	–
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good
		Leaking?	NO
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	OPEN AIR
16	Maintenance of equipment	Retrofilled?	NO
		If yes, last retrofill when?	N/A
		By which company?	N/A
		With which replacement liquid /insulating oil?	N/A
		Repaired?	NO
		By which company and when?	N/A
		When the next maintenance is planned for?	DEC-2024
17	Other observations:	Very Good, X-F PCB Free	
18	Fill in:	Name and Surname / Signature / Date	29-04-24

29-04-24
[illegible]

29/04/24
Jyoti Raman Biswas
Junior Engineer
Comilla PBS-3

[illegible]

CamScanner



Sampling Report

Label for

Company:	Chattogram PBS-3
Address/City:	Shibpur, Fatuwali, Chattogram
Site/Substation:	Sitakunda
Description of location:	
GPS coordinates:	

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ .....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☐ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ .....
Analysis on site: (field screening)	☐ CLOR-N-SOIL	☑ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ .....

Photo:

Scheme:

Responsible person / signature: .....

Date : .....

CamScanner

01308

Bangladesh Rural Electrification Board

Date :

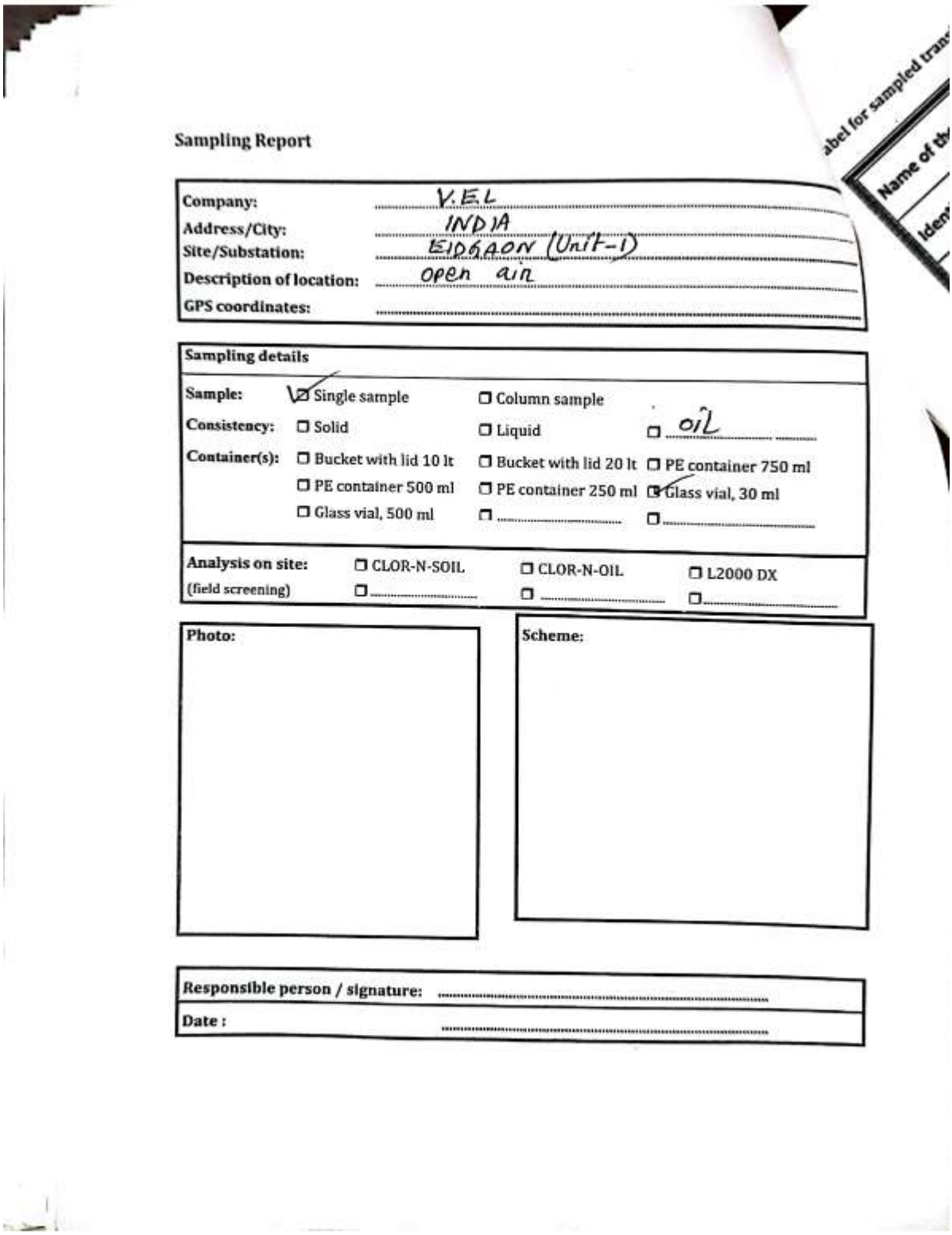
Form B: Information related to the potentially PCB contain

Information related to the potentially PCB-containing equipment
(repeat this section on a separate Section B form for each additional piece of equipment)

1	Identification number:		795551/01308
2	Name of location:		Sitakundu, Sadar
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		transformer
4	Type:		1-ф
5	Name of manufacturer and country of origin:		Vijay / India
6	Serial number:		795551
7	Power rating: (kVA, kVAr, V)		5-37
8	Date of fabrication:		
9	Weight:	Equipment (dry weight in kg)	7500
		Oil/liquid (l or kg)	1380
		Total weight (kg)	7300
	Size of equipment:	Height, width, lenght (m)	-
10	Name of liquid and or insulating oil/coolant, etc.		-
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	NO
		No (according to plaque)	-
		Not known	-
		Equipment emptied of liquid	-
12	PCB analyses already performed? If yes, by whom, which method and when?		Yes, [illegible], L4, LM-1 [illegible]
13	Source of the above information (e.g. plaque or name plate on the equipment		Name plate
14	Operational status of equipment:	In use: yes/since	Yes
		On stand-by	-
		Decommissioned	-
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	good
		Leaking?	NO
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	Open air
16	Maintenance of equipment	Retrofilled?	No
		If yes, last retrofill when?	N/A
		By which company?	N/A
		With which replacement liquid /insulating oil?	-
		Repaired?	NO
		By which company and when?	N/A
		When the next maintenance is planned for?	Jan-25
17	Other observations:		overall condition is good.

18	Fill in:	Name and Surname	Signature	Date

CamScanner



Sampling Report

Company: V.E.L
Address/City: INDIA
Site/Substation: EIDGAON (Unit-I)
Description of location: open air
GPS coordinates:

Sampling details

Sample: ☑ Single sample ☐ Column sample

Consistency: ☐ Solid ☐ Liquid ☐ oil

Container(s): ☐ Bucket with lid 10 lt ☐ Bucket with lid 20 lt ☐ PE container 750 ml
☐ PE container 500 ml ☐ PE container 250 ml ☑ Glass vial, 30 ml
☐ Glass vial, 500 ml ☐ ☐

Analysis on site: (field screening) ☐ CLOR-N-SOIL ☐ CLOR-N-OIL ☐ L2000 DX
☐ ☐ ☐

Photo:

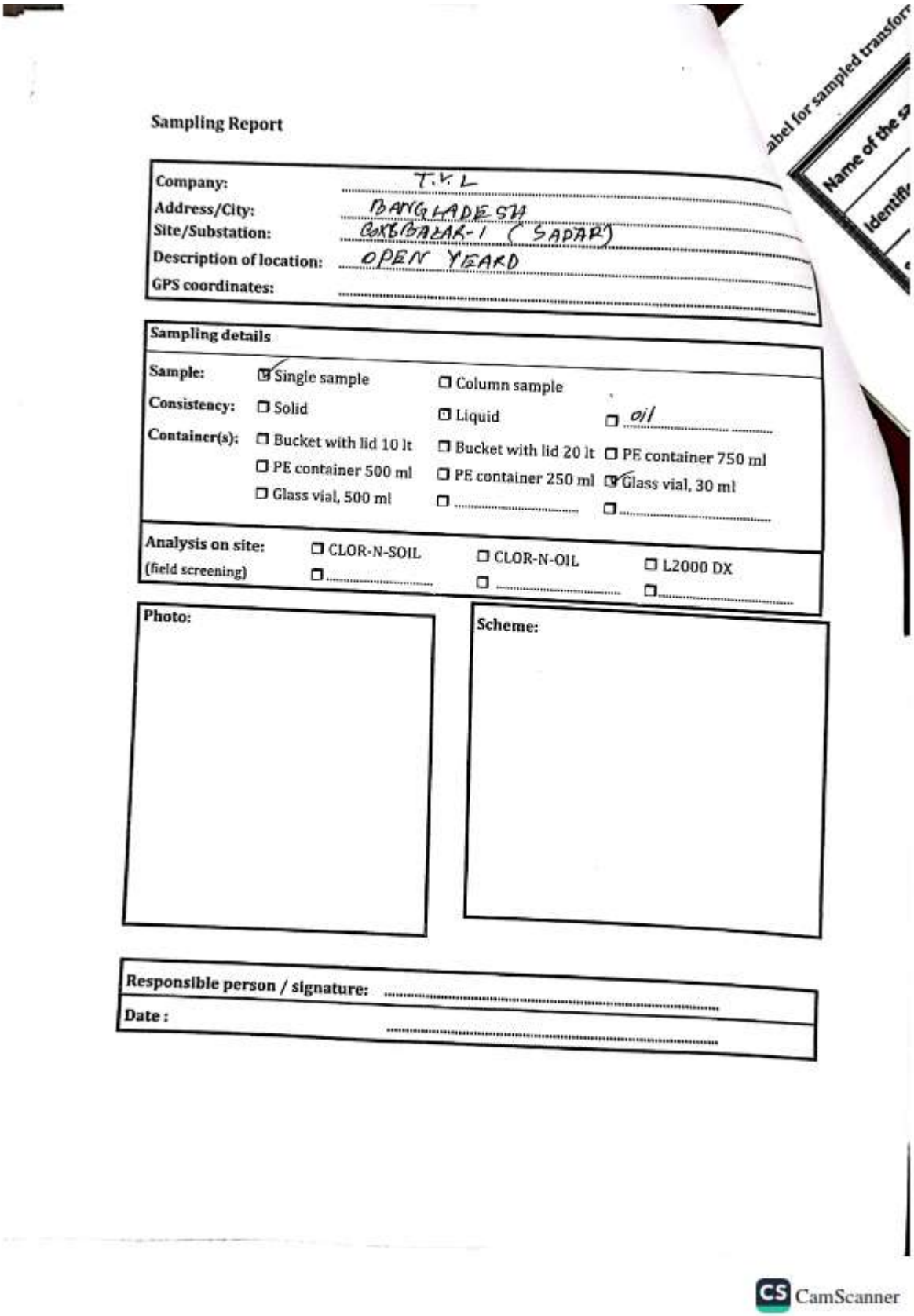
Scheme:

Responsible person / signature:

Date :

Form B: Information related to the potentially PCB containing equipment

B	*Information related to the potentially PCB-containing equipment* (repeat this section on a separate Section B form for each additional piece o		0 1 3 2 9 Bangladesh Rural Electrification Board Date:
1	Identification number:		
2	Name of location:		KIOARON (Unit-I)
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		Power transformer
4	Type:		OUT DOOR
5	Name of manufacturer and country of origin:		V.E.L
6	Serial number:		488460
7	Power rating: (kVA, kVAr, V)		1667/2083
8	Date of fabrication:		202
9	Weight:	Equipment (dry weight in kg)	
		Oil/liquid (l or kg)	1000kg
		Total weight (kg)	5800kg
	Size of equipment:	Height, width, lenght (m)	
10	Name of liquid and or insulating oil/coolant, etc.		oil
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	NO PCB FREE
		No (according to plaque)	No
		Not known	
		Equipment emptied of liquid	
12	PCB analyses already performed? If yes, by whom, which method and when?		
13	Source of the above information (e.g. plaque or name plate on the equipment		Name plate
14	Operational status of equipment:	In use: yes/since	yes
		On stand-by	yes
		Decommissioned	
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	good
		Leaking?	No
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building.: school, hospital, etc.)	open air
16	Maintenance of equipment	Retrofilled?	No
		If yes, last retrofill when?	
		By which company?	
		With which replacement liquid /insulating oil?	
		Repaired?	No
		By which company and when?	
		When the next maintenance is planned for?	
17	Other observations:		
18	Fill in:	Name and Surname: Mohammad Asif Kamal	Signature: Akamal	Date: 03-04-24



Sampling Report

Company:	T.V.L
Address/City:	BANGLADESH
Site/Substation:	COX'S BAZAR-1 (SADAR)
Description of location:	OPEN YEARD
GPS coordinates:	

Sampling details

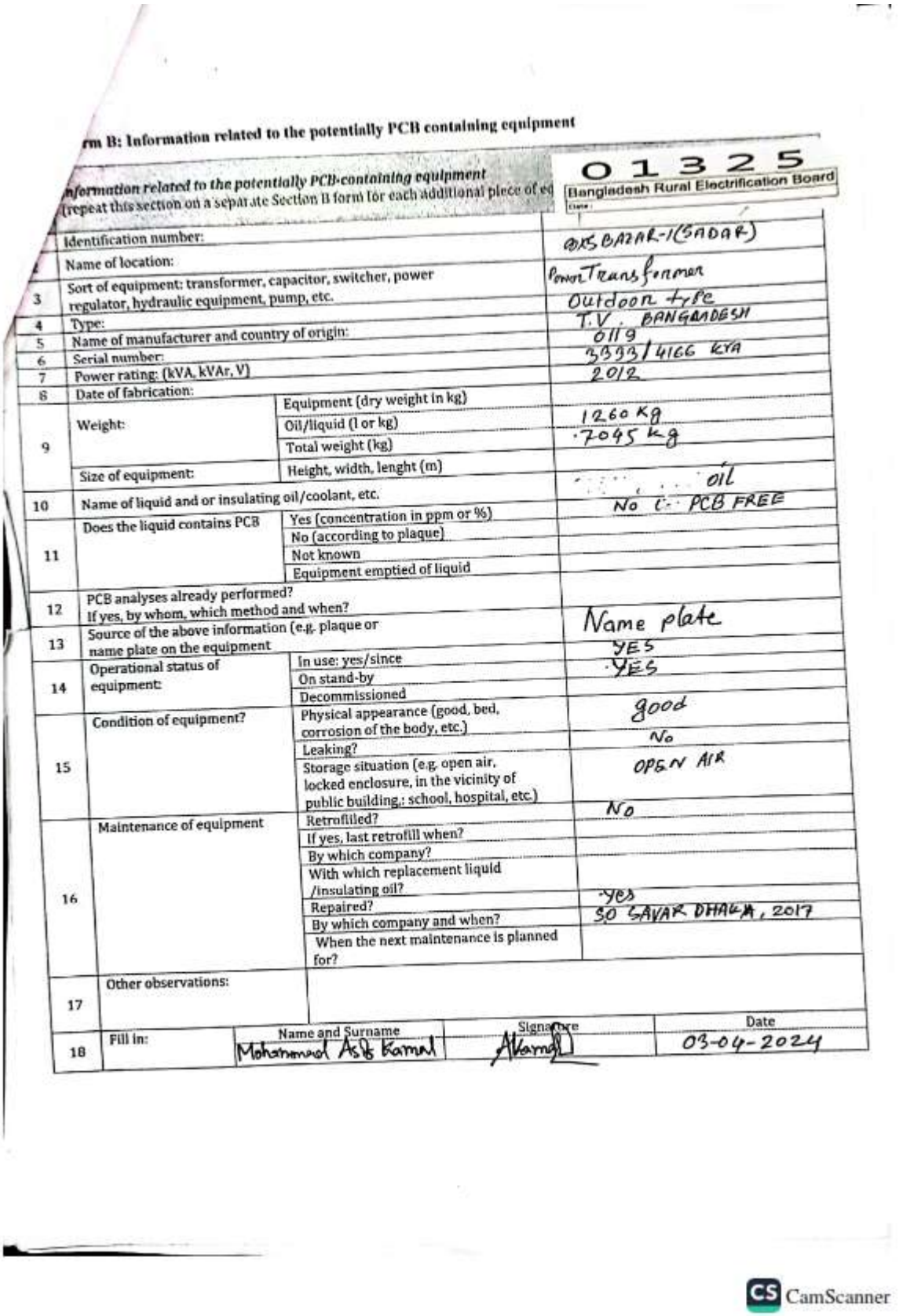
Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ oil
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☑ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ .....
Analysis on site: (field screening)	☐ CLOR-N-SOIL	☐ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ .....

Photo:

Scheme:

Responsible person / signature: .....

Date : .....



rm B: Information related to the potentially PCB containing equipment

	nformation related to the potentially PCB-containing equipment (repeat this section on a separate Section B form for each additional piece of eq		01325 Bangladesh Rural Electrification Board
2	Identification number:		BXS BAZAR-1(SADAR)
3	Name of location:		
4	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		Power Transformer
5	Type:		Outdoor type
6	Name of manufacturer and country of origin:		T.V. BANGLADESH
7	Serial number:		0119
8	Power rating: (kVA, kVAr, V)		3333/4166 KVA
9	Date of fabrication:		2012
	Weight:	Equipment (dry weight in kg)	1260 Kg
		Oil/liquid (l or kg)	7045 kg
		Total weight (kg)	
	Size of equipment:	Height, width, lenght (m)	
10	Name of liquid and or insulating oil/coolant, etc.		oil
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	No i.e. PCB FREE
		No (according to plaque)	
		Not known	
		Equipment emptied of liquid	
12	PCB analyses already performed? If yes, by whom, which method and when?		
13	Source of the above information (e.g. plaque or name plate on the equipment		Name plate
14	Operational status of equipment:	In use: yes/since	YES
		On stand-by	YES
		Decommissioned	
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	good
		Leaking?	No
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	OPEN AIR
16	Maintenance of equipment	Retrofilled?	No
		If yes, last retrofill when?	
		By which company?	
		With which replacement liquid /insulating oil?	
		Repaired?	YES
		By which company and when?	SO SAVAR DHAKA, 2017
		When the next maintenance is planned for?	
17	Other observations:		
18	Fill in:	Name and Surname: Mohammad Asib Kamal	Signature: Akamal / Date: 03-04-2024

Sampling Report

Company:	Brahmanbaria PBS
Address/City:	Oshiwana Sub Station
Site/Substation:	oshiwana sub-station
Description of location:	
GPS coordinates:	

Sampling details

Sample:	☐ Single sample	☐ Column sample	
Consistency:	☐ Solid	☐ Liquid	☐ .....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☐ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ .....
Analysis on site: (field screening)	☐ CLOR-N-SOIL	☐ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ .....

Photo:

Scheme:

Responsible person / signature: .....

Date : .....

মোঃ জিয়াউর রহমান
লাইন টেকনিশিয়ান
ব্রাহ্মণবাড়িয়া পল্লী।

মোঃ আবদুস সালাম
সহঃ সুপারিন্টেন্ডিং ইঞ্জিনিয়ার
ব্রাহ্মণবাড়িয়া পল্লী।

মোঃ সোহানুল ইসলাম
এজিএম (ই এন্ড সি)
ব্রাহ্মণবাড়িয়া পল্লী বিদ্যুৎ সমিতি

সাহাবুদ্দিন আবু জায়েদ
সদস্য (সদস্য সচিব-কারিগরি)
ব্রাহ্মণবাড়িয়া পল্লী।

01408
Bangladesh Rural Electrification Board
Date:

Form B: Information related to the potentially PCB containing equipment

B	*Information related to the potentially PCB-containing equipment* (repeat this section on a separate Section B form for each additional piece of equipment)		
1	Identification number:		01408
2	Name of location:		Oshiwana substation BBPDB
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		Power Transformer
4	Type:		Danish, PVT. LTD.
5	Name of manufacturer and country of origin:		20013008
6	Serial number:		10000/14000 kVA
7	Power rating: (kVA, kVAr, V)		2020
8	Date of fabrication:		
9	Weight:	Equipment (dry weight in kg)	7800 L
		Oil/liquid (l or kg)	26970 kg
		Total weight (kg)	
	Size of equipment:	Height, width, lenght (m)	
10	Name of liquid and or insulating oil/coolant, etc.		PYRANOL
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	—
		No (according to plaque)	NO
		Not known	—
		Equipment emptied of liquid	—
12	PCB analyses already performed? If yes, by whom, which method and when?		YES XEN BREB SOW CTG DGM(Tech) Brahmanbaria PBS
13	Source of the above information (e.g. plaque or name plate on the equipment		NAME PLATE
14	Operational status of equipment:	In use: yes/since	YES
		On stand-by	—
		Decommissioned	—
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good
		Leaking?	No
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building.: school, hospital, etc.)	open Air
16	Maintenance of equipment	Retrofilled?	NO
		If yes, last retrofill when?	N/A
		By which company?	N/A
		With which replacement liquid /insulating oil?	N/A
		Repaired?	No
		By which company and when?	N/A
		When the next maintenance is planned for?	Dec - 2024
17	Other observations:		overall condition is good
18	Fill in:	Name and Surname / Signature / Date	

০৮/০৫/২৪
মোঃ জিয়াউর রহমান
ব্রাহ্মণবাড়িয়া পল্লী।

০৮/০৫/২৪
মোঃ আবদুস সালাম
সহঃ ব্যবস্থাপক ইঞ্জিনিয়ার
ব্রাহ্মণবাড়িয়া পল্লী বিদ্যুৎ সমিতি।

08.15.24
মোঃ সোহানুল ইসলাম
এক্সিএম (ই এন্ড সি)
ব্রাহ্মণবাড়িয়া পল্লী বিদ্যুৎ সমিতি

০৮/০৫/২৪
মোঃ মকবুল হোসেন
ব্রাহ্মণবাড়িয়া পল্লী বিদ্যুৎ সমিতি

CamScanner

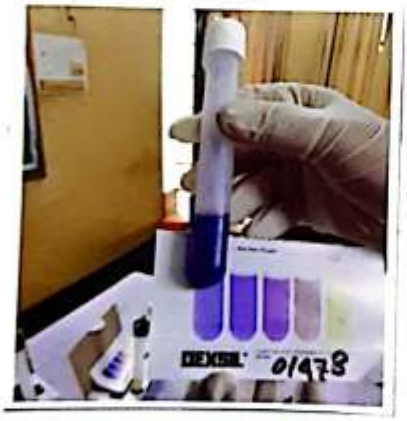
Sampling Report

Company: PBS	Chandpur palli Bidyut Samity-1
Address/City:	Hajiganj, chandpur
Site/Substation:	Kachua Substation-01
Description of location:	palashpur, Kachua, chandpur
GPS coordinates:	Longitude: 90.28899 Latitude: 23.33917

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ .....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☑ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ .....

Analysis on site: (field screening)	☐ CLOR-N-SOIL	☑ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ .....



Scheme:

Responsible person / signature: .....

Date : .....

01478
Bangladesh Rural Electrification Board

Form B: Information related to the potentially PCB containing equipment

B	*Information related to the potentially PCB-containing equipment* (repeat this section on a separate Section B form for each additional piece of equipment)		
1	Identification number:		01478
2	Name of location:		Kachua, Chandpur
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		Transformer
4	Type:		ONAN/(FU ONAF)
5	Name of manufacturer and country of origin:		TS TRANSFORMERS LIMITED Bangladesh
6	Serial number:		2017-10000-029
7	Power rating: (kVA, kVAr, V)		10000
8	Date of fabrication:		
9	Weight:	Equipment (dry weight in kg)	15585
		Oil/liquid (l or kg)	4350 Ltrs / 3915 KG
		Total weight (kg)	19500
	Size of equipment:	Height, width, lenght (m)	
10	Name of liquid and or insulating oil/coolant, etc.		
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	NO
		No (according to plaque)	N/A
		Not known	N/A
		Equipment emptied of liquid	N/A
12	PCB analyses already performed? If yes, by whom, which method and when?		
13	Source of the above information (e.g. plaque or name plate on the equipment		
14	Operational status of equipment:	In use: yes/since	YES
		On stand-by	—
		Decommissioned	—
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good
		Leaking?	-
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	Open Air
16	Maintenance of equipment	Retrofitiled?	
		If yes, last retrofill when?	
		By which company?	
		With which replacement liquid /insulating oil?	
		Repaired?	
		By which company and when?	
		When the next maintenance is planned for?	
17	Other observations:		Over all Condition is good
18	Fill in:	Name and Surname	Signature / Date

Lat

Sampling Report

Company: PBS:	Chandpur Palli Bidyut Samity-1
Address/City:	Hajiganj, Chandpur
Site/Substation:	Hajiganj Substation - 01 (H/Q)
Description of location:	Toragor, Kongais, Hajiganj, Chandpur
GPS coordinates:	Longitude: 90.8727 Latitude: 23.25278

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ .....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☑ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ .....

Analysis on site: (field screening)	☐ CLOR-N-SOIL	☑ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ .....

Scheme:

Responsible person / signature: GM, DGM-T, Others of CPBS-1 & MM of SOW. ctg

Date : 30.04.2024

01471
Bangladesh Rural Electrification Board

Form B: Information related to the potentially PCB containing equipment

B	*Information related to the potentially PCB-containing equipment* (repeat this section on a separate Section B form for each additional piece of equipment)		
1	Identification number:		01471
2	Name of location:		Hajiganj. Chandpur
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		Transformer
4	Type:		ONAN/P.ONAF
5	Name of manufacturer and country of origin:		ALFA Transformers Ltd. India
6	Serial number:		5000/84
7	Power rating: (kVA, kVAr, V)		5000
8	Date of fabrication:		
9	Weight:	Equipment (dry weight in kg)	9280 KG
		Oil/liquid (l or kg)	3000 Ltrs/2700KG
		Total weight (kg)	11980 KG
	Size of equipment:	Height, width, lenght (m)	
10	Name of liquid and or insulating oil/coolant, etc.		
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	NO
		No (according to plaque)	N/A
		Not known	N/A
		Equipment emptied of liquid	N/A
12	PCB analyses already performed? If yes, by whom, which method and when?		YES (GM, DGM-T. others of Chandpur PBS-1 & MM of SOD.Ctg)
13	Source of the above information (e.g. plaque or name plate on the equipment		
14	Operational status of equipment:	In use: yes/since	YES
		On stand-by	-
		Decommissioned	-
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good
		Leaking?	-
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	Open Air
16	Maintenance of equipment	Retrofilled?	
		If yes, last retrofill when?	
		By which company?	
		With which replacement liquid /insulating oil?	
		Repaired?	
		By which company and when?	
		When the next maintenance is planned for?	
17	Other observations:	Over all condition is good.	

18	Fill in:	Name and Surname	Signature	Date

CamScanner

Sampling Report

Company:	Cumilla PbS-4
Address/City:	Laksam, Cumilla
Site/Substation:	Monohorgonj-1
Description of location:	
GPS coordinates:	

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ ....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☑ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ ....

Analysis on site: (field screening)	☐ CLOR-N-SOIL	☑ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ ....

Scheme:

Responsible person / signature:	
Date :	

01382
Bangladesh Rural Electrification Board
Date :

Form B: Information related to the potentially PCB containing equipment

	Information related to the potentially PCB-containing equipment (repeat this section on a separate Section B form for each additional piece of equipment)		
1	Identification number:		01382
2	Name of location:		Manohorgonj-1
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		Power Transformer
4	Type:		ONAN/(ONAF)
5	Name of manufacturer and country of origin:		TS
6	Serial number:		025
7	Power rating: (kVA, kVAr, V)		10/14
8	Date of fabrication:		2018
9	Weight:	Equipment (dry weight in kg)	11000
		Oil/liquid (l or kg)	4750
		Total weight (kg)	19500
	Size of equipment:	Height, width, lenght (m)	
10	Name of liquid and or insulating oil/coolant, etc.		Mineral Oil
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	-
		No (according to plaque)	NO
		Not known	-
		Equipment emptied of liquid	-
12	PCB analyses already performed? If yes, by whom, which method and when?		YES, (i) MD Selim Shaikh (AGM (E&C)) (ii) MD Mijanur Rahman
13	Source of the above information (e.g. plaque or name plate on the equipment		Nameplate
14	Operational status of equipment:	In use: yes/since	Yes, 2018
		On stand-by	-
		Decommissioned	-
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good
		Leaking?	No
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	Open Air
16	Maintenance of equipment	Retrofilled?	No
		If yes, last retrofill when?	N/A
		By which company?	N/A
		With which replacement liquid /insulating oil?	N/A
		Repaired?	No
		By which company and when?	N/A
		When the next maintenance is planned for?	DEC, 2024
17	Other observations:	Good. X-Former PCB Free.	
18	Fill in:	Name and Surname / Signature / Date	

28/04/24

23/4/24
মোঃ সেলিম শেখ
এ জি এম (ইএন্ডসি)
কুমিল্লা পবিস-৪

29/4/2024
আতিকুর রহমান
কুমিল্লা পবিস-৪

CamScanner

Sampling Report

Company:	Chattagram PBS-1
Address/City:	Lohagara
Site/Substation:	Lohagara
Description of location:	Unit-1
GPS coordinates:	

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ ....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☑ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ ....

Analysis on site: (field screening)	☐ CLOR-N-SOIL	☑ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ ....

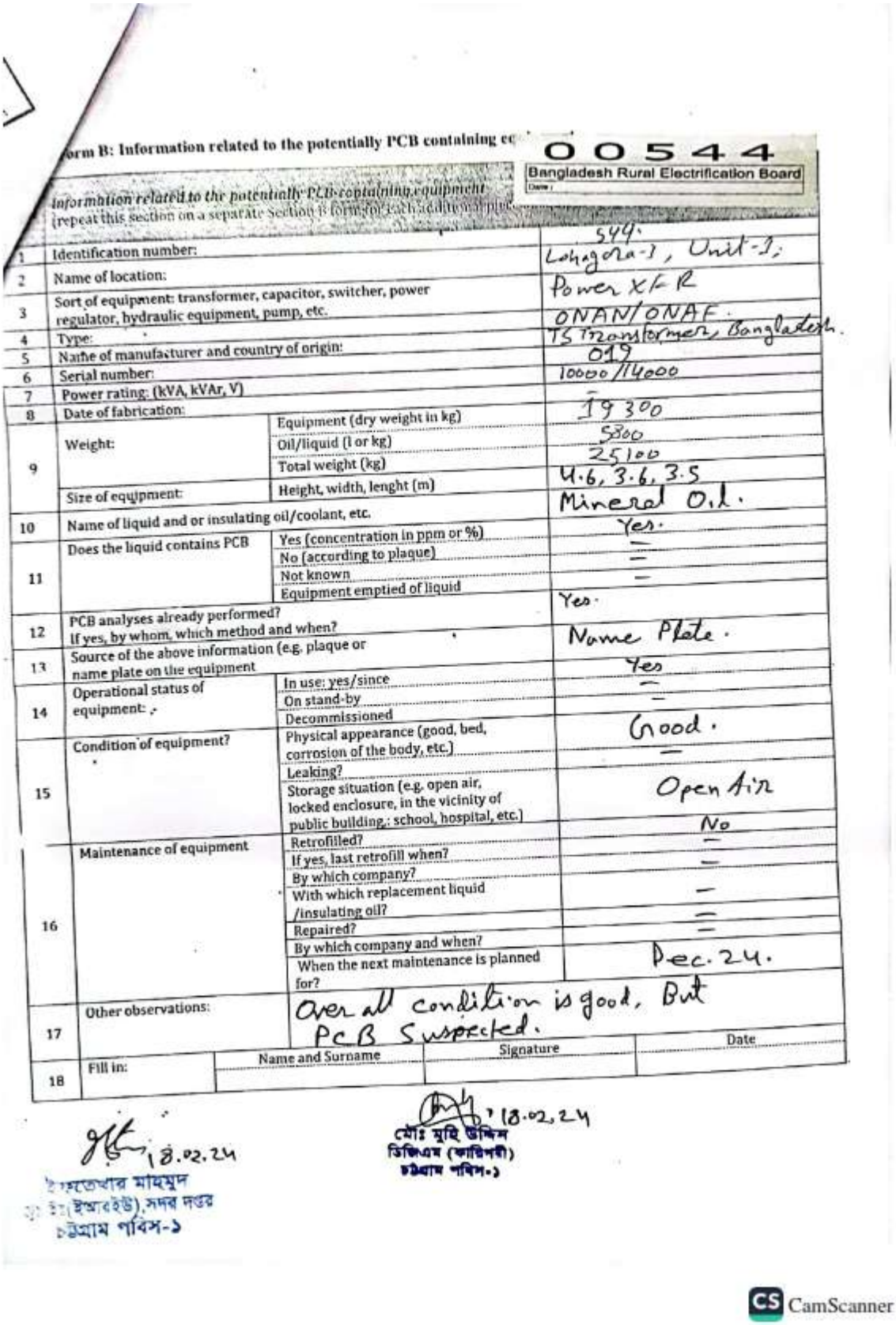
Photo:	Scheme:

Responsible person / signature:	....
Date :	....

18.02.24
ইফতেখার মাহমুদ
জুঃ ইঃ(ইআরইউ),সদর দপ্তর
চট্টগ্রাম পবিস-১

18.02.24
মোঃ মহি উদ্দিন
ডিজিএম (কারিগরী)
চট্টগ্রাম পবিস-১

CamScanner



Form B: Information related to the potentially PCB containing eq

00544

Bangladesh Rural Electrification Board

Information related to the potentially PCB-containing equipment
(repeat this section on a separate Section 3 form for each additional piece

1	Identification number:		544.
2	Name of location:		Lohagara-1, Unit-1;
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		Power X'fR
4	Type:		ONAN/ONAF.
5	Name of manufacturer and country of origin:		TS Transformer, Bangladesh.
6	Serial number:		019
7	Power rating: (kVA, kVAr, V)		10000/14000
8	Date of fabrication:		-
9	Weight:	Equipment (dry weight in kg)	19300
		Oil/liquid (l or kg)	5800
		Total weight (kg)	25100
	Size of equipment:	Height, width, lenght (m)	4.6, 3.6, 3.5
10	Name of liquid and or insulating oil/coolant, etc.		Mineral O.l.
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	Yes.
		No (according to plaque)	—
		Not known	—
		Equipment emptied of liquid	—
12	PCB analyses already performed? If yes, by whom, which method and when?		Yes.
13	Source of the above information (e.g. plaque or name plate on the equipment		Name Plate.
14	Operational status of equipment:	In use: yes/since	Yes
		On stand-by	—
		Decommissioned	—
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good.
		Leaking?	—
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	Open Air
16	Maintenance of equipment	Retrofilled?	No
		If yes, last retrofill when?	—
		By which company?	—
		With which replacement liquid /insulating oil?	—
		Repaired?	—
		By which company and when?	—
		When the next maintenance is planned for?	Dec. 24.
17	Other observations:		Over all condition is good, But PCB Suspected.
18	Fill in:	Name and Surname	Signature / Date

18.02.24
ইফতেখার মাহমুদ
ইঞ্জিনিয়ার (ইপ্রাবইউ), সদর দপ্তর
চট্টগ্রাম পবিস-১

18.02.24
মোঃ মুহি উদ্দিন
ডিজিএম (কারিগরী)
চট্টগ্রাম পবিস-১

Sampling Report

Company:	CTG PBS-1.
Address/City:	Anowara
Site/Substation:	Anowara S/S-2
Description of location:	Unit-1.
GPS coordinates:	

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ .....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☑ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ .....

Analysis on site: (field screening)	☐ CLOR-N-SOIL	☑ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ .....

Photo:

Scheme:

Responsible person / signature: .....

Date : .....

17.02.24
ইফতেখার মাহমুদ
সুঃ ইঃ(ইআরইউ), সদর দপ্তর
চট্টগ্রাম পবিস-১

17.02.24
মোঃ মুহি উদ্দিন
ডিজিএম (কাস্টমার)
চট্টগ্রাম পবিস-১

Form B: Information related to the potentially PCB containing equipment

00542

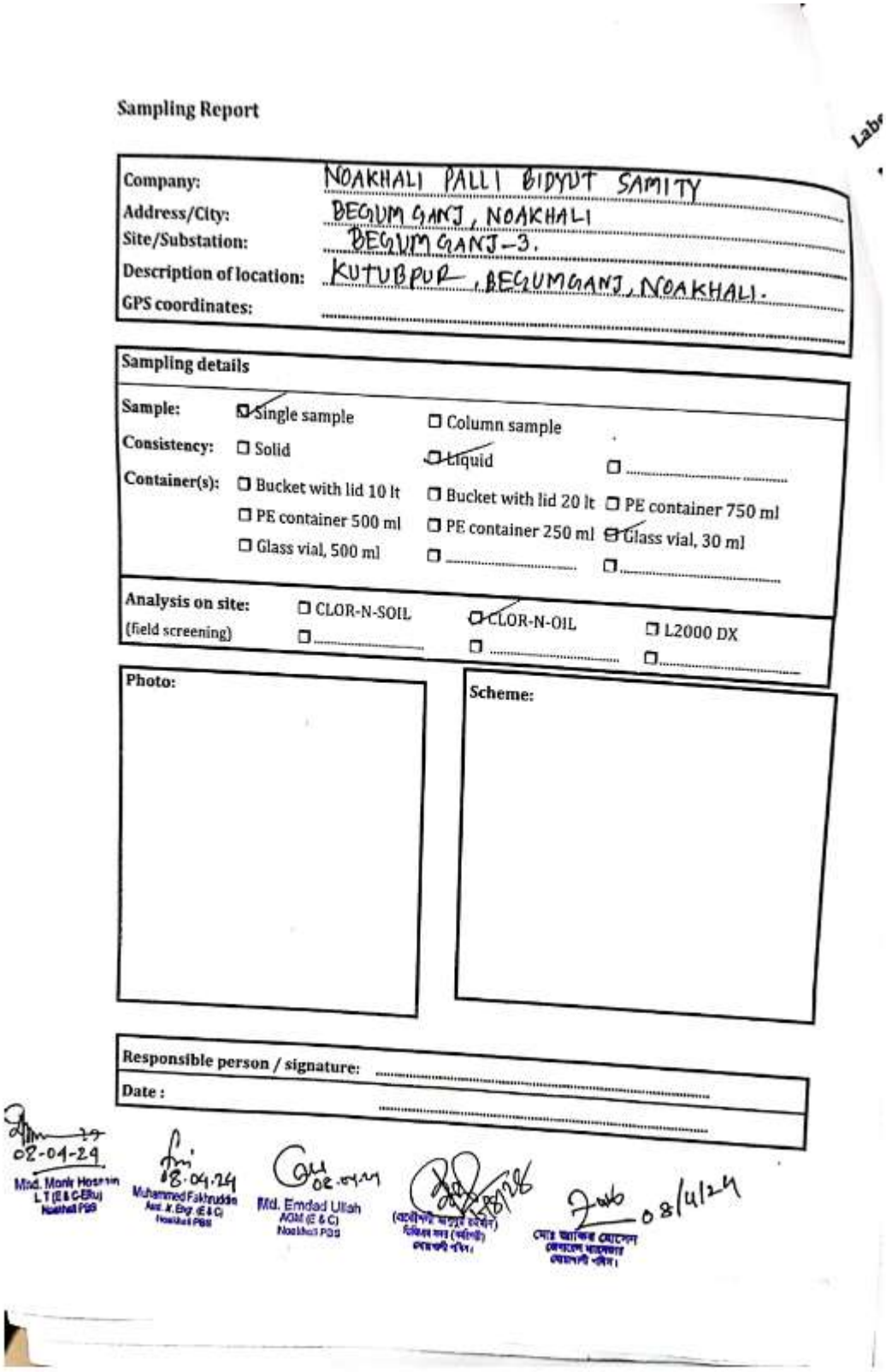
Bangladesh Rural Electrification Board

Date :

8	*Information related to the potentially PCB-containing equipment* (repeat this section on a separate Section 8 form for each additional p		
1	Identification number:		542 Anowara-2; Unit-1
2	Name of location:		Power YFR
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		Air Natural
4	Type:		KF Toriatsuma Electric, Japan
5	Name of manufacturer and country of origin:		4738439
6	Serial number:		5000 KVA
7	Power rating: (kVA, kVAr, V)		—
8	Date of fabrication:		20
9	Weight:	Equipment (dry weight in kg)	7380
		Oil/liquid (l or kg)	24300
		Total weight (kg)	4.7, 3.6, 3.5
	Size of equipment:	Height, width, lenght (m)	Mineral Oil
10	Name of liquid and or insulating oil/coolant, etc.		—
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	No
		No (according to plaque)	—
		Not known	—
		Equipment emptied of liquid	Yes.
12	PCB analyses already performed? If yes, by whom, which method and when?		Name Plate.
13	Source of the above information (e.g. plaque or name plate on the equipment		Yes.
14	Operational status of equipment:	In use: yes/since	—
		On stand-by	—
		Decommissioned	Good.
15	Condition of equipment?	Physical appearance (good, bad, corrosion of the body, etc.)	—
		Leaking?	Open Air
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building: school, hospital, etc.)	No
16	Maintenance of equipment	Retrofilled?	—
		If yes, last retrofill when?	—
		By which company?	—
		With which replacement liquid /insulating oil?	No
		Repaired?	—
		By which company and when?	Dec. 24.
		When the next maintenance is planned for?	
17	Other observations:		Over all condition is good.
18	Fill in:	Name and Surname / Signature / Date	

17.02.24
ইফতেখার মাহমুদ
জুঃ ইঃ(ইআরইউ),সদর দপ্তর
চট্টগ্রাম পবিস-১

17.02.24
মোঃ মুহি উদ্দিন
ডিজিএম (কারিগরী)
চট্টগ্রাম পবিস-১



Sampling Report

Labr

Company:	NOAKHALI PALLI BIDYUT SAMITY
Address/City:	BEGUM GANJ, NOAKHALI
Site/Substation:	BEGUM GANJ-3.
Description of location:	KUTUBPUR, BEGUMGANJ, NOAKHALI.
GPS coordinates:	

Sampling details

Sample:	☒ Single sample	☐ Column sample	
Consistency:	☐ Solid	☒ Liquid	☐ .....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☒ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ .....
Analysis on site: (field screening)	☐ CLOR-N-SOIL	☒ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ .....

Photo:

Scheme:

Responsible person / signature: .....

Date : .....

02-01-24
Md. Monir Hossain
LT (E & C-Elec)
Noakhali PBS

8.04.24
Muhammed Fakhruddin
Asst. X. Engr. (E & C)
Noakhali PBS

02.04.24
Md. Emdad Ullah
AGM (E & C)
Noakhali PBS

08/4/24

08/4/24

01503

Bangladesh Rural Electrification Board

Form B: Information related to the potentially PCB containing equipment

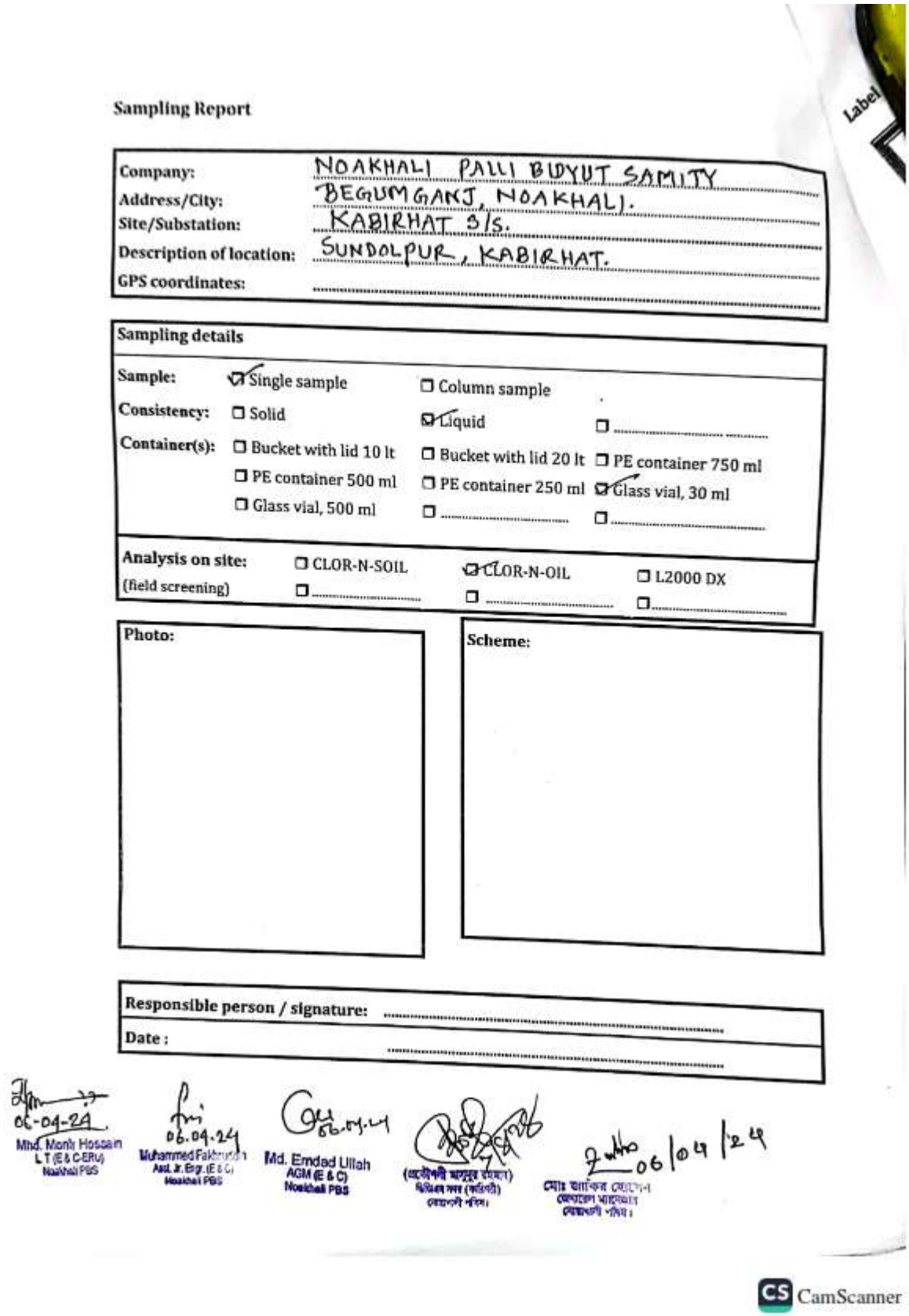
B	*Information related to the potentially PCB-containing equipment* (repeat this section on a separate Section B form for each additional piece of equipment)		
1	Identification number:		01503
2	Name of location:		BEGUMGANJ
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		TRANSFORMER
4	Type:		ONAN/ONAF - CONVENTIONAL
5	Name of manufacturer and country of origin:		T.V - BANGLADESH.
6	Serial number:		0170
7	Power rating: (kVA, kVAr, V)		3333/4166
8	Date of fabrication:		2012
9	Weight:	Equipment (dry weight in kg)	5785
		Oil/liquid (l or kg)	1260
		Total weight (kg)	7045
	Size of equipment:	Height, width, lenght (m)	N/A
10	Name of liquid and or insulating oil/coolant, etc.		PYRANOL
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	—
		No (according to plaque)	NO
		Not known	—
		Equipment emptied of liquid	—
12	PCB analyses already performed? If yes, by whom, which method and when?		YES, XEN BREB, SDW, CTG. DGM CD, NOAKHALI PBS.
13	Source of the above information (e.g. plaque or name plate on the equipment		NAME PLATE
14	Operational status of equipment:	In use: yes/since	YES
		On stand-by	NO
		Decommissioned	—
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	GOOD
		Leaking?	NO
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	OPEN AIR
16	Maintenance of equipment	Retrofilled?	NO
		If yes, last retrofill when?	N/A
		By which company?	N/A
		With which replacement liquid /insulating oil?	N/A
		Repaired?	NO
		By which company and when?	N/A
		When the next maintenance is planned for?	DECEMBER-2024.
17	Other observations:		Overall Conditions is Good.
18	Fill in:	Name and Surname	Signature / Date

08-09-24
Mhd. Monir Hossain
L T (E & C-ERL)
Noakhali PBS

08.09.24
Muhammed Fakhruddin
Asst. Jr. Engr. (E & C)
Noakhali PBS

08.09.24
Md. Emdad Ullah
ADM (E & C)
Noakhali PBS

8/9/24



Sampling Report

Company:	NOAKHALI PALLI BIDYUT SAMITY
Address/City:	BEGUMGANJ, NOAKHALI.
Site/Substation:	KABIRHAT S/S.
Description of location:	SUNDOLPUR, KABIRHAT.
GPS coordinates:	

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☑ Liquid	☐ .....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☑ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ .....
Analysis on site: (field screening)	☐ CLOR-N-SOIL	☑ CLOR-N-OIL	☐ L2000 DX
	☐	☐	☐ .....

Photo:

Scheme:

Responsible person / signature: .....

Date : .....

06-09-24
Md. Monir Hossain
LT (E & C-ERU)
Noakhali PBS

06.09.24
Muhammed Fakhruddin
Asst. Jr. Engr. (E & C)
Noakhali PBS

06.09.24
Md. Emdad Ullah
AGM (E & C)
Noakhali PBS

06/09/24

CamScanner

01501
Bangladesh Rural Electrification Board
Date:

Form B: Information related to the potentially PCB containing equipment

B	*Information related to the potentially PCB-containing equipment* (repeat this section on a separate Section B form for each additional piece of equipment)		
1	Identification number:		01501
2	Name of location:		KABIRHAT
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		TRANSFORMER
4	Type:		OA/FA - CONVENTIONAL
5	Name of manufacturer and country of origin:		VIJAI - INDIA
6	Serial number:		441298
7	Power rating: (kVA, kVAr, V)		3333/4166
8	Date of fabrication:		2001
9	Weight:	Equipment (dry weight in kg)	5920
		Oil/liquid (l or kg)	1380
		Total weight (kg)	7300
	Size of equipment:	Height, width, lenght (m)	–
10	Name of liquid and or insulating oil/coolant, etc.		PYRANOL
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	–
		No (according to plaque)	No
		Not known	–
		Equipment emptied of liquid	–
12	PCB analyses already performed? If yes, by whom, which method and when?		YES, XEN BREB, SOW, CTG. DGM (T), NOAKHALI PBS
13	Source of the above information (e.g. plaque or name plate on the equipment		NAME PLATE
14	Operational status of equipment:	In use: yes/since	YES
		On stand-by	–
		Decommissioned	
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	GOOD
		Leaking?	NO
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	OPEN AIR
16	Maintenance of equipment	Retrofilled?	NO
		If yes, last retrofill when?	N/A
		By which company?	N/A
		With which replacement liquid /insulating oil?	N/A
		Repaired?	NO
		By which company and when?	N/A
		When the next maintenance is planned for?	DECEMBER-2024.
17	Other observations:	Overall Condition is good.	
18	Fill in:	Name and Surname / Signature	Date

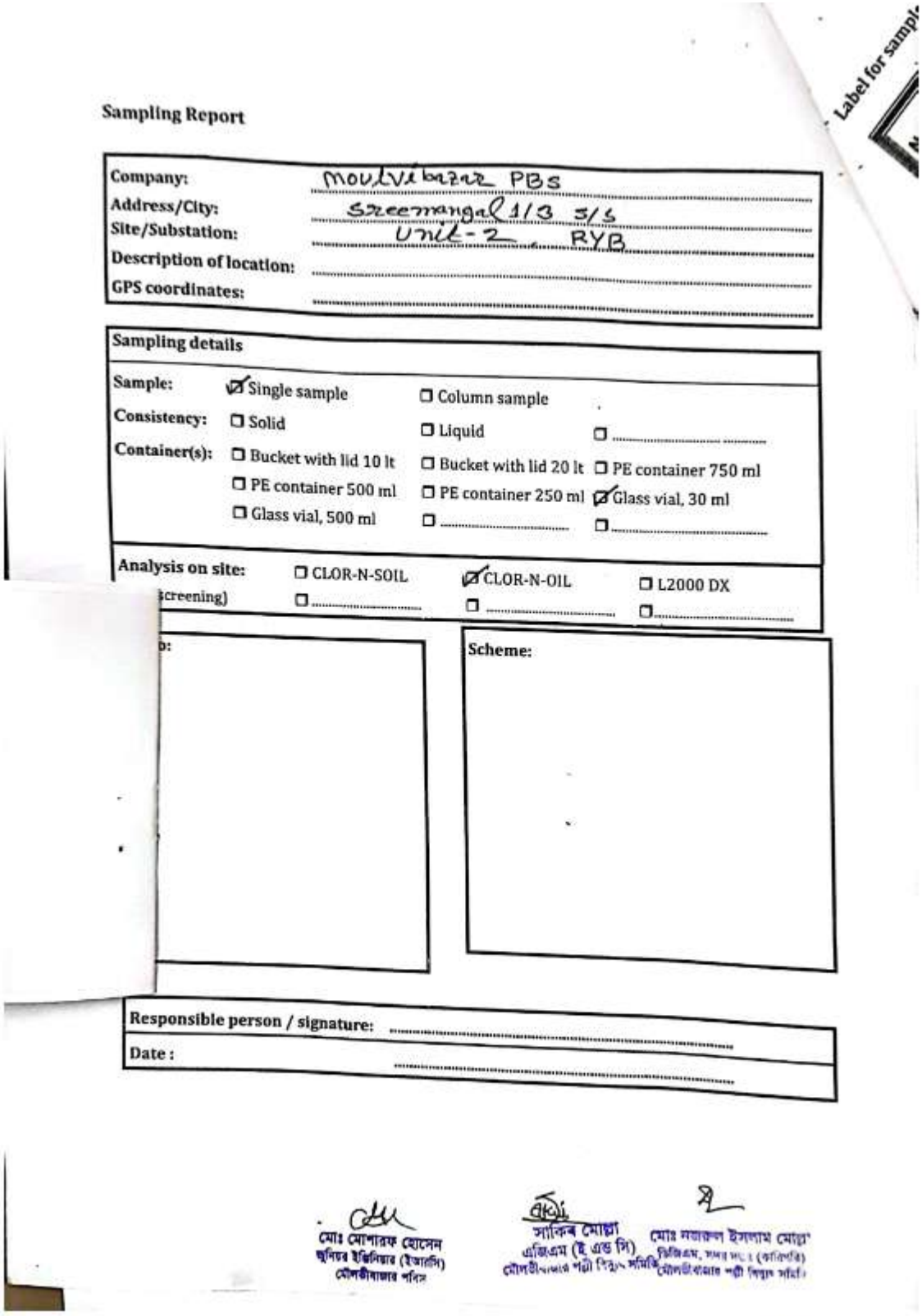
06-04-24.
Mhd. Monir Hossain
L T (E & C-ERU)
Noakhali PBS

06.04.24
Muhammed Fakhruddin
Asst. Jr. Engr (E & C)
Noakhali P...

06.04.24
Md. Emdad Ullah
AGM (E & C)
Noakhali PBS

(রাকেশ কান্তি ...)
...

মোঃ আকির হোসেন
06/04/24



Label for sampl

Sampling Report

Company:	Moulvibazar PBS
Address/City:	Sreemangal 1/3 S/S
Site/Substation:	Unit-2 RYB
Description of location:	
GPS coordinates:	

Sampling details

Sample:	☑ Single sample	☐ Column sample	
Consistency:	☐ Solid	☐ Liquid	☐ .....
Container(s):	☐ Bucket with lid 10 lt	☐ Bucket with lid 20 lt	☐ PE container 750 ml
	☐ PE container 500 ml	☐ PE container 250 ml	☑ Glass vial, 30 ml
	☐ Glass vial, 500 ml	☐	☐ .....

Analysis on site:	☐ CLOR-N-SOIL	☑ CLOR-N-OIL	☐ L2000 DX
screening)	☐	☐	☐ .....

Scheme:

Responsible person / signature: .....

Date : .....

মোঃ মোশারফ হোসেন
অনিয়র ইঞ্জিনিয়ার (ইআরসি)
মৌলভীবাজার পল্লী

সাকিব মোল্লা
এজিএম (ই এন্ড সি)
মৌলভীবাজার পল্লী বিদ্যুৎ সমিতি

মোঃ মজাক্কল ইসলাম মোল্লা
ডিজিএম, সমন্বয় (কারিগরি)
মৌলভীবাজার পল্লী বিদ্যুৎ সমিতি

CamScanner

Form B: Information related to the potentially PCB containing equipment

B	*Information related to* [01411 Bangladesh Rural Electrification Board Date:] (repeat this section on a ... ece of equipment)		
1	Identification number:		01411
2	Name of location:		Sreemangal 1/3, 2 No unit
3	Sort of equipment: transformer, capacitor, switcher, power regulator, hydraulic equipment, pump, etc.		RYB
4	Type:		ONAN/ONAF
5	Name of manufacturer and country of origin:		TS Transformers limited
6	Serial number:		011
7	Power rating: (kVA, kVAr, V)		10000 / 14000
8	Date of fabrication:		
9	Weight:	Equipment (dry weight in kg)	11000
		Oil/liquid (l or kg)	8500
		Total weight (kg)	19500kg
	Size of equipment:	Height, width, lenght (m)	
10	Name of liquid and or insulating oil/coolant, etc.		Transformer oil minaral
11	Does the liquid contains PCB	Yes (concentration in ppm or %)	–
		No (according to plaque)	No
		Not known	–
		Equipment emptied of liquid	–
12	PCB analyses already performed? If yes, by whom, which method and when?		Name plate
13	Source of the above information (e.g. plaque or name plate on the equipment		Yes
14	Operational status of equipment	In use: yes/since	Yes
		On stand-by	–
		Decommissioned	–
15	Condition of equipment?	Physical appearance (good, bed, corrosion of the body, etc.)	Good
		Leaking?	No
		Storage situation (e.g. open air, locked enclosure, in the vicinity of public building,: school, hospital, etc.)	open air
16	Maintenance of equipment	Retrofiiled?	No
		If yes, last retrofill when?	–
		By which company?	–
		With which replacement liquid /insulating oil?	No
		Repaired?	–
		By which company and when?	–
		When the next maintenance is planned for?	Dec.2024
17	Other observations:	over all condition is Good.	
18	Fill in:	Name and Surname / Signature / Date	

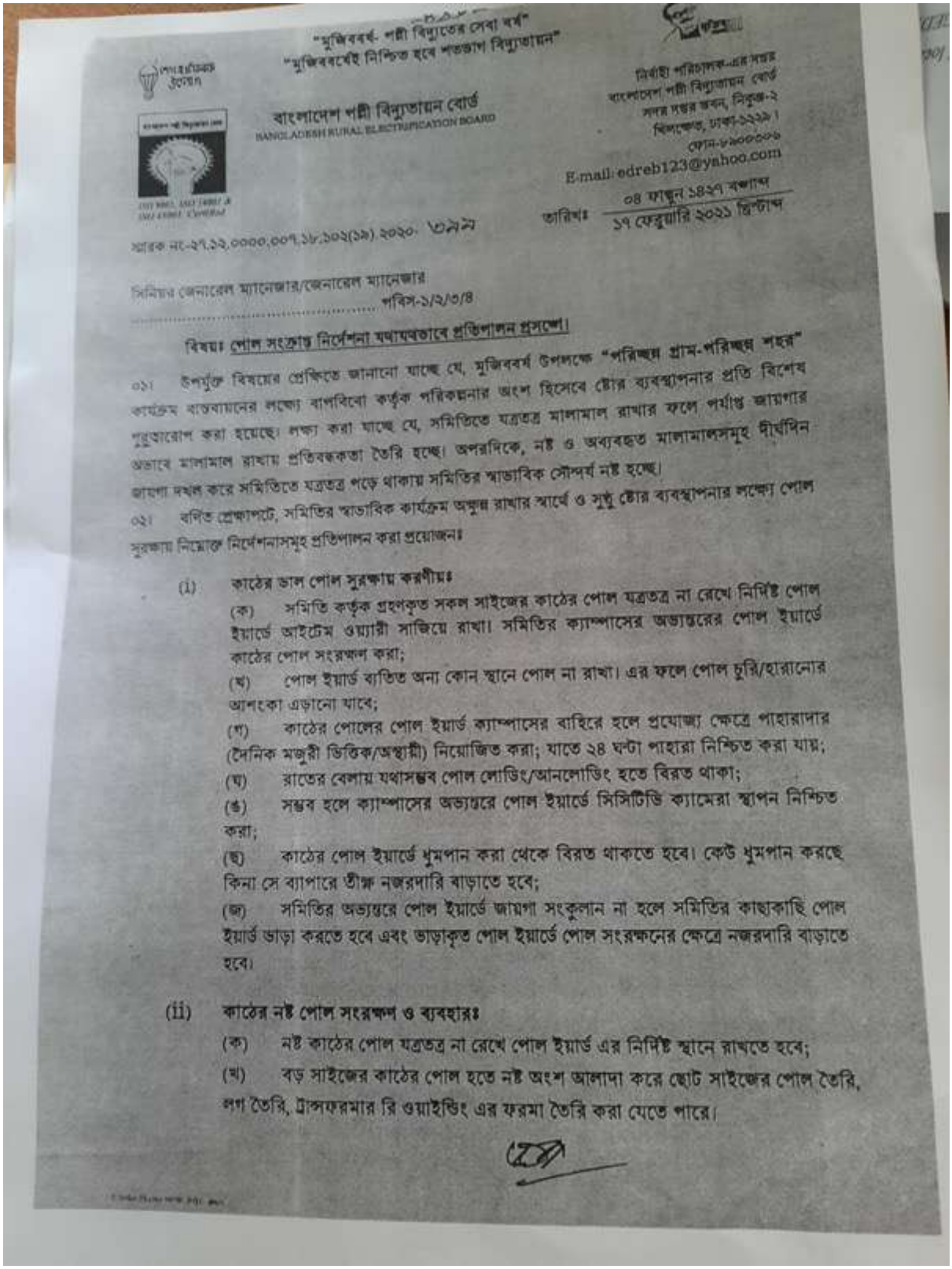
মোঃ মোশারফ হোসেন
জুনিয়র ইঞ্জিনিয়ার (ইআরসি)
মৌলভীবাজার পবিস

সাকিব মোল্লা
এজিএম (ই এন্ড সি)
মৌলভীবাজার পল্লী বিদ্যুৎ সমিতি

মোঃ নজরুল ইসলাম মোল্লা
ডিজিএম, সদর দপ্তর (কারিগরি)
মৌলভীবাজার পল্লী বিদ্যুৎ সমিতি

CamScanner

Appendix 17: Letter from BREB to PBSs official on Pole handling, storage & usage



"মুজিববর্ষ- পল্লী বিদ্যুতের সেবা বর্ষ"
"মুজিববর্ষেই নিশ্চিত হবে শতভাগ বিদ্যুতায়ন"

বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড
BANGLADESH RURAL ELECTRIFICATION BOARD

নির্বাহী পরিচালক-এর দপ্তর
বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড
সদর দপ্তর ভবন, নিকুঞ্জ-২
খিলক্ষেত, ঢাকা-১২২৯।
ফোন-৮৯০০০০৬
E-mail: edreb123@yahoo.com

স্মারক নং-২৭.১২.০০০০.০০৭.১৮.১০২(১৯) ২০২০- ৩৯৯

তারিখঃ ০৪ ফাল্গুন ১৪২৭ বঙ্গাব্দ / ১৭ ফেব্রুয়ারি ২০২১ খ্রিস্টাব্দ

সিনিয়র জেনারেল ম্যানেজার/জেনারেল ম্যানেজার
..... পবিস-১/২/৩/৪

বিষয়ঃ পোল সংক্রান্ত নির্দেশনা যথাযথভাবে প্রতিপালন প্রসঙ্গে।

০১। উপর্যুক্ত বিষয়ের প্রেক্ষিতে জানানো যাচ্ছে যে, মুজিববর্ষ উপলক্ষে "পরিচ্ছন্ন গ্রাম-পরিচ্ছন্ন শহর" কার্যক্রম বাস্তবায়নের লক্ষ্যে বাপবিবো কর্তৃক পরিকল্পনার অংশ হিসেবে স্টোর ব্যবস্থাপনার প্রতি বিশেষ গুরুত্বারোপ করা হয়েছে। লক্ষ্য করা যাচ্ছে যে, সমিতিতে যত্রতত্র মালামাল রাখার ফলে পর্যাপ্ত জায়গার অভাবে মালামাল রাখায় প্রতিবন্ধকতা তৈরি হচ্ছে। অপরদিকে, নষ্ট ও অব্যবহৃত মালামালসমূহ দীর্ঘদিন জায়গা দখল করে সমিতিতে যত্রতত্র পড়ে থাকায় সমিতির স্বাভাবিক সৌন্দর্য নষ্ট হচ্ছে।

০২। বর্ণিত প্রেক্ষাপটে, সমিতির স্বাভাবিক কার্যক্রম অক্ষুন্ন রাখার স্বার্থে ও সুষ্ঠু স্টোর ব্যবস্থাপনার লক্ষ্যে পোল সুরক্ষায় নিম্নোক্ত নির্দেশনাসমূহ প্রতিপালন করা প্রয়োজনঃ

(i) **কাঠের ভাল পোল সুরক্ষায় করণীয়ঃ**

(ক) সমিতি কর্তৃক গ্রহণকৃত সকল সাইজের কাঠের পোল যত্রতত্র না রেখে নির্দিষ্ট পোল ইয়ার্ডে আইটেম ওয়্যারী সাজিয়ে রাখা। সমিতির ক্যাম্পাসের অভ্যন্তরের পোল ইয়ার্ডে কাঠের পোল সংরক্ষণ করা;

(খ) পোল ইয়ার্ড ব্যতিত অন্য কোন স্থানে পোল না রাখা। এর ফলে পোল চুরি/হারানোর আশংকা এড়ানো যাবে;

(গ) কাঠের পোলের পোল ইয়ার্ড ক্যাম্পাসের বাহিরে হলে প্রযোজ্য ক্ষেত্রে পাহারাদার (দৈনিক মজুরী ভিত্তিক/অস্থায়ী) নিয়োজিত করা; যাতে ২৪ ঘন্টা পাহারা নিশ্চিত করা যায়;

(ঘ) রাতের বেলায় যথাসম্ভব পোল লোডিং/আনলোডিং হতে বিরত থাকা;

(ঙ) সম্ভব হলে ক্যাম্পাসের অভ্যন্তরে পোল ইয়ার্ডে সিসিটিভি ক্যামেরা স্থাপন নিশ্চিত করা;

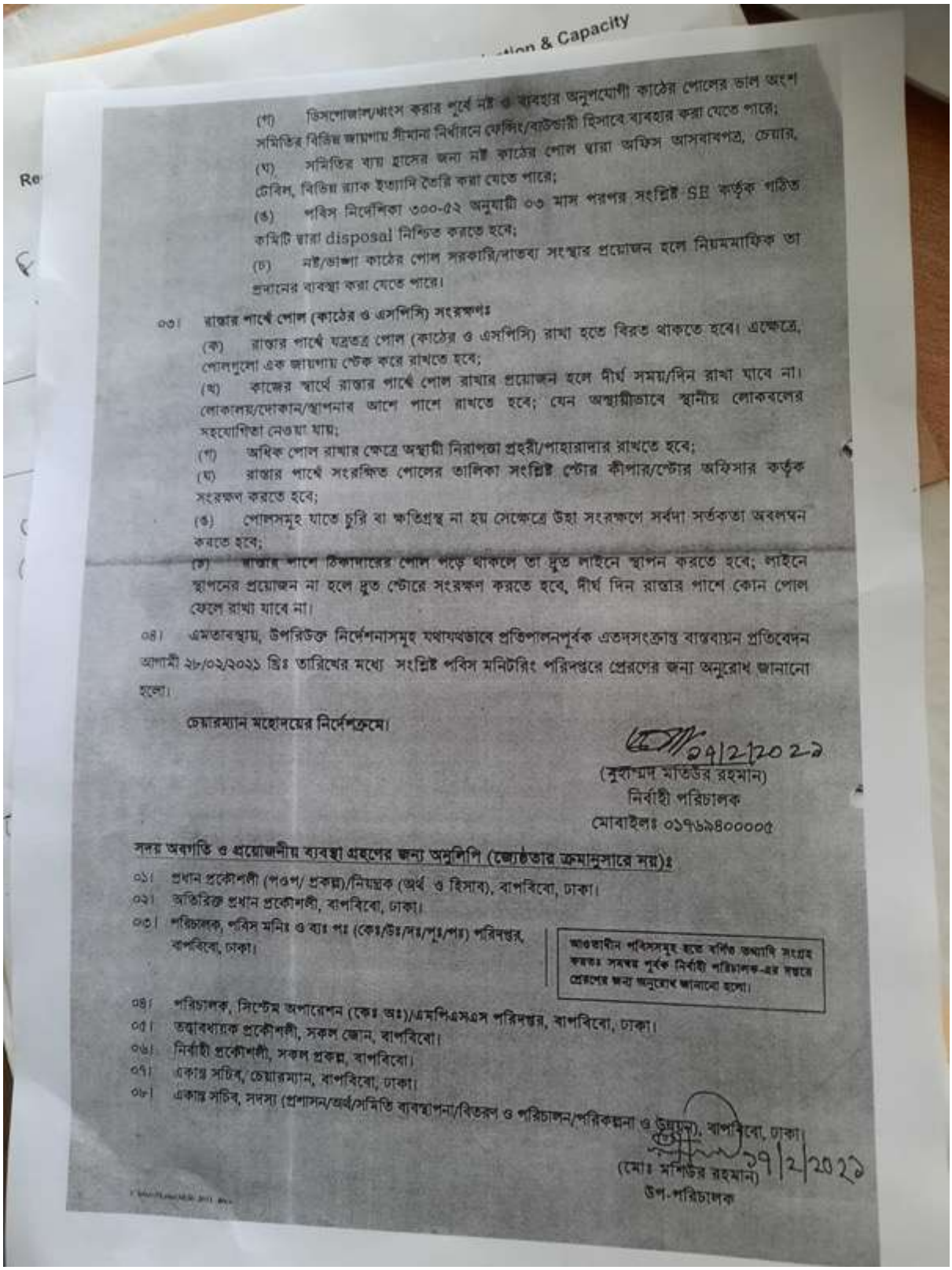
(ছ) কাঠের পোল ইয়ার্ডে ধুমপান করা থেকে বিরত থাকতে হবে। কেউ ধুমপান করছে কিনা সে ব্যাপারে তীক্ষ্ণ নজরদারি বাড়াতে হবে;

(জ) সমিতির অভ্যন্তরে পোল ইয়ার্ডে জায়গা সংকুলান না হলে সমিতির কাছাকাছি পোল ইয়ার্ড ভাড়া করতে হবে এবং ভাড়াকৃত পোল ইয়ার্ডে পোল সংরক্ষনের ক্ষেত্রে নজরদারি বাড়াতে হবে।

(ii) **কাঠের নষ্ট পোল সংরক্ষণ ও ব্যবহারঃ**

(ক) নষ্ট কাঠের পোল যত্রতত্র না রেখে পোল ইয়ার্ড এর নির্দিষ্ট স্থানে রাখতে হবে;

(খ) বড় সাইজের কাঠের পোল হতে নষ্ট অংশ আলাদা করে ছোট সাইজের পোল তৈরি, লগ তৈরি, ট্রান্সফরমার রি ওয়াইন্ডিং এর ফরমা তৈরি করা যেতে পারে।



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(গ) ডিসপোজাল/ধ্বংস করার পূর্বে নষ্ট ও ব্যবহার অনুপযোগী কাঠের পোলের ভাল অংশ সমিতির বিভিন্ন জায়গায় সীমানা নির্ধারনে ফেন্সিং/বাউন্ডারী হিসাবে ব্যবহার করা যেতে পারে;

(ঘ) সমিতির ব্যয় হ্রাসের জন্য নষ্ট কাঠের পোল দ্বারা অফিস আসবাবপত্র, চেয়ার, টেবিল, বিভিন্ন র‍্যাক ইত্যাদি তৈরি করা যেতে পারে;

(ঙ) পবিস নির্দেশিকা ৩০০-৫২ অনুযায়ী ০৩ মাস পরপর সংশ্লিষ্ট SE কর্তৃক গঠিত কমিটি দ্বারা disposal নিশ্চিত করতে হবে;

(চ) নষ্ট/ভাঙ্গা কাঠের পোল সরকারি/দাতব্য সংস্থার প্রয়োজন হলে নিয়মমাফিক তা প্রদানের ব্যবস্থা করা যেতে পারে।

০৩। রাস্তার পার্শ্বে পোল (কাঠের ও এসপিসি) সংরক্ষণঃ

(ক) রাস্তার পার্শ্বে যত্রতত্র পোল (কাঠের ও এসপিসি) রাখা হতে বিরত থাকতে হবে। এক্ষেত্রে, পোলগুলো এক জায়গায় স্টেক করে রাখতে হবে;

(খ) কাজের স্বার্থে রাস্তার পার্শ্বে পোল রাখার প্রয়োজন হলে দীর্ঘ সময়/দিন রাখা যাবে না। লোকালয়/দোকান/স্থাপনার আশে পাশে রাখতে হবে; যেন অস্থায়ীভাবে স্থানীয় লোকবলের সহযোগিতা নেওয়া যায়;

(গ) অধিক পোল রাখার ক্ষেত্রে অস্থায়ী নিরাপত্তা প্রহরী/পাহারাদার রাখতে হবে;

(ঘ) রাস্তার পার্শ্বে সংরক্ষিত পোলের তালিকা সংশ্লিষ্ট স্টোর কীপার/স্টোর অফিসার কর্তৃক সংরক্ষণ করতে হবে;

(ঙ) পোলসমূহ যাতে চুরি বা ক্ষতিগ্রস্থ না হয় সেক্ষেত্রে উহা সংরক্ষণে সর্বদা সর্তকতা অবলম্বন করতে হবে;

(চ) রাস্তার পাশে ঠিকাদারের পোল পড়ে থাকলে তা দ্রুত লাইনে স্থাপন করতে হবে; লাইনে স্থাপনের প্রয়োজন না হলে দ্রুত স্টোরে সংরক্ষণ করতে হবে, দীর্ঘ দিন রাস্তার পাশে কোন পোল ফেলে রাখা যাবে না।

০৪। এমতাবস্থায়, উপরিউক্ত নির্দেশনাসমূহ যথাযথভাবে প্রতিপালনপূর্বক এতদসংক্রান্ত বাস্তবায়ন প্রতিবেদন আগামী ২৮/০২/২০২১ খ্রিঃ তারিখের মধ্যে সংশ্লিষ্ট পবিস মনিটরিং পরিদপ্তরে প্রেরণের জন্য অনুরোধ জানানো হলো।

চেয়ারম্যান মহোদয়ের নির্দেশক্রমে।

০৭/২/২০২১

(মুহাম্মদ মতিউর রহমান)
নির্বাহী পরিচালক
মোবাইলঃ ০১৭৬৯৪০০০০৫

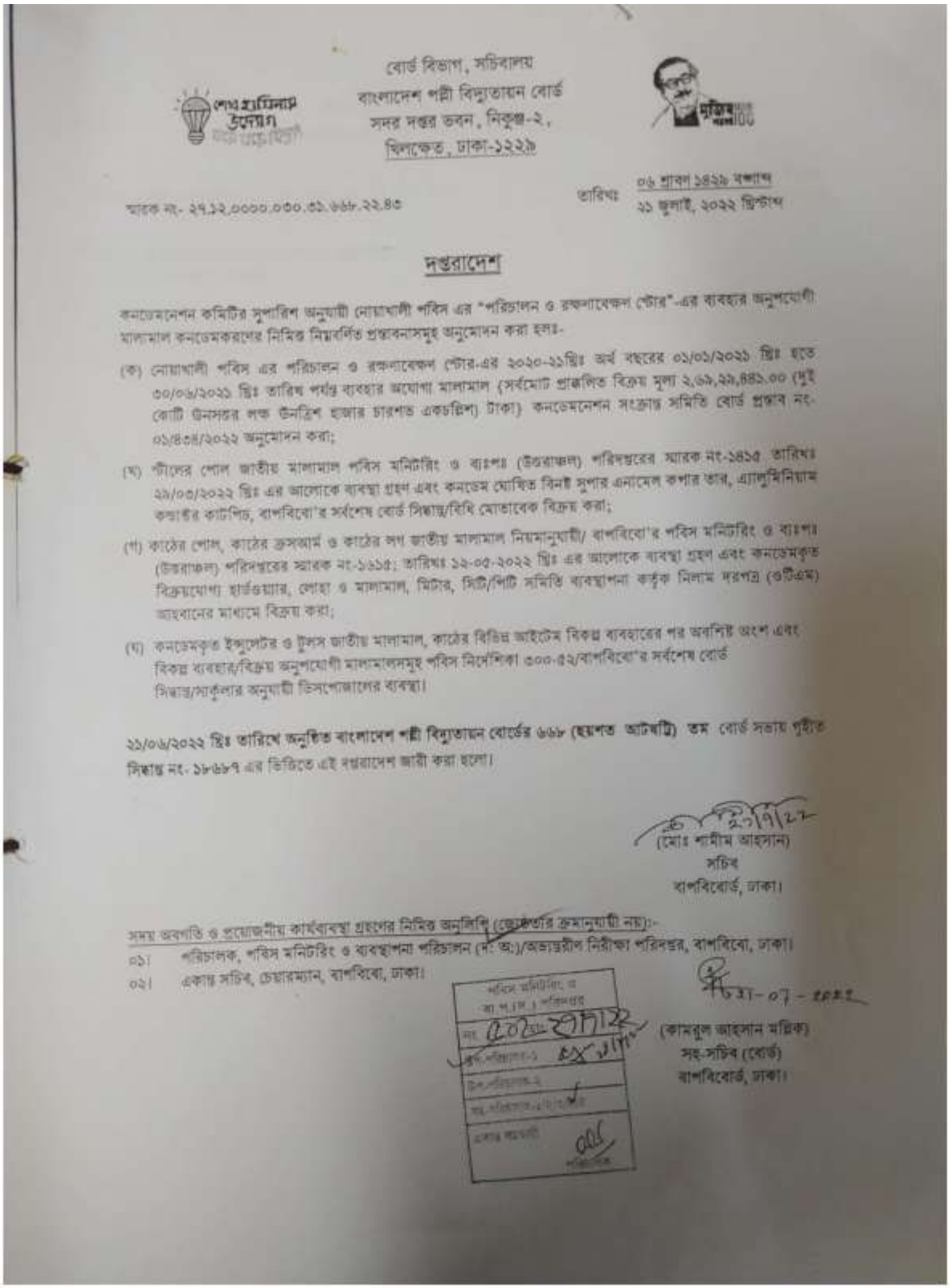
সদয় অবগতি ও প্রয়োজনীয় ব্যবস্থা গ্রহণের জন্য অনুলিপি (জ্যেষ্ঠতার ক্রমানুসারে নয়)ঃ

০১। প্রধান প্রকৌশলী (পওপ/ প্রকল্প)/নিয়ন্ত্রক (অর্থ ও হিসাব), বাপবিবো, ঢাকা।
০২। অতিরিক্ত প্রধান প্রকৌশলী, বাপবিবো, ঢাকা।
০৩। পরিচালক, পবিস মনিঃ ও ব্যাঃ পঃ (কেঃ/উঃ/দঃ/পূঃ/পঃ) পরিবপ্তর, বাপবিবো, ঢাকা।

অধঃস্তন পবিসসমূহ হতে বর্ণিত তথ্যাদি সংগ্রহ করতঃ সত্বর পূর্বক নির্বাহী পরিচালক-এর দপ্তরে প্রেরণের জন্য অনুরোধ জানানো হলো।

০৪। পরিচালক, সিস্টেম অপারেশন (কেঃ অঃ)/এমপিএসএস পরিদপ্তর, বাপবিবো, ঢাকা।
০৫। তত্ত্বাবধায়ক প্রকৌশলী, সকল জোন, বাপবিবো।
০৬। নির্বাহী প্রকৌশলী, সকল প্রকল্প, বাপবিবো।
০৭। একান্ত সচিব, চেয়ারম্যান, বাপবিবো, ঢাকা।
০৮। একান্ত সচিব, সদস্য (প্রশাসন/অর্থ/সমিতি ব্যবস্থাপনা/বিতরণ ও পরিচালন/পরিকল্পনা ও উন্নয়ন), বাপবিবো, ঢাকা।

(মোঃ মশিউর রহমান) ৭/২/২০২১
উপ-পরিচালক



বোর্ড বিভাগ, সচিবালয়
বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড
সদর দপ্তর ভবন, নিকুঞ্জ-২,
খিলক্ষেত, ঢাকা-১২২৯

স্মারক নং- ২৭.১২.০০০০.০৩০.৩১.৬৬৮.২২.৪৩

তারিখ: ০৬ শ্রাবণ ১৪২৯ বঙ্গাব্দ
২১ জুলাই, ২০২২ খ্রিস্টাব্দ

দপ্তরাদেশ

কনডেমনেশন কমিটির সুপারিশ অনুযায়ী নোয়াখালী পবিস এর "পরিচালন ও রক্ষণাবেক্ষণ স্টোর"-এর ব্যবহার অনুপযোগী মালামাল কনডেমকরণের নিমিত্ত নিম্নবর্ণিত প্রস্তাবনাসমূহ অনুমোদন করা হলঃ-

(ক) নোয়াখালী পবিস এর পরিচালন ও রক্ষণাবেক্ষণ স্টোর-এর ২০২০-২১খ্রিঃ অর্থ বছরের ০১/০১/২০২১ খ্রিঃ হতে ৩০/০৬/২০২১ খ্রিঃ তারিখ পর্যন্ত ব্যবহার অযোগ্য মালামাল (সর্বমোট প্রাক্কলিত বিক্রয় মূল্য ২,৬৯,২৯,৪৪১.০০ (দুই কোটি উনসত্তর লক্ষ উনত্রিশ হাজার চারশত একচল্লিশ) টাকা) কনডেমনেশন সংক্রান্ত সমিতি বোর্ড প্রস্তাব নং-০১/৪৩৪/২০২২ অনুমোদন করা;

(খ) স্টীলের পোল জাতীয় মালামাল পবিস মনিটরিং ও ব্যাংপঃ (উত্তরাঞ্চল) পরিদপ্তরের স্মারক নং-১৪১৫ তারিখঃ ২৯/০৩/২০২২ খ্রিঃ এর আলোকে ব্যবস্থা গ্রহণ এবং কনডেম ঘোষিত বিনষ্ট সুপার এনামেল কপার তার, এ্যালুমিনিয়াম কন্ডাক্টর কাটপিচ, বাপবিবো'র সর্বশেষ বোর্ড সিদ্ধান্ত/বিধি মোতাবেক বিক্রয় করা;

(গ) কাঠের পোল, কাঠের ক্রসআর্ম ও কাঠের লগ জাতীয় মালামাল নিয়মানুযায়ী/ বাপবিবো'র পবিস মনিটরিং ও ব্যাংপঃ (উত্তরাঞ্চল) পরিদপ্তরের স্মারক নং-১৬১৫; তারিখঃ ১২-০৫-২০২২ খ্রিঃ এর আলোকে ব্যবস্থা গ্রহণ এবং কনডেমকৃত বিক্রয়যোগ্য হার্ডওয়্যার, লোহা ও মালামাল, মিটার, সিটি/পিটি সমিতি ব্যবস্থাপনা কর্তৃক নিলাম দরপত্র (ওটিএম) আহবানের মাধ্যমে বিক্রয় করা;

(ঘ) কনডেমকৃত ইন্সুলেটর ও টুলস জাতীয় মালামাল, কাঠের বিভিন্ন আইটেম বিকল্প ব্যবহারের পর অবশিষ্ট অংশ এবং বিকল্প ব্যবহার/বিক্রয় অনুপযোগী মালামালসমূহ পবিস নির্দেশিকা ৩০০-৫২/বাপবিবো'র সর্বশেষ বোর্ড সিদ্ধান্ত/সার্কুলার অনুযায়ী ডিসপোজালের ব্যবস্থা।

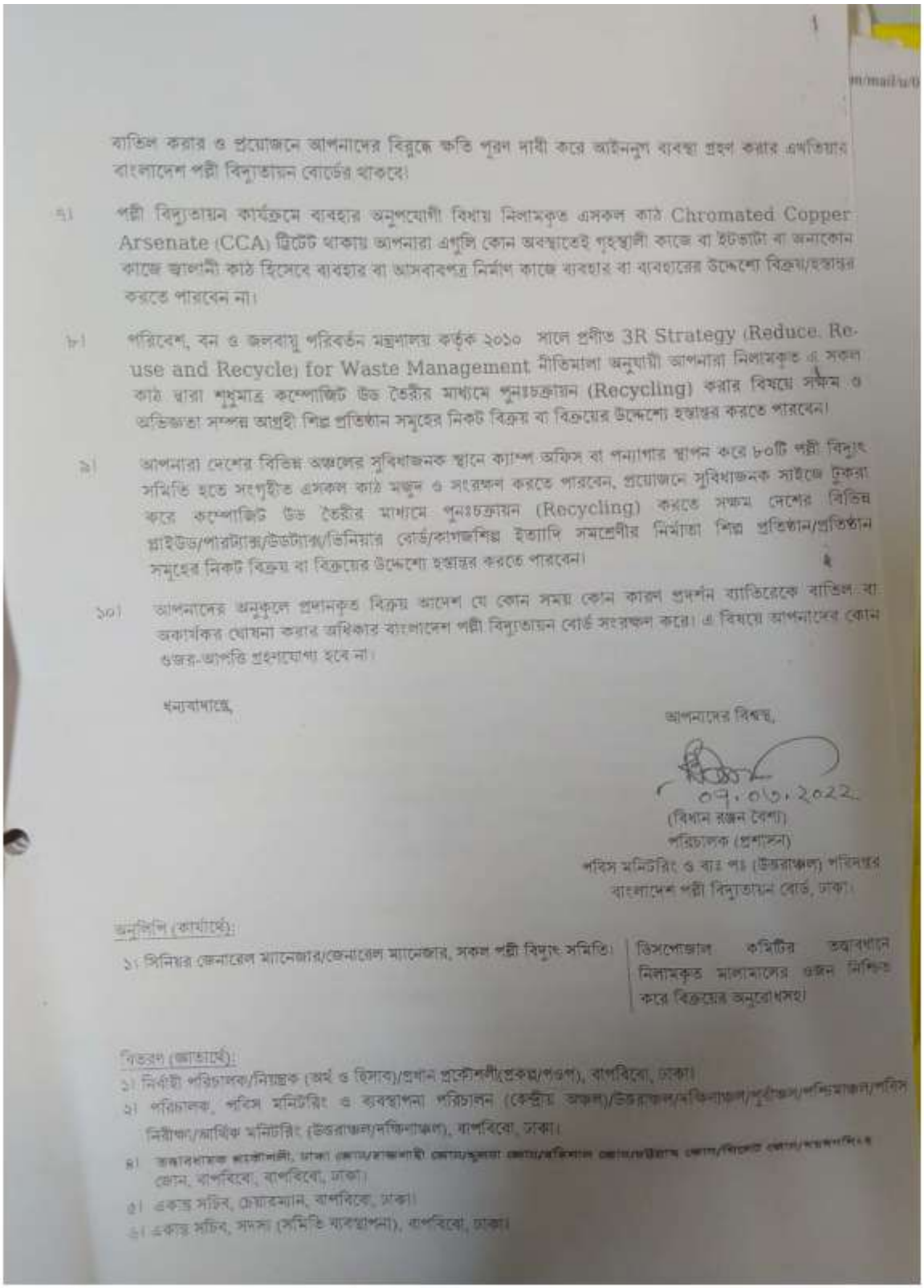
২১/০৬/২০২২ খ্রিঃ তারিখে অনুষ্ঠিত বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ডের ৬৬৮ (ছয়শত আটষট্টি) তম বোর্ড সভায় গৃহীত সিদ্ধান্ত নং- ১৮৬৮৭ এর ভিত্তিতে এই দপ্তরাদেশ জারী করা হলো।

(মোঃ শামীম আহসান)
সচিব
বাপবিবোর্ড, ঢাকা।

সদয় অবগতি ও প্রয়োজনীয় কার্যব্যবস্থা গ্রহণের নিমিত্ত অনুলিপি (জ্যেষ্ঠতার ক্রমানুযায়ী নয়):-

০১। পরিচালক, পবিস মনিটরিং ও ব্যবস্থাপনা পরিচালন (দঃ অঃ)/অভ্যন্তরীণ নিরীক্ষা পরিদপ্তর, বাপবিবো, ঢাকা।
০২। একান্ত সচিব, চেয়ারম্যান, বাপবিবো, ঢাকা।

(কামরুল জাহসান মল্লিক)
সহ-সচিব (বোর্ড)
বাপবিবোর্ড, ঢাকা।



বাতিল করার ও প্রয়োজনে আপনাদের বিরুদ্ধে ক্ষতি পূরণ দাবী করে আইননুগ ব্যবস্থা গ্রহণ করার এখতিয়ার বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ডের থাকবে।

৭। পল্লী বিদ্যুতায়ন কার্যক্রমে ব্যবহার অনুপযোগী বিধায় নিলামকৃত এসকল কাঠ Chromated Copper Arsenate (CCA) ট্রিটেট থাকায় আপনারা এগুলি কোন অবস্থাতেই গৃহস্থালী কাজে বা ইটভাটা বা অন্যকোন কাজে জ্বালানী কাঠ হিসেবে ব্যবহার বা আসবাবপত্র নির্মাণ কাজে ব্যবহার বা ব্যবহারের উদ্দেশ্যে বিক্রয়/হস্তান্তর করতে পারবেন না।

৮। পরিবেশ, বন ও জলবায়ু পরিবর্তন মন্ত্রণালয় কর্তৃক ২০১০ সালে প্রণীত 3R Strategy (Reduce, Re-use and Recycle) for Waste Management নীতিমালা অনুযায়ী আপনারা নিলামকৃত এ সকল কাঠ দ্বারা শুধুমাত্র কম্পোজিট উড তৈরীর মাধ্যমে পুনঃচক্রায়ন (Recycling) করার বিষয়ে সক্ষম ও অভিজ্ঞতা সম্পন্ন আগ্রহী শিল্প প্রতিষ্ঠান সমূহের নিকট বিক্রয় বা বিক্রয়ের উদ্দেশ্যে হস্তান্তর করতে পারবেন।

৯। আপনারা দেশের বিভিন্ন অঞ্চলের সুবিধাজনক স্থানে ক্যাম্প অফিস বা গুদামাগার স্থাপন করে ৮০টি পল্লী বিদ্যুৎ সমিতি হতে সংগৃহীত এসকল কাঠ মজুদ ও সংরক্ষণ করতে পারবেন, প্রয়োজনে সুবিধাজনক সাইজে টুকরা করে কম্পোজিট উড তৈরীর মাধ্যমে পুনঃচক্রায়ন (Recycling) করতে সক্ষম দেশের বিভিন্ন প্লাইউড/পার্টিক্যাল/ডেনসিটি বোর্ড/কাগজশিল্প ইত্যাদি সমশ্রেণীর নির্মাতা শিল্প প্রতিষ্ঠান/প্রতিষ্ঠান সমূহের নিকট বিক্রয় বা বিক্রয়ের উদ্দেশ্যে হস্তান্তর করতে পারবেন।

১০। আপনাদের অনুকূলে প্রদানকৃত বিক্রয় আদেশ যে কোন সময় কোন কারণ প্রদর্শন ব্যাতিরেকে বাতিল বা অকার্যকর ঘোষনা করার অধিকার বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড সংরক্ষণ করে। এ বিষয়ে আপনাদের কোন ওজর-আপত্তি গ্রহণযোগ্য হবে না।

ধন্যবাদান্তে,

আপনাদের বিশ্বস্ত,

০৭.০৩.২০২২

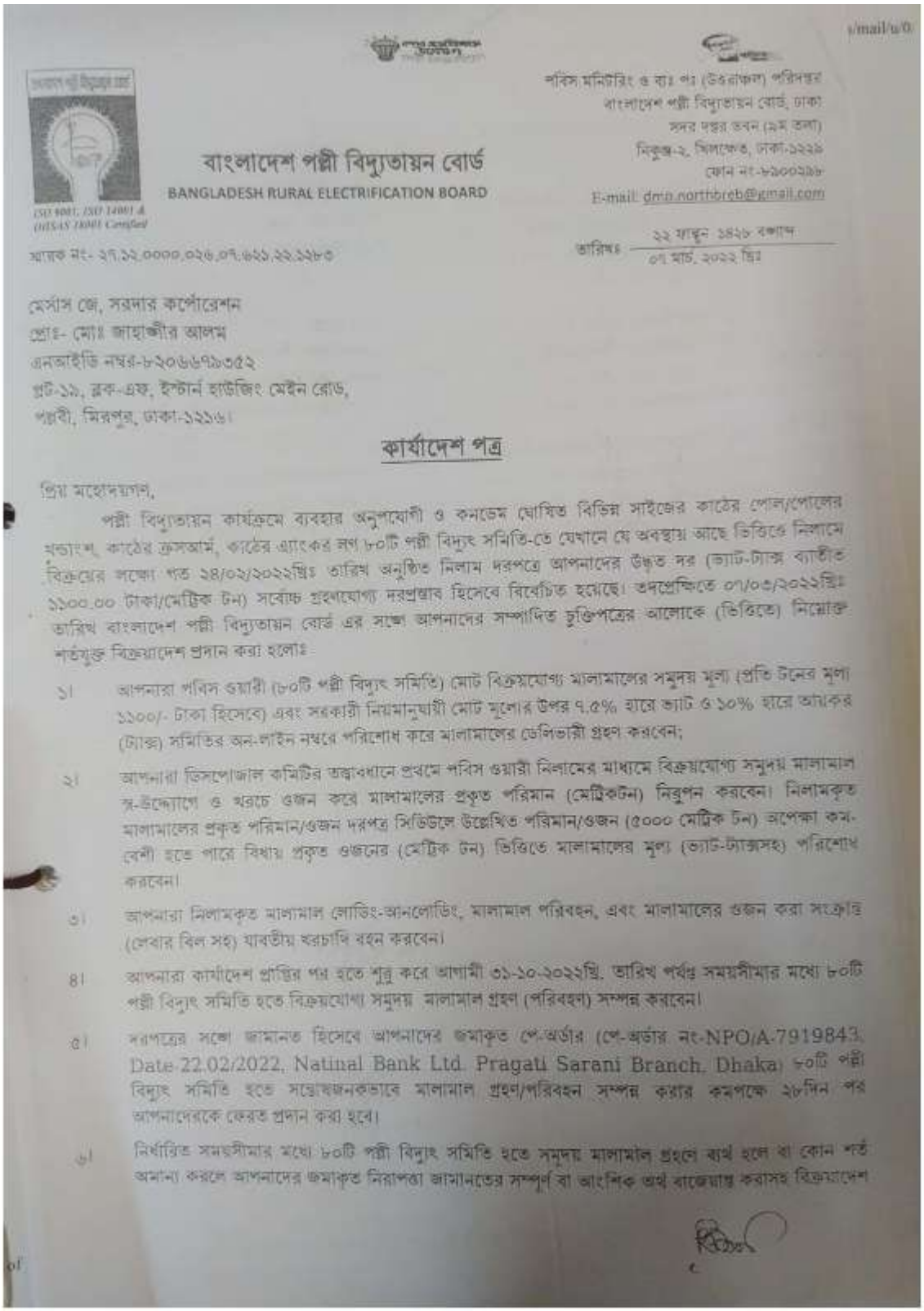
(বিধান রঞ্জন বৈদ্য)
পরিচালক (প্রশাসন)
পরিদর্শন মনিটরিং ও ব্যয় পঃ (উত্তরাঞ্চল) পরিদপ্তর
বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড, ঢাকা।

অনুলিপি (কার্যার্থে):

১। সিনিয়র জেনারেল ম্যানেজার/জেনারেল ম্যানেজার, সকল পল্লী বিদ্যুৎ সমিতি। | ডিসপোজাল কমিটির তত্ত্বাবধানে নিলামকৃত মালামালের ওজন নিশ্চিত করে বিক্রয়ের অনুরোধসহ।

বিতরণ (জ্ঞাতার্থে):

১। নির্বাহী পরিচালক/নিয়ন্ত্রক (অর্থ ও হিসাব)/প্রধান প্রকৌশলী(প্রকল্প/পওপ), বাপবিবো, ঢাকা।
২। পরিচালক, পরিদর্শন মনিটরিং ও ব্যবস্থাপনা পরিচালন (কেন্দ্রীয় অঞ্চল)/উত্তরাঞ্চল/দক্ষিণাঞ্চল/পূর্বাঞ্চল/পশ্চিমাঞ্চল/পরিদর্শন নিরীক্ষা/আর্থিক মনিটরিং (উত্তরাঞ্চল/দক্ষিণাঞ্চল), বাপবিবো, ঢাকা।
৪। তত্ত্বাবধায়ক প্রকৌশলী, ঢাকা জোন/রাজশাহী জোন/খুলনা জোন/বরিশাল জোন/চট্টগ্রাম জোন/সিলেট জোন/ময়মনসিংহ জোন, বাপবিবো, বাপবিবো, ঢাকা।
৫। একান্ত সচিব, চেয়ারম্যান, বাপবিবো, ঢাকা।
৬। একান্ত সচিব, সদস্য (সমিতি ব্যবস্থাপনা), বাপবিবো, ঢাকা।



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বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড
BANGLADESH RURAL ELECTRIFICATION BOARD

ISO 9001, ISO 14001 & OHSAS 18001 Certified

পরিদর্শন মনিটরিং ও ব্যয় পত্র (উত্তরাঞ্চল) পরিদপ্তর
বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড, ঢাকা
সদর দপ্তর ভবন (২য় তলা)
নিকুঞ্জ-২, খিলক্ষেত, ঢাকা-১২২৯
ফোন নং-৮৯০০২৯৯
E-mail: dmo.northbreb@gmail.com

স্মারক নং- ২৭.১২.০০০০.০২৬.০৭.৬২১.২২.১২৮৩

তারিখঃ ২২ ফাল্গুন ১৪২৮ বঙ্গাব্দ / ০৭ মার্চ, ২০২২ খ্রিঃ

মেসার্স জে, সরদার কর্পোরেশন
প্রোঃ- মোঃ জাহাঙ্গীর আলম
এনআইডি নম্বর-৮২০৬৬৭৯৩৫২
প্লট-১৯, ব্লক-এফ, ইস্টার্ন হাউজিং মেইন রোড,
পল্লবী, মিরপুর, ঢাকা-১২১৬।

কার্যাদেশ পত্র

প্রিয় মহোদয়গণ,

পল্লী বিদ্যুতায়ন কার্যক্রমে ব্যবহার অনুপযোগী ও কনডেম ঘোষিত বিভিন্ন সাইজের কাঠের পোল/পোলের খন্ডাংশ, কাঠের ক্রসআর্ম, কাঠের এ্যাংকর লগ ৮০টি পল্লী বিদ্যুৎ সমিতি-তে যেখানে যে অবস্থায় আছে ভিত্তিতে নিলামে বিক্রয়ের লক্ষ্যে গত ২৪/০২/২০২২খ্রিঃ তারিখ অনুষ্ঠিত নিলাম দরপত্রে আপনাদের উদ্ধৃত দর (ভ্যাট-ট্যাক্স ব্যতীত ১১০০.০০ টাকা/মেট্রিক টন) সর্বোচ্চ গ্রহণযোগ্য দরপ্রস্তাব হিসেবে বিবেচিত হয়েছে। তদপ্রেক্ষিতে ০৭/০৩/২০২২খ্রিঃ তারিখ বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড এর সঙ্গে আপনাদের সম্পাদিত চুক্তিপত্রের আলোকে (ভিত্তিতে) নিম্নোক্ত শর্তযুক্ত বিক্রয়াদেশ প্রদান করা হলোঃ

১। আপনারা পরিদর্শ ওয়ারী (৮০টি পল্লী বিদ্যুৎ সমিতি) মোট বিক্রয়যোগ্য মালামালের সমুদয় মূল্য (প্রতি টনের মূল্য ১১০০/- টাকা হিসেবে) এবং সরকারী নিয়মানুযায়ী মোট মূল্যের উপর ৭.৫% হারে ভ্যাট ও ১০% হারে আয়কর (ট্যাক্স) সমিতির অন-লাইন নম্বরে পরিশোধ করে মালামালের ডেলিভারী গ্রহণ করবেন;

২। আপনারা ডিসপোজাল কমিটির তত্ত্বাবধানে প্রথমে পরিদর্শ ওয়ারী নিলামের মাধ্যমে বিক্রয়যোগ্য সমুদয় মালামাল স্ব-উদ্যোগে ও খরচে ওজন করে মালামালের প্রকৃত পরিমান (মেট্রিকটন) নিরুপন করবেন। নিলামকৃত মালামালের প্রকৃত পরিমান/ওজন দরপত্র সিডিউলে উল্লেখিত পরিমান/ওজন (৫০০০ মেট্রিক টন) অপেক্ষা কম-বেশী হতে পারে বিধায় প্রকৃত ওজনের (মেট্রিক টন) ভিত্তিতে মালামালের মূল্য (ভ্যাট-ট্যাক্সসহ) পরিশোধ করবেন।

৩। আপনারা নিলামকৃত মালামাল লোডিং-আনলোডিং, মালামাল পরিবহন, এবং মালামালের ওজন করা সংক্রান্ত (লেবার বিল সহ) যাবতীয় খরচাদি বহন করবেন।

৪। আপনারা কার্যাদেশ প্রাপ্তির পর হতে শুরু করে আগামী ৩১-১০-২০২২খ্রি. তারিখ পর্যন্ত সময়সীমার মধ্যে ৮০টি পল্লী বিদ্যুৎ সমিতি হতে বিক্রয়যোগ্য সমুদয় মালামাল গ্রহণ (পরিবহণ) সম্পন্ন করবেন।

৫। দরপত্রের সঙ্গে জামানত হিসেবে আপনাদের জমাকৃত পে-অর্ডার (পে-অর্ডার নং-NPO/A-7919843, Date-22.02/2022, Natinal Bank Ltd. Pragati Sarani Branch, Dhaka) ৮০টি পল্লী বিদ্যুৎ সমিতি হতে সন্তোষজনকভাবে মালামাল গ্রহণ/পরিবহন সম্পন্ন করার কমপক্ষে ২৮দিন পর আপনাদেরকে ফেরত প্রদান করা হবে।

৬। নির্ধারিত সময়সীমার মধ্যে ৮০টি পল্লী বিদ্যুৎ সমিতি হতে সমুদয় মালামাল গ্রহণে ব্যর্থ হলে বা কোন শর্ত অমান্য করলে আপনাদের জমাকৃত নিরাপত্তা জামানতের সম্পূর্ণ বা আংশিক অর্থ বাজেয়াপ্ত করাসহ বিক্রয়াদেশ

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নোয়াখালী পল্লী বিদ্যুৎ সমিতি

বেগমগঞ্জ, নোয়াখালী।

[illegible] E-mail: gm.noa.pbs@gmail.com Web:www.pbs.noakhali.gov.bd

স্মারক নং- ২৭.১২.৭৫০৭.৫০১. ০১.০৫৮.২২. ৪৬৬০ | তারিখ: ০৭/০৫/১৪২৯ বঙ্গাব্দ / ২২/০৯/ ২০২২ খ্রিঃ

মে. সরদার কর্পোরেশন
প্রো: মোঃ জাহাঙ্গীর আলম
এনআইডি নম্বর- [illegible]
প্লট-১৯, ব্লক-এফ, ইস্টার্ন হাউজিং মেইন রোড
পল্লবী, মিরপুর, ঢাকা-১২১৬।

বিষয়: বাপবিবোর্ডের নির্দেশক্রমে অত্র পবিসে ব্যবহার অনুপযোগী ও কনডেম ঘোষিত বিভিন্ন সাইজের কাঠের পোল/পোলের খন্ডাংশ/কাঠের ক্রস আর্ম ও এ্যাংকর লগ এর নিলাম মূল্য জমা প্রদান প্রসঙ্গে।

সূত্র: ০১। স্মারক নং-২৭.১২.০০০০.[illegible], তারিখ: ০৭/০৩/২০২২ খ্রিঃ।
০২। স্মারক নং-২৭.১২.০০০০.[illegible], তারিখ: ১৪/০৩/২০২২ খ্রিঃ।

উপর্যুক্ত বিষয় ও সূত্রের প্রেক্ষিতে আপনার অবগতির জন্য জানানো যাচ্ছে যে, অত্র পবিসের ব্যবহার অনুপযোগী ও কনডেম ঘোষিত বিভিন্ন সাইজের কাঠের পোল/পোলের খন্ডাংশ, কাঠের ক্রসআর্ম, কাঠের এ্যাংকর লগ নিলামে বিক্রয়ের লক্ষ্যে বাপবিবোর্ড কর্তৃক কার্যাদেশ প্রদান করা হয়। কার্যাদেশের প্রেক্ষিতে মালামাল যাচাই-বাছাই করে উল্লিখিত মালামালের পরিমাণ আনুমানিক ২০০ টন নির্ধারণ করা হয়। প্রতি টন ১১০০/= টাকা হিসেবে আনুমানিক ২০০ টন বিভিন্ন সাইজের কাঠের পোল/পোলের খন্ডাংশ, কাঠের ক্রসআর্ম, কাঠের এ্যাংকর লগ এর পরিমাণ নিম্নরূপ:

ক্রঃ নং	মালামালের বিবরণ	সংখ্যা	পরিমান(ওজন)	একক মূল্য	মোট মূল্য
০১	কাঠের পোল/ পোলের খন্ডাংশ	১৮৬৫টি	২০০ টন (আনুমানিক)	১১০০.০০	২,২০,০০০.০০
০২	কাঠের ক্রসআর্ম	৫৯১১টি			
০৩	কাঠের এ্যাংকর লগ	৪৯টি			
				৭.৫% ভ্যাট বাবদ=	১৬,৫০০.০০
				১০% আয়কর বাবদ=	২২,০০০.০০
				সর্বমোট=	২,৫৮,৫০০.০০
	দুই লক্ষ আটান্ন হাজার পাঁচশত টাকা মাত্র				

এমতাবস্থায়, অত্র পবিসের ব্যবহার অনুপযোগী বিভিন্ন সাইজের ১৮৬৫ টি কাঠের পোল/ পোলের খন্ডাংশ, ৫৯১১ টি কাঠের ক্রসআর্ম ও ৪৯টি কাঠের এ্যাংকর লগ এর নিলাম মূল্য বাবদ ২,৫৮,৫০০.০০ টাকা আগামী ২৯/০৯/২০২২ খ্রিঃ তারিখের মধ্যে অত্র পবিসের অনুকূলে [illegible] ব্যাংক ড্রাফট/পে-অর্ডারের মাধ্যমে জমা প্রদান পূর্বক মালামাল গ্রহণের জন্য আপনাকে অনুরোধ করা হলো। তবে উল্লেখিত মালামালের সংখ্যার আলোকে হস্তান্তর কালে পরিমান কম/বেশী হলে অর্থ সমন্বয় করা হবে।

22/09/22

(মোঃ জাকির হোসেন)
জেনারেল ম্যানেজার

অনুলিপি:

০১। তত্ত্বাবধায়ক প্রকৌশলী, চট্টগ্রাম জোন, বাপবিবো, চট্টগ্রাম।
০২। এজিএম (অর্থ-হিসাব), নপবিস।
০৩। স্টোর কিপার, নপবিস।
০৪। অফিস কপি/মাস্টার কপি/ফিল কপি।

22/09/22

(মোঃ জাকির হোসেন)
জেনারেল ম্যানেজার

[illegible]

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J.SARDAR CORPORATIO

Exclusive House & Land Builder

ডাইরী নং: ৫৮৫৫ তারিখ: ৮/১০/২২
ডিজিএম
এজিএম
শীঘ্র দিন
যথামতে দিন
সংশ্লিষ্ট নথিতে সংরক্ষণ করুন
জেনারেল ম্যানেজার

তারিখঃ ০৬/১০/২০২২ ইং

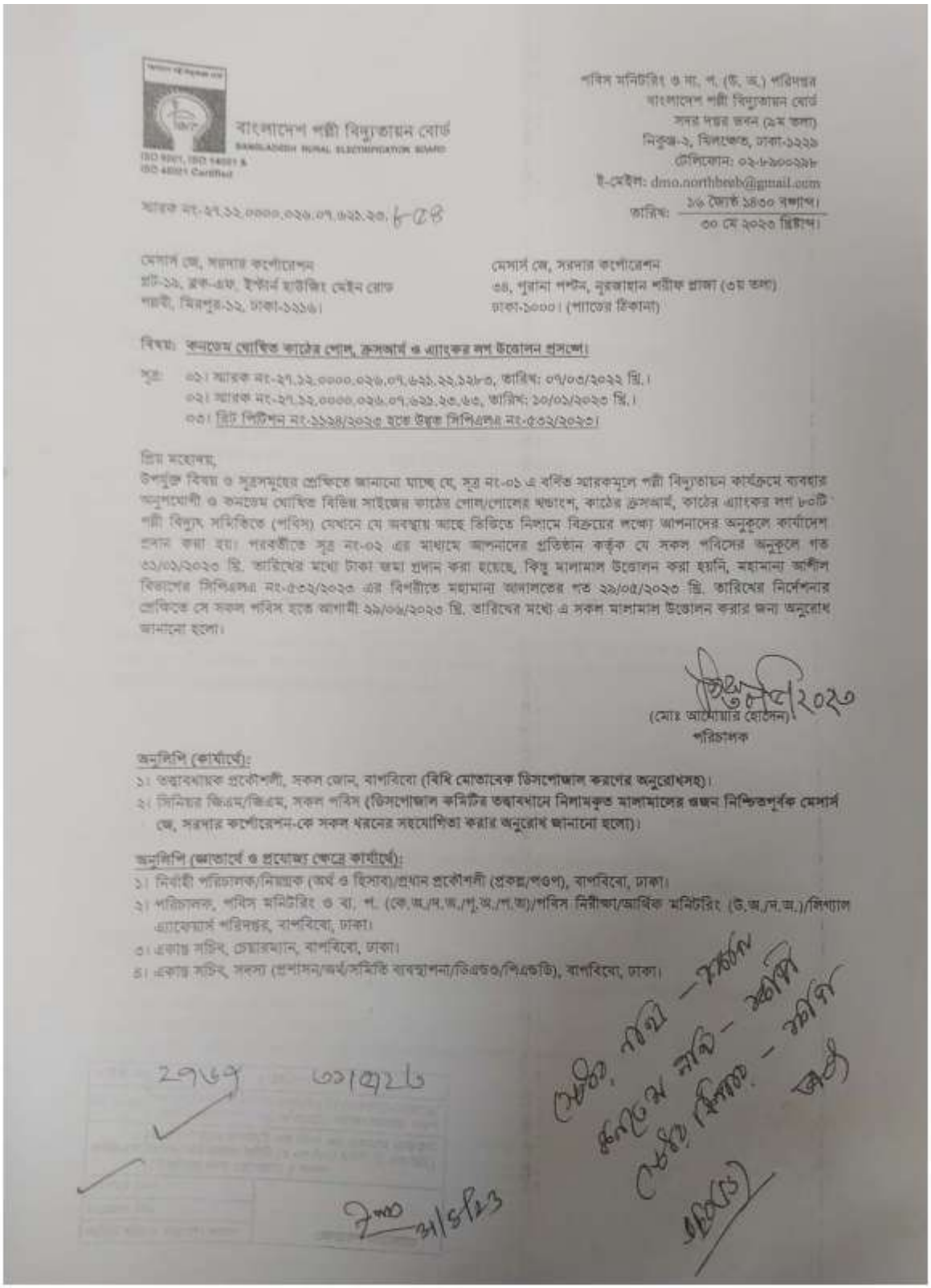
বরাবর
জেনারেল ম্যানেজার
নোয়াখালী পল্লী বিদ্যুৎ সমিতি
বেগমগঞ্জ
নোয়াখালী।

বিষয়ঃ আর পরিদের ব্যবহার অনুযায়ী বিভিন্ন সাইজের কাঠের পোল/কাঠের ক্রস আর্ম ডেলিভারী দেয়া প্রসঙ্গে।

উপরোক্ত বিষয়ে গত ২২/০৯/২০২২ ইং তারিখে আনুমানিক ২০০ (দুই শত) টি কাঠের পোল/কাঠের ক্রস আর্ম নিয়েছি, যার সর্বমোট মূল্য ২,৫৮,৫০০/- (দুই লক্ষ আটান্ন হাজার পাঁচ শত টাকা) অগ্রনী ব্যাংক লিঃ, চৌমুহনী শাখায় জমা দিয়েছি। উক্ত টাকার পরিপ্রেক্ষিতে মালামাল বুঝিয়া দেয়ার জন্য অনুরোধ জানাচ্ছি। উক্ত মালামাল আমার মনোনিত ব্যক্তি বুঝিয়া নিবে, যাহার নাম- রানা কর্মকার, মোবাইল নং- ০১৭২০-৩৩৩২০৫।

বিনীত

মোঃ সেলোয়ার হোসেন
প্রতিনিধি
জে.সরদার কর্পোরেশন



বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড
BANGLADESH RURAL ELECTRIFICATION BOARD
ISO 9001, ISO 14001 & ISO 45001 Certified

পরিদর্শন মনিটরিং ও মা. প. (উ. অ.) পরিদপ্তর
বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড
সদর দপ্তর ভবন (২য় তলা)
নিকুঞ্জ-২, খিলক্ষেত, ঢাকা-১২২৯
টেলিফোন: ০২-৮৯০০২৯৮
ই-মেইল: dmo.northbeeb@gmail.com
তারিখ: ১৬ জ্যৈষ্ঠ ১৪৩০ বঙ্গাব্দ। / ৩০ মে ২০২৩ খ্রিষ্টাব্দ।

স্মারক নং-২৭.১২.০০০০.০২৬.০৭.৬২১.২৩. ৮-৫৪

মেসার্স জে, সরদার কর্পোরেশন
প্লট-১২, ব্লক-এফ, ইস্টার্ন হাউজিং মেইন রোড
পাইবী, মিরপুর-১২, ঢাকা-১২১৬।

মেসার্স জে, সরদার কর্পোরেশন
৩৪, পুরানা পল্টন, নুরজাহান শরীফ প্লাজা (৩য় তলা)
ঢাকা-১০০০। (পাতের ঠিকানা)

বিষয়: কমতেম ঘোষিত কাঠের পোল, ক্রসআর্ম ও এ্যাংকর লগ উত্তোলন প্রসঙ্গে।

সূত্র: ০১। স্মারক নং-২৭.১২.০০০০.০২৬.০৭.৬২১.২২.১২৮৩, তারিখ: ০৭/০৩/২০২২ খ্রি.।
০২। স্মারক নং-২৭.১২.০০০০.০২৬.০৭.৬২১.২৩.৬৩, তারিখ: ১০/০১/২০২৩ খ্রি.।
০৩। রিট পিটিশন নং-১১১৪/২০২৩ হতে উদ্ভূত সিপিএলএ নং-৫৩২/২০২৩।

প্রিয় মহোদয়,
উপর্যুক্ত বিষয় ও সূত্রসমূহের প্রেক্ষিতে জানানো যাচ্ছে যে, সূত্র নং-০১ এ বর্ণিত স্মারকমূলে পল্লী বিদ্যুতায়ন কার্যক্রমে ব্যবহার অনুপযোগী ও কমতেম ঘোষিত বিভিন্ন সাইজের কাঠের পোল/পোলের খন্ডাংশ, কাঠের ক্রসআর্ম, কাঠের এ্যাংকর লগ ৮০টি পল্লী বিদ্যুৎ সমিতিতে (পবিস) যেখানে যে অবস্থায় আছে কিভিতে নিলামে বিক্রয়ের লক্ষ্যে আপনাদের অনুকূলে কার্যাদেশ প্রদান করা হয়। পরবর্তীতে সূত্র নং-০২ এর মাধ্যমে আপনাদের প্রতিষ্ঠান কর্তৃক যে সকল পবিসের অনুকূলে গত ৩১/০১/২০২৩ খ্রি. তারিখের মধ্যে টাকা জমা প্রদান করা হয়েছে, কিন্তু মালামাল উত্তোলন করা হয়নি, মহামান্য আপীল বিভাগের সিপিএলএ নং-৫৩২/২০২৩ এর বিপরীতে মহামান্য আদালতের গত ২৯/০৫/২০২৩ খ্রি. তারিখের নির্দেশনার প্রেক্ষিতে সে সকল পবিস হতে আগামী ২৯/০৬/২০২৩ খ্রি. তারিখের মধ্যে এ সকল মালামাল উত্তোলন করার জন্য অনুরোধ জানানো হলো।

১৬/৫/২০২৩
(মোঃ আনোয়ার হোসেন)
পরিচালক

অনুলিপি (কার্যার্থে):
১। তত্ত্বাবধায়ক প্রকৌশলী, সকল জোন, বাপবিবো (বিধি মোতাবেক ডিসপোজাল করণের অনুরোধসহ)।
২। সিনিয়র জিএম/জিএম, সকল পবিস (ডিসপোজাল কমিটির তত্ত্বাবধানে নিলামকৃত মালামালের ওজন নিশ্চিতপূর্বক মেসার্স জে, সরদার কর্পোরেশন-কে সকল ধরনের সহযোগিতা করার অনুরোধ জানানো হলো)।

অনুলিপি (জ্ঞাতার্থে ও প্রয়োজ্য ক্ষেত্রে কার্যার্থে):
১। নির্বাহী পরিচালক/নিয়ামক (অর্থ ও হিসাব)/প্রধান প্রকৌশলী (প্রকল্প/পওপ), বাপবিবো, ঢাকা।
২। পরিচালক, পবিস মনিটরিং ও মা. প. (কে.অ./দ.অ./পূ.অ./প.অ.)/পবিস নিরীক্ষা/আর্থিক মনিটরিং (উ.অ./দ.অ.)/লিগ্যাল এ্যাফেয়ার্স পরিদপ্তর, বাপবিবো, ঢাকা।
৩। একান্ত সচিব, চেয়ারম্যান, বাপবিবো, ঢাকা।
৪। একান্ত সচিব, সদস্য (প্রশাসন/অর্থ/সমিতি ব্যবস্থাপনা/টিএন্ডও/পিএন্ডডি), বাপবিবো, ঢাকা।

"শেখ হাসিনার উদ্যোগ-ঘরে ঘরে বিদ্যুৎ"

নোয়াখালী পল্লী বিদ্যুৎ সমিতি

বেগমগঞ্জ, নোয়াখালী।

টেলিফোন [illegible], ফ্যাক্স [illegible], ই-মেইল gm.noa pbs@gmail.com ওয়েব সাইট www. pbs.noakhali.gov.bd

বিষয়: কনডেম ঘোষিত কাঠের পোল, ক্রসআর্ম ও এ্যাংকর লগ হস্তান্তর ও গ্রহণ প্রসঙ্গে।

সূত্র: (০১) স্মারক নং- ২৭.১২.০০০০.০২৬.০৭.৬২১.২২.১২৮৩ তারিখ- ০৭.০৩.২০২২ ইং।
(০২) স্মারক নং- ২৭.১২.০০০০.০২৬.০৭.৬২১.২৩.৮৫৪ তারিখ: ৩০.০৫.২০২৩ ইং।

সূত্রস্থ স্মারক মোতাবেক ব্যবহার অযোগ্য কনডেম ঘোষিত কাঠের পোল, ক্রসআর্ম ও এ্যাংকর লগ গ্রহণের জন্য মেসার্স জে.সরদার কর্পোরেশন, প্লট-১৯, ব্লক-এফ, ইস্টার্ন হাউজিং মেইন রোড, পল্লবী, মিরপুর-১২, ঢাকা-১২১৬ - কে কার্যাদেশ প্রদান করা হয়। উক্ত প্রতিষ্ঠান কনডেম ঘোষিত কাঠের পোল, ক্রসআর্ম ও এ্যাংকর লগ এর মূল্য বাবদ ২,৫৮,০০০.০০ (দুই লক্ষ আটান্ন হাজার টাকা মাত্র) [illegible] সহ সরকারী নিয়ম অনুযায়ী ভ্যাট ও ইনকাম ট্যাক্স জমা প্রদান করেছেন মর্মে সমিতির অর্থ বিভাগ নিশ্চিত করেছেন। জে.সরদার কর্পোরেশন, প্লট-১৯, ব্লক-এফ, ইস্টার্ন হাউজিং মেইন রোড, পল্লবী, মিরপুর-১২, ঢাকা-১২১৬ এর ক্ষমতা প্রাপ্ত প্রতিনিধি জনাব মোঃ [illegible] হোসেন, পিতা- মৃত আব্দুর রহমান মালামাল গ্রহণের জন্য আবেদনপত্র অত্র দপ্তরে দাখিল করেছেন। উক্ত প্রতিষ্ঠানকে ইস্যু ভাউচার মাধ্যমে নিম্নোক্তভাবে মালামাল প্রদান করা হলো।

ক্র নং	আইটেম নং	অনুমোদিত/বিক্রয়যোগ্য পরিমাণ	গ্রহণকারী প্রতিষ্ঠানের নাম	গ্রহণকারী প্রতিষ্ঠানের প্রতিনিধির স্বাক্ষর ও জাতীয় পরিচয়পত্র নম্বর
১	কাঠের পোল, ক্রসআর্ম ও এ্যাংকর লগ	২০০ টন	মেসার্স জে.সরদার কর্পোরেশন, প্লট-১৯, ব্লক-এফ, ইস্টার্ন হাউজিং মেইন রোড, পল্লবী, মিরপুর-১২, ঢাকা-১২১৬	NID: 7518076933119

উল্লেখিত মালামাল সমূহ এসআইএম স্টোরের ইস্যু টিকিট নং- ২২২৭৫৯, ২২২৭৬৫, ২২২৭৭৫, ২২২৮০৮, ২২৩৬৬৭ এর মাধ্যমে ডিসপোজাল কমিটির সকল সদস্যের উপস্থিতিতে বর্ণিত প্রতিষ্ঠানের ক্ষমতা প্রাপ্ত প্রতিনিধির নিকট মালামাল হস্তান্তর করা হলো।

26/06/23
(মোঃ মামুন অর রশিদ)
[illegible]
নোয়াখালী পবিস
ও
সদস্য, ডিসপোজাল কমিটি।

26.06.23
(মাহবুবুর রহমান)
এজিএম (ওএন্ডএম)
নোয়াখালী পবিস
ও
সদস্য, ডিসপোজাল কমিটি।

26/06/23
(মোঃ জাকির হোসেন)
জেনারেল ম্যানেজার
নোয়াখালী পবিস
ও
সদস্য সচিব, ডিসপোজাল কমিটি।

২৬/৬/26
(প্রকৌঃ মোহাম্মদ মোস্তফা কামাল)
তত্ত্বাবধায়ক প্রকৌশলী
চট্টগ্রাম জোন, বাপবিবো, চট্টগ্রাম
ও
আহ্বায়ক, ডিসপোজাল কমিটি।

CamScanner

Appendix 18: Sample Waste Management Plan

1.GENERAL

Considerable quantities of waste (general & construction) will be generated due to the construction of water supply schemes. Three types of wastes will be generated during construction:

- General Waste: Organic waste (foods, fruits, tree leaves etc.) and Inorganic (such as papers, plastic and glass bottles & containers, polythene etc.);
- Construction wastes: construction materials such as sand, piece of rocks, bricks, rods, geotextiles etc.
- Hazardous waste: chemicals, Oil, grease etc. from construction machinery etc.

2. OBJECTIVES

The main objective of the WMP is to organize disposal of all wastes generated during construction in an environmentally acceptable manner specially consider the following:

- Health hazards of the project personnel as well as community people should not be occurred;
- Manage the wastes in such a way that environment (specially air, soil, water etc,) will not be polluted;
- Odor means bad smell should not be generated;
- Always friendly environment at the construction sites and construction camps.

3. SITE FOR DISPOSAL OF WASTES

Contractor will select the site for disposal of general wastes at the area within the construction camp at some site which is as much as possible far away from the project workers' and community residents & cultural site.

4. METHOD OF DISPOSAL OF WASTES

4.1 General Waste

Contractor will collect the general wastes in separate waste bin at sources (means organic waste in one bin & inorganic waste in another bin) and dumped at the designated waste disposal site. The Contractor will construct concrete waste disposal site (means concrete floor and wall and covered by shed to avoid, air, bad smell, soil and ground water pollutions. Based on the quantity of general waste (organic & inorganic waste), the following three chambers (rooms) of the concrete disposal site will be constructed by Contractor-

- Two chambers for organic waste;
- One Chamber for inorganic waste.

Just after filling one chamber (say after 6 months) by organic waste through pocket gate, it should be covered by earth (soils) properly & keeps it for about 6 months for converting organic fertilizer for the agricultural lands. After filling 1st chamber by organic waste, disposing of waste will be started for 2nd chamber.

In the same way, inorganic waste will be dumped in the chamber, designated for inorganic waste. Just after filling, these inorganic wastes can be given to the vender free of cost. Contractor collects construction waste separately & dump into the room at the designated area. Contractor will maintain logbook for the measurement of quantity of the waste, disposed every day.

4.2 Construction Waste

- Organize disposal of all wastes generated during construction in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.

- Train and instruct all personnel in waste disposal practices and procedures as a component of the environmental induction process.
- Make sure all containers, drums, and tanks that are used for storage are in good condition and are labeled with expiry date. Any container, drum, or tank that is dented, cracked, or rusted might eventually leak. Check for leakage regularly to identify potential problems before they occur.
- Minimize the production of waste materials by 3R (Reduce, Recycle and Reuse) approach.
- Segregate and reuse or recycle all the wastes, wherever practical.
- Prohibit burning of solid waste.
- Provide reuse containers at each worksite.
- Request suppliers to minimize packaging where practicable.
- Maintain all construction sites in a cleaner, tidy and safe condition and provide and maintain appropriate facilities as temporary storage of all wastes before transportation and final disposal.

4.3 Hazardous Waste

- Transport waste of dangerous goods, which cannot be recycled, to a designated disposal site.
- Provide absorbent and containment material (e.g., absorbent matting) where hazardous materials are used and stored and personnel trained in the correct use.
- Provide protective clothing, safety boots, helmets, masks, gloves, goggles, to the construction personnel, appropriate to materials in use.
- Provide protective clothing, safety boots, helmets, masks, gloves, goggles, to the construction personnel, appropriate to materials in use.
- Avoid the use of material with greater potential for contamination by substituting them with more environmentally friendly materials.
- Organize disposal of all wastes generated during construction in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less environmental impact.
- Train and instruct all personnel in waste disposal practices and procedures as a component of the environmental induction process.

5. INSTITUTIONAL ARRANGEMENT

The Contractor will mainly responsible for environmental monitoring for the waste management. The PIU-BREB will setup a ‘Waste Management Committee’ with the representatives of the Contractor to effectively disposing the wastes. The committee is also responsible for monitoring procedure for the collection and carrying of wastes without causing any environmental hazards.

Hazardous waste. Storage, handling, transport, and final disposal should follow relevant regulations and international good industry practices (GIIP). Key that contractor hires a hazardous waste subcontractor. This Waste management Plan will be used by contractor and enhanced mitigation measures should be applied in prior to mobilization on the site.

Appendix 19: Rapid Screening Assessment of Climate and Disaster Risk

Climate & Disaster Risk Screening Tools

Climate and Disaster Risk Screening Report for Modernization & Capacity Enhancement of BREB Network (Chattogram & Sylhet) division in bangladesh

Table 1: Project Information

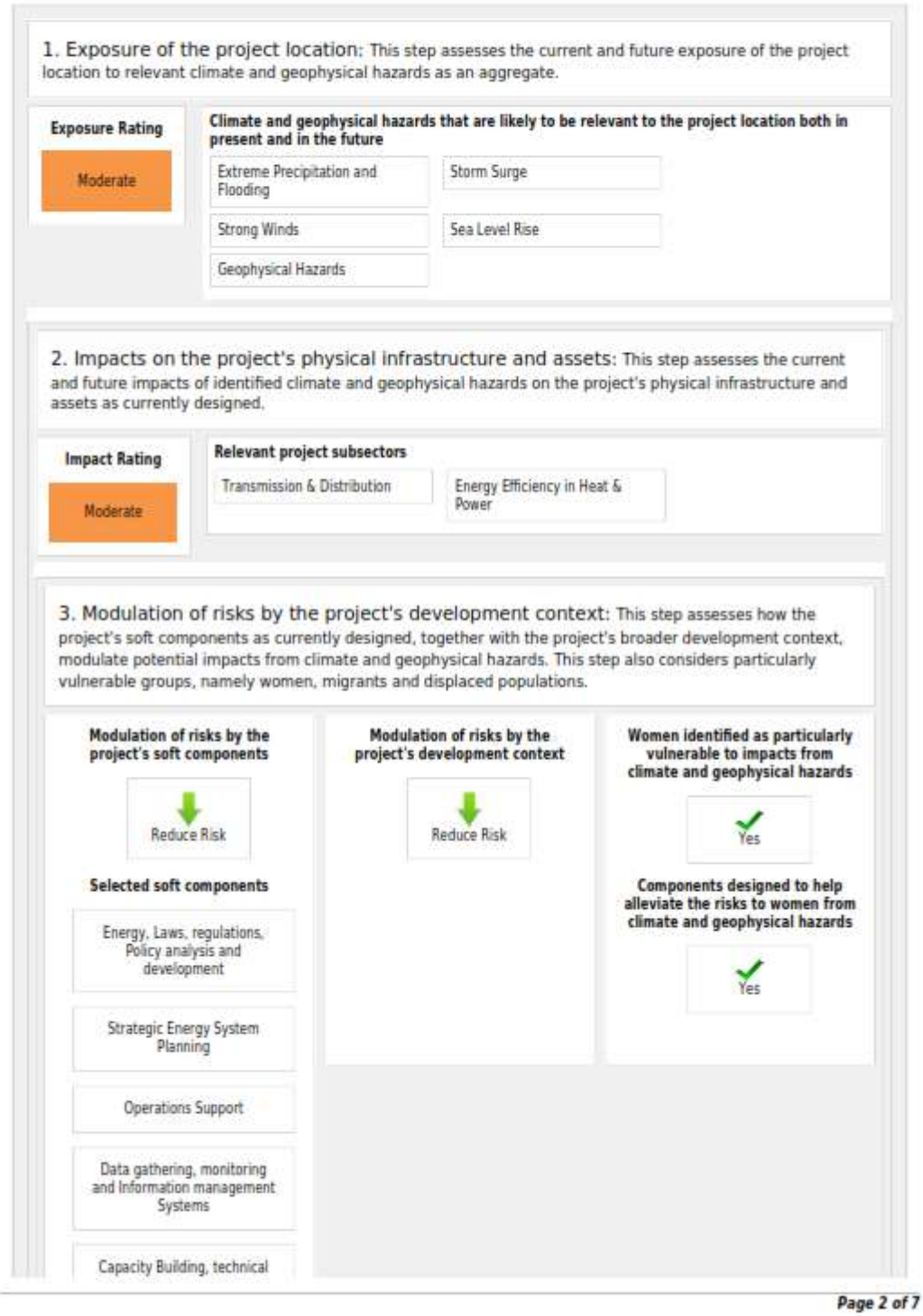
Project Title:	Modernization & Capacity Enhancement of BREB Network (Chattogram & Sylhet) division
Project Number:	02
Assessment completed by:	IIFC
Estimated timeline for PCN Year:	2024
Screening Tool Used:	Rapid Screening Assessment

The Climate and Disaster Risk Screening Tool provides high-level screening to help consider short- and long-term climate and disaster risks at an early stage of project design. The tool applies an Exposure-Impact-Adaptive capacity framework to characterize risks (Annex 1). Potential risks are identified by connecting information on climate and geophysical hazards with users' subject matter expertise of project components (both physical and non-physical) and understanding of the broader sector and development context.

The tool does not provide a detailed risk analysis. Rather, it is intended to help inform the need for further consultations, dialogue with local and other experts and analytical work at the project location to strengthen resilience measures in the course of project design.

[1] This is the output report from applying the World Bank Group's Climate and Disaster Risk Screening Project Level Tool (Global website:climatescreeningtools.worldbank.org; World Bank users: wbclimatescreeningtools.worldbank.org). The findings, interpretations, and conclusions expressed from applying this tool are those of the individual that applied the tool and should be in no way attributed to the World Bank, to its affiliated institutions, to the Executive Directors of The World Bank or the governments they represent. The World Bank does not guarantee the accuracy of the information included in the screening and this associated output report and accepts no liability for any consequence of its use.

Summary Climate and Disaster Risk Screening Report



1. Exposure of the project location: This step assesses the current and future exposure of the project location to relevant climate and geophysical hazards as an aggregate.

Exposure Rating

Moderate

Climate and geophysical hazards that are likely to be relevant to the project location both in present and in the future

- Extreme Precipitation and Flooding
- Storm Surge
- Strong Winds
- Sea Level Rise
- Geophysical Hazards

2. Impacts on the project's physical infrastructure and assets: This step assesses the current and future impacts of identified climate and geophysical hazards on the project's physical infrastructure and assets as currently designed.

Impact Rating

Moderate

Relevant project subsectors

- Transmission & Distribution
- Energy Efficiency in Heat & Power

3. Modulation of risks by the project's development context: This step assesses how the project's soft components as currently designed, together with the project's broader development context, modulate potential impacts from climate and geophysical hazards. This step also considers particularly vulnerable groups, namely women, migrants and displaced populations.

Modulation of risks by the project's soft components

Reduce Risk

Selected soft components

- Energy, Laws, regulations, Policy analysis and development
- Strategic Energy System Planning
- Operations Support
- Data gathering, monitoring and Information management Systems
- Capacity Building, technical

Modulation of risks by the project's development context

Reduce Risk

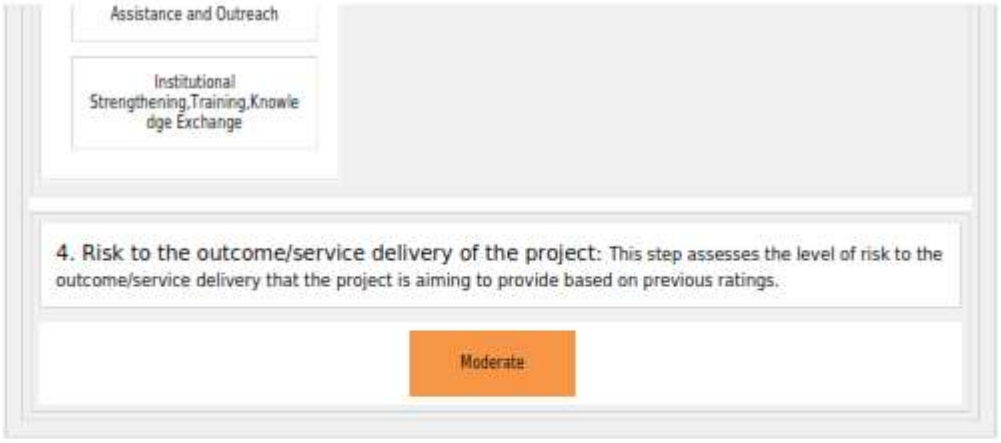
Women identified as particularly vulnerable to impacts from climate and geophysical hazards

Yes

Components designed to help alleviate the risks to women from climate and geophysical hazards

Yes

Page 2 of 7


Assistance and Outreach
Institutional Strengthening,Training,Knowledge Exchange
4. Risk to the outcome/service delivery of the project: This step assesses the level of risk to the outcome/service delivery that the project is aiming to provide based on previous ratings.
Moderate

Notes from the Screening Process

1. Exposure of the project location

Exposure Rating: Moderate

This step provides information on exposure to climate and geophysical hazards at the project location. **The Exposure rating is Moderate.The project location has experienced climate and geophysical hazards in the past and is expected to experience these in the future with moderate intensity, frequency, or duration..** The rating is based on climate information drawing on global, quality controlled data sets from the Climate Change Knowledge Portal. It is useful, for example to understand the temperature range and the rate of annual or decadal increase in a region; or precipitation patterns for historical and future time frames and seasonality shifts. Understanding the trends of hazards is important as they act individually and collectively on project components/subsectors.

TThe following guiding questions were used to assess exposure:

- What have been the historical trends in temperature, precipitation and drought conditions?
- How are these trends projected to change in the future in terms of intensity, frequency and duration?
- Has the location experienced strong winds and/or geophysical hazards in the past that may occur again in the future?
- Will the location be exposed to sea level rise and storm surge in the future?

User Notes: *No notes added*

2. Impacts on the project's physical infrastructure and assets

Impact Rating: Moderate

This step provides an indication of the potential impacts of climate and geophysical hazards on the project's physical infrastructure and assets as currently designed under relevant subsectors. **The Impact rating is Moderate.Climate and geophysical hazards are likely to impact the structural integrity, materials, siting, longevity and overall effectiveness of your investments..** The impact rating is based on the exposure rating and the understanding of the project's sensitivity by the user. Please note that for this step the tool is helping judge the effect these impacts may have on the investment, and the ability of the project to sustain and enhance physical infrastructures and assets under a changing climate. Understanding where risks may exist and identifying where further work may be required to reduce or manage these risks can help inform the process of dialogue, consultation and analysis during project design.

The following guiding questions were used to assess impact:

- Have recent trends and projected changes in climate and geophysical hazards affected your project's infrastructure and activities as currently designed?
- Are project designs appropriate given recent trends in climate hazards?
- Do the investments in infrastructure design standards "lock in" certain decisions for decades to come
- Have future maintenance costs been adequately factored into the project design??

User Notes: *No notes added*

3. Modulation of risks by the project's soft components and development context

This step provides information on how the potential impact on key components/subsectors due to exposure from hazards is modulated by the project's soft components and broader development context. In doing this, this step also takes into account particularly vulnerable groups including women, migrants and displaced populations.

Modulation of risks by the project's soft components	Modulation of risks by the project's development context
	

Reduce Risk

This rating reflects how the project's soft components (enabling and capacity building activities) can modulate risks. The right kind of capacity building measures could increase preparedness and long-term resilience and reduce risk.

User Notes: *No notes added*

Reduce Risk

This rating reflects how the larger development context, including sector context and other social, economic and political factors can modulate risks.

User Notes: *No notes added*

4. Risk to the outcome/service delivery of the project

Outcome/Service Delivery Rating Moderate

This step provides an indication of the level of risk to the outcome/service delivery that the project is aiming to provide. **The risk to the outcome/service delivery of your project is Moderate.** This rating is derived from hazard information, subject matter expertise, contextual understanding of the project, and modulated on the basis of the project's soft components and broader development context. Keep in mind that in considering resilience measures for risk management, each element of risk should be taken into account, not just the collective risk rating at the outcome/service delivery level.

User Notes: *No notes added*

Guidance on Managing Climate Risks through Enhanced Project Design

By understanding which of your project components are most at risk from climate change and other natural hazards through initial screening, you can begin to take measures to avoid impacts by:

- Enhancing the consideration of climate and disaster risks early in project design.
- Using your risk screening analysis to inform follow-up feasibility studies and technical assessments.
- Encouraging local stakeholder consultations and dialogue to enhance resilience measures and overall success of the project.

Table 1 provides some general guidance based on the risk ratings for Outcome/Service Delivery, and Table 2 lists some climate risk management measures for your consideration. Visit the "Screening Resources" section of the landing page for additional guidance and a list of useful resources

Note: Please recall that that this is a high-level screening tool, and that the characterization of risks should be complemented with more detailed work.

Table 1: General Guidance Based on Risk Ratings for Exposure, Impact and Outcome/Service Delivery

Insufficient Understanding	Gather more information to improve your understanding of climate and geophysical hazards and their relationship to your project.
No/Low Risk	If you are confident that climate and geophysical hazards pose no or low risk to the project, continue with project development. However, keep in mind that this is a high-level risk screening at an early stage of project development. Therefore, you are encouraged to monitor the level of climate and geophysical risks to the project as it is developed and implemented.
Moderate Risk	For areas of Moderate Risk, you are encouraged to build on this screening through additional studies, consultation, and dialogue. This initial screening may be supplemented with a more detailed risk assessment to better understand the nature of the risk to the project.
High Risk	For areas of High Risk, you are strongly encouraged to conduct a more detailed risk assessment and to explore measures to manage or reduce those risks.

Table 2: Types of Climate Risk Management Measures for Typical energy Projects

OBJECTIVE	EXAMPLES
Accommodate/Manage	• Develop redundant structures or services that can be relied upon if structures fail • Plan back-up power systems for treatment and pumping facilities • Increase inspection frequency to ensure structures are enduring climate change pressures • For transmission and distribution where higher winds are expected, adopting higher design standards for distribution poles; in the case of increased temperatures, putting in place of more effective cooling systems for substations and transformers • Setting up rapid emergency repair teams to repair damaged facilities quickly

Protect/Harden	• Upgrade existing cooling systems for thermal power • Designing facilities to be waterproofed where increased flooding is expected • Add reinforcements to walls and roofs • Build dikes to contain flooding • Incorporate structural improvements to transmission • For existing hydro infrastructure, operational changes to optimize reservoir management and improve energy output by adapting to changes in rainfall or river flow patterns • For hydropower, restored and better-managed upstream land, including afforestation to reduce floods, erosions and mudslides for a better protection of existing infrastructure • Increase drainage of energy facilities • Employ more robust specifications allowing structures to withstand more extreme conditions (such as higher wind or water velocity) • Design turbines and structures better able to handle increased wind speed and gusts
Retreat/Relocate	• Integrate sea level rise projections and storm surge in coastal siting • Relocate or refit extremely vulnerable existing infrastructure • For hydropower, where water flows changes are expected, consider diverting upstream tributaries, building new storage reservoirs and installing turbines better suited to expected conditions • For transmission & distribution, specifying redundancy in control systems, multiple T&D routes, relocation and underground distribution for protection against adverse conditions may be considered.
Build information collection and management systems	• Strengthen climate information systems, building on existing regional and national networks • For hydropower, strengthen hydrologic forecasting and coordinate power planning and operations with other water-use projects • For electricity end-use, putting in place mandatory minimum energy performance standards for buildings, manufacturing facilities and energy-intensive appliances • Build capacity of national governments to harmonize data across regions • Putting in place more robust operational and maintenance procedures
Strengthen policies, planning and systems	• Integrate climate change and disaster management planning • Improve coordination of policies and programs across government agencies to address the additional pressures imposed by climate change • Foster integrated resource management with agriculture and water • Put in place policies and enforceable regulations to improve energy security, decentralized local planning and generation • Improve forecasting of demand changes and supply-demand with climate change • Improved land-use planning so future power infrastructure is in less vulnerable areas

Sources: USAID Climate Risk Screening and Management Tools: Infrastructure, Construction and Energy Annex; ADB Guidelines for Climate Proofing Investments in Energy

Appendix 20: Received Environmental Clearance Certificate from DoE

শেখ মুজিবুর রহমান
বঙ্গবন্ধু সফিক্ষ বাংলাদেশ

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

Memo No: 22.02.0000.018.72.057.21- 187 Date: December 30, 2021

Subject: **Environmental Clearance for Moderaization and Capacity Enhancement Project of BREB Network (Chattogram-Sylhet Division)**

Ref: Your Application received on 18/11/2021

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

1. This Environmental Clearance Certificate is valid for the following activities in 12 districts namely Brahmanbaria, Chandpur, Chattogram, Cumilla, Cox'sbazar, Feni, Laxmipur and Noakhali under Chattogram Divisiona and Sylhet, Hobiganj, Sunamganj and Moulvibazar under Sylhet Division:
   a) Construction of 1901 km of 33 KV new distribution lines
   b) Upgradation of 913 km of 33 KV existing distribution lines
   c) Construction of 155 km of 33 KV new underground lines
   d) Construction of 11 km of 33 KV submarine cable lines
   e) Construction of 4145 km of 11 KV distribution lines
   f) Upgradation of 15,923 km of 11KV existing distribution lines
   g) Construction of 724 km of 11 KV underground lines
   h) Construction of 5 km of 11 KV submarine cable lines
   i) Construction of 5597 km of 11 KV insulated lines
   j) Conversion of 5795 km LT to HT lines
   k) Conversion of 5663 km HT 1-ph to HT 3-ph lines
   l) Construction of 34 sets of river crossing tower
   m) Construction of 45 nos. of 20 MVA and 96 nos. of 10MVA 33/11KV new Substation (total 1860 MVA)
   n) Upgradation (Augmentation) 51 nos. of 33/11 KV (total 525 MVA extension) existing substations.
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 Management Plan (EMP) included in the EIA 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 as well as Chattogram and Sylhet Divisional offices of DoE 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 Chattogram and Sylhet Divisional offices of DoE 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 Head office of DoE with copies to Chattogram and Sylhet Divisional offices 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.

30.12.21

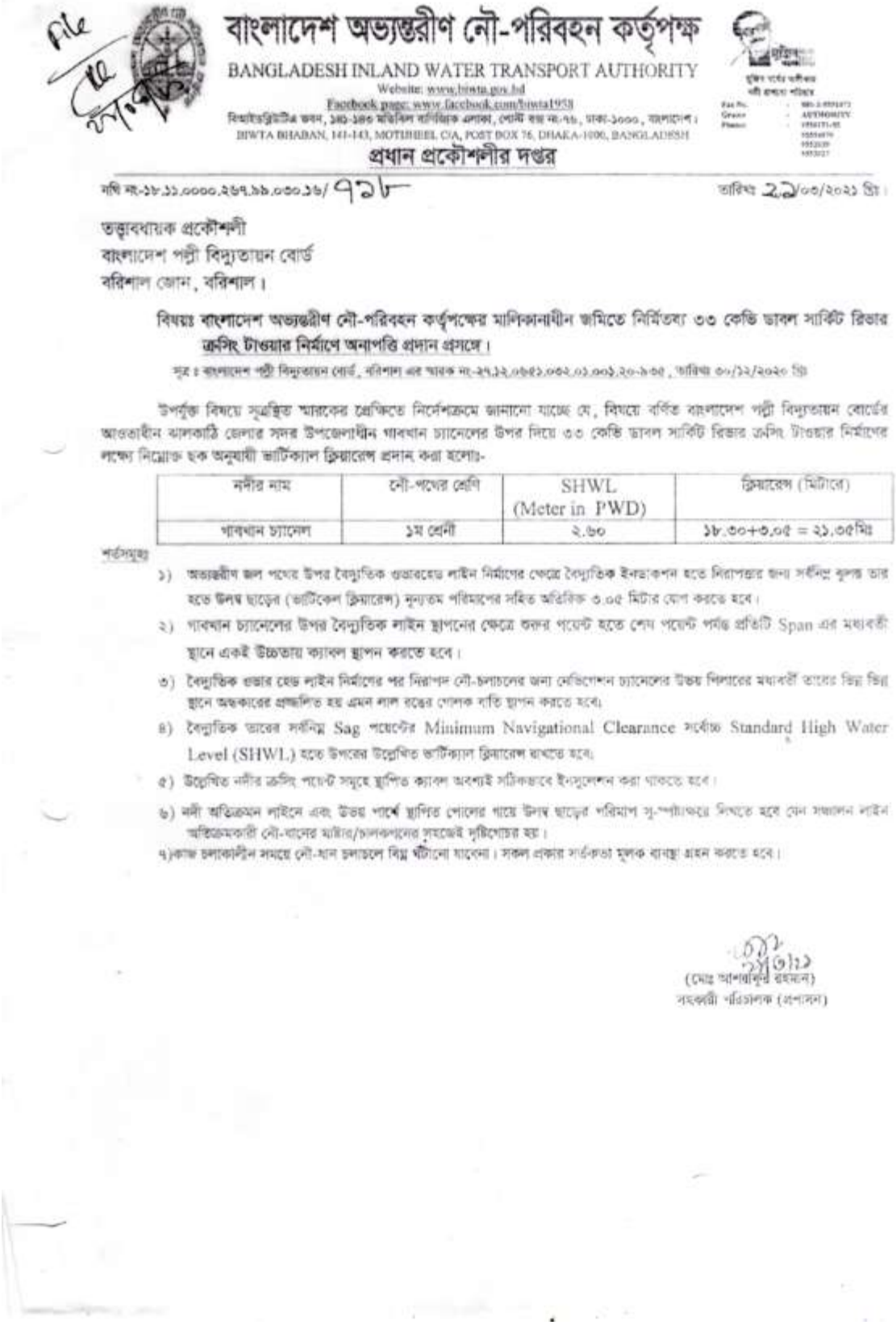
(Masud Iqbal Md. Shameem)
Director (Environmental Clearance)
Phone # 8181673

Project Director
Modernization and Capacity Enhancement Project of BREB Network (Chattogram-Sylhet Division)
Training Academy Building (5th floor)
BREB, Nikunja-2, Khilkhet, Dhaka.

Copy Forwarded to:

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

Appendix 21: Sample Navigation Clearance Certificate obtain from BIWTA.



বাংলাদেশ অভ্যন্তরীণ নৌ-পরিবহন কর্তৃপক্ষ

BANGLADESH INLAND WATER TRANSPORT AUTHORITY

Website: www.biwta.gov.bd

Facebook page: www.facebook.com/biwta1958

বিআইডব্লিউটিএ ভবন, ১৪১-১৪৩ মতিঝিল বাণিজ্যিক এলাকা, পোস্ট বক্স নং-৭৬, ঢাকা-১০০০, বাংলাদেশ।

BIWTA BHABAN, 141-143, MOTIJHEEL C/A, POST BOX 76, DHAKA-1000, BANGLADESH

প্রধান প্রকৌশলীর দপ্তর

নথি নং-১৮.১১.০০০০.২৬৭.৯৯.০৩০.১৬/ ৭২৮

তারিখ ২২/০৩/২০২১ খ্রি।

তত্ত্বাবধায়ক প্রকৌশলী
বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড
বরিশাল জোন, বরিশাল।

বিষয়ঃ বাংলাদেশ অভ্যন্তরীণ নৌ-পরিবহন কর্তৃপক্ষের মালিকানাধীন জমিতে নির্মিতব্য ৩৩ কেভি ডাবল সার্কিট রিজার ক্রসিং টাওয়ার নির্মাণে অনাপত্তি প্রদান প্রসঙ্গে।

সূত্র ঃ বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড, বরিশাল এর স্মারক নং-২৭.১২.০৬৫১.০৩২.০১.০০১.২০-৯৩৫, তারিখ ৩০/১২/২০২০ খ্রি।

উপর্যুক্ত বিষয়ে সূত্রস্থিত স্মারকের প্রেক্ষিতে নির্দেশক্রমে জানানো যাচ্ছে যে, বিষয়ে বর্ণিত বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ডের আওতাধীন ঝালকাঠি জেলার সদর উপজেলাধীন গাবখান চ্যানেলের উপর দিয়ে ৩৩ কেভি ডাবল সার্কিট রিজার ক্রসিং টাওয়ার নির্মাণের লক্ষ্যে নিম্নোক্ত ছক অনুযায়ী ভার্টিক্যাল ক্লিয়ারেন্স প্রদান করা হলো-

নদীর নাম	নৌ-পথের শ্রেণি	SHWL (Meter in PWD)	ক্লিয়ারেন্স (মিটারে)
গাবখান চ্যানেল	১ম শ্রেণী	২.৬০	১৮.৩০+৩.০৫ = ২১.৩৫মিঃ

শর্তসমূহ:

১) অভ্যন্তরীণ জল পথের উপর বৈদ্যুতিক ওভারহেড লাইন নির্মাণের ক্ষেত্রে বৈদ্যুতিক ইনডাকশন হতে নিরাপত্তার জন্য সর্বনিম্ন কুলক তার হতে উলম্ব ছাড়ের (ভার্টিকেল ক্লিয়ারেন্স) ন্যূনতম পরিমাপের সহিত অতিরিক্ত ৩.০৫ মিটার যোগ করতে হবে।

২) গাবখান চ্যানেলের উপর বৈদ্যুতিক লাইন স্থাপনের ক্ষেত্রে তরল পয়েন্ট হতে শেষ পয়েন্ট পর্যন্ত প্রতিটি Span এর মধ্যবর্তী স্থানে একই উচ্চতায় ক্যাবল স্থাপন করতে হবে।

৩) বৈদ্যুতিক ওভার হেড লাইন নির্মাণের পর নিরাপদ নৌ-চলাচলের জন্য নেভিগেশন চ্যানেলের উভয় পিলারের মধ্যবর্তী তারের ভিন্ন ভিন্ন স্থানে অন্ধকারের প্রচ্ছলিত হয় এমন লাল রঙের গোলক সাতি স্থাপন করতে হবে।

৪) বৈদ্যুতিক তারের সর্বনিম্ন Sag পয়েন্টের Minimum Navigational Clearance সর্বোচ্চ Standard High Water Level (SHWL) হতে উপরের উল্লেখিত ভার্টিক্যাল ক্লিয়ারেন্স থাকতে হবে।

৫) উল্লেখিত নদীর ক্রসিং পয়েন্ট সমূহে স্থাপিত ক্যাবল অবশ্যই সঠিকভাবে ইনসুলেশন করা থাকতে হবে।

৬) নদী অতিক্রমন লাইনে এবং উভয় পার্শ্বে স্থাপিত পোলের গায়ে উলম্ব ছাড়ের পরিমাপ সু-স্পষ্টাক্ষরে লিখতে হবে যেন সঞ্চালন লাইন অতিক্রমকারী নৌ-যানের মাঝির/চালকদলের সহজেই দৃষ্টিগোচর হয়।

৭)কাজ চলাকালীন সময়ে নৌ-যান চলাচলে বিঘ্ন ঘটানো যাবেনা। সকল প্রকার সর্তকতা মূলক ব্যাবস্থা গ্রহন করতে হবে।

২২/৩/২১

(মোঃ আশরাফুল রহমান)
সহকারী পরিচালক (প্রশাসন)

প্রধান প্রকৌশলী (প্রকল্প) এর দপ্তর
ডায়েরী নং...
তারিখ ২৮/৩/২০১৯

প্রকল্প পরিচালক,১০০% আওতাধীন...
DD-1/2,AE-1/2

বাংলাদেশ অভ্যন্তরীণ নৌ-পরিবহন কর্তৃপক্ষ
BANGLADESH INLAND WATER TRANSPORT AUTHORITY
প্রধান প্রকৌশলীর দপ্তর

BIWTA BHABAN
141-143, MOTIJHEEL C/A,
POST BOX N, DHAKA-1000
BANGLADESH

স্মারক নং-১৮.১১.০০০০.২৬৭.৯৯.০১৫.১৯/ তারিখ: ...০৩/২০১৯ খ্রি

চেয়ারম্যান
বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড
নিকুঞ্জ-২, খিলক্ষেত, ঢাকা-১২২৯।

বিষয়ঃ-বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড কর্তৃক বাস্তবায়নাধীন শতভাগ পল্লী বিদ্যুতায়নের জন্য বিতরণ নেটওয়ার্ক সম্প্রসারণ (রাজশাহী, রংপুর, খুলনা ও বরিশাল বিভাগ) এর আওতায় ৩৩ কেভি রিভার ক্রসিং টাওয়ার লাইন নির্মাণের লক্ষে Mininum Navigation Clearance এর ছাড়পত্র প্রদান প্রসঙ্গে।

সূত্রঃ বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ডের স্মারক নং-২৭.১২.০০০০.১০২.৭২.০০১.১৯/২২৭৩, তারিখ ২৭/০১/২০১৯ খ্রি।

উপর্যুক্ত বিষয় ও সূত্রস্থ স্মারকের প্রেক্ষিতে নির্দেশক্রমে জানানো যাচ্ছে যে, বাংলাদেশ পল্লী বিদ্যুতায়ন বোর্ড কর্তৃক বাস্তবায়নাধীন শতভাগ পল্লী বিদ্যুতায়নের জন্য বিতরণ নেটওয়ার্ক সম্প্রসারণ (রাজশাহী, রংপুর, খুলনা ও বরিশাল বিভাগ) এর আওতায় ৩৩ কেভি রিভার ক্রসিং টাওয়ার লাইন নির্মাণের লক্ষে নিম্নোক্ত শর্তাবলী অনুযায়ী Mininum Navigational Clearance প্রদান করা হলো-

ক্রম নং-	নদীর নাম	উপকেন্দ্রের নাম	নৌ-পথের শ্রেণী	ক্লিয়ারেন্স (মিটার)	মন্তব্য
০১।	রূপসা	বাদুরা, খুলনা সেন্ট্রাল রোড	১ম শ্রেণী	১৮.৩০+৩.০৫=২১.৩৫	অভ্যন্তরীণ জলপথের উপর বৈদ্যুতিক ওভারহেড লাইন নির্মাণের ক্ষেত্রে বৈদ্যুতিক ইনডাকশন হতে নিরাপত্তার জন্য সর্ব নিম্ন ঝুলন্ত তার হতে উলম্ব ছাড়ের (ভার্টিক্যাল ক্লিয়ারেন্স) ন্যূনতম পরিমাপের সহিত অতিরিক্ত ৩.০৫ মিটার যোগ করতে হবে।
০২।	ভৈরব	চেঙ্গুটিয়া এবং নোয়াপাড়া বাজার, গোয়াল পাড়া	১ম শ্রেণী	১৮.৩০+৩.০৫=২১.৩৫	
০৩।	কাজী	বারোআড়িয়া	২য় শ্রেণী	১২.২০+৩.০৫=১৫.২৫	
০৪।	ভৈরব	কাড়া, বাগের হাট	১ম শ্রেণী	১৮.৩০+৩.০৫=২১.৩৫	
০৫।	মধুমতি	মোল্লাহাট, গোপালগঞ্জ	২য় শ্রেণী	১২.২০+৩.০৫=১৫.২৫	
০৬।	বিশনা	রামপাল, বাগেরহাট	২য় শ্রেণী	১২.২০+৩.০৫=১৫.২৫	
০৭।	ভৈরব	চিতলমারী, বাগেরহাট	১ম শ্রেণী	১৮.৩০+৩.০৫=২১.৩৫	
০৮।	কচাতোয়া	গোবিন্দগঞ্জ-১ ও সাঘাটা, গাইবান্ধা	৩য় শ্রেণী	৭.৬২+৩.০৫=১০.৬৭	
০৯।	বিষখালী	বাকেরগঞ্জ-২ বরিশাল দক্ষিন (কলাপাড়া)	১ম শ্রেণী	১৮.৩০+৩.০৫=২১.৩৫	
১০।	পায়রা	বাকেরগঞ্জ, বরিশাল দক্ষিন (কলাপাড়া)	১ম শ্রেণী	১৮.৩০+৩.০৫=২১.৩৫	
১১।	আড়িয়াল খাঁ	মুলাদী, বরিশাল দক্ষিন, (কলাপাড়া)	২য় শ্রেণী	১২.২০+৩.০৫=১৫.২৫	
১২।	নবগঙ্গা	কালিয়া, নড়াইল	২য় শ্রেণী	১২.২০+৩.০৫=১৫.২৫	
১৩।	গাবখান চ্যানেল	ঝালকাঠি, ভান্ডারিয়া	১ম শ্রেণী	১৮.৩০+৩.০৫=২১.৩৫	
১৪।	বলেশ্বর	পিরোজপুর সদর, বাগেরহাট	১ম শ্রেণী	১৮.৩০+৩.০৫=২১.৩৫	
[illegible]	পোনা	ভান্ডারিয়া	১ম শ্রেণী	১৮.৩০+৩.০৫=২১.৩৫	
[illegible]	পোনা	ভান্ডারিয়া	১ম শ্রেণী	১৮.৩০+৩.০৫=২১.৩৫	
[illegible]	কালীগঙ্গা	পিরোজপুর সদর (নাজিরপুর)	২য় শ্রেণী	১২.২০+৩.০৫=১৫.২৫	
[illegible]	কালীগঙ্গা	পিরোজপুর সদর (নেসারাবাদ) বাগেরহাট	২য় শ্রেণী	১২.২০+৩.০৫=১৫.২৫	
১৯।	কালীগঙ্গা	পিরোজপুর সদর (নাজিরপুর) বাগেরহাট	২য় শ্রেণী	১২.২০+৩.০৫=১৫.২৫	
২০।	কালীগঙ্গা	পিরোজপুর সদর (ঝালকাঠি) বাগেরহাট	২য় শ্রেণী	১২.২০+৩.০৫=১৫.২৫	

শর্তসমূহঃ

১) বৈদ্যুতিক ওভার হেড লাইন নির্মাণের পর নিরাপদ নৌ-চলাচলের জন্য নেভিগেশন চ্যানেলের উভয় পিলারের মধ্যবর্তী তারের ভিন্ন ভিন্ন স্থানে অন্ধকারের প্রজ্জলিত হয় এমন লাল রঙের গোলক বাতি স্থাপন করতে হবে।

২) বৈদ্যুতিক তারের সর্বনিম্ন Sag পয়েন্টের Minimum Navigational Clearance সর্বোচ্চ Standard High Water Level (SHWL) হতে উপরের উল্লেখিত ভার্টিক্যাল ক্লিয়ারেন্স রাখতে হবে।

৩) উল্লেখিত নদীর ক্রসিং পয়েন্ট সমূহে স্থাপিত ক্যাবল অবশ্যই সঠিকভাবে ইনসুলেশন করা থাকতে হবে।

৪) নদী অতিক্রমন লাইনে এবং উভয় পার্শ্বে স্থাপিত পোলের গায়ে উলম্ব ছাড়ের পরিমাণ সু-স্পষ্টাক্ষরে লিখতে হবে যেন সহজেই লাইন অতিক্রমকারী নৌ-যানের মাষ্টার/চালকগনের সহজেই দৃষ্টিগোচর হয়।

DD(T)

(মোঃ আশরাফুর রহমান)
সহকারী পরিচালক (প্রশাসন)

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Appendix 22: Site Visit Pictures During AIIB mission.