Initial Environment Examination

Project Number: 41614-036
August 2017
(Addendum)

IND: Assam Power Sector Enhancement Investment Program - Tranche 4

Subproject : Addendum to IEE- for Change in substation location of Gharamara 33/11kV substation to Kaliapani 33/11 kV substation)

Submitted by

Assam Power Distribution Company Limited, Guwahati

Asian Development Bank

Reg. Office: Bijulee Bhawan, Paltanbazar, Guwahati-781 001, Assam
CIN: U40109AS2003SGC007242
PROJECT MANAGEMENT UNIT, 4th Floor, Bijulee Bhawan,
Tel. No.0361-2607533, Fax: 0361-2739526, E-mail: pmu_aseb@rediffmail.com

Nilesh Kumar / JB

No. APDCL/PMU/Tr-4/235/2014/Pt-I/176 Date: 17-08-2017

To,
The Country Director,
Indian Resident Mission, ADB.
4, San Martin Marg, Chanakyapuri,
New Delhi – 110 021

Subject : **Re-submission of Addendum Initial Environmental Examination Report for 33/11kV Kaliapani sub-station (Location change from Ghoramara) for Tranche -4 under Loan No. 3200 –IND.**

Ref: Mail from J. Banerjee dtd. 11.08.2017

Sir,

Please find enclosed herewith the Addendum to Initial Environmental Examination Report (re-submission) for 33/11kV Kaliapani sub-station (Location change from Ghoramara) for Tranche – 4 under Loan No. 3200 –IND for your needful action.

Thanking you,

Yours faithfully,

17/8/17

Director (PMU),
APDCL

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Addendum
Initial Environmental Examination
(Change in substation location of Gharamara 33/11kV substation to Kaliapani 33/11 kV substation)

Loan Number: 3200-IND

August, 2017

IND: Assam Power Sector Enhancement Investment Program – Tranche 4

Prepared by: Assam Power Sector Distribution Company Limited

Government of Assam

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List of Acronyms

ADB	Asian Development Bank
AEGCL	Assam Electricity Grid Corporation Ltd.
APDCL	Assam Power Distribution Company Limited
APGCL	Assam Power Generation Corporation Limited
ASEB	Assam State Electricity Board
dB(A)	decibels
BOD	Biological Oxygen Demand
CPCB	Central Pollution Control Board
DO	Dissolved Oxygen
EA	Executing Agency
ESMU	Environmental and Social Management Unit
EARF	Environmental Assessment and Review Framework
EIA	Environment Impact Assessment
EMP	Environmental Management Plan
GPS	Global Positioning System
GOA	Government Of Assam
GOI	Government Of India
GSS	Grid Sub-Station
GRC	Grievance Redress Committee
GRM	Grievance Redressal Mechanism
IA	Implementing Agency
IEE	Initial Environmental Examination
km	kilometre
ha	Hectare
mi	Miles
Ltd.	Limited
m	Meter
NAAQS	National Ambient Air Quality Standards
NEA	National Environmental Act
kV	Kilo Voltage
MFF	Multi-Tranche Financing Facility
NH	National Highway
N/A	Not Applicable
R &R	Resettlement and Rehabilitation
PMU	Project Management Unit
PM_{10}	Particulate Matter 10micrometers or less
$PM_{2.5}$	Particulate matter 2.5micrometers or less
PCB	Poly Chlorinated Biphenyls
ROW	Right of Way
REA	Rapid Environmental Assessment
SEIAA	State Level Environment Impact Assessment Authority
SEAC	State Level Expert Appraisal Committee
SF6	Sulphur hexafluoride
SPM	Suspended Particulate Matter
SPS	Safeguard Police Statement
TSS	Total Suspended Solid
TE	Tea Estate
O&M	Operation and Maintenance
LT	Low Tension

A. INTRODUCTION

1. The Government of Assam (GoA), through the Government of India (GoI, the Borrower) has requested the Asian Development Bank (ADB) for a loan funding through the Multitranche Financing Facility (MFF) which was approved on 18 November 2009. The Assam Electricity Grid Corporation Limited (AEGCL) and the Assam Power Distribution Company Limited (APDCL) are the Executing Agencies (EAs) for the MFF[1]this project will be the Tranche 4 from the MFF with an estimated total amount of $50million.

2. GoA unbundled the former Assam State Electricity Board (ASEB) into three companies: Assam Power Generation Corporation Limited (APGCL), Assam Electricity Grid Corporation Limited (AEGCL), and Assam Power Distribution Company Limited (APDCL). The APDCL will be the Implementing Agency (IA) for Tranche 4. APDCL proposes to include the following components for Tranche 4:

a. Physical works in the sub-transmission and distribution system such as additional 33/11 kV lines and substations to ensure that the system is adequate and reliable to meet the growth demand and the energy requirement.
b. Energy efficiency measures and loss reduction measures to be undertaken for reduction of both commercial as well as technical losses mainly at low tension (LT) level. Also, reduction of length of 11 kV lines which are the primary cause of technical losses.
c. For loss reduction, improvement in quality of power and stability of distribution grid of APDCL by providing segregated feeders to Tea Estates (T.E.) for maximum revenue generation.
d. Introduction of Quick Response Operation and Maintenance (O&M) System in all Electrical Divisions and sub divisions of APDCL to ensure reliability and quality power with a view to increase revenue.
e. Implementation of IT Modules to cover part of the high value consumers of major towns of Assam to improve revenue by reduction in commercial loss.
f. Setting up of Independent Meter Testing Laboratory at Jorhat Engineering College.

3. As required by ADB's Safeguard Policy Statement 2009 (SPS 2009), an environmental assessment and review framework (EARF) was prepared for the MFF approved in 2009 to provide guidance on environmental screening, assessment, institutional arrangements, and procedures to be followed for the succeeding tranches in the MFF where components were not yet been fully defined and locations not identified. The EARF ensures that succeeding tranches comply with SPS 2009 and the applicable national laws and regulations.

4. According to SPS 2009, Tranche 4 is environment category B requiring an initial environmental examination (IEE). Following SPS 2009 and the EARF, an IEE was prepared for Tranche 4. As the EA for Tranche 4, APDCL is in charge of preparing the applicable environmental documentation, implementation and monitoring of Tranche 4 following the requirements of SPS 2009 and the approved EARF for the MFF.

5. This report is proposed as addendum to the APDCL's original Tranche 4 IEE report that was approved by ADB in August 2014. The addendum is on account of shifting of proposed substation at Gharamara site in Initial Environmental Examination (IEE) to Kaliapani site under Dibrugarh Electric Circle in Dibrugarh district. The report would capture information on the environmental consequences associated with the new location. This report is also a due diligence report and based on the assessment of the environmental impacts it has been observed that no further corrective actions are required to be undertaken.

[1]The Assam State Electricity Board (ASEB) was legally dissolved in 2013. Subsequent to this action, AEGCL and APDCL were designated as EAs for the MFF

B. APPLICABLE ENVIRONMENTAL POLICIES AND OTHER LEGISLATIONS

6. The Ministry of Environment, Forest and Climate Change, GoI, vide its Notification No. S.O. 1533 dated 14-09- 2006, reengineered the EIA process in India and also decentralized some powers and made provision to constitute the State Level Environment Impact Assessment Authority (SEIAA) and the State Level Expert Appraisal Committee (SEAC) for performing functions under the said notification. The aforementioned notification is not applicable for this sub-project.

7. Aside from SPS 2009, the project needs to comply with the requirements provided by the GoI acts, rules, notifications, standards, and policies and other state level guidelines that apply to the project. The relevant regulations and other legislations are given in Annexure I of original IEE report, August 2014 are applicable for this subproject.

C. SUB-PROJECT DESCRIPTION

8. As per original IEE, the sub-station site identified was identified at Gharamara in Dibrugarh district. The sub-station also included erection of 25 km of 33 kV transmission line i.e. 15 km from Namrup substation and 10 km from Tingkhong substation with GI and terminal equipment at Namrup and Tingkhong substation, and four number of feeder points involving erection of 15 km of associated 11kV distribution line. During the implementation stage it was found that one new substation 2x10.0 MVA at Romai, Near Ghoramara is under construction in World Bank scheme and the power supply under Ghoramara area can be covered from this new Romai substation. Further, shifting of sub-station at Kaliapani will have additional benefit to at least 10 tea gardens at Kaliapani requiring separate tea feeder to provide uninterrupted power supply for better revenue realization. In addition to above the installation of 33/11kV sub-station at Kaliapani, the 11kV line length will be reduce line loss and increase in reliability of better power supply. The power to Sassomi neighboring area will be fed from new Kaliapani substation and this will reduce the length of Sassoni feeder from 169.0km to 80km.

9. The new substation site is identified at Kaliapani site (Fig1) in Dibrugah district. The identified land for substation site is privately owned. The land area of 0.27ha is being acquired through 'direct negotiation' and rate have been negotiated with the landowners. The new site is located adjacent to and 70m from Namrup-Tingkhong road. The change in substation site will also result in changes in the incoming 33kV and outgoing 11kV lines. The details of new 33/11kV Kaliapani substation is provided in Table 1.

Table 1: Details of New Substation Site

S.No.	Sub-project	Village / Tehsil	District	Region	Area (ha)	Land Ownership
1	33/11kVKaliapani S/S	Rajgar Rangali / Tingkhong	Dibrugarh	UAR	0.27	• Smti Surya Bala Deb • Sri Debaru Urang

10. The handing over of substation site shall be after completing acquisition of land i.e. 'Deed of Sale' and obtaining approval from ADB. Subsequently, the alignment of 33kV and 11kV will be finalized after conducting route survey.

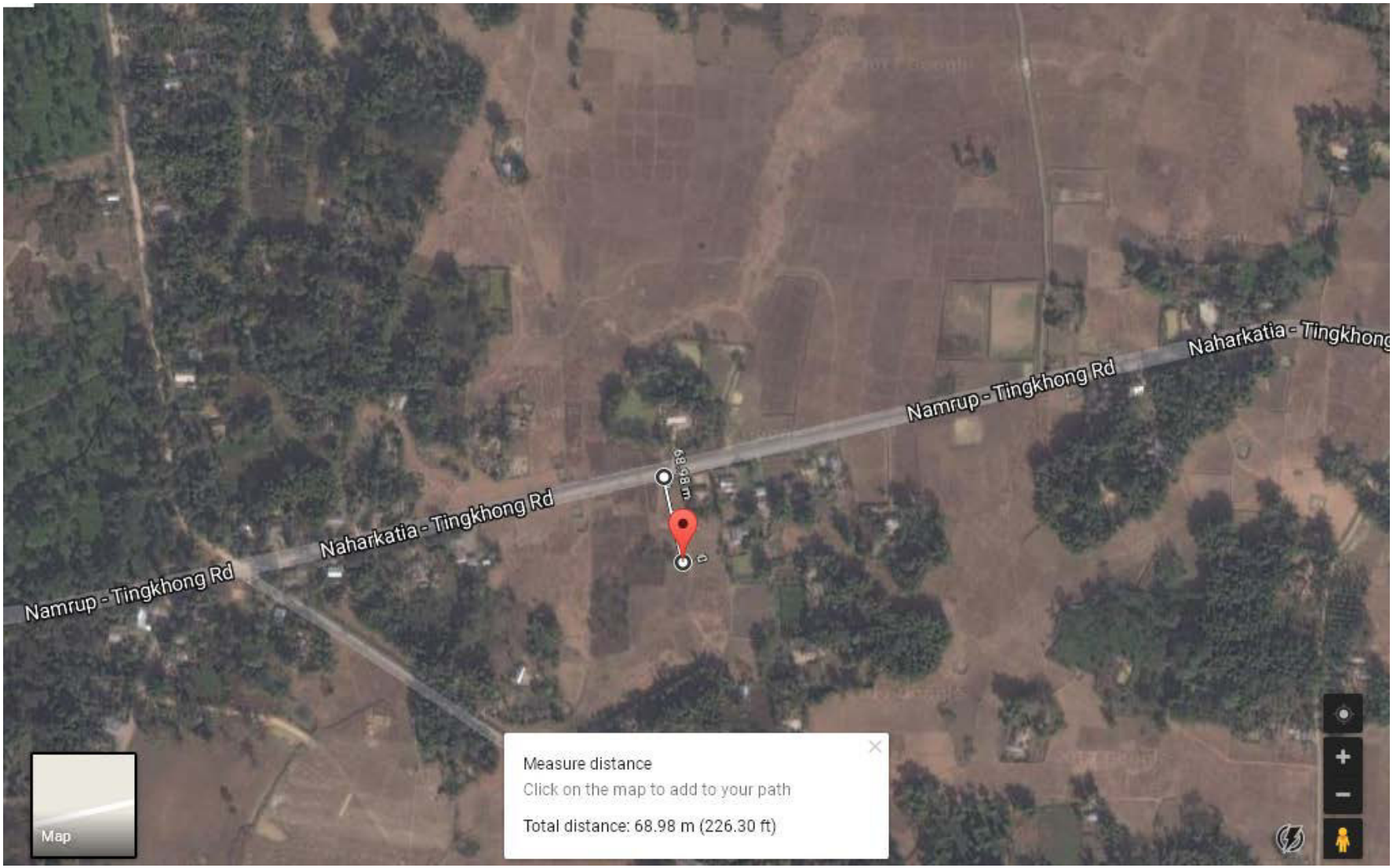

Fig 1: Location Map of 33/11kV Kaliapani sub-station

D. APPROACH FOR ADDENDUM PREPRATION

11. The Addendum to original IEE report (August, 2014) has been prepared based on site visits that were conducted in months of June 2016, September 2016, and May 2017 by Environmental and Social team supporting the Project Management Unit, APDCL. The observations were recorded based on informal one-to-one meeting with land owners, local people, & officials of implementing agency, and identification of sensitive receptors within vicinity of sub-station site. The information gathered during site visit has been used to complete the Rapid Environmental Assessment (REA) Checklist (Annexure II), which assisted in screening, categorization of sub-project and anticipating potential impacts on environment due to construction of sub-project.

E. DESCRIPTION OF ENVIRONMENT

12. The sub-project is located in the district of Dibrugarh. The descriptions of environment for this district have been captured in Section 3.0 (Description of Environment) of original IEE report prepared in August 2014, which adequately capture the environmental setting in the district and may be referred. The baseline information for air, noise, soil, and water quality have not been provided in the original IEE report. However, the monitoring of aforementioned environmental attributes will be conducted as per the provided frequency and parameters in the original IEE report and the detailed results will be provided in the respective Environmental Safeguard Monitoring Report.

13. The site specific environmental features with reference to sub-station location are provided in Table 2, which would be used to assess the impact on environment due to the sub-project.

F. POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

14. The preparation of this addendum is accordance to specified criteria provided in the Environmental Assessment Review Framework (EARF). These criteria were used for identifying the potential environmental impacts due to the sub-project in originally approved IEE report under the Chapter 4.0. The REA checklist prepared for the sub-project forms the basis for assessment of potential environmental impacts and suggesting mitigation measures.

15. The land details of new proposed 33/11kV Kaliapani substation and distance from sensitive receptors is provided in Table 3.

Table 2: Location Analysis for Kaliapani Substations

Sl. No.	Particulars	Status
1	Land Details	Agricultural land (Private ownership)
1.a	Area of land	0.27 ha
1.b	Slope/Plain Land	Plain Land
1.c	Approximate Amount of land cutting required	N/A
2.	Owner Ship of land (Private / Forest/ Other Govt. Department/ Other)	Private Land
3.	Private land (in ha.)	0.27 ha
	(i) Agriculture :- a) Irrigated, b)Non – irrigated	Non-irrigated
	(ii) Non - Agriculture/ Private Waste land / barren.	Not involved
	(iii) House or Building: a) Residential, b) Non –Residential	Not involved
4.	Distance from Nearest (With name)	
4.a	River (Name/Distance)	4.16 km (Disang River - Fig 2)
4.b	Highway	8.45 km (NH-215)
4.c	Forest Area	38.43 km Dibru Saikhowa National Park
4.d	Village / town	Rajgar Rangali Gaon
4.e	Market/Area of Economic Activity	-
5.	Road accessibility	Pucca Road
6.	EHV Line Passing Near By (Distance)	-
7.	HT line Passing Near By	-
8.	No. of Forest Trees :- Trees to be felled Trees to be lopped	Not involved
9.	No. of private trees	Not involved
	(i) Fruit Trees: Trees to be felled Trees to be lopped	Not involved
	(ii) Non - Fruit Trees: Trees to be felled Trees to be lopped	Not involved
10.	Distance from mountainous area	Approx.52.78 km - Pakhain Mountain Range
11.	Distance from cultivated area	Identified in agriculture land
12.	Altitude of substation	118 m (Dibrugarh District)
13.	Nearest distance from airport/national& international boundaries	Dibrugarh Airport – 36.89 km State Boundary(Arunachal Pradesh) - 16.37km International Boundary (India-Myanmar) - 51.63 km
14.	Distance from nearest religious or archaeological sites	16.11 km (Juria Ai Than Temple) from substation site.

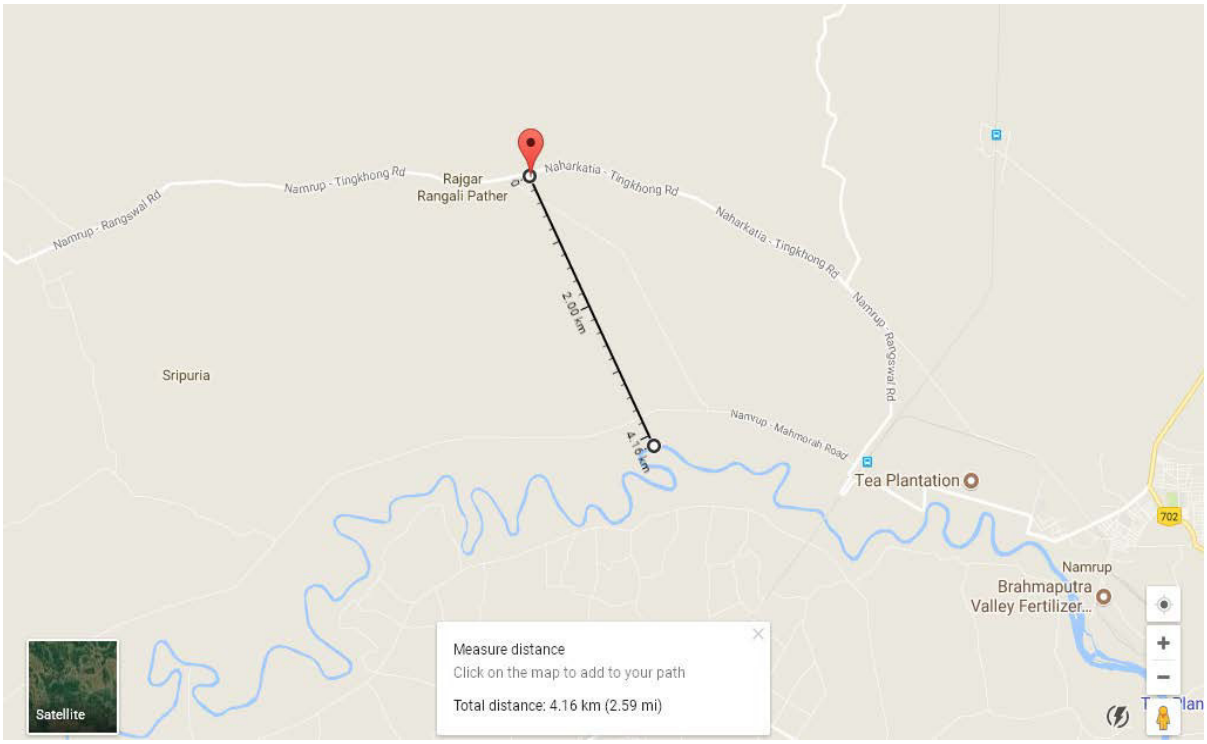

Fig 2: Disnag River (4.16 km from project site)

Table 3: Land Details of Kaliapani Substations

Village / Town Name	Tehsil Name	District Name	Land of substation identified / finalized?	Total Land Area Required (ha)	Ownership of Land	Type of Land	Status of Land Acquisition	No of Affected Households/Owner	Number of affected Indigenous Peoples Household or Owners (If any)
Kaliapani	Rajgar Rangali / Tingkhong	Dibrugarh	Finalised	0.27	Private Land	Agricultural Land	Negotiation with land owners completed.	• Smti. Surya Bala Deb • Sri Debaru Urang	Not involved

16. The change in sub-station site, and scale of construction being small will not change the environmental category of the project i.e. Category-B. The potential environmental impacts anticipated is mainly due to activities during construction of sub-station and has been specifically capture in Section 4.0 of original IEE report, which is also valid during construction of Kaliapani sub-station.

17. At Ghoramara sub-station, impact on trees (cutting/trimming) were anticipated due to incoming 33kV line traversing through Rungliting Tea Estate (Ganeska Kanoi Tea co. Pvt. Ltd). While, sub-station site to Kaliapani is open agriculture land without trees and its associated incoming 33kV line's alignment is suggested within the right-of-way of Namrup-Tingkhong road. Hence, the impact of the sub-project has been further minimized.

G. ENVIRONMENTAL MANAGEMENT

18. The original IEE report has suggested appropriate measures to mitigate impacts associated with construction activities. An Environmental Management Plan (**Annexure IV**) has been prepared for the project that discusses the anticipated impacts, monitoring requirements, and development of mitigation measures with respect to the following stages: (i) Pre-Construction, (ii) Construction, and (iii) Operation and Maintenance.

19. The impacts associated with the sub-project are mainly due to activities during construction stage. Hence, the Environmental Management Plan prepared for the project is adequate to mitigate the impacts due to sub-project.

H. INSTITUTIONAL REQUIREMENTS AND ENVIRONMENTAL MONITORING PLAN

20. The institutional arrangement has been agreed for the project and Environmental and Social Management Unit was created to support Project Management Unit for implementing environmental and social safeguards measures. PMU has designated one Assistant Manager (now promoted to Deputy Manager) as in-charge of ESMU, who has oversight responsibilities for monitoring all subprojects in areas such as environmental, R&R and social safeguards. The duties of the ESMU will include at a minimum (i) oversight of field offices and construction contractors for monitoring and implementation mitigation measures. (ii) Liaising with the field officers and contractors and seeking their help to sole an environmental related issue of subproject implementations and (iii) preparation of environmental monitoring reports every 6 months (as required by ADB). ESMU is supported by individual Environmental and Social Safeguard consultant and assist in coordinating with PIU for monitoring as well as designing appropriate mitigation measures to address as environmental and social safeguard issues.

21. The minimal provision for environmental monitoring program was not provided in the original IEE report prepared in August 2014. However, the same was provided in Clause 9.8 (contractor's responsibility) under Section 8 (Special Conditions of Contract) of the Bidding Document.

22. Presently, the site has not been handed to contractor due to ongoing land acquisition process. The change in sub-station site has been informed to ADB and EA has submitted REA, IP and IR checklists. Based on REA checklist **(Annexure-II)** prepared, no major environmental impact is anticipated due to construction of sub-station on the selected site. After start of works, the Executing Agency would monitor compliance to environmental safeguard requirements as per the Loan Agreement. The minimal provision for environmental monitoring is provided in Table 5.

I. GRIEVANCE REDRESS MECHANISM

23. The formation of GRM and GRC at project level is one of the requirements in Project Administration Manual and Loan Agreement. The GRC has been constituted in Guwahati and Dibrugarh Zones. This is in progress in remaining zones through APDCL's continuous follow-up with concerned Chief Executive Officer in their respective circle.

24. Till date no grievance has been reported with respect to the sub-project. Any grievance from any person will be addressed in set time frame and will be properly documented.

J. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

25. The consultation with local people and land owner was conducting on 25th November 2016. The consultation meeting was conducted at Rajgarh Rangoli village, which was participated by 7 peoples, including one land owner. The meeting aim to capture social and environmental issues due to proposed construction of sub-station. The discussions during the consultation are as follows:-

- The land owner requested the official present during the meeting to expedite

payment of compensation amount.

- Local people welcome the proposal for construction of sub-station. They also requested preference to local people for employment of both skill and unskilled works.

26. The addendum to IEE shall be disclosed and made available to the public.

K. CONCLUSION

27. This addendum to IEE is based upon the environmental assessment and review framework (EARF) which is consistent with the ADB's Safeguard Policy Statement (SPS) 2009. The subproject is classified as category "B" for environmental and does not require further environmental impact assessment. The original EMP prepared for the project is valid and the same is recommended for adoption during implementation stage.

Table 4 Provision for Environmental Monitoring

Project Stage	Mitigation Measure	Parameters to be Monitored	Location	Measurements	Frequency	Responsibility	Cost
Pre-Construction[2]	Route survey to define alternative alignments	Possible encroachment on reserved forests	All transmission and substation sites	Field mapping with Global Positioning System (GPS) equipment	1-time survey to finalize design	APDCL/PMU through route survey contractor	n/a
	Dust and equipment emission minimization	Air Quality[3]: PM_{10} and $PM_{2.5}$	Inside and outside (0.5km) of the proposed substation	Spot check for air quality using portable monitoring device	One time before start of works	Contractor	Included in construction contract (estimated at <0.5% of total contract value)
	Erosion and waste water management	Water Quality: pH, dissolved oxygen (DO), biochemical oxygen demand (BOD), total suspended solids (TSS),	Nearest wells (2 wells) around the substation	"Grab" samples for water and Spot check for waste water generation and disposal			
	Noise control	Noise Level dB(A)	Inside and outside of the proposed substation	Spot check for noise using portable monitoring device			
	Waste management	Soil Quality: pH, Sodium absorption ratio, water holding capacity, nitrogen, potassium, phosphorus	Inside and outside of the proposed substation	"Grab" samples and Spot check for solid waste generation and disposal			
Construction	Dust and equipment emission minimization	Air Quality: PM_{10} and $PM_{2.5}$	Inside and outside (0.5km) of the proposed substation	Spot check for air quality using portable monitoring device	Once in six months	Contractor	
	Erosion and waste water management	Water Quality: pH, dissolved oxygen (DO), biochemical oxygen demand (BOD), total suspended solids (TSS),	Nearest wells (2 wells) around the substation	"Grab" samples for water and Spot check for waste water generation and disposal			
	Noise control	Noise Level dB(A)	Inside and outside of the proposed substation	Spot check for noise using portable monitoring device			
	Waste management	Soil Quality pH, Sodium absorption ratio, water holding capacity, nitrogen, potassium, phosphorus	Inside and outside of the proposed substation	"Grab" samples and Spot check for solid waste generation and disposal			
Operation and Maintenance	Transformer and waste oil management	Soil Quality: pH, Sodium absorption ratio, water holding capacity, nitrogen, potassium, phosphorus	Inside sub-station site	Spot checks based on visual inspections and any complaints	As necessary based on inspections and complaints	APDCL through PMU, ADB to audit during project review missions	
		Water Quality: pH, dissolved oxygen (DO), biochemical oxygen demand (BOD), total suspended solids (TSS)	Inside sub-station site				

[2] Baseline monitoring shall be conducted by the contractor as per the monitoring plan provided in the IEE.

[3] Originally, Suspended Particulate Matters was indicated for monitoring air quality. However, this has been replaced with PM_{10} and $PM_{2.5}$ considering NAAQS, 2009 of CPCB.

Project Stage	Mitigation Measure	Parameters to be Monitored	Location	Measurements	Frequency	Responsibility	Cost
	Noise control	Noise Level dB(A)	Inside and outside of the proposed substation	Spot checks based on visual inspections and any complaints	One time during Defect Liability Period		

ADB = Asian Development Bank, APDCL = Assam Power Distribution Company Ltd., BOD = biochemical oxygen demand, DO =dissolved oxygen, PCB = polychlorinated biphenyls, PMU = project management unit, SPM = suspended particulate matter, TSS = total suspended solids.

Source: Asian Development Bank assessment.

Annexure I (A)

Request for Administrative Approval

(Shifting Of 33/11kv Ghoramara Substation to Kaliapani Substation)

ASSAM POWER DISTRIBUTION COMPANY LTD.
Registered Office : Bijulee Bhavan , Paltan Bazar, Guwahati - 781001
CIN- U40109AS2003SGCOO7242
Project Implementation Unit
Tel No.-0361-2733094; Fax-0361-2739535; email: cpm_piuadb@hotmail.com

NO. CPM(PIU)/APDCL/Tech-8/Trnanche-4/2013-14/142 Date: 13/06/2017

To

The Director (PMU)
APDCL , Bijulee Bhawan
4th Floor, Guwahati-01

Sub.:- Shifting of location for proposed 33/11 KV 2X5 MVA Substation from Ghoramora to Kaliapani in Dibrugarh District under ADB Tranche 4 Project(Loan No. 3200-IND).

Ref.:- 1. Letter No. CEO/DEC/APDCL/UAR/ADB-Tranche-4/2014/2796 dtd. 05.06-2017.

Please refer to the above. The CEO, Tinsukia Electrical Circle has proposed for shifting of location for 33/11 KV 2X5 MVA Substation from Ghoramora to Kaliapani in Dibrugarh District because one no. of another new 2X10 MVA Substation at Romai, near to Ghoramora, is under construction in World Bank Scheme and the power supply to this area under Ghoramora can be covered from this new Romai Substation as Romai is not far away from Ghoramora. Therefore the shifting of the location for 33/11 KV Substation from Ghoramora to Kaliapani is proposed for better quality power supply with reliable distribution network connectivity at Kaliapani and adjoining area.

The benefits of shifting the location of 33/11 KV Substation from Ghoramora to Kaliapani under Dibrugarh Electrical Circle are as given below:

1. There are at least 10 nos. Tea Gardens at Kaliapani area for which separate Tea feeder is essential to provide uninterrupted power supply for better revenue realisation.
2. The length of the existing Kaliapani feeder originating from 33/11 KV Naharkatia Substation includes RGGVY network of 180 CKT KM HT lines with 102 Nos. DTRs and by installation of 33/11 KV new SS at Kaliapani the 11 KV line lengths will be reduced with decrease of line loss and increase in reliability of power supply in that area.
3. The power supply to Sassoni area will be fed from new Kaliapani SS and this will reduce the length of 11 KV Sassoni feeder from 169 KM to 80 KM.
4. The Kaliapani area is under Joypur Block and with upcoming of more HT,LT lines and more DTRs under DDUGJY Scheme it will be essential for installation of one 33/11 KV Substation at Kaliapani to reduce the length of 11 KV lines as well as providing reliable power supply.

You are hereby requested to take necessary action for arranging approval for shifting the location of 33/11 KV Substation from Ghoramora to Kaliapani under Dibrugarh Electrical Circle & Dibrugarh District.

Thanking you,

Yours faithfully

13/6/17

Chief Project Manager (PIU-ADB)
APDCL, Bijulee Bhawan, Paltanbazar
Guwahati-01.

Memo. No. CPM(PIU)/APDCL/Tech-8/Trnanche-4/2013-14/142(a) Date: 13/06/2017

Copy to:

1. The CGM(PP&D), APDCL, Bijulee Bhawan, Ghy-01 for kind information.

Chief Project Manager (PIU-ADB)

Annexure I (B)

Letter to ADB for Approval

(Shifting Of 33/11kv Ghoramara Substation to Kaliapani Substation)

Received on 21/06/17 from PMU

ASSAM POWER DISTRIBUTION COMPANY LIMITED

Reg. Office: Bijulee Bhawan, Paltanbazar, Guwahati-781 001, Assam

CIN: U40109AS2003SGC007242

PROJECT MANAGEMENT UNIT, 4th Floor, Bijulee Bhawan,

Tel. No.0361-2607533, Fax: 0361-2739526, E-mail: pmu_aseb@rediffmail.com

No. APDCL/PMU/Tr-4/235/2014/Pt-I/160 Date : 15-06-2017

To,
The Country Director,
Indian Resident Mission, ADB.
4, San Martin Marg, Chanakyapuri.
New Delhi -110 021

Subject : **Shifting of proposed 33/11Kv, 2x5.0 MVA Ghoramara sub-station under Tranche-4 Project (Loan No. – 3200-IND Package-1) to Kaliapani under Dibrugarh Electrical Circle.**

Sir,

In inviting a reference to the subject cited above, this is to inform you that a proposal is taken by APDCL for shifting of the proposed site of 33/11kV, 2x5.0 MVA Ghoramara sub-station under Package-1 of trenche-4 (Loan No.-3200-IND) to Kaliapani under Dibrugarh Electrical Circle on the following reasons :

1. One no. of new 2x10.0 MVA sub-station at Romai, near Ghoramara is under construction in World Bank scheme and the power supply to this area under Ghoramara can be covered from this new Romai sub-station.
2. There are atleast 10 (ten) nos. of Tea Gardens at Kaliapani area for which separate Tea garden feeder is essential to provide uninterrupted power supply.
3. By installation of 33/11 kV sub-station at Kaliapani the 11kV line length will be reduced with decrease in line loss and increase in reliability of better power supply.
4. The power to Sassoni, neighboring area will be fed from new Kaliapani sub-station and this will reduce the length of Sassoni feeder from 169.0 Km to 80.0 Km.

APDCL shall undertake necessary safeguard due diligence by assessing potential environmental and social impacts and will incorporate the same in revised IEE & RP of Tranche-4.

This is for your kind needful action.

Thanking you,

Yours faithfully,

15/06/17

Director (PMU)
APDCL.

Annexure - II

Rapid Environmental Assessment (REA) Checklist

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to Environment and Safeguards Division (RSES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:	Assam Power Sector Enhancement Investment Program, Trench-4 (IND-3200)
Sector Division:	Buildings

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?		√	Project area is not in the vicinity of any such area.
▪ Cultural heritage site		√	
▪ Protected Area		√	
▪ Wetland		√	
▪ Mangrove		√	
▪ Estuarine		√	
▪ Buffer zone of protected area		√	
▪ Special area for protecting biodiversity		√	
B. Potential Environmental Impacts Will the Project cause…			
▪ Encroachment on historical/cultural areas, disfiguration of landscape and increased waste generation?		√	No historical/cultural area or monument is present near project area.
▪ Encroachment on precious ecosystem (e.g. sensitive or protected areas)?		√	Project area is not located near any sensitive area.
▪ Alteration of surface water hydrology of waterways crossed by roads and resulting in increased sediment in streams affected by increased soil erosion at the construction site?		√	Not Involved
▪ Damage to sensitive coastal/marine habitats by construction of submarine cables?		√	Not Involved
▪ Deterioration of surface water quality due to silt runoff, sanitary wastes from worker-based camps and chemicals used in construction?		√	No River, Lake, Ocean, Wetland etc is present nearby the site. Thus no impact on surface water quality is anticipated.
▪ Increased local air pollution due to rock crushing, cutting and filling?		√	Not involved
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	√		No radiological hazards are expected. However chemical hazard can result due to mismanagement of transformer oil. Biological and physical hazard can occur due to improper sanitation and storage facilities respectively.
▪ Chemical pollution resulting from chemical clearing of vegetation for construction site?		√	Not involved

Screening Questions	Yes	No	Remarks
▪ Noise and vibration due to blasting and other civil works?	√		Blasting is not involved in construction of substation. Hence no such impact is anticipated. However during construction phase noise level may increase due to operation of machinery.
▪ Dislocation or involuntary resettlement of people?		√	Not involved
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		√	No such impact is involved.
▪ Social conflicts relating to inconveniences in living conditions where construction interferes with pre-existing roads?		√	No such conflict is anticipated.
▪ Hazardous driving conditions where construction interferes with pre-existing roads?		√	No such condition is anticipated.
▪ Creation of temporary breeding habitats for vectors of disease such as mosquitoes and rodents?	√		This impact is anticipated during construction stage, but necessary facilities such as proper disposal of waste water, and sanitation system etc. shall be ensured at labour camp.
▪ Dislocation and compulsory resettlement of people living in right-of-way of the power transmission lines?		√	No such impact is anticipated, since alignment of associated are 33kV and 11kV lines are generally proposed within RoW of existing road and in some cases through agriculture field.
▪ Environmental disturbances associated with the maintenance of lines (e.g. routine control of vegetative height under the lines)?	√		The route survey of associated lines is still to be carried out. The routine control of vegetation height may be involved and will be taken care once the route alignment is finalized.
▪ Facilitation of access to protected areas in case corridors traverse protected areas?		√	The alignment of lines will avoid traversing through protected area. Hence, no such impact is anticipated.
▪ Disturbances (e.g. noise and chemical pollutants) if herbicides are used to control vegetative height?		√	Physical method such as cutting, pruning, and trimming would be adopted during routine maintenance.
▪ Large population influx during project construction and operation that cause increased burden on social infrastructure and services (such as water supply and sanitation systems)?		√	Labour requirement is about ten (approx.) and employment of local labour will be first priority. Hence, no such impact is anticipated.
▪ Social conflicts if workers from other regions or countries are hired?		√	Priority shall be given to locally available labour. Hence, would aid in minimizing social conflict.
▪ Poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases from workers to local populations?	√		Providing of suitable sanitation facilities for workers at labor camp will be ensured through regular monitoring of contractor's operation during construction stage.
▪ Risks to community safety associated with maintenance of lines and related facilities?		√	No such impact is anticipated. However, advance notice shall be provided before maintenance activity.
▪ Community health hazards due to electromagnetic fields, land subsidence, lowered groundwater table, and salinization?		√	Safe vertical distance required for distribution shall be maintained as per regulatory requirement. Hence, no such impact is anticipated.
▪ Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?		√	No such impact is anticipated. The transformer oil will be transferred to substation is sealed drums with proper storage area.

Screening Questions	Yes	No	Remarks
▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project (e.g., high voltage wires, and transmission towers and lines) are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?		√	Project area is located at safe distance from the locality. Hence, no such risk is anticipated.

A Checklist for Preliminary Climate Risk Screening

Country/Project Title: **Assam Power sector enhancement Investment program, Tranche 4 (IND-3200)**

Sector: **Buildings**

Subsector: **Power Substation (33/11kV Kaliapani substation)**

Division/Department: **Duliajan Division/APDCL**

Screening Questions		Score	Remarks[4]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	The control room building is designed by taking the seismicity of area under consideration. The selected substation site is at a high lying area and is not present in flood prone area. However distribution line may be located in such area and design of pole will be done by taking it into consideration.
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?	0	
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?	0	
Performance of project outputs	Would weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?	0	

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Low

Other Comments:_____

_____

Prepared by: _____

[4]If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Annexure III

Consultation

Public Consultation	
Name of the Sub-project	33/11 KV Ghoramara (Kaliyapani) Sub. Station
Name of the Village/s	Kaliyani
Venue	Kaliyapani
Date	25/11/16
No. of Participants attended:	11
Consultations conducted by	SMEC

Objectives:

- To inform the community about the sub-project
- To understand their overall socio-economic condition
- To understand their views and perceptions on project

Issues Discussed & Observation made:

↳ Local people were happy for the proposed S/S construction where local people will be engaged for both skilled & unskilled labour works.

↳ Both the owner of the land requested the officials present in the consultation to speed up the process so that they would get their compensation amount early.

Attendance Sheet

Date: 25-11-16

Sub-Project Name: 33/11 kV Ghoramara (Kaliyapani) Sub-station

Village/s: Kaliyapani

Sl. No.	Name	Address	Occupation	Signature
1	Debanu Urang	Kaliyapani	Business	Debanu Urang
2	Raju Deb	'Do'	'Do'	R. Deb
3	Pallab Bokotial	'Do''	'Do'	P. Bakatial
4	Mukunda Bokotial	'Do'	'Do'	Mukunda Bokotial
5	Rajib Borah	Service 'Do'	Service	[illegible]
6	Dhiraj Gogoi	'Do'	'Do'	[illegible]
7	Aimentka Tehekap	'Do'	'Do'	[illegible]
8	Khani n Barikhya	PMU, Bijulee Bhawan	Service	[illegible]
9	Navroz Kaur	PMU, Bijulee Bhawan	Service	[illegible]
10	Dibya Jyoti Baruah	- do -	- do -	[illegible]
11	Deepjyoti Singha	'Do'	'Do'	[illegible]
12				
13				
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Annexure IV

Environmental Management Plan

Project Activity	Potential Environmental Impact	Mitigation Action	Monitoring Scope	Standards	Institutional Responsibility	Implementation Schedule
Pre-construction						
Temporary use of lands	Impact to the existing environment	Selection of lands adhering to local laws and regulations and in close consultation with LAs Construction facilities should be placed at least 10 m away from water bodies, natural flow paths, important ecological habitats and residential areas	Water and air quality	Air quality Standards and CPCB water quality standards	APDCL Contractor	Detailed design
Substation location and design	Noise generation Exposure to noise, Nuisance to neighboring properties	Substation designed to ensure noise will not be a nuisance.	Expected noise emissions based on substation design, noise levels	Noise control regulations. Noise levels to be specified in tender	APDCL	Detailed design
	Disturbance to the adjacent lands and the people due to cut and fill operations	Maintain adequate clearance, construction of retaining structures, minimize cut and fill operations adjoining to the dwellings	Proximity to houses and other structures	Documents Setback distances to nearest houses – as per ROW norm of 5 m	APDCL	Detailed design
Location of poles and line alignment and design	Exposure to safety related risks	Setback of dwellings to overhead line route designed in accordance with permitted level of power frequency and the regulation of supervision at sites.	Location of distribution poles and line alignment selection with respect to nearest dwellings	Setback distances to nearest houses -	APDCL	Part of line sighting survey and detailed alignment survey and design
	Impact on water bodies /land/ residences	Consideration of site location at where they could be located to avoid water bodies or agricultural land as much as possible. Careful site selection to avoid existing settlements	Site location away from water bodies, line alignment selection(distance to dwelling, water and/or agricultural land)	Consultation with local authorities and land owners, CPCB water quality standards	APDCL	Part of detailed project sighting and survey and design
Equipment specifications and design parameters	Release of chemicals and harmful gases in receptors (air, water, land)	PCBs not used in substation transformers or other project facilities or equipment.	Compliance with National Environmental Act	Banned under NEA	APDCL	Detailed design

Project Activity	Potential Environmental Impact	Mitigation Action	Monitoring Scope	Standards	Institutional Responsibility	Implementation Schedule
Encroachment into precious ecological areas	Loss of precious ecological values/damage to precious species	Avoid encroachment by careful site and alignment selection Minimize the need by using existing poles and RoW wherever possible	Floral and faunal habitats loss	Environmental Conservation Act	APDCL	Detailed design
Encroachment into forest areas	Trees to be cut for distribution line	Avoid trees to be cut by careful site and alignment selection. Minimize the Row wherever possible Afforestation to be done in coordination with forest department	Loss of trees in the alignment	Forest Conservation Act	APDCL	Detailed design
Involuntary resettlement or land acquisition	Loss of lands and structures	Compensation paid for temporary/permanent loss of productive land	Public complaints	Rates stipulated in the Resettlement plan/ Frame work	APDCL	Prior to construction phase
Encroachment into farmland	Loss of agricultural productivity	Use existing poles wherever possible Avoid sighting new towers/poles on farmland wherever possible Farmers compensated for any permanent loss of productive land trees that need to be trimmed or removed along RoW.	Pole location and line alignment selection Design of Implementation of Crop and tree compensation(based on affected area)Statutory approvals for tree trimming /removal	Consultation with local authorities and design engineers	APDCL	Part of detailed alignment survey and design
Interference with drainage patterns/Irrigation channels	Temporary flooding hazards/loss of agricultural production	Appropriate sighting of poles to avoid channel interference	Site location and line alignment selection	Consultation with local authorities and design engineers	APDCL	Detailed alignment survey and design
Explosions/Fire	Hazards to life	Design of substations to include modern fire control systems/firewalls. Provision of firefighting equipment to be located close to transformers, power generation equipment.	Substation design compliance with fire prevention and control codes	Tender document to mention detailed specifications	APDCL	Part of detailed substation layout and design/ drawings
Construction						
Removal or disturbance to other public utilities	Public inconvenient	Advance notice to the public about the time and the duration of the utility disruption Use of well trained and experienced machinery operators to reduce accidental damage to the public utilities Restore the utilities immediately to overcome public inconvenience	Disruption other commercial and public activities / Public complaints	Technical specification	APDCL	Throughout the construction period
Acquisition of paddy fields and	Loss of agricultural productivity	Avoid farming season wherever possible for the project activities. Ensure existing	Land area of agriculture loss Usage of existing utilities	Regular monitoring compliance with	APDCL, Contractor	Throughout the construction period

Project Activity	Potential Environmental Impact	Mitigation Action	Monitoring Scope	Standards	Institutional Responsibility	Implementation Schedule
Temporary outage of the electricity	Loss of power supply to the local community when distribution lines crossing the new line are switched off	Advance notice to the public about the time and the duration of the utility disruption Restore the utilities immediately to overcome public inconvenient.	Houses and commercial premises of power disruption	Regular monitoring during the period of strengthening the conductors	Contractor APDCL	Throughout the construction period
Equipment layout and installation	Noise and vibrations	Selection of construction techniques and machinery to minimize ground disturbance.	Construction techniques and machinery	Minimal ground disturbance	APDCL, Contractor through contract provisions	Construction period
Substation construction	Loss of soil	Fill for the substation foundations obtained by creating or improving local drain system.	Borrow area sighting(area of site in m^2 and estimated volume in m^3)	Laws and regulations of respective LAs	APDCL, Contractor through contract provisions	Construction period
	Water pollution	Construction activities involving significant ground disturbance (i.e. substation land forming) not undertaken during the monsoon season.	Seasonal start and finish of major earthworks	Timing of major disturbance activities - prior to start of construction activities	APDCL, Contractor through contract provisions	Construction period
Construction schedules	Noise nuisance to neighboring properties	Construction activities only undertaken during the day and local communities informed of the construction schedule.	Timing of construction(noise, [dB(a)])	Daytime construction only	APDCL, Contractor through contract provisions	Construction period
	Nuisance to wildlife if the line route construction crosses migratory path	Complete restriction of construction work for two months before and after the known period of migration by the animals	Timing of Construction	No construction for two months	APDCL, Contractor	Construction period
Provision off anilities for construction workers	Contamination of receptors (land, water, air)	Construction workforce facilities to include proper sanitation, water supply and waste disposal facilities.	Amenities for Workforce facilities	Presence of proper sanitation, water supply and waste disposal facilities	APDCL, Contractor through contract provisions	Construction period
Surplus earthwork/soil	Runoff to cause water pollution, solid waste disposal	Any excess material will only be used as fill material offsite when the owner's agreement has been obtained and with the disposal site restored in a manner that prevents erosion and does not block any drainage path	Location and amount(m^3) of fill disposal Soil disposal locations and volume (m^3)	Appropriate fill disposal and dispersal locations	APDCL, Contractor through contract provisions	Construction period

Project Activity	Potential Environmental Impact	Mitigation Action	Monitoring Scope	Standards	Institutional Responsibility	Implementation Schedule
Air Pollution	Loose dust might blow in the area causing dusty conditions	Dampening of dust by sprinkling of water within the work area and stack the loose soil and contain it with covers if required.	Soil stacking locations, access roads, pole locations, substation site	Air Quality Standards	APDCL, Contractor through contract provisions	Construction period
Wood/vegetation harvesting, cut and fill operations	Loss of vegetation and deforestation	Construction workers prohibited from Harvesting wood in the project area during their employment.	Illegal wood /vegetation harvesting (area in m^2,number of incidents reported)	Complaints by local people or other evidence of illegal harvesting	APDCL, Contractor through contract provisions	Construction period
	Effect on fauna	Prevent his work force from disturbing to the flora, fauna including hunting of animal and fishing in water bodies Proper awareness program regarding conservation of flora, fauna including ground vegetation to all drivers, operators and other workers	Habitat loss	Fauna and flora protection Act.	APDCL/ DWC/ DoF	Construction period
Site clearance	Vegetation	Marking of vegetation to be removed prior to clearance, and strict control on clearing activities to ensure minimal clearance.	Vegetation marking and clearance control(area in m^2)	Forest Conservation Act. Clearance strictly limited to target vegetation	APDCL, Contractor through contract provisions	Construction period
	Soil erosion and surface runoff	Construction in erosion and flood-prone areas should be restricted to the dry season Treat clearing and filling areas against flow acceleration and construction work should be carefully designed to minimize obstruction or destruction to natural drainage	Soil erosion	Visual inspection (Turbidity and sedimentation)	APDCL, Contractor through contract provisions	Construction period
Mechanized construction	Noise, vibration and operator safety, efficient operation Noise, vibration, equipment wear and tear	Construction equipment to be well maintained. Proper maintenance and turning off equipment not in use.	Construction equipment - estimated noise levels and operating schedules	Technical specifications, safety regulations, Noise control regulations of CPCB	APDCL, Contractor through contract provisions	Construction period
Construction of roads for accessibility	Increase in airborne dust particles Increased land requirement for temporary accessibility	Existing roads and tracks used for construction and maintenance access to the site wherever possible. New access ways restricted to a single carriageway width within the RoW.	Access roads, routes(length and width of new access roads to be constructed)	Use of established roads wherever possible Access restricted to single carriageway width	APDCL, Contractor through contract provisions	Construction period

Project Activity	Potential Environmental Impact	Mitigation Action	Monitoring Scope	Standards	Institutional Responsibility	Implementation Schedule
				within RoW		
Transportation and storage of materials	Nuisance to the general public	Transport loading and unloading of construction materials should not cause nuisance to the people by way of noise, vibration and dust	Water and air quality	Laws and regulations of respective states National Emission	APDCL/ CPCB	Construction period
		Avoid storage of construction materials beside the road, around water bodies, residential or public sensitive locations Construction materials should be stored in covered areas to ensure protection from dust, emissions and such materials should be bundled in environment friendly and nuisance free manner		Standards and CPCB water quality standards		
Trimming/cutting of trees within RoW	Fire hazards Loss of vegetation and deforestation	Trees allowed growing up to a height within the RoW by maintaining adequate clearance between the top of tree and the conductor as per the regulations. Trees that can survive pruning to comply should be pruned instead of cleared. Felled trees and other cleared or pruned vegetation to be disposed of as authorized by the statutory bodies.	Species-specific tree retention as approved by statutory authorities(average and maximum tree height at maturity, in meters)Disposal of cleared vegetation as approved by the statutory authorities (area cleared in m^2)	Forest Conservation Act Presence of target species in Row following vegetation clearance.	APDCL, Contractor through contract provisions	Construction period
Health and safety	Injury and sickness of workers and members of the public	Contract provisions specifying minimum setback requirements for construction camps from water bodies, reserved areas etc. Contractor to prepare and implement health and safety plan. Contractor to arrange for health and safety awareness programs	Contract clauses(number of incidents and total lost-work days caused by injuries and sickness)	Health and safety regulations	APDCL, Contractor through contract provisions	Construction period
Nuisance to nearby properties	Losses to neighboring land uses/ values	Contract clauses specifying careful construction practices. Use existing access ways as much as possible. Productive land will be reinstated	Contract clauses Design basis and layout Reinstatement of land status (area affected,	Incorporating good construction management, design engineering	APDCL, Contractor through contract provisions	Construction period

Project Activity	Potential Environmental Impact	Mitigation Action	Monitoring Scope	Standards	Institutional Responsibility	Implementation Schedule
Operation and Maintenance Phase						
Electric shock	Death or injury to the workers and public	Security fences around substation Establishment of warning signs Careful design using appropriate technologies to minimize hazards	Proper maintenance offences and sign boards Usage of appropriate technologies (lost workdays due to illness and injuries)	Periodic maintenance Number of programs and percent of staff/workers covered	APDCL	Throughout the operation
Noise generation	Nuisance to the community around the site	Provision of noise barriers	Noise level	Noise level [db (A)]-Once a year	APDCL	Throughout the operation
SF6 Gas levels	Leakage of SF6	Monitoring of SF_6 gas from Electrical Substations	Measurement using hand held devices	0.1%-0.5% as per design	APDCL	Throughout operation
Maintenance of Distribution line	Exposure to electromagnetic interference	Distribution line to comply with the design parameters of electromagnetic interference from cables	Required ground clearance (meters)	Ground clearance as per APDCL norms	APDCL	Throughout the operation
Substation maintenance	Exposure to electromagnetic interference	Substation design to comply with the parameters of electromagnetic interference from instruments within floor area	EMF measurement, instrumentation	Technical specifications	APDCL	Throughout the operation
Oil spillage	Contamination of land/nearby water bodies	Substation transformers located with insecure and impervious bundled areas with a storage capacity of at least 100% of the capacity of oil in transformers and associated reserve tanks.	Substation bounding(“as-built” diagrams)	Bounding capacity and permeability	APDCL	Throughout the operation