

Final Environmental Assessment Report of Transmission and Distribution Subprojects in East Khasi Hills & Ri-Bhoi Districts of Meghalaya under NERPSIP



Prepared for



Meghalaya Power Transmission Corporation Ltd. (MePTCL)

&

Meghalaya Power Distribution Corporation Ltd. (MePDCL)



Submitted By

**Department of Environmental Studies
North-Eastern Hill University
Shillong-793022**

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ABBREVIATIONS

ADC	–	Autonomous District Council
APs	–	Affected Persons
AP		Angle Point
CBIS	–	Capacity Building & Institutional Strengthening
CEA	–	Central Electricity Authority
CPTD	–	Compensation Plan for Temporary Damages
CPIU	–	Central Project Implementation Unit
dB		Decibel
DC	–	District Collector
DL		Distribution Line
E&S	–	Environmental and Social
EHS		Environment, Health & Safety
EMF		Electro Magnetic Field
ESMC	–	Environment & Social Management Cell
ESPPF	–	Environment and Social Policy & Procedures Framework
EMP	–	Environmental Management Plan
FCA, 1980	–	Forest (Conservation) Act, 1980
FEAR	–	Final Environment Assessment Report
KHADC		Khasi Hills Autonomous District Council
GOI	–	Government of India
GRM	–	Grievances Redressal Mechanism
GRC	–	Grievance Redressal Committee
HFL		High Flood Level
IA	–	Implementing Agency
IEAR	–	Initial Environmental Assessment Report
MoEFCC	–	Ministry of Environment, Forest and Climate Change
MePDCL	–	Meghalaya Power Distribution Corporation Ltd
MePTCL	–	Meghalaya Power Transmission Corporation Ltd
LOA	–	Letter of Award
NOC		No Objection Certificate
NEHU	–	North Eastern Hill University
NER	–	North Eastern Region
NERPSIP	–	North Eastern Region Power System Improvement Project
O & M		Operation & Maintenance
OPs	–	Operational Policies
PCB		Poly Chlorinated Biphenyl
PIU	–	Project Implementation Unit
POWERGRID	–	Power Grid Corporation of India Ltd.
PPEs	–	Personal Protective Equipments
PMU	–	Project Management Unit

PRA		Participatory Rural Appraisal
RoW	–	Right of Way
R& R	–	Rehabilitation and Resettlement
RRM	–	Random Rubble Masonry
SS	–	Substation
SPCU	–	State Project Coordination Unit
T & D	–	Transmission & Distribution (T&D)
TL		Transmission Line
WB	–	The World Bank

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Acknowledgement

It is a pleasure to place on record, my appreciation for all the help and support received from different quarters towards completion of the project.

I am thankful to the Power Grid Corporation of India for reposing their faith in NEHU for undertaking the project. I am especially appreciative of Mr. Dipjyoti Baruah and the field station staff of Power Grid for all the support through documents and consultations during the course of the project.

I am thankful to my teammates Prof. B. K. Tiwari, Prof. D. Walia and Mr. K.K. Choudhury for their valuable observations and inputs, both during field visits, and during compilation of the report.

My confidence in my project staff who are past students of the department has been amply rewarded by the excellent discipline and meticulous work ethics they exhibited during the field work and data collection. I am thankfully proud of them and am confident that this experience would have exposed them to new domains of discourse and enriched their knowledge

Finally, I am extremely grateful to all the respondents of the PRA exercise whose valuable inputs were indispensable in the fruition of the work and its logical culmination into the present report.

Dibyendu Paul

Executive Summary

North Eastern Region Power System Improvement Project (NERPSIP), a jointly funded project of World Bank and Government of India (GoI) which is aimed at improving the impoverished power transmission and distribution system in the North Eastern states of India. Power Grid Corporation of India Ltd. (POWERGRID), the state-owned transmission utility of the country has been appointed as the implementing agency (IA) for this project by Ministry of Power (MoP), GoI. In line with the framework agreed between The World Bank, IA and State Utilities, the Final Environmental Assessment study for transmission and distribution system in the East Khasi Hills and Ri-Bhoi districts has been undertaken by Independent Agency to evaluate the compliance with respect to measures listed in the Initial Environmental Assessment Report (IEAR) /Environment Management Plan (EMP) prepared for the instant project.

The project components include 126.52 km long 220 kV D/C transmission line from Killing (Byrnihat) to New Shillong via Mawngap and associated new 220/132 kV GIS substation at New Shillong, new 220/132 kV GIS sub-station at Mawngap, 220 Byrnihat S/s bay extension. It also includes 5 nos. 33 kV distribution lines of 43.58 km length and 4 nos. of new 33/11 kV substations at Mawpat, New Shillong, Mawryngkneng & Mawkynew in East Khasi Hills and Ri-Bhoi districts.

The topography of the project location is mostly hilly terrain (>90%). About 90% of the landscape has a vegetation cover and most of these lands are privately owned and some are under the jurisdiction of the Village Council. The final layout of transmission line has been carefully selected based on three alternatives analysis study. However, the selected alignment had to be re-routed because of widening of the Shillong-Guwahati highway with considerable infringement on tower locations and RoW, resulting in an increase in route length from 115.5 Km to 126.52 Km. Moreover, the final alignment has successfully avoided all reserve forests and protected areas. Almost 90% of the tower locations are on (hilltop locations) hillocks and the height gain due to elevation is sufficient to allow retention of trees along RoW, thus minimizing felling requirements.

Similarly, the 33 kV distribution lines too have been aligned by avoiding forested areas. Here, the RoW corridor being narrower (15 m) will further reduce tree felling. Much of the

line would only need lopping of branches for unhindered passage. The land requirement and excavation for tower footing has been adequately addressed. As most of the tower locations (68%) are on sloppy terrain, site-specific measures such as Retention Wall, Unequal Leg Extensions (ULE) and bio-engineering measures including grass with bamboo grid have been planned/ implemented to reduce earth cutting as well as slope instability. Accordingly, there have been provisions of total 163 ULE and 57 retention walls at tower locations of 220 kV lines to negate chances of erosion/slope instability. Soil excavated for tower footing has been backfilled, and the remaining soil has been adequately managed through even spreading and compaction. As the tower excavation works are undertaken during the lean/dry seasons, no hindrances to agricultural/cropping operations as well as erosion problems are envisaged. However, as per compensation procedures laid down in IEAR/ ESPPF, compensation to all affected persons/ land owners for any damage to crops/ felling of trees and cost for use of the land for tower base area @ 100% land cost as per prevailing rates are being provided by IA/Utility. Accordingly, till June 2021, tree/ crop and land compensation to the tune of Rs. 2.64 million and Rs. 56.35 million respectively has already been disbursed to affected persons/ land owners.

As the transmission and distribution lines avoid ecologically sensitive areas, there is no evidence to suggest threats to biodiversity. Elephant sightings have been reported in a section of the transmission line (2.3 km, 8 tower locations) adjacent to the Nongkhyllam WLS reserve and the adequate tower extension as per regulation (i.e. at least 6 m extension over and above minimum ground clearance) have been provided for towers in this section so as to ensure unhindered passage of elephants. Review of literature on animal/elephant corridors has revealed the presence of two documented elephant corridors, but they are located distantly, to the east and south east of the project area. No animal corridors are present in the project area. An endangered (IUCN category) herbaceous species *Nepenthes Khasiana* is reported to inhabit some pockets of the project area. However, being herbaceous in habit, there is no apparent threat to the species except in the event of excavations accidentally uprooting populations. Care should be taken to avoid such accidental disturbance. Primates are also reported in some locations. However, the clearance of the conductors from the canopy is high enough to negate any chances of electrocutions. No bird migration/fly path found in project area. Moreover, bird guard/anti perching devices are being made part of BoQ/tower design.

The substations are located away from human habitation and are mostly on high ground (HFL) so as to avoid instances of flooding or noise pollution. Necessary permissions/No Objection, wherever necessary have been taken from the Autonomous District Council and New Shillong Township Development Agency (NSTDA). In some locations, earth cutting/levelling requirements have necessitated and installations of retaining walls have been provided. The excavated soils for various sub-station equipment foundations are backfilled, the excess being evenly spread out within the boundary of the substations. Appropriate drainage has been provided, and management of transformer oil spillage has been adequately addressed through provisions for collection and storage for either recycling or disposal.

Excavations and all accident-prone areas are appropriately barricaded for safety. Issues relating to operational health and safety have been adequately addressed. The labourers are provided with safety gear and provisions for first aid and arrangement for shifting of affected persons to nearby hospitals are also in place. Compensation for accident has been ensured through provisions in Safety Plan & Contract conditions. Proper sanitation facilities and safe drinking water are being provided in the project locations. The site managers have been advised to ensure that there are no instances of open defecation.

The IA has a continuous monitoring mechanism of the project w.r.t. compliance of the mandatory requirements as stipulated in the IEAR. Thus, the adherences to the clauses by the contractors are regularly monitored especially in respect of EMP implementation, OHS compliance. The project has thus far had zero fatality which is an indicative of the good supervision/monitoring by IA.

The Capacity building and Institutional Strengthening program of the IA is held intermittently to enhance the skills of the project officials. Further, meetings between IA and MePTCL are held on a monthly/ bimonthly basis to assess the work progress and difficulties encountered in respect of land acquisition, RoW and compensation if any.

The two-tier grievance redress mechanism has been addressing/resolving the concerns and grievances of the complainant effectively. All concerns/grievances of affected persons/public including minor ones are also recorded and regularly tracked for early resolution within stipulated timeframe. Moreover, regular consultation with the

complainant is under progress for possible settlement. As of June 2021, 2 cases out of total 3 complaints remain open/are being negotiated.

For the Participatory Rural Appraisal (PRA), prior permissions and appointments were taken from the village headmen and meetings were held with the villagers to generate information regarding their opinions about the project and its potential impact on the area. Further, information about the important biodiversity elements present in the area was also generated through 500m walks undertaken in the North, South, East and West directions from a focal point for sightings of large winged birds and their nesting sites, and primates. At private plantation locations, potential perching sites were carefully observed for sightings. Most of the tower locations visited for PRA was on either flat land or on gentle slopes, thus negating chances of erosive losses during construction. Further, as most of the locations were agricultural land or private plantation patches with low canopy, the requirement of tree felling for ROW is drastically reduced and will have negligible impact.

It emerged from the survey that the PAPs were appreciative of the project and hoped that the power scenario would improve after implementation of the project. Local people also benefited through project related employment that was being generated.

Overall, the planning and design/layout of the project elements have been undertaken in a judicious manner so as to ensure minimum environmental and social impacts. However, strict monitoring by the IA should be undertaken so as to ensure proper compliance of IEAR/EMP provisions by the Contractors during the construction phase with special emphasis on site specific HSE compliances as & when necessary.

CHAPTER 1: INTRODUCTION

1.1 Project Background

Electric power being an enabler sector acts as a catalyst for the growth and development of areas having accessibility to it. The North Eastern Region (NER) of India faces significant bottlenecks in accessibility and availability of power and the per capita power consumption of NER is one third of the national average. Further, no significant generation capacity has been added between 2004 and 2011, as a result of which, inadequate power supply remains a critical constraint to sustainable and inclusive growth, and to the efforts of scaling up private investment and economic competitiveness in the NER.

The road-map for development of power sector specifying the need for strengthening of overall Transmission, Sub-transmission and Distribution system of NER was brought out in the “Pasighat Proclamation on Power” released during the first Sectoral Summit of North Eastern Council at Pasighat in Arunachal Pradesh in January 2007. Accordingly, Government of India (GoI) with the financial assistance of The World Bank (WB) has planned a composite scheme viz. **“North Eastern Region Power System Improvement Project” (NERPSIP)** to create/augment proper infrastructure/network of Transmission & Distribution (T&D) in the region. The scheme covers six North Eastern States (Assam, Meghalaya, Manipur, Tripura, Nagaland & Mizoram) to create a robust power network by improving the intra-state transmission & distribution (33kV and above) network with required capacity building initiatives for effective utilization of assets. The Ministry of Power (MoP), GoI appointed **Power Grid Corporation of India Limited (POWERGRID)**, the Central Transmission Utility of the country as the “Implementing Agency” (IA) to implement the project under Tranche-1 in close coordination with the respective State Governments/Utilities. However, the ownership of the assets shall be with the respective State Governments/ State Utilities, who will be responsible for operation and maintenance of assets once they are handed over to them upon progressive commissioning. POWERGRID is also facilitating in building the institutional capacity of the state departments and utilities to continue managing the rehabilitated networks in an efficient manner. The state wise scope of works proposed under Tranche-1 is given below:

State	Transmission/ Sub-transmission (132kV & above)			Distribution (33kV)		
	Line (Km)	New S/s (No.)	Total MVA (New & Aug.)	Line (Km)	New S/s (No.)	Total MVA (New & Aug.)
Assam	233	11	1644	479	16	240
Manipur	254	2	160	131	13	229.4
Meghalaya	225	4	940	263	11	135
Mizoram	143	3	125	5	1	6.3
Nagaland	285	5	245	76.5	10	190
Tripura	261	9	1306.5	1096	34	450.5
Total	1401	34	4420.5	2051	85	1251.2

The project has two components namely Component A: Priority Investments for Strengthening Intrastate Transmission, Sub-transmission, and Distribution Systems, and Component B: Technical Assistance for Capacity Building and Institutional Strengthening (CBIS) of Power Utilities and Departments of Participating States. The total project cost is Rs. 5111 Crore with financing from both Govt and Bank on 50:50 basis. The Bank is providing financial support to the tune of Rs \$ 470 million (Rs 2511.165 crores) under the Loan No.-8631-IN which was signed on 28th November, 2016 and became effective from 20th February, 2017. The loan closing date is 31st March, 2023. The remaining financing including capacity building will be met through Govt. of India funding.

1.2 Project Justification

The existing intra-state transmission system in Meghalaya is quite old & weak, which is unable to cater to the growing power requirements of the state. Although the present T&D system covers many areas of the state, it is inadequate in its reach, and due to a redundant T&D system, outage of any transmission system element results in long term power shortages making the system highly unreliable. Further, some of the network elements have undergone long term outage due to break-down. Therefore, it has become essential to address the situation through remedial measures in the transmission and distribution system. Accordingly, phase-wise strengthening of transmission & sub-transmission system has been proposed.

The transmission schemes proposed under Tranche-1 of Meghalaya State include construction of 416km of 220/132 kV lines & associated 4 nos. new substations and 198 ckm of 33 kV distribution lines & associated 11 nos. substation along with augmentation & strengthening of transmission and sub-transmission spread across the State.

1.3 Benefits of the Project

The proposed transmission and distribution schemes will not only improve the overall power situation, but will also enhance reliability, quality and security of power supply of the State.

1.4 Project Scope & Present Study

In line with MePTCL & MePDCL's **Environmental and Social Policy & Procedures Framework (ESPPF)**, POWERGRID in association with Meghalaya Power Transmission Corporation Ltd (MePTCL) & Meghalaya Power Distribution Corporation Ltd (MePDCL) carried out comprehensive environment and social assessment of each subprojects and prepared Initial Environment Assessment (IEA) reports. These reports were subsequently disclosed for public information both on the State Utility, POWERGRID and Bank website after obtaining clearance from The World Bank.

As per provision the ESPPF, a **Final Environment Assessment Report (FEAR)** for each subproject need to be prepared with an objective to assess the compliance of mitigation measures as suggested in IEARs. However, as per Project Agreement signed between POWERGRID and Bank such study require to be undertaken by Independent Agencies as per Term of Reference agreed with Bank. Accordingly, POWERGRID appointed North Eastern Hill University (NEHU) as Independent consultant vide LOA Ref No.: NEGW/NERPSIP/C&M/17-18/400-13/LOA-57/117 dated 27th March 2019 to carry out FEAR study.

The present Final Environment Assessment Report (FEAR) is a document developed as a consultancy assignment by NEHU to validate the work undertaken and to examine any deviation, if any with respect to management measures as outlined in the IEAR which is based on MePTCL/MePDCL's Environmental and Social Policy & Procedures Framework (ESPPF), World Bank's Operational Policies and Bank's Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution.

The scope of the present study includes 220 kV transmission line and associated 220/132 kV substations & 33 kV distribution lines and 33/11 kV substations being implemented in East Khasi Hills and Ri-Bhoi Districts of Meghalaya. Details of T & D component are as below;

A. Transmission Components

- i) 220 kV Killing (Byrnihat) - Mawngap – New Shillong line – 126.52 km;
- ii) 220/132/33 kV New Shillong GIS Substation (new) (2x160 MVA + 2x160 MVA)
- iii) 220 kV Mawngap GIS Substation (new) (2x160 MVA)
- iv) Extension of 220 kV Byrnihat Substation (2 nos. bay)

B. Distribution Components

- i) Establishment of 2x10 MVA, 33/11kV new substation at **Mawpat**;
- ii) Establishment of 2x10 MVA ,33/11 kV new substation at **New Shillong**;
- iii) Establishment of 2x7.5 MVA, 33/11 kV new substation at **Mawryngkneng**;
- iv) Establishment of 2x5 MVA, 33/11 kV new substation at **Mawkynew**.
- v) 33 kV line from Mawpat (new) sub-station to New Shillong GIS (new) substation and extending up to existing 33 kV SE Falls substation-**10.76 Km**;
- vi) 33 kV line from New Shillong (new) substation to New Shillong GIS (new) substation- **3.55 Km**;
- vii) 33 kV line from Mawryngkneng (new) substation to New Shillong GIS (new) substation -**22 Km**;
- viii) 33 kV line from 33/11 kV Mawkynew substation (New)- 33/11kV Jongksha substation (Existing)- **6.476 Km**;
- ix) LILO of existing 33 KV Jowai -Landnongkrem line at Mawryngkneng (new) -**0.88 Km**;

1.5 Overall Project Progress

A brief status on project implementation progress of various transmission & distribution components till September, 2020 is presented below;

Name of the T & D Component	Progress as on June, 2021
A. Transmission and Distribution Line	
Killing (Byrnihat) - Mawngap – New Shillong 220 kV D/C line	Overall progress- approx. 45 % <ul style="list-style-type: none"> ➤ 291 out of 389 tower foundations completed. ➤ 196 out of 389 tower erections completed. ➤ 9.80 out of total 126.52 km stringing completed.

33 kV line from 33 /11kV Mawpat (New) - 220/132/33 kV New Shillong	<ul style="list-style-type: none"> ➤ All 225 poles erection completed. ➤ All Stringing (total 10.76km) completed.
33 kV line from 33/11 kV New Shillong (New) substation - 220/132/33 kV New Shillong substation	<ul style="list-style-type: none"> ➤ All 101 poles erection completed. ➤ All Stringing (total 3.55 km) completed.
33 kV line from 33/11 kV Mawryngkneng substation (New) - 220/132/33 kV New Shillong substation (New)	<ul style="list-style-type: none"> ➤ 229 poles erected out of total 486 poles. ➤ 2.5 km out of total 22 km Stringing completed.
LILO of existing 33 KV Jowai - Landnongkrem line at New Mawryngkneng	➤ Commissioned in January, 2021.
33 kV line from 33/11 kV Mawkynew substation (New)- 33/11kV Jongksha substation (Existing)	➤ Commissioned in June, 2019.
T & D Substations	
Establishment of 2x160 MVA, 220/132kV + 2 x 50 MVA, 132/33 kV GIS substation (New) at New Shillong	<ul style="list-style-type: none"> ➤ Land area measuring 6.214 acre secured from two land owners through private purchase on “willing buyer willing seller” basis on negotiated/market rate. ➤ All Civil & equipments erection works completed in April, 2021
Extension of 220 KV Byrnihat Substation	<p>Required land for extension work already available in the existing Byrnihat substation premise</p> <p>Substation commissioned in November, 2019.</p>
Upgradation of under construction 132 kV substation to 2x160 MVA, 220/132 kV GIS substation at Mawngap	<p>No fresh land secured as existing land of MEPTCL is utilized for this purpose.</p> <p>Substation commissioned in March, 2021.</p>

Establishment of 2x10 MVA, 33/11kV new substation at Mawpat	Land area measuring 0.30 acre secured from single landowner through private purchase on “willing buyer willing seller” basis on negotiated/market rate. Substation commissioned in September, 2019
Establishment of 2x10 MVA,33/11 kV new substation at New Shillong	Land area measuring 1.0 acre which was basically a community land secured through private purchase on “willing buyer willing seller” basis on negotiated/market rate. Substation commissioned in December, 2019.
Establishment of 2x7.5 MVA, 33/11 kV new substation at Mawryngkneng	Land area measuring 0.61 acre secured from single landowner through private purchase on “willing buyer willing seller” basis on negotiated/market rate. Substation commissioned in February, 2021.
Establishment of 2x5 MVA, 33/11 kV new substation at Mawkynrew	Land area measuring 1.18 acre secured from single landowner through private purchase on willing buyer willing seller basis on negotiated/market rate. Substation commissioned in June, 2019.

1.6 Objectives and Methodology adopted for FEAR Study

The main objectives of the FEAR study is to assess that the mitigative measures suggested in IEAR and/or EMP are effectively implemented/ addressed at the ground during pre-construction & construction stages of project cycles. The study also helps in establishing the status of compliance of various mitigation/management measures provided in the IEAR/EMP and suggests gaps or weaknesses, if any.

To achieve this, NEHU undertook a comprehensive biophysical, environmental, socio-economic data gathering exercise along the transmission/ distribution line routes and substations location to assess/verify the actual site-specific measures implemented /being implemented by IA/Contractor in respect of measures/actions listed in IEAR/EMP. The

methodologies adopted for the proposed study is inclusive of but not limited to following steps:

- (i) **Review of existing reports/data:** The IEAR for this project has been thoroughly analyzed to ensure that the mitigation measures as proposed in IEAR are being implemented at ground level or deviation if any. Additionally, other existing safeguard reports/data prepared and generated by POWERGRID viz. ESPPF, Compensatory Plan for Temporary Damage (CPTD), Semi-annual E & S Monitoring Reports, QPRs, Monthly Progress Reports etc. were also studied for preparation of present report.
- (ii) **Physical verification of construction elements:** Field/site visits were conducted for each project elements along with IA and Contractor during November 2019 to January 2020 & June to July 2021 to verify compliance with respect to IEAR/EMP, contract conditions through discussion with Site In-charge and Construction Contractor. This includes collection of any other primary data/ maps/ other records, which, in the opinion of agency, is required for ascertaining the compliance of the mitigating measures as enlisted in IEAR/EMP. Besides, photographs of important events such as interaction with various stakeholders, Health and Safety measures safe working practices, status of labour camps borrow area management, erosion control, slope stability, top soil management and construction during lean period etc. was taken as evidence. Photographs of visit to various subproject sites is presented at **Appendix-A**.
- (iii) **Line transects survey for flora and fauna:** Being a TL project, line transect survey methodology has been followed for assessment of vegetation structure/ profile in the proximity of the proposed TL, corridors of TL routes, S/S, etc. As the topography along the routes varied from undulating / plain to top of hill it was therefore, not feasible to chart the entire routes of proposed TL as due to steep slopes and issues of accessibility point of view. However, during the field surveys it was tried to survey minimum 10% of the line route for flora & fauna data collection. The fauna elements were not found during field surveys in the project areas except some bird and common fauna. Hence the data was collected through consultations with local public, Forest department officials and POWERGRID officials working in the project area. Besides, bird walks were also undertaken, particularly in private plantation patches, to locate nesting sites and for bird

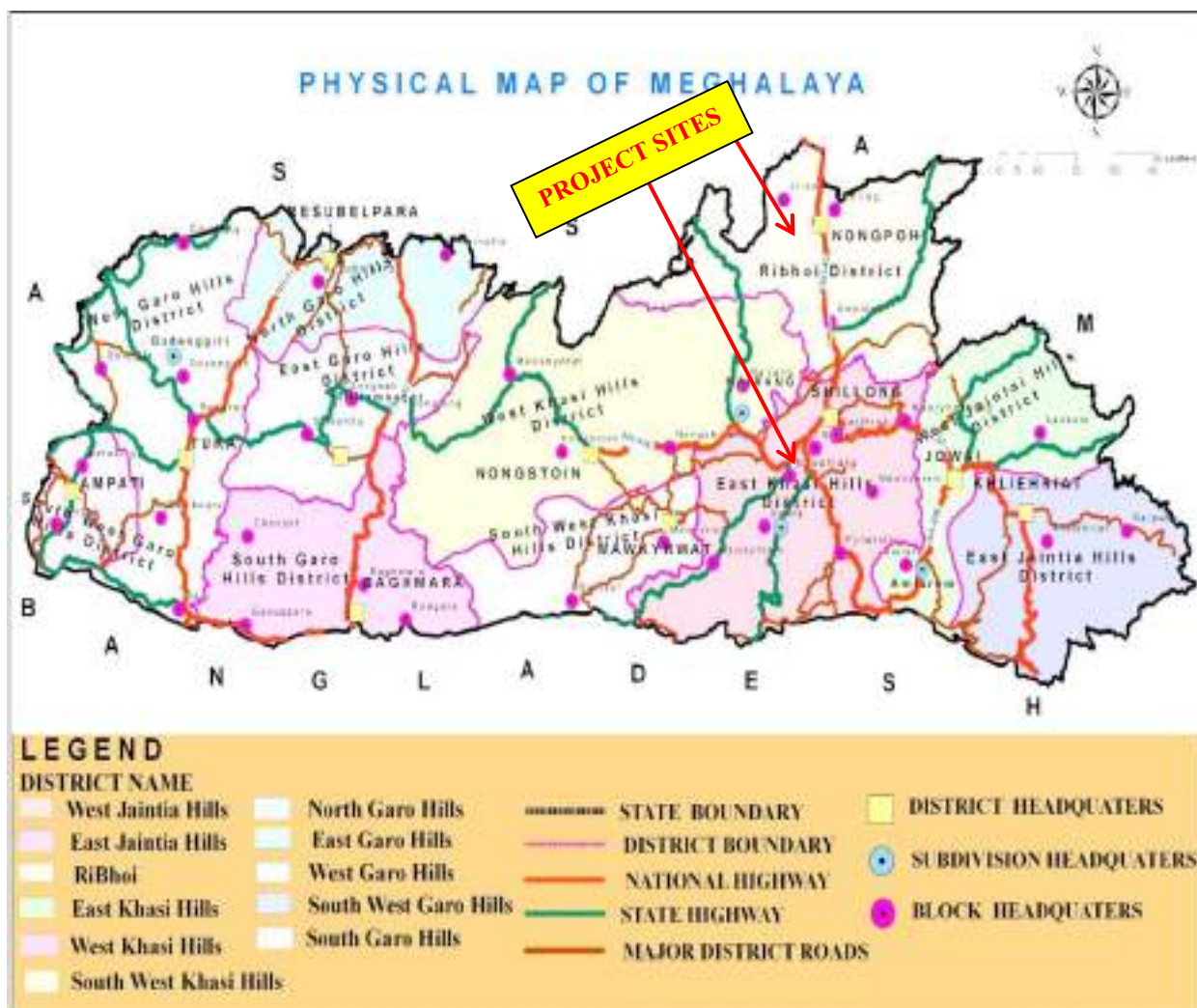
sightings. Details of line transects survey undertaken during study is placed at **Appendix-B.**

- (iv) **Visit schedule with local residents to generate PRA data and public consultation:** Local headmen of villages selected for PRA study were approached and meetings were fixed to gather information from other stakeholders the Project Affected People (PAPs), local residents and forest officials, in respect of the impact of the project, the compensation status, the biodiversity elements etc. and any other information related to the project implementation. The details of PRA exercise is presented at **Appendix-C.**
- (v) **Analysis of secondary data:** Extensive literature study/survey undertaken to determine the biodiversity components of the project area. Further, literature in respect of animal corridors, presence of endangered species, legal status of forests, etc. were also consulted. The official websites of the forest department and other relevant department websites were also visited to corroborate the information garnered from secondary sources. Subsequently, findings of field survey were consolidated along with secondary data for interpretation and finding the gaps for immediate necessary action.
- (vi) **Development of Google maps/ Satellite Imagery:** Google maps and Geo-referenced maps with superimposed coordinates of various project elements have been generated by using sophisticated software i.e. ARCGIS so as to verify locational details and details of physical features of terrain of the project locations. It also helps in making a detail analysis of the sub-project elements with respect to various ecological sensitive areas of the State.

CHAPTER 2: BASELINE DATA

2.1 Project Location

The proposed project comprising of both transmission and associated distribution networks are located in East Khasi Hills & Ri-Bhoi districts of Meghalaya (**Map-2.1**). The map showing location of various subprojects is presented in **Map- 2.2**.



Map - 2.1: Location Map of the Project

2.2 Meghalaya

Meghalaya has a geographic area of 2.24 million ha, which constitutes 6.82% of the country's total area. It is situated between latitude 24°58' N to 26°07' N and longitude 89° 48' E to 92° 51'E. The state has most of its land covered by hills interspersed with gorges and small valleys with elevation ranging between 150 m to 1,950 m.

Map- 2.2: Google Map showing Subprojects Location



In terms of tribal composition, the state has three distinct regions, namely, Garo Hills, Khasi Hills and Jaintia Hills. The general land use pattern of the state is depicted in **Table 2.1**.

Table- 2.1: Land use pattern in Meghalaya

Land Use	Area in '000 ha	Percentage
Total geographical area	2,243	
Reporting area for land utilization	2,243	100.00
Forests	946	42.21
Not available for cultivation	239	10.66
Permanent pastures and other grazing lands	00	00
Land under misc. tree crops & groves	164	7.31
Culturable wasteland	391	17.44
Fallow lands other than current fallows	155	6.91
Current Fallows	60	2.67
Net area sown	285	12.71

Source: Land use statistics, Ministry of Agriculture, GOI, 2011-12

Climate:

The State enjoys a temperate climate. It is directly influenced by the South-West Monsoon and the northeast winter wind. The climate varies with altitude. The four seasons of Meghalaya are: Spring - March and April, Summer & Monsoon - May to September, Autumn -October and November and Winter - December to February.

Temperature:

The temperature during summer months (April to October) is usually 15°C minimum to 23°C maximum, and during winter months (November to March) it is 3°C minimum to 15°C maximum.

Rainfall:

Monsoon usually starts by the third week of May and continues to the end of September, and sometimes well into the middle of October. The average rainfall in the State is 12,000 millimeters (mm). There is a great variation of rainfall over central and southern Meghalaya. Mawsynram platform, receives the heaviest rainfall in the world. At Sohra

(Cherrapunjee), the average annual rainfall is as high as 12000 mm but Shillong located at a distance of about fifty kilometers from Sohra receives an average of 2200 mm of rainfall annually.

Minerals:

Meghalaya with its rich wealth of mineral deposits has tremendous industrial potential. There are extensive deposits of coal, limestone, granite, clay and other minerals. Coal deposits are available in all districts and particularly in the southern slopes of the state. The coal bears low ash content and its calorific value ranges between 6500 to 7500 KCal/Kg. The total estimated reserve of coal is in the region of 640 million tonnes. The coal is mainly of sub-bituminous type and can be utilized in varied industries ranging from power, fertilizer, cement and textile to paper, rubber, brick kilns and also pottery based industries. The coal found in the State can also be converted into coke to recover value added chemicals like light, medium and heavy oil, phenol and producer gas.

Limestone is another mineral that occurs in an extensive belt (approx. 200 km. Long) along the Southern border of Meghalaya. The quality of limestone found here varies from cement grade to chemical grade having three brands as well. Total inferred reserve limestone within the State is about 5,000 million tons. The quality of limestone in the state has CaO content of 53% and can be of use in steel, fertilizer and chemical industries. Granite of excellent quality is at present being mined in the East and West districts of Khasi hills. Sizeable deposits are estimated and can be found in various shades and colours. Clay of various types such as Kaolin (China clay), white clay, and fire clay are found in various parts of the states. These clays are suitable for the ceramic, paper, rubber and refractory industries. It has been estimated that there are a few hundred million tonnes of clay reserves in the state.

Beside the above, other economically viable minerals like gypsum, phosphorite, silica and, base metals, quartz and feldspar can be located in various parts of the state. The State is also credited with having one of the most valuable sillimanite deposits in the world. Details of mineral deposits in the State are placed below.

Minerals	Reserve (in million tonnes)				Grades	Major Places of Occurrence
	Proved	Indicated	Inferred	Total		
Limestone	9515	41599	3986	15100	Cement, Metallurgical and Chemical	Cherrapunjee, Mawlong, Ishamati, Shella, Komorrah, Borsora, Bagli in Khasi Hills, Lakadong, Lumshonong, Nongkhlieh in Jaintia Hills, Darrang Era-Aning, Siju and Chokpot in Garo Hills District.
Coal	133.13	-	443.35	576.48	Sub-bituminous with med to high sulphur and C.V.	Langrin and East Darrangiri in Khasi Hills, Bapung in Jaintia Hills&West Darrangiri in Garo Hills District
Clay (Lithomargic)	-	-	97.0	97.0	White ware, earthen ware, furnace lining, curing soap etc.	Cherrapunjee and Mahadek in Khasi Hills District, Tongseng in Jaintia Hills District, Nangwalbibra and Rongrenggiri in Garo Hills District
Granite	24.0	-	26.0	50.0	Table top, wall cladding etc	Nongpoh in Ri-Bhoi, Mylliem and Mawkyrwat in Khasi Hills, Rongjeng in East Garo Hills District
Kaolin	3.20	1.94	0.10	5.24	White ware	Mawphlang, Smit, Laitlyngkot in Khasi Hills, Thadlaskein, Mulieh Shangpung, Mynsngat in Jaintia Hills and Darugiri in Garo Hills
Iron ore	3.60	-	-	-	Low grade	West Khasi Hills and East Garo Hills District
Glass sand	-	-	3.0	3.0	Ordinary glass ware	Laitryngew, Umstew and Kreit in Khasi hills, Tura in Garo Hills District
Quartz	-	0.5	0.5	0.5	Ordinary ceramic grade	
Feldspar	-	-	0.127	0.127	Ceramic grade	Bonsamgiri and Rombhagiri in East Garo Hills
Silimanite	-	-	0.045	0.045	High temp furnace lining.	Sonapahar in West Khasi Hills District
Bauxite	-	-	1.45	1.45	Low grade(40%Al ₂ O ₃)	Sung valley in Jaintia Hills District
Rock phosphate	-	0.015	-	0.015	Lowgrade (15-30%P ₂ O ₅)	Sung valley in Jaintia Hills District
Phosphatic nodule	Nominal				P ₂ O ₅ : 5-15%	Rewak in South Garo Hills District
Gypsum	Nominal				Crystals of salanite variety	Mahendraganj in West Garo Hills District
Uranium	AMD, Govt of India, has established a reserve of 9.22 mt., higher grade 0.104% U ₂ O ₃ at Domiasiat, West Khasi Hills					
Base metal /trace metal	1.14% Cu:0.80mt, 1.61%Zn:0.85mt, 1.88%Pb:0.88mt. with traces of Cd, Bi, Ag, Tenor of gold encountered in 3 bore Holes of Tyrsad.					

Soils:

The soils of the hills are derived from gneissic complex parent materials; they are dark brown to dark reddish-brown in colour, varying in depth from 50-200 cm. The texture of soils varies from loamy to fine loamy. The soils of the alluvial plains adjacent to the northwest and southern plateau are very deep, dark brown to reddish-brown in colour and sandy-loam to silty-clay in texture. Meghalaya soils are rich in organic carbon, which is a measure of nitrogen supplying potential of the soil, deficient in available phosphorous and medium to low in available potassium. The reaction of the soils varies from acidic (pH 5.0 to 6.0) to strongly acidic (pH 4.5 to 5.0). Most of the soils occurring on higher altitudes under high rainfall belt are strongly acidic due to intense leaching. Base saturation of these soils is less than 35 %. These soils are not suitable for intensive crop production.

There is not much difference in fertility classes of the soils of the State. Four soils fertility classes, namely, High Low Medium (HLM), High Medium Medium (HMM), Medium Medium Low (MML), Medium Low Medium (MLM) have been established from the soil test data so far compiled in the Soil Testing Laboratory of the State. A study conducted by the Indian council of Agricultural Research (ICAR), Shillong revealed that about 40% of the soils of the state contain micronutrients below the critical level.

Water Resources:

River System: The river system of Meghalaya comprises mainly of rivers draining to the Brahmaputra Basin in the north and the Meghna Basin in the South. Brahmaputra Basin comprises of sub-basin of Dilni, Ganol, Jinjiram, Ringgi, Ghagua, Didak, Damring, Krishnai, Dudhnoi, Ronggre, Umsiang, Umkhri, Umiam, Umiew, Myntang, Umlarem and Meghna Basin comprises of sub- Basin of Kangra, Simsang, Dareng, Darong, Ronglk, Kynshi, Umngi, Myntdu, Lubha. Meghalaya is dominated by the Brahmaputra river (length: 2900 km). Its drainage area is roughly 935,500 sq. km.

Surface Water: The availability of surface water has been roughly estimated at 63.204BCM by referring to data from various sources.

Ground Water: The ground water resources of the state have been assessed by the Central Ground Water Board and the Annual replenishable ground water is 1.15 BCM.

Ecological Resources:

The recorded forest area is 9,496 sq. km which constitutes 42.34% of the geographic area of the state. According to legal status, Reserved Forests constitute 11.72 % and Unclassed Forest 88.15% of the total forest area (**Map-2.4**).

The state has eight forest types as per Champion & Seth Classification system (1968), belonging to five forest type groups, viz. Tropical Wet Evergreen, Tropical Semi Evergreen, Tropical Moist Deciduous, Subtropical Broadleaved Hill and Subtropical Pine Forests.

Most of unclassified forest falls under two categories (i) Private Forests and (ii) Raid Forest (community forests).

i) Private Forests

In the District Council Forest Act of 1958, "Private Forests" have been classified as:

- (a) Ri Kynti – These are forests belonging to an individual, clan or joint clan;
- (b) Law Ri Sumar – These forests belong to individual clan, joint clan that are grown or inherited by the clan in a village.

Clause (a) of Section 4 of the Act, states that the Private Forests shall be looked after by the owner, subject to the rules that may be framed by the Executive Committee from time to time. A major shortcoming of the said Act is that the manner in which these forests are to be "looked after" has not been mentioned in the Act of 1958. Though, clause (a) of Section 4 of the United Khasi Hills-Jaintia Hills Autonomous District (Management and Control of Forests) Rules 1960 has various rules for the management of forests. However, a critical look at the rules reveal that actually there are not rules for the management of forests but rather deal with the various formalities that the private owner has to fulfil before making commercial transaction of timber and other forest produce. What is absent in the rules is a "working plan" for the management of forests.

The importance of a working plan need not be over emphasized. Development of forests largely depends upon the quality of working plan and the various prescriptions that are to be undertaken in the particular forest division. The forests are important not only for their productive functions but also for environmental and protective function. It is therefore essential that the harvesting of timber be done in a planned and scientific manner so as to cause minimum harm to the environment and to ensure regeneration of cleared forests.

The absence of a working plan for the private forests can be regarded as one of the major reasons for its depletion. This is evident from a note that was prepared by the State Forest Department and submitted to the “Commission of Inquiry on Autonomous District Administration in Meghalaya” in 1984. It stated that the District Council has only a notional right over the management of such (Private) forests. The owners exploit the forests as they like and pay royalty to the District Council on timber taken out for trade. The private forests in the Khasi Hills, it is said, has come under unplanned excessive exploitation during the past decade or so the owners of private forests often lease out their forests to timber contractors who exploit the forests to their maximum benefit without caring for the future. Some unscrupulous timber traders buy out forest operation rights from the owners of private forests in anticipation of construction of roads to such areas and when the roads are constructed they carry out wanton felling of trees in the forests.

ii) Raid Forests (Community forests)

The fact that at times, the enactment of a statutory law overpowering the customary law of the tribals can lead to confusion as well on conflict is best exemplified by the manner in which the ‘Raid’ Forests are being managed by the Syiems. The institution of Syiemship is in fact one of the most important element that held the Khasi society together as the traditional rulers of the Khasi Hills. The Syiems however lost their political importance to the British but retained their position as an administrative entity with a focus on perpetuating cultural and customary practices of the Khasis.

With the enactment of the Constitution of India, the position of the Syiems has changed, and their status has been reduced to that of officials and functionaries of the District Council. Thus, as per the law, the Syiems are treated as administrative officers by the District Council. However, in practice, they continue to function as if their status has not changed and this illusion is also presented to the common man in the manner in which they manage the Raid Forests, bypassing the laws of the District Council.

Under customary laws, the Syiems managed the ‘Raid Forests’ and collected royalties on timber. However, once the District Council has made laws for the management of such forests, as authorized by the Sixth Schedule of the Constitution, the customary law under which the Syiems managed the Raid Forests became abrogated. Thus, the Syiems derived their right of management from the laws made by the District Council.

The District Council has made laws with regard to Raid Forests. Clause VI of Section 3 of the United Khasi Hills Autonomous District (Management and Control of Forest) Act, 1958, defines Raid Forests as: "These are forests looked after by the head of the Raid and under the management of the local administrative head." The District Council has made rules under which the Syiems should remit a portion of the royalties collected by them to the Council. In reality, the Syiems ignore all the rules made by the Council, and they in fact have their own Forest Department which deals with the issuing of permits, settlement of disputes and control of forests. The District Council has not converted or treated the Syiemship as administrative units nor entrusted them with specific functions. Yet the Syiems continue to function according to customary and traditional laws.

Sacred Groves

The sacred groves are a unique feature of the Khasi and Jaintia Hills and Ri-Bhoi districts. These are scattered at different places and generally found below the hill brows. These forests are a relic of the original forests and are a storehouse of a variety of plant genetic resources.

The District Council has entrusted the management of sacred groves i.e. Law Lyngdoh, Law Kyntang and Law Niam to the Lyngdohs and other such religious priests. The sacred groves however are also getting destroyed and mismanaged, similar to that of private forests and Raid Forests.

The Sacred groves of Meghalaya, may not, at the first glance appear to be of much importance in terms of biodiversity, since the bulk of them are quite limited in their extent. Besides, the sacred groves are far too scattered to be regarded as one viable unit from the conservation point of view (**Table- 2.2**). A large number of sacred groves are also in a degraded state. Studies have concluded that only 1 % of the total area of sacred groves is undisturbed. The bulk of the sacred groves are subjected to various degrees of disturbance. The very weak network of Protected areas in the state as also of Reserved and Protected forest means that the sacred groves are the only patches where many endangered species find refuge. The sacred groves are also spread over a wide range of bio-geographical areas and hence have a high rate of species diversity.

Table 2.2 : Sacred groves in Khasi Hills and Ri-Bhoi districts

Sl. No.	Name of the Sacred Grove	Distance from Shillong	Area (Ha.)	Village	Controlling authority (Syiemship)
East Khasi Hills					
1	Law Kyntang/ Law Lyngdoh	25 Km. South West	75	Mawphlang	Mawphlang Lyngdohship
2	Law Lyngdoh Nongkrem	Not Known	Not Known	Smit	Khyrim Syiemship
3	Lum Shyllong	Not Known	Not Known	Laitkor	Khyrim Syiemship
4	Law Kyntang	53 Km south	350	Khlei Shnong	Sohra Syiemship
5	Law Adong	53 Km south	900	Khlei Shnong	Sohra Syiemship
6	Khlaw Ram Jadong	55 Km south	150	Mawsmmai	Mawsmmai Sirdarship
7	Law Blei Bah	55 Km south	120	Mawsmmai	Mawsmmai Sirdarship
8	Mawlong Syiem	55 Km south	120	Mawsmmai	Mawsmmai Sirdarship
9	Pom Shandi	55 Km south	Not Known	Mawsmmai	Mawsmmai Sirdarship
10	Law Adong	55 Km south	200	Mawsmmai	Mawsmmai Sirdarship
11	Law Suidnoh	15 Km south	Not Known	Laitryngew	Sohra Syiemship
12	Law-u-Niang		Not Known	Laitryngew	Sohra Syiemship
13	Madan Jadu		Not Known	Laitryngew	Sohra Syiemship
14	Lum Diengjri		Not Known	Not Known	Not Known
15	Mawmang		Not Known	Khadar Shnong	Sohra Syiemship
16	Wakhen		Not Known	Khadar Blang	Khyrim Syiemship
17	Law-ar-Liang		Not Known	Khadar Blang	Khyrim Syiemship
18	Law Lieng		Not Known	Sohra Rim	Khatsawphra Syiemship
19	Law Mawsptur		Not Known	Sohra Rim	Khatsawphra Syiemship
20	Law Dymmiew		Not Known	Sohra Rim	Khatsawphra Syiemship
21	Law Nongshim		Not Known	Mawmih	Khatsawphra Syiemship
22	Mawsawa		Not Known	Mawmluh	Sohra Syiemship
23	Mawryot		Not Known	Wahlong	Wahlong Sirdarship
24	Nangdoh		Not Known	Wahlong	Wahlong Sirdarship
25	Risaw		Not Known	Wahlong	Wahlong Sirdarship
26	Umtong		Not Known	Umwai	Umwai Sirdarship
27	Deingkain		Not Known	Umwai	Umwai Sirdarship
28	Mawthoh		Not Known	Umwai	Umwai Sirdarship
29	Maw Kyrngah		Not Known	Umwai	Umwai Sirdarship
30	Kynsang		Not Known	Mawlong	Mawlong Sirdarship
31	Umthri		Not Known	Mawlong	Mawlong Sirdarship

32	Umkatait		Not Known	Mawlong	Mawlong Sirdarship
Ri-Bhoi District					
1	Phampdem		900	Phampdem	Riad Umsaw Nongkhrah
2	Nonglyngdoh		90	Nongkhrah	Nongpoh Sirdarship
3	Sophetbneng		90	Nongkhrah	Nongpoh Sirdarship

Source : Khasi Hills Autonomous District Council

Flora: Apart from normal tree sp. of Bamboo, cane, banana, orchid, betel nut, broomgrass, packing leaf other major species of forest comprises of *Tectona grandis*, *Shorea robusta*, *Terminalia myriocarpa*, *Gmelina arborea*, *Pinus kesya*, *Michelia champaca*, *Toona ciliata*, *Acrocarpus fraxinifolius*, *Bischofia javanica*, *Dillenia indica*, *D. pentagyna*, *Dysoxylum binectariferum*, *Elaecarpus floribunda*, *Alcimandra cathcartii*, *Betula alnoides*, *Castanopsis sp.*, *Lithocarpus elegans*, *Manglietia insignis*, *Talauma phellocarpa*, *Elaecarpus floribundus*, *Ficus nemoralis*, *Lithocarpus fenestratus*, *Myrica esculenta* etc. These are very common species with wide distribution across Meghalaya and none of the above species face any level of endangerment, hence, does not warrant any special conservation measures.

Fauna: Meghalaya is amongst the states having the highest density of elephants and there are 6 elephant corridors in the state. Besides, the State also has 9 Important Bird Areas (IBA) sites. Diversity of mammals in Meghalaya is well represented with about 139 species and sub-species belonging to 83 genera and 27 families. The primates are well represented in Meghalaya with about 7 species. The Western Hoolock Gibbon *Hoolock hoolock*, one of the only two true ape species found in India, is still found in the state where tropical evergreen forests are still intact. The Capped Langur *Trachypithecus pileatus* with its bright golden-yellow front is also found in dense forests as well as light woodlands in the state. Meghalaya's capped langurs are often mistaken for golden langurs. Three out of six cats species of the world recorded in the state are - the Tiger (*Panthera tigris*), Leopard (*Panthera pardus*), and the Clouded Leopard (*Neofelis nebulosa*). The state is also home to three species of bears, the Asiatic black bear (*Selenarctos thibetanus*), Malayan sun bear (*Helartos malayanus*) and the sloth bear (*Melursus ursinus*). The red panda (*Ailurus fulgens fulgens*) called by the Garos as Mitchebel and by the Khasis as Dkhan-bah is confined to Nokrek and Balpakram in the Garo Hills and the adjacent forests of the West Khasi Hills. It is also found farther east in Trongpleng in the Mawsynram area of the East Khasi Hills district. One species of pangolin (*Manis crassicaudata*) is also found in the state. Other mammalian species

found are Asian elephant (*Elephas maximus*), wild dog (*Cuon alpinus*), smooth-coated otter (*Lutrogale perspicillata*) and large Indian civet (*Viverra zibetha*)

The important avian fauna of the state includes Rufous-necked hornbill (*Aceros nipalensis*), white-winged duck (*Cairina scutellata*), ferruginous pochard (*Aythya nyroca*), Pallas's fish-eagle (*Haliaeetus leucoryphus*), marsh babbler (*Pellorneum palustre*), tawny-breasted wren-babbler (*Spelaeornis longicaudatus*), Manipur bush-quail (*Perdica manipurensis*), bristled grassbird (*Chaetornis striatus*), Blyth's kingfisher (*Alcedo hercules*), greater spotted eagle (*Aquila clanga*), black-breasted parrotbill (*Paradoxornis flavirostris*), dark-rumped swift (*Apus acuticauda*), and beautiful nuthatch (*Sitta formosa*). The network of protected areas provides for conservation of the faunal diversity.

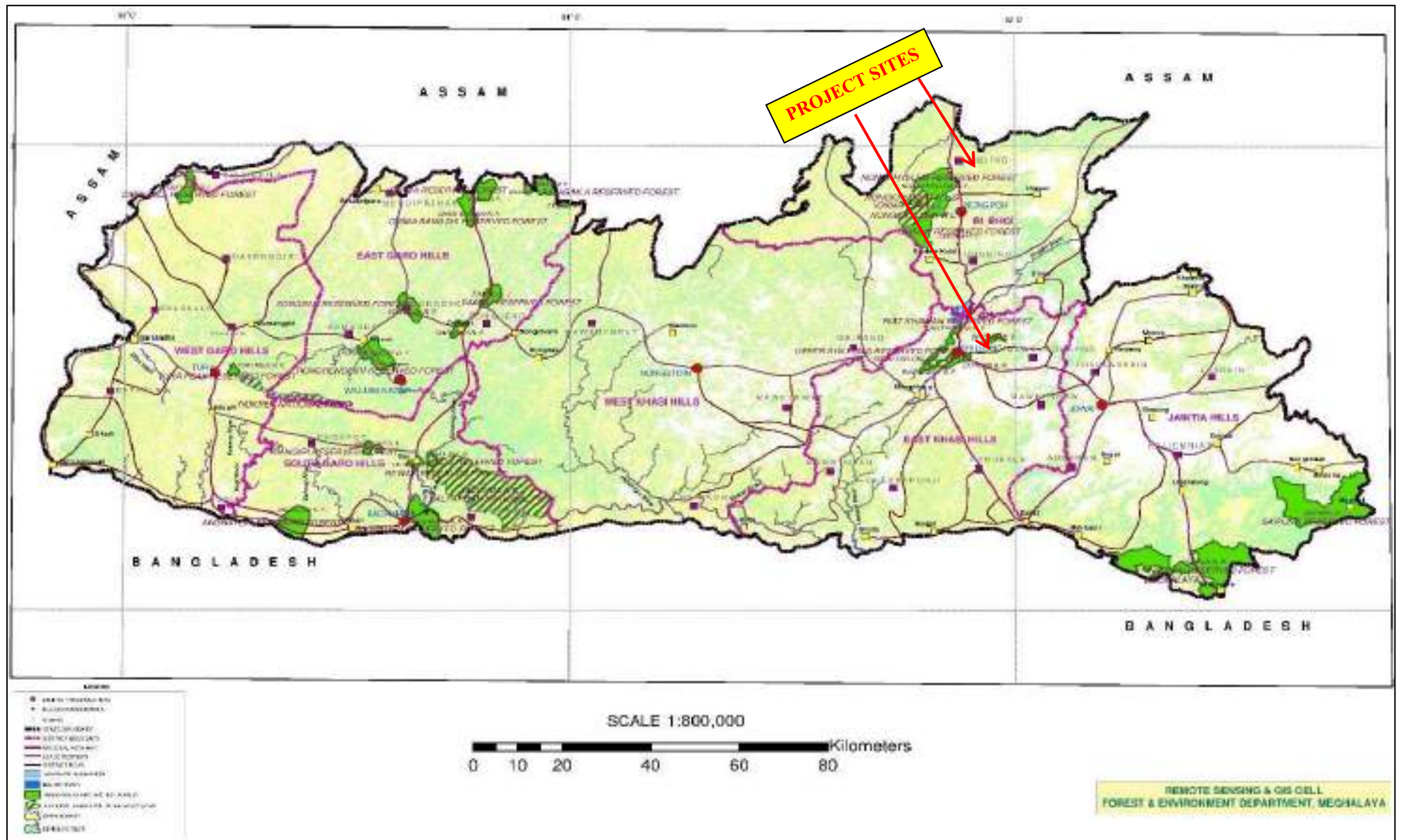
Protected Areas: The protected area network in Meghalaya occupies 1133.9 Sq. Km area which constitute about 5.06 % of the State's Geographical Area. The Protected Area Network includes 2 national Parks, 4 wildlife Sanctuaries and 1 Biosphere Reserve playing an important role in in-situ conservation of Biodiversity. Details of the protected areas are presented in **Table -2.3** below:

Table 2.3: Protected Areas in Meghalaya

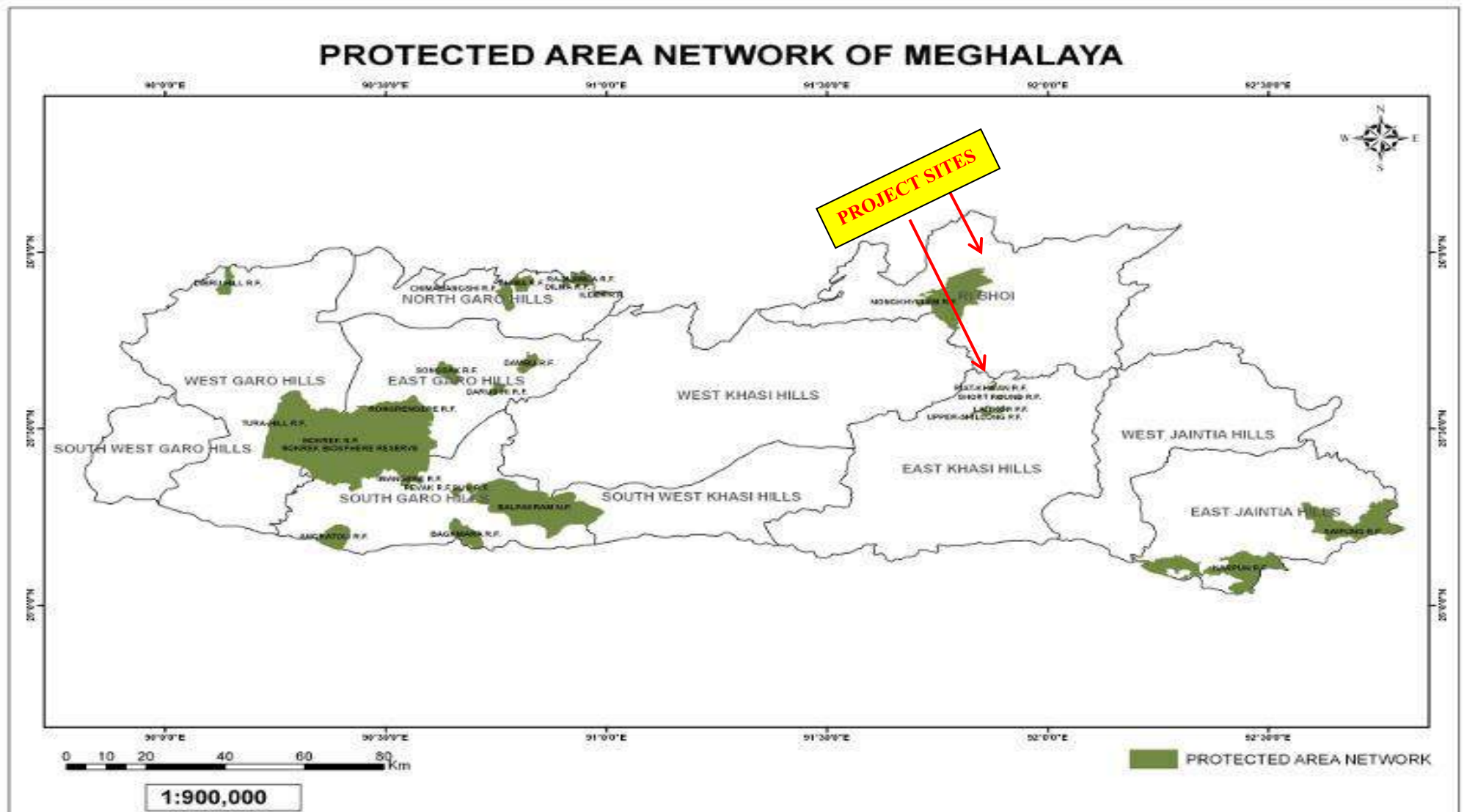
SI. No.	Protected Areas	Area in Sq. km	District	Year of Establishment
1.	Siju Wildlife Sanctuary	5.81	South Garo Hills	1979
2.	Nongkhyllem Wildlife Sanctuary	29	Ri-Bhoi District	1981
3.	Baghmara Pitcher Plant Sanctuary	0.02	South Garo Hills	1984
4.	Balpakram National Park	220	South Garo Hills	1985
5.	Nokrek Ridge National Park	47.78	East Garo Hills	1986
6.	Nokrek Biosphere Reserve	820	East, West and South Garo Hills	1988
7.	Narpuh Wildlife Sanctuary	59.90	East Jaintia Hills	2014

It has been observed that none of the proposed transmission and distribution lines or substations are located/passing through any protected areas like national parks, wildlife sanctuaries, biosphere reserves etc. (**Map- 2.4**). It is also found that there is no ecologically sensitive area within a radius of 3.5 km from the transmission and distribution lines proposed under this scheme.

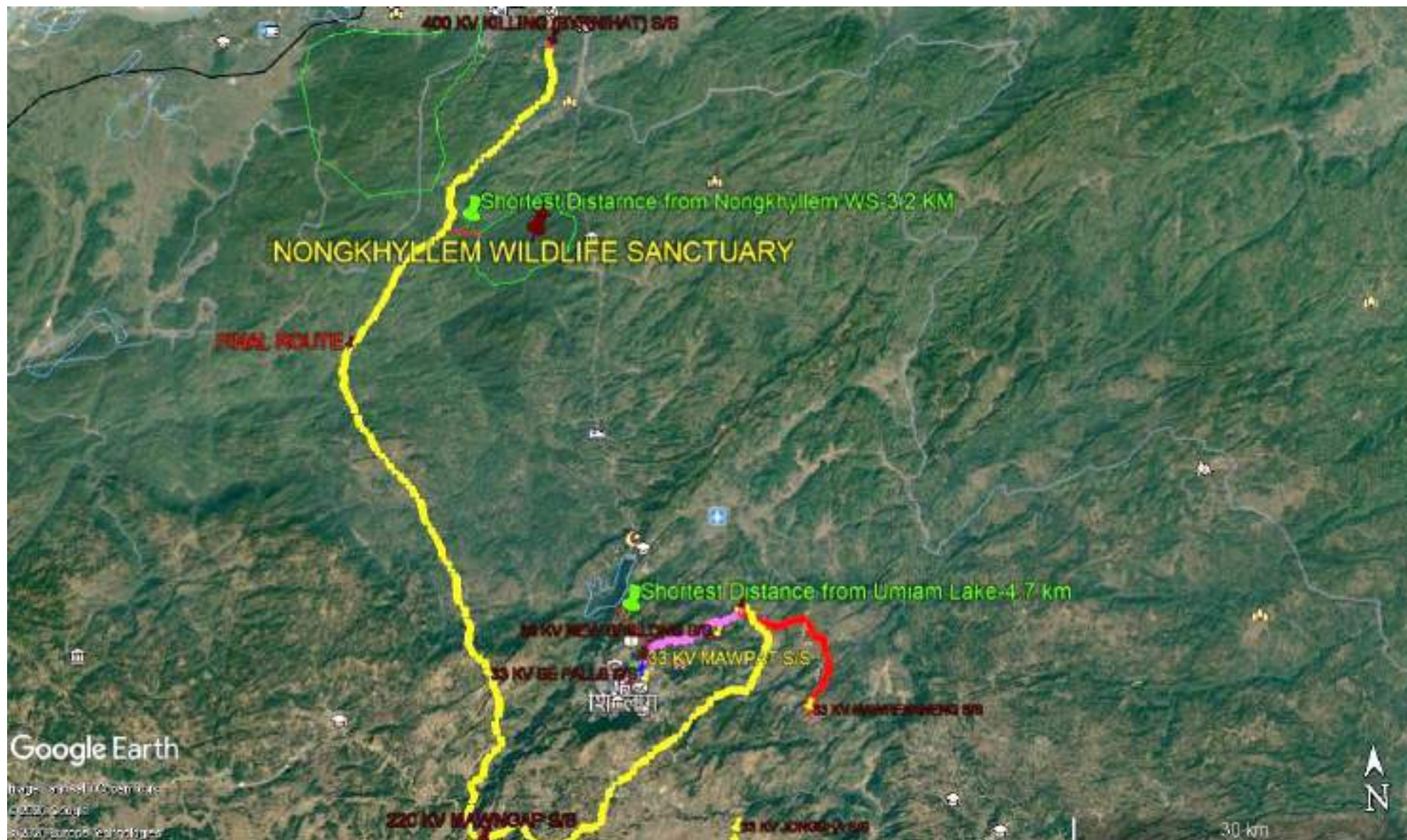
Map 2.3 - Forest Cover Map of Meghalaya



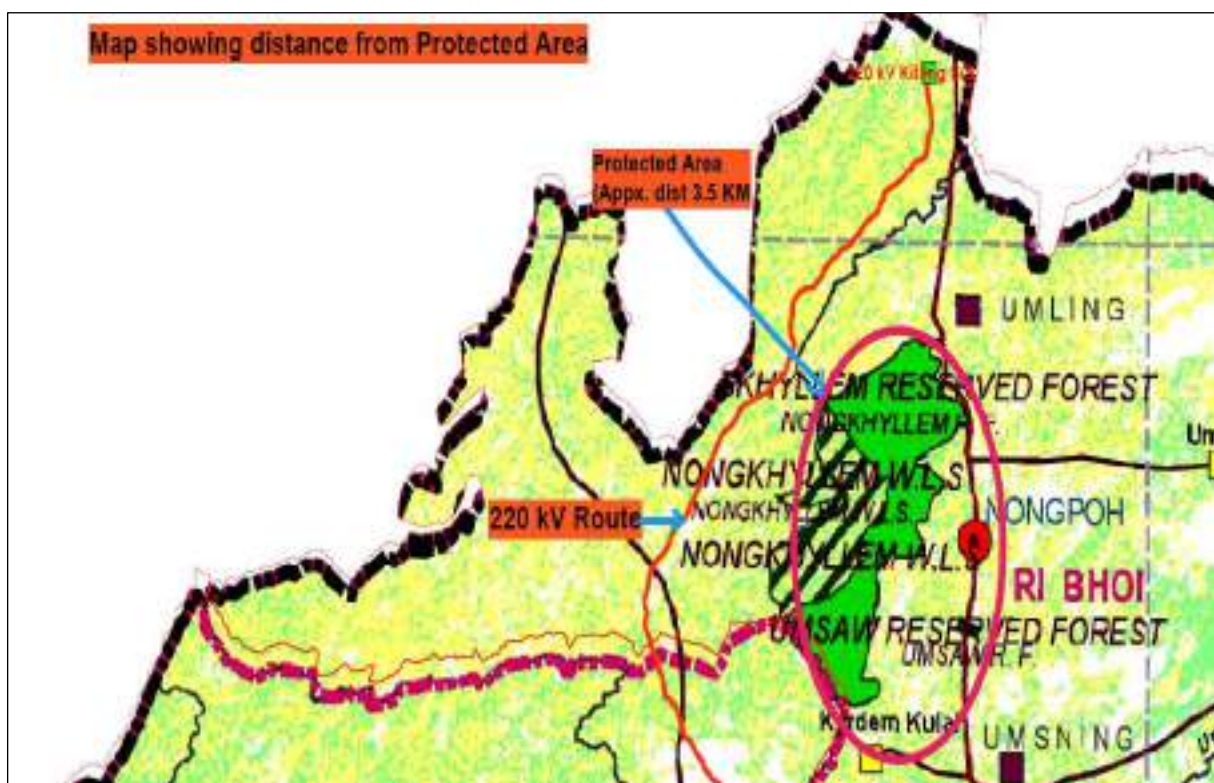
Map 2.4 - Protected Areas Map of Meghalaya



Map-2.5- Protected Areas vis-à-vis subprojects location



Map-2.5 A - Distance from Reserved Forest & Protected Area from 220 kV Line



Map-2.5 B - Distance from Reserved Forest & Protected Area from 33 kV Lines



Wetlands:

The state of Meghalaya has 259 wetlands including small wetlands, covering an area of 29987 Ha, constituting 1.25% of geographic area of the state. None of the wetlands are part of Ramsar Convention. Total wetland area of West Garo Hills is 7196 Ha, which is 0.021% of the geographic area of the district. The Umium lake (also called Barapani) which is formed by damming of Umiam river under Umiam Hydro-electric project is also approx. 4.7 km from line route of 33 KV New Shillong -Mawpat line (**Map- 2.5**). However, none of these wetlands are impacted in due to construction of T & D lines and associated substations.

Human and Economic Development:

Meghalaya is predominantly an agrarian economy. Agriculture and allied activities engage nearly two-thirds of the total work force in Meghalaya. However, the contribution of this sector to the State's NSDP is only about one-third. Agriculture in the state is characterized by low productivity and unsustainable farm practices. Despite the large percentage of population engaged in agriculture, the state imports food from other Indian states. The service sector is made up of real estate and insurance companies. Infrastructural constraints have also prevented the economy of the state from creating high income jobs at a pace commensurate with that of the rest of India.

2.3. East Khasi Hills and Ri-Bhoi District:

Topography:

East Khasi Hills District forms a central part of Meghalaya and covers a total geographical area of 2,748 km². It lies approximately between 25°07" & 25°41" N Latitude and 91°21" & 92°09" E Longitude. Geomorphologically, the East Khasi Hills comprises of denudational high and low hills with deep gorges. The district represents a remnant of ancient plateau of Indian Peninsular Shield which is deeply dissected suggesting several geotectonic and structural deformities that the plateau has undergone. The northern portion of the district is a dissected Shillong plateau gradually rising southwards to the rolling grasslands with gentle river valleys, then falls sharply in the Southern portion forming deep gorges and ravines in Mawsynram and Shella-Bholaganj, bordering Bangladesh. In the southern border areas, there are fringes of alluvial plains that are localized in nature.

Ri-Bhoi District is one of the youngest districts of Meghalaya which came into existence and assumed the hierarchical status of the district on the 4th June 1992 by upgrading the former Civil Sub-Division. The District was carved out from the erstwhile East Khasi Hills District and covers an area of 2448 km². It lies between 90°55'15 to 91°16' latitude and 25°40' to 25°21' longitude. Geo-morphologically, Ri-Bhoi district is a hilly one with intermontane valleys. The western and northern part of the district comprises of the denudational high hills with deep, narrow intermontane valleys covered with or without colluvium. Lithologically, the hills comprise Archaean Gneissic complex rocks, which are highly deformed, fractured and fissured in nature. These rocks also form highly dissected plateau with steep slopes and deep, narrow valleys exposed in the south-western part of the district. In the central and eastern parts, denudational high hills with deep valleys are found to exist which comprise intrusive Granites. Further in the south eastern part, denudational low hills are found to occur with valleys and comprise granite with fracture zones. Large number of narrow intermontane valley occurs mostly in the southern part of the district, which are good recharge areas and have highly productive shallow aquifer zone.

Climate: The climate of the East Khasi Hills district ranges from temperate in the plateau region to the warmer tropical and sub-tropical pockets on the Northern and Southern regions. The whole of the district is influenced by the south-west monsoon which begins generally from May and continues till September. The weather is humid for the major portion of the year except for the relatively dry spell usually between December and March. Ri Bhoi district experiences different types of climate ranging from tropical climate in the areas bordering Assam to the temperate climate adjoining the East Khasi Hills District.

Soils: East Khasi hills have deep, excessively drained, fine soils on moderately sloping side-slopes of hills having loamy surface with moderate erosion hazard and moderately deep, excessively drained, coarse-loamy soils on gently sloping hill tops with very severe erosion hazard and strong stoniness. Soil in Ri Bhoi district may broadly classified into hill and plain soils. It can be found out patches of black loamy soil and lime silt constitutes the major portion. This soil is much suitable for growing both local and improved varieties of crops.

Forests¹:

The state also represents an important part of the Indo-Burma biodiversity hotspot which is one of the 4 bio-diversity hotspots present in India and 34 in the world. The state has been identified as a key area for biodiversity conservation due to its high species diversity and high level of endemism.

The proposed transmission lines are passing through East Khasi Hills & Ri-Bhoi district having forest cover of 63.72 % and 87.54 % respectively. The details of forest resources available in the project area are as follows in **Table 2.3**.

Table 2.4. Forest Cover of the Project Districts:

District	Geographic area	As per 2017 Assessment				% Forest cover
		(Area in Sq. km)				
		Very Dense forest	Mod Dense forest	Open forest	Total	
East Khasi Hills	2748	3	1012	736	1751	63.72
Ri-Bhoi	2448	132	1096	915	2143	87.54

Source: Indian State of Forest Report, 2017

Since most of these forest in the project districts are Private and Community forests, a detailed tree enumeration has been undertaken to ascertain the applicability of Forest (Conservation) Act, 1980 as per Meghalaya Forest regulation (Amendment) Bill 2012 notified on 21.12.12. Accordingly, for 220 kV D/C Kiling (Byrnihat) - Mawngap – New Shillong line a 12.88 km (45.09Ha) stretch in the Mawngap – New Shillong section has been categorized forest land based on tree enumeration and subsequently application for forest clearance under Forest (Conservation) Act, 1980 was initiated on 06.04.2019 (**Annexure-1**). However, the concerned Divisional Forest Officers (DFOs) after site inspection has concluded that the land in question is not part of any reserve/protected forest under their control but non-forest land as per provisions of Meghalaya Forest regulation (Amendment) Bill 2012. Accordingly, DFO has issued Non- Forest land certificate for Mawngap-Shillong portion on 03.07.2019 (**Annexure- 2**). As regard Kiling-Byrnihat portion, DFO has also sought clarification from Khasi Hills Autonomous District Council (KHADC) & they have confirmed the presence of private/community land only along the transmission line corridor (**Annexure- 2a**). Hence, forest clearance under Forest (Conservation) Act, 1980 is not applicable in instant case.

¹ **Notified forests**- An area under Government control notified or recorded as forest.

Reserve forests - Natural forests having rich bio-diversity and No activity is permitted without permission.

Protected forests - All activities are permitted unless it is prohibited.

Protected areas - A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means. It includes National Parks, Wildlife Sanctuaries, Tiger Reserves, Biosphere Reserves etc.

Community forests - Involvement of local communities in the protection and/or management of public forests.

Degraded forests- Forest with canopy density < 40%.

Open forests- Canopy density between 10 to 40%.

Besides, the proposed transmission and distribution lines do not pass through any protected area like national parks, sanctuaries, elephant reserves/corridors and biosphere reserve etc. as all such areas have been completely avoided through careful route selection. However, some portion of Kiling (Byrnihat)-Mawngap-New Shillong 220kV D/C transmission line is passing at a distance of approx. 3.2 km from Nongkhylllem Wildlife Sanctuary boundary (**Map-2.5**) & the same is not going to have any adverse impact on the forest & wildlife.

Demography Features

Total Population

Total population in Meghalaya stands at 29,66,889 of which 23,71,439 (79.93%) population belong to rural area and 5,95,450 (20.07%) population belong to urban area. The East Khasi Hills district has a total of 8,25,922 population which is constituting 27.84% of State's population. The rural and urban population constitutes 55.63% and 44.37% of total populations of the district. However, Ri-Bhoi district has total population of 2,58,840 constituting 90.24% of rural and 9.76% of urban population. Details are given in **Table 2.4**.

Table 2.5: Details on Total Population

Name/ Particulars	Total Population	Total (Rural)	Total (Urban)	Percentage (Rural)	Percentage (Urban)
Meghalaya	29,66,889	23,71,439	5,95,450	79.93	20.07
East-Khasi Hills	8,25,922	4,59,441	3,66,481	55.63	44.37
Ri-Bhoi	2,58,840	2,33,587	25,253	90.24	9.76

Source: Census of India, 2011

Male and Female Population

Out of total population 29,66,889 of the State, male population constitutes 14,91,832 (50.27%) and female population is 14,75,057 (49.73%). Total population in East Khasi Hills district stands at 8,25,922 of which male population stands at 4,10,749 (49.73%) and female population stands at 4,15,173 (50.27%). The sex ratio of the district stands at 1011 females per thousand male which is higher than State's average of 989. Total population in Ri-Bhoi district stands at 2,58,840 of which male population stands at 1,32,531 (51.20%) and female population stands at 1,26,309 (48.80%) with a sex ratio of 953 females per thousand male which is lower than State's average of 989. Details are given in **Table 2.5**.

Table 2.6: Details on Male/ Female Population

Name /Particulars	Total Population	Total Male	Total Female	Percentage (Male)	Percentage (Female)	Sex Ratio
Meghalaya	29,66,889	14,91,832	14,75,057	50.27	49.73	989
East-Khasi Hills	8,25,922	4,10,749	4,15,173	49.73	50.27	1011
Ri-Bhoi	2,58,840	1,32,531	1,26,309	51.20	48.80	953

Source: Census of India, 2011

Scheduled Caste (SC) and Scheduled Tribe (ST) Population

As per census 2011, the Scheduled Caste (SC) & Scheduled Tribe (ST) population of the State stands at 17,355 (0.89%) and 25,55,861 (86.14%) respectively. The East Khasi Hills district has a total SC population of 5,642 (0.68%) and ST population of 6,61,158 (80.05%). In Ri-Bhoi district SC and ST population stands at 590 (0.23%) and 2,30,081 (88.89%) respectively. Details are given in **Table 2.6**.

Table 2.7: Details on Percentage SC/ST

Name/Particulars	Total Population	Total SC Population	Percentage of SC Population	Total ST Population	Percentage of ST Population
Meghalaya	29,66,889	17,355	0.89	25,55,861	86.14
East-Khasi Hills	8,25,922	5,642	0.68	6,61,158	80.05
Ri-Bhoi	2,58,840	590	0.23	2,30,081	88.89

Source: Census of India, 2011

Literacy

The literacy rate of East Khasi Hills district stands at 70% which is significantly higher than State's average and the female literacy rate (51.20%) of the district is slightly higher than the male literacy rate (49.70%) of the district. In Ri-Bhoi district literacy rate (60.21%) is slightly higher than the State literacy rate, however female literacy rate lower than that of the male. Details are given in **Table 2.7**.

Table 2.8 : Literate and Illiterate Population

Name/Particulars	Total Population	Total Literate	Percentage of Literate	Percentage (Male)	Percentage (Female)
Meghalaya	29,66,889	17,85,005	60.16	51.20	48.80
East-Khasi Hills	8,25,922	5,78,030	70.00	49.70	50.3
Ri-Bhoi	2,58,840	1,55,859	60.21	51.96	48.04

Source: Census of India, 2011

Total Workers (Male and Female)

Total population into work in Meghalaya stands at 11,85,619 of which total Male (work)

population stands at 7,03,709 (59.35%) and total female (Work) population stands at 4,81,910 (40.65%). The East Khasi Hills district has a total work population of 3,26,786 of which total male (work) population stands at 2,04,303 (62.52%) and total female (Work) population stands at 1,22,483 (37.48%). Total work population of Ri-Bhoi district stands at 1,06,473 which constitutes 63,871 (60%) of male (work) and 42,602 (40%) female (work) population. Details are given in **Table 2.8**.

Table 2.9: Details on Workers

Name/ Particulars	Total Population (Work)	Total Male (Work)	Total Female (Work)	Percentage (Male)	Percentage (Female)
Meghalaya	11,85,619	7,03,709	4,81,910	59.35	40.65
East-Khasi Hills	3,26,786	2,04,303	1,22,483	62.52	37.48
Ri-Bhoi	1,06,473	63,871	42,602	60.00	40.00

Source: Census of India, 2011

Households

Total Households in Meghalaya stands at 5,48,059 of which 4,30,573 (78.56%) households belong to rural area and 1,17,486 (21.44%) households belong to urban area. East Khasi Hills district has a total of 1,64,046 households of which 86,985 (53.02%) households belong to rural area and 77,061 (46.98%) households belong to urban area whereas in Ri-Bhoi district, the total number of households stands at 46,872 of which 42,412 (90.48%) belong to rural area and 4,460 (9.52%) belong to Urban area. Details are given in **Table 2.9**.

Table 2.10: Details on Households

Name/ Particulars	Total Households	Total (Rural)	Total (Urban)	Percentage (Rural)	Percentage (Urban)
Meghalaya	5,48,059	4,30,573	1,17,486	78.56	21.44
East-Khasi Hills	1,64,046	86,985	77,061	53.02	46.98
Ri-Bhoi	46,872	42,412	4,460	90.48	9.52

Source: Census of India, 2011

2.4 Baseline Description of the Subproject areas:

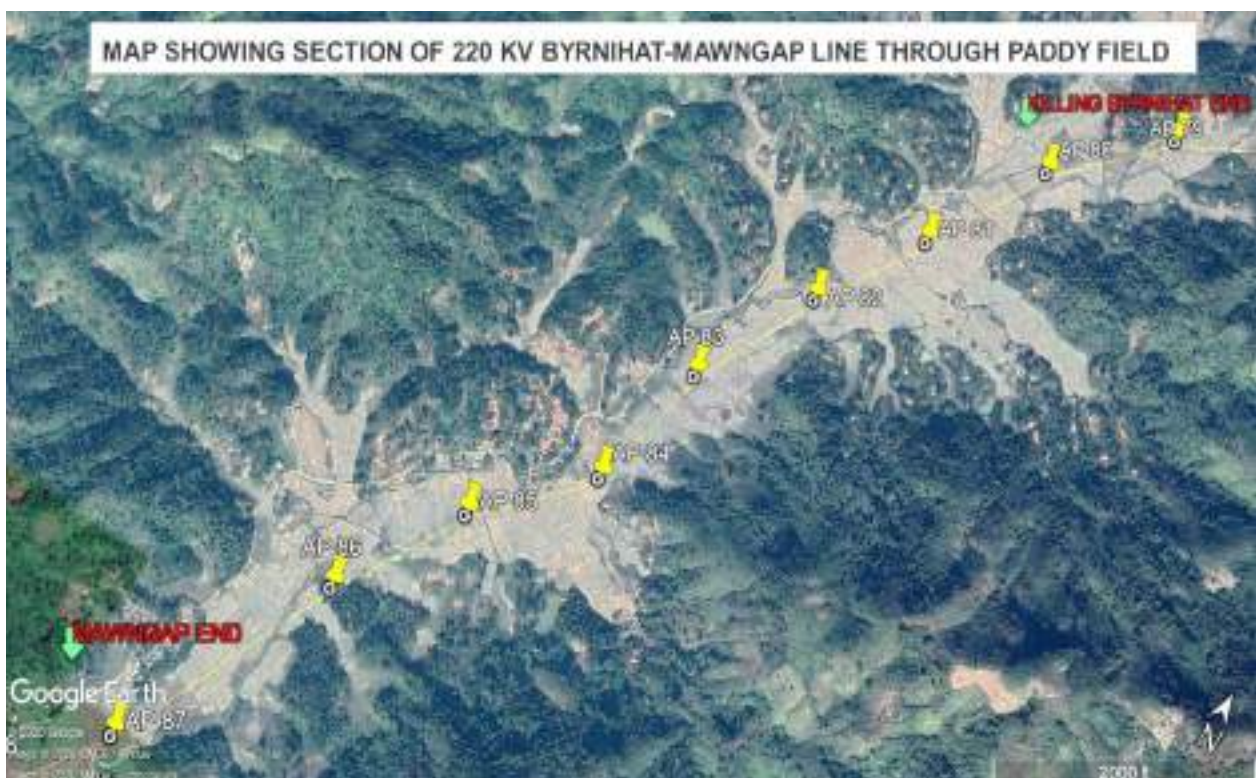
The baseline data around the sub-project sites is generally in conformity with the baseline data of the East Khasi Hill & Ri-Bhoi districts. However, the topography encountered around the transmission and distribution line route alignment is mostly combination of hilly and plain land under paddy cultivation, barren land and jhum land. On an average 70% of transmission/distribution line corridors are in hill areas and remaining 30% are in plain land with some gentle slope. All the substations are located in Hill area.

The common vegetation type encountered along the transmission line corridor are mostly jhum/paddy cultivation and private land with moderate dense tree cover dominated by fruit bearing trees and in some places by rubber cultivation done by local population. The general baseline of the project area is well depicted in the **Map-2.6**.

There is no recorded forest (reserved forest/protected forest etc.) and Protected areas (NP/WS/Tiger Reserve etc.) involved in the sub-project sites. The nearest recorded forest i.e. Garbhanga RF is located approximately 1.5 km from the nearest project site i.e. 33/11 kV line from New Shillong to Mawpat as shown in **Map- 2.5 & Map-2.7-2.8**.

As regard demographic profile of subproject sites, it is mix of scheduled tribe population dominated by Khasi Tribe. The Bhois of Ri Bhoi District are the Sub – group of the main Khasi Tribe. The principal languages are Khasi, Jaintia & Garo. The majority of the Bhois speak the Bhoi dialect, although they use the Khasi dialect as a major subject in their schools. In Ri Bhoi District, there are other groups of tribes viz, Garos, who speak the Tibeto – Burman groups of language, whereas the Karbis, Marngars, Mikirs, Bodos and Lalungs use Assamese as their Lingua Franca. Some speak and write Khasi too. The Bhois follow the matrilineal system. Children bear the title of the mother and she is the safe keeper of all properties owned by her parents.

Map-2.6 – Map showing general land use pattern along transmission corridor





Map-2.7 – Map showing notified forest area vis-à-vis subproject location



Map-2.8 – Map depicting land use and actual impacts on ground due to construction of 33kV Distribution line

Under construction 33kV line from New Shillong to Mawryngkneng



CHAPTER 3: LEGAL & REGULATORY FRAMEWORKS

Power transmission and distribution project activities by their inherent nature and flexibility have negligible impacts on environmental and social attributes. The IA & MePTCL/MePDCL are undertaking its activities within the purview of Indian and State specific laws keeping in mind appropriate international obligations and directives and guidelines with respect to environmental and social considerations of Bank's Operational Policy. The regulatory frameworks applicable for this project and its status of compliance provided below;

3.1. Constitutional Provisions

Subsequent to the first United Nations Conference on Human Environment at Stockholm in June, 1972, which emphasized the need to preserve and protect the natural environment, the Constitution of India was amended through the historical 42nd Amendment Act, 1976 by inserting Article 48-A and 51-A (g) for protection and promotion of the environment under the Directive Principles of State Policy and the Fundamental Duties respectively. The amendment, inter alia provides:

"The State shall endeavor to protect and improve the environment and to safeguard the forests and wildlife of the country". (New Article 48A)

"It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures". [New Article 51 A(g)]

Article 21 of the constitution provides, "no person shall be deprived of his life or personal liberty except according to procedure established by law".

Article 21 is the heart of the fundamental rights and has received expanded meaning from time to time after the decision of the Supreme Court in 1978. The Article 21 guarantees fundamental right to life – a life of dignity to be lived in a proper environment, free of danger or disease or infection. Recently, Supreme Court has broadly and liberally interpreted the Article 21, transgressing into the area of protection of environment, and held that the citizen's right to live in an eco-friendly atmosphere is to be interpreted as the basic right guaranteed under Article 21.

Thus the Indian Constitution now has a two folds provision:

- (a) On the one hand, it gives directive to the State for the protection and improvement of environment.
- (b) On the other hand the citizens owe a constitutional duty to protect and improve the natural environment.

Constitutional provisions in regard to social safeguards are well enshrined in the preamble such as JUSTICE, social, economic and political; LIBERTY of thought, expression, belief, faith and worship; EQUALITY of status and of opportunity; FRATERNITY assuring the dignity of the individual and the unity and integrity of the Nation. Fundamental Rights and Directive Principles guarantee the right to life and liberty. Health, safety and livelihood have been interpreted as part of this larger right. Social safeguards provisions are dealt in detail in different Article such as Article-14, 15 17, 23, 24, 25, 46, 330, 332 etc. POWERGRID shall implement the said constitutional provision in true sprit to fulfill its environmental and social obligations and responsibilities.

3.2 Environmental Provisions

Sl. No.	Acts, Notifications & Policies	Relevance/ Applicability to the project	Status of Compliance
I. National/State requirement			
1.	Forest (Conservation) Act, 1980	When transmission projects pass through forest land, prior clearance has to be obtained from Ministry of Environment Forest & Climate Change (MoEFCC), Gol under the Forest (Conservation) Act, 1980 before starting any construction activity in designated forest area.	Based on tree enumeration, a 12.88 km (45.09Ha) stretch of 220 kV D/C Kiling (Byrnihat) - Mawngap - New Shillong transmission line was categorized forest land and accordingly forest clearance under Forest (Conservation) Act, 1980 was initiated on 06.04.2019. However, Divisional Forest Officers (DFOs) after site inspection concluded that the land in question is not part of any reserve/protected forest under

Sl. No.	Acts, Notifications & Policies	Relevance/ Applicability to the project	Status of Compliance
			their control but non-forest land as per provisions of Meghalaya Forest regulation (Amendment) Bill 2012. Subsequently, DFO has issued Non-Forest land certificate (Annexure-2) . Hence, forest clearance under Forest (Conservation) Act, 1980 is not applicable.
2.	Wildlife (Protection) Act, 1972	This Act is applicable whenever a transmission line traverses protected area such as National Parks, Wildlife Sanctuaries etc. Projects involving protected areas undergo detailed review and approval procedures to obtain permission from Standing Committee of National Board for Wildlife (NBWL), MoEFCC before starting any construction activity in such area.	Not applicable as no protected area is involved.
3.	The Scheduled Tribes & Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006	When transmission projects pass through forest land, NoC from DC has to be obtained before Stage-II approval in compliance to FRA Act as per MoEFCC circular dated 5th February 2013.	Not applicable as no forest clearance is required.
4.	Environment (Protection) Act,	Transmission line projects are exempted from of Environment	Not applicable.

Sl. No.	Acts, Notifications & Policies	Relevance/ Applicability to the project	Status of Compliance
	1986/ Environment Impact Assessment Notification, 2006	(Protection) Act, 1986 EIA Notification, 2006. However, amendment in the Environment (Protection) Act, 1986 on 7th May' 1992 made it necessary to obtain clearance from MoEFCC for power transmission projects in three districts in the Aravalis (viz., Alwar in Rajasthan and Gurgaon & Nuh-Mewat in Haryana).	
i)	Ozone Depleting Substances (Regulation and Control) Rules, 2000	Regulate and control manufacturing, import, export and use of Ozone Depleting Substances under Montreal Protocol adopted on 16 th September 1987.	Only CFC free equipments are being procured/specified in tender document.
ii)	Batteries (Management and Handling) Rules, 2001	Provides certain restriction on disposal of used batteries and its handling and to file half yearly return in prescribed form to the concerned State Pollution Control Board.	Batteries are used during operation phase. Hence, the issue of proper handling and disposal of batteries as per rules not an issue during construction stage.
iii)	Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008	Provides for environmentally sound management of hazardous wastes so as to ensure no adverse effects that may result from such waste. Used transformer oil is categorized as hazardous waste which has to be	Generally Used oil is generated after 10-15 years of operation of transformers and hence the issues of handling and disposals of hazardous transformer oil is not an issue at this stage.

Sl. No.	Acts, Notifications & Policies	Relevance/ Applicability to the project	Status of Compliance
		disposed off only through auctioned/ sold to registered recyclers only and file annual return on prescribed form to the concerned State Pollution Control Board.	
iv)	E-waste (Management and Handling) Rules, 2011	Provides for environmentally sound management of e-waste to ensure that e-waste are managed in a manner which shall protect health and the environment against the adverse effects that may result from hazardous substance contained in such wastes. It is the responsibility of the bulk consumer to ensure that e-waste generated is channelized to authorized collection center(s) or registered dismantler(s) or recycler(s) or is returned to the pick-up of take back services provided by the producer.	E-waste disposal is not an issue during construction phase.
5.	Biological Diversity Act, 2002	Provide for conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge and for matters connected therewith.	The present project does not involve any biosphere reserves.

Sl. No.	Acts, Notifications & Policies	Relevance/ Applicability to the project	Status of Compliance
6.	Ancient Monuments & Archaeological Sites & Remains Act, 1958	The act has been enacted to prevent damage to archaeological sites identified by Archaeological Survey of India.	All such areas have been completely avoided.
7.	Meghalaya Forest regulation (Amendment) Bill 2012	Defines 'Forest' "as a continuous area of at least 4 Acres of land having trees, irrespective of ownership, where more than 250 trees of 15 cm diameter at breast height (DBH) per hectare are present, or where more than 100 clumps of bamboo per hectare are present".	The project does not involve any forest land as per definition of forest. Accordingly, NoC has been issued by forest authority based on tree enumeration data and joint verification as per provisions of Meghalaya Forest regulation (Amendment) Bill 2012.
II. World Bank Operational Policy (OP)			
8.	OP- 4.01: Environmental Assessment	To ensure the environmental and social and sustainability of investment projects. Support integration of environmental and social aspects of projects in the decision-making process.	E & S aspects of the project have already been integrated in to management procedures based on comprehensive environment assessment undertaken by IA during 2015.
9.	OP- 4.04: Natural Habitats	To promote sustainable development by supporting the protection, conservation, maintenance, and rehabilitation of natural habitats and their functions.	The present project does not involve any natural habitats such as biodiversity area, protected area etc.

Sl. No.	Acts, Notifications & Policies	Relevance/ Applicability to the project	Status of Compliance
10	OP-4.11: Physical Cultural Resources (PCR)	To preserve PCR and in avoiding their destruction or damage. PCR includes resources of archeological, paleontological, historical, architectural, and religious (including graveyards and burial sites), aesthetic, or other cultural significance.	The Present project does not encroach upon any such resources.
11	OP-4.36: Forests	To realize the potential of forests to reduce poverty in a sustainable manner, integrate forests effectively into sustainable economic development, and protect the vital local and global environmental services and values of forests	All line routes and substation locations successfully avoided encroachment into any Protected and Reserve forests.
10	WB EHS Guidelines for Electric Power Transmission and Distribution	The Environmental, Health, and Safety (EHS) Guidelines are technical reference documents with general and industry specific examples of Good International Industry Practice. The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs.	Applicable provisions of EHS guidelines are being followed during project implementation.

3.3 Social Provisions

Sl. No.	Acts, Rules and Policies	Relevance/ Applicability to the project	Status of Compliance
1	Sixth Schedule of the Constitution	Special provisions also have been extended to the Tribal Areas under the 6th Schedule [Articles 244(2) and 275(1) of the constitution] in addition to basic fundamental rights. The Sixth Schedule provides for administration of tribal areas as autonomous entities. The administration of an autonomous district is vested in a District Council and of an autonomous region, in a Regional Council. These Councils are endowed with legislative, judicial, executive and financial powers.	NoC from Village Council/ Headman (Dorbar) /Land owner obtained by I.A, wherever applicable.
2.	The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013	Act ensures appropriate identification of the affected families/ households, fair compensation and rehabilitation of titleholders and non-titleholders.	No involuntary acquisition involved. Fresh land secured only for construction of new 220/132kV New Shillong (GIS) and 33/11 kV Mawpat, New Shillong, Mawryngkneng & Mawkynrew substations on private purchase (Willing Buyer Willing Seller) on negotiated/market rate.

Sl. No.	Acts, Rules and Policies	Relevance/ Applicability to the project	Status of Compliance
3.	Electricity Act, 2003 (EA, 2003)	Sanction of Ministry of Power (MoP), Gov/State Govt. is a mandatory requirement for taking up any new transmission project under the section 68(1) of The Electricity Act, 2003. The sanction authorizes to plan and coordinate activities to commission the new projects.	MoP, Gov approved the NERPSIP comprehensive scheme for six North Eastern States including Meghalaya under vide its Office Memorandum dated 1st December 2014.
4.	Rights of Way (RoW) and Compensation	The act has a provision for notifying transmission company under section 164 (B) to avail benefits of eminent domain provided under the Indian Telegraph Act, 1885.	MePTCL & MePDCL has been vested with the powers of Telegraph Authority vide Deptt. of Power, Govt. of Meghalaya notification dated 5th February 2016, under Section- 164 of the Electricity Act. However, compensation for all damages are being paid to the individual land owner as per the provision of Section-10 (d) of Indian Telegraph Act, 1885
5.	The Right to Information Act, 2005	The Act provides for setting out the practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, the constitution of a Central Information Commission and State	The required mechanism to comply with the provisions of the act including designated officers at various levels is already in place in MePTCL & MePDCL.

Sl. No.	Acts, Rules and Policies	Relevance/ Applicability to the project	Status of Compliance
		Information Commissions and for matters connected therewith or incidental thereto.	
6.	Indian Treasure Trove Act, 1878 as amended in 1949	The Act provides for procedures to be followed in case of finding of any treasure, archaeological artifacts etc. during excavation.	No such instances reported. Moreover, possibilities of such discoveries are quite remote due to limited and shallow excavations.
7.	The Meghalaya Transfer of Land (Regulation) Act, 1971 (Act 1 of 1972)	Act prohibits transfer of land from tribal to non-tribal.	Not applicable as Govt. of Meghalaya has already issued an Exemption Certificate that the provisions of Section 11(d)(i) of the aforesaid act (as amended) shall not apply in relation to all purchases/ acquisition of land by MePTCL /MePDCL
II. World Bank Operational Policy (OP)			
8.	OP 4.12 – Involuntary Resettlement	This policy covers direct economic and social impacts both resulting from Bank-assisted investment projects and are caused by the involuntary taking of land. To avoid or minimize involuntary resettlement and, where this is not feasible, assist displaced persons in improving or at least restoring their livelihoods and standards of living in real terms relative to pre-displacement	Not applicable as no involuntary acquisition invoked for securing land for proposed substations. Only fresh land required for construction of 220/132kV New Shillong (GIS) and 33/11 kV Mawpat, New Shillong, Mawryngkneng & Mawkynrew substations were secured through direct Purchase on Willing Buyer Willing Seller basis on negotiated rate.

Sl. No.	Acts, Rules and Policies	Relevance/ Applicability to the project	Status of Compliance
		levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.	
9.	OP 4.10 – Indigenous Peoples	This policy contributes to the Bank's mission of poverty reduction and sustainable development by ensuring that the development process fully respects the dignity, human rights, economies, and cultures of Indigenous Peoples. The objective is to design and implement projects in a way that fosters full respect for indigenous peoples so that they receive culturally compatible social and economic benefits, and do not suffer adverse effects during the development process. The project shall ascertain broad community support for the project based on social assessment and free prior and informed consultation with the affected Tribal community, if any.	Explicit consent from ADC and the Village Councils is required in the case of acquisition of lands which is not applicable in instant project. However, NoC of from village councils (Head man, Sordars) and land owners obtained for community forest land/ADC area, wherever applicable.

CHAPTER-4 : MAJOR FEATURES OF FINAL ROUTE & ENVIRONMENTAL IMPACTS

Environmental impact of transmission and distribution (T & D) line projects are not far reaching and are mostly localized to RoW. However, T & D project has some effects on natural and socio-culture resources. These impacts can be minimized by careful route selection. To minimize these possible impacts, MePTCL/MePDCL & IA at the system planning stage itself try to avoid ecological sensitive areas like forest. Wherever such infringements are substantial, different alternative options are considered to select most viable route alignment. For further optimization of route modern survey techniques/tools like GIS, GPS aerial photography is also applied. Introduction of GIS and GPS in route selection result in access to updated/latest information, through satellite images and further optimization of route having minimal environmental impact. Moreover, availability of various details, constraints like topographical and geotechnical details, forest and environmental details etc. help in planning the effective mitigate measures including engineering variations depending upon the site situation/location. The route/site selection criteria followed is detailed below:

4.1 Environmental Criteria for Route Selection

For selection of optimum route, the following points are taken into consideration:

- (i) The route of the proposed lines does not involve any human rehabilitation.
- (ii) Any monument of cultural or historical importance is not affected by the route of the line.
- (iii) The proposed route does not create any threat to the survival of any community with special reference to Tribal Community.
- (iv) The proposed route 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 area of natural resources.

In order to achieve this, MePTCL/MePDCL undertook route selection for individual transmission & distribution lines in close consultation with representatives from the Ministry of Environment and Forests and the Department of Revenue. Although under

National law, POWERGRID has the right of eminent domain, yet alternative alignments are considered keeping in mind the above-mentioned factors during site selection, ***with minor alterations often added to avoid environmentally sensitive areas and settlements at execution stage.***

- As a rule, alignments are generally cited 10-15 km away from major towns, whenever possible, to account for future urban expansion (refer final route maps **Map 4.1 to Map- 4.5**).
- Similarly, forests are avoided to the extent possible, and when it is not possible, a route is selected in consultation with the local Divisional Forest Officer, that causes minimum damage to existing forest resources.
- Alignments are selected to avoid wetlands and unstable areas for both financial and environmental reasons.

In addition, care is also taken to avoid National parks, Sanctuaries, Eco-sensitive zones, Tiger reserves, Biosphere reserves, Elephant corridors and IBA sites etc. Keeping above in mind the routes of proposed lines under the project have been so aligned that it takes care of above factors. As such, different alternatives for transmission lines were studied with the help of Govt. published data like Forest atlas, Survey of India etc. and Google Maps to arrive at the most optimum route, which can be taken up for detailed survey and assessment of environmental & social impacts for their proper management.

Similarly, the TOR for detailed survey using modern tool like GIS/GPS also contained parameters to avoid/reduce environmental impact while deciding the final route alignment.

The major objectives for detailed survey that are part of contract are summarized below:

- (i) The alignment of transmission line shall be most economical from the point of view of construction and maintenance.
- (ii) **Routing of transmission line through protected and reserved forest area should be avoided. In case it is not possible to avoid the forest or areas having large trees completely then keeping in view of the overall economy, the route should be aligned in such a way that cutting of trees is minimum.**
- (iii) **The route should have minimum crossing of major rivers, railway lines, and national/state high ways, overhead EHP power lines and communication lines.**
- (iv) The number of angle point shall be kept to a minimum.

- (v) The distance between the terminal points specified shall be kept shortest possible, consistent with the terrain that is encountered.
- (vi) **Marshy and low line areas, river beds and earth slip zones shall be avoided to minimum risk to the foundations.**
- (vii) It would be preferable to utilize level ground for the alignment.
- (viii) Crossing of power line shall be minimal. Alignment will be kept at a minimum distance of 300 meters from power lines to avoid induction problems on the lower voltage lines.
- (ix) Crossings of communication lines shall be minimized and it shall be preferably at right angle, proximity and paralyses with telecom lines shall be eliminated to avoid danger of induction to them.
- (x) **Area subjected to flooding searches streams shall be avoided.**
- (xi) **Restricted areas such as civil and military airfield shall be avoided. Care shall also be taken to avoid the aircraft landing approaches.**
- (xii) **All alignment should be easily accessible both in dry and rainy seasons to enable maintenance throughout the year.**
- (xiii) **Certain areas such as quarry sites, tea, tobacco and saffron fields and rich plantation, gardens and nurseries that will present the owner problems in of right of way and leave clearance during construction and maintenance should be avoided.**
- (xiv) **Angle point should be selected such that shifting of the point within 100 m radius is possible at the time of construction of the line.**
- (xv) **The line routing should avoid large habitation densely populated areas to the extent possible.**
- (xvi) The area requires special foundations and those prone to flooding should be avoided.
- (xvii) For examination of the alternatives and identification of the most appropriate route, besides making use of information/data/details available/extracted through survey of India topographical maps and computer aided processing of NRSA satellite imagery, the contractor shall also carry out reconnaissance/preliminary survey as may be required for the verification and collection of additional

information/data/details.

(xviii) The contractor shall submit his preliminary observation and suggestion along with various information/data/details collected and also processed satellite imagery data, topographical map data marked with alternative routes etc. The final evaluation of the alternative routes shall be conducted by the contractor in consultation with owners' representatives and optimal route alignment shall be proposed by the contractor. Digital terrain modeling using contour data from topographical maps as well as processed satellite data shall be done by the contractor for the selected route. A fly through perspective using suitable software(s) shall be developed or further refinement of the selected route. If required site visit and field verification shall be conducted by the contractor jointly with the owners' representatives for the proposed route alignment.

(xix) Final digitized route alignment drawing with the latest topographical and other details/features including all river railway lines, canals, roads etc. up to 8 Kms on both side of selected route alignment shall be submitted by the contractors for owners approval along with report containing other information / details as mentioned above.

In the instant project also, criteria for route selection as mentioned above, has been duly adhered to and the proposed 220 kV D/C Kiling (Byrnihat) - Mawngap – New Shillong line route has been selected from analysis of three (03) alternatives routes as described in the IEAR. Subsequently, the proposed route was considered for detail survey by Contractor Agency (after awarding of contract). During detailed survey minor alterations as well as geometrical corrections of the route have been carried out which seems inevitable due to actual ground conditions with prime objective of avoiding dense forest/private plantation areas, settlements, CPR, and also considering the technical feasibility of the route from operation and maintenance point of view in consultation with the local village councils prevalent in the project area. Therefore, following minor change in scope of work has been observed with respect to IEAR scope which resulted due to the best effort of IA/MePTCL in effectively integrating safeguard and engineering measures in successful minimization of impact on forest and environment. Further, it has been observed that no new/additional impacts apart from those enlisted in EMP/IEAR is anticipated as neither any significant changes w.r.t. baseline conditions nor involvement ecologically/ socially sensitive areas were found due to increase/change in line length/ alignment and also substation location

which might have an incremental overall impact of the project. Since the mitigation measures as suggested in IEAR/ EMP and various provisions in the contract conditions is so comprehensive it will address any such minor changes. Details on change in scope in respect to IEAR scope along with justification thereof and resultant new/additional impact, if any is provided in table below;

Sl. No	Scope as per IEAR	Current Status with justification	Remarks	
Transmission Component				
	Line	Substation		
1.	220 kV D/C Killing-Mawngap- New Shillong Transmission Line – 115.5 Km	Establishment of 220/132/33 kV GIS substation at New Shillong	Final route is 126.52 km and line length is increased by 11 km due to realignment of route to further avoid the Nongkhylllem W/S (earlier proximity to the W/S is 500 mtr) & also some geometric corrections were required consequent upon widening of Guwahati-Shillong road and change of New-Shillong substation location due to non-finalization of earlier identified land	Apart from possible impacts identified in EMP/IEAR, no new/additional impact is anticipated due to increase in line length/ changed in alignment considering that no changes w.r.t. baseline condition or also no involvement protected or ecologically/socially sensitive areas found.
2		Upgradation of under construction 132 kV substation to 220/132 kV GIS substation at Mawngap.	Not Applicable (N.A.)	
Distribution Component				
1	33 kV line from 33 /11kV Mawpat - 220/132/33 kV New Shillong substation (6	Establishment of 2x10 MVA, 33 /11kV new substation at Mawpat	Final line route is 10.76 km and there is an increase of line length of 0.76 km due to change in the location of New	No substantial change in length or line route observed. Though there are some changes in substation location

	km & extending up to existing SE Falls 33/11 kV substation - 10 km		Shillong and Mawpat substation.	observed but due to meticulous realignment by IA during ground truthing survey has further reduced line length in most cases.
2	33 kV line from 33/11 kV New Shillong (New) substation - 220/132/33 kV New Shillong substation - 4 km	Establishment of 2x10 MVA, 33/11 kV new substation at New Shillong	Final route is 3.55 km which is approx. 0.45 km less as compared to earlier route due to change in the location of 220/132/33 kV New Shillong substation	
3	33 kV line from 33/11 kV Mawkynew substation (New)- 33/11 kV Jongksha substation - 7.5 km	Establishment of 2x5 MVA, 33/11 kV new substation at Mawkynew	Final route is 6.47 km and there is a decrease in line length of approx. 1.0 km from earlier route.	
4	LILO of existing 33 KV Jowai - Landnongkrem line at New Mawryngkneng - 3.8 km	Establishment of 2x7.5 MVA, 33/11 kV new substation at Mawryngkneng	Final route is 0.8 km and there is a decrease in line length of approx. 2 km from earlier route.	
5	33 kV line from 33/11 kV Mawryngkneng substation (New) - 220/132/33 kV New Shillong substation (New) -16.6 km		Final route is 22 increase of line length of approx. 3.75 km from earlier route was due to further optimization during ground truthing survey.	Increase in length is basically due to further optimization during ground truthing survey based on ground condition particularly to avoid habitation area. However, considering very limited environmental footprint in 33kV line, no additional impacts those identified in EMP is anticipated.

Similarly, a detailed justification for change in substations' final locations vis-à-vis locations in IEAR along with final coordinates is provided below;

Details of Changes in substation location vis-à-vis location in IEAR				
Sl. No	Name of Substation	Co-ordinate as per IEAR	New Location Co-ordinates	Reason for Change in location
1	220/132/33 kV New Shillong GIS	25°36'47.90"N 91°56'38.85" E	25°37'45.08"N 91°59'34.38"E	Location changed by MePTCL due to non-finalization of earlier identified land. New land was selected/ finalized which is 5.5 km north west from earlier location.
2	33/11 kV Mawkynew	25°25'09.11"N 92°00'03.36"E	25° 24.787' N 91° 59.817' E	Location changed by MePDCL due to non-finalization of earlier identified land. New land was selected/ finalized in same locality approx. 700 m south west from earlier location.
3	33/11 kV Mawpat	25°36'40.27" N 91°57'08.12"E	25° 35.647' N 91°54.311' E	Location changed by MePDCL due to non-finalization of earlier identified land. New land was selected/ finalized which is 1.5 km south west from previous location.

4.2 Major Features of Final Route of TL & DL

Transmission line: The earlier route of 220 kV D/C Killing- Mawngap- New Shillong based on survey done long back in 2009 was parallel to National Highway (NH) - 40 (Guwahati to Shillong) and the tower locations were close vicinity to highway. In year 2013-2014, the 100-km Shillong-Guwahati road has been upgraded into a four-lane highway. Many habitations have been grown up along the highway and settled nearby both side of the said highway. Many people from villages migrate nearby highway for the purpose of commercial business. In earlier route, it was noticed that many tower locations are coming mostly on private forest land, highway, nearby houses and commercial plot nearby roads. Detailed check survey was carried out span to span and a constraint of the corridor was recorded and realigned route from Killing to Mawngap, Mawngap to New Shillong has been finalized. The following advantageous points are taken into consideration for selection of optimum route:

1. The route of the proposed transmission lines does not involve any human rehabilitation.
2. Any monument of cultural or historical importance is not affected by the route of the transmission line.
3. The proposed route of transmission line does not create any threat to the survival of any community with special reference to Tribal Community.

4. The proposed route of transmission line does not affect any public utility services like playgrounds, schools, other establishments etc.
5. The line route does not pass through any sanctuaries, National Park etc. The line route does not infringe with area of natural resources.
6. RoW problem has been avoided.
7. The alignment of transmission line is most economical from the point of view of construction and maintenance.
8. Routing of transmission line avoiding reserved forest area or areas having large trees completely.
9. The number of angle point has minimized.
10. Crossing of power line minimized.
11. Earlier line was crossing through NH 3-4 times and mostly through town/market area such as Byrnihat, Nongpoh, Umsining, Sumer etc. Now line is passing parallel towards state highway with a normal tower. Hence construction period also minimized.
12. Considering the no/minimum forest area involved, less population density, avoiding human & animal habitats.

Initially, a 12 km stretch has been categorized as forest based on tree enumeration and accordingly, forest clearance process under Forest (Conservation) Act, 1980 was initiated on 06.04.2019. However, Divisional Forest Officers (DFOs) after site inspection concluded that the land in question is not part of any reserve/protected forest under their control but non-forest land as per provisions of Meghalaya Forest regulation (Amendment) Bill 2012. Subsequently, DFO has issued Non-Forest land certificate (**Annexure-2**). The office of executive committee, Khasi Hills Autonomous District Councils have also given their no objection regarding same (**Annexure-2a**). Besides, the final route completely avoided protected areas like National parks, Wildlife sanctuaries and designated wildlife/elephant corridor etc. Considering the above advantages with respect to environmental, social and construction point of view in finalization of line route, no additional impacts are envisaged in spite of increase of 11 km in the final route length. Details of tower schedule of final route of various lines are placed as **Annexure-3**.

Distribution lines: About 60% of the lines are passing through hilly terrain and 40% plain area. Due to careful route selection by IA, these lines are mostly passing through along existing roads, waste land or agricultural. Besides, no ecologically sensitive areas like reserve/protected forest land or protected areas like National Parks, Wildlife Sanctuary, elephant corridor/movement zones (refer **Map-2.6**) are getting affected due to

proposed intervention. It has been observed that there are some major variations in final route length of lines from earlier routes due to change in location of some associated substations. However, considering that distribution line has minimum environmental footprints and increase in total line length by 6.68 km for all lines (from earlier 36.90 km to 43.58 km) without any change in land use and other base line data, no additional impacts of any kind apart from earlier identified impacts in IEAR/EMP are anticipated. A total of 1,185 poles are being/to be erected for all 5 proposed distribution lines having a total line length of 43.58 km (**Map - 4.2 to 4.6**). Details of pole schedule of final route of various lines are placed as **Annexure-4**.

Based on the above analysis of final route of transmission and distribution lines, the summarized environmental impact matrix is presented below;

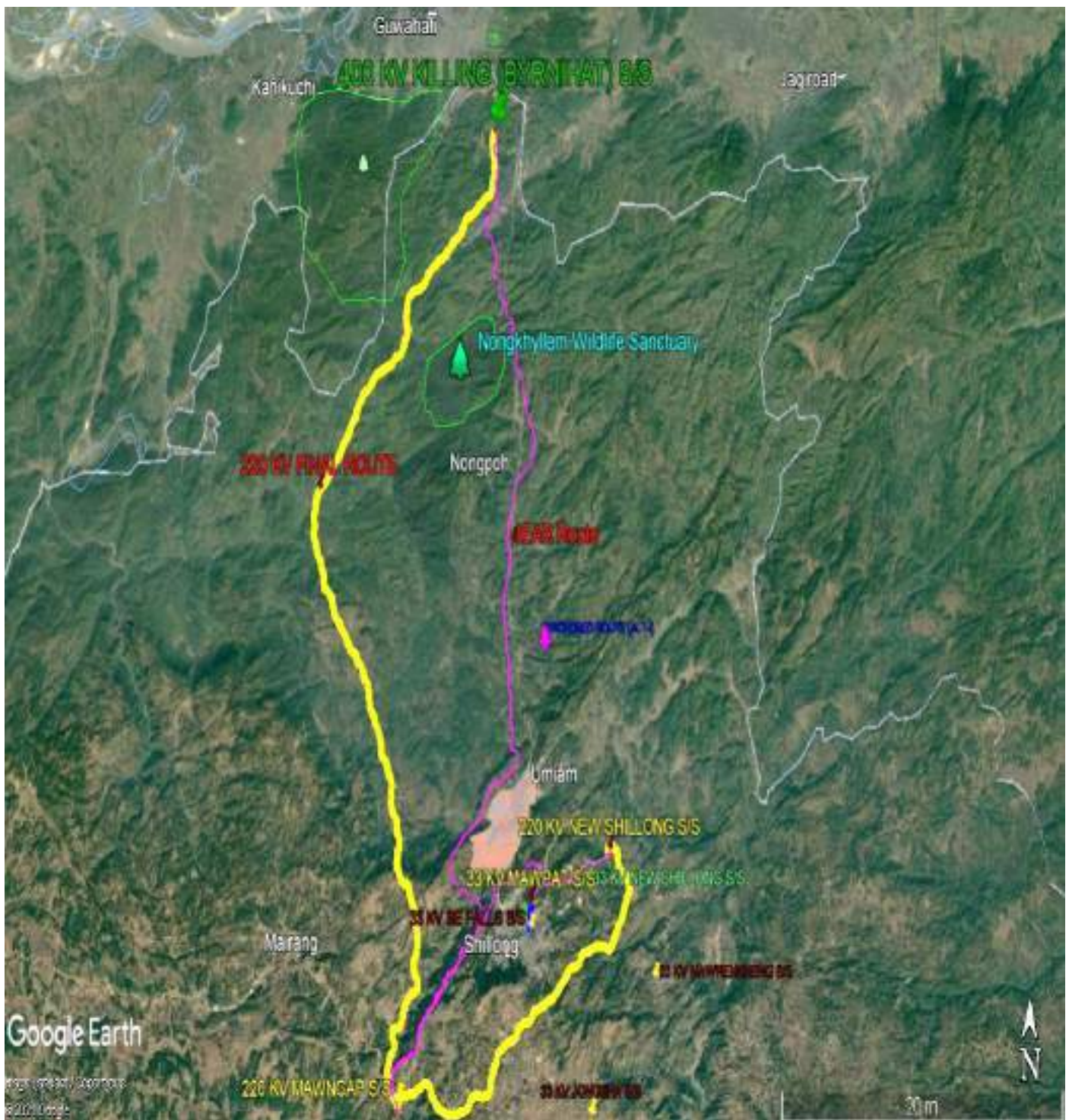
S. No.	PARAMETERS	EXTENT OF IMPACT
1. A.	Total Line length- (TL -126.52km, DL- 43.58 km)	Though change in final route length observed in most TL & DL lines as compared line length envisaged in IEAR due to minor geometrical correction and change in substation locations, no new/additional impacts are anticipated as no changes w.r.t. baseline condition, land use pattern or involvement protected areas or ecologically/socially sensitive areas are observed. Hence, the existing mitigation provisions of IEAR/EMP and in contract conditions which are being implemented by IA will also adequately address such
B.	Terrain: Plain area- 37.956 km (TL)+ 16.912 km (DL) Hilly area- 88.564 km (TL)+ 25.668 km (DL)	Major portion of the TL (70 %) of lines are passing through hilly terrain which are mostly gentle sloping hills and remaining are plain area. Whereas, 60% of DL are passing through hilly terrain and rest 40% covers plain area. However, all possible site-specific mitigation measures with respect to soil erosion & slope protection measures like revetment/ retaining/ toe wall, ULE, bio-engineering etc. are being implemented based on site assessment and recommendation/approval of technical committee.
2.	Forest land traversed (km)	Nil. No notified forest, protected areas and other ecological sensitive area involved.
3.	Forest land	Nil
4.	Forest type	NA

5.	Forest density	NA
6.	Rare/endangered flora	<i>Nepenthes Khasiana</i> is reported to inhabit some pockets of the project area. However, being herbaceous in habit, there is no apparent threat to the species except in the event of excavations accidentally uprooting populations. Care should be taken to avoid such accidental disturbance.
7.	Rare/endangered fauna	The pangolin or scaly ant eater (<i>Manis sp</i>) which is an endangered species is reported in some pockets of the project area. However, this animal is fossorial in habit, living in burrows inside dense vegetation areas only. As the lines being drawn aerially and there is no involvement of forest land in the line routes, encroachment of these burrows are quite remote and unlikely. Hence, possibility of any impacts on this species not anticipated.
8.	Migrating Wildlife/ breeding ground	No animal corridors are present in the project area Further, no impact on avifauna is anticipated as there is no migratory path or nesting sites found in project area /tower location. Moreover, bird guard/anti perching devices are being made part of BoQ/tower design.
9.	National Park / sanctuaries	No protected areas involved
10.	Wet land traverse	None
11.	Soil erodibility	Since nearly 70 % lines and all substations are located in hilly/sloppy terrain possibility of soil erosion and slope protection is quite high for which adequate measures at tower location and substation need to be taken by IA to minimize any such impact. Though such aspects were not covered in Bill of Quantity (BoQ), IA after assessment of site requirement/conditions and subsequent technical approval through committee finalized various measures like retaining wall/revetment wall, Unequal Leg Extension (ULE), stone pitching, bio-engineering measures etc. Accordingly, IA has been implementing revetment walls at total 57 locations and ULE at 163 tower locations of 220 kV lines and RRM/ Retaining Wall including bio engineering measures in New Shillong, Mawpat & Mawryngkneng substation.

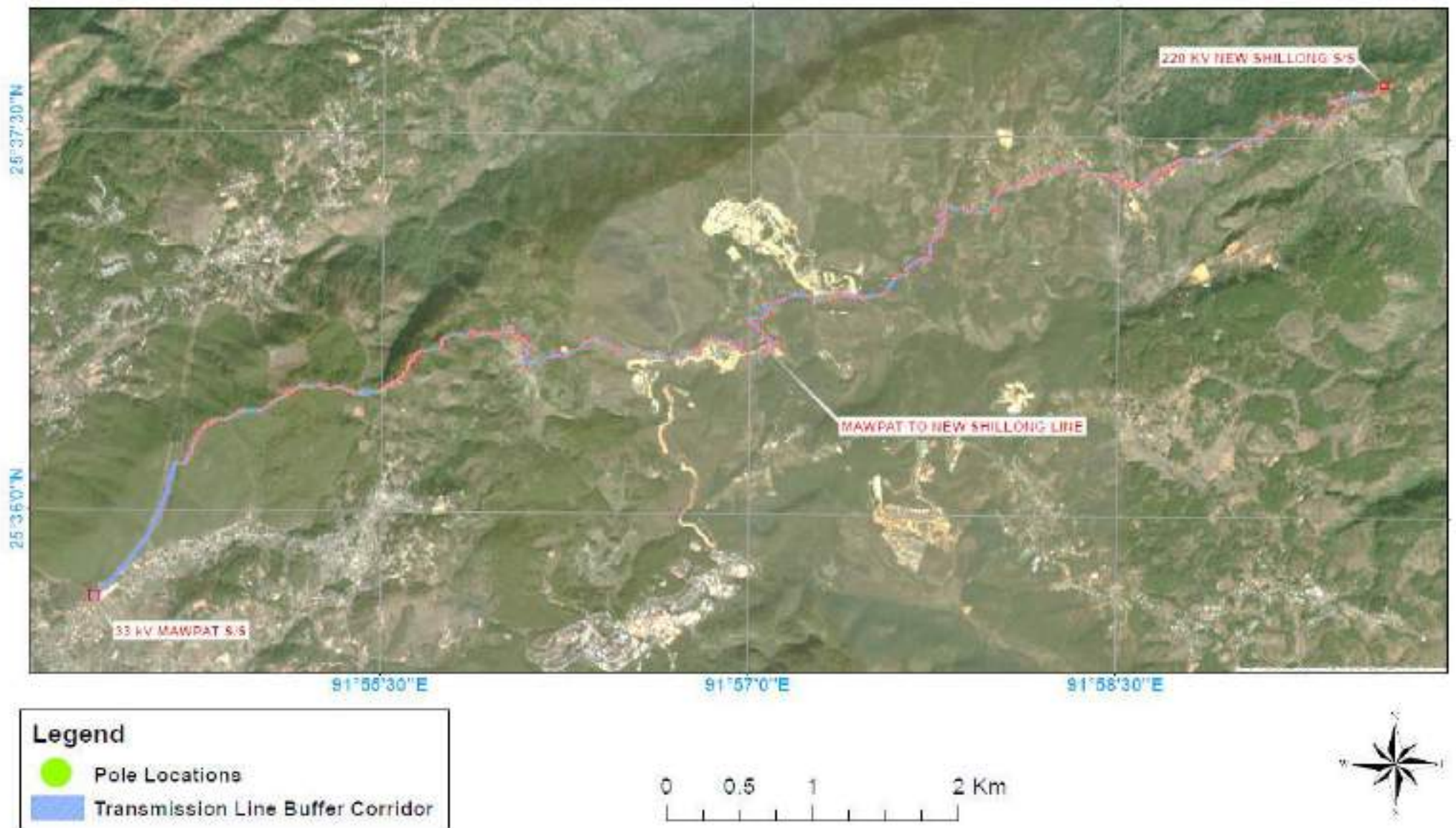
FEAR for T & D Project in East Khasi Hills and Ri-Bhoi Districts of Meghalaya under NERPSIP

12.	Historical/Cultural monuments	None
13.	Relocation of villagers	None
14.	Loss/ Hindrance to Public Utilities	Negligible, restricted to construction phase only.

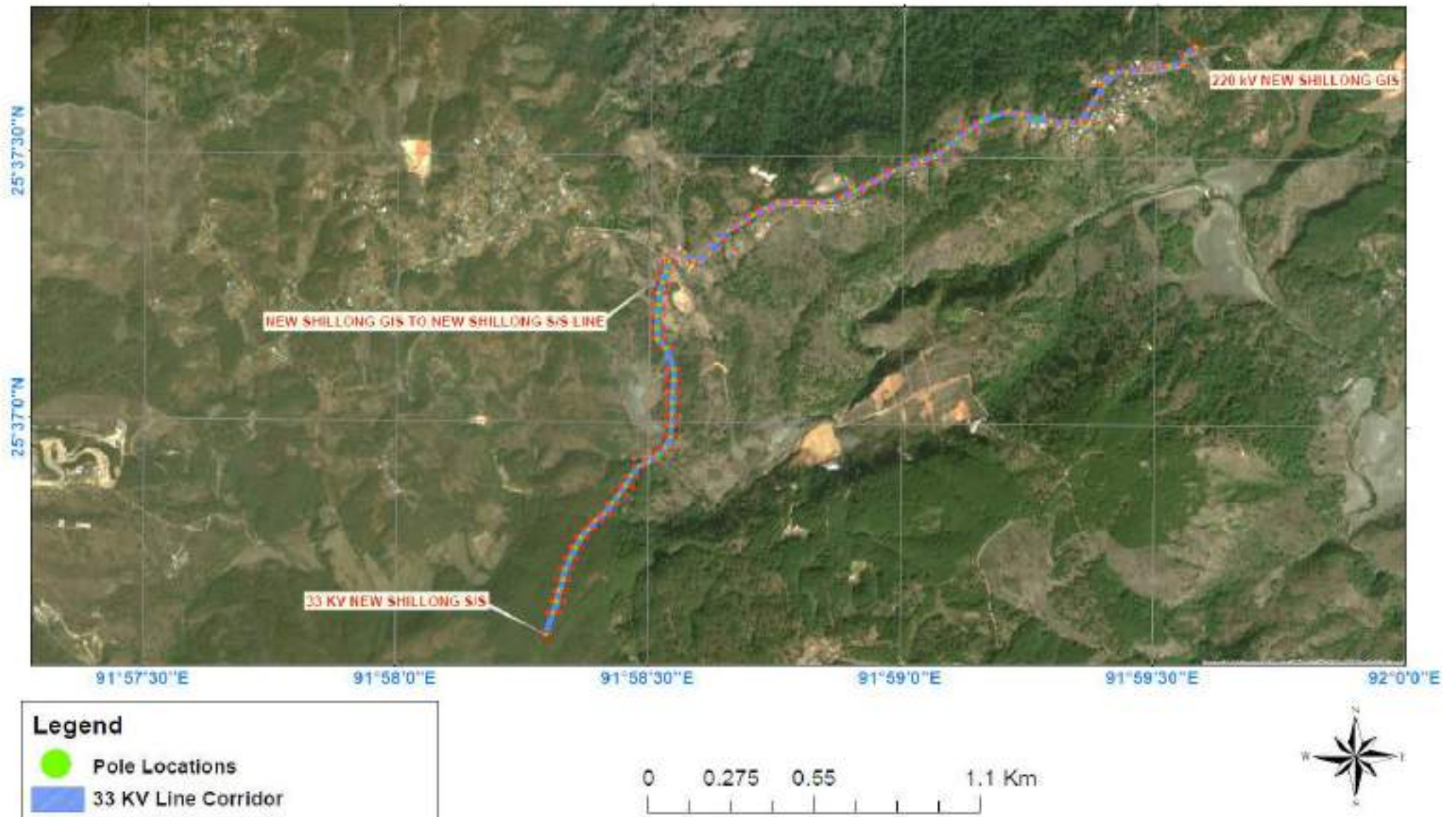
Map 4.1 : Map showing final line route vis-à-vis IEAR route of 220 kV Killing – Mawngap- New Shillong along with important land use features



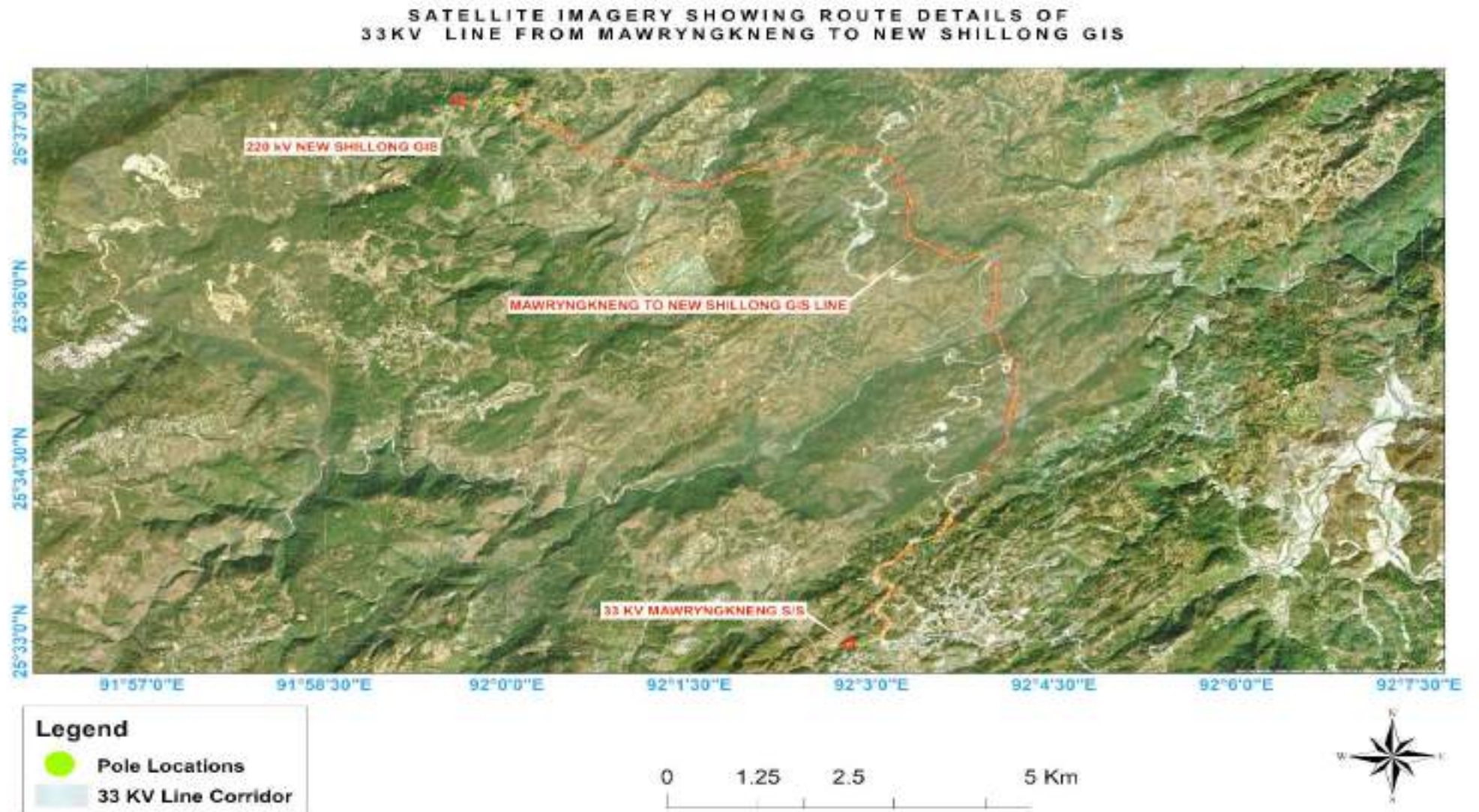
Map- 4.2: Satellite imagery showing details of 33 kV line from 33 /11kV Mawpat (New) - 220/132/33 kV New Shillong



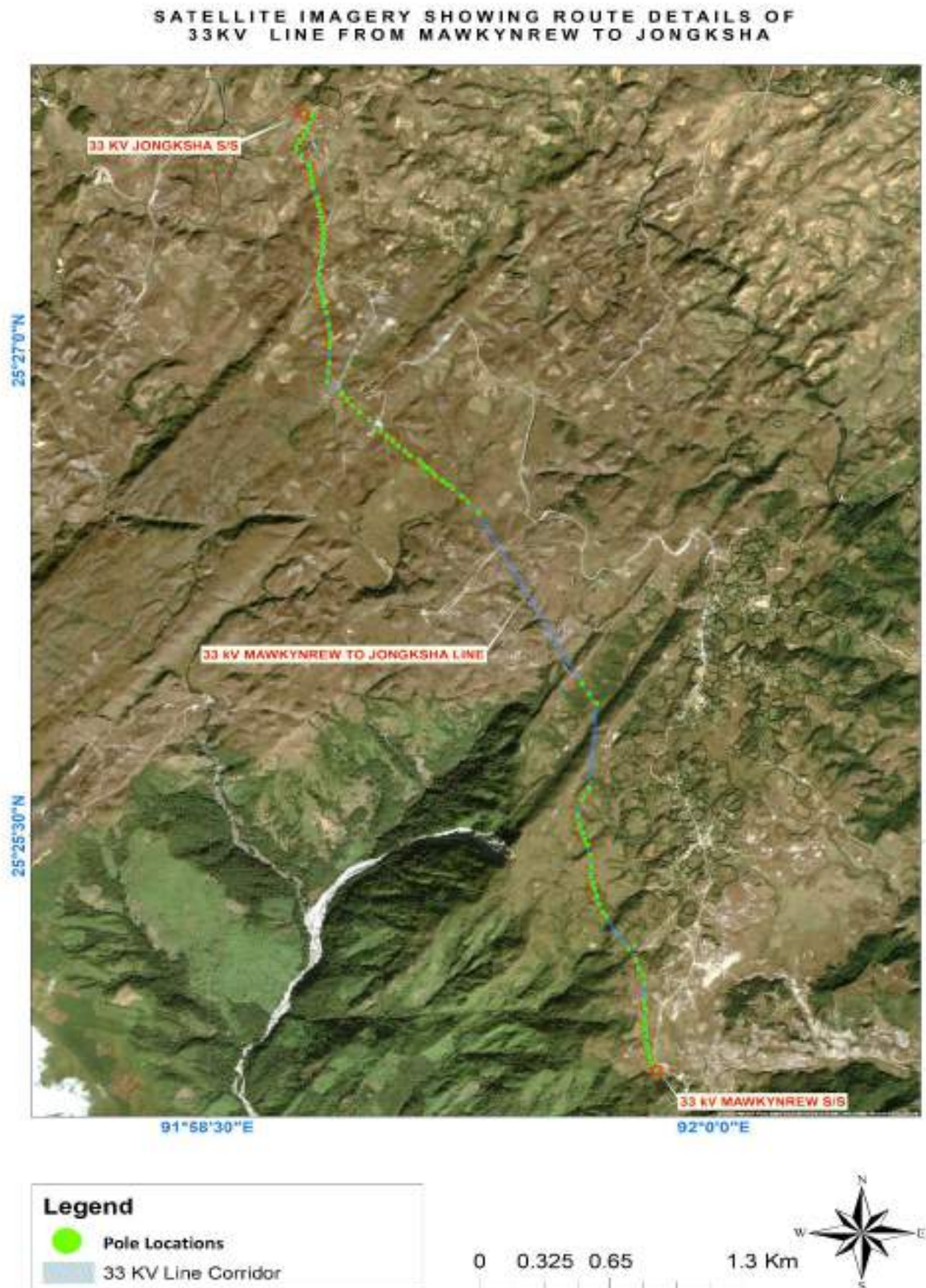
Map-4.3: Satellite imagery showing details of 33 kV line from 33/11 kV New Shillong (New) substation -220/132/33 kV New Shillong substation



Map-4.4: Satellite imagery showing details of 33 kV line from 33/11 kV Mawryngkneng (New) -220/132/33 kV New Shillong substation (New)



Map-4.5: Satellite imagery showing details of 33 kV line from 33/11 kV Mawkynew substation (New)- 33/11kV Jongksha substation (Existing)



CHAPTER-5 : POTENTIAL ENVIRONMENTAL IMPACTS, EVALUATION AND ITS MANAGEMENT

In general environmental impacts associate with Transmission & Distribution (T & D) projects are not far reaching and are mostly localized to RoW. However, T & D projects have some effects on natural and socio-cultural resources. Although, all possible measures have been taken during the finalization of route alignment as described in the earlier chapter for the proposed transmission/distribution lines but due to peculiarity of terrain and demography of the area where project is being implemented, some environmental impacts may be there. The explanations in brief with regard to possible environmental impact and measures taken to minimize the same are as follows:

5.1 Impact Due to Project Location

(i) Impact on Habitation and Resettlement

As explained in previous chapter during line routing stage itself all measures have been undertaken by IA to avoid settlements such as cities, villages etc. in line with the guiding principle of avoidance as per ESPPF. During detail survey modern techniques/tools like GIS, GPS, and aerial photography were utilized to further optimization the final route alignment avoiding human habitation and other ecological and socially sensitive areas. The final route map of transmission and distribution lines clearly depict no major habitations /settlement areas are located near to project location (refer **Map 4.1 to Map 4.7**). Moreover, the project does not require any resettlement of villagers as no land is acquired for tower/pole foundation as per existing law.

As regard substation, the instant project involves construction of 5 new substations i.e. 220/132 kV substation at New Shillong and four 33/11 kV substations at Mawpat, New Shillong, Mawryngkneng and Mawkynrew for which fresh lands have been secured through private purchase on willing-buyer and willing-seller basis on negotiated/market rate. A total of 9.304 acres land was secured for these substations from 6 private persons who willing to sold their land. The extension/ upgradation work in Byrnihat and Mawngap substations are undertaken in the already existing MePTCL/MePDCL substation premises and no acquisition of fresh land was required for this purpose. Mostly these substations are located on hilly land and away from socially and ecologically sensitive areas. Since,

no involuntary acquisition was involved and fresh lands were secured only through private purchase there is no R & R and resettlement issues.



220/132 kV New Shillong



33/11 kV Mawkynrew



33/11 kV New Mawpat



33/11 kV New Shillong



33/11 kV Mawryngkneng

(ii) Land value depreciation

It is evident that electric power being an enabler sector acts as a catalyst for the growth and development of areas having accessibility to it. Based on past experience land prices are generally expected to rise in the areas receiving power. The final route 220 kV D/C Kiling (Byrnihat)- Mawngap-New Shillong line is passing mostly through agriculture/jhum fields and uninhabited areas (refer **Map 4.1 to Map 4.6**) where the land-use is not going to change in foreseeable future. Further, all substations are also being implemented away from major habitation/city area. Therefore, the value of land is not adversely affected to a significant degree. Moreover, distribution lines intended to provide power supply to populated area will boost the economic status as well as land price of the area, thus, outweighing possible negative impacts, if any.

(iii) Historical/cultural monuments/value

The final routes of transmission and distribution line and substation lands don't involve any monuments of historical or cultural significance.

(iv) Encroachment into precious ecological areas

In accordance with the policy of route selection, IA/Utility have taken due precautions right from the planning stage itself to avoid routing of line through forest, protected areas like national park/sanctuaries and other ecological sensitive areas. Because of careful route selection technique it was possible to avoid all such areas completely in all line routes and substation locations in spite of the fact that the project area districts are rich in natural resources and biodiversity area having average forest cover more than 75% of total geographical area of the district. The final route alignment passes mostly through cultivated /jhum land (55%) and the remaining 45% passes through degraded land with sparse tree cover which does not have any ecologically sensitive locations.

As explained earlier, some stretch (12 km approx.) of Kiling-Mawngap-New Shillong 220kV D/C line has been categorized as forest land based on tree enumeration and accordingly, forest clearance process under Forest (Conservation) Act, 1980 was initiated by IA on 06.04.2019. However, after site inspection/verification the Divisional Forest Officers (DFOs) found that the forest land in question is not part of any reserve/protected forest under their control but actually non-forest land as per provisions of Meghalaya

Forest regulation (Amendment) Bill 2012. Subsequently, DFO has issued Non-Forest land certificates (**Annexure-2 & 2a**).

(v) Encroachment into other valuable lands

Most of the stretch (>70%) of final route passes through hilly terrain having moderate vegetation cover and remaining through flat land. (**Plate-5.1 & Plate- 5.2**).

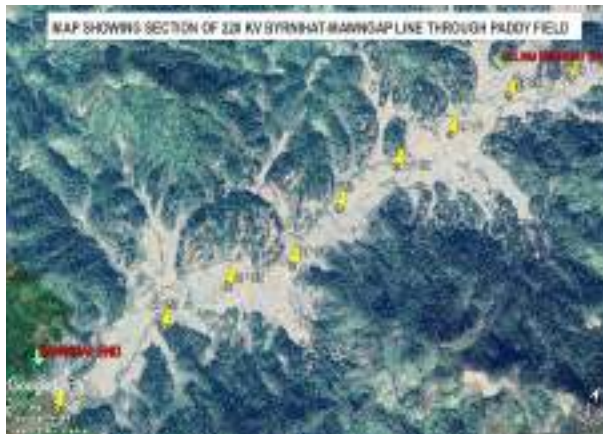


Plate-5.1: Line route in paddy field



Plate- 5.2: Line route in private plantation

As per existing law, land for tower/pole & right of way is not acquired and ownership of land remains with the owner and agricultural activities are allowed to continue after construction activity. However, as per existing laws² compensation for all damages (tree/crop) are paid to the individual land owner. Additionally, land compensation @100% land value for tower footing area is also paid to land owner as per prevailing practices.

In the instant case all the 389 nos. tower locations are coming either on private land or community land owned by Autonomous District Council/Village council. Since the whole area is coming under Khasi Hills Autonomous District Council (KHADC), No Objection Certificate (NoC) from concerned land owner/ Headman /Village Council has already been obtained (**Annexure-5**). The agriculture, horticulture departments have been approached to determine the rates of compensation for the paddy fields and fruit bearing trees respectively. Similarly, for land compensation the land rate has been fixed by District Collector/ ADCs. In line with the compensation procedures laid down in ESPPF & CPTD, compensation towards damage to tree/crop and land diminution value have been paid to affected persons after assessment of actual damage based on market rate and verification by concerned revenue authorities. The details of compensation plan along with estimated

² As per the present provision in the Electricity Act, 2003 read with relevant provisions of Indian Telegraph Act, 1885 all the damages (without acquisition of subject land) accrued to person while placing the tower and line are to be compensated

cost for damages towards tree/crop & land has been explained in the Compensation Plan for Temporary Damages (CPTD) report already prepared/disclosed for this project. Accordingly, till June 2021, tree/ crop and land compensation to the tune of Rs. 2.64 million and Rs. 56.35 million respectively has already been disbursed to affected persons/ land owners. Since Govt of Meghalaya has recently adopted MoP guidelines on RoW Compensation on 15.12.20 land compensation for corridor shall be paid in addition to normal tree, crop compensation. A sample case of compensation payment including notice to land owner, assessment and verification by revenue authority and payment to affected person etc. is enclosed as **Annexure-6**.

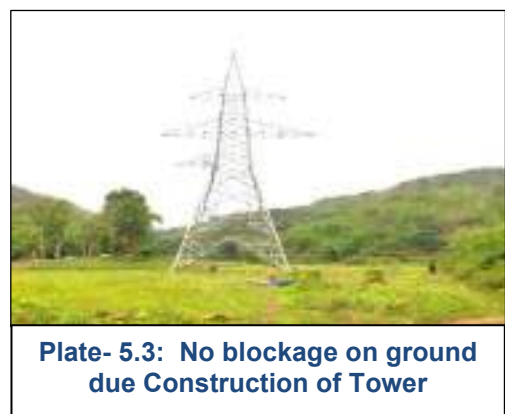
(vi) Interference with other utilities and traffic

As per regulations, it is mandatory for IA/Utility to seek clearance prior to construction from department of Railways, Telecommunications and wherever necessary from aviation authorities that are likely to be affected by the construction of transmission lines. The transmission and distribution lines do not interfere with telecommunication towers. Further, railway lines and aviation routes are not present in the project locations. It is therefore not required to avail clearances from Department of Railways, Department of Telecommunications, and the Ministry of Aviation. As already explained at section 4.2 the route of T & D lines are realigned selecting even more circuitous route to reduce number of crossings and also interference with other utilities along Guwahati-Shillong National Highway.

As regard inference with traffic, it is to may be noted that the project area has very low vehicular/traffic density due to low economic base prevalent in the area. Further, the instant project activities require very less vehicular movement and that too restricted to construction period only. Hence, no steep rise in traffic volume is anticipated/observed.

(vii) Interference with drainage pattern

As the transmission/distribution lines are constructed aerially and the blockage of ground surface is limited to area of tower footings, which is very small, there is little possibility of affecting drainage pattern. Since in the instant project all substations are located in hilly area, possibility of



any impact on drainage of the area is negligible and no such case encountered till date. Further, no tower/pole to be placed on river beds which could interfere with existing drainage patterns. Another measure already suggested in EMP and in place is to avoid dumping of fill materials in sensitive drainage area. In case of substations, all drainage channels along or inside substations are being trained and connected to main or existing drainage to avoid any erosion due to uncontrolled flow of water. Hence possibility flooding due to surface runoff is not anticipated.

5.2 Environmental Problems Due to Design

(i) Escape of polluting materials

The equipment installed on lines and substations are static in nature and do not generate any fumes or waste materials. However, detailed specification with respect to equipment design and substation drainage design has been included in tender document to avoid any incidence of land and water contamination. Transformers have been designed with secondary containment for oil spill having sump areas of at least 100% of the capacity of oil in each transformer. Further, each substation includes drainage and sewage disposal systems to avoid offsite land and water pollution. Apart from this, solid waste like packing materials, cables, aluminum conductor, sand, aggregate material, cements and steel generated during construction is carefully handled and removed from site periodically to avoid any contamination.



Plate- 5.4 Storage of Materials in earmarked/designated area only



Plate 5.5: Transformer Oil Sump Pit at 220/132kV New Shillong



Plate 5.6 : Drainage constructed inside 220/132kV New Shillong

(ii) Explosion/fire hazards

During the survey and site selection for transmission lines and substations, it has been ensured that these are kept away from oil/gas pipelines and other sites with potential for creating explosions or fires. In the instant case also the route line routes and substations are not located close to the vicinity of oil/gas pipelines or other installations with potential fire/ explosion hazard. Apart from this, states of art safety instruments have been installed in the substations on both the ends, so that the line gets tripped within milliseconds in case of any fault. Firefighting instruments including fire extinguishers are kept in appropriate place for immediate action in case of any fire hazard.



(iii) Erosion hazards due to inadequate provision for resurfacing of exposed area

Each 220 kV tower and 33 kV pole foundation require excavation of approx. 108 m³ and 0.72 m³ earth respectively. However, all the soil excavated for tower/pole footings and substations construction are optimally utilized for backfilling and the remaining soil being spread evenly and compacted. Topsoil disturbed during the development of sites are used to restore the surface of the platform. Infertile and rocky material are dumped at carefully selected dumping areas and used as fill for substation/ and tower/pole foundations.



After construction, complete resurfacing/compaction of excavated area are done to avoid any possible erosions hazard. Since most of the tower locations and substations are on flat land, there is no potential for erosion hazard in instant case.

(iv) Environmental aesthetics

The visual aesthetics of the localities are not going adversely affected as all line routes and substations are located away from habitation area and towers/poles for 220 kV transmission & 33 kV distribution lines are placed wide apart at an interval of approx. 300 meters and 70-100 meter respectively.

(v) Noise/vibration nuisances

The equipment installed at substation are mostly static and are so designed that the noise level always remains within permissible limits i.e. 85dB as per Indian standards. Some noise is unavoidable during construction phase like noise produced by concrete mixing equipment and excavators which are temporary and only in day time. However, proper maintenance of equipments/machinery by the contractor is ensured through regular monitoring by IA to keep the noise level well within the prescribed limit. The average noise level measured during site visits to all active sites varies from is 48 dB- 64dB which are well within permissible limits (<75 dB). Further, all substations are located far away from residential area and therefore no major impacts with respect to noise and vibration is also anticipated even during operation of substation.

(vi) Blockage of wildlife passage/ impact on avifauna

As already explained, the transmission & distribution lines have been aligned with total avoidance of reserve forest, protected areas, demarcated/ documented migration path of wildlife/elephant corridors. However, during ground survey it was informed by local forest officials that in some section of the transmission line elephant sighting have been reported a few years back. Further analysis of literature and interaction with villagers revealed that no animal / elephant corridors are present within the project locations and sightings of stray elephants (straying from the main herd) were reported in the past (5-10 years back) and, there were no reported sightings in recent times due to reduction in forest cover in that area.

However, as a precautionary measure, it has been decided to provide tower extensions of 6m between AP 07/0 to AP 13/0 (total 8 tower locations) to ensure unhindered passage in the event of incursion of elephants thus maintaining an additional clearance of more than the mandated 6.6 M from the ground so that elephants can pass safely below the conductor

The Bird hit/electrocution by electric lines mostly occurs during landing and takeoff near the water bodies, fly path of birds. Since in the instant case due to routing of line away from such areas, bird hit/electrocution is not anticipated. Although the incidence of avian hazards is rare due to the wide span between the conductors, However, as an additional measures Bird guard/ anti perch devise has been included in part of BoQ and also made integral part of tower design (drawing attached as **Annexure-7**).

5.3 Environmental Problems during Construction Phase

(i) Uncontrolled silt runoff

As already explained, majority (90-95%) of excavated earth/material from tower/substation foundation are backfilled and remaining earth, if any have been spread around the base and compacted. In case of distribution lines all the excavated soil is backfilled and compacted after erection of tubular poles. So far there are no instances with potential of erosion during construction of above said lines.



Plate 5.8: Backfilling & resurfacing of excavated area inside substation and 33kV pole

The substations have been provided with boundary walls and backfilling /and or spreading and compaction within the boundary walls have been done to take care of excavated materials. There are also no instances of erosion/losses of soils into adjoining area as all the overburden are being backfilled within the substation boundary walls and properly managed. The substations are not located in the vicinity of water bodies or ecologically sensitive areas. As an additional site-specific measure, construction of retaining walls are being undertaken at New Shillong, Mawpat and Mawryngkneng substation to prevent soil erosion. Further, retaining wall and stone pithing measures and bio-engineering measures (grass with bomboo grid) are also implemented at 220/132 KV New Shillong and Mawkynew substation (**Plate 5.9**). The dimension details and photographs of these

under construction RRM are given in **Table -5.1** respectively.



Plate 5.9: Grass with bamboo grids (Bio-engineering measures) for slope protection/ soil stabilization work under progress at 220/132/33 kV GIS Substation New Shillong



Plate- 5.10 Retaining Wall at 200 kV New Shillong Section at tower loc AP 76



Plate- 5.10 Revetment Wall provided for Tower Protection in 220 kV D/c Byrnihat-Mawngap-New Shillong

Table 5.1 Details of Retaining wall

Sl.	Substation	Retaining wall dimensions
1	33/11kV substation at New Shillong	Length: 74 Height: As per site condition Earthwork excavation: 268.8 Wall up to raft: 187.88 Wall above plinth: 104.49 Cement concrete above R-R wall: 2.12 Pointing: 175.48 Weep holes: 15
2	33/11kV new substation at Mawpat;	Length: 83.3 Height: As per site condition Earthwork excavation: 153.39 Wall up to raft: 270 Wall above plinth: 277 Cement concrete above R-R wall: 4 Pointing: 322.88 Weep holes: 52

3	33/11 kV new substation at Mawryngkneng	Length:25 Height: As per site condition Earthwork excavation: 39.51 Wall up to raft: 52.12 Wall above plinth: 10.55 Cement concrete above R-R wall: 0.72 Pointing: 68.72 Weep holes: 5
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Plate 5.11: Retaining wall at 33/11kV Mawpat



Plate 5.12: Retaining wall at 33/11kV New Shillong

Besides, RRM and Unequal Leg Extension (ULE) are being constructed at several locations to avoid cutting of soil and soil erosion in hilly section of 220 kV D/c Byrnihat-Mawngap-New Shillong line. Out of proposed ULE at 163 locations and RRM wall at 57 locations in this line around 73 ULEs and 8 RRM has already been completed.



Plate- 5.13 Construction of Revetment Wall and ULE at AP 23/0 & 59/0 of 220 kV D/c Byrnihat-Mawngap-New Shillong line

(ii) Nuisance to nearby properties

Due to careful route and site selection settlements/habitation area have been kept away from transmission line route and substations. The construction activities are normally

undertaken in lean period and post harvesting to avoid/minimize such impact Further, construction activities are mostly undertaken through the use of small mechanical devices e.g. tractors and manual labour, therefore nuisance to the nearby properties if any, is not expected.

Apart from siting of substations from habitated area, all active substations sites are prohibited for general public both due to its separation/demarcation by boundary wall (**Plate -5.14**). Hence, any adverse impact arising during the construction of these substations will be temporary and limited to the boundaries of proposed substations only and will neither impact nearby habitat/property nor health & safety of neighboring community.



Plate-5.14 Activities confined within the substation boundary only

(iii) Interference with utilities and traffic and blockage of access way

It has been observed that most of the tower/pole locations are easily accessible (taking 250-300 m as buffer zone which can always be accessed through head load) through existing roads or village paths and no new construction of roads was required till date. However, in case upgradation /augmentation of existing field/path is required during construction, compensation for any damage to crop or field as per normal compensation procedure will be paid to the owner. In many areas and such improvement in the access road is highly appreciated by the local population. All the new substations are located adjacent to existing road and no new approach road is required to be constructed except a 20m stretch road for 220kV New Shillong substation. Since it is a very small stretch being constructed solely for the purpose to be used for entry into substation, no impacts on fragmentation of habitation, blockage of natural water resources and discharge areas anticipated in instant case. However, all necessary measures w.r.t. dust suppression, reduction of noise and vibrations etc. are being undertaken by IA to reduce any possible impacts arising due to construction of road.

The transmission and distribution lines do not interfere with telecommunication towers. Further, railway lines and aviation routes are not present in the project locations. It is therefore not required to avail clearances from Department of Railways, Department of Telecommunications, and the Ministry of Aviation. For crossings of road short span angle

(DT) towers are located at a distance so as not to cause any hindrance to the movement of traffic. Stringing at the construction stage is carried out during lean traffic period in consultation with the concerned authorities and angle towers are planted to facilitate execution of work in different stages.

(iv) Inadequate resurfacing for erosion control

As explained earlier, majority of tower/pole locations located on hilly terrain have been positioned on hilltops so as to avoid bench cutting of soil, revetments or retaining walls. Accordingly, for 220 kV D/c Byrnihat-Mawngap-New Shillong line a total of 230 locations have been identified for taking of ULE and RRM wall for soil erosion control measures. Till now around 73 ULEs and 8 RRM has already been completed (**Plate-5.11- Plate 5.13**). Moreover, it is also ensured the construction is generally undertaken outside the rainy season.

Since all the substations are located hilly terrain, additional site specific erosion protection measures such as Revetment & RRM Wall & Grass with bamboo grids slopes are implemented/to be implemented based on site requirement/conditions (refer **Plate -5.9 to 5.13**)

(v) Inadequate disposition of borrow area

As mentioned earlier the transmission tower foundations involve excavations on small scale basis and the excavated soil is being optimally utilized for back filling. All the substations land on located in hilly terrain hence the volume of cutting is equal to volume of filling avoiding borrowing of the area. However, approximately 1068m³ borrowed earth has been used for construction of 33 kV Mawkynew which was taken from community land utilized for development of road in agreement with community. Hence, acquisition/creation of any new borrow area is not needed in instant project.

(vi) Protection of Worker's health/safety

All health and safety issues and its management aspects related contract workers/laboures have been made integral part of project through contract specific safety plan. Accordingly, a construction contractor has submitted their Safety Plan duly signed before award of each contract under the project. A sample copy of Safety Plan submitted by M/s Unique Structure and Tower Limited is enclosed as **Annexure-8**. The Project is

being executed as per the approved plan and is regularly monitored by dedicated Safety personnel. Moreover, for strict compliance of safety standard/plan a special provision as a deterrent has been added in the contract which provides for a heavy penalty of Rs.10 lakhs for each accidental death and Rs1.0 lakh/each for any injury and is deducted from the contractor's payment and paid to the deceased/affected family (**Annexure-9**). Additionally, work and safety regulations, workmen's compensation, insurance are adequately covered under the General Conditions of Contract (GCC), a part of bidding documents. The project authority ensures that all contractors are operating with valid labor license as per provision under section – 12(1) of the Contract Labour (Regulation & Abolition) Act, 1970 and also certified under Section- 7(3) of the Building and Other Construction Workers (Regulation of Employment and Condition of Service) Act, 1996 from Ministry of Labour & Employment. Besides, the contractors have obtained requisite insurance policy as per provisions of Employee Compensation Act, 1923 for its employed workforce. Sample copy of labor license and insurance policy for workers is attached as **Annexure-10**. During construction work, safety guidelines/checklists including work permits and safety precautions are being strictly followed which are also regularly monitored by site in-charge. This can be evident from the fact that no accidents (fatal or non-fatal) including major/minor injuries were reported from any of the construction sites till date. Sample copy of filled in checklist is enclosed as **Annexure-11**.

Labourers were hired locally, wherever possible. The workers have been provided with PPEs such as boots and helmets. Mock drill such as fire safety, first aid etc. are conducted periodically to enhance the preparedness level of the workforce. Safety induction & awareness programme including HIV/AIDS are also conducted at every active site. Safety film for transmission project in local language has been shown to workers for better awareness. First aid boxes and provisions for treatment in case of emergencies were arranged locally/ nearby towns. Photographs depicting health and safety compliance at various project sites is placed as **Annexure-12**.

5.4 Environmental Problems Resulting from Operation

(i) O&M Staff/Skills less than acceptable resulting in variety of adverse effects

As informed by project officials, O & M program will be implemented by substation personnel for both the lines as well as substations. Monitoring measures employed

include patrolling and thermo-vision scanning. The supervisors and managers entrusted with O&M responsibilities are intensively trained for necessary skills and expertise for handling these aspects. A monthly preventive maintenance program will be carried out to disclose problems related to cooling oil, gaskets, circuit breakers, vibration measurements, contact resistance, condensers, air handling units, electrical panels and compressors. Any sign of soil erosion is also reported and rectified. Monitoring results are published monthly, including a report of corrective action taken and a schedule for future action.

As regard Electro Magnetic Field (EMF), the transmission system is absolutely safe which are designed based on approved international standards following ICNIRP guidelines. It may also be noted that the transmission line do not pass directly over any residential properties and as such the potential for EMF effects to occur is further diminished. In respect of Poly Chlorinated Biphenyl (PCB), it has been observed that no PCB containing equipments are being procured as PCB level of less than 2 mg/kg (ppm) which is non-detectable has been stated in tender specification.

5.5 Critical Environmental Review Criteria

(i) Loss of irreplaceable resources

In the instant project none of the project elements involve any forest/protected areas, /ecologically sensitive areas hence, the problem of losing natural resources is not anticipated.

(ii) Accelerated use of resources for short-term gains

There will be no significant impact on the natural resources occurring due to construction of transmission/distribution line and substation. The construction material such as tower members, cement etc. shall come from factories while the excavated soil finally reused for backfilling to restore the surface. The water is required for construction activity and domestic use in small quantity which is being met from nearby existing source or Borewell. Thus the project shall not cause any accelerated use of resources for short-term gains. The aggregates used for construction are sourced locally existing borrow sites only without creating any new borrow area. Hence, it may be seen that the activities associated with implementation of subject project shall not cause any accelerated use of resources for short term gain.

(iii) Endangering of species

As already explained, Pangolin or scaly anteater (*Manis sp*) is reported in some pockets of the project. As the animal is fossorial in habit and mostly concentration in dense forest/vegetation land, no direct impact on such species is anticipated considering no involvement of forest land along line route and also aerial nature of transmission and distribution project.

(iv) Promoting undesirable rural-to urban migration

The project doesn't involve any submergence or loss of land holdings that normally trigger migration. It also does not involve resettlement due to acquisition of any private land holdings. Hence, there is no possibility of any migration.

5.6 Public Consultation

Public consultation/ information dissemination is a continuous process starting with the project conception and continues during project implementation and even during O&M stage. As stated in ESPPF, public consultation using different technique like Public Meeting, Small Group Meeting, informal Meeting are being carried out during different activities of project cycle. During such consultation, the public is informed about the project in general and in particular about the following:

- Complete project plan (i.e. its route and terminating point and substations, if any, in between);
- Design standards in relation to approved international standards;
- Health impacts in relation to EMF;
- Measures taken to avoid public utilities such as school, hospitals, etc.;
- Other impacts associated with transmission & distribution lines and DPN approach to minimizing and solving them;
- Trees and crop compensation process.

In the instant project both formal and informal consultations meeting were organized which is also made integral part of IEAR and CPTD. During survey also Utilities & POWERGRID site officials meet people and inform them about the routing of transmission and distribution lines. Similarly, during the construction every individual, on whose land tower is erected and people affected by RoW, are being consulted. Further, in case of Autonomous District Council areas consultations are being held with the respective village

councils for identification of the landowner and obtaining their consent for the RoW (**refer Annexure -5**). Besides, as per agreed framework, gender issues have also been addressed to the extent possible during such consultation process (total 12 female out of 98 participants). Details of formal and informal consultation organized for instant project including photographs of the meeting and minutes of meeting are placed as **Annexure-13**.

Date of meeting	Venue of Meeting	No. of Persons attended	Persons Attended
Public Consultation Meeting			
12.09.2014	Village- Byrnihat, Ri-Bhoi District	28	Members of Khasi Hill Council, Senior members & General Public
19.09.2014	Village- Umium, Ri-Bhoi District	35	Members of Khasi Hill Council, Senior members & General Public
Informal Group Meeting			
12.05.2019	Lamkyv village, East Khasi Hills	9	Project affected families, Village headman & general public
18.06.2019	Mynkre village, East Khasi Hills	14	Project affected families, Village headman & general public
27.06.2019	Village- Mynkre, East Khasi Hills	12	Project affected families, Village headman & general public

5.7 Compliance Status of EMP

The IA has a continuous monitoring mechanism of the project w.r.t. compliance of the mandatory requirements as stipulated in the IEAR. As many provisions of EMP related to construction contractor, EMP has been made integral part of contract document for proper its implementation by contractor/sub-contractor. Thus, the adherence to the clauses by the contractor is regularly monitored especially in respect of various implementation E & S measures including health and safety aspects. During the present study, our team has critically assessed/evaluated the compliance measures with respect mitigation measures stipulated in the IEAR through physical inspection, verification of record/ documents/ drawing, interaction with project officials/contractor/ villagers/construction workers and PRA etc (refer Appendix-A, B & C). Based on above, a detailed compliance status w.r.t. each identified impacts enlisted in EMP have been prepared and is presented in **Table – 5.2**.

Table – 5.2: Compliance Status of EMP as proposed in IEAR

Clause No.	Project activity/stage	Potential impact	Proposed mitigation measures	Compliance Status
Pre-construction				
1	Location of overhead line towers/ poles/ underground distribution lines and alignment & 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.	Complied with. Route alignment criterion is part of survey contract wherein all statutory Electrical clearance as stipulated under CEA's regulations, 2010 (Measures related to safety & electric supply) is considered/ensured.
2	Equipment specifications and design parameters	Release of chemicals and gases in receptors (air, water, land)	PCBs not used in substation transformers or other project facilities or equipment.	Complied with Part of technical specification of transformer. PCB is not used or non-detectable level (i.e. less than 2mg/kg) as per IEC 61619 or ASTM D4059.
			Processes, equipment and systems not to use chlorofluorocarbons (CFCs), including halon, and their use, if any, in existing processes and systems should be phased out and to be disposed of in a manner consistent with the requirements of the Government	Complied with. CFC Free equipment is part of tender specifications.
3	Transmission/ Distribution line design	Exposure to electromagnetic interference	Line design to comply with the limits of electromagnetic interference from overhead power lines	Complied with. Design parameters have been complied with. Field testing should be done after energization.
4	Substation location and design	Exposure to noise	Design of plant enclosures to comply with noise regulations.	Complied with. Transformers with maximum noise level of 75 dB specified in tender specification. Sound proof enclosures used for D.G sets.
		Social inequities	Careful selection of site to avoid encroachment of socially, culturally and archaeological sensitive areas (i.g. sacred groves, graveyard, religious worship place, monuments etc.)	Complied with. No encroachment of any socially sensitive areas due to proposed substations.

Clause No.	Project activity/stage	Potential impact	Proposed mitigation measures	Compliance Status
5	Location of overhead line towers/poles/ laying of underground distribution line & alignment and design	Impact on water bodies	Avoidance of such water bodies to the extent possible. Avoidance of placement of tower inside water bodies to the extent of possible	Complied with. Part of detailed alignment survey and design. No tower/pole placed in water bodies.
		Social inequities	Careful route selection to avoid existing settlements and sensitive locations Minimise impact on agricultural land	Complied with. Part of detailed tower/pole alignment survey design. Though major section of proposed lines are routed through agricultural land in order to avoid impact on environmentally/ socially sensitive areas, efforts such as scheduling of construction lean/ post-harvest period, consultation with local authorities/ autonomous councils etc (refer Annexure-5) are being made to minimize impacts on agricultural land/produce to the extent possible.
			Careful selection of site and route alignment to avoid encroachment of socially, culturally and archaeological sensitive areas (i. g. sacred groves, graveyard, religious worship place, monuments etc.)	All ecologically and socially sensitive areas are completely avoided.
6	Securing lands for substations.	Loss of land/ income change in social status etc.	In the case of Involuntary Acquisitions, Compensation and R&R measures are extended as per provision of RFCTLARRA, 2013 ³	Fresh land required for construction of substations at Mawpat, New Shillong, Mawryngkneng and Mawkynrew have been secured through private purchase on willing-buyer and willing-seller basis on negotiated/market rate. Since no involuntary acquisition of land is involved, there is no R&R issue.

³ In the instant case no Involuntary acquisition of land (permanent) is involved, hence this clause shall not be applicable.

Clause No.	Project activity/stage	Potential impact	Proposed mitigation measures	Compliance Status
7	Encroachment into protected area/ precious ecological area	Loss of precious ecological values/ damage to precious species	Avoid encroachment into such areas by careful site and alignment selection (National Parks, Wildlife Sanctuary, Biosphere Reserves/ Biodiversity Hotspots)	Complied with. Part of detailed siting and alignment survey/design. All such areas avoided through careful selection/optimization line routes.
			Minimize the need by using RoW wherever possible	
8	Line through identified Elephant corridor / Migratory bird	Damage to the Wildlife/ Birds and also to line	Study of earmarked elephant corridors to avoid such corridors, Adequate ground clearance, Fault clearing by Circuit Breaker, Barbed wire wrapping on towers, reduced spans etc., if applicable	Complied with. Part of detailed sitting and alignment survey /design. All identified Elephant corridors/bird fly path have been avoided completely. In spite of that some elephant movement zone has been reported in Nongpoh section (8 tower locations from AP 07/0 to AP 13/0) of transmission line for which adequate ground clearance has been provided through tower extension up to 9 meter. For details refer section 5.2 (vi) . Bird guard/ anti perch devise is part of BoQ and also integral part of tower design (refer Annexure-7).
			Avoidance of established/ identified migration path (Birds & Bats). Provision of flight diverter/ reflectors, bird guard, elevated perches, insulating jumper loops, obstructive perch deterrents, raptor hoods etc. ⁴ , if applicable	
9	Line through forestland	Deforestation and loss of biodiversity edge effect	Avoid encroachment by careful site and alignment selection	Complied with. Part of detailed siting and alignment survey and forest areas have been completely avoided. NOC regarding non-involvement of forest land issued by concerned DFOs/ADCs. (refer Annexure-2 & 2a). Tower extensions of 3-9 m have been provided to reduce tree felling, wherever needed Invasion of alien species not anticipated.
			Minimise the need by using existing towers, tall towers and RoW, wherever possible	
			Measures to avoid invasion of alien species	

⁴ As per International/National best practices and in consultation with concerned forest/wildlife authority

Clause No.	Project activity/stage	Potential impact	Proposed mitigation measures	Compliance Status
			Obtain statutory clearances from the Government	Since no reserve/protected forest is involved, forest clearance under Forest Conservation) Act, 1980 is not applicable. Wherever required consultation with ADC/ village councils are undertaken (Annexure-5).
			Consultation with autonomous councils wherever required	
10	Lines through farmland	Loss of agricultural production/ change in cropping pattern	Use existing tower or footings wherever possible Avoid sitting new towers on farmland wherever feasible	Complied with. Part of detailed sitting and alignment survey. Though it is unavoidable but effort are being made to minimized the impact/loss of production
11	Noise related	Nuisance to neighbouring properties	Substations sited and designed to ensure noise will not be a nuisance	Complied with. Part of detailed equipment design. Substations are appropriately sited and away from settlement area. Transformers with maximum noise emitting level of 75 dB and DG set with proper enclosures are part of equipment specification/ design criteria
12	Interference with drainage patterns/ irrigation channels	Flooding hazards/ loss of agricultural production	Appropriate sitting of towers to avoid channel interference	Complied with. Part of detailed alignment survey and alignment survey, Interference with drainage patterns/ irrigation channels not anticipated
13	Escape of polluting materials	Environmental pollution	Transformers designed with oil spill containment systems, and purpose-built oil, lubricant and fuel storage system, complete with spill cleanup equipment. Substations to include drainage and sewage disposal systems to avoid offsite land and water pollution.	Complied with. Part of detailed equipment design /drawings. Oil spill containment systems having sump of capacity of 200% of oil volume of largest transformer are being constructed. (refer Plate-5.5) Complied with. Proper drainage and sewage system are part of detailed substation layout and design /drawings based on site condition.

Clause No.	Project activity/stage	Potential impact	Proposed mitigation measures	Compliance Status
14	Equipments submerged under flood	Contamination of receptors	Substations constructed above the high flood level(HFL) by raising the foundation pad	Complied with. Part of detailed substation layout and design /drawings. All substations are being constructed above HFL.
15	Explosions /Fire	Hazards to life	Design of substations to include modern fire fighting equipment	Complied with. Part of detailed substation layout and design /drawings. Compliance assured by site manager.(refer Plate-5.7)
			Provision of fire fighting equipment to be located close to transformers	
Construction				
16	Equipment layout and installation	Noise and vibrations	Construction techniques and machinery selection seeking to minimize ground disturbance.	Complied with. Noise generated mostly from concrete mixing equipment and excavators are temporary and confined to day time only. No ground disturbance observed.
17	Physical construction	Disturbed farming activity	Construction activities on cropping land timed to avoid disturbance of field crops (within one month of harvest wherever possible).	Complied with Excavations not done during monsoon which is the cropping period. However, in case such damages are inevitable full compensation as per assessment of revenue authorities is being paid to land owner/farmer by IA/Utility.
18	Mechanized construction	Noise, vibration and operator safety, efficient operation	Construction equipment to be well maintained.	Complied with. Some noise unavoidable as work is undertaken at day time only. Noise levels measurements are done regularly by IA & Construction contractor. Noise level measured during site visits to all active sites found to be within permissible limits (<75 dB).
		Noise, vibration, equipment wear and tear	Turning off plant not in use.	Complied with. Ensured through regular monitoring.

Clause No.	Project activity/stage	Potential impact	Proposed mitigation measures	Compliance Status
	Construction of roads for accessibility	Increase in airborne dust particles	Existing roads and tracks used for construction and maintenance access to the line wherever possible.	Complied with. Water sprinkling done whenever required
		Increased land requirement for temporary accessibility	New access ways restricted to a single carriageway width within the RoW.	Most of the tower locations are easily accessible through existing roads/paths. All substations sites are located close top existing road and no new access road required/ constructed for this project.
20	Construction activities	Safety of local villagers	Coordination with local communities for construction schedules, Barricading the construction area and spreading awareness among locals	Complied with. Excavated areas barricaded and restriction to enter work site during construction strictly followed,
		Local traffic obstruction	Coordination with local authority/ requisite permission for smooth flow of traffic	Most of the tower/pole locations are in farm/ barren land. Hence, no traffic obstruction is witnessed. For substation location, smooth traffic flow is ensured by project authorities/contractor in close co-ordination with local authority wherever necessary.
21	Temporary blockage of utilities	Overflows, reduced discharge	Measure in place to avoid dumping of fill materials in sensitive drainage area	No dumping observed. All overburden managed optimally by reutilizing it as fill materials.
22	Site clearance	Vegetation	Marking of vegetation to be removed prior to clearance, and strict control on clearing activities to ensure minimal clearance.	Minimal clearing required as most part of line/towers are in paddy fields and substations are on degraded land. For distribution lines, hardly any trees will be required to be felled. No use of herbicides and pesticides observed/anticipated.
			No use of herbicides and pesticides	

Clause No.	Project activity/stage	Potential impact	Proposed mitigation measures	Compliance Status
23	Trimming /cutting of trees within RoW	Fire hazards	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.	Complied/to be complied during stringing work. In distribution line where string has already completed only looping/pruning done to maintain safe electrical clearance as per applicable norms (CEA's regulations, 2010 (Measures related to safety & electric supply))
		Loss of vegetation and deforestation	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.	Felled trees are handed over to land owner. IA/State Utilities have no role in storage or disposal of felled trees/wood
24	Wood/vegetation harvesting	Loss of vegetation and deforestation	Construction workers prohibited from harvesting wood in the project area during their employment, (apart from locally employed staff continuing current legal activities)	Complied with. Cooking Gas/ fuel wood provided by the Contractor
25	Surplus earthwork/soil	Runoff to cause water pollution, solid waste disposal	Soil excavated from tower footings/ substation foundation disposed of by placement along roadsides, or at nearby house blocks if requested by landowners	Complied with. Soil backfilled and excess spread out evenly and compacted. Excavated soil was properly stored and no dumping observed in visited sites/location.
26	Substation construction	Loss of soil	Loss of soil is not a major issue as excavated soil will be mostly reused for filling. However, in case of requirement of excess soil the same will be met from existing quarry or through deep excavation of existing pond or other nearby barren land with agreement of local communities	Complied with. Excavated soil used optimally for backfilling and distribution within the boundary is adequate. No additional requirements of soil observed for any substations.
		Water pollution	Construction activities involving significant ground disturbance (i.e. substation land forming) not undertaken during the monsoon season	Complied with No construction during monsoons. No seepage or water pollution observed.

Clause No.	Project activity/stage	Potential impact	Proposed mitigation measures	Compliance Status
27	Site clearance	Vegetation	Tree clearances for easement establishment to only involve cutting trees off at ground level or pruning as appropriate, with tree stumps and roots left in place and ground cover left undisturbed	Complied with/to be complied
28	Substation foundation/Tower erection disposal of surplus earthwork/fill	Waste disposal	Excess fill from substation/tower foundation excavation disposed of next to roads or around houses, in agreement with the local community or landowner.	Complied/ to be complied Excavated soil optimally used. Backfilling and spreading of excess soil within substation area assured by project authorities.
29	Storage of chemicals and materials	Contamination of receptors (land, water, air)	Fuel and other hazardous materials securely stored above high flood level.	Proper complied to be ensured. Stored in designated area inside the premise in most sites. However, some construction waste laying haphazardly and required proper storage/disposal
30	Construction schedules	Noise nuisance to neighbouring properties	Construction activities only undertaken during the day and local communities informed of the construction schedule.	Complied with Construction in day time only
31	Provision of facilities for construction workers	Contamination of receptors (land, water, air)	Construction workforce facilities to include proper sanitation, water supply and waste disposal facilities.	Complied with. However, there is scope for further improvement in improving the living condition of worker
32	Influx of migratory workers	Conflict with local population to share local resources	Using local workers for appropriate asks	Complied with. Local workforces have been given preference based on skill only.
33	Lines through farmland	Loss of agricultural productivity	Use existing access roads wherever possible	Complied with. Repair/restoration done immediately wherever required. No complaint observed/reported.
			Ensure existing irrigation facilities are maintained in working condition	
			Protect /preserve topsoil and reinstate after construction completed	

Clause No.	Project activity/stage	Potential impact	Proposed mitigation measures	Compliance Status
			Repair/reinstate damaged bunds etc after construction completed	
		Social inequities	Land owners/ farmers compensated for any temporary loss of productive land as per existing regulation.	Compensation for land and damage to crop/tree etc is paid to land owner after assessment by revenue authority. Till June 2020, a total compensation of Rs. 58.99 million (Rs. 56.35 million towards land compensation and Rs. 2.64 million towards tree/crop compensation) has already been disbursed 270 affected persons/village councils. However, it has been observed that there was some initial delay in payment of compensation to land owner (after 3-6 months of actual damage) which was expedited by IA subsequently after streamlining the process.
34	Uncontrolled erosion/silt runoff	Soil loss, downstream siltation	Need for access tracks minimised, use of existing roads. Limit site clearing to work areas Regeneration of vegetation to stabilise works areas on completion (where applicable) Avoidance of excavation in wet season Water courses protected from siltation through use of bunds and sediment ponds	Complied with. Construction during monsoon avoided as far as possible
35	Nuisance to nearby properties	Losses to neighbouring land uses/ values	Contract clauses specifying careful construction practices. As much as possible existing access ways will be used Productive land will be reinstated following completion of construction	Complied with. Good construction practices with proper scheduling of construction activities observed in all active sites. No major deviation with respect to contract conditions by the contractor found/reported
		Social inequities	Compensation will be paid for loss of production, if any.	Observation already provided at Clause no 34 above

Clause No.	Project activity/stage	Potential impact	Proposed mitigation measures	Compliance Status
36	Flooding hazards due to construction impediments of natural drainage	Flooding and loss of soils, contamination of receptors (land, water)	Avoid natural drainage pattern/ facilities being disturbed/blocked/ diverted by ongoing construction activities	Complied/ being complied. No such issue reported/ came across during visit to various sites
37	Equipment submerged under flood	Contamination of receptors (land, water)	Equipment stored at secure place above the high flood level(HFL)	Complied with Substations are constructed above HFL.
38	Inadequate siting of borrow areas (quarry areas)	Loss of land values	Existing borrow sites will be used to source aggregates, therefore, no need to develop new sources of aggregates	Complied with.
39	Health and safety	Injury and sickness of workers and members of the public	Safety equipment's (PPEs) for construction workers	Safety equipment available but often not used by workers. Worker facilities/camp available adequately. Health & safety plan in place and properly implemented. No major accident/incident reported for any site till date. More training to be conducted to create awareness on use of PPEs /safety gear. Photographs depicting of Health & Safety compliance is placed as Annexure- 12 .
			Contract provisions specifying minimum requirements for construction camps	
			Contractor to prepare and implement a health and safety plan.	
			Contractor to arrange for health and safety training sessions	
40	Inadequate construction stage monitoring	Likely to maximise damages	Training of environmental monitoring personnel	Project staffs often found to be unaware of the IEAR, ESPPF and the requirements therein. More specific awareness/ training on IEAR, ESPPF etc requirements for effective implementation/ monitoring of provisions of IEAR, ESPPF and contract conditions to achieve 100% compliance
			Implementation of effective environmental monitoring and reporting system using checklist of all contractual environmental requirements	

Clause No.	Project activity/stage	Potential impact	Proposed mitigation measures	Compliance Status
			Appropriate contact clauses to ensure satisfactory implementation of contractual environmental mitigation measures.	
Operation and Maintenance				
41	Location of line towers/poles and overhead/ under-ground line alignment & 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.	Not applicable at present. Pertain to Operation & Maintenance period only
42	Line through identified bird flyways, migratory path	Injury/ mortality to birds, bats etc due to collision and electrocution	Avoidance of established/identified migration path (Birds & Bats). Provision of flight diverter/ reflectors, elevated perches, insulating jumper loops, obstructive perch deterrents, raptor hoods etc., if applicable	
43	Equipment submerged under flood	Contamination of receptors (land, water)	Equipment installed above the high flood level (HFL) by raising the foundation pad.	
44	Oil spillage	Contamination of land/nearby water bodies	Substation transformers located within secure and impervious sump areas with a storage capacity of at least 100% of the capacity of oil in transformers and associated reserve tanks.	
45	SF6 management	Emission of most potent GHG causing climate change	Reduction of SF6 emission through awareness, replacement of old seals, proper handling & storage by controlled inventory and use, enhance recovery and applying new technologies to reduce leakage	
46	Inadequate provision of staff/workers health and safety during operations	Injury and sickness of staff /workers	Careful design using appropriate technologies to minimise hazards Safety awareness raising for staff. Preparation of fire emergency action plan and training given to staff on implementing emergency action plan	

Clause No.	Project activity/stage	Potential impact	Proposed mitigation measures	Compliance Status
			Provide adequate sanitation and water supply facilities	
47	Electric Shock Hazards	Injury/ mortality to staff and public	Careful design using appropriate technologies to minimise hazards	
			Security fences around substations	
			Barriers to prevent climbing on/ dismantling of transmission towers	
			Appropriate warning signs on facilities	
			Electricity safety awareness raising in project areas	
48	Operations and maintenance staff skills less than acceptable	Unnecessary environmental losses of various types	Adequate training in O&M to all relevant staff of substations & transmission/ distribution line maintenance crews.	
			Preparation and training in the use of O&M manuals and standard operating practices	
49	Inadequate periodic environmental monitoring.	Diminished ecological and social values.	Staff to receive training in environmental monitoring of project operations and maintenance activities.	
50	Equipment specifications and design parameters	Release of chemicals and gases in receptors (air, water, land)	Processes, equipment and systems using chlorofluorocarbons (CFCs), including halon, should be phased out and to be disposed of in a manner consistent with the requirements of the Govt.	
51	Transmission/ distribution line maintenance	Exposure to electromagnetic interference	Transmission/ distribution line design to comply with the limits of electromagnetic interference from overhead power lines	
52	Uncontrolled growth of vegetation	Fire hazard due to growth of tree/shrub /bamboo along RoW	Periodic pruning of vegetation to maintain requisite electrical clearance. No use of herbicides/ pesticides	
53	Noise related	Nuisance to neighbouring properties	Substations sited and designed to ensure noise will not be a nuisance.	

5.8 Conclusion

It is clear from the above discussion that due inherent flexibility, all the subprojects have been selected meticulously based on technical, environmental, socio-economic aspects. Though some changes in line length & route alignment have been observed in transmission /distribution lines as compared to IEAR scope but IA/Utility could able to successfully avoided the ecologically & socially sensitive areas including forest, protected areas, PCR etc in all the lines and substations being implemented under this project following the principle of avoidance as per its ESPPF.

The provisions of IEAR & EMP are being implemented at ground level and strict compliance by construction contractors is ensured through regular monitoring by IA/Utility. So far, no major impacts apart from earlier identified impacts are anticipated due to such changes in scope. However, based on site condition IA /Utility has taken some additional site-specific measures like providing tower extension in some stretches for adequate clearance to wild animal/elephant and erosion/slope protection measures like RRM Wall etc. in substations. Besides, all other applicable laws/rules/regulations of the country & funding agencies are being complied with and till date no violation/ penalty with respect to contravention of any regulations has been reported. During assessment, it has also been observed that so far the project has achieved zero fatality with no major non-compliance of EMP/Contract provisions as stipulated in IEAR, which is an indicative of the strict vigil of the IA.

In addition to above, the study team has observed followings during the site visit/PRA study.

- People are well aware about the project, its various components and confirmed that MePTCL/ MePDCL and IA inform about the project at every stage of execution.
- Considering the bottle neck supply of electricity in the state, people welcomed the project as it will not only improve overall power supply situation but will also improve reliability, quality, security and enhancement of power supply of the state.
- People confirmed that MePTCL/ MePDCL and IA are taking every step possible to avoid/ minimize the environmental and social impacts along the route of transmission lines and at site of sub stations.

- People confirmed that community reserves, sacred groves and community conserved areas are completely avoided while finalizing the route of lines.
- People informed that staff of IA/ contractor are easily approachable and are very open to address their grievances. As a result, no written grievance has been received till date.
- People are very much happy with the rate of compensation being given to them and they are being involved in the process of deciding the rate of compensation.
- People confirmed that there is no disturbance of any sort to their life/ livelihood due to the construction or various other activities being carried out under the project.
- No cases of conflict between migrant and local population has been reported till date.
- Execution of project work provides opportunities to local contractors to get involved in construction, fabrication, transportation etc. activities.
- Most of the sub-contracts are awarded/ being awarded to local peoples.
- Contractor prefer and engage local peoples for skilled and unskilled works
- Local villagers rented out their buildings to contractor and IA for temporary offices and staff quarters in local that helps in income generation.
- Wherever possible contractor and IA purchase daily need requirements for local vendors and shopkeepers that helps in economic upliftment of the area.
- It was revealed that contractor and IA works with close coordination with village heads and community to avoid any misunderstanding during work.

In view of the above, following suggestions may be considered to further improvement in the safeguard measures and also enhance the environmental sustainability of project which will fulfill the overall project objectivity of uninterrupted and reliable power distribution supply and also act as a catalyst for economic activity and development of the area/region.

- ✓ During the construction phase, the implementing agency needs to ensure strict compliance of the contract provisions/EMP by Contractor especially in respect of workers health and safety.
- ✓ Care should be taken to ensure that no borrows inhabited by Pangolin exists before taking up excavations for tower foundation or substations. The workers and field personnel should be educated on the identification and detection of burrows

in consultation with the local inhabitants, who often have the knowledge about the presence and location of local biodiversity.

- ✓ In some cases delay in payment of tree, crop & land compensation to affected persons have been observed. Further streamlining of compensation process and responsibility allocation need to be undertaken by IA/Utility to avoid delay in future cases.

CHAPTER-6 : MONITORING & ORGANIZATIONAL SUPPORT STRUCTURE

For smooth implementation of this project, following administrative and functional set up have been institutionalized for project implementation, review and monitoring etc.

6.1 Administrative Arrangement for Project Implementation:

Central Project Implementation Unit (CPIU) - A body responsible for coordinating the preparation and implementation of the project housed within the IA's offices at Guwahati. The "Project-In-Charge" of IA & Head of each of the SPCU shall be a member of CPIU.

State Project Coordination Unit (SPCU) – A body formed by the State Utility and responsible for coordinating with IA in preparing and implementing the project at the State level. It consist of experts across different areas from the Utility headed by an officer of the rank not below Chief Engineer, from the Utility.

Project Implementation Unit (PIU) – A body formed by the IA, including members of Utility on deputation, and responsible for implementing the Project across the State, with its personnel being distributed over the work site/s & operating in close association with the SPCU/ CPIU. PIU reports to the State level "Project Manager" nominated by the Project-in-Charge of IA. The IA has a Core team stationed at the CPIU on a permanent basis, and other IA officers (with required skills) makes visits as and when required by this core team. This team represents IA is responsible for all coordination with SPCU, PIU, within IA and MoP, Gol. CPIU also assists MoP, Gol in monitoring project progress and coordination with The Bank.

6.2 Review of Project Implementation Progress:

To enable timely implementation of the project/subprojects, following committee has been set up to review the progress;

A. Joint Co-ordination Committee (JCC): IA and SPCU nominate their representatives in a body called JCC to review the project. IA specifies quarterly milestones or targets, which are reviewed by JCC through a formal monthly review meetings. This meeting forum is called as Joint Co-ordination Committee Meeting

(JCCM). The IA convenes & keeps record of every meeting. MoP, Gol and The Bank join in as and when needed.

B. High Power Committee (HPC): The Utility in consultation with its State Government has constituted a High-Power Committee (HPC) consisting of high-level officials from the Utility, State/ District Administration, Law enforcement agencies, Forest Department. etc. so that various permission/ approvals/ consents/ clearances etc. are processed expeditiously so as to reach the benefits of the Project to the end consumers. HPC meets on bimonthly basis or earlier, as per requirement. This forum is called as High Power Committee Meeting (HPCM) and the SPCU keeps records of every meeting. Minutes of the meeting will be shared with all concerned and if required, with Gol and The Bank.

C. Contractor's Review Meeting (CRM): Periodic Review Meeting is held by officials of PIU with Contractors at field offices, State Head Quarters (PIU location) and if required with core team of IA at Guwahati. These meetings are called "Contractor's Review Meeting" (CRM). PIU shall keep a record of all CRMs, which shall be shared with all concerned and if required, with Gol and The Bank.

D. Review meetings are held among MoP, Gol, The Bank, State Government, Utility and IA, at four (4) months interval or earlier if needed, primarily to maintain oversight at the top level, and also to debottleneck issues that require intervention at Gol/ State Government level. Minutes of the meeting shall be prepared by IA and shared with all concerned.

6.3. E & S Monitoring:

The arrangement for monitoring and reviewing of project from the perspective of environment and social management forms part of overall arrangements for project management and implementation environment. Environmental monitoring is a continuous process throughout the Project life cycle starting from site selection to construction and maintenance stage. As Implementing Agency (IA) POWERGRID endeavors to implement the project in close coordination with the respective state power utilities and departments. POWERGRID has been implementing the project based on the Implementation/ Participation agreements that were signed separately between POWERGRID and the Power utilities.

The IA has appointed dedicated Environment Officer in each state including Meghalaya

to oversee the E & S management. Besides, MePTCL / MePDCL also has a separate cell at the Circle office level namely Environment and Social Management Cell (ESMC) headed by Chief Engineer (Transmission) for proper implementation and monitoring of environmental & social management measures. Apart from day to day E & S monitoring other major responsibilities are;

- Coordinating environmental and social commitments and initiatives with various multilateral agencies, MoEFCC and Govt. of Meghalaya.
- Coordination of all environmental activities related to a project from conceptualization to operation and maintenance stage. Advising site offices to follow-up with the state forest offices and other state departments for expediting forest clearances and other E & S issues of various projects.
- Providing a focal point for interaction with the MoEFCC for expediting forest clearances
- Training of Circle and Site officials on E & S issues arising out of Transmission/Distribution projects and their management plan.
- Training of other departments to familiarize them with the ESPP document.

Additionally, Field In-Charge reviews the progress on daily basis and periodic review by higher management including review by Heads of SPCU and CPIU undertaken wherein apart from construction issues the environmental aspects of the projects are discussed and remedial measures taken wherever required. Besides, Periodic Contractor's Review Meeting (CRM) are being held by officials of PIU with Contractors at field offices, State Head Quarters (PIU location) and with CPIU at Guwahati for better co-ordination and resolution any pending issues. The World Bank mission team also visits various sites every six months to review the progress status including ground level implementation of safeguard measures. Any observation/agreed action plan suggested by the Bank in the Aide Memoire is religiously complied in time bound manner. Additionally, review meeting among MoP, Gol, The Bank, State Governments., Utility and IA being held periodically to maintain oversight at the top level and also to debottleneck issues that require intervention at Gol/ State Government level.

The Capacity building and Institutional Strengthening program of the IA is held intermittently to enhance the skills of the project officials. Besides, separate E & S training are also organized for Official of State Utility under Capacity Building & Institutional Strengthening (CBIS) programme. Further, State utility meetings between IA and MePTCL

are held on a monthly/ bimonthly basis to assess the work progress and difficulties encountered in respect of land acquisition, RoW and compensation if any.

The IA has a continuous monitoring mechanism of the project w.r.t. compliance of the mitigation measures as stipulated in the IEAR. Thus, the adherence to the clauses by the contractors are regularly monitored especially in respect of various implementation E & S measures including health and safety aspects. Due to such strong institutional support structure coupled with monitoring mechanism in place, no major non-compliance were observed/reported during the implementation of projects till date. The project has so far had zero fatality which is indicative of the strict vigil of the IA. During the present study, our team also observed mitigation measures as suggested in IEAR are mostly complied with even though some gaps were found with respect proper to documentation.

6.4 Grievance Redressal Mechanism (GRM)

Grievance Redress Mechanism (GRM) is an integral and important mechanism for addressing/resolving the concern and grievances in a transparent and swift manner. In accordance with the provision in ESPPF, Grievance Redress Committees (GRC) have been constituted in Meghalaya both at the project/scheme level and at Corporate/HQ. This GRC is aimed to provide a trusted way to voice and resolve environment & social concerns of the project, and to address the concerns of the affected person/community in a time bound manner without impacting project implementation.

The Corporate/HQ level GRC has been constituted and notified which is headed by Director (Transmission), MePTCL. Similarly, project level GRCs have been constituted for each transmission and substations covered under this project. Notifications of Corporate & Project level GRC are placed as **Annexure-14**.

Apart from above, grievance redressal is in built in crop/tree compensation process where affected persons are given a chance to place their grievances after issuance of notice by revenue officials on the basis of assessment of actual damages. Grievances received towards compensation are generally addressed in open forum and in the presence of many witnesses. Process of spot verification and



collector/ its authorized representative also provides forum for raising the grievance towards any irregularity/complain. Moreover, MePTCL/MePDCL & POWERGRID officials also address to the complaints of affected farmers and the same are forwarded to revenue official for doing the needful, if required.

It may also be noted that concerns of public are addressed regularly through public consultation process which started from project planning to construction and will be continued in operation and maintenance also. Besides, many concerns/grievances from affected persons/public have been received by Site Offices which are also regularly tracked for early resolution. However, it has been observed that most of them were minor in nature and were resolved instantly and amicably by Site Officials after discussion & deliberation with affected person/ in consultation of revenue/district officials. However, till date two major grievances have been registered which are already resolved/being resolved in closed co-ordination with concerned State authority.

S N	Name of the Subproject /State	Loc. No/ Village	Name of complain ants	Date of complaints/ Court case	Main Issue of complaints	Status of complaint
1	220 kV D/C Killing- Mawngap- New Shillong line	Mawphlang	AP 1-3	10.08.19	Realignment of line route	Resolved. Meeting held under Joint Secretary Power on 4.10.19. Minor realignment along with making 3 nos. tower multi-circuit has been proposed
2		Nongthymai	Land Owners	18.02.20	Land Owner disagreed to give NOC for construction works due to low Land/Tree & Crops Compensation rates	Matter taken up by DC Office, Ri-Bhoi with the concerned forest, horticulture deptt. Meeting held on 20.04.2021 but land owners still disagreed to give NOC demanding

FEAR for T & D Project in East Khasi Hills and Ri-Bhoi Districts of Meghalaya under NERPSIP

						higher rates of compensation for Betel Nut plantations.
3		Umsoh pai, Tasku, Umshohphri a	Land Owners	20.02.21		Planters/Owners disagreed with the low rates of Rubber Plantations received from Range Office, Marngar on 08.04.2021. Now, matter taken up with DC, Ri-Bhoi Office.

APPENDIX A

Photo Plates of Site Visits & Project Elements



Discussion with contractor & IA officials with workers shed in background



220/132/33kV GIS substation at New Shillong



Construction in progress (220/132/33KV GIS substation) at New Shillong





Site Visit to 220/132 KV GIS New Shillong





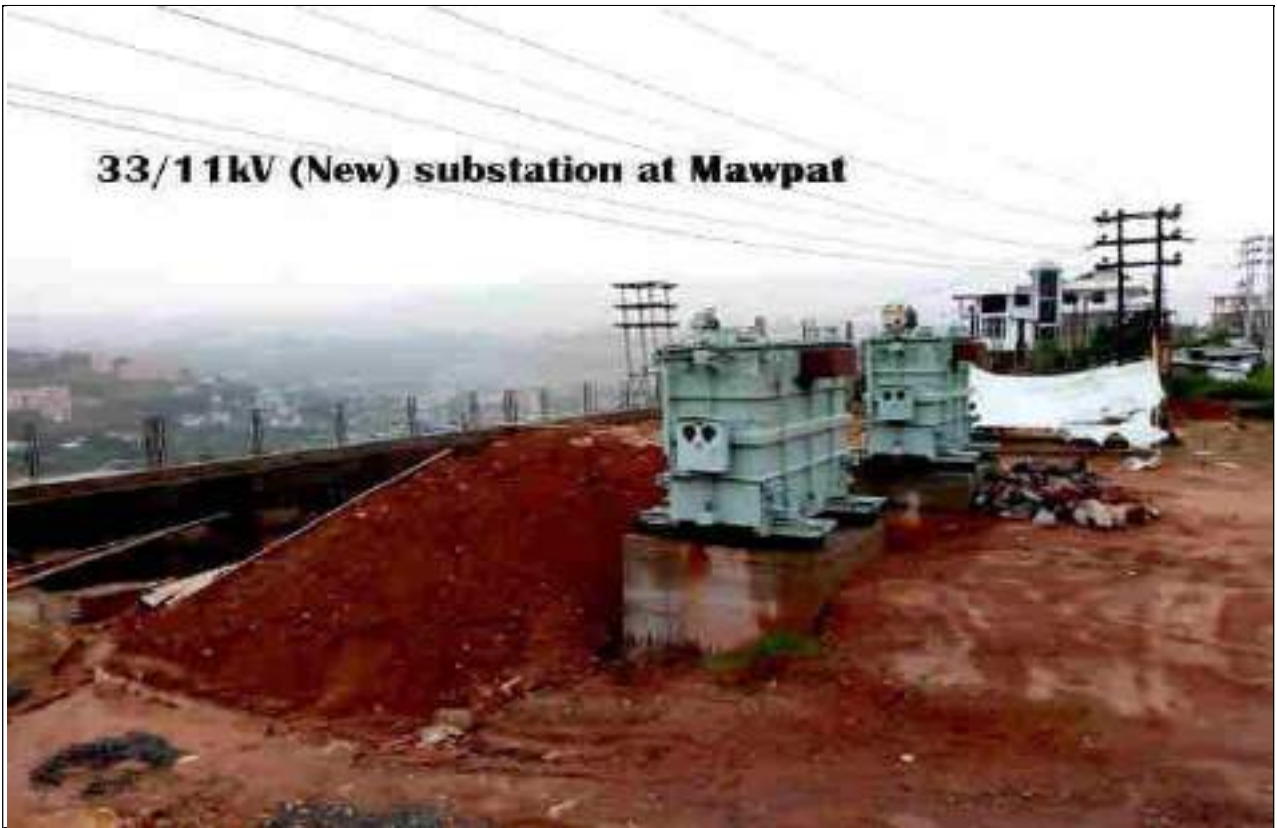
Site Visit to tower location 110/0 of 220 KV Byrnihat- Mawngap-New Shillong





Construction in progress (33/11KV Mawpat substation)



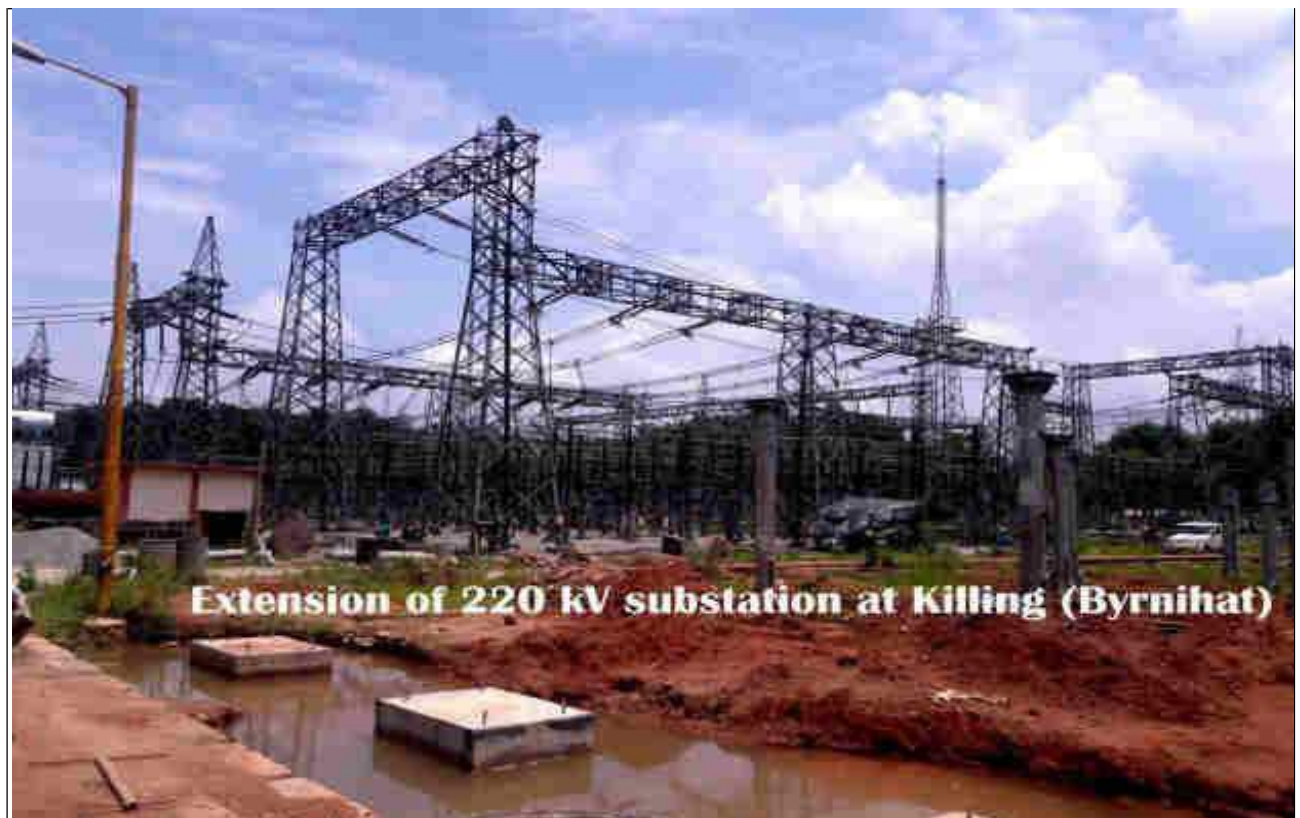


Site Visit to 33/11kV New Shillong



33/11kV (New) substation at Mawkasiang





APPENDIX B

Data Collection Through Line Transacts Survey

(A) 220 kV D/C Line Mawngap Sub-station to New Shillong Sub-station (East Khasi Hills District)

1.

Name of the line	:	220 kV Mawngap – New Shillong Line
Section of Route	:	AP 4 to AP 27 (Loc. No. 4/0 to 27/0)
Number of Tower/ Poles	:	28
Section length	:	9.134 km
AP surveyed after every ~10 km	:	AP 27/0
Tower type of AP27/0	:	DD+0
Latitude	:	25°46'39.80"
Longitude	:	91°83'75.41"

DESCRIPTION	REMARKS
Status of Land	Private Ownership
General topography of the area	Hillock
Nature of vegetation in the study area	Naturally grown trees
Density of vegetation	Medium
Number of trees likely to be felled in that stretch	Based on the tree enumeration report obtained from POWERGRID, from AP 27/0 to AP 28/0 the number of trees to be felled is 236
Any specific observation	There are no ecologically sensitive areas near the tower location that would impact the environment around it.

DETAILS ON BIODIVERSITY OF THE STUDY AREA AND LIKEY IMPACTS

DESCRIPTION	STATUS/AVAILABILITY	LIKELY IMPACT
FLORA		
(a) Common flora in the study area	<i>Pinus kesiya, Quercus griffithii, Botrychium, Dryopteris, Myrica esculenta</i> (Sohphie) and <i>Polyodium</i>	There are no likely impact as observed in the study area
(b) Endemic flora	<i>Pinus kesiya, Quercus griffithii, Botrychium, Dryopteris, Myrica esculenta</i> (Sohphie) and <i>Polyodium</i>	
(c) Endangered flora		
(d) Vulnerable		
(e) Threatened		
(f) Any specific observation	The tower location is covered with fully grown trees	

FAUNA

(a) Common fauna in the study area	<i>Gallus gallus, Pycnonotus cafer bengalensis, Elaphe prasiana</i>	There is no likely impact on the faunal diversity in the tower location.
(b) Endemic fauna		
(c) Endangered fauna		
(d) Vulnerable		
e) Threatened		
Special Emphasis on Elephant Habitat/Corridor		
a.) Presence of Elephant habitat/corridor in the study area.	There is no elephant corridor nor an elephant habitat in the region	There will be no likely impact on it as there is no elephant habitat or corridor in the region.
Special Emphasis on electrocution of birds/monkey/primate species		
1. Availability of large winged birds	Hawk	This bird is spotted only at times. There is no likely impact
2. Availability of monkey/primate species and chances of electrocution.	Monkeys are there but barely sighted near the tower location area AP 27/0	There is barely any chance of electrocution of animal since the estimated tower height is to be higher than the height of the tree, and also the population of the monkey is less.
3. Any specific nesting sites of birds which may be impacted	There are no nesting sites of birds sighted	

IMPACT OF PROJECT ACTIVITY (TOWER FOUNDATION/ ERECTION/ STRINGING)

Description	Remarks
Disposal of excavated soil/Excess soil	No disposal of the excavated soil
Any major issue of soil erosion at project site/tower locations.	There is no soil erosion observed in the tower location
Whether benching carried at tower locations	No benching required in tower location
Number of trees felled/ required to be felled at tower location	
Leg extension/ extended tower provided /requirement	Leg extension is not required
Impact on nearby water bodies due to project activity	There is no impact on the nearby water bodies
Whether location is vulnerable to soil erosion/slope failure	The location is not vulnerable to soil erosion
Any specific requirement of slope protection measures like revetment/retaining /toe wall etc. at project locations	No requirements needed for slope protection since the towers are footed on a horizontal plane area avoiding the steep slopes
Impact of approach road construction (if required)	No impacts on the road construction
Transportation of tower materials	The materials are transported via trucks

SOCIO ECONOMIC ASSESSMENT OF THE STUDY AREA

Description	Remarks
Name of the village/village council	Umtyngar
General socio economic profile of PAP in project area	
Nature of land affected due to project activity	
Any resettlement issue	There is no issue of resettlement as it is a forested area
Any negative impact on livelihood of the PAP	There is no negative impact on the livelihood of the people.
Any impact on archaeological structure(if, available in the vicinity)	No archaeological structure in and around the village
Any impact on common property resources/religious area /sacred groves etc.	There is no such impact on the common property resources or any religious area or sacred groves
Consultation with PAP/ Village council(As per TOR, public consultation is required to be done Consultant in association with POWERGRID and property documented)	As per the PRA conducted, there was no negative feedback from the villagers. Moreover, only the base of the tower has been constructed and the compensation is under process.

2.

Name of the line	:	220 kV Mawngap – New Shillong Line
Section of Route	:	AP 28 to AP 54 (Loc. No. 28/0 to 54/0)
Number of Tower/ Poles	:	27
Section length	:	10.26 km
AP surveyed after every ~10 km	:	AP 54/0
Tower type of AP 54/0	:	DD+0
Latitude	:	25°51'35.08"
Longitude	:	91°89'26.44"

DESCRIPTION	REMARKS
Status of Land	Private ownership
General topography of the area	Hillock
Nature of vegetation in the study area	Naturally grown trees
Density of vegetation	Low
Number of trees likely to be felled in that stretch	N/A
Any specific observation with respect to ecological sensitivity in the study area	There is no ecological sensitivity in the tower location.

DETAILS ON BIODIVERSITY OF THE STUDY AREA AND LIKEY IMPACTS

DESCRIPTION	STATUS/AVAILABILITY	LIKELY IMPACT
FLORA		
(a) Common flora in the study area	Pines (Pinus Khasiana), Teak (<i>Tectona grandis</i>), Sal (<i>Shorea robusta</i>), Bamboo (<i>Bambusa vulgaris</i>), Bat iong (Hedyotis scandens), sohum, sohpdeng, sohksuid	There are no likely impacts on the floral diversity in the region
(b) Endemic flora		
(c) Endangered flora		
(d) Vulnerable		
e) Threatened		
f) Any specific observation	The tower is located in a hillock which the vegetation of the area is sparse.	

FAUNA

(a) Common fauna in the study area	Squirrel, snake, rabbit, sparrow, <i>Acridotheres tristis</i> (Myna)	No likely impact on the faunal diversity
(b) Endemic fauna	Squirrel, snake, rabbit, sparrow, <i>Acridotheres tristis</i> (Myna)	
(c) Endangered fauna	None	
(d) Vulnerable	None	
e) Threatened	None	

Special Emphasis on Elephant Habitat/Corridor

a.) Presence of Elephant habitat/corridor in the study area.	There is no elephant habitat or corridor in the study area	There will be no likely impact since there is no elephant habitat or corridor in the study area
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Special Emphasis on electrocution of birds/monkey/primate species

- | | | |
|--|---|--|
| 1. Availability of large winged birds | Hawk, Crow | These birds are spotted only at times. There is no likely impact |
| 2. Availability of monkey/primate species and chances of electrocution. | There are no monkeys in the study area | |
| 3. Any specific nesting sites of birds which may be impacted | There are no nesting sites of birds sighted | |

IMPACT OF PROJECT ACTIVITY (TOWER FOUNDATION/ ERECTION/ STRINGING)

Description	Remarks
Disposal of excavated soil/Excess soil	No disposal of the excavated soil
Any major issue of soil erosion at project site/tower locations.	There is no major soil erosion observed in the tower location
Whether benching carried at tower locations	No benching required in tower location
Number of trees felled/ required to be felled at tower location	
Leg extension/ extended tower provided /requirement	Leg extension is not required
Impact on nearby water bodies due to project activity	There is no impact on the nearby water bodies
Whether location is vulnerable to soil erosion/slope failure	The location is not vulnerable to soil erosion
Any specific requirement of slope protection measures like revetment/retaining /toe wall etc. at project locations	No requirements needed for slope protection since it is a gentle slope area
Impact of approach road construction (if required)	No impacts on the road construction
Transportation of tower materials	The materials are transported via trucks

SOCIO ECONOMIC ASSESSMENT OF THE STUDY AREA

Description	Remarks
Name of the village/village council	Nongkrem
General socio economic profile of PAP in project area	
Nature of land affected due to project activity	
Any resettlement issue	There is no resettlement issue
Any negative impact on livelihood of the PAP	There is no impact on the livelihood of the people.
Any impact on archaeological structure(if, available in the vicinity)	There is no archaeological site in the village
Any impact on common property resources/religious area /sacred groves etc.	There are no sacred groves or any religious area near the tower location and nor there are any damages on the common property.
Consultation with PAP/ Village council(As per TOR, public consultation is required to be done Consultant in association with POWERGRID and property documented)	As per the PRA, there is no such negative feedback from the villagers though compensation is still under process.

3.

Name of the line	:	220 kV Mawngap – New Shillong line
Section of Route	:	AP 55 to AP 84 (Loc. No. 55/0 to 84/0)
Number of Tower/ Poles	:	30
Section length	:	10.740 km
AP surveyed after every ~10 km	:	AP 84/0
Tower type of AP 84/0	:	DC+3
Latitude	:	25°56'72.17"
Longitude	:	91°96'63.29"

DESCRIPTION	REMARKS
Status of Land	Private ownership
General topography of the area	Hilly
Nature of vegetation in the study area	Naturally grown trees
Density of vegetation	Medium
Number of trees likely to be felled in that stretch	Based on the tree enumeration report obtained from POWERGRID, from AP 84/0 to AP 85/0 the number of trees likely to be felled is 240
Any specific observation with respect to ecological sensitivity in the study area	There are no ecologically sensitive areas near the tower location

DETAILS ON BIODIVERSITY OF THE STUDY AREA AND LIKEY IMPACTS

DESCRIPTION	STATUS/AVAILABILITY	LIKELY IMPACT
FLORA		
(a) Common flora in the study area	Pines (<i>Pinus kesiya</i>), <i>Myrica esculenta</i> (soh phie), dieng tiew-saw, <i>Randia tetrosperma</i> (soh-mon) and <i>Psidium guajava</i> (Soh priam)	There are no likely impact on the floral diversity in the region
(b) Endemic flora	Pines (<i>Pinus kesiya</i>), <i>Myrica esculenta</i> (soh phie), dieng tiew-saw, <i>Randia tetrosperma</i> (soh-mon) and <i>Psidium guajava</i> (Soh priam)	
(c) Endangered flora	None	None
(d) Vulnerable	None	None
e) Threatened	None	None
f) Any specific observation	The tower is located in a hill where the vegetation was covered with fully grown trees	None

FAUNA

(a) Common fauna in the study area	Reptiles eg., snakes, lizards etc, Rodents eg., rats, squirrel, rabbit etc, Aviaries eg., Bulbul, Sparrow etc	No likely impact on the faunal diversity
(b) Endemic fauna	Reptiles eg., snakes, lizards etc, Rodents eg., rats, squirrel, rabbit etc, Aviaries eg., Bulbul, Sparrow etc	
(c) Endangered fauna	None	
(d) Vulnerable	None	
e) Threatened	None	
Special Emphasis on Elephant Habitat/Corridor		
a.) Presence of Elephant habitat/corridor in the study area.	There is no elephant habitat or corridor in the study area	There will be no likely impact since there is no elephant habitat or corridor in the study area
Special Emphasis on electrocution of birds/monkey/primate species		
1. Availability of large winged birds	Hawk, Crow	These birds are spotted only at times. There is no likely impact
2. Availability of monkey/primate species and chances of electrocution.	Monkeys are not available	
3. Any specific nesting sites of birds which may be impacted	There are no nesting sites of birds sighted	

**IMPACT OF PROJECT ACTIVITY (TOWER FOUNDATION/ ERECTION/
STRINGING)**

Description	Remarks
Disposal of excavated soil/Excess soil	No disposal of the excavated soil
Any major issue of soil erosion at project site/tower locations.	There is no soil erosion observed in the tower location
Whether benching carried at tower locations	No benching is carried out
Number of trees felled/ required to be felled at tower location	
Leg extension/ extended tower provided /requirement	Leg extension was carried out
Impact on nearby water bodies due to project activity	There is no impact on the nearby water bodies
Whether location is vulnerable to soil erosion/slope failure	The location is not vulnerable to soil erosion
Any specific requirement of slope protection measures like revetment/retaining /toe wall etc. at project locations	No requirements are needed for slope protection
Impact of approach road construction (if required)	No impacts on the road construction
Transportation of tower materials	The materials are transported via trucks

SOCIO ECONOMIC ASSESSMENT OF THE STUDY AREA

Description	Remarks
Name of the village/village council	Sohryngkham
General socio economic profile of PAP in project area	
Nature of land affected due to project activity	
Any resettlement issue	There is no resettlement issue
Any negative impact on livelihood of the PAP	There is no impact on the livelihood of the people.
Any impact on archaeological structure(if, available in the vicinity)	There is no archaeological site in the village
Any impact on common property resources/religious area /sacred groves etc.	There are no sacred groves or any religious area near the tower location and nor there are any damages on the common property.
Consultation with PAP/ Village council(As per TOR, public consultation is required to be done Consultant in association with POWERGRID and property documented)	As per the PRA, there is no such negative feedback from the villagers though compensation is still under process.

4.

Name of the line	:	220 kV Mawngap – New Shillong Line
Section of Route	:	AP 85 to AP 102 (Loc. No. 85/0 to 102/0)
Number of Tower/ Poles	:	19
Section length	:	7.960 km
AP surveyed after every ~10 km	:	AP 102/0
Tower type of AP 102/0	:	N/A
Latitude	:	25°60'07.45''
Longitude	:	92°01'43.98''

DESCRIPTION	REMARKS
Status of Land	Community Land
General topography of the area	Gentle slope
Nature of vegetation in the study area	Private plantation
Density of vegetation	Medium
Number of trees likely to be felled in that stretch	N/A
Any specific observation with respect to ecological sensitivity in the study area	There is no ecological sensitivity in the tower location.

DETAILS ON BIODIVERSITY OF THE STUDY AREA AND LIKEY IMPACTS

DESCRIPTION	STATUS/AVAILABILITY	LIKELY IMPACT
FLORA		
(a) Common flora in the study area	Pine (<i>Pinus kesiya</i>), Sal (<i>Shorea robusta</i>), <i>Eugenia praecox</i> (Sohum), <i>Psidium guajava</i> (Sohpriam)	There are no likely impact on the floral diversity in the region
(b) Endemic flora		
(c) Endangered flora		
(d) Vulnerable		
e) Threatened		
f) Any specific observation	The tower is located in an agricultural field where it has been left uncultivated and the area has medium vegetation cover	

FAUNA

<p>(a) Common fauna in the study area</p> <p>(b) Endemic fauna</p> <p>(c) Endangered fauna</p> <p>(d) Vulnerable</p> <p>(e) Threatened</p> <p>Special Emphasis on Elephant Habitat/Corridor</p> <p>a.)Presence of Elephant habitat/corridor in the study area.</p> <p>Special Emphasis on electrocution of birds/monkey/primate species</p> <p>1. Availability of large winged birds</p> <p>2. Availability of monkey/primate species and chances of electrocution.</p> <p>3. Any specific nesting sites of birds which may be impacted</p>	<p>Squirrel, Snakes, Red jungle Fowl, Wild Boar, and Bulbul</p> <p>Squirrel, Snakes, Red jungle Fowl, Wild Boar, and Bulbul</p> <p>There is no elephant habitat or corridor in the study area</p> <p>Crow, Hawk</p> <p>Monkeys are available in the project area</p> <p>There are no nesting sites of birds sighted</p>	<p>No likely impact on the faunal diversity</p> <p>There will be no likely impact since there is no elephant habitat or corridor in the study area</p> <p>These birds are spotted only at times. There is no likely impact</p> <p>Chances of electrocution is less since the length between canopy of the trees and the conductors is at a far reach</p>
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IMPACT OF PROJECT ACTIVITY (TOWER FOUNDATION/ ERECTION/ STRINGING)

Description	Remarks
Disposal of excavated soil/Excess soil	No disposal of the excavated soil
Any major issue of soil erosion at project site/tower locations.	There is no major soil erosion observed in the tower location
Whether benching carried at tower locations	No benching is not carried out
Number of trees felled/ required to be felled at tower location	
Leg extension/ extended tower provided /requirement	No leg extension
Impact on nearby water bodies due to project activity	There is no impact on the nearby water bodies
Whether location is vulnerable to soil erosion/slope failure	The location is not vulnerable to soil erosion
Any specific requirement of slope protection measures like revetment/retaining /toe wall etc. at project locations	No requirements needed for slope protection since the towers are footed on a horizontal plane area avoiding the steep slopes
Impact of approach road construction (if required)	No impacts on the road construction
Transportation of tower materials	The materials are transported via trucks

SOCIO ECONOMIC ASSESSMENT OF THE STUDY AREA

Description	Remarks
Name of the village/village council	Mawpdang
General socio economic profile of PAP in project area	
Nature of land affected due to project activity	
Any resettlement issue	There is no resettlement issue as the tower is located far away from the settlement areas.
Any negative impact on livelihood of the PAP	There is no negative impact on the livelihood of the people.
Any impact on archaeological structure(if, available in the vicinity)	There is/are no archaeological site
Any impact on common property resources/religious area /sacred groves etc.	No impact on the common property nor on any religious area and sacred groves. The tower location is far away from the religious area in the village
Consultation with PAP/ Village council(As per TOR, public consultation is required to be done Consultant in association with POWERGRID and property documented)	There is no negative feedback from the villagers regarding the tower which is yet to be constructed. The compensation is under process.

5.

Name of the line	:	220 kV Mawngap – New Shillong line
Section of Route	:	AP 103 to AP 116 (Loc. No. 103/0 to 116/0)
Number of Tower/ Poles	:	17
Section length	:	4.641 km
AP surveyed after every ~10 km	:	AP 116/0
Tower type of AP 116/0	:	N/A
Latitude	:	25°37'48.12"
Longitude	:	91°59'32.06"

DESCRIPTION	REMARKS
Status of Land	Community land
General topography of the area	Gentle slope
Nature of vegetation in the study area	Naturally grown trees
Density of vegetation	Medium
Number of trees likely to be felled in that stretch	N/A
Any specific observation with respect to ecological sensitivity in the study area	There are no ecologically sensitive areas near the tower location

DETAILS ON BIODIVERSITY OF THE STUDY AREA AND LIKEY IMPACTS

DESCRIPTION	STATUS/AVAILABILITY	LIKELY IMPACT
FLORA		
(a) Common flora in the study area	Dieng sohphoh (Wild Pear), <i>Psidium guajava</i> (Guava), <i>Euginea praecox</i> (Soh um)	There are no likely impact on the floral diversity in the region
(b) Endemic flora	Dieng sohphoh (Wild Pear), <i>Psidium guajava</i> (Guava), <i>Euginea praecox</i> (Soh um)	
(c) Endangered flora		
(d) Vulnerable		
e) Threatened		
f) Any specific observation	The tower location is located near the Saisiej sub-station area	

FAUNA

(a) Common fauna in the study area	Rodents eg., rats, squirrels, Red jungle fowl, reptiles eg., snake, lizard etc, Red jungle fowl and Myna.	No likely impact
(b) Endemic fauna	Rodents eg., rats, squirrels, Red jungle fowl, reptiles eg., snake, lizard etc, Red jungle fowl and Myna.	
(c) Endangered fauna		
(d) Vulnerable		
e) Threatened		
Special Emphasis on Elephant Habitat/Corridor		
a.)Presence of Elephant habitat/corridor in the study area.	There is no elephant corridor nor an elephant habitat in the region	There will be likely impact on it as there is no elephant habitat or corridor in the region.
Special Emphasis on electrocution of birds/monkey/primate species		
1. Availability of large winged birds	Hawk, Crow and Owl	These birds are spotted only at times. There is no likely impact
2. Availability of monkey/primate species and chances of electrocution.	Monkeys are not available in the study area	
3. Any specific nesting sites of birds which may be impacted	There are no nesting sites of birds sighted	

IMPACT OF PROJECT ACTIVITY (TOWER FOUNDATION/ ERECTION/ STRINGING)

Description	Remarks
Disposal of excavated soil/Excess soil	No disposal of the excavated soil
Any major issue of soil erosion at project site/tower locations.	There is no major soil erosion observed at the tower location
Whether benching carried at tower locations	Benching is not carried out at tower location
Number of trees felled/ required to be felled at tower location	
Leg extension/ extended tower provided /requirement	Leg extension is to be carried out
Impact on nearby water bodies due to project activity	There is no impact on the nearby water bodies
Whether location is vulnerable to soil erosion/slope failure	The location is not vulnerable to soil erosion
Any specific requirement of slope protection measures like revetment/retaining /toe wall etc. at project locations	No requirements needed for slope protection since the towers are footed on a horizontal plane area avoiding the steep slopes
Impact of approach road construction (if required)	No impacts on the road construction
Transportation of tower materials	The materials are transported via trucks and man labour

SOCIO ECONOMIC ASSESSMENT OF THE STUDY AREA

Description	Remarks
Name of the village/village council	Saisiej
General socio economic profile of PAP in project area	
Nature of land affected due to project activity	
Any resettlement issue	There is no issue of resettlement
Any negative impact on livelihood of the PAP	There is no negative impact on the livelihood of the people.
Any impact on archaeological structure(if, available in the vicinity)	No archaeological structure in and around the village
Any impact on common property resources/religious area /sacred groves etc.	No impact on the common property nor on any religious area and sacred groves. The tower location is far away from the religious area in the village
Consultation with PAP/ Village council(As per TOR, public consultation is required to be done Consultant in association with POWERGRID and property documented)	As per the PRA conducted, there was no negative feedback from the villagers. Moreover, only the base of the tower has been constructed and the compensation is under process.

(B) 220 kV D/C Line Killing Sub-station to Mawngap Sub-station (Ri-Bhoi District)

6.

Name of the line	:	220 kV Killing – Mawngap line
Section of Route	:	Gantry to AP 25 (Loc. No. Gantry to AP 25/0)
Number of Tower/ Poles	:	27
Section length	:	9.689 km
AP surveyed after every ~10 km	:	AP 25/0
Tower type of AP 25/0	:	DB+9
Latitude	:	28.78362
Longitude	:	38.1183

DESCRIPTION	REMARKS
Status of Land	Private ownership
General topography of the area	Gentle slope
Nature of vegetation in the study area	Naturally grown trees
Density of vegetation	Medium
Number of trees likely to be felled in that stretch	Based on the tree enumeration report obtained from POWERGRID, from AP25 to AP26 the number of trees to be felled are 331.
Any specific observation with respect to ecological sensitivity in the study area	There are no ecologically sensitive areas near the tower location that would impact the environment around it.

DETAILS ON BIODIVERSITY OF THE STUDY AREA AND LIKEY IMPACTS

DESCRIPTION	STATUS/AVAILABILITY	LIKELY IMPACT
<u>FLORA</u>		
(a) Common flora in the study area	<i>Nepenthes khasiana</i> , Tapioca, Bamboo (<i>Bambusa vulgaris</i>), Pineapple (<i>Ananas comosus</i>)	There are no likely impact as observed in the study area
(b) Endemic flora	<i>Nepenthes khasiana</i> , Tapioca, Bamboo (<i>Bambusa vulgaris</i>), Pineapple (<i>Ananas comosus</i>)	
(c) Endangered flora		
(d) Vulnerable		
e) Threatened		
f) Any specific observation	The tower location is covered with fully grown trees	

FAUNA

(a) Common fauna in the study area	<i>Callosciurus erythraeus</i> (Pallas's Squirrel), <i>Rattus nitidus</i> , viper	There is no likely impact on the faunal diversity in the tower location.
(b) Endemic fauna	<i>Callosciurus erythraeus</i> (Pallas's Squirrel), <i>Rattus nitidus</i> , viper	
(c) Endangered fauna		
(d) Vulnerable		
e) Threatened		
Special Emphasis on Elephant Habitat/Corridor		
a.) Presence of Elephant habitat/corridor in the study area.	There is no elephant corridor nor an elephant habitat in the region	There will be no likely impact on it as there is no elephant habitat or corridor in the region.
Special Emphasis on electrocution of birds/monkey/primate species		
1. Availability of large winged birds	Hawk, Owl and Kite	These birds are spotted only at times. There is no likely impact
2. Availability of monkey/primate species and chances of electrocution.	Monkeys are available in the study area	There is barely any chance of electrocution of animal since the estimated tower height is to be higher than the height of the tree, and also the population of the monkey has declined in the area.
3. Any specific nesting sites of birds which may be impacted	There are no nesting sites of birds sighted	

IMPACT OF PROJECT ACTIVITY (TOWER FOUNDATION/ ERECTION/ STRINGING)

Description	Remarks
Disposal of excavated soil/Excess soil	No disposal of the excavated soil
Any major issue of soil erosion at project site/tower locations.	There is no soil erosion observed at the tower location
Whether benching carried at tower locations	No benching is carried out
Number of trees felled/ required to be felled at tower location	
Leg extension/ extended tower provided /requirement	Leg extension is carried out
Impact on nearby water bodies due to project activity	There is no impact on the nearby water bodies
Whether location is vulnerable to soil erosion/slope failure	The location is not vulnerable to soil erosion
Any specific requirement of slope protection measures like revetment/retaining /toe wall etc. at project locations	No requirements needed for slope protection
Impact of approach road construction (if required)	No impact on the road construction, the condition of the road itself is bad.
Transportation of tower materials	The materials are transported via trucks and also man labour

SOCIO ECONOMIC ASSESSMENT OF THE STUDY AREA

Description	Remarks
Name of the village/village council	Nerbong
General socio economic profile of PAP in project area	
Nature of land affected due to project activity	
Any resettlement issue	There is no issue of resettlement
Any negative impact on livelihood of the PAP	There is no negative impact on the livelihood of the people.
Any impact on archaeological structure(if, available in the vicinity)	No archaeological structure in and around the village
Any impact on common property resources/religious area /sacred groves etc.	No impact on the common property nor on any religious area and sacred groves. The tower location is far away from the religious area in the village
Consultation with PAP/ Village council(As per TOR, public consultation is required to be done Consultant in association with POWERGRID and property documented)	As per the PRA conducted, there was no negative feedback from the villagers. Moreover, only the base of the tower has been constructed and the compensation is under process.

7.

Name of the line	:	220 kV Killing – Mawngap line
Section of Route	:	AP 26 to AP 60 (Tower No. 26/0 to 60/0)
Number of Tower/ Poles	:	35
Section length	:	11.52 km
AP surveyed after every ~10 km	:	AP 60/0
Tower type of AP 60/0	:	DD+0
Latitude	:	28.70121
Longitude	:	37.4603

DESCRIPTION	REMARKS
Status of Land	Private ownership
General topography of the area	Hilly
Nature of vegetation in the study area	Naturally grown trees
Density of vegetation	High
Number of trees likely to be felled in that stretch	N/A
Any specific observation with respect to ecological sensitivity in the study area	There are no ecologically sensitive areas near the tower location that would impact the environment around it.

DETAILS ON BIODIVERSITY OF THE STUDY AREA AND LIKEY IMPACTS

DESCRIPTION	STATUS/AVAILABILITY	LIKELY IMPACT
FLORA		
(a) Common flora in the study area	Teak (<i>Tectona grandis</i>), Sal (<i>Shorea robusta</i>), Bamboo (<i>Bambusa vulgaris</i>), Banana (<i>Musa acuminata</i>), Pineapple (<i>Ananas comosus</i>)	There are no likely impact as observed in the study area
(b) Endemic flora	Teak (<i>Tectona grandis</i>), Sal (<i>Shorea robusta</i>), Bamboo (<i>Bambusa vulgaris</i>), Banana (<i>Musa acuminata</i>), Pineapple (<i>Ananas comosus</i>)	
(c) Endangered flora		
(d) Vulnerable		
e) Threatened		
f) Any specific observation	The tower location is covered with fully grown trees	

FAUNA

(a) Common fauna in the study area

Red jungle Fowl,
Mynas, Blind snake,
Rodents like squirrels
and
rats

There is no likely impact on
the faunal diversity in
the tower location.

(b) Endemic fauna

Red jungle Fowl,
Mynas, Blind snake,
Rodents like squirrels
and
rats

(c) Endangered fauna

(d) Vulnerable

e) Threatened

Special Emphasis on
Elephant Habitat/Corridor

**a.) Presence of Elephant
habitat/corridor in the study area.**

There is no elephant
corridor nor an elephant
habitat in the region

There will be no likely impact
on it as there is no
elephant habitat or corridor in
the region.

Special Emphasis on
electrocution of
birds/monkey/primate species

1. Availability of large winged birds

Hawk, Kite

These birds are spotted only
at times. There is no likely
impact

**2. Availability of monkey/primate
species and chances of
electrocution.**

Monkeys are available in
the study area

There is barely any chance of
electrocution of animal since
the estimated tower height is
to be higher than the height of
the tree, and also the
population of the
monkey has declined in the
area.

**3. Any specific nesting sites of birds
which may be impacted**

There are no nesting sites
of birds sighted

IMPACT OF PROJECT ACTIVITY (TOWER FOUNDATION/ ERECTION/ STRINGING)

Description	Remarks
Disposal of excavated soil/Excess soil	No disposal of the excavated soil
Any major issue of soil erosion at project site/tower locations.	There is no soil erosion observed at the tower location
Whether benching carried at tower locations	No benching is carried out
Number of trees felled/ required to be felled at tower location	
Leg extension/ extended tower provided /requirement	No leg extension
Impact on nearby water bodies due to project activity	There is no impact on the nearby water bodies
Whether location is vulnerable to soil erosion/slope failure	The location is not vulnerable to soil erosion
Any specific requirement of slope protection measures like revetment/retaining /toe wall etc. at project locations	No requirements needed for slope protection
Impact of approach road construction (if required)	No impact on the road construction, the condition of the road itself is bad.
Transportation of tower materials	The materials are transported via trucks

SOCIO ECONOMIC ASSESSMENT OF THE STUDY AREA

Description	Remarks
Name of the village/village council	Tasku
General socio economic profile of PAP in project area	
Nature of land affected due to project activity	
Any resettlement issue	There is no issue of resettlement
Any negative impact on livelihood of the PAP	There is no negative impact on the livelihood of the people.
Any impact on archaeological structure(if, available in the vicinity)	No archaeological structure in and around the village
Any impact on common property resources/religious area /sacred groves etc.	No impact on the common property nor on any religious area and sacred groves. The tower location is far away from the religious area in the village
Consultation with PAP/ Village council(As per TOR, public consultation is required to be done Consultant in association with POWERGRID and property documented)	As per the PRA conducted, there was no negative feedback from the villagers. Moreover, only the base of the tower has been constructed and the compensation is under process.

8 .

Name of the line	:	220 kV Killing – Mawngap line
Section of Route	:	AP 61/0 to AP 81/0 (Tower No. 61/0 to 81/0)
Number of Tower/ Poles	:	21
Section length	:	7.006 km
AP surveyed after every ~10 km	:	AP 81/0
Tower type of AP 81/0	:	DB+9
Latitude	:	28.65722
Longitude	:	36.9723

DESCRIPTION	REMARKS
Status of Land	Paddy field
General topography of the area	Plain
Nature of vegetation in the study area	Paddy field
Density of vegetation	Low
Number of trees likely to be felled in that stretch	N/A
Any specific observation with respect to ecological sensitivity in the study area	There are no ecologically sensitive areas near the tower location that would impact the environment around it.

DETAILS ON BIODIVERSITY OF THE STUDY AREA AND LIKEY IMPACTS

DESCRIPTION	STATUS/AVAILABILITY	LIKELY IMPACT
FLORA		
(a) Common flora in the study area	Arcea Nut (<i>Areca catechu</i>), Banana (<i>Musa acuminata</i>), <i>Nepenthes khasiana</i> and Wet Rice	There are no likely impact as observed in the study area
(b) Endemic flora	Arcea Nut (<i>Areca catechu</i>), Banana (<i>Musa acuminata</i>), <i>Nepenthes khasiana</i> and Wet Rice	
(c) Endangered flora		
(d) Vulnerable		
e) Threatened		
f) Any specific observation	The tower is located in the paddy field where it has been left uncultivated and the vegetation in the area is sparse.	

FAUNA

(a) Common fauna in the study area

Squirrels, Frogs, Toads and Sparrow (*Passer domesticus*)

There is no likely impact on the faunal diversity in the tower location.

(b) Endemic fauna

Squirrels, Frogs, Toads and Sparrow (*Passer domesticus*)

(c) Endangered fauna

(d) Vulnerable

e) Threatened

Special Emphasis on Elephant Habitat/Corridor

a.) Presence of Elephant habitat/corridor in the study area.

There is no elephant corridor nor an elephant habitat in the region

There will be no likely impact on it as there is no elephant habitat or corridor in the region.

Special Emphasis on electrocution of birds/monkey/primate species

1. Availability of large winged birds

Hawk, Kite

These birds are spotted only at times. There is no likely impact

2. Availability of monkey/primate species and chances of electrocution.

Monkeys are not available in the study area

3. Any specific nesting sites of birds which may be impacted

There are no nesting sites of birds sighted

IMPACT OF PROJECT ACTIVITY (TOWER FOUNDATION/ ERECTION/ STRINGING)

Description	Remarks
Disposal of excavated soil/Excess soil	No disposal of the excavated soil
Any major issue of soil erosion at project site/tower locations.	There is no soil erosion observed at the tower location
Whether benching carried at tower locations	No benching is carried out
Number of trees felled/ required to be felled at tower location	
Leg extension/ extended tower provided /requirement	No leg extension
Impact on nearby water bodies due to project activity	There is no impact on the nearby water bodies
Whether location is vulnerable to soil erosion/slope failure	The location is not vulnerable to soil erosion since it is a levelled ground
Any specific requirement of slope protection measures like revetment/retaining /toe wall etc. at project locations	No requirements needed for slope protection
Impact of approach road construction (if required)	No impact on the road construction
Transportation of tower materials	The materials are transported via trucks

SOCIO ECONOMIC ASSESSMENT OF THE STUDY AREA

Description	Remarks
Name of the village/village council	Nongladew
General socio economic profile of PAP in project area	
Nature of land affected due to project activity	
Any resettlement issue	There is no issue of resettlement as it is an agricultural land.
Any negative impact on livelihood of the PAP	There is no negative impact on the livelihood of the people.
Any impact on archaeological structure(if, available in the vicinity)	No archaeological structure in and around the village
Any impact on common property resources/religious area /sacred groves etc.	There is no such impact on the common property resources or any religious area as the tower is located inside the village, few distances from the main road and there are no sacred groves in the village area.
Consultation with PAP/ Village council(As per TOR, public consultation is required to be done Consultant in association with POWERGRID and property documented)	As per the PRA conducted, there was no negative feedback from the villagers. Moreover, only the base of the tower has been constructed and the compensation is under process.

9.

Name of the line	:	220 kV Killing – Mawngap line
Section of Route	:	AP 82/0 to AP 102/0 (Tower No. 82/0 to 104/0)
Number of Tower/ Poles	:	21
Section length	:	7.745 km
AP surveyed after every ~10 km	:	AP 104/0
Tower type of AP 104/0	:	DB+0
Latitude	:	36.4806
Longitude	:	28.58525

DESCRIPTION	REMARKS
Status of Land	Private ownership
General topography of the area	Gentle slope
Nature of vegetation in the study area	Private plantation
Density of vegetation	Medium
Number of trees likely to be felled in that stretch	Based on the tree enumeration report obtained from POWERGRID, from AP104/0 to AP105/0 the number of trees to be felled are 165.
Any specific observation with respect to ecological sensitivity in the study area	There are no ecologically sensitive areas near the tower location that would impact the environment around it.

DETAILS ON BIODIVERSITY OF THE STUDY AREA AND LIKEY IMPACTS

DESCRIPTION	STATUS/AVAILABILITY	LIKELY IMPACT
<u>FLORA</u>		
(a) Common flora in the study area	<i>Nepenthes khasiana</i> , Tapioca, Bamboo (<i>Bambusa vulgaris</i>), Pineapple (<i>Ananas comosus</i>), Sal (<i>Shorea robusta</i>), Rubber plant (<i>Ficus elastica</i>)	There are no likely impact as observed in the study area
(b) Endemic flora	<i>Nepenthes khasiana</i> , Tapioca, Bamboo (<i>Bambusa vulgaris</i>), Pineapple (<i>Ananas comosus</i>), Sal (<i>Shorea robusta</i>), Rubber plant (<i>Ficus elastica</i>)	
(c) Endangered flora		
(d) Vulnerable		
e) Threatened		
f) Any specific observation	The tower location is near the rubber plantation area	

FAUNA

(a) Common fauna in the study area	Monitor Lizard (<i>Veranus benghalensis</i>), Sparrow (<i>Passer domesticus</i>), Boar (<i>Sus scrofa cristatus</i>), Assamese Macaque (<i>Macaca assamensis</i>), etc	There is no likely impact on the faunal diversity in the tower location.
(b) Endemic fauna	Monitor Lizard (<i>Veranus benghalensis</i>), Sparrow (<i>Passer domesticus</i>), Boar (<i>Sus scrofa cristatus</i>), Assamese Macaque (<i>Macaca assamensis</i>), etc	
(c) Endangered fauna		
(d) Vulnerable		
e) Threatened		
Special Emphasis on Elephant Habitat/Corridor		
a.) Presence of Elephant habitat/corridor in the study area.	There is no elephant corridor nor an elephant habitat in the region	There will be no likely impact on it as there is no elephant habitat or corridor in the region.
Special Emphasis on electrocution of birds/monkey/primate species		
1. Availability of large winged birds	Hawk, Owl and Kite	These birds are spotted only at times. There is no likely impact
2. Availability of monkey/primate species and chances of electrocution.	Monkeys are available in the study area	There is barely any chance of electrocution of animal since the estimated tower height is to be higher than the height of the tree, and also the population of the monkey has declined in the area.
3. Any specific nesting sites of birds which may be impacted	There are no nesting sites of birds sighted	

IMPACT OF PROJECT ACTIVITY (TOWER FOUNDATION/ ERECTION/ STRINGING)

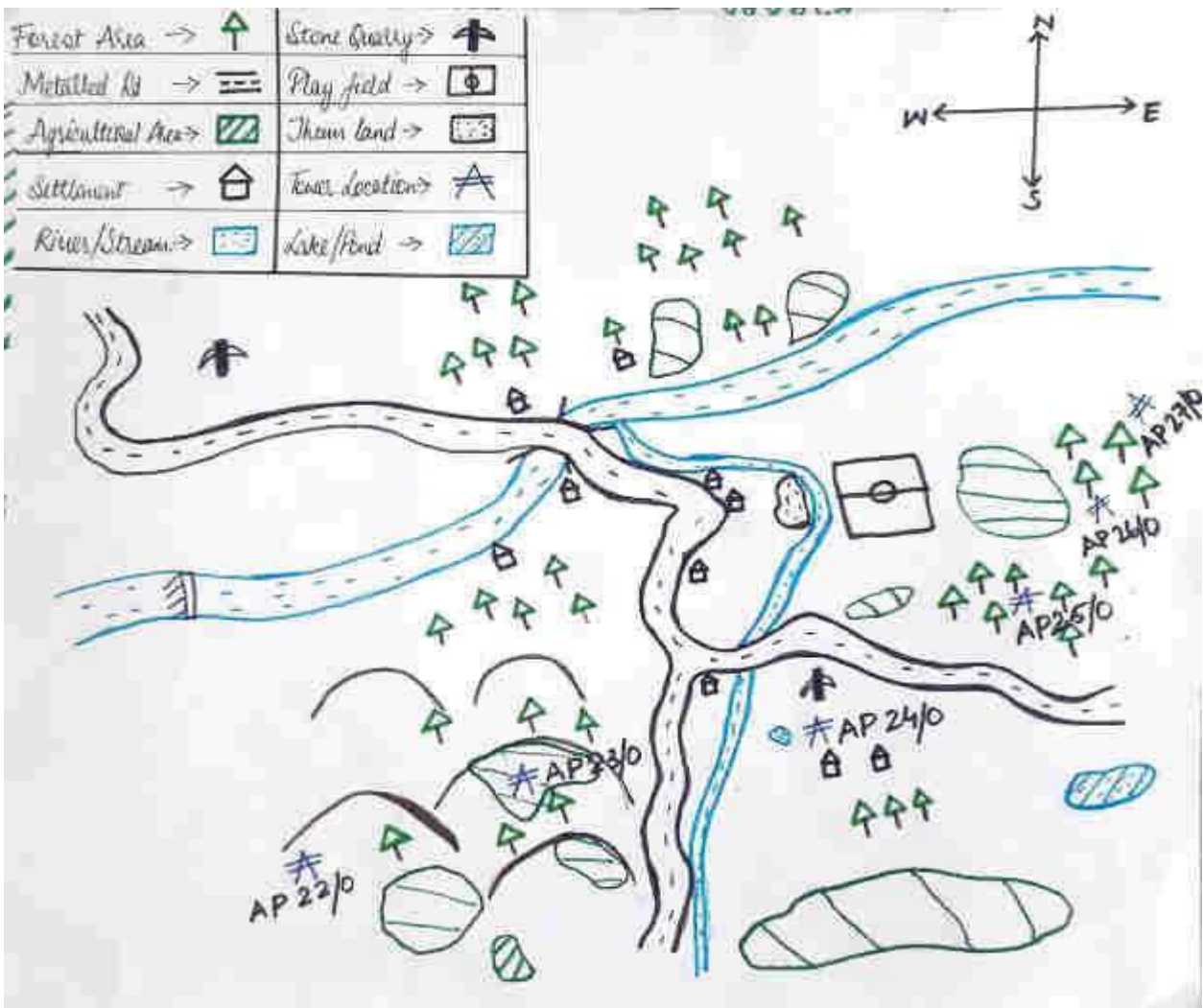
Description	Remarks
Disposal of excavated soil/Excess soil	No disposal of the excavated soil
Any major issue of soil erosion at project site/tower locations.	There is no soil erosion observed at the tower location
Whether benching carried at tower locations	No benching is carried out
Number of trees felled/ required to be felled at tower location	
Leg extension/ extended tower provided /requirement	No leg extension
Impact on nearby water bodies due to project activity	There is no impact on the nearby water bodies
Whether location is vulnerable to soil erosion/slope failure	The location is not vulnerable to soil erosion
Any specific requirement of slope protection measures like revetment/retaining /toe wall etc. at project locations	No requirements needed for slope protection
Impact of approach road construction (if required)	No impact on the road construction
Transportation of tower materials	The materials are transported via trucks and also man labour

SOCIO ECONOMIC ASSESSMENT OF THE STUDY AREA

Description	Remarks
Name of the village/village council	Umsophria
General socio economic profile of PAP in project area	
Nature of land affected due to project activity	
Any resettlement issue	There is no issue of resettlement
Any negative impact on livelihood of the PAP	There is no negative impact on the livelihood of the people.
Any impact on archaeological structure(if, available in the vicinity)	No archaeological structure in and around the village
Any impact on common property resources/religious area /sacred groves etc.	No impact on the common property nor on any religious area and sacred groves. The tower location is far away from the religious area in the village
Consultation with PAP/ Village council(As per TOR, public consultation is required to be done Consultant in association with POWERGRID and property documented)	As per the PRA conducted, there was no negative feedback from the villagers. Moreover, only the base of the tower has been constructed and the compensation is under process.

APPENDIX C

Details of Participatory Rural Appraisal (PRA)



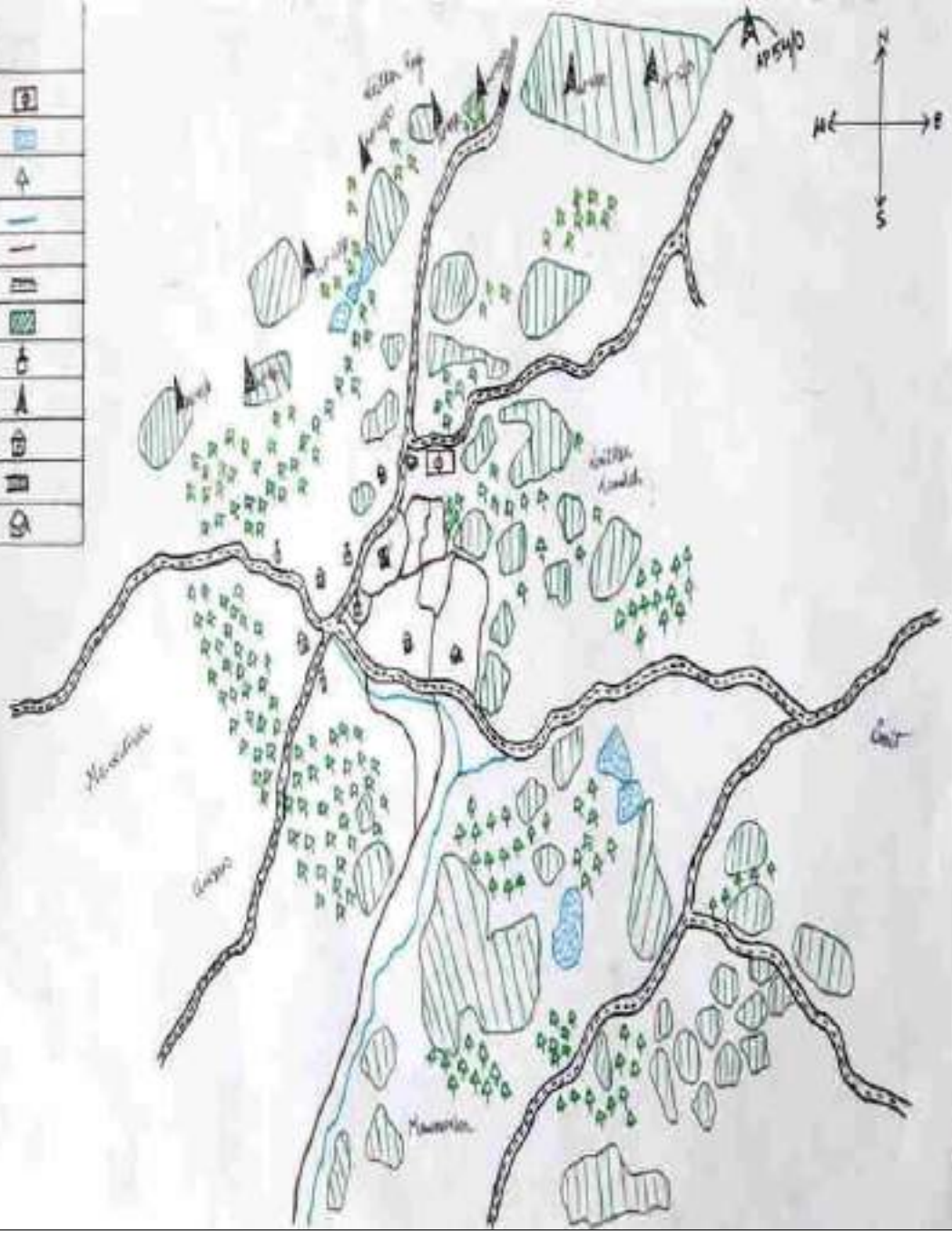
**AP 54/0
Nongkrem**



**PRA for AP 54/0
Nongkrem
(EKH)**

LEGENDS

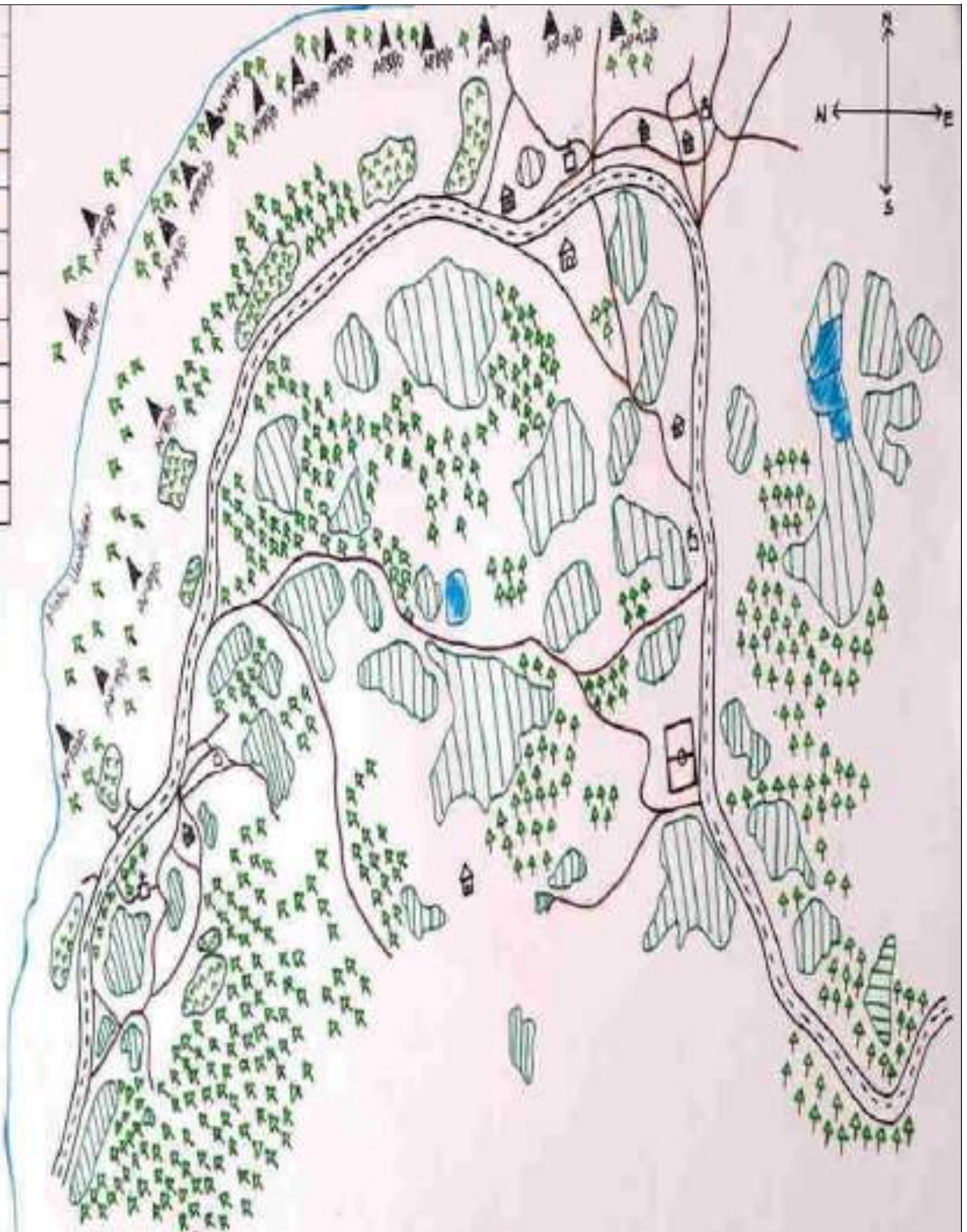
Play pit	→	[Square with diagonal lines]
Pond	→	[Blue shaded area]
Water Area	→	[Blue shaded area]
Water Run	→	[Wavy line]
High ground (h)	→	[Dotted pattern]
High water (h)	→	[Horizontal lines]
Appointed Area	→	[Green shaded area]
Quack	→	[Small circle]
Tom (with) (with)	→	[Triangle]
Grain	→	[Small square]
Bridge	→	[Rectangular structure]
Island	→	[Circle]

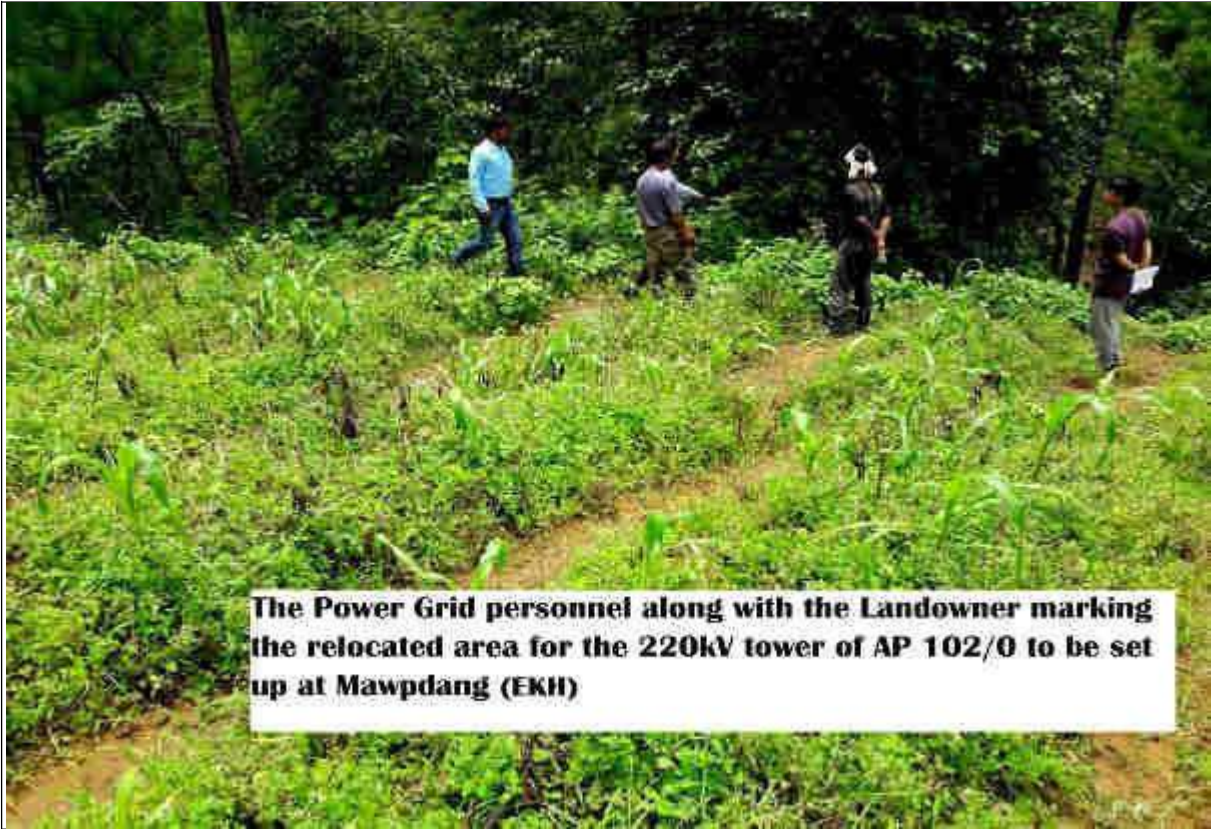




LEGENDS

Play Field	→	
Pond	→	
Forest Area	→	
Stream/River	→	
Mountain/ Hills	→	
Marked Rd	→	
Paddy Field	→	
Plantation	→	
Church	→	
Town/ Locality	→	
Settlement	→	

















The Power Grid personnel along with the Landowner marking the relocated area for the 220kV tower of AP 102/0 to be set up at Mawpdang (EKH)

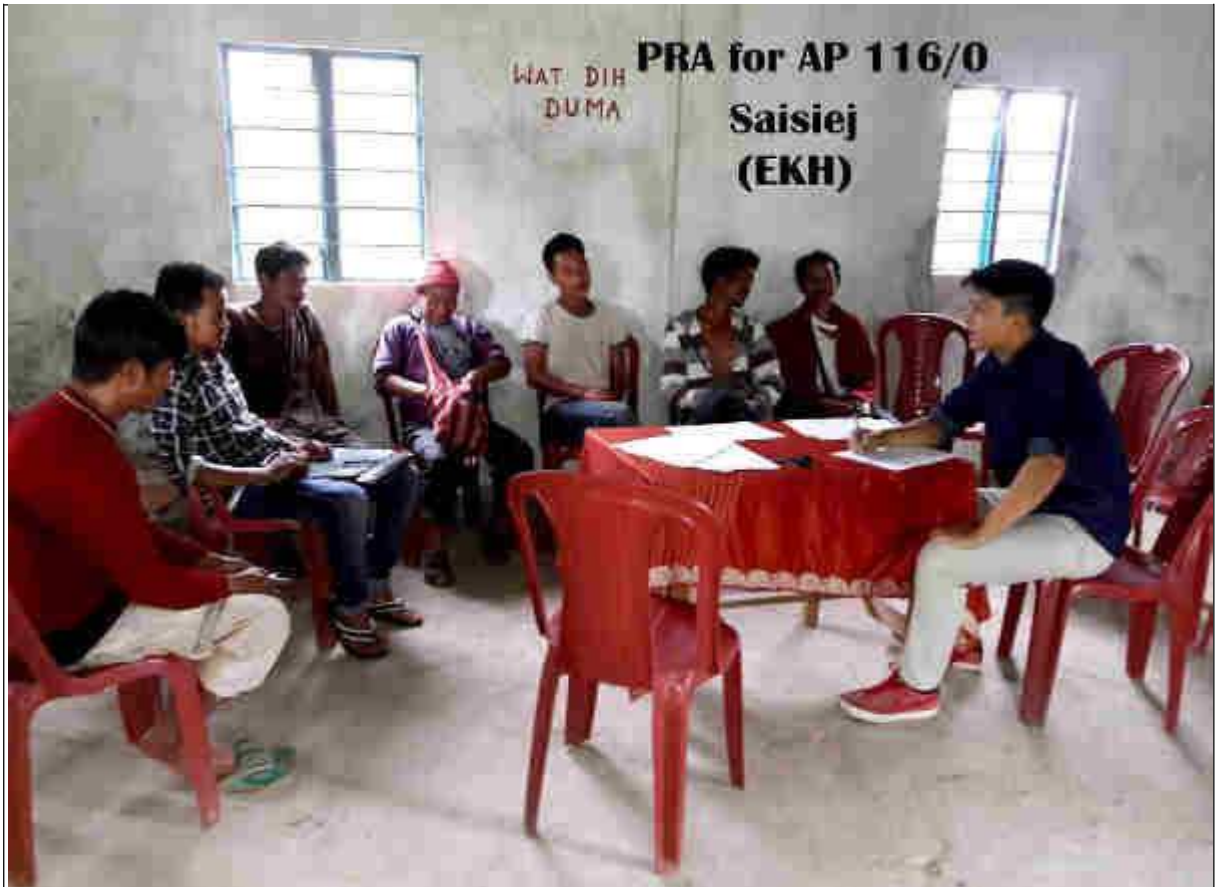


**PRA for AP 102/0
Mawpdang
(EKH)**

LEGENDS

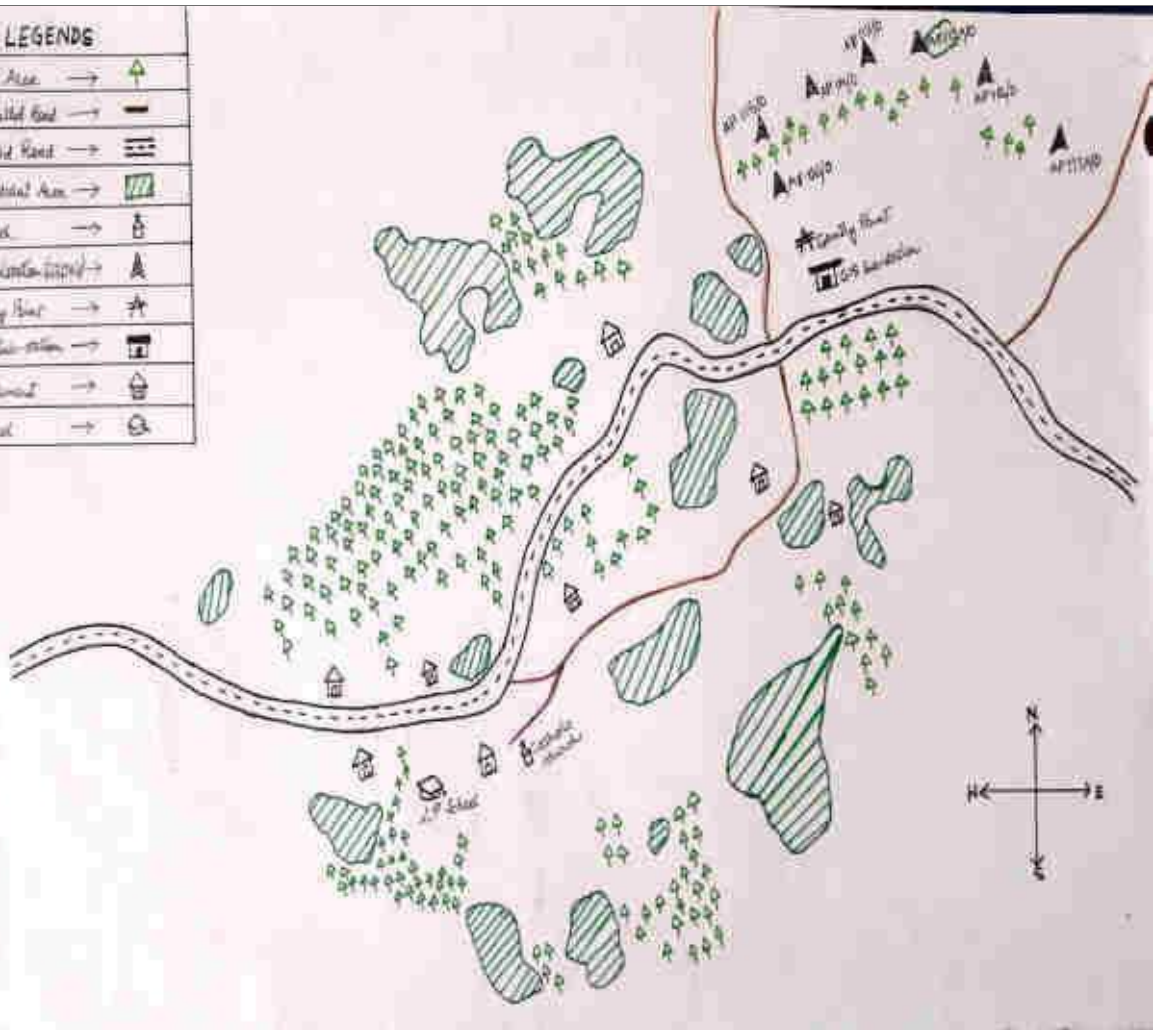
Forest Area → 	School → 
Unmetalled Rd. → 	Pond/Lake → 
Agricultural Area → 	Play field → 
Church → 	Metalled Rd. → 
Tower location → 	Stone Quarry → 
Settlement → 	
Bus Stop → 	





LEGENDS

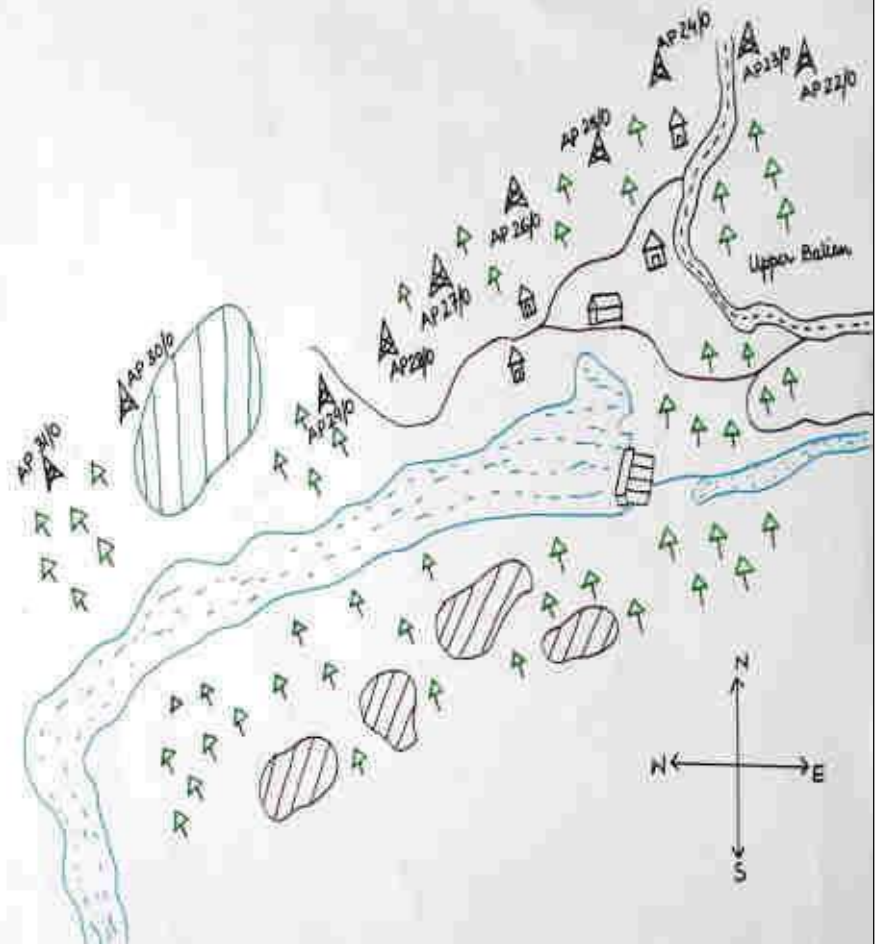
Forest Area	→	
Unmetalled Road	→	
Metalled Road	→	
Agricultural Area	→	
Church	→	
Tom. (Tombstone)	→	
Gandy Boat	→	
GIS Station	→	
Settlement	→	
School	→	



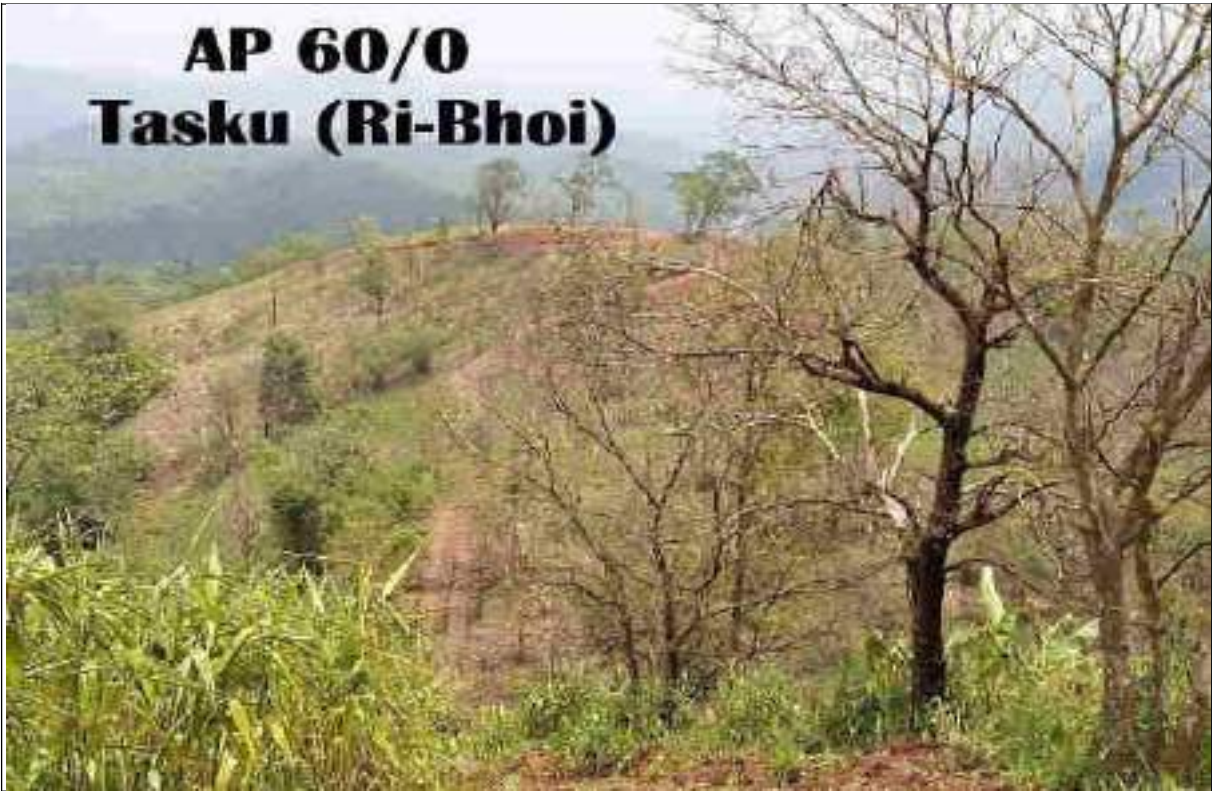


LEGENDS

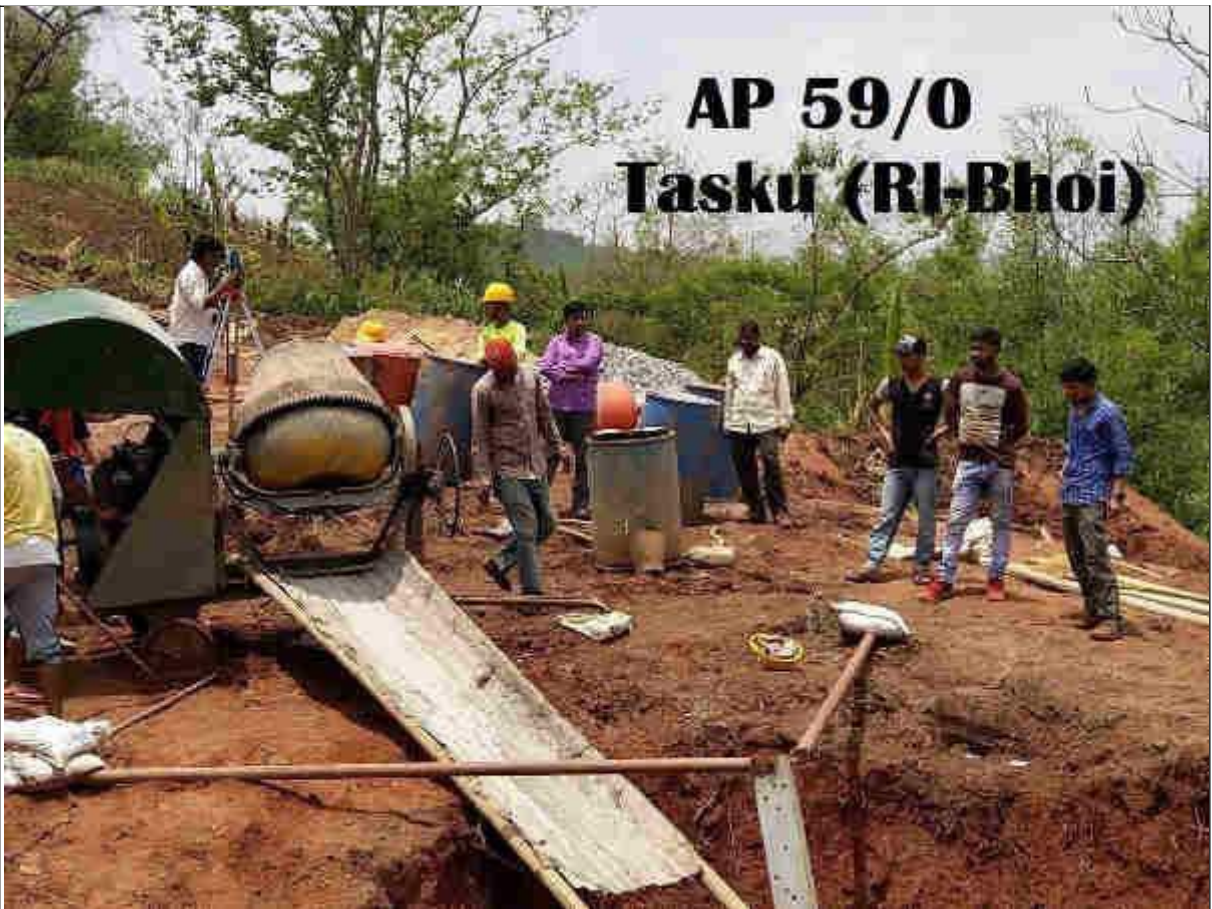
Forest Area	→	↑
Unmetalled Rd	→	—
Metalled Rd	→	---
Agricultural Area	→	▨
Town Location	→	▲
Settlements	→	⌂
Dam	→	▩
Season/River	→	⊡
Barren Land	→	▨
Community Hall	→	⌂

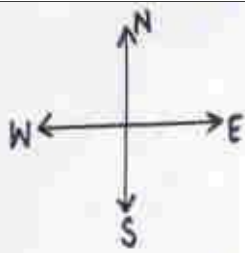


AP 60/0
Tasku (Ri-Bhoi)



AP 59/0
Tasku (Ri-Bhoi)



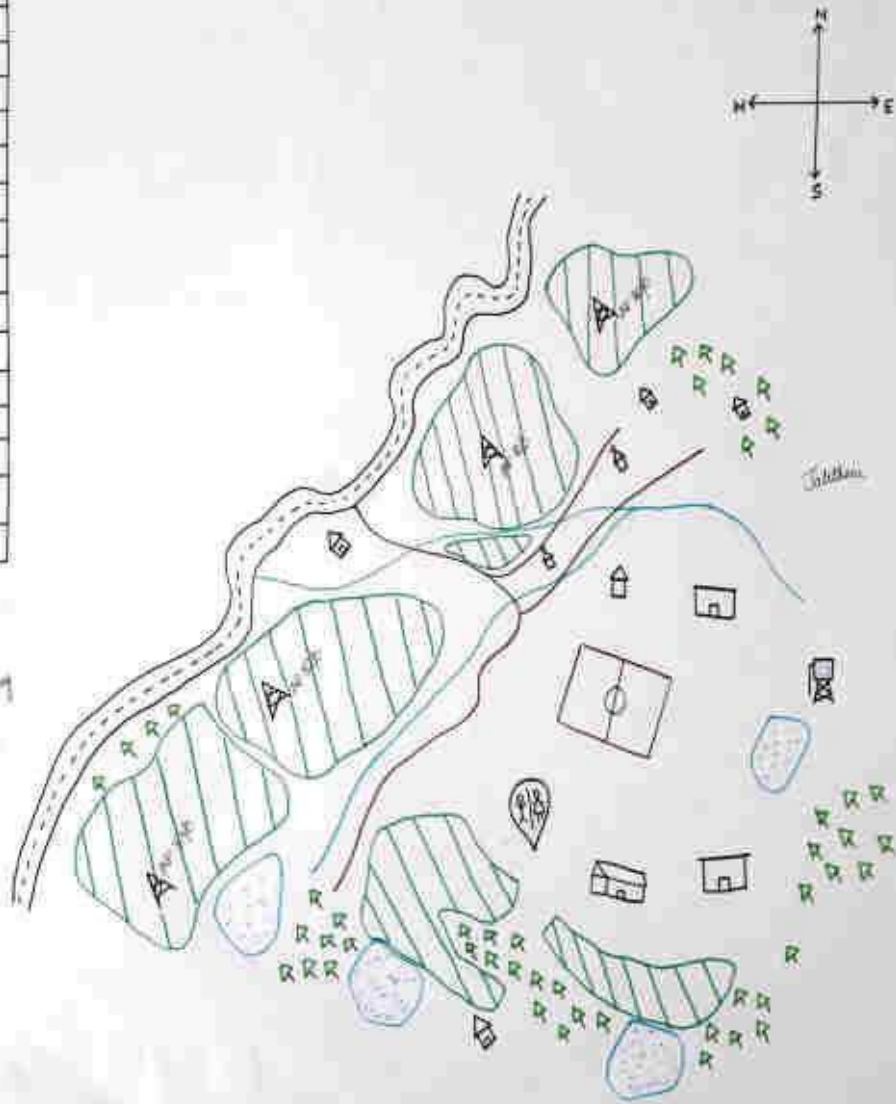


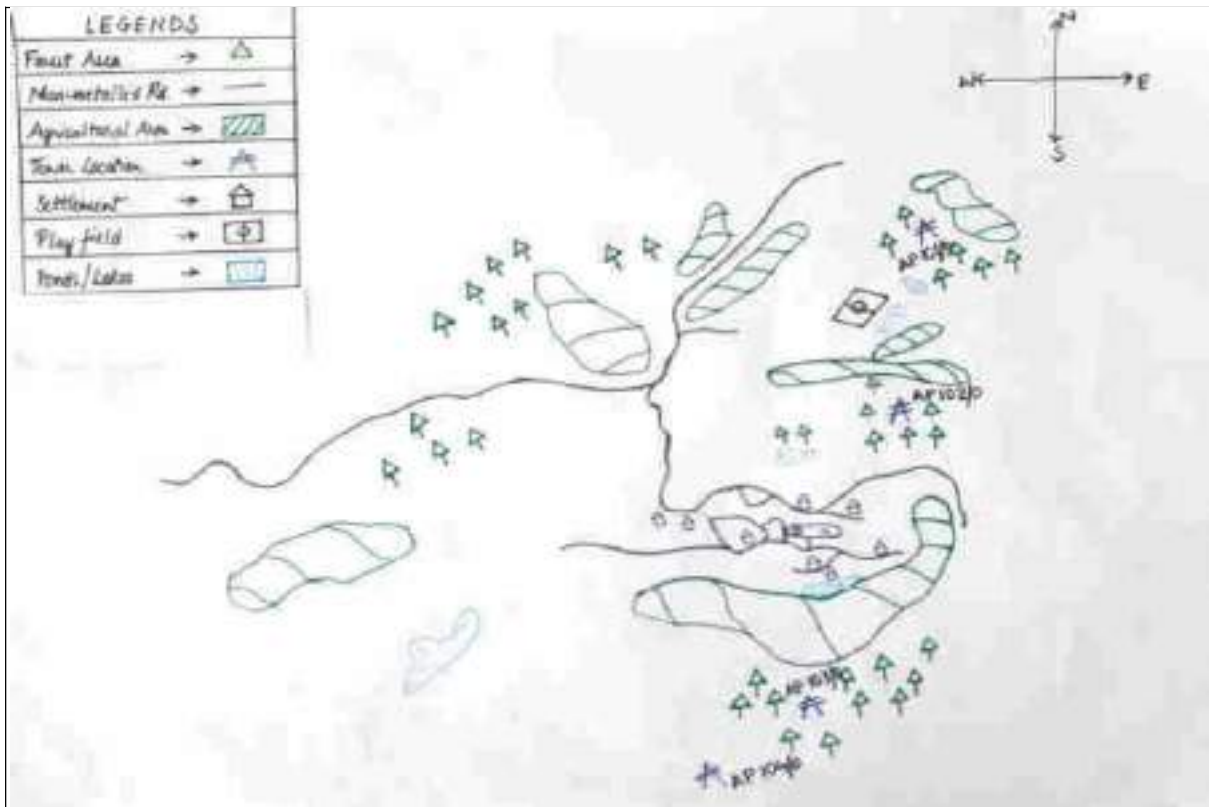
LEGENDS

Forest Area	→	
Unmetalled Rd	→	
Metalled Rd	→	
Agricultural Area	→	
Settlement	→	
Water location	→	
Pond/Lake	→	
Play Field	→	
Waste land	→	



LEGENDS	
Play Field	→ [Square with diagonal lines]
Pond	→ [Square with wavy lines]
Forest Area	→ [Square with tree symbols]
Stream/River	→ [Wavy line]
Unmetalled Road	→ [Single dashed line]
Metalled Road	→ [Double dashed line]
Paddy Field	→ [Square with vertical lines]
Church	→ [Square with cross]
Police Station (220 x 20)	→ [Square with 'A']
Settlements	→ [Small square]
School	→ [Square with horizontal lines]
Bus Stop	→ [Circle with vertical line]
Community Hall	→ [Square with horizontal lines]
Apartment Complex	→ [Square with vertical lines]
Irrigation Tank	→ [Square with wavy lines]







ANNEXURE - 1

***INITIAL ONLINE SUBMISSION OF
FOREST PROPOSAL***

FORM - A

Form for seeking prior approval of Central Government under section 2 of the Forest(Conservation) Act,1980 for
Diversion of fresh forest area

PART - I

(To be filled up by User Agency)

A. General Details**A-1. Project Details**

(i). **Proposal No.** : FP/ML/TRANS/39617/2019

(ii). **Name of Project for which Forest Land is required** : CONSTRUCTION OF 220 KV KILLING (BYRNIHAT) TO MAWNGAP TRANSMISSION LINE UNDER NORTH EASTERN REGION POWER SYSTEM IMPROVEMENT PROJECT IN MEGHALAYA

(iii). **Short narrative of the proposal and Project/scheme for which the forest land is required** : CONSTRUCTION OF 220 KV KILLING (BYRNIHAT) TO MAWNGAP LINE UNDER NORTH EASTERN REGION POWER SYSTEM IMPROVEMENT PROJECT IN MEGHALAYA

(iv). **State** : Meghalaya

(v). **Category of the Proposal** : Transmission Line

(vi). **Shape of forest land proposed to be diverted** : Linear

(vii). **Estimated cost of the Project(Rupees in lacs)** : 77693

(viii). **Area of forest land proposed for diversion(in ha.)**: 45.09

(ix). **Non-forest land required for this project(in ha.)**: 269.91

(x). **Total period for which the forest land is proposed to be diverted(in years)**: NIL

A-2. Details of User Agency

(i). **Name** : MEGHALAYA POWER TRANSMISSION CORPORATION LIMITED

(ii). **Address1** : MEGHALAYA POWER TRANSMISSION CORPORATION LIMITED

(iii). **Address2** : OFFICE OF THE CHIEF ENGINEER (TRANSMISSION) LUMJINGSHAI SHILLONG

(iv). **State** : Meghalaya

- (v). District : East Khasi Hills
- (vi). Pin : 793001
- (vii). Landmark : SHILLONG
- (viii). Email address : eettbyrnihat@gmail.com
- (ix). Landline Telephone No. : 364-2590122
- (x). Fax No. : 364-
- (xi). Mobile No. : 9856133943
- (xii). Website (if any) : NIL
- (xiii). Legal status of User Agency : State PSU


A-3. Details of Person Making Application

- (i). First Name: COLMAN
- (ii). Middle Name: C
- (iii). Last Name: SYNGAI
- (iv). Gender: Male
- (v). Designation: EE
- (vi). Address 1: OFFICE OF THE EXECUTIVE ENGINEER TRANSMISSION AND TRANSFORMATION MEPTCL
- (vii). Address 2: BYRNIHAT
- (viii). State: Meghalaya
- (ix). District: Ri Bhoi
- (x). Tehsil: Umling
- (xi). Pin: 793101
- (xii). Landmark: NIL
- (xiii). Email Address: jishnusarma@rediff.com

(xiv). Landline Telephone No.: 364-2590199

(xv). Fax No.: NIL

(xvi). Mobile No.: 9706044624

(xvii). Copy of documents in support of the competence/authority of the person making this application to make application on behalf of the User Agency: 

B. Details of land required for the Project

B-1. Details of proposal seeking prior approval of Central Government under the Act for diversion of forest land for the Project already submitted in the past

List of proposal submitted in Past							
S.no	Proposal Status.	Proposal No.	Moef File No.	Area Proposed for Diversion(Ha.)	Area Diverted(Ha.)	Date of In-Principle Approval	Date of Final Approval
NIL							

B-2. Details of forest land proposed to be diverted

B-2.1 Details of Divisions involved

Details of Divisions involved			
S.no	Division Name	Forest Land(ha.)	Non-Forest Land(ha.)
1.	Khasi Hills	45.09	269.91
Total		45.09	269.91

B-2.2 Details of Districts involved

District wise breakup			
S.no	District Name	Forest Land(ha.)	Non-Forest Land(ha.)
1.	Ri Bhoi	31.6	125.9
1.	West Khasi Hills	8.53	43.97
3.	East Khasi Hills	4.96	100.04
Total		45.09	269.91

B-2.3 Village wise breakup















Villages wise breakup			
S.no	Village	Forest Land(ha.)	Non-Forest Land(ha.)
1	NOT APPLICABLE	0	0

Total	0	0
--------------	----------	----------

B-2.4 Component wise breakup

Component wise breakup			
S.no	Component	Forest Land(ha.)	Non-Forest Land(ha.)
1	RIGHT OF WAY FOR 220 KV TRANSMISSION LINE	45.09	269.91
Total		45.09	269.91

C. Maps of forest land proposed to be diverted

Division 1. : Khasi Hills																			
<p>(i). Area of forest land proposed to be diverted(in ha.) : 45.09</p> <p>(ii). Nature of the Project: Linear</p> <p>(b). No. of Segments : Four</p> <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">Segment wise details</th> </tr> <tr> <th style="text-align: center;">Segments</th> <th style="text-align: center;">Segment Area(in ha.)</th> <th style="text-align: center;">Kml File of Segments <small>(To view KML file on google the same may be downloaded and then open if in google earth install in your computer).</small></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td style="text-align: center;">17.22</td> <td style="text-align: center;"> View File</td> </tr> <tr> <td style="text-align: center;">2.</td> <td style="text-align: center;">14.38</td> <td style="text-align: center;"> View File</td> </tr> <tr> <td style="text-align: center;">3.</td> <td style="text-align: center;">8.53</td> <td style="text-align: center;"> View File</td> </tr> <tr> <td style="text-align: center;">4.</td> <td style="text-align: center;">4.96</td> <td style="text-align: center;"> View File</td> </tr> </tbody> </table> <p>(iii). Copy of Survey of India Toposheet indicating boundary of forest land proposed to be diverted: </p> <p>(iv). Scanned copy of the Geo-referenced map of the forest land proposed to be diverted prepared by using GPS or Total Station: </p>		Segment wise details			Segments	Segment Area(in ha.)	Kml File of Segments <small>(To view KML file on google the same may be downloaded and then open if in google earth install in your computer).</small>	1.	17.22	 View File	2.	14.38	 View File	3.	8.53	 View File	4.	4.96	 View File
Segment wise details																			
Segments	Segment Area(in ha.)	Kml File of Segments <small>(To view KML file on google the same may be downloaded and then open if in google earth install in your computer).</small>																	
1.	17.22	 View File																	
2.	14.38	 View File																	
3.	8.53	 View File																	
4.	4.96	 View File																	

D. Justification for locating the Project in forest land and details of alternatives examined:

(i). Copy of note containing justification for locating the Project in forest land: 

(ii). Whether a copy of map indicating location of alternative examine is required to be provided:
Yes

(a). Copy of map indicating location of alternative examined: 

E. Employment likely to be generated

(i). Whether the Project is likely to generate employment?: Yes

(ii). Permanent/Regular Employment(Number of persons): 25


(iii). Temporary Employment(Number of person-days): 30000

F. Displacement of People due to the Project, if any

(i). Whether Project involves displacement?: No

G. Details of Cost-Benefit analysis for the Project

(i). Whether the Project requires Cost-Benefit analysis?: Yes

(a). Copy of Cost-Benefit analysis: 

H. Status of Environmental Clearance

(i). Whether the Project requires Clearance under the Environment (Protection) Act 1986?: No

I. Status of Wildlife Clearance

(i). Whether the Project or a part thereof is located in any Protected Area or their Eco sensitive zone?: No

J. Applicability of special provisions governing Scheduled Areas

(i). Whether the Project or a part thereof is located in a Scheduled Area?: Yes

K. Status of settlement of rights under the Forest Rights Act, 2006 on the forest land proposed to be diverted

(i). Whether the process for settlement of Rights under the Forest Rights Acts 2006 on the forest land proposed to be diverted has been completed?: No












L. Details of land identified for Compensatory Afforestation

(i). Whether non-forest or Revenue forest land is required to be provided by User Agency?: No

(ii). Whether the area of non-forest land or Revenue forest land required to be provided by User Agency for raising Compensatory Afforestation is less than area of forest land proposed to be diverted?: No

(iii) . Reason for not providing Non-Forest Land: For laying of transmission lines

Additional information Details

Documents		
S.No	Documents	Remarks
1		FINAL ROUTE ALIGNMENT MAP OF 220 KV KILLING (BYRNIHAT)-MAWNGAP TRANSMISSION LINE
2		MOU BETWEEN POWERGRID AND MEPTCL FOR EXECUTION OF NERPSIP PROJECT IN MEGHALAYA
3		STATEMENT OF FOREST LAND PROPOSED TO BE DIVERTED
4		UNDERTAKING FOR PAYMENT OF CA AND NPV
5		UNDERTAKING FOR PAYMENT OF ADDITIONAL NPV
6		UNDERTAKING FOR FOREST RIGHT ACT COMPLIANCE
7		CERTIFICATE BY USER AGENCY REGARDING MINIMUM USE OF FOREST LAND
8		CERTIFICATE BY USER AGENCY FOR SURVEY DONE BY TOTAL STATION
9		GOVT OF INDIA APPROVAL OF THE PROJECT NERPSIP
10		GOVT OF MEGHALAYA APPROVAL OF THE PROJECT UNDER ELECTRICITY ACT
11		COMPLIANCE REPORT AGAINST NODAL OFFICE OBSERVATION DTD. 07.04.2019

□

ANNEXURE - 2

***NOC FROM DFO REGARDING NON-
INVOLVEMENT OF FOREST LAND***

GOVERNMENT OF MEGHALAYA
THE DEPARTMENT OF FORESTS AND ENVIRONMENT
OFFICE OF
THE DIVISIONAL FOREST OFFICER:: EAST KHASI HILLS & RI-BHOI (T) DIVISION::
SHILLONG



No KH/1/45/2017/2027

Dated Shillong, the 3rd July 2019

To:
The Executive Engineer,
T & T Division, MePTCL, Shillong

Subject: Submission of Transmission line Route Alignment (Mawngap-New Shillong sector) in SOI Toposheet for joint inspection and demarcation of Forest Boundary

Sir,
With reference to the above, I am to inform you that the land proposed for construction of 220 KV D/C Mawngap-New Shillong Transmission line is not part of Reserved Forest/Protected Forest under this office and it is Non- Forest Land as per Meghalaya Forest Regulation Amendment Act, 2012. Hence, this office issue Non- forest Land Certificate

Also, permission to fell trees on the proposed site is hereby granted under Meghalaya Tree-Felling (Non- Forest Area) Rules, 2006 section 5 (1) from Homestead/Farm etc subjected to the following condition:-

1. You shall plant 10(ten) times the number of trees felled and submit compliance report alongwith photographs.
2. You shall pay royalty amounting to Rs.8,18,414 /- (Rupees Eight Lakhs Eighteen Thousand Four Hundred Fourteen) only.
3. You shall obtain T.P. for transporting timber

This is for favour of your kind information and necessary action

Enclosed: As above



Yours Faithfully,

(Shri. T. Wanhiang NFS)
Divisional Forest Officer
East Khasi Hills & Ri-Bhoi (T) Division
Shillong

Dated Shillong, the 3rd July 2019

Memo No. KH/1/45/2017

Copy to:-

1. The Conservator of Forests (T), Khasi & Jaintia Hills, Meghalaya, Shillong for favour of his kind information. This has a reference to his letter No.MFG.22/525/8007 dt. 1st July 2019

ANNEXURE - 2a

***NOC FROM ADC REGARDING NON-FOREST
LAND***

OFFICE OF THE EXECUTIVE COMMITTEE
KHASI HILLS AUTONOMOUS DISTRICT COUNCIL
SHILLONG.

NO. DC XIV(A) 121/2018-19.

Dated Shillong, the 22 Feb. 2019.

To
The Divisional Forest Officer
East Khasi Hills & Ribhoi (T) Division
Shillong.

Subject: Project 220KV D/C Killing Mawngap New Shillong transmission under NE RPSIP
Meghalaya.

Reference: No. KH/1/98/2011/5779. Dated Shillong, the 11th Dec. 2018.

Sir,

With reference to your letter cited above, I would like to inform you that based on the Inspection Report of the Range Forest Officer i/c. Shillong Range dated 31st January 2019 regarding the Proposed site for construction of 220 KV D/C Mawngap New Shillong (220 KV D/C Mawngap to New Shillong Section) under East Khasi Hills, transmission under NE RPSIP, indicated that the said construction is taking place on a Non forest land.

The Detail report/finding of the Ranger supported by photographs are enclosed herewith for reference. Further necessary document like N.O.Cs from the Headman and route map of the area are kept in the office for record.

Yours Faithfully.

Chief Forest Officer
Khasi Hills Autonomous District Council
Shillong.

Dated Shillong, the 22 Feb. 2019.

Memo No. DC XIV (A) 121/2018-19/67

Copy to :-

1. The Conservator of Forest (T) Khasi & Jaintia Hills for favour of his kind information.
2. The Manager, NE RPSIP Shillong for information and necessary action.

Chief Forest Officer
Khasi Hills Autonomous District Council
Shillong.



OFFICE OF THE EXECUTIVE COMMITTEE
KHASI HILLS AUTONOMOUS DISTRICT COUNCIL
SHILLONG.

DC/1/98/2011/257/19

Dated Shillong, the 1st Feb. 2019

To
The Divisional Forest Officer
East Khasi Hills & Ri Bhoi (I) Division
Shillong

Subject
Project 220KV D/C Mawngap New Shillong transmission under RI BPSIP
Mepalaya.

Reference: No.KH/1/98/2011/257/19, Dated Shillong, the 11th Dec. 2018.

With reference to your letter cited above, I would like to inform you that enclosed is the Inspection Report of the Range Forest Officer I/C Shillong Range dated 31st January 2019 regarding the Proposed site for construction of 220 KV D/C Mawngap New Shillong 220 KV D/C Mawngap to New Shillong Section under East Khasi Hills, transmission under RI BPSIP, indicated that the said construction is taking place on a Non forest land.

The Detail report/finding of the Ranger supported by photographs are enclosed herewith for reference. Further necessary document like N.O.S from the Headman and site map of the area are kept in the office for record

Yours faithfully

Chief Forest Officer
Khasi Hills Autonomous District Council
Shillong

Dated Shillong, the 1st Feb. 2019.

Memo. No DC XIV (A) 121/2018-19/19

Copy to:

1. The Conservator of Forest (I) Khasi & Jaintia Hills for favour of his kind information.
2. The Manager, NI BPSIP Shillong for information and necessary action.

Chief Forest Officer
Khasi Hills Autonomous District Council
Shillong.



OFFICE OF THE EXECUTIVE COMMITTEE
KHASI HILLS AUTONOMOUS DISTRICT COUNCIL
SHILLONG

NO.DC.XIV(A)/121/2018-20/19/35

Dated Shillong the 31st January, 2020.

To,

✓ The Divisional Forest Officer,
East Khasi Hills & Ribhoi (T) Division
Shillong.

Ref: - NO. KH/1/98/2017/1369 dated 12th June, 2019,

Subject: - **Construction of 220 KV D/C Killing (Byrnihat) – Mawngap Transmission line under NERPSIP, Meghalaya**

Sir,

With reference to the subject cited above, I would like to inform you that the Forest Officers and Forest field staff of KHADC along with Officials of Power Grid Corporation of India have completed the process of field verification along the whole stretch of the proposed Transmission line starting from Killing (Byrnihat) to Mawngap.

Thus based on the Inspection Report of our Forest Officers, the whole stretch of the proposed Transmission line starting from Killing (Byrnihat) to Mawngap belongs to private individuals and the alignment does not pass through any recorded Forest land under the Council.

The Detail Reports of the Forest Officers of the Council supported by Declaration of records from the local Headmen/Sordars are enclosed for reference.

T. Sait

Chief Forest Officer,
Khasi Hills Autonomous District Council,
Shillong.

Memo NO.DC.XIV(A)/121/2018-20/19(4)
Copy for favour of information to:-

Dated Shillong the ____ January, 2020.

1. The Chief Executive Member, Khasi Hills Autonomous District Council.
2. The Secretary to the Executive Committee, Khasi Hills Autonomous District Council.
3. The Executive Engineer, T&T Div, MePTCL, Byrnihat.
4. The DCFO
5. The ACFO
6. The RO in-charge

Chief Forest Officer
Khasi Hills Autonomous District Council,
Shillong

ANNEXURE - 3

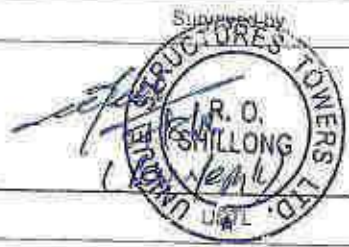
***DETAILS OF TOWER SCHEDULE OF 220
KV BYRNIHAT-MAWNGAP-NEW
SHILLONG LINE***

UNIQUE STRUCTURES & TOWERS LTD.
 TWT (Pro-053A) - Construction of 220kV D/c Killing (Byrnihat)-Mawngap-New Shillong T/L
 Order No - CC-0581-NER/TWT 2468/G4/CA-1/5842(Services), Dated 30.08.2016
 Tower Schedule from Gantry of Killing Sub-Station to AP 3/0 (Route Length-0.472 Kms) of 220kV D/c Killing-Mawngap-New Shillong Line
 Client - Power Grid Corporation of India Limited

Date - 07-Aug-18

K1122-127
1142

Sl. No.	Location No.	Tower No.	Angle of Deviation	GPS Coordinates		Tower Type	Reduce d Level at center	Span (M)	Section Length (M)	Cumulat ive Route Length	Sum of Adjacent Span (M)	Wind Span (M)	Weight Span HOT(M)			Weight Span COLD (M)			Remarks/ Crossing.	
				Easting	Northing								LEFT	RIGHT	TOTAL	LEFT	RIGHT	TOTAL		
1	GANTRY	GANTRY	00°00'00"	2884987	384356	Gantry	200.799	78.48	0	0	78.480	80.240	0	-25	-25	0	-53	-53		
2	AP01/0 DE	AP01/0 DE	53°59'2" LT	2887932	384296	DC + 0	199.165	54.93	78	78	173.410	86.705	104	35	138	131	29	160	Nalla, Bituminous road & 1 Line	
3	AP 01A/0	AP 01A/0	17°50'57" LT	2884841	384289	DC + 0	199.969	90.25	95	173	194.180	97.090	80	36	97	66	31	96	Bituminous road & 11kV L/R (Power line needs to be shifted) Tower proposed with Auxiliary Cross arms	
4	AP 02/0	AP 02/0	44°03'31" RT	2884743	384322	DC + 0	200.840	169.5	89	273	298.850	149.425	63	82	145	68	75	143	11kV Line & LT line needs to be shifted.	
5	AP 03/0	AP 03/0	25°58'47" LT	2884571	384230	DC + 0	203.190		200	472	610.600	305.300	118	78	195	125	24	149	Cart Track, 11kV line, 132kV MCT T/L & scattered trees.	
Total Route Length in M.:-							0.472	0.472												

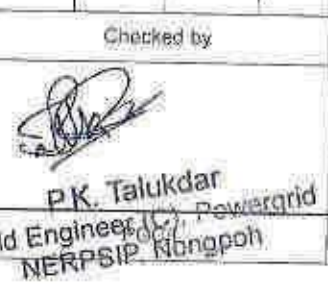
Supervised by

 R. O. SHILLONG
 UNIQUE STRUCTURES & TOWERS LTD.

Checked by

 R. O. SHILLONG
 UNIQUE STRUCTURES & TOWERS LTD.

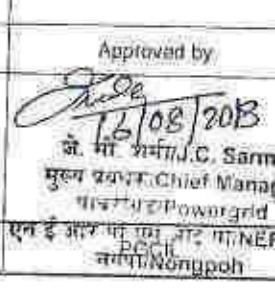
Substituted by

 P.K. Talukdar
 USIL

Checked by

 P.K. Talukdar
 Field Engineer (C) Powergrid
 NERPSIP Nongpoh

Recommended by

 जे. सी. शर्मा/J.C. Sarma
 मुख्य प्रबंधक/Chief Manager
 पावर ग्रीड/Powergrid
 एन ई आर पी एन सी पी/NERPSIP
 नंगपो/Nongpoh







Approved by

 16/08/2018
 जे. सी. शर्मा/J.C. Sarma
 मुख्य प्रबंधक/Chief Manager
 पावर ग्रीड/Powergrid
 एन ई आर पी एन सी पी/NERPSIP
 नंगपो/Nongpoh

AS PER THE DETAILED SURVEY									AS PER THE CHECK SURVEY							Crossing details & Remarks, if any		
Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location		Span (M)	Section Length (M)
		Easting	Northing								Easting	Northing						
8	9A/0	384512	2882338	35°00'04"RT	DD+0	319.273		208	8	9A/0	384599	2882335	37°54'55"RT	DD+6	319.584			Extension provided for ELEPHANT ZONE
							368									365		POND
9	10/0	384570	2881972	49°27'47"RT	DD+0	351.674		368	9	10/0	384562	2881970	50°49'14"RT	DD+6	351.886			Extension provided for ELEPHANT ZONE
							272									272		
10	11/0	384344	2881821	32°49'19"LT	DD+0	368.650		272	10	11/0	384348	2881829	33°05'52"LT	DD+6	368.057			Extension provided for ELEPHANT ZONE
							456									472		
11	12/0	384163	2881401	44°22'18"LT	DD+6	418.013		456	11	12/0	384136	2881399	20°48'12"LT	DD+3	417.802			Extension provided for ELEPHANT ZONE
							298									305		
12	13/0	384271	2881124	38°25'29"RT	DD+3	368.509		298	12	13/0	384114	2881100	02°59'50"RT	DB+6	358.128			Extension provided for ELEPHANT ZONE
							504									467		
13	14/0	384120	2880642	50°21'44"RT	DD+0	324.601		504	13	14/0	384078	2880636	58°18'01"RT	DD+0	318.840			
							324									284		CART TRACK
14	15/0	383821	2880519	04°21'34"LT	DB+0	346.231		324	14	15/0	383814	2880523	02°09'08"LT	DB+0	347.270			
							192									199		
15	16/0	383649	2880433	02°17'17"LT	DB+0	374.362		192	15	16/0	383641	2880439	02°43'14"RT	DB+0	374.352			
							403									403		
16	17/0	383286	2880245	30°22'02"LT	DD+0	375.649		403	16	17/0	383288	2880245	30°36'50"LT	DD+0	375.649			
							209									209		
17	18/0	383183	2880068	26°09'56"RT	DC+0	388.000		209	17	18/0	383183	2880068	26°09'56"RT	DC+0	388.894			
							490									490		CART TRACK



(Signature)
P.K. Talukdar
 Field Engineer (C), Powergrid
 NERPSIP, Nongpoh

(Signature)
 Mr. W.K. Rhyiem
 Sr. Engineer
 POWERGRID
 NONGPOH

AS PER THE DETAILED SURVEY									AS PER THE CHECK SURVEY							Crossing details & Remarks, if any			
Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location		Span (M)	Section Length (M)	
		Easting	Northing								Easting	Northing							
18	19/0	382774	2879797	24°16'24"LT	DC+0	289.000		490	18	19/0	382774	2879797	24°16'24"LT	DC+0	289.000				
								324											
19	20/0	382598	2879533	26°54'21"LT	DD+0	263.000		324	19	20/0	382598	2879533	26°54'21"LT	DD+0	263.000				
								528											POND
20	21/0	382141	2879262	02°37'31"LT	DD+25	206.000		528	20	21/0	382141	2879262	02°37'31"LT	DD+25	206.000				
								407											132 KV D/C LINE GS NDS. CART TR
21	22/0	381788	2879058	08°04'34"LT	DB+0	287.000		407	21	22/0	381788	2879058	08°04'34"LT	DB+0	287.000				
Route Length as per the detailed Survey:-								7076 M	Route Length as per the Check Survey:-								7041 M		
Surveyed by			Checked by			Submitted by			Checked by			Recommended by			Approved by				
																			
			USTL						P.K. Talukdar Field Engineer (C), Powergrid NERPSIP, Nongpoh			PGCIL/Nongpoh			J. C. Sarma Senior Engineer (C), Powergrid NERPSIP, Nongpoh				

5041

UNIQUE STRUCTURES & TOWERS LTD.

TWA/81 (P/6-052A) - Construction of 220kV D/C Killing (Bymahal) - Mawngap New Shikang T/L

Order No. - CC-25/31-NER/TWT-2425/164/CA-10042/Services, Dated 30.08.2016

Check Survey Report from AP22/0 to AP29/0 (Route Length 2.379Kms) of Killing (Bymahal) - Mawngap Section

Client - Power Grid Corporation of India Limited

Date - 20/03/18

AS PER THE DETAILED SURVEY								AS PER THE CHECK SURVEY								Crossing details & Remarks, if any		
St. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	St. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location		Span (M)	Section Length (M)
		Easting	Northing								Easting	Northing						
1	AP 22/0	3517117	2879059	03°04'34" LT	DB+0	266.229			1	AP 22/0	3517157	2879059	03°04'34" LT	DB+0	266.529			
							243								243			11kV Line (Clearance - 9.00M)
2	AP 23/0	351563	2878971	14°43'53" LT	DB+0	310.040		243	2	AP 23/0	351563	2878971	14°43'53" LT	DB+0	315.040		243	
							383								383			Can Track
3	AP 24/0	351258	2878749	16°40'04" LT	DB+0	305.443		383	3	AP 24/0	351258	2878749	16°40'04" LT	DB+0	305.443		383	
							252								252			
4	AP 25/0	351103	2878575	18°18'44" RT	DB+0	276.689		252	4	AP 25/0	351103	2878575	18°18'44" RT	DB+0	276.689		252	
							456								456			Tea plantation
5	AP 26/0	350718	2878292	50°25'23" LT	DD+3	266.816		456	5	AP 26/0	350718	2878292	50°25'23" LT	DD+3	266.816		456	
							223								223			
6	AP 27/0	350696	2878072	13°28'46" RT	DB+0	229.760		223	6	AP 27/0	350696	2878072	13°28'46" RT	DB+0	229.760		223	
							363								363			Can Track & temporary hut at 15.77M from center line
7	AP 28/0	350570	2877732	18°56'30" RT	DB+0	216.884		363	7	AP 28/0	350570	2877732	18°56'30" RT	DB+0	216.884		363	
							459								459			Can Track & 11kV Line (H=7.520M & clearance=7.508)
8	AP 29/0	350227	2877320	18°48'35" RT	DB+0	257.336		459	8	AP 29/0	350227	2877320	18°48'35" RT	DB+0	257.336		459	

Route Length as per the detailed Survey - 2379 M

Route Length as per the Check Survey - 2379 M

Surveyed by

Checked by

Submitted by

Checked by

Recommended by

Approved by

[Signature]



[Signature]



[Signature]
20/03/18
(Mohan)

[Signature]
31/09/18
S. Bana
Field Supervisor

[Signature]
P.K. Talukdar
Field Engineer (C), Powergrid
NERPSIP, Nongpoh

[Signature]
31/03/2018
जे. सी. शर्मा J.C. Sarma
मुख्य प्रबंधक Chief Manager
NERPSIP, Nongpoh
एन. ई. आर. पी. सि. एल. को. लि. नगपो Nongpoh

ESATU

USTI

UNIQUE STRUCTURES & TOWERS LTD.

TWIST (Tribeniya) - Construction of 220KV Line Killing (Bynihat)-Mawngap-New Shillong (N).

Order No. - DD-03/91-NER/TWT-2458/5/ICA-1/5842(Services), Dated 30.06.2018

Check Survey Report from AP29/0 to AP41/0 (Route Length-1.762Kms) of Killing (Bynihat) - Mawngap Section.

Client:- Power Grid Corporation of India Limited

Date:- 29/08/18

AS PER THE DETAILED SURVEY								AS PER THE CHECK SURVEY								Crossing details & Remarks.			
Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location		Span (M)	Section Length (M)	
		Easting	Northing								Easting	Northing							
1	AP29/0	380280	2877379	18°48'05"RT	DC+0	257.335			1	AP29/0	380280	2877379	18°48'05"RT	DC+0	257.335				
							572.000								572.000			Valley & Scattered trees.	
2	AP30/0	379803	2877068	29°03'39"LT	DD+0	257.726		572.000	2	AP30/0	379803	2877068	29°03'39"LT	DD+0	257.726		572.000		Valley & Scattered trees.
							201.000								201.000			Valley & Scattered trees.	
3	AP31/0	379707	2876991	10°12'04"RT	DB+0	259.487		201.000	3	AP31/0	379707	2876991	10°12'04"RT	DB+0	259.487		201.000		Valley & Scattered trees.
							400.000								400.000			Valley & Scattered trees.	
4	AP32/0	379456	2876578	28°11'48"RT	DC+0	227.148		400.000	4	AP32/0	379456	2876578	28°11'48"RT	DC+0	227.148		400.000		Valley & Scattered trees.
							279.200								279.200			Valley & Scattered trees.	
5	AP33/0	379203	2876470	42°57'38"LT	DD+0	237.084		279.200	5	AP33/0	379203	2876470	42°57'38"LT	DD+0	237.084		279.200		Scattered trees.
							282.320								282.320			Scattered trees.	
6	AP34/0	379112	2876227	33°40'30"RT	DD+3	218.132		282.320	6	AP34/0	379112	2876227	33°40'30"RT	DD+3	218.132		282.320		Valley & Scattered trees.
							494.390								494.390			Valley & Scattered trees.	
7	AP35/0	378872	2875941	11°53'01"RT	DB+0	219.493		494.390	7	AP35/0	378872	2875941	11°53'01"RT	DB+0	219.493		494.390		Scattered trees.
							160.000								160.000			Scattered trees.	
8	AP35/0	378520	2875690	15°29'14"LT	DC+0	234.915		160.000	8	AP35/0	378520	2875690	15°29'14"LT	DC+0	234.915		160.000		



(Signature)
R.O. (In-charge)

(Signature)
S. Saha
Field Supervisor (E) NERPS
Nongpoh






(Signature)

05/08/2018
S. Saha
Chief Manager
Nongpoh
NERPS
Nongpoh

AS PER THE DETAILED SURVEY

AS PER THE CHECK SURVEY

Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Crossing details & Remarks	
		Easting	Northing								Easting	Northing							
							292.600											Scattered trees	
9	AP37/0	378285	2875718	15°58'58"LT	DC+0	283.409	292.600	292.600	9	AP37/0	378285	2875718	15°58'58"LT	DC+0	283.409	292.600	292.600		
							222.500											Valley & Scattered trees	
10	AP38/0	378108	2875621	19°58'26"RT	DC+0	232.105	222.500	222.500	10	AP38/0	378108	2875621	19°58'26"RT	DC+0	232.105	222.500	222.500		
							339.190											Cart Track/RCC foot path, LT Line	
11	AP39/0	377836	2875393	31°50'08"LT	DD+0	257.705	339.190	339.190	11	AP39/0	377836	2875393	31°50'08"LT	DD+0	257.705	339.190	339.190		
							192.000											Scattered trees	
12	AP40/0	377649	2875348	31°09'51"RT	DD+0	272.628	192.000	192.000	12	AP40/0	377649	2875348	31°09'51"RT	DD+0	272.628	192.000	192.000		
							355.570											Cart Track & Scattered trees	
13	AP41/0	377393	2875102	02°57'40"LT	DB+0	249.955	355.570	355.570	13	AP41/0	377393	2875102	02°57'40"LT	DB+0	249.955	355.570	355.570		
Route length as per detailed Survey:-							3790.170 M	Route length as per Check Survey:-							3790.170 M				

Surveyed by 	Checked by 	Submitted by 	Checked by S. Saha Field Supervisor NEERPSIP, Jangpoh	Recommended by 	Approved by 
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नाम संवन्धु के निदेशानुसार S.W.K. Khyne
 ने अभियंता (Sc. Engineer)
 एन.ए.ए.ए. POWERGRID
 एन.ई.आर.पी.एस.आई. (NERPSIP)
 जंगपोह

जे. सी. सार्मा J.C. Sarma
 मुख्य अभियंता (Chief Engineer)
 एन.ए.ए.ए. POWERGRID
 एन.ई.आर.पी.एस.आई. (NERPSIP)
 जंगपोह

6/69/17

UNIQUE STRUCTURES & TOWERS LTD.

TW-01 (Prj-053AY - Construction of 220kV D/c Killing (Byrnihat)-Mawngap-New Shilong T/L

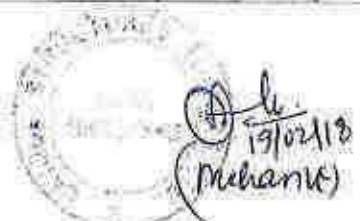
Order No. - EC DS/51-NER/TWT-2468/G4/CA-1/5842 (Services), Dated 30.08.2016

Check Survey Report from AP41/0 to AP67/0 (Route Length-8.75Kms) of Killing (Byrnihat) - Mawngap Section

Client - Power Grid Corporation of India Limited.


Date: 19-Feb-18

AS PER THE DETAILED SURVEY								AS PER THE CHECK SURVEY								Crossing details & Remarks, if any			
Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location		Span (M)	Section Length (M)	
		Easting	Northing								Easting	Northing							
1	AP 41/0	377393	2875102	To be decided later	To be decided later	250.021			1	AP 41/0	377393	2875102	02°04'09" LT		250.021				
							319									319		Cart Track & Rubber trees	
2	AP 42/0	377169	2874873	11°40'30" LT	DC+0	242.106		319	2	AP 42/0	377169	2874873	11°40'30" LT	DC+0	242.106		319		
							646									646		Rubber garden	
1	AP 43/0	376825	2874327	11°19'20" RT	DC+9	227.615		646	3	AP 43/0	376825	2874327	11°19'20" RT	DC+9	227.615		646		
							303									303		Rubber garden	
3	AP 44/0	376614	2874108	06°18'20" RT	DB+0	237.135		303	3	AP 44/0	376614	2874108	06°18'20" RT	DB+0	237.135		303		
							348									348		Rubber garden	
4	AP 45/0	376346	2873886	22°53'10" RT	DC+0	204.541		348	4	AP 45/0	376346	2873886	22°53'10" RT	DC+0	204.541		348		
							244									244		Rubber garden	
5	AP 46/0	376112	2873617	11°23'03" RT	DB+0	208.865		244	5	AP 46/0	376112	2873617	11°23'03" RT	DB+0	208.865		244		
							365									365		Rubber garden	
6	AP 47/0	375749	2873786	17°05'30" LT	DC+0	204.028		365	6	AP 47/0	375749	2873786	17°05'30" LT	DC+0	204.028		365		
							294									294			
7	AP 48/0	375478	2873673	21°51'11" LT	DC+0	215.788		294	7	AP 48/0	375478	2873673	21°51'11" LT	DC+0	215.788		294		
							466									466		Rubber garden	




S. Saha
 Field Supervisor (E), Powergrid
 NERPSIP, Nongpoh


 19/02/18
 Mr. S. Saha के निगरान/S.W.K. Khynm
 के अंतर्गत/Sr Engineer
 पावरग्रिड/POWERGRID
 एन ई ग्रिड कोर्स, आई पी/NERPSIP
 नॉंगपो, असम


 07/03
 जे. सी. शर्मा/J.C.
 मुख्य प्रबंधक/Chief Engineer
 पावरग्रिड/Powergrid
 एन ई ग्रिड कोर्स, आई पी/NERPSIP
 नॉंगपो, असम

AS PER THE DETAILED SURVEY

AS PER THE CHECK SURVEY

Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Crossing details & Remarks, if any
		Easting	Northing								Easting	Northing						
18	AP 59/0	374604	2870381	18°35'05" RT	DC+0	344.409		168	18	AP 59/0	374604	2870381	18°35'05" RT	DC+0	344.409		168	
							321									321		
19	AP 60/0	374609	2870126	34°17'03" LT	DD+0	367.371		321	19	AP 60/0	374609	2870126	34°17'03" LT	DD+0	367.371		321	
							533									533		
20	AP 61/0	374597	2869584	34°19'04" RT	DD+0	354.132		533	20	AP 61/0	374597	2869584	34°19'04" RT	DD+0	354.132		533	Cart Track, Rubber & Tea Garden.
							392									392		
21	AP 62/0	374355	2869276	18°39'09" RT	DC+0	420.764		392	21	AP 62/0	374355	2869276	18°39'09" RT	DC+0	420.764		392	Rubber & Tea Garden.
							211									211		
22	AP 63/0	374194	2869151	06°46'36" RT	DB+0	429.733		211	22	AP 63/0	374194	2869151	06°46'36" RT	DB+0	429.733		211	Cart Track
							182									182		
23	AP 64/0	374057	2869064	11°33'56" RT	DB+0	427.291		182	23	AP 64/0	374057	2869064	11°33'56" RT	DB+0	427.291		182	
							433									433		
24	AP 65/0	373625	2868929	25°37'15" LT	DC+0	399.225		433	24	AP 65/0	373625	2868929	25°37'15" LT	DC+0	399.225		433	Cart Track & Tea Garden
							328									328		
25	AP 66/0	373391	2868708	13°40'50" LT	DB+0	442.822		328	25	AP 66/0	373391	2868708	13°40'50" LT	DB+0	442.822		328	Cart Track & Tea Garden
							233									233		
26	AP 67/0	373264	2868502	To be decided later	To be decided later	456.974		233	26	AP 67/0	373264	2868502	To be decided later	To be decided later	456.974		233	

Route Length as per the detailed Survey - 8755 M.

Route Length as per the Check Survey - 8755 M.

Surveyed by

Checked by

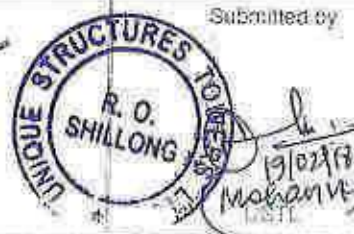
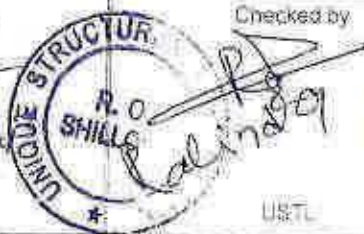
Submitted by

Checked by

Recommended by

Approved by

Nirajal K R
Nirajal K R
19/2/2018
U.S.T.L.



S. Saha
S. Saha
19/02/18

S. Saha
Field Supervisor (E) Powergrid
NERPSIP, Nongpoh

W.K. Khynem
W.K. Khynem
Engineer
POWERGRID
NERPSIP, Nongpoh

FROM AP 55
to AP 67
approved.
07/03/2018
Approved by
R.O. Shillong
Union Structures Towering
NERPSIP, Nongpoh

UNIQUE STRUCTURES & TOWERS LTD

TW-01 (Pro-063A):- Construction of 220KV D/G Killing (Byrniahat)-Mawngap-Now Shillong TTL

Order No.- CC-CS/91-NER/TWT-2488/G4/CA-1/8842(Services), Dated

Check Survey Report from AP 67/0 TO AP 76/0 (Route Length-2.873 Km) of Killing (Byrniahat)-Mawngap Section.

Client:- Power Grid Corporation of India Limited.

AS PAR THE DETAILED SURVEY

AS PAR THE CHECK SURVEY

SL. NO.	Location No.	Angle of Deviation	GPS Coordinates		Tower Type	Reduced Level of center peg	Span (M)	
			Easting	Northing				
1	AP 67/0	48°52'34"RT	2888502	373264	DD+0	458.974	321.470	
2	AP 68/0	31°12'17"LT	2888448	372947	DD+0	409.218	253.280	
3	AP 69/0	14°34'56"RT	2886284	372755	DB+0	411.310	378.660	
4	AP 70/0	04°15'21"LT	2888117	372414	DB+0	428.606	226.080	
5	AP 71/0	19°09'17"LT	2888004	372221	DC+0	446.787	294.110	
6	AP 72/0	54°44'58"RT	2887778	372028	DD+0	437.361	308.150	
7	AP 73/0	34°51'08"LT	2887806	371723	DB+3	494.931	439.800	
8	AP 74/0	21°28'24"LT	2887589	371341	DD+0	525.792	337.180	
9	AP 75/0	17°37'18"LT	2887328	371139	DC+6	422.377	316.200	
10	AP 76/0	11°25'57"RT	2887031	371014	DB+3	368.554		
Total Route Length In M.:-							2872.930	

SL. NO.	Location No.	Angle of Deviation	GPS Coordinates		Tower Type	Reduced Level of center peg	Span (M)	Remarks/ Crossing.	
			Easting	Northing					
1	AP 67/0	48°52'34"RT	2888502	373264	DD+0	458.974	321.470	Valley & scattered trees	
2	AP 68/0	31°12'17"LT	2888448	372947	DD+0	409.218	253.280	Valley & scattered trees	
3	AP 69/0	14°34'56"RT	2886284	372755	DC+0	411.310	378.660	Valley & scattered trees	
4	AP 70/0	04°15'21"LT	2888117	372414	DB+0	428.606	226.080	Cart Track & scattered trees	
5	AP 71/0	19°09'17"LT	2888004	372221	DC+0	446.787	294.110	Valley & scattered trees	
6	AP 72/0	54°44'58"RT	2887778	372028	DD+0	437.361	308.150	Valley & scattered trees	
7	AP 73/0	34°51'08"LT	2887806	371723	DD+3	494.931	439.800	Valley & scattered trees	
8	AP 74/0	21°28'24"LT	2887589	371341	DD+0	525.792	337.180	Valley & scattered trees	
9	AP 75/0	17°37'18"LT	2887328	371139	DC+6	422.377	316.200	Valley, Cart Track & 11 KV	
10	AP 76/0	11°25'57"RT	2887031	371014	DB+3	368.554			
Total Route Length In M.:-							2872.930 MTR		

Surveyed By	Checked By	Submitted By	Checked By	Recommended By	Approved By
<i>Nongpon</i>	<i>Ajit Shivhare</i>	<i>Kishor Shivhare</i>	<i>Chandra</i>	<i>Pradyumn</i>	<i>J.C. Sarma</i>



ए. शिवशंकर/A. Byntabiang
 इन्जिनियर/Engineer
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जे. सी. शर्मा/J.C. Sarma
 डी. महा प्रबंधक/DGM
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2872-93

UNIQUE STRUCTURES & TOWERS LTD.

TW-01 (Pr-053A) - Construction of 220kV D/c Killing (Bymihat)-Mawngap-New Shillong T/L

Order No. - CC-CS/11-NER/TWT-2468/G4/CA-1/5642(Services), Dated 30.08.2016.

Check Survey Report from AP76/0 to AP94/0 (Route Length-8.107Kms) of Killing (Bymihat) - Mawngap Section.

Client - Power Grid Corporation of India Limited.

Date:- 03 February 2018

AS PER THE DETAILED SURVEY								AS PER THE CHECK SURVEY						Crossing details & Remarks, if any				
Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation		Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)
		Easting	Northing								Easting	Northing						
1	AP76/0	2867031	371014	To be decided later	To be decided later	368.645			1	AP76/0	2867031	371014	To be decided later	To be decided later	368.645			
							368									368		Pond
2	AP77/0	2866728	370819	30°45'45"RT	DD+0	381.653		368	2	AP77/0	2866728	370819	30°53'45"RT	DD+0	381.653		368	
							328									328		Cart Track, LT Line (Clearance 10.400M)
3	AP78/0	2866574	370526	08°47'06"LT	DB+6	361.816		328	3	AP78/0	2866574	370526	08°47'06"LT	DB+6	361.816		328	
							346									346		Nalla-2Nos & Cart Track
4	AP79/0	2866380	370240	09°10'50"LT	DB+6	359.696		346	4	AP79/0	2866380	370240	09°10'50"LT	DB+6	359.696		346	
							410									410		Nalla
5	AP80/0	2866092	369943	16°00'39"LT	DC+9	356.700		410	5	AP80/0	2866092	369943	16°00'39"LT	DC+9	356.704		410	
							433									415		33kV Line, LT Line & Tar Road. Sp. reduced to get ample clearance of 6.200M & 5.200M above 33kV & LT line respectively)
6	AP81/0	2865721	369722	03°19'37"RT	DB+9	355.738		433	6	AP81/0	2865735	369732	03°12'14"RT	DB+9	355.133		415	
							384									384		Tar Road, 11kV Line & Nalla. Clearance above 11kV Line is 4.950M
7	AP82/0	2865417	369518	06°27'31"LT	DB+9	353.303		384	7	AP82/0	2865417	369518	06°27'31"LT	DB+9	353.303		384	
							426									426		
8	AP83/0	2865041	369320	14°09'21"LT	DC+9	351.611		426	8	AP83/0	2865041	369320	14°09'21"LT	DB+9	351.611		426	
																		Tower Type changed w.r.t AoD



Drif
 P.V. Kishora
 Supervisor (E), Powergrid
 NERPSIP, Nongpoh

Shall
 मम इत्ययु के वेदग्याम/S.W.K. Khynem
 व जनिपता /Sr Engineer
 गलरगि/POWERGRID
 नम ई आर मे एम ब्राई/NERPSIP
 नगरी/ Nongpoh

AS PER THE DETAILED SURVEY								AS PER THE CHECK SURVEY								Crossing details & Remarks, If		
Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location		Span (M)	Section Length (M)
		Easting	Northing								Easting	Northing						
							410									410		Nalla-2Nos, LT Line & 11kV Line
9	AP84/0	2864642	369225	32°28'20"RT	DD+3	350.631		410	9	AP84/0	2864642	369225	32°28'20"RT	DD+6	350.631		410	Extension increased at AP84/0 to get adequate clearance of 8.400M & 6.600M above 11KV & LT Line respectively.
							359									359		Nalla.
10	AP85/0	2864393	368967	13°57'19"LT	DC+3	349.960		359	10	AP85/0	2864393	368967	13°57'19"LT	DC+3	349.960		359	Though AoD is less than 15°, DC tower is proposed to fulfill sum of adjacent span criterion.
							392									392		Nalla, Pond.
11	AP86/0	2864062	368759	05°06'19"LT	DB+3	349.285		392	11	AP86/0	2864062	368759	05°45'05"LT	DB+3	349.285		392	
							340									347		Nalla-2Nos.
12	86/1	2863758	368603		DA+0	346.246		340	12	AP86A/0	2863748	368604	02°10'12"RT	DB+0	346.195		347	
							357									345		Nalla.
13	AP87/0	2863441	368441	06°51'19"RT	DB+3	345.391		357	13	AP87/0	2863436	368448	06°57'39"RT	DB+3	345.286		348	
							297									299		
14	AP88/0	2863195	368278	02°58'57"RT	DB+0	344.469		297	14	AP88/0	2863195	368278	02°31'57"RT	DB+0	344.469		299	
							340									340		Nalla-2Nos.
15	88/1	2862922	368074		DA+0	343.381		340	15	AP88A/0	2862920	368073	02°01'03"RT	DB+0	343.483		340	
							340									340		Nalla & 11KV Line. Clearance above 11KV line is 4.820M.
16	88/2	2862650	367870		DA+0	342.238		340	16	AP88B/0	2862649	367870	02°56'44"LT	DB+0	342.485		340	
							305									305		Nalla.
17	AP89/0	2862404	367687	02°55'27"LT	DB+9	341.341		305	17	AP89/0	2862404	367687	02°55'27"LT	DB+9	341.341		306	
							407									407		11KV Line & Nalla-2Nos. Clearance above 11KV Line - 4.650M.
18	AP90/0	2862074	367445	07°01'45"LT	DB+3	342.876		407	18	AP90/0	2862074	367445	07°01'45"LT	DB+3	342.876		407	








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AS PER THE DETAILED SURVEY								AS PER THE CHECK SURVEY						Crossing details & Remarks, if any					
Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation		Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	
		Easting	Northing								Easting	Northing							
							315									315		Nalla-2Nos & LT Line Extension provided to get ample clearance of 5.000M above ET Line.	
19	AP91/0	2881797	367296	22°23'04"RT	DC+0	340.328		315	19	AP91/0	2881797	367296	22°23'04"RT	DC+0	340.328		315		
							503									503		Nalla, 11KV Line, H/W & Cart Track Clearance above 11KV Line - 6.400M	
20	AP92/0	2881485	366904	10°57'17"LT	DC+0	371.010		503	20	AP92/0	2881485	366904	10°57'17"LT	DC+0	371.010		503		
							380									380		Nalla.	
21	AP92A/0	2881193	366657		DB+3	336.579		380	21	AP92A/0	2881193	366658		DB+3	336.579		380		Though the spotted tower is in line with AoD-0°, DB tower has been proposed to fulfill sum of adjacent span criterion.
							401									401		Nalla.	
22	AP93/0	2860890	366401	17°37'34"LT	DC+0	340.829		401	22	AP93/0	2860890	366401	17°37'34"LT	DC+0	340.829		401		
							284									284			
23	AP94/0	2860634	366273	To be decided later	To be decided later	346.437		284	23	AP94/0	2860634	366273	To be decided later	To be decided later	346.437		284		
Route Length as per the detailed Survey:-							8107 M.	Route Length as per the Check Survey:-							8107 M.				

Surveyed by	Checked by	Submitted by	Checked by	Recommended by	Approved by
USTL	 R. O. SHILLONG USTL	 R. O. SHILLONG USTL	 P. W. R. Shore Field Supervisor (Sr.) Powergrid NERPSIP, Nongpoh	 S. W. K. Khyrem Sr Engineer POWERGRID Nongpoh	 J. C. Sarma Chief Manager Powergrid Nongpoh

2107

UNIQUE STRUCTURES & TOWERS LTD.

TW-01 (Pro-053A) - Construction of 220kV D/o Killing (Byrnihat)-Mawngap-New Shillong T/L

Order No. - CC-CB/91-MER/TWT-2400/GA/CA-1/5842(Services), Dated 30.08.2018.

Check Survey Report from AP194/0 to AP120/0 (Route Length- 9.657Kms) of Killing (Byrnihat) - Mawngap Section.

Client- Power Grid Corporation of India Limited.

Date: 11/Jul/18

AS PER THE DETAILED SURVEY								AS PER THE CHECK SURVEY								Crossing details & Remarks, if any			
Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location		Span (M)	Section Length (M)	
		Easting	Northing								Easting	Northing							
1	94/0	366273	2860634	02°43'14"RT	DB+0	346.437			1	94/0	366273	2860634	02°43'14"RT	DB+0	346.437				
							368.200									368.200		Valley & scattered trees.	
2	95/0	366101	2860307	02°55'18"LT	DB+0	362.499		368.200	2	95/0	366101	2860307	02°55'18"LT	DB+0	362.499		368.200		
							531.470									531.470		Cart Track, Nalla & scattered trees.	
3	98/0	365887	2859832	40°17'48"RT	DD+0	362.711		531.470	3	98/0	365887	2859832	40°17'48"RT	DD+0	362.711		531.470		
							346.440									346.440		Cart Track & scattered trees.	
4	97/0	366546	2859893	20°37'54"LT	DC+0	343.702		346.440	4	97/0	366546	2859893	20°37'54"LT	DC+0	343.702		346.440		
							357.040									357.040		Nalla & scattered trees.	
5	98/0	365292	2859447	11°47'11"LT	DB+0	348.560		357.040	5	98/0	365292	2859447	11°47'11"LT	DB+0	348.560		357.040		
							287.900									287.900		Scattered trees.	
6	96/0	365129	2859207	02°27'51"LT	DB+0	387.585		287.900	6	96/0	365129	2859207	02°27'51"LT	DB+0	387.585		287.900		
							208.570									208.570		Scattered trees & Rubber plantation.	
7	100/0	365018	2859032	06°12'11"LT	DB+0	376.280		208.570	7	100/0	365018	2859032	06°12'11"LT	DB+0	376.280		208.570		
							204.210									204.210		Scattered trees & Rubber plantation.	
8	101/0	364925	2858848	06°04'00"LT	DB+0	378.445		204.210	8	101/0	364925	2858848	06°04'00"LT	DB+0	378.445		204.210		
							345.080									345.080		Cart Track, scattered trees & Tea Garden.	
9	102/0	364808	2858525	11°38'21"LT	DB+0	358.620		345.080	9	102/0	364808	2858525	11°38'21"LT	DB+0	358.620		345.080		



(Signature)
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 Field Engineer (C), Powergrid
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(Signature)
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(Signature)
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 Chief Engineer
 POWERGRID
 NERPSIP, Nongpoh

AS PER THE DETAILED SURVEY								AS PER THE CHECK SURVEY							Crossing details & Remarks, if any.			
Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower		Reduced level at the center of location	Span (M)	Section Length (M)
		Easting	Northing								Easting	Northing						
							381.060											
10	103/0	364749	2858152	30°07'10"RT	DD+0	370.533	381.060		10	103/0	364749	2858152	30°07'10"RT	DD+0	370.533	381.060		Nails & scattered trees.
							345.400									345.400		State Highway No 3, Pond, 11KV Line (H=0.216M & clearance-31.405M) & scattered trees.
11	104/0	364532	2857882	15°15'07"LT	DC+0	421.662	345.400		11	104/0	364532	2857882	25°11'39"LT	DD+0	421.662	345.400		Tower type changed to restrict violation of sum of adjacent span & one side span parameters as per revised T&D.
							503.590									503.590		State Highway No 3, Valley & scattered trees.
12	105/0	364331	2857420	20°31'40"LT	DD+18	439.368	503.590		12	105/0	364981	2857322	00°53'20"RT	DC+0	451.174	503.590		Location shifted to higher ground to avoid higher extension at this location. DC tower provided to justify one side span to be below 60% of sum of adjacent spans.
							441.490									441.490		Scattered trees.
13	106/0	364324	2857020	21°10'37"LT	DD+3	529.919	441.490		13	106/0	364324	2857020	32°39'18"LT	DD+6	529.919	441.490		Extension provided to maintain ample clearance above ground level.
							290.780									290.780		Scattered trees.
14	107/0	364397	2856703	01°01'08"RT	DB+0	538.118	290.780		14	107/0	364397	2856703	01°01'08"RT	DB+0	538.118	290.780		Scattered trees.
							237.090									237.090		Scattered trees.
15	108/0	364403	2856460	07°01'54"LT	DB+0	583.616	237.090		15	108/0	364403	2856460	07°01'54"LT	DB+3	583.616	237.090		Extension provided to maintain ample clearance above ground level.
							370.730									370.730		Cart Track & scattered trees.
16	109/0	364818	2856140	05°35'39"LT	DB+0	550.431	370.730		16	109/0	364818	2856140	05°35'39"LT	DB+0	550.431	370.730		Cart Track, Nails & scattered trees.
							461.120									461.120		Valley & scattered trees.
17	110/0	364847	2855735	15°30'29"RT	DC+0	592.401	461.120		17	110/0	364847	2855735	15°30'29"RT	DC+0	592.401	461.120		Valley & scattered trees.
							504.640									504.640		Valley & scattered trees.
18	111/0	364970	2855253	12°58'54"LT	DC+0	612.876	504.640		18	111/0	364970	2855253	12°58'54"LT	DC+0	612.876	504.640		Valley & scattered trees.
							680.270									680.270		Valley & scattered trees.
19	112/0	365283	2854644	05°08'05"LT	DC+0	675.333	680.270		19	112/0	365283	2854644	05°08'05"LT	DC+0	675.333	680.270		Valley & scattered trees.



P.K. Talukdar
Field Engineer (C), Powergrid
NERPSIP, Nongpoh

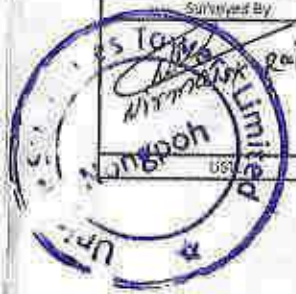
13/07/2019
Date
श्री. इंजीनियर के. वेंकटरावु डी. वेंकटरावु, सी. 285/03, D. Sarm
ए. ए. ए. इंजीनियर
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श्री. ए. ए. ए. इंजीनियर

AS PER THE DETAILED SURVEY									AS PER THE CHECK SURVEY							Crossing details & Remarks, if any		
Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location	Span (M)	Section Length (M)	Sl. No.	Location No.	GPS Coordinate (UTM)		Angle of Deviation	Type of Tower	Reduced level at the center of location		Span (M)	Section Length (M)
		Easting	Northing								Easting	Northing						
							410.170											
20	113/0	365503	2854300	25°25'33"RT	DD+0	670.175		410.170	20	113/0	365503	2854300	25°25'33"RT	DD+0	670.175		410.170	Valley & scattered trees.
							470.130											
21	114/0	365597	2853823	41°31'41"LT	DD+0	692.141		470.130	21	114/0	365597	2853823	41°31'41"LT	DD+0	692.141		470.130	Pond, Valley & scattered trees.
							345.540											
22	115/0	365818	2853593	43°05'08"RT	DD+0	755.080		345.540	22	115/0	365818	2853593	43°05'08"RT	DD+0	755.080		345.540	State highway No.3 & scattered trees.
							461.450											
23	116/0	365856	2853137	08°22'22"LT	DB+3	791.386		461.450	23	116/0	365856	2853137	08°22'22"LT	DB+3	791.386		461.450	Scattered trees.
							311.530											
24	117/0	365919	2852828	01°48'47"RT	DD+25	739.013		311.530	24	117/0	365919	2852828	01°48'47"RT	DD+25	739.013		311.530	Scattered trees.
							319.920											
25	118/0	365974	2852512	11°23'03"LT	DB+0	795.446		319.920	25	118/0	365974	2852512	11°23'03"LT	DB+0	795.446		319.920	Cart Track & scattered trees.
							213.880											
26	119/0	366059	2852313	39°00'06"LT	DD+25	791.318		213.880	26	119/0	366059	2852313	39°00'06"LT	DD+25	791.318		213.880	Scattered trees.
							265.600											
27	120/0	366277	2852182	43°25'20"RT	DD+9	661.189		265.600	27	120/0	366277	2852182	43°25'20"RT	DD+9	661.189		265.600	Scattered trees.
Route Length as per the detailed Survey:-							8672.290 M.	Route Length as per the Check Survey:-							8656.733 M.			
Surveyed by			Checked by			Submitted by			Checked by			Recommended by			Approved by			
USTL			USTL			USTL			P.K. Talukdar Field Engineer (C), Powergrid NERPS/1			S.W.K. Khyasani Sr Engineer POWER GRID NERPS/1			J.C. Sarika Chief Manager POWER GRID NERPS/1			

9656-733

SL NO.	Location No.	Angle of Deviation	GPS Coordinates		Tower Type	Reduced Level at center peg	Span (M)	SL NO.	Location No.	Angle of Deviation	GPS Coordinates		Tower Type	Reduced Level at center peg of Location	Span (M)	Remarks/ Crossing
			Easting	Northing							Easting	Northing				
18	AP 137/0	42°34'04"LT	269780	2847769	DB+0	892.748	281.090	18	AP 137/0	42°34'04"LT	269780	2847769	DB+0	892.748	281.090	NALA & VALLEY
19	AP 139/0	05°24'51"RT	370127	2847741	DB+0	817.435	350.690	19	AP 139/0	05°24'51"RT	370127	2847741	DB+0	817.435	350.690	
20	AP 139/0	35°07'29"RT	370560	2847641	DB+0	834.167	437.580	20	AP 139/0	35°07'29"RT	370560	2847641	DB+0	834.167	437.580	Carl Track & scattered trees
21	AP 140/0	11°49'08"RT	370723	2847446	DB+0	853.211	259.450	21	AP 140/0	11°49'08"RT	370723	2847446	DB+0	853.211	259.450	TAR ROAD & scattered trees
Total Route Length in M.:-							8933.480	Total Route Length in M.:-							8933.480	

Surveyed By <i>[Signature]</i>	Checked By <i>[Signature]</i>	Submitted By <i>[Signature]</i>	Checked By <i>[Signature]</i>	Recommended By <i>[Signature]</i>	Approved By <i>[Signature]</i> 12/12/18
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रिन्ताथियांग/ A. Ryntathiang
 सहायक अभियंता/ Junior Engineer
 पावर गिड/ Powergrid
 एन ई आर पी एम आई पी/NERPSIP
 नंगपो/Nongpoh

एस. डबल्यू. के. खेरियाम/S.W.K. Khyiem
 उप प्रबंधक/Dy Manager
 पावर गिड/POWERGRID
 एन ई आर पी एम आई पी/NERPSIP
 नंगपो/Nongpoh

जे. सी. शर्मा/J.C. Sarma
 उप प्रबंधक/DGM
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4781

UNIQUE STRUCTURES & TOWERS LTD.

TW/ST(P10-053A)-Construction of 220KV D/C Killing(By:Patar) Mawngap-New Shilling T/L

Order No. -CC-03/e1-NER/TWT-2468/G4/CA-1/5842(Services), Dated 30.03.2016.

Tower Schedule from AP 1407D to AP 1510 i.e. Prev. AP.1821D (Route Length - 7.960 Kms) of Killing - Mawngap Section

Client - Power Grid Corporation of India Limited.

Date: 22-Sep-16

Sl. NO.	Location No.	Tower No.	Angle of Direction	GPS Coordinates		Tower Type	Reduced Level at center of Location	Span (M)	Section Length (M)	Cumulative Section Length (M)	Sum of Adjacent Span (M)	Wind Span (M)	Weight Span (TON)			Remarks/Cladding			
				Easting	Northing								LEFT	TOTAL	RIGHT				
1	AP 1450	1410	11:45:08 RT	370723	2847446	DB + 0	855.211	509.200	0.000	0.000	788.950	384.325	240	561	401	297	127	408	Scattered trees.
2	AP 1410	1410	12:05:21 RT	370975	2847002	DB + 0	895.036		509.200	509.200	993.216	450.105	349	225	574	388	236	629	
3	AP 1408	1420	05:54:40 RT	371009	2845509	DB + 0	877.278	391.010	391.010	900.210	831.080	418.540	186	653	719	153	663	846	Can Track & scattered trees
4	AP 1430	1430	30:00:00 RT	371269	2846221	DB + 6	773.360	448.070	448.070	1348.280	875.670	437.835	107	182	75	247	158	479	Scattered trees
5	AP 1440	1440	07:37:18 LT	371436	2845826	DB + 0	788.709	430.000	430.000	1778.280	733.130	368.565	248	137	386	262	131	393	Scattered trees
6	AP 1450	1450	12:32:02 LT	371588	2846660	DB + 0	791.655	304.000	394.500	2082.780	511.620	255.510	167	23	189	173	12	161	Can Track & scattered trees
7	AP 1460	1450	00:00:00 RT	371729	2846411	DB + 0	802.876	208.000	208.500	2290.280	701.670	350.635	185	176	361	220	146	356	Bad Track 2Kms LT from Play ground & scattered trees
8	AP 1470	1475	30:34:37 LT	372087	2846050	DB + 0	826.138	493.500	493.500	2781.980	679.620	339.910	318	214	103	346	345	3	Wedge & Scattered trees
9	AP 1480	1480	37:30:50 RT	372246	2844898	DB + 0	884.128	186.000	186.000	2967.980	637.740	268.670	400	280	681	531	325	856	Scattered trees.

MANGALAM M. RYMBAL
Sr. Engineer
NERPSIP, Mawngap

MANGALAM PATAR
Sr. Engineer
NERPSIP, Mawngap

MANGALAM PATAR
Sr. Engineer
NERPSIP, Mawngap



SL NO.	Location No.	Tower No.	Angle of Descent	GPR Coordinates		Tower Type	Height (m) of tower at center of tower	Span (M)	Add'l Spacing (M)	Cumulative Span Length (M)	Sum of Adjacent Span (M)	Worst Span (M)	Worst Span HOTLINE			Remarks/Crossing			
				Easting	Northing								LEFT	RIGHT	TOTAL		LEFT	RIGHT	TOTAL
							351.700									Scattered trees			
10	AP-1490	1490	10°34'43"LT	372454	2844714	DB + 0	639.711	381.700	3319.660	734.290	307.110	307.110	71	142	27	20	37		
							380.900											Dist. Track 2-Nes & scattered trees	
11	AP-1500	1500	28°46'58"RT	372733	2824453	DB + 0	830.164	362.500	3702.380	814.290	417.145	417.145	317	211	303	210	572		
							431.900											Dist. Track & scattered trees	
12	AP-1510	1510	10°24'51"RT	372868	2824041	DC + 0	627.351	431.900	4133.080	680.500	440.260	440.260	221	140	303	104	327		
							448.700											Dist. Track 2-Nes & scattered trees	
13	AP-1520	1520	03°31'25"LT	373083	2843547	DB + 0	687.036	448.700	4682.500	776.410	388.295	388.295	309	137	445	340	128	471	
							527.700											Dist. Track 1-Line & scattered trees	
14	AP-1530	1530	17°52'54"RT	373220	2843351	DC + 0	923.816	387.700	4970.280	669.330	304.665	304.665	181	205	395	202	233	436	
							291.800											Scattered trees	
15	AP-1540	1540	21°36'21"RT	373414	2843146	DB + 9	861.721	261.600	5181.830	621.660	311.832	311.832	76	120	44	49	243	194	
							342.210											Dist. Track 2-Nes & scattered trees	
16	AP-1550	1550	43°25'28"RT	373541	2842430	DB + 0	966.876	342.210	5534.140	396.880	498.440	498.440	482	277	739	586	296	641	
							654.700											Dist. Track 2-Nes 11KV Univ. station tower & Valley	
17	AP-1560	1560	04°14'16"RT	373301	2842219	DB + 6	972.708	564.700	6198.840	595.350	452.675	452.675	378	331	709	389	419	818	
							260.700											Valley & Scattered trees	
18	AP-1570	1570	08°11'47"RT	373217	2841963	DB + 0	944.372	250.700	6439.540	505.800	261.945	261.945	28	63	-20	168	87	138	
							253.200											Valley & Scattered trees	
19	AP-1580	1580	47°56'08"LT	373161	2841733	DB + 0	955.973	253.200	6882.740	595.420	297.710	297.710	193	138	331	221	124	365	
							342.200											Valley & Scattered trees	

Map

AP-1510

AP-1520

AP-1530

AP-1540

AP-1550

AP-1560

AP-1570

AP-1580

Notes

AP-1510 to AP-1580

AP-1510 to AP-1580

AP-1510 to AP-1580

AP-1510 to AP-1580

UNIQUE STRUCTURES & TOWERS LTD

TW-01 (Ptd-053A) - Construction of 220kV D/c Killing (Bymahat)-Mawngap-New Shillong T/L



Order No. - CC-CS/91-NER/TWT-2468/G4/CA-1/5842(Services), Dated 30.08.2016.

Tower Schedule from AP 182/0 to AP 193/0 (Route Length-3.54059Kms) SECTION Killing S/S-Mawngap S/S.

Client - Power Grid Corporation of India Limited.

Date: -

Sl. No.	Location No.	Tower No	Angle of Direction	GPS Coordinates		Tower Type	Reduced Level at center of top of pylon of Location.	Span (M)	Section Length (M)	Cumulative Route Length (M)	Sum of Adjacent Span (M)	Wind Span (M)	Weight Span HOT(M)			Weight Span COLD (M)			Remarks/ Crossing
				Easting	Northing								LEFT	RIGHT	TOTAL	LEFT	RIGHT	TOTAL	
1	AP 181/0 182/0	AP 181/0	21°30'00"LT	2840541	3779459	DC + 3	976.178	250.620	0.000	0.000	638.820	419.910	374	126	154	322	424	90	Valley & Scattered pine trees.
2	AP 183/0	AP 183/0	16°53'40"LT	2840313	3735556	DC + 0	969.050		260.620	259.620	431.800	215.900	371	44	415	475	24	499	Valley & Scattered pine trees.
3	AP 184/0	AP 184/0	13°55'49"RT	2840177	3730372	DC + 0	965.706	181.180	181.180	431.800	548.670	274.335	136	91	229	157	62	209	Cart Track & Scattered pine trees.
4	AP 185/0	AP 185/0	18°55'49"RT	2839661	3730940	DC + 0	968.380	367.480	367.480	799.280	601.675	300.835	277	86	101	310	173	143	Valley & Scattered pine trees.
5	AP 185/0	AP 185/0	50°54'08"RT	2839687	3740111	DB + 0	1029.046	254.180	254.180	1053.470	606.550	303.295	320	212	532	407	222	629	Valley & Scattered pine trees.
6	AP 187/0	AP 187/0	11°25'30"LT	2839320	3735882	DB + 0	1013.759	372.410	372.410	1425.880	627.450	311.225	161	161	322	150	176	326	Cart Track, Valley & Scattered pine trees.
7	AP 189/0	AP 189/0	16°58'36"LT	2839972	3740114	DC + 0	1007.789	250.040	250.040	1655.920	579.240	289.620	86	222	311	74	246	320	Valley & Scattered pine trees.
								329.200											Cart Track, Valley & Scattered pine trees.



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SL. NO.	Location	Tower No.	Align of Foundation	Tower Type	GPS Coordinates	Pioneer Line of (from this at Location)	Height (M)	Bottom Height (M)	Girth Base Length (M)	Sum of All Height Spacing (M)	Wind Force (M)	Weight Span (kg/m)			Weight Span (kg/m)			Remarks	
												LEFT	RIGHT	TOTAL	LEFT	RIGHT	TOTAL		
13	AP-201	AP-201A	00°11'25.12"N	CD-01	253332.34	304252	301	301	4448	101	351	542	52	120	165	165	165	003	Scattered Intra
14	AP-206	AP-206A	00°07'02.91"N	CD-01	263331.16	1001453	163	163	1410	231	307	550	17	325	354	354	354	338	Can Track & Scattered Intra
15	AP-207	AP-207A	00°07'35.13"N	CD-01	263225.90	1001652	218	218	1038	411	260	175	125	302	209	127	301	301	Scattered Intra
16	AP-208	AP-208A	00°07'23.11"N	CD-01	263227.10	1001210	225	218	3257	441	221	52	67	160	64	46	133	133	Can Track & Scattered Intra
17	AP-209	AP-209A	00°07'07.11"N	CD-01	263221.54	1001207	233	225	1410	457	211	135	28	185	174	185	185	185	Scattered Intra
18	AP-210	AP-210A	00°05'42.11"N	CD-01	243220.88	1735701	372	330	5718	650	354	200	339	017	365	370	754	754	Can Track & Scattered Intra
19	AP-221	AP-211B	00°05'48.11"N	CD-01	283223.37	1001120	337	321	6049	680	333	19	120	132	41	56	108	108	Can Track & Scattered Intra
20	AP-212	AP-212B	00°05'00.11"N	CD-01	283222.36	1704828	331	337	6315	637	319	218	230	335	237	107	344	344	Can Track & Scattered Intra
21	AP-213	AP-213B	00°06'46.11"N	CD-01	233102.37	1718308	300	300	6885	680	340	185	305	606	148	420	618	618	Scattered Intra
22	AP-214	AP-214B	00°06'41.11"N	CD-01	233104.31	1621688	243	300	7000	680	300	24	180	714	45	254	100	100	Can Track & Scattered Intra
23	AP-215	AP-215A	00°06'53.11"N	CD-01	243102.37	1656371	253	208	7270	456	254	10	247	257	22	254	257	257	Scattered Intra
24	AP-216	AP-216B	00°06'01.11"N	CD-01	243112.37	1606148	242	300	7303	516	253	16	30	14	31	50	127	127	Scattered Intra
25	AP-217	AP-217B	00°06'09.11"N	CD-01	243050.37	1653508	240	242	7775	670	260	372	8	201	337	29	318	318	Scattered Intra & Temporary Intra
26	AP-218	AP-218B	00°05'08.11"N	CD-01	283220.00	1621715	240	233	8111	649	163	327	37	170	344	58	452	452	Scattered Intra
27	AP-219	AP-219B	00°05'17.11"N	CD-01	283220.30	1708927	300	300	8820	511	258	222	170	302	251	582	606	606	Scattered Intra & Cell Track



14/05/2018
 R.O. SHILLONG
 (Signature)
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14/05/2018
 R.O. SHILLONG
 (Signature)
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SL NO	Locality (No)	Tower No	Date of Disruption	Tower Type	GPRS Coordinates		Height Location (m)	Span (m)	Pylon Length (m)	Cable Length (m)	Sum of A-Values Span (m)	Wind Span (m)	Weights Span (kg)			Weights Span (kg)			Remarks (Remarks)
					Easting	Northing							LEFT	RIGHT	TOTAL	LEFT	RIGHT	TOTAL	
28	AF 220	AF 2200	05/01/2017	11B-5	281014	276244	1792.061	357	100	8802E	019	310	42	113	171	17	253	333	Scattered bases & Cant. Vases
29	AF 221	AF 2200	17/01/2017	11B-5	282606	277113	1738.247	417	41E	9809E	042	351	530	107	407	59	209	487	MIN Unit (mass) = 6.347MA. Cant. Total with vases & bases
30	AF 222	AF 2200	20/02/2017	01B-1P	282256	277215	1824.111	228	50E	1262E	238	251	332	330	502	625	605	430	Scattered vases
Submitted by												Checked by			Responsible by			Appointed by	
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 R.O. SHILLONGS
 BRICKLINES TOWERS
 14-03-17

UNIQUE STRUCTURES & TOWERS LTD
 Tower No. - 220 (220A) - Construction of 220KV DCR Xing (Yimhai) - Mawngap-kaw Stations TA
 Order No. - CC-2585-1-ER-17/1 - 246042/2024 - 15047/25-10-24, Dated: 30.09.2024
 Tower Structure from AP-220 to AP-253 (Tower Length: 3.144Kms) of (M) LINE - MAWNGAP Section
 Check: Power End Composition of India Limited.

Table - 10.125a-17

SL NO.	Location No.	Tower No.	Angle of Rotation	Tower Type	GPS Coordinates		Height Level at centering of Location	Span (M)	Swatch Length (M)	Curr. Route Length (M)	Start of Adjacent Span (M)	Wind Speed (M)	Weight Span (KGM)			TOTAL	RIGHT	LEFT	TOTAL	Weight Span (KGM)	RIGHT	LEFT	TOTAL	Remarks/Crossings
					East (N)	North (E)							LEFT	RIGHT	TOTAL									
1	AP-221	222	90°	DB+0	2632095	377205	1824.11	303	303	303	303	152	0	0	303	0	0	303	0	0	0	303	146.8340, 146V, 01E	
2	AP-221	223	04°45'58"LL	DB+0	269376	377307	1785.19	190	303	303	498	252	27	27	375	294	102	375	375	402	402	METAL ROAD		
3	AP-224	224	77°51'02"RT	DB+0	2620130	377390	1745.19	335	196	493	481	244	301	301	44.00	288	308	44.00	308	288	40	40	METAL ROAD	
4	AP-225	226	02°35'07"LT	DB+0	2820855	377400	1705.85	390	205	744	645	303	40	40	510	0	0	510	0	0	0	510	VALLEY	
5	AP-226	226	53°13'17"RT	DB+0	2820855	377420	1658.85	307	300	1144	737	369	110	110	118	252	244	118	252	244	11	11	07 METAL RD	
6	AP-227	227	13°02'42"RT	DB+0	2820855	377432	1650.78	320	377	1521	627	345	150	150	264	137	137	264	137	137	0	0	METAL ROAD	
7	AP-227A	227A	05°40'37"RT	DB+0	2927804	377372	1684.19	320	320	1541	640	270	176	176	233	20	20	233	20	20	0	0	METAL ROAD	
8	AP-228	228	18°55'49"LT	DB+25	2827608	377257	1637.51	320	220	2081	441	221	157	157	273	101	101	273	101	101	0	0	132 KV DCR LINE, M, RD	
9	AP-228	228	44°72'17"RT	DB+25	2827608	377257	1631.47	367	221	2207	606	244	117	117	303	120	120	303	120	120	0	0	ENCLOSURE LINE	
10	AP-228	228	18°14'10"LT	DB+0	2827145	377245	1554.08	330	257	2040	707	388	81	81	306	66	66	306	66	66	0	0		
11	AP-231	231	68°20'07"LT	DB+0	2828642	377142	1588.24	363	530	3073	865	402	305	305	371	322	31	371	322	31	258	258		
12	AP-232	232	70°53'07"LT	DB+0	2828301	377112	1706.070	185	363	3452	109	353	318	318	563	207	207	563	207	207	0	0		

Checked by
 Wafar
 F. S. (Electrical)

Checked by power
 F. S. (Electrical)

Checked by
 Wafar
 F. S. (Electrical)



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SL. NO.	Location No.	Tower No.	Angle of Elevation	Tower Type	D-S Coordinates		Reduced Level at corner (m) at Leicestershire	Span (M)	Spectrum Length (M)	Elem. Height (m)	Span of Adjusted Span (M)	Wind Span (M)	Weight Span (K) (M)			Weight Span (G) (M)		Remarks/Comments	
					Seating	Northing							LEFT	RIGHT	TOTAL	LEFT	RIGHT		TOTAL
13	AP 232	233	6°35'30"PL	DB+0	2636141	377124	1680163	406	455	3560	582	281	59	171	102	131	157	76	
14	AP 234	234	31°52'19"RL	DB+0	2825835	377430	1080163	473	466	3594	379	448	215	269	484	248	278	526	
15	AP 235	235	02°22'57"RT	DB+0	2825374	377507	1587139	142	473	4487	632	311	207	186	276	184	237	420	
16	AP 236	236	56°41'37"RL	DB+0	2825225	377524	1676167	219	149	6616	388	384	39	34	6	58	1	87	
17	AP 240	240	0°22'00"LT	DB+0	2625683	377262	1688120	238	319	5935	438	229	185	437	24	217	62	281	GAZE TRACK
18	AP 241	241	00°02'03"LT	DB+0	2824009	377178	1705354	292	289	5074	401	246	245	194	408	285	210	474	
19	AP 242	242	12°17'07"RT	DB+0	2824748	376893	1694180	292	292	3328	588	283	61	200	286	30	222	294	GAZE TRACK
20	AP 243	243	10°13'24"LT	DB+0	2824675	376710	1682128	231	352	5658	664	282	128	41	169	111	9	130	
21	AP 248	244	05°38'46"LT	DB+0	2824421	376542	1687113	480	231	6690	711	366	184	227	317	225	354	592	
22	AP 245	245	00°46'23"LT	DB+0	2824060	376223	1669124	286	280	6370	766	383	153	144	287	136	164	280	
23	AP 246	246	11°10'51"LT	DB+0	2823814	376074	1663158	267	386	6658	434	269	142	5	134	149	58	77	
24	AP 247	247	12°44'14"LT	DB+0	2823532	375987	1661178	331	292	6088	583	232	280	231	481	317	269	576	
25	AP 248	248	10°11'56"RT	DB+0	2823250	375849	1647183	265	331	7209	696	298	100	334	284	72	185	207	
26	AP 249	249	02°15'01"RT	DB+0	2822998	375889	1623172	438	265	7803	663	347	131	185	287	130	146	276	
27	AP 249	249	05°51'53"LT	DB+0	2822584	375781	1680164	438	424	7837	656	248	262	223	485	282	263	544	

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Checked by
W. S. (Electrical)

Checked by
W. S. (Electrical)



MK

12/11/17

SIL Location Ref.	Tower No.	Angle of Oscillation	Tower Type	GPS Coordinates		Insured Level as compared to Location	Spire (ft)	Structure Length (ft)	Climb Route through (ft)	Sum of Adjacent Spire (ft)	Wind Span (ft)	Weight Span (lb)			Remarks/Comments		
				Easting	Northing							LEFT	RIGHT	TOTAL			
28 AP 200	201	20° 30' 30" RT	OC-10	2022522	3793720	1074 (40)	207	0109	427	274	44	146	172	5	177	182	
29 AP 202	202	17° 00' 00" RT	OC-10	2020197	3761115	1067 (81)	100	5359	364	177	12	362	384	17	481	499	
30 AP 203	203	22° 15' 30" L	OC-10	2022005	3784270	1034 (83)	194	10553	515	458	150	302	144	287	228	11	VALLEY RIVER
31 AP 204	204	17° 57' 30" RT	OC-10	2021504	3760779	1036 (82)	224	5274	1387	854	419	95	515	443	4	439	
32 AP 205	205	30° 55' 00" RT	SP-15	2020648	374895	1005 (80)	888	5940	924	652	310	170	480	670	117	787	

Approved
12/11/17

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12/11/17

UNIQUE STRUCTURES & TOWERS LTD

TW-01 (Pro-653A): Construction of 220kV D/C Killing (Ayrohat)-Mansarovar-New Shillong T/L
 Order No.: CC-CS/91-NEP/TWT-2458/GA/GA-1/5842(Services), Dated 30.08.2014.

Re-Route Tower Schedule from AP-255/0 to AP-259/0 (Route Length-124467Kms) SECTION KILLING S/S-MANSAROVAR S/S.

Client:- Power Grid Corporation of India Limited

Sl. NO.	Location No.	Tower No.	Angle of Deviation	Tower Type	GPS Coordinates		Reduced Level at center peg or Location.	Span (M)	Section Length (M)	Sum of Adjacent Span (M)	Wind Span (M)	Weight Span HOT (M)		Weight Span COLD (M)		Remarks/ Crossing.	
					Easting	Northing						LEFT	RIGHT	LEFT	RIGHT		TOTAL
1	255/0	255/0	58°10'28" RT	SPL+6	374895	2820845	1761.161	344.18	0	364	172	162	708	194	656		
2	256/0	256/0	48°51'56" LT	DB+0	374565	2820744	1751.705		344.18	566	278	72	229	57	208	fine tree & jungle mixed trees	
3	257/0	257/0	04°49'11" RT	DB+3	374479	2820524	1765.538	211.07	211.97	424	213	140	93	155	86	241	VALLEY fine tree & jungle mixed trees. LT LINE TO BE
4	258/0	258/0	35°19'21" LT	DB+0	374372	2820369	1770.544	214.07	214.07	472	236	121	198	128	227	355	fine tree & jungle mixed trees
5	258A/P	258A/0	07°19'41" RT	DB+0	374400	2820305	1758.755	256	256.000	474	237	60	24	134	31	91	fine tree & jungle mixed trees
6	259/0	259/0	13°06'27" RT	DB+0	374372	2819892	1763.653	216.45	216.45	474	237	142	407	157	525	682	fine tree & jungle mixed trees
								1,2447									

ROUTE LENGTH IN KM

Surveyed by  10/01/2015 (Date)	Checked by  10/01/2015 (Date)	Submitted by Rajat Sen PRASANT SEN (Signature) 10/01/2015 (Date)	Checked by 	Recommended by  (Signature) 10/01/2015 (Date)	Approved by B. C. D. (Signature) 10/01/2015 (Date)
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 UNIQUE STRUCTURES & TOWERS LTD
 POWER GRID CORPORATION OF INDIA LIMITED
 (Stamp)
 (Date)

POWER GRID CORPORATION OF INDIA LIMITED
 (Stamp)
 (Date)

Block Material

1. 100% of the weight of the material shall be used for the purpose of the project.
 2. The material shall be of the best quality and shall be free from any defects.
 3. The material shall be stored in a dry place and shall be protected from moisture.
 4. The material shall be used within the specified period of time.

Sl. No.	Quantity	Unit	Dimensions		Volume	Weight	Density	Specific Gravity	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Shrinkage (%)	Soil Classification	Remarks	Remarks	Remarks	Weight Spent (kg)		Weight Spent (kg)		Remarks		
			Length	Breadth													Left	Right	Left	Right			
1	100	m ³	10	10	100	2400	2.4	1.0	11	11	11	11	Well				100	100	100	100	11	11	
2	100	m ³	10	10	100	2400	2.4	1.0	11	11	11	11	Well				100	100	100	100	11	11	
3	100	m ³	10	10	100	2400	2.4	1.0	11	11	11	11	Well				100	100	100	100	11	11	
4	100	m ³	10	10	100	2400	2.4	1.0	11	11	11	11	Well				100	100	100	100	11	11	
5	100	m ³	10	10	100	2400	2.4	1.0	11	11	11	11	Well				100	100	100	100	11	11	
6	100	m ³	10	10	100	2400	2.4	1.0	11	11	11	11	Well				100	100	100	100	11	11	
7	100	m ³	10	10	100	2400	2.4	1.0	11	11	11	11	Well				100	100	100	100	11	11	
8	100	m ³	10	10	100	2400	2.4	1.0	11	11	11	11	Well				100	100	100	100	11	11	
9	100	m ³	10	10	100	2400	2.4	1.0	11	11	11	11	Well				100	100	100	100	11	11	
10	100	m ³	10	10	100	2400	2.4	1.0	11	11	11	11	Well				100	100	100	100	11	11	

Rate Certificate



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Sl. No.	Spanning No.	Project No.	BFB COORDINATES		Length of Distribution	Trench Type	Vertical Location (elevation of location)	Span (m)	Spanular Length (m)	Supportive Piers Length (m)	Spanular Spacing (m)	Wind Spacing (m)	Weight Span (kg/m)		Weight Span (kg)	Crossing		
			Bearing	Narrowing									Left	Right			Total	Left
11	AP 204	20140	374523	2816340	00'10"40" LT	110-0	1807.287	247	2600	2775	517	368	223	245	265	520	National Highway-44 LT, LTR	
12	AP 205	20140	374417	2816301	05'05"11" LT	100-0	1701.455	260	248	2775	517	368	88	112	4	50	Methtoad, 11M Lane	
13	AP 207	20140	374517	2816306	04'35"00" LT	100-0	1800.405	248	3923	3923	654	352	170	323	201	154	355	
14	AP 208	20140	374825	2817509	05'35"28" RT	100-0	1870.627	418	3429	3429	818	416	65	325	281	30	281	
15	AP 209	20140	375074	2817465	22'15"50" LT	100-0	1643.15	403	3942	3942	763	382	150	472	373	137	510	210/200m road LT
16	AP 210	20140	375074	2817465	To be decided later	To be decided later	1997.255	380	4202	4202	380	380	0	210	273	0	273	
											Route Length (M):-		4202					

S. K. Gupta

Suraj Kumar / Sushil Gupta
 Sr. Asst. Engineer (Electrical)
 PGCIL
 F. S. C. Buildings

Shant
 Approved by
 PGCIL
 25/5/18

Recommended by
 PGCIL
 25/5/18

Checked by
 PGCIL

Submitted by
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ANNEXURE - 4

***DETAILS OF POLE SCHEDULE OF
DISTRIBUTION LINE***

Survey Details of 33 KV Line from Mawrenkneng New 33/11 KV PSS to New Shillong 220/132 KV GIS

Sl No	Name	Latitude	Longitude	Span length (In mtrs)	Remarks
					Mawrenkneng 33/11 KV New PSS
1	DP1	25.550543	92.047467	0	
2	DP2	25.550546	92.047863	40	
3	DP3	25.550441	92.048363	51	
4	4P1	25.550336	92.04854	22	
5	SP1	25.550562	92.048939	48	
6	SP2	25.550761	92.049367	47	
7	SP3	25.55091	92.049807	48	
8	SP4	25.551104	92.050198	44	
9	SP5	25.551256	92.050628	47	
10	4P2	25.551375	92.05103	42	
11	SP6	25.551629	92.051176	33	
12	SP7	25.551755	92.05119	15	
13	DP4	25.552101	92.051374	43	
14	SP8	25.552474	92.051646	50	
15	DP5	25.552834	92.051971	51	
16	4P3	25.553337	92.052239	63	
17	DP6	25.553825	92.05214	55	
18	DP7	25.554223	92.051888	50	
19	SP9	25.554402	92.051449	48	
20	DP8	25.554623	92.050911	59	
21	4P4	25.555015	92.050459	64	
22	4P5	25.555607	92.050331	67	
23	SP10	25.555954	92.050624	43	
24	SP11	25.55631	92.050853	50	
25	SP12	25.556634	92.051197	33	
26	SP13	25.556982	92.051548	67	
27	SP14	25.557294	92.051907	50	
28	SP15	25.557623	92.052259	60	
29	4P6	25.558108	92.052697	70	
30	DP9	25.558459	92.052789	40	
31	DP10	25.55886	92.052593	40	
32	DP11	25.559021	92.052375	30	
33	SP16	25.559143	92.051902	50	
34	4P7	25.559315	92.051268	70	
35	DP12	25.559714	92.050904	60	
36	SP17	25.560223	92.050705	60	
37	DP13	25.560737	92.050613	50	
38	4P8	25.561053	92.05063	40	
39	SP18	25.561535	92.050953	60	
40	DP14	25.561967	92.051473	70	
41	SP19	25.562184	92.052018	60	
42	SP20	25.562335	92.052521	60	
43	DP15	25.562591	92.05319	70	
44	DP16	25.562888	92.053571	50	
45	SP21	25.563256	92.053855	50	
46	DP17	25.563804	92.05422	70	

Route is following Shillong BY PASS Road from 4 P1 to 4P 12. (3.189 km)

Provisional
Approved

02/02/20

Mason Chanda

Pragati

Page 1 of 5

Survey Details of 33 KV Line from Mawrenkneng New 33/11 KV PSS to New Shillong 220/132 KV GIS

Sl No	Name	Latitude	Longitude	Span length (In mtrs)	Remarks
47	SP22	25.564089	92.054578	50	<i>The Provisionally Approved</i>
48	SP23	25.564352	92.054904	40	
49	SP24	25.564688	92.055256	50	
50	4P9	25.565096	92.055847	80	
51	SP25	25.56552	92.056847	110	
52	SP26	25.56568	92.057323	50	
53	SP27	25.565839	92.057782	50	
54	SP28	25.565957	92.058156	40	
55	SP29	25.566111	92.058638	50	
56	SP30	25.566327	92.059189	60	
57	4P10	25.566665	92.059634	60	
58	DP18	25.56708	92.059822	50	
59	SP31	25.567508	92.060022	50	
60	SP32	25.567928	92.060218	50	
61	SP33	25.568369	92.060386	60	
62	SP34	25.56879	92.060578	50	
63	4P 11	25.569326	92.060794	60	
64	4P12	25.569311	92.061087	30	Shillong By Pass Crossing (Guarding)
65	4P13	25.571478	92.062584	280	<i>Approved</i>
66	4P14	25.573742	92.06405	290	
67	DP20	25.575387	92.065236	230	
68	DP21	25.575756	92.065402	40	
69	DP22	25.577624	92.066688	240	
70	DP23	25.578874	92.067369	160	
71	DP 24	25.579425	92.06793	80	
72	TP 1	25.580136	92.068462	100	
73	DP25	25.581132	92.06827	110	
74	DP26	25.582261	92.068426	130	
75	DP27	25.583355	92.068474	120	
76	DP28	25.583799	92.068629	50	
77	SP35	25.584265	92.068652	50	
78	SP36	25.58472	92.068818	60	
79	SP37	25.585163	92.068974	50	
80	SP38	25.585626	92.069095	50	
81	SP39	25.586195	92.069211	70	
82	DP29	25.587052	92.069643	100	
83	DP30	25.588182	92.069686	130	
84	DP31	25.589147	92.069578	110	
85	DP32	25.590067	92.069364	100	
86	DP33	25.590938	92.069713	100	
87	DP34	25.592021	92.068828	150	
88	TP 2	25.592928	92.067802	150	
89	DP35	25.594076	92.06744	130	
90	DP36	25.594866	92.067203	90	
91	DP37	25.59566	92.066887	90	
92	DP38	25.596878	92.065927	170	
93	DP39	25.597908	92.066119	120	
94	DP40	25.598792	92.066322	100	
95	DP41	25.599735	92.066524	110	

Signature

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उप प्रमुख (पै)
मकलीड, सि
विक्रम चौक
विक्रम चौक

Key Details of 33 KV Line from Mawrenkneng New 33/11 KV PSS to New Shillong 220/132 KV GIS

SI No	Name	Latitude	Longitude	Span length (In mtrs)	Remarks
96	SP40	25.600176	92.0666	40	
97	DP42	25.601309	92.066544	130	
98	DP43	25.602335	92.066481	110	
99	SP41	25.602988	92.066524	80	
100	DP44	25.604147	92.06659	130	
101	DP45	25.605096	92.066568	100	
102	DP46	25.605821	92.066855	90	
103	TP3	25.607516	92.066204	200	
104	DP47	25.607522	92.065167	100	
105	SP42	25.607329	92.064753	50	
106	SP43	25.607145	92.06429	50	
107	SP44	25.606941	92.063832	50	
108	SP45	25.606734	92.063356	50	
109	SP46	25.606501	92.062894	60	
110	SP47	25.606406	92.062415	100	
111	DP48	25.606062	92.061481	50	
112	DP49	25.606622	92.060521	110	
113	SP48	25.606846	92.060058	60	
114	SP49	25.607064	92.059519	50	
115	SP50	25.607329	92.059075	60	
116	DP50	25.607839	92.05814	110	
117	DP51	25.608322	92.057131	110	
118	DP52	25.608912	92.056373	100	
119	SP51	25.609066	92.055897	60	
120	DP53	25.609236	92.05541	50	
121	DP54	25.609878	92.054726	105	
122	DP55	25.61051	92.054465	75	
123	TP 4	25.611409	92.05446	97	
124	DP 56	25.612255	92.054558	99	
125	DP 57	25.613176	92.054497	101	
126	DP 58	25.613973	92.054919	97	
127	SP 52	25.614432	92.054815	51	
128	SP 53	25.614779	92.054696	38	
129	SP 54	25.615007	92.054668	25	
130	DP 59	25.615822	92.0544	94	
131	DP60	25.616776	92.053981	115	
132	DP 61	25.617374	92.053327	94	
133	DP 62	25.618004	92.052967	79	
134	DP 63	25.619113	92.053252	130	
135	DP 64	25.619919	92.052476	110	
136	SP55	25.620338	92.052207	60	
137	DP65	25.620749	92.051964	50	
138	4P15	25.621347	92.051258	100	
139	4P16	25.621552	92.050644	60	Shillong By Pass Crossing (Guarding)
140	DP66	25.621777	92.049653	110	
141	DP67	25.621877	92.048418	120	
142	DP68	25.621888	92.047246	120	
143	DP69	25.621871	92.046267	100	
144	SP56	25.621831	92.045807	40	

Chandra

विकास मंडल / Vikas Mandala
 27/02/17

vey Details of 33 KV Line from Mawrenkneng New 33/11 KV PSS to New Shillong 220/132 KV GIS

SI No	Name	Latitude	Longitude	Span length (In mtrs)	Remarks
145	DP70	25.621772	92.045347	50	
146	SP57	25.621618	92.044909	50	
147	SP58	25.621518	92.044543	40	
148	SP59	25.621367	92.044009	50	
149	SP60	25.621266	92.043464	60	
150	DP71	25.620935	92.042474	100	
151	DP72	25.621095	92.040928	160	
152	DP73	25.621095	92.039776	120	
153	DP74	25.620888	92.038805	100	
154	DP75	25.620485	92.03787	100	
155	SP61	25.620174	92.037422	60	
156	SP62	25.619997	92.036929	50	
157	DP76	25.619751	92.035965	100	
158	DP76	25.61959	92.034966	110	
159	SP63	25.619435	92.034503	50	
160	DP77	25.619217	92.033557	90	
161	DP78	25.619247	92.033348	20	
					Umir Mawkhanu Road Crossing (Guarding) Kaccha Road)
162	SP64	25.619045	92.032837	60	
163	SP65	25.618876	92.032365	50	
164	SP66	25.618591	92.031865	60	
165	SP67	25.61872	92.031369	50	
166	SP68	25.618495	92.030881	60	
167	SP69	25.618329	92.030314	60	
168	DP79	25.61808	92.029305	100	
169	DP80	25.617465	92.028757	90	
170	DP81	25.61716	92.02792	90	
171	DP82	25.616932	92.026961	100	
172	DP83	25.616831	92.026231	70	
173	DP84	25.61679	92.025395	90	
174	DP85	25.616818	92.024386	100	
175	DP86	25.616778	92.023388	100	
176	DP87	25.616802	92.022424	100	
177	DP88	25.617338	92.021554	100	
178	DP89	25.617662	92.020915	70	
179	DP90	25.617941	92.020347	70	
180	DP91	25.618381	92.019413	110	
181	DP92	25.618812	92.01853	100	
182	DP93	25.61917	92.018009	60	
183	DP94	25.619637	92.017159	100	
184	DP95	25.619962	92.016327	90	
185	DP96	25.620098	92.016108	30	
186	DP97	25.620224	92.015644	50	
187	DP98	25.620198	92.014489	120	
188	DP99	25.620751	92.0131	150	
189	DP100	25.621125	92.012248	90	

Handwritten signature and date: Approved 02/02/17

**ey Details of 33 KV Line from Mawrenkneng New 33/11 KV PSS to New
Shillong 220/132 KV GIS**

Sl No	Name	Latitude	Longitude	Span length (In mtrs)	Remarks	
190	DP101	25.621379	92.011803	50	APPROVED 02/07/17	
191	DP102	25.621807	92.011026	100		
192	DP103	25.622142	92.0103	80		
193	DP104	25.62251	92.009219	120		
194	TP05	25.622596	92.00806	110		
195	DP105	25.623649	92.007712	120		
196	DP106	25.624547	92.007089	120		
197	DP107	25.624963	92.006208	20		
198	DP108	25.624617	92.006879	80		
199	DP109	25.625056	92.005695	50		
200	DP110	25.625323	92.005158	60		
201	DP111	25.625676	92.004677	70		
202	DP112	25.625867	92.00411	60		
203	DP113	25.626158	92.003139	100		
204	DP114	25.626853	92.002513	100		
205	DP115	25.627021	92.002314	30		Lumkseh - Lumdiengsai Road Crossing (Guarding)
206	DP116	25.627093	92.002124	20		DP 6 to TP 8 the Saisej Road to Follow up to 766 mtr (0.766 km) & there is Road Crossing at DP118 to TP 7)
207	DP117	25.627903	92.001602	103		
208	TP6	25.62867	92.000983	105		
209	SP70	25.628839	92.000513	50		
210	SP71	25.628952	92.000033	50		
211	SP72	25.629017	91.999539	51		
212	SP73	25.629116	91.999046	50		
213	DP118	25.629215	91.998634	43		
214	TP7	25.629347	91.99834	32		
215	SP74	25.629125	91.997853	55		
216	SP75	25.628831	91.997505	50		
217	SP76	25.628462	91.997204	50		
218	DP119	25.62846	91.996674	31		
219	DP120	25.628035	91.996365	69		
220	DP121	25.62776	91.995696	76		
221	SP77	25.627998	91.995247	54		
222	TP8	25.628406	91.99488	55		
223	4P17	25.628564	91.993443	147		
224	DP122	25.628733	91.993247	29	New Shillong 220/132 KV GIS	
Total Span (In mtr)				17230		

Abstract :-

Sl no	Pole Arrangemet	Qty in nos	Total No of Poles (in nos)
1	SP(Single Pole)	77	77
2	DP(Double Pole)	122	244
3	TP (Triple Pole)	8	24
4	4P (Four Pole)	17	68
Total			413

APPROVED
02/07/17
Vikash Chandra
NERPSI

JOINT MESURMENT REPORT OF NEW 33KV MAWKYNREW S/S TO JONGKSHA S/S LINE BETWEEN PGCIL & NECCON ON DATED 08.07.2019

LOCATI ON NO	POLE STRUCTUR E	LATITUDE	LONGITUDE	Nos of pole	span length	STAY set	Earthing	Channel					Clamp			Guarding	Pin	Dnc	PG CLAM P	Fish plate
								Treated Type	9A	10A	V-CROSS	V-CROSS	8A	2A	3A					
1	AP1	25.41118	91.99715	4	7.73				4	1						4	1	1		
2	DP1	25.41348	91.99491	2	41.28	4						2				5	1	2	1	
3	SP1	25.41381	91.99662	1	37.73					1	1			2	1					
4	SP2	25.41419	91.99671	1	45.9					1	1			2	1					
5	DP2	25.41449	91.99663	2	34.9	1						2				3	6	3	1	
6	DP3	25.41499	91.99655	2	45.71	3	1					2				3	6	3	3	
7	SP3	25.41524	91.99657	1	37.58					1	1			2	1					
8	SP4	25.41561	91.99658	1	41.35					1	1			2	1					
9	DP4	25.41584	91.99651	2	18.15	4						2				3				
10	SP5	25.41634	91.99655	1	55.66					1	1			2	1		4	3	1	
11	DP5	25.41667	91.99651	2	38	2	1					2				3	6	3	3	
12	SP6	25.41701	91.99651	1	45.73					1	1			2	1					
13	DP6	25.41764	91.99651	2	64.7	3						2				3	6	3	3	
14	DP7	25.41803	91.99644	2	45	3						2				3	6	3	3	
15	SP7	25.41871	91.99672	1	42.7	1				1	1			2	1					
16	SP8	25.41863	91.99613	1	34.3					1	1			2	1					
17	DP8	25.41885	91.99604	2	26.7	3						2				3	6	3	2	
18	DP9	25.41947	91.99567	2	28.54	3	1					2				3	6	3	1	
19	SP9	25.41962	91.99556	1	23.8					1	1			2	1					
20	DP10	25.42007	91.99545	2	31.74	1						2				3	6	3	1	
21	DP11	25.42029	91.99532	2	52.04	1						2				3	6	3	1	
22	AP2	25.42109	91.99459	4	210	4		4						6		6	6	3	1	
23	SP10	25.42127	91.9944	1	37.08					1	1			2	1					
24	DP12	25.42168	91.9942	2	49.82	1						2				3	6	3	3	
25	DP13	25.42215	91.9941	2	53	3						2				3	6	3	3	
26	SP11	25.42247	91.99298	1	37.76					1	1			2	1					
27	DP14	25.42274	91.99291	2	32	1	1					2				3	6	3	3	
28	SP12	25.42314	91.99281	1	46.2	1				1	1			2	1					
29	SP13	25.42362	91.99264	1	53.8					1	1			2	1					
30	AP3	25.42417	91.99200	4	82	4		4						6		6	6	3	1	
31	AP4	25.42473	91.99167	4	85	1		4						6		6	6	3	1	
32	SP14	25.425	91.99151	1	35		1							2	1					
33	SP15	25.42531	91.99139	1	17.34					1	1			2	1					
34	SP16	25.42575	91.99125	1	55	1				1	1			2	1					
35	DP15	25.42621	91.99118	2	52.73	3						2				3	6	3	1	
36	SP17	25.42658	91.99124	1	44.5					1	1			2	1					
37	DP16	25.42728	91.99108	2	82.07	3	1					2				3	6	3	1	
38	DP17	25.42794	91.99108	2	90.71	1						2				3	6	3	1	
39	DP18	25.4288	91.99125	1	61.84	2						2				3	6	3	1	
40	SP18	25.42908	91.99126	1	112					1	1			2	1					
41	AP5	25.43018	91.99467	4	89.4	4		4						6		6	6	3	1	



Flash

95	SP 39	25.45389	91.98019	1	50.53					1	1		2	3					
96	SP 40	25.45445	91.98022	1	51.43					1	1		2	3					
97	DP 50	25.45500	91.98025	2	63.67	5				2	1		2	3					
98	SP 41	25.45541	91.98031	1	45.9	1				1	1		2	3			6	1	
99	SP 42	25.45581	91.98037	1	43.29					1	1		2	3					
100	SP 43	25.45618	91.98034	1	42					1	1		2	3					
101	DP 51	25.45669	91.98034	1	37.5	5							2						
102	SP 44	25.45686	91.98024	1	42.87	1				1	1		2	3			6	1	
103	SP 45	25.45722	91.98017	1	46.23					1	1		2	3					
104	SP 46	25.4574	91.98008	1	46					1	1		2	3					
105	DP 52	25.45795	91.97998	2	46	4				1	1		2	3					
106	DP 53	25.45831	91.9798	2	65.83	5							2				6	3	
107	SP 47	25.45889	91.97974	1	42.55					1	1		2	3			6	1	
108	SP 48	25.45921	91.97963	1	38					1	1		2	3					
109	DP 54	25.45958	91.97961	2	41.8	5							1						
110	SP 49	25.45972	91.9796	1	18.24					1	1		2	3			6	3	
111	SP 50	25.46014	91.97924	1	58.55					1	1		2	3					
112	DP 8	25.46051	91.97898	4	50	5							8				6	3	
113	SP 51	25.46082	91.97913	1	38.5					1	1		2	3					
114	DP 55	25.46116	91.97897	1	45.17								2						
115	DP 56	25.46143	91.97851	1	33.71	5							2	3					
116	SP 52	25.46178	91.97861	1	38.72								2						
117	DP 9	25.4622	91.97975	4	48	4				1	1		2	3			6	3	
118	DP 10	25.46232	91.97948	4	45	4							8				6	3	
119	DP 11	25.46248	91.97888	4	55.58								14				6	3	
TOTAL =				208	6407.4	215	6	47	2	52	52	112	198	56	2	393	351	174	170



Kash

**PROPOSED 33 KV LINE FROM 220/132/33 KV GIS Substation New SHILLONG To
33/11 KV. Mawpat Substation.**

SL No.	Name	Latitude	Longitude	Span Length (In mtrs)	Cumulative Span	ELEVATION	Remarks
1	4P1	25.628092	91.992629	0	0	1195	
2	3P1	25.627871	91.992711	26	26	1198	Road Crossing - Guarding Required.
3	3P2	25.627725	91.99201	72	98	1221	
4	SP1	25.627638	91.991609	41	139	1221	
5	DP1	25.62764	91.991019	59	199	1227	
6	3P3	25.627519	91.99064	40	239	1227	
7	3P4	25.627506	91.990314	33	272	1220	
8	3P5	25.627031	91.989995	62	333	1231	
9	3P6	25.626579	91.989573	66	399	1219	
10	3P7	25.626028	91.989162	74	473	1229	
11	3P8	25.62605	91.988676	49	522	1229	11 KV Line Crossing
12	3P9	25.626084	91.987919	76	598	1227	
13	3P10	25.626252	91.987352	60	658	1227	
14	SP2	25.626355	91.986812	55	713	1234	
15	3P 11	25.626122	91.986157	71	784	1236	
16	SP3	25.625803	91.985649	62	846	1236	
17	DP2	25.6255	91.985235	53	899	1231	
18	DP3	25.625203	91.984943	44	943	1232	
19	3P12	25.624853	91.98434	72	1015	1228	11 KV Line Crossing
20	3P13	25.624667	91.983614	76	1091	1238	
21	3P14	25.624314	91.983038	70	1161	1243	
22	DP4	25.624208	91.982588	47	1207	1258	
23	3P15	25.623657	91.981705	68	1275	1267	
24	DP5	25.623649	91.981703	40	1315	1265	
25	3P 16	25.62352	91.981243	48	1364	1269	
26	3P 17	25.623409	91.981163	15	1378	1269	Road Crossing & 11 KV line Crossing.
27	DP6	25.62348	91.980594	58	1436	1269	
28	DP 7	25.623502	91.97989	71	1506	1272	
29	3P 18	25.623514	91.979214	68	1574	1271	
30	DP 8	25.623072	91.978638	76	1650	1268	
31	DP 9	25.622805	91.97827	47	1697	1264	
32	DP 10	25.622635	91.977787	52	1749	1261	
33	DP 11	25.622237	91.977369	61	1810	1261	
34	3P 19	25.621796	91.97695	65	1875	1249	
35	3P 20	25.621733	91.97641	55	1930	1249	
36	3P 21	25.622037	91.975869	64	1994	1252	
37	4P 2	25.621725	91.97552	49	2043	1252	
38	SP 4	25.621908	91.975256	33	2076	1255	
39	SP 5	25.622132	91.974961	39	2115	1262	
40	DP12	25.62237	91.974597	45	2160	1270	
41	DP13	25.622488	91.974248	37	2198	1270	
42	SP6	25.622559	91.973822	43	2241	1270	
43	DP 14	25.622562	91.973334	49	2290	1284	
44	3P22	25.622649	91.973115	24	2314	1284	LT line crossing

(Handwritten signature)
 Project Manager
 NECCON Power Infra Ltd.
 Shillong

(Handwritten signature)
 Project Manager
 NECCON Power Infra Ltd.
 Shillong

(Handwritten signature)
 Project Manager
 NECCON Power Infra Ltd.
 Shillong

Sl. No.	Name	Latitude	Longitude	Span Length (In mtrs)	Cumulative Span	ELEVATION	Remarks
45	DP 15	25.622675	91.972806	31	2345	1285	
46	3P 23	25.622877	91.972605	30	2375	1285	
47	3P 24	25.623076	91.972424	29	2404	1292	
48	3P 25	25.62304	91.971993	43	2447	1292	
49	3P 26	25.622833	91.971713	36	2484	1283	
50	3P 27	25.622925	91.971255	47	2531	1284	
51	DP16	25.622722	91.970731	57	2588	1284	
52	3P28	25.622587	91.970241	51	2639	1283	Road Crossing - Guarding Required.
53	3P29	25.622444	91.969908	37	2676	1283	
54	DP 17	25.622605	91.969561	39	2715	1282	
55	sp7	25.62228	91.969123	57	2772	1282	
56	3p30	25.62214	91.968775	38	2810	1281	
57	DP18	25.621795	91.968152	73	2884	1277	
58	3p31	25.621637	91.967624	56	2939	1277	
59	3p32	25.621518	91.9673	35	2974	1277	
60	3p33	25.621376	91.966989	35	3009	1285	
61	3p34	25.620953	91.966699	55	3065	1280	
62	3p35	25.620409	91.966661	61	3125	1278	
63	3p36	25.620264	91.966502	23	3148	1278	
64	3p37	25.620272	91.966216	29	3177	1279	
65	3p38	25.620087	91.965981	31	3208	1279	
66	3p39	25.620018	91.965686	31	3238	1279	
67	3p40	25.620008	91.965378	31	3269	1273	
68	3p41	25.62013	91.964724	67	3336	1273	
69	3p42	25.62038	91.964517	35	3371	1271	
70	3p43	25.62016	91.964079	50	3421	1271	
71	3p44	25.620568	91.96335	86	3507	1278	
72	3p45	25.620057	91.963257	58	3565	1273	
73	3p46	25.619701	91.962799	61	3626	1286	
74	DP19	25.619497	91.96322	48	3674	1281	
75	DP20	25.619216	91.963261	31	3705	1281	
76	DP21	25.618744	91.96306	56	3761	1292	
77	3P 47	25.618318	91.962666	62	3823	1287	
78	3P 48	25.617994	91.962307	51	3874	1287	
79	3P 49	25.617381	91.962288	68	3942	1280	
80	DP 22	25.61689	91.962151	56	3999	1282	
81	3P 50	25.616924	91.96167	48	4047	1280	
82	3P 51	25.616294	91.960629	126	4173	1284	Road Crossing - Guarding Required.
83	DP 23	25.615948	91.96073	40	4213	1279	
84	DP 24	25.615897	91.960616	13	4225	1279	
85	3P 52	25.615854	91.96048	14	4240	1291	
86	3P 53	25.615664	91.959856	66	4306	1291	
87	DP 25	25.614706	91.959245	123	4429	1293	
88	DP 26	25.614538	91.958886	41	4469	1291	
89	DP 27	25.614504	91.958533	36	4505	1302	
90	3P 54	25.614359	91.957838	72	4576	1309	
91	3P55	25.614392	91.957176	66	4643	1314	

Handwritten signature and stamp:
 Head Office, Shillong District
 Mopden, Polo, Shillong

Handwritten signature:
 W. S. Chandra
 Project Manager (NEECON)
 NEECON Power Infra Ltd.
 Shillong

Handwritten signature:
 Project Manager
 NEECON Power Infra Ltd.
 Shillong

Handwritten signature and initials at the bottom of the page.

SL No.	Name	Latitude	Longitude	Span Length (In mtrs)	Cumulative Span	ELEVATION	Remarks
92	3P56	25.614517	91.95622	97	4740	1323	11 KV line crossing.
93	3P57	25.614492	91.956108	12	4751	1323	
94	3P58	25.614331	91.955425	71	4822	1331	Road crossing - Guarding Required.
95	3P59	25.614277	91.954978	45	4868	1331	
96	3P60	25.614183	91.954407	58	4926	1338	Road crossing - Guarding Required.
97	3P61	25.61422	91.954322	9	4935	1338	Road crossing & 11 KV line crossing
98	DP 28	25.61451	91.953825	59	4995	1338	
99	DP 29	25.61447	91.953353	48	5042	1336	
100	3P62	25.614417	91.952635	72	5114	1329	11 KV line crossing & road crossing.
101	3P63	25.614069	91.95208	68	5182	1334	
102	3P64	25.613906	91.951464	64	5247	1334	
103	3P65	25.613994	91.951305	19	5265	1339	
104	3P66	25.613876	91.95092	41	5306	1339	
105	3P67	25.613185	91.951237	83	5389	1333	
106	DP 30	25.612918	91.950925	43	5432	1323	
107	3P68	25.612939	91.950466	46	5478	1339	
108	3P69	25.612949	91.949814	65	5544	1339	Nala crossing
109	3P70	25.612612	91.950203	54	5598	1330	
110	3P71	25.612326	91.950622	53	5651	1323	
111	3P72	25.611877	91.950887	57	5707	1326	
112	3P73	25.611449	91.951479	76	5783	1315	
113	3P74	25.611136	91.951923	57	5840	1323	
114	4 P 3	25.610789	91.952038	40	5880	1323	
115	DP 31	25.610978	91.951594	49	5929	1323	
116	DP 32	25.610841	91.950882	73	6002	1333	
117	3 P 75	25.610518	91.950238	74	6076	1344	
118	DP 33	25.610961	91.949235	112	6188	1354	
119	DP 34	25.611156	91.949112	25	6214	1354	
120	SP 8	25.611309	91.948837	32	6246	1357	
121	3P76	25.611409	91.948311	54	6300	1357	
122	3P77	25.611533	91.947636	69	6369	1365	
123	3P78	25.611437	91.946942	70	6439	1358	
124	DP 35	25.610896	91.946382	82	6522	1377	
125	3P 79	25.610747	91.945843	57	6578	1377	
126	DP 36	25.610481	91.945283	63	6642	1379	
127	3P 80	25.610364	91.944892	41	6683	1383	
128	3P 81	25.610284	91.944286	61	6744	1383	
129	DP 37	25.610499	91.943882	47	6792	1387	
130	DP 38	25.610602	91.94344	46	6837	1401	
131	3P 82	25.610596	91.942967	47	6885	1401	
132	DP 39	25.610669	91.942561	41	6926	1413	
133	3P 83	25.610594	91.942033	54	6980	1433	
134	3P 84	25.610525	91.941505	54	7033	1433	
135	3P 85	25.610567	91.940976	53	7087	1436	
136	3P 86	25.611032	91.94	111	7197	1431	

(Signature)
 Area Manager
 NEPCO, Shillong Distribution
 Main Office, P.O., Shillong.

(Signature)
 Vinay Chandra
 Project Manager
 NEPCO (P) Ltd. (P) Manager
 SHILLONG

(Signature)
 F. Siangshai
 Project Manager
 NEPCO Power Infra Ltd.
 Shillong

(Signature)
 Manager (M&O)
 -111

SL. No.	Name	Latitude	Longitude	Span Length (In mtrs)	Cumulative Span	ELEVATION	Remarks
137	3P 87	25.611439	91.939385	77	7274	1449	
138	3P 88	25.611144	91.938731	73	7347	1443	
139	3P 89	25.610712	91.937895	97	7444	1437	
140	3P 90	25.610358	91.937249	76	7520	1437	
141	3P 91	25.610306	91.936361	89	7609	1411	
142	3P 92	25.609958	91.935343	109	7718	1404	Road Crossing
143	3P 93	25.609833	91.934798	56	7774	1404	
144	3P 94	25.610624	91.934828	88	7863	1406	
145	3P 95	25.611144	91.9349	58	7921	1406	
146	DP 40	25.611633	91.934335	79	8000	1408	
147	3P 96	25.611899	91.934095	38	8038	1408	
148	3P 97	25.612221	91.933793	47	8085	1414	
149	3P 98	25.611745	91.932979	97	8182	1410	
150	3P 99	25.611963	91.93236	67	8249	1525	
151	3P 100	25.611789	91.931771	62	8311	1438	
152	DP 41	25.611887	91.930995	79	8390	1460	
153	3P 101	25.611755	91.930194	82	8471	1471	
154	3P 102	25.611538	91.929329	90	8561	1482	
155	DP 42	25.610921	91.929026	75	8636	1501	
156	3P 103	25.610759	91.928549	51	8687	1513	
157	DP 43	25.61061	91.927952	62	8750	1504	
158	3P 104	25.610458	91.927376	60	8810	1525	
159	DP 44	25.610007	91.927646	57	8867	1525	
160	3P 105	25.609741	91.927838	35	8902	1525	
161	DP 45	25.609487	91.928118	40	8942	1525	
162	3P 106	25.609142	91.928415	49	8991	1525	
163	DP 46	25.608731	91.928171	52	9043	1526	
164	3P 107	25.608452	91.927939	39	9081	1550	
165	3P 108	25.608116	91.927961	37	9119	1550	
166	3P 109	25.607591	91.927474	76	9195	1544	
167	DP 47	25.607025	91.927499	63	9258	1548	
168	3P 110	25.606603	91.927501	47	9305	1548	
169	DP 48	25.606134	91.927443	52	9357	1550	
170	3P 111	25.605798	91.927235	43	9400	1550	
171	3P 112	25.605588	91.926934	38	9438	1566	
172	3P 113	25.605329	91.926775	33	9471	1563	
173	3P 114	25.605041	91.926595	37	9508	1563	
174	DP 49	25.604851	91.926922	39	9547	1563	
175	3P 115	25.604642	91.927061	27	9574	1563	
176	3P 116	25.604629	91.926672	39	9613	1575	
177	DP 50	25.604421	91.926457	32	9645	1575	
178	DP 51	25.604276	91.926186	32	9676	1591	
179	3P 117	25.604075	91.925996	29	9706	1591	
180	DP 52	25.603762	91.925807	40	9745	1591	
181	3P 118	25.603559	91.925723	24	9769	1588	
182	3P 119	25.603252	91.925516	40	9809	1588	
183	DP 53	25.603525	91.925346	35	9844	1596	
184	DP 54	25.603971	91.925264	50	9894	1603	

[Handwritten Signature]
 Sr. Engineer,
 Billing Distributor
 NEPCO, Poba, Shillong

[Handwritten Signature]
 Vikash Chandra
 Sr. Engineer (N&S)
 NEPCO, Poba, Shillong

[Handwritten Signature]
 F. Siangshai
 Project Manager
 NEECON Power Infra Ltd.
 Shillong

SL No.	Name	Latitude	Longitude	Span Length (In mtrs)	Cumulative Span	ELEVATION	Remarks
185	3P 120	25.604737	91.925407	87	9981	1597	
186	DP 55	25.604926	91.924918	53	10034	1597	
187	3P 121	25.604915	91.924594	32	10067	1592	
188	3P 122	25.605214	91.924501	35	10101	1592	
189	3P 123	25.605959	91.924473	83	10184	1595	
190	3P 124	25.606317	91.924823	53	10238	1610	
191	3P 125	25.606819	91.925032	60	10297	1610	
192	DP 56	25.607361	91.924259	98	10396	1617	
193	DP 57	25.607731	91.923951	52	10447	1617	
194	3P 126	25.607897	91.923557	44	10491	1621	
195	3P 127	25.607855	91.923193	37	10528	1621	
196	3P 128	25.608022	91.922897	35	10563	1638	
197	DP 58	25.608159	91.922617	32	10595	1638	
198	3P 129	25.608175	91.922288	33	10628	1638	
199	DP 59	25.608362	91.92194	41	10668	1642	
200	3P 130	25.608251	91.921647	32	10700	1642	
201	3P 131	25.608117	91.921139	53	10753	1652	
202	3P 132	25.608351	91.920979	31	10784	1652	
203	3P 133	25.608418	91.92082	18	10802	1652	
204	3P 134	25.608366	91.920263	56	10858	1661	
205	DP 60	25.608202	91.919757	54	10912	1661	
206	DP 61	25.608152	91.919134	63	10974	1657	
207	3P 135	25.607851	91.918826	46	11020	1640	
208	DP 62	25.607667	91.918527	36	11056	1640	
209	DP 63	25.607629	91.918159	37	11093	1640	
210	DP 64	25.607358	91.917846	43	11137	1620	
211	DP 65	25.607108	91.91749	45	11182	1620	
212	DP 66	25.606866	91.917137	44	11227	1624	
213	DP 67	25.606735	91.916887	29	11256	1624	
214	DP 68	25.606684	91.916522	37	11293	1624	
215	3P136	25.606707	91.916056	47	11339	1625	
216	3P 137	25.606723	91.915662	40	11379	1625	
217	3P 138	25.606657	91.915193	48	11427	1625	
218	DP 69	25.606436	91.914687	56	11483	1625	
219	DP 70	25.606091	91.914353	51	11534	1619	
220	3P 139	25.605796	91.914488	35	11569	1619	
221	DP 71	25.605604	91.914531	22	11591	1619	
222	DP 72	25.605365	91.914596	27	11619	1605	
223	3P 140	25.605339	91.914026	57	11676	1605	
224	3P 141	25.605493	91.913599	46	11722	1603	
225	DP 73	25.605734	91.91317	51	11773	1603	
226	3P 142	25.60543	91.912742	55	11827	1584	
227	3P 143	25.605005	91.912393	59	11886	1584	
228	DP 74	25.604575	91.912175	53	11939	1572	
229	4P 4	25.604479	91.911694	49	11988	1568	switching device to be placed.
Total span length in Ckt Km				11988			

[Signature]
Area Manager
Shillong Distribution
Bhagal, Poo, Shillong.

Vishal Chandra
Vishal Chandra
Area Manager
Shillong Distribution
Bhagal, Poo, Shillong.

[Signature]
F. Senghai
Project Manager
NEECON Power Infra Ltd.
Shillong

[Signature]

[Signature]

SL No.	Name	Latitude	Longitude	Span Length (In mtrs)	Cumulative Span	ELEVATION	Remarks
--------	------	----------	-----------	--------------------------	--------------------	-----------	---------

Abstract :-

Sl no	Pole Arrangemet	Qty in nos	No of Poles in arrangement	Total No of Poles (in nos)
1	SP(Single Pole)	7	1	7
2	DP(Double Pole)	74	2	148
3	3P (Three Pole)	143	3	429
4	4P (Four Pole)	4	4	16
5	Guarding	14		
	Total			600

Vikash Chandra
 विकेश चंद्रा / Vikash Chandra
 एन मॅनेजर (एन ई ऑफ पी एन अंड पी) / Dy Manager (NER-P)
 पावरग्रिड, शिल्लोण/POWERGRID, SHILLONG

F. Siangshai
 F. Siangshai
 Project Manager
 NEECON Power Infra Ltd.
 Shillong

[Signature]
 Area Manager,
 Area VIII, Shillong Distribution,
 M. E. S. C. L., Polo, Shillong.

[Signature]
 Deputy General Manager (NER-P)
 Area VIII, Shillong
 Shillong

[Signature]
 Chief Executive Officer
 Shillong Distribution Circle
 Meghalaya Energy Corporation Limited
 Lum Jindhat, Shillong

Location No. as per office drawing submitted	No. of Pole Locations (Type)				Pole Type (12 Meter Galvanized Pole/14.5 Meter Galvanized Pole)	Quantity of Galvanized Pole (Size-Wise)			Remarks / Justification for the necessity of using 14.5 Meter Galvanized
	1-Pole	2-Pole	4-Pole	Total		(12 Meter Galvanized Pole)	(14.5 Meter Galvanized Pole)	Total	
1	1			1	14.5		1	1	11 KV Tapping point to DT Sub-station from existing 11 KV Nangnyong Feeder OK
2				1	12	4		4	
3	1			1	12	2		2	OK
4	1			1	12	1		1	
5	1			1	12	1		1	OK
6	1			1	12	1		1	
7	1			1	12	4		4	OK
8	1			1	12	1		1	
9	1			1	12	1		1	OK
10	1			1	12	2		2	
11	1			1	14.5	2		2	(i) Existing composite line with 11KV Nangnyong Feeder. (ii) Existing 1/1 Lines 3Ph 4 Wire with 2 feeders. (iii) Due to Less clearance between 11KV Nangnyong line, 1/1 Lines 3Ph Wire and the proposed New 33 KV Mainpat Line. (iv) Less clearance from the existing building. OK
12	1			1	14.5	4		4	
13	1			1	12	1		1	OK
14	1			1	14.5	1		1	
15	1			1	14.5	1		1	To avoid overlapping of conductor and to maintain clearance with the existing Double Pole connecting to the DT Sub-station. OK
16	1			1	14.5	1		1	
17	1			1	14.5	1		1	To avoid overlapping of conductor and to maintain clearance with the existing Four Pole structure. OK
18	1			1	14.5	2		2	
19	1			1	12	2		2	(i) Due to Less clearance between 11KV Nangnyong line, 1/1 Lines 3Ph 4 Wire and the proposed New 33 KV Mainpat Line. (ii) Less clearance from the existing building. OK
20	1			1	12	1		1	

ITEMS / COMMENTS ON REQUIREMENT OF POLES ALONG THE ROUTE FOR THE CONSTRUCTION OF 33 KV LINE FROM 33/11 KV MAHAPAT NUB STATION (PROPOSED) TOWARDS THE EXISTING 33/11 KV SE FALLS SUBSTATION UNDER NERSIP SCHEME (DMS-03).

Sl No	Inventory Name as appearing in schedule	No. of Pole Locations (Types)				Poles Type (12 Metre Galvanized Pole/1.5 Metre Galvanized Pole)	Quantity of Galvanized Pole (Size-Wise)				Remarks / Justification for the necessity of using 1.5 Metre Galvanized Pole
		2-Pole	3-Pole	4-Pole	Total		(12 Metre Galvanized Pole)	(1.5 Metre Galvanized Pole)	Total		
1	DP-1	1			1	12		2	2	OK	
2	DP-2		1		1	12		2	2	OK	
3	SP-1	1			1	12		1	1	OK	
4	SP-2	1			1	12		1	1	OK	
5	SP-3	1			1	12		1	1	OK	
6	SP-4	1			1	12		1	1	OK	
7	SP-1			1	1	12		4	4	OK	
8	SP-4	1			1	12		1	1	OK	
9	SP-6	1			1	12		1	1	OK	
10	SP-5	1			1	12		1	1	OK	
11	DP-1		1		1	12		2	2	OK	
12	DP-1		1		1	12		2	2	OK	
13	DP-5		1		1	12		2	2	OK	
14	SP-8	1			1	12		1	1	OK	
15	DP-4		1		1	12		2	2	OK	
16	DP-7		1		1	12		2	2	OK	
17	DP-8		1		1	12		2	2	OK	
18	SP-2			1	1	12		4	4	OK	
19	SP-9	1			1	12		1	1	OK	
20	SP-10	1			1	12		1	1	OK	
21	SP-11	1			1	12		1	1	OK	

2)

3)

Sl. No.	Location/Service per survey showing substation	No. of Pole Locations (Type)				Poles Type (12 Meter Galvanised Pole/14.5 Meter Galvanised Pole)	Quantity of Galvanised Pole (Size- Wise)			Remarks / Justification for the necessity of using 14.5 Meter Galvanised Pole
		3-Pole	2-Pole	4-Pole	Total		(12 Meter Galvanised Pole)	(14.5 Meter Galvanised Pole)	Total	
11	SP/19	1			1	14.5	1	1	To avoid overlapping of conductor and to maintain clearance with the existing 1 mtr Four Pole structure.	
12	SP/20	1			1	14.5	1	1		
13	SP/1			1	1	14.5	4	4		
14	SP/21	1			1	14.5	1	1	(1) Due to Less clearance between 11KV mangyngsong line 1.1T Lines 319/A Wire and the proposed New 33 KV Mawpat Line	
15	SP/22	1			1	14.5	1	1		
16	SP/11		1		1	14.5	2	2	(1) Less clearance from the existing building.	
17	SP/8			1	1	14.5	4	4		
Total		25	14	8	47		54	31	85	

Note: Proper Grounding needs to be put in place for road crossing and in sections where composite lines is crevitable.


 Chief Executive Officer (SD)
 Merydell Shilong

ANNEXURE - 5

***NoC FROM CONCERNED LAND OWNER/
HEADMAN /VILLAGE COUNCIL***

DORBAR SHNONG MAWPDANG

KHYRIM SYIEMSHIP

SHILLONG - 793018, EAST KHASI HILLS

Date: 22/8/17

Ref No:

To

The Deputy Manager
Power Grid,NERPSIP
Nongrah,Lapalang
Shillong.

Sub:- No Objection Certificate (NOC) for 220KV

Sir,

With reference to the subject cited above, we would like inform you that the Dorbar Shnong Mawpdang has no objection for the construction of 220KV Line passing through our Village land and our jurisdiction as per your Map and Drawing.

We therefore, the undersigned issued this Certificate to your Office as per the following terms and conditions:-

1. That the Power GRID Corporation of India Ltd, should compensate to all the lands where the Towers is to be erected as per the rate approved by the District Council.
2. That the Power GRID Corporation of India Ltd, should compensate to all the Trees, Crops, Vegetables and Etc where the Line is passing through and affected as per the rate approved by the Government authorized Offices.
3. That the Power GRID Corporation of India Ltd, should inform from time to time in relation to any complaint or disputes to the headman of the Dorbar Shnong Mawpdang in the future to come.

Thanking You


Stai Sing Syiem

Sordar Shnong Mawpdang
Corder
Shnong Mawpdang
Khyrim Syiemship
East Khasi Hills


Robinson Syiem

Gen.Secy Shnong Mawpdang
General Secretary
Shnong Mawpdang
Khyrim Syiemship
East Khasi Hills

036

No Objection Certificate

I Shri / Smti Thomas KhosumwidS/o D/o
(L) Puan Khosumwid aged about 50 yrs old and residing
at Sohryngkham East Khasi Hills District and

Owner of Land mentioned hereunder at clause (1), hereby on this day the 3/04/18

2017 solemnly affirm and declare as follows:

1) That I have no objection whatsoever for MePTCL / PGCIL to construct 220 KV
power Transmission Line passing through my land located at
Sohryngkham (H.P. 109) Village Sohryngkham District E. K. H.
.....

2) That I am making this declaration sincerely and conscientiously, believing the same to be true and with full knowledge that it is on the strength of this declaration that MePTCL / PGCIL to pay compensation to me, in accordance with the schedule of rates issued by the Deputy Commissioner.....District Council.....

Thomas
Land Owner

Witness:

1. Chhenuf
SORDAR
Sohryngkham
2. Khym Syiemship, E. K. Hills

No Objection Certificate

I Shri/ Smti Losina Kharkong S/o D/o

L. KORNELIUS KHARJAN aged about 70 years old and residing
at New Chabaut Loc 73 at Umpyngmai E.K.H. District and
Owner of Land mentioned hereunder at clause (I), hereby on this day the 15/Jan/2017

2017 solemnly affirm and declare as follows:

1) That I have no objection whatsoever for MePTCL / PGCIL to construct High tension
220KV Transmission lines passing through my land located at
Umpyngmai village Loc 73 District E.K.H.
Assam - Meghalaya.

2) That I am making this declaration sincerely and conscientiously, believing the same to be true
and with full knowledge that it is on the strength of this declaration that MePTCL / PGCIL to pay
compensation to me, in accordance with the schedule of rates issued by the Deputy Commissioner
District Council

Land Owner

Witness:

1. Bosstar Lamare B Son - law
2. Pdianghem Kharkong (Bangor) (y/D)
- 3.

Losina

**OFFICE OF THE
DORBAR SHNONG Mawripiéh A
MYLLIEM SYIEMSHIP East Khasi Hills
Meghalaya**

Under Rule 10(5) of the Administration of Myllem Syiemship Rule 2015 of the Khasi Hills Autonomous District (Appointment and Succession of Syiem, Deputy Syiem, Electors and Rangbah shnong of Myllem Syiemship) Act 2007.

Ref.No

Date: 19/10/2017

No Objection Certificate

Da kane la pynshisha ba na ka liang jong ka Dorbar Shnong Mawripiéh A ryngkat bad ki trai jaka ngim don kano kano ka jingpyrshah ha kaba ia dei bad ka jingthmu jong ka Office Power Grid Corporation of India Limited ban shna ia ka Tower Light ka kaba ia id lyngba hapoh jong ka Shnong Mawripiéh A

Dated: Mawripiéh A
The 19/10/2017

B.P
Signature of Issuing Authority

with Seal
Phrur Khairang
Rangbah Shnong
Mawripiéh-A

**OFFICE OF THE
DORBAR SHNONG Mawripieh B
MYLLIEM SYIEMSHIP East Khasi Hills
Meghalaya**

Under Rule 10(3) of the Administration of Mylliem Syiemship Rule 2015 of the Khasi Hills Autonomous District (Appointment and Succession of Sgiem, Deputy Sgiem, Electors and Rangbah shaong of Mylliem Syiemship) Act 2007.

Ref.No

Date: 19/10/2017

No Objection Certificate

Da kane la pynshisha ba na ka liang jong ka Dorbar Shnong Mawripieh B ryngkat bad ki trai jaka ngim don kano kano ka jingpyrshah ha kaba ia dei bad ka jingthmu jong ka Office Power Grid Corporation of India Limited ban shna ia ka Tower Light ka kaba ia id lyngba hapoh jong ka Shnong Mawripieh B

Dated: Mawripieh B
The 19/10/2017

A. Mawripieh
Signature of Issuing Authority
with Seal
**Rangbah Shnong
Mawripieh 'B'
Mylliem Syiemship**

DORBAR SHNONG PHANSAWRANG

P.O. MAWPUN, MYLLEM SYIEMSHIP
EAST KHASI HILLS DISTRICT
MEGHALAYA - 793115

Under Rule 10(3) of the Administration of Myllem Syiemship Rules, 2015 of the Khasi Hills Autonomous District (Appointment and Succession of Syiem, Deputy Syiem, Electors and Rangbah Shnong of Myllem Syiemship) Act, 2007.

No. DSP/NOC/2017

Date: 19/10/2017

NO-objection Certificate.

Da kame nga bynshisha ba ka Dorbar Shnong jong ka Shnong Phansawrang kom don kono kono ka Objection na ka bynba ka Power Grid Corporation of India Ltd. ba kan pyniaid lymba ia u Tower Line lymba ka Shnong Phansawrang.

Bad ha kaba hadai bad ka jingsien ia u jaka kiba u Tower Line um ieng bad u line um iaid katei ka Company kon hap ban ~~now~~ iakgruh ia ki thoi saka (Land-owner) kon ia kien bngwthuh lymbat ka jingdon lang bad u Rangbah Shnong.

Dated: Phansawrang
The 19/10/2017

Rangbah Shnong
Phansawrang.


Rangbah Shnong
Phansawrang - B
Myllem Syiemship.

DORBAR SHNONG LAWMEI

MYLLEM SYIEMSHIP

EAST KHASI HILLS, MEGHALAYA

(Under Rule 10(3) of the Administration of Myllem Rules, 2015 of the Khasi Hills Autonomous District (Appointment and Succession of Syiem Deputy Syiem, Electors and Rangbah Shinong of Myllem Syiemship) Act, 2007)

Ref. No:.....

Date: 31/12/19

NO OBJECTION CERTIFICATE

Da kane la pynshisha ba na ka liang jong ka
Dorbar Shnong Lawmei ngin den kano kano ka jingpynshah
ka kaba iadei bad ka jingthimie yang ka office Power Grid
Cooperation of India Ltd. ban shina is ki Tower light
ka ba iadei jingthimie yang ka Shnong Lawmei

Signature of issuing
Authority with Seal


Rangbah Shinong
Dorbar Shnong
Lawmei

OFFICE OF THE DURBAR SHNONG NONGBSAP

MYLLEM SYIEMSHIP
EAST KHASI HILLS DISTRICT: MEGHALAYA - 793115

Under rule 10(3) of the administration of Myllem Syiemship Rules, 2015 of the Khasi Hills Autonomous District (Appointment and succession of Syiem, Electors and Rangbah Shnong of Myllem Syiemship) Act 2007.

No.DSN/RC/2015 - /

Date: 27/12/19

NO OBJECTION CERTIFICATE

Da kane lo pynshah lo na ka liang jang ka Durbar Shnong Nongbsap A, Nongbsap B bad Nongbsap Mission ngem din kano kano ka jingpynshah ha kaba iadi bad ka jingthma jang ka office Power Grid Corporation of India Limited ban shma ia ka Tower Light ka kaba iadi lyngba hapoh jang ka shnong Nongbsap A, Nongbsap B bad Nongbsap Mission.

Dated: 27/12/19


place: Nongbsap

Nongbsap - A →

Rangbah Shnong
Nongbsap
Myllem Syiemship

Nongbsap - B →

Rangbah Shnong
Nongbsap "B"
Myllem Syiemship

Nongbsap - Mission →

Rangbah Shnong
Nongbsap Mission
Myllem Syiemship

Signature of Issuing Authority
with Seal

ANNEXURE - 6

***SAMPLE CASE OF COMPENSATION
PAYMENT***

OFFICE OF THE EXECUTIVE COMMITTEE
KHASI HILLS AUTONOMOUS DISTRICT COUNCIL
SHILLONG.

No.DC.RBF/XI(L)/107/2016 - 17 / 25

Dated Shillong, the 17th August, 2017.

To


The Sordar Shnong Mawpdang,
Khyrim Sylemship, Shillong - 793018,
East Khasi Hills District, Meghalaya.

Subject: Land Valuation Certificate.

Reference: Your Application dt. 7th August, 2017.

With reference to your letter indicated above, I am directed to inform you that the market value of the land located within Mawpdang Village Khyrim Sylemship, Shillong - 793018, East Khasi Hills District, Meghalaya is ₹ 120/- (Rupees One hundred twenty) only, Per Sq.Ft.




Deputy Secretary to the Executive Committee,
Khasi Hills Autonomous District Council,
Shillong.

002

Compensation Bill

MEGHALAYA POWER TRANSMISSION CORPORATION LIMITED.

Name of the Project under NERPSIP Scheme: 220 K.V double circuit line between Haingap - New Siphong

- 1. Name of Land Owner: Debar Shong Mawpdang
- 2. Father's Name
- 3. Village/Town/Locality/ Mawpdang
- 4. District East Khasi Hills District
- 5. Amount of Compensation in Rs. 2337592

Bank Account No. 30270100006759 Branch

Name Bank of Baroda

IFSC No. DARBOMAWDIA Branch

Code MAWDIA

Details of Crops: (As per Annexure attached) Compensation against 220 KV tower footing area under Mawpdang village is enclosed in Annexure 1

Signature of Land Owner [Signature] For POWER GRID

Khyrim Syiemship Junior Engineer/Engineer/Sr. Engineer/Manager

East Khasi Hills

- Witness:
- 1. Robinson Syiem - [Signature]
 - 2. Shaiber Syiem - [Signature]

Certified that the land under Mawpdang village

Village/Town/Locality, District East Khasi Hills, belongs to

Sri/Smt. Debar Shong Mawpdang

The crops/trees mentioned in the Annexure are being damaged during construction of the said line. Necessary compensation towards the damages may be released to the affected land owner.

[Signature]

Sardar

Shnong Mawpdang

Khyrim Syiemship

Signature of Work/Headman

East Khasi Hills

On behalf of MePTCL

Name of Transmission Line :- 220 KV D/C Transmission line killing -Mawngap- New Shillong (Mawngap -New Shillong Section)

ANNEXURE -I

Compensation against 220 KV Tower footing area under Mawpdang Village, East Khasi Hills Meghalaya

Sl No	Location No	Village Name	Type of tower	Area of tower footing(in square metre)	Area of tower footing(in square feet)	Rate of land(Per square feet) (in Rs)	Amount to be compensated(in Rs)	Bank Account Holder + Joint Acc Holder Name	Address of Account Holder	Bank account No	Name of bank	Branch Address
1	AP-93	Mawpdang	DC+0, DFR (1.5 mtr Extension)	131.91	1439.87924	120	170385.508	[i]Dorbar Shingong Mawpdang [ii] Stajoling Syiem [iii] Robinson Syiem	Mawpdang Village, East Khasi Hills, Shillong, 793012	38270100006759	Bank of Baroda	Mawdiangdiane, NEGRIMS Complex, Meghalaya, Pin 793012
2	AP-94	Mawpdang	DC+0, DFR	119.16	1282.63824	120	153916.589					
3	AP-95	Mawpdang	DC+0, DFR (1.5 mtr. eg. Extension)	131.91	1439.87924	120	170385.508					
4	AP-96	Mawpdang	DB+0, WTR	96.57	1039.47948	120	124737.538					
5	AP-97	Mawpdang	GB+0, DFR(with 3 mtr. extension at two legs)	117.66	1266.49224	120	151979.089					
6	AP-98	Mawpdang	DB+0, DFR (+5 mtr. leg Extension)	117.66	1266.49224	120	151979.089					
7	AP-99	Mawpdang	DB+0, DFR (+3 mtr. Extension)	117.66	1266.49224	120	151979.089					
8	AP-100	Mawpdang	DB+3, DFR	117.66	1266.49224	120	151979.089					
9	AP-100A	Mawpdang	DB+3, DFR	117.66	1266.49224	120	151979.089					
10	AP-101	Mawpdang	DB+0, DFR	96.57	1039.47948	120	124737.538					
11	AP-102	Mawpdang	DC+0, DFR(3 mtr. Extension)	145.32	1564.22448	120	187706.988					
12	AP-103	Mawpdang	DD+0, DFR (1.5 mtr. extension)	152.35	1639.8954	120	196787.448					
13	AP-104	Mawpdang	DC+0, DFR	119.16	1282.63824	120	153916.589					
14	AP-105	Mawpdang	GB+0, DFR	96.57	1039.47948	120	124737.538					
15	AP-106	Mawpdang	DC+0, DFR(+1.5 mtr. Extension)	131.91	1439.87924	120	170385.508					
				1809.73	19479.93372		2337592					


Robinson Syiem
East Khasi Hills

DORBAR SHNONG MAWPDANG

KHYRIM SYIEMSHIP
SHILLONG - 793018, EAST KHASI HILLS

Ref. No. :

Date : 26-12-17

To,

The Project Manager,

Power Grid, Lapalang, Meghalaya, Shillong,

Subject: Payment of Compensation to Dorbar Shnong Mawpdang.

Sir,


With reference to the subject mentioned above, we would like to inform you that Dorbar Shnong Mawpdang has an Account transaction at Baroda Bank Neigrihms Branch. An Account Number was 30270100006759 / 30270100006759

Regarding with Compensation to be paid by your office to the Dorbar Shnong Mawpdang for Land and Trees for the construction of 220kv tower lines should be paid in this Account. Photo copy of pass book are enclosed herewith.

This is for your information and necessary action.

Thanking,

Yourfaithfully,


Sordar Shnong Mawpdang.

Sordar
Shnong Mawpdang
Khyrim Syiemship
East Khasi Hills


Gen.Secy. Shnong Mawpdang.

General Secretary
Shnong Mawpdang
Khyrim Syiemship
East Khasi Hills

1. पिन नं.
2. आईडी
3. मोबाइल
4. आपका नाम।
5. पुराना
6. प्रोब्लम
7. डेबिट
8. पोलिस
9. पासपोर्ट नं./Passport No.
10. ई-मेल का पता/Email address :



उपयोग सुझाव/Useful Tips :

1. अपने खाते की जानकारी प्राप्त करने के लिए अपना मोबाइल नंबर और ई-मेल आईडी रजिस्टर करवाएं/ Register your Mobile number and email-id for getting information about your account.
2. आप सुझाव के लिए टॉल-फ्री नंबर पर कॉल कर सकते हैं/ You may call toll free number for inquiry etc.
3. पासबुक को नियमित रूप से अद्यतन करवाएं/ Get pass-book updated regularly.
4. जहाँ कहीं संभव हो स्थायी अनुदेश जारी करें/ Issue standing instructions wherever possible.
5. पासबुक में कहीं भी अपने हस्ताक्षर न करें/ Do not put signature any where in pass-book.
6. हम आपके सुझावों का स्वागत करते हैं/ We welcome your suggestions.
7. किसी भी प्रकार की कठिनाई के मामले में शाखा प्रबंधक से संपर्क करें/ Contact branch manager in case of difficulties/Value added services.

बैंक ऑफ बड़ोदा Bank of Baroda

Branch Address :
 HAWDANGDIANG, MESHALATA
 MESHALATA COMPLEX
 HAN DIANG DIANG
 SHILLONG
 PIN : 793012
 URL : www.bankofbaroda.com
 TEL : 0364-2538039 FAX :

Customer ID : 39480144
 Account No : 3027819880553
 Scheme Desc : BARODA ADVANTAGE 36 BEN
 A/c Holder : DORBAR BUNANG HANPANG
 Joint Holders : MR. STRI BING SYIEN
 MR. ROBINSON BAIEN

Occupation : OTHERS
 Operation Mode : BOTH JOINTLY OR SURVIVOR
 Comm Address :

HANPANG VILLAGE
 EAST KHASS HILLS DISTRICT
 SHILLONG
 793018

Machine Added : NO
 Machine Name : शाखा प्रबंधक / BRANCH MANAGER
 A/c Oper Date : 27-07-2018


DORBAR SHNONG SOHRYNGKHAM PYLLUN

Khyrim Syiemship
East Khasi Hills District
Meghalaya – Shillong – 793021

Date: 04/04/18

NO OBJECTION CERTIFICATE

This is to certify that the Dorbar Shnong of Sohryngkham Village East Khasi Hills District hereby declared that it has No Objection for MePTCL/PGCIL to construct 220 Kv.DC/TL Power transmission Line passing through Our Village and the MePTCL/PGCIL has to Pay the Compensation to the Land Owner in accordance with the Schedule of rates Issued by the District Council.


SORDAR
Sohryngkham
Khyrim Syiemship, E. K. Hills



No Objection Certificate

I Shri / Smti Prakash Shriyog Sahayngkham Bilkung Palla.....S/o D/o
aged about.....old and residing
at.....District and

Owner of Land mentioned hereunder at clause (I), hereby on this day the 26/03/2018
2017 solemnly affirm and declare as follows:

1) That I have no objection whatsoever for MePTCL / PGCIL to construct 22 KV DC / TL
Power Transmission Line.....passing through my land located at
Sahayngkham (At 72650) village, Sahayngkham.....District E. K. H.

2) That I am making this declaration sincerely and conscientiously, believing the same to
be true and with full knowledge that it is on the strength of this declaration that MePTCL /
PGCIL to pay compensation to me, in accordance with the schedule of rates issued by the
Deputy Commissioner.....District Council.....

Witness:

2.

Prakash Shriyog
Land Owner

SORDAR
Sahayngkham
Khyim Sylemship, E.

038

Compensation Notice

NOTICE UNDER INDIAN ELECTRICITY ACT-2003
MEGHALAYA POWER TRANSMISSION CORPORATION LIMITED.

Name of the Project under NERPSIP Scheme: 220 KV DC/TL from Mawngap to New Shillong

To

Sri/Smti. Hendman Sohryngkham

Location AP-75-80

Village/Tower/Locality Sohryngkham

P.O. Sohryngkham District E.K. 14

Date 22/03/2015

Sir/Madam,

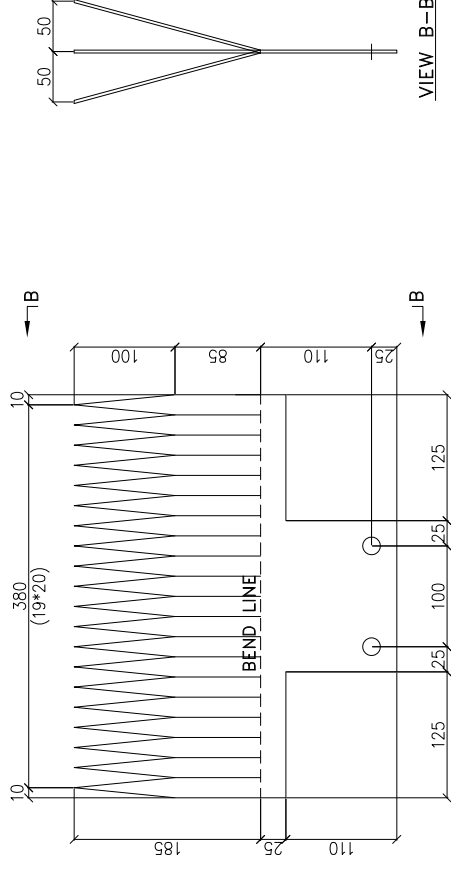
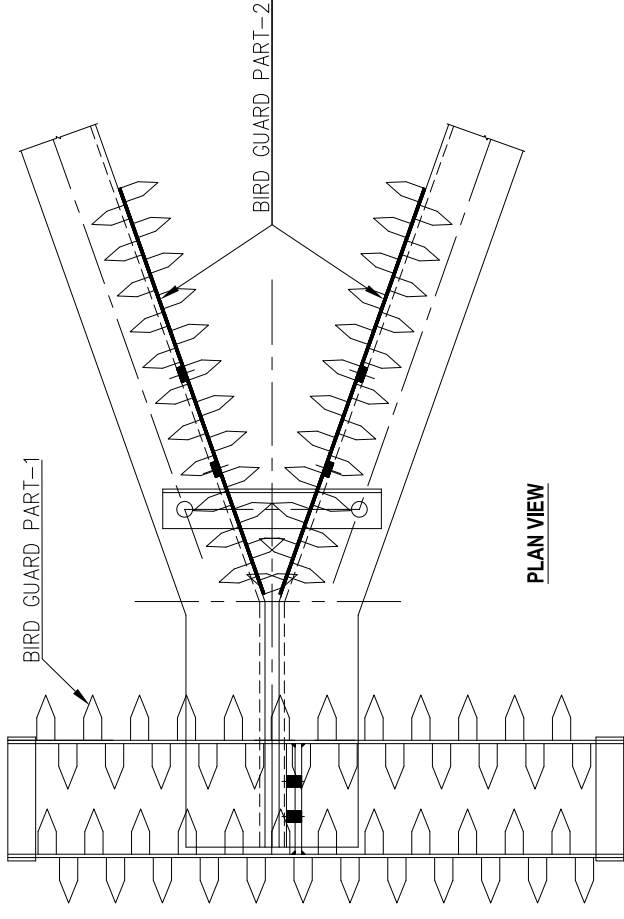
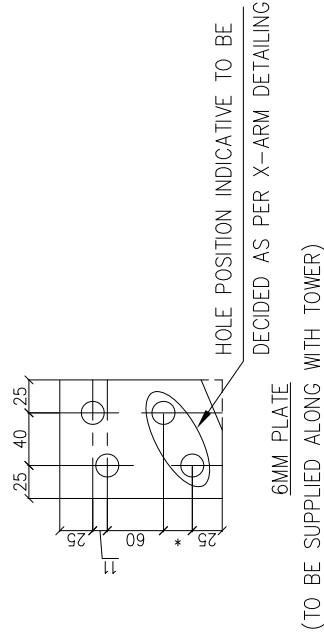
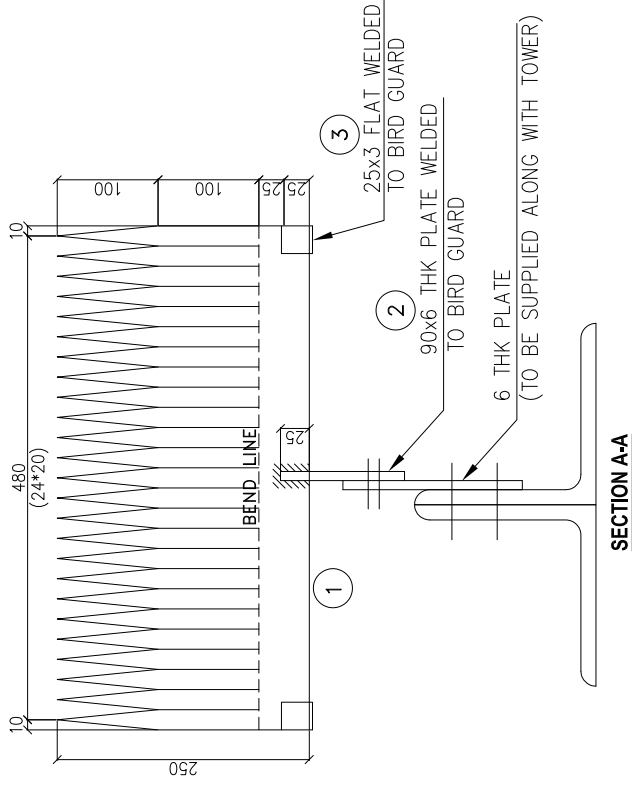
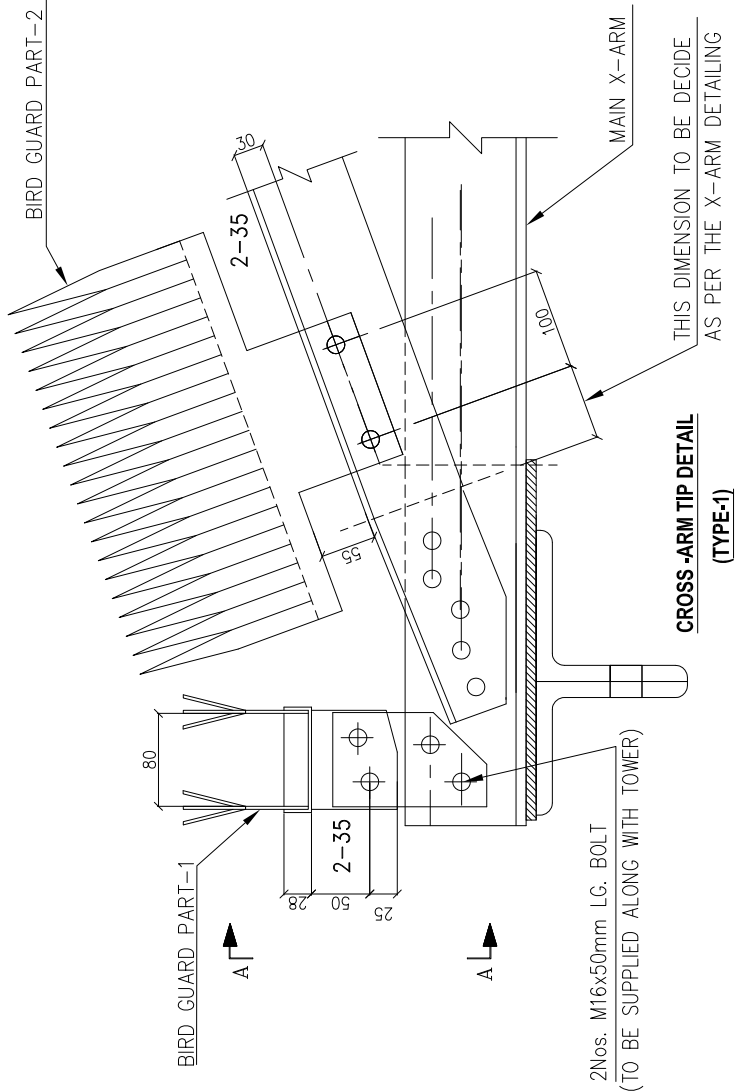
In exercise of power vested with MePTCL and Power Grid under part-iii of Indian Telegraph Act and CL-164/CL-68(6) of part -VII of Indian Electricity Act 2003 as amended up to date, you are hereby informed that the proposed 220 KV Double Circuit Transmission Line from Killing - Mawngap- New Shillong may pass through your land the trees/ plants belonging to you will have to be unavoidably damaged during construction/erection of the line by the MePTCL / PGCIL and you will be compensated for the loss as per the norms of local revenue Authority/Govt Departments. The crop/trees/plants so cut will be handed over to you at after cutting. Kindly issue the NOC for the above.

Received
Sohryngkham
26/3/15
SORDAR
Sohryngkham
Khyrim Syiemship, E. K. Hills


For POWER GRID
Junior Engineer/Engineer/Sr. Engineer/Manager

ANNEXURE - 7

***DRAWING OF BIRD GUARD/ANTI
PERCHING DEVICES***



4) 320x3THK.-400LG.
QTY: 2 NOS / SETS

BIRD GUARD PART-2

MATERIAL LIST / SETS (TYPE-1)				
NO	DESC.	QTY./SET	WT/PC (kg)	TOTAL (kg)
1	3 THK 250x500 LG	2	2.944	5.888
2	6 THK 90x103 LG	1	0.437	0.437
3	3 THK 25x140 LG	2	0.082	0.164
4	3MM THK 320x400 LG	2	3.014	6.028
	16ø x35MM Lg B&N	6	0.119	0.714
	16ø 3.5mm SP.Washer	6	0.009	0.054
			GRD. TOTAL=	13.285

NOTES:

- ALL DIMENSIONS ARE IN MM.
- GALVANISED AFTER FABRICATION.
- FIXING ARRANGEMENT TO BE CHECKED WITH TOWER.
- SUITABLE PROVISION OF CLEAT/PLATE/HOLE TO BE PROVIDED ON SUSPENSION TOWER FACILITATING INSTALLATION OF BIRD GUARD AFTER STRINGING.
- ONE SET OF BIRD GUARD FOR I-STRING (TYPE-1) INCLUDES.
 - BIRD GUARD PART-1(TYPE-1) = ONE NUMBER
 - BIRD GUARD PART-2 = TWO NUMBERS
- HOLE FOR FIXING BG PART-2 TO BE ENSURED ON TOWER MEMBER.
- 6MM PLATE & 2 Nos. M16x50 Lg. BOLT & NUT TO BE SUPPLIED ALONG WITH TOWER



POWER GRID CORPORATION OF INDIA LIMITED

TITLE :

DETAILS OF BIRD GUARD FOR I-STRING (TYPE - 1)-REVISED

DRAWING No. CC:ENGG:TLACC:BG (SHEET 1 of 2)

ANNEXURE - 8

***SIGNED COPY OF SAFETY PLAN
SUBMITTED BY CONTRACTOR***

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

रु. 100

ONE
HUNDRED RUPEES



सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

मेघालय MEGHALAYA

079012

SAFETY PLAN

THIS SAFETY PLAN is made this 19th day of ~~January~~ 2017..... by M/s. **Unique Structures & Towers Ltd, Bhilai** a Company registered under the Companies Act, 1956/Partnership firm/proprietary concern having its Registered Office at **1-A, Light Industrial Area, Bhilai - 490 026 (C.G.)** [to be modified suitably for JV Contractor] (hereinafter called as 'Contractor' which expression shall include its successors and permitted assigns) for approval of M/s. **Power Grid Corporation of India Limited** a company incorporated under the Companies Act, 1956 having its Registered Office at **B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016** for its **Contract for Services Contract for Tower Package TW01 Associated with NER Power System Improvement Project (Inter-State : Meghalaya) Specification No.CC-CS/91-NER/TWT-2468/1/G4.**

WHEREAS M/s **Power Grid Corporation of India Limited** has awarded to the Contractor the aforesaid Contract vide its Contract No. **CC-CS/91-NER/TWT-2468/1/G4/CA-II/5842 Dated 30.08.2016** and Amendment No Nil (applicable when amendments have been issued) (hereinafter called the "Contract") in terms of which the Contractor is required to submit 'Safety Plan' along with certain documents to the Engineer In-Charge/Project Manager of the Employer within Sixty (60) days of Notification of Award for its approval.

NOW THEREFORE, the Contractor undertakes to execute the Contract as per the safety plan as follows

1. THAT the Contractor shall execute the works as per provisions of Bidding Documents including those in regard to Safety Precautions / provisions as per statutory requirements.

for Unique Structures & Towers Ltd

(VAIBHAV JAIN)
Chief Operating Officer

2. THAT the Contractor shall execute the works in a well planned manner from the commencement of Contract as per agreed mile stones of work completion schedule so that planning and execution of construction works goes smoothly and consistently through out the contract duration without handling pressure in last quarter of the financial year/last months of the Contract and the shall be finalized in association with EMPLOYER Engineer In-charge/Project Manager from time to time as required.

3. THAT the Contractor has prepared the safe work procedure for each activity i.e. foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc. to be executed at site, which is enclosed at **Annexure - 1A (SP)** for acceptance and approval of Engineer In-charge/Project Manager. The Contractor shall ensure that on approval of the same from Engineer In-charge/Project Manager, the approved copies will be circulated to Employer's personnel at site [Supervisor(s)/Executive(s)] and Contractor's personnel at site [Gang leader, supervisor(s) etc.] in their local language / language understood by gang.

THAT the Contractor has prepared minimum manpower deployment plan, activity wise as stated above, which is enclosed at **Annexure - 1B (SP)** for approval of Engineer In-charge/Project Manager.

4. THAT the Contractor shall ensure while executing works that they will deploy minimum 25% of their own experienced work force who are on the permanent roll of the company and balance 75% can be a suitable mixed with the hired gangs / local workers / casual workers if required. The above balance 75% work force should be provided with at least 10 days training by the construction agencies at sites and shall be issued with a certificate. No worker shall be engaged without a valid certificate. Hired gang workers shall also follow safe working procedures and safety norms as is being followed by company's workmen. It should also be ensured by the contractor that certified fitters who are climbing towers / doing stringing operations can be easily identifiable with a system like issue of Badge / Identification cards (ID cards) etc. Colour identification batches should be worn by the workers. Contractor has to ensure that inexperience workers / unskilled workers should not be deployed for skilled job.

5. THAT the Contractor's Gang leader / Supervisor / Senior most member available at every construction site shall brief to each worker daily before start of work about safety requirement and warn about imminent dangers and precautions to be taken against the imminent dangers (Daily Safety Drill) This is to be ensured without fail by Contractor and maintain record of each gang about daily safety instructions issued to workers and put up to EMPLOYER site In-charge for his review and record.

6. THAT the Contractor shall ensure that working Gangs at site should not be left at the discretion of their Gang Leaders who are generally hired and having little knowledge about safety. Gang leader should be experienced and well versed with the safe working procedures applicable for transmission line/ Sub Station works. In case gang is having Gang leader not on permanent roll of the company then additional Supervisor from company's own roll having thorough knowledge about the works would be deployed so as to percolate safety instructions upto the grass root level in healthy spirits. Contractor has to ensure close supervision while executing critical locations of transmission lines / sub-stations and ensures that all safety instructions are in place and are being followed.

for Unique Structures & Towers Ltd.


(VAIBHAV JAIN)
Chief Operating Officer

7. THAT the Contractor shall maintain in healthy and working condition all kind of Equipments / Machineries / Lifting tools / Lifting tackles / Lifting gears / All kind of Ropes including wire ropes / Polypropylene ropes etc. used for Lifting purpose during execution of the project and get them periodically examined and load tested for safe working load in accordance with relevant provisions and requirement of Building & other construction workers Regulation of Employment and Conditions of Services Act and Central Rule 1998, Factories Act 1948, Indian Electricity Act 2003 before start of the project. A register of such examinations and tests shall be properly maintained by the contractor and will be promptly produced as and when desired by the Engineer In-charge/Project Manager or by the person authorised by him. The Contractor has to ensure to give special attention on the formation / condition of eye splices of wire rope slings as per requirement of IS 2762 Specification for wire rope slings and sling legs.

THAT the Contractor has prepared a list of all Lifting machines, lifting Tools / Lifting Tackles / Lifting Gears etc. / All types of ropes and Slings which are subject to safe working load is enclosed at **Annexure – 2 (SP)** for review and approval of Engineer In-charge/Project Manager.

8. THAT the Contractor has to procure sufficient quantity of Personal Protective Equipment (PPE) conforming to Indian / International standards and provide these equipment to every workman at site as per need and to the satisfaction of Engineer-in-charge/Project Manager of EMPLOYER. The Contractor's Site Supervisor/ Project Manager has to ensure that all workmen must use Personal Protective Equipment at site. The Contractor shall also ensure that Industrial Safety helmets are being used by all workmen at site irrespective of their working (at height or on ground). The Contractor shall further ensure use of safety shoes by all ground level workers and canvas shoes for all workers working at height. Rubber Gum Boots for workers working in rainy season and concreting job. Use of Twin Lanyard Full body Safety Harness with attachment of light weight such as aluminium alloy etc. and having features of automatic locking arrangement of snap hook, by all workers working at height for more than three meters and also for horizontal movement on tower shall be ensured by contractor. The Contractor shall not use ordinary half body safety harness at site. The Contractor has to ensure use of Retractable type fall arrestors by workers for ascending / descending on suspension insulator string and other similar works etc. Use of Mobile fall arrestor for ascending / descending from tower by all workers. The contractor has to provide cotton / leather hand gloves as per requirement. Electrical Resistance Hand gloves for operating electrical installations / switches. Face shield for protecting eyes while doing welding works and Dust masks to workers as per requirement. The Contractor will have to take action against the workers not using Personal Protective Equipment at site and those workers shall be asked to rest for that day and also their Salary be deducted for that day. EMPLOYER may issue warning letter to Project Manager of contractor in violation of above norms.

THAT the Contractor shall prepare a detailed list of PPEs, activity wise, to commensurate with manpower deployed, which is enclosed at **Annexure – 3 (SP)** for review and approval of Engineer In-charge/Project Manager. It shall also be ensured that the sample of these equipment shall be got approved from EMPLOYER supervisory staff before being distributed to workers. The contractor shall submit relevant test certificates as per IS / International Standard as applicable to PPEs used during execution of work. All the PPE's to be distributed to the workers shall be checked by EMPLOYER supervisory staff before its usage.

The Contractor also agrees for addition / modification to the list of PPE, if any, as advised by Engineer In-Charge/Project Manager.

for Unique Structures & Towers Ltd


(KAIBHAV JAIN)
Chief Operating Officer

9. THAT the Contractor shall procure, if required sufficient quantity of Earthing Equipment / Earthing Devices complying with requirements of relevant IEC standards (Generally IECs standards for Earthing Equipments / Earthing Devices are – 855, 1230, 1235 etc.) and to the satisfaction of Engineer In-Charge/ Project Manager and contractor to ensures to maintained them in healthy condition.

THAT the Contractor has prepared / worked out minimum number of healthy Earthing Equipments with Earthing lead conforming to relevant IS / European standards per gang wise during stringing activity/as per requirement, which is enclosed herewith at **Annexure – 4 (SP)** for review and acceptance of Engineer In-Charge/ Project Manager prior to execution of work.

10. THAT the Contractor shall provide communication facilities i.e. Walky – Talkie / Mobile Phone, Display of Flags / whistles for easy communication among workers during Tower erection / stringing activity, as per requirement.
11. THAT the Contractor undertakes to deploy qualified safety personnel responsible for safety as per requirements of Employer/Statutory Authorities.

THAT the Contractor employing more than 250 workmen whether temporary, casual, probationer, regular or permanent or on contract, shall employ at least one full time officer exclusively as qualified safety officer having diploma in safety to supervise safety aspects of the equipment and workmen who will coordinate with Engineer In-charge /Project Manager/Safety Co-ordinator of the Employer. In case of work being carried out through sub contractors the sub – contractor's workmen / employees will also be considered as the contractor's employees / workmen for the above purpose. If the number of workers are less than 250 then one qualified safety officer is to be deployed for each contract. He will report directly to his head of organization and not the Project Manager of contractor He shall also not be assigned any other work except assigning the work of safety. The curriculum vitae of such person shall be got cleared from EMPLOYER Project Manager / Construction staff.

The name and address of such safety officers of contractor will be promptly informed in writing to Engineer In-charge with a copy to safety officer - In-charge before start of work or immediately after any change of the incumbent is made during the currency of the contract. The list is enclosed at **Annexure – 5A (SP)**

THAT the Contractor has also prepared a list including details of Explosive Operator (if required), Safety officer / Safety supervisor / nominated person for safety for each erection / stringing gang, list of personnel trained in First Aid Techniques as well as copy of organisation structure of the Contractor in regard to safety. The list is enclosed at **Annexure – 5B (SP)**.

12. The Project Manager shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and/or property, and/or equipment. In such cases, the Contractor shall be informed in writing about the nature of hazards and possible injury/accident and he shall comply to remove shortcomings promptly. The Contractor after stopping the specific work can, if felt necessary, appeal against the order of stoppage of work to the Project Manager within 3 days of such stoppage of work and decision of the Project Manager in this respect shall be conclusive and binding on the Contractor.
13. THAT, if, any Employer's Engineer/ supervisor at site observes that the Contractor is failing to provide safe working environment at site as per agreed Safety Plan /

for Unique Structures & Towers Ltd


VAIBHAV JAIN)
Chief Operating Officer

EMPLOYER Safety Rule/ Safety Instructions / Statutory safety requirement and creates hazardous conditions at site and there is possibility of an accident to workmen or workmen of the other contractor or public or the work is being carried out in an unsafe manner or he continues to work even after being instructed to stop the work by Engineer / Supervisor at site / RHQ / Corp. Centre, the Contractor shall be bound to pay a penalty of Rs. 10,000/- per incident per day till the instructions are complied and as certified by Engineer / Supervisor of Employer at site. The work will remain suspended and no activity will take place without compliance and obtaining clearance / certification of the Site Engineer / Supervisor of the Employer to start the work.

14. THAT, if the investigation committee of Employer observes any accident or the Engineer In-charge/Project Manager of the Employer based on the report of the Engineer/Supervisor of the Employer at site observes any failure on the Contractor's part to comply with safety requirement / safety rules/ safety standards/ safety instruction as prescribed by the Employer or as prescribed under the applicable law for the safety of the equipment, plant and personnel and the Contractor does not take adequate steps to prevent hazardous conditions which may cause injury to its own Contractor's employees or employee of any other Contractors or Employer or any other person at site or adjacent thereto, or public involvement because of the Contractor's negligence of safety norms, the Contractor shall be liable to pay a compensation of Rs. 10,00,000/- (Rupees Ten Lakh only) per person affected causing death and Rs. 1,00,000/- (Rupees One Lakh only) per person for serious injuries / 25% or more permanent disability to the Employer for further disbursement to the deceased family/ Injured persons. The permanent disability has the same meaning as indicated in Workmen's Compensation Act 1923. The above stipulations is in addition to all other compensation payable to sufferer as per workmen compensation Act / Rules

THAT as per the Employer's instructions, the Contractor agrees that this amount shall be deducted from their running bill(s) immediately after the accident. That the Contractor understands that this amount shall be over and above the compensation amount liable to be paid as per the Workmen's Compensation Act /other statutory requirement/ provisions of the Bidding Documents.

15. THAT the Contractor shall submit Near-Miss-Accident report alongwith action plan for avoidance such incidence /accidents to Engineer – In-charge/ Project Manager, Contractor shall also submit Monthly Safety Activities report to Engineer – In-charge/ Project Manager and copy of the Monthly Safety Activities report also to be sent to Safety In-charge at RHQ of the Employer for his review record and instructions.
16. THAT the Contractor is submitting a copy of Safety Policy/ Safety Documents of its Company which is enclosed at **Annexure – 6 (SP)** and ensure that the safety Policy and safety documents are implemented in healthy spirit.
17. THAT the Contractor shall make available of First Aid Box [Contents of which shall be as per Building & other construction workers (Regulation of Employment and Conditions of Services Act and Central Rule 1998 / EMPLOYER Guidelines)] to the satisfaction of Engineer In-Charge/ Project Manager with each gang at site and not at camp and ensures that trained persons in First Aid Techniques with each gang before execution of work.
18. THAT the Contractor shall submit an 'Emergency Preparedness Plan' for different incidences i.e. Fall from height, Electrocution, Sun Stroke, Collapse of pit, Collapse of Tower, Snake bite, Fire in camp / Store, Flood, Storm, Earthquake, Militancy etc. while carrying out different activities under execution i.e. foundation works including civil works, erection stringing (as applicable), testing & commissioning, disposal of

for Unique Structures & Towers Ltd

(VAIBHAV JAIN)
Chief Operating Officer

materials at site / store etc. which is enclosed at **Annexure – 7 (SP)** for approval of the Engineer In-Charge/ Project Manager before start of work.

19. THAT the Contractor shall organise Safety Training Programs on Safety, Health and Environment and for safe execution of different activities of works i.e. foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc. for their own employees including sub contractor workers on regular basis.

The Contractor, therefore, submits copy of the module of training program, enclosed at **Annexure – 9 (SP)**, to Engineer In-charge/Project Manager for its acceptance and approval and records maintained.

20. THAT the Contractor shall conduct safety audit, as per Safety Audit Check Lists enclosed at **Annexure – 8 (SP)**, by his Safety Officer(s) every month during construction of Transmission Lines / Sub Stations / any other work and copy of the safety audit report will be forwarded to the Employer's Engineer In-charge / Site In-charge/Project Manager for his comments and feedback. During safety audit, healthiness of all Personal Protective Equipments (PPEs) shall be checked individually by safety officer of contractor and issue a certificate of its healthiness or rejection of faulty PPEs and contractor has to ensure that all faulty PPEs and all faulty lifting tools and tackles should be destroyed in the presence of EMPLOYER construction staff. Contractor has to ensure that each gang be safety audited at least once in two months. During safety audit by the contractor, Safety officer's feedback from EMPLOYER concerned shall be taken and recorded. The Employer's site officials shall also conduct safety audit at their own from time to time when construction activities are under progress. Apart from above, the Employer may also conduct surveillance safety audits. The Employer may take action against the person / persons as deemed fit under various statutory acts/provisions under the Contract for any violation of safety norms / safety standards.
21. THAT the Contractor shall develop and display Safety Posters of construction activity at site and also at camp where workers are generally residing.
22. THAT the Contractor shall ensure to provide potable and safe drinking water for workers at site / at camp.
23. THAT the Contractor shall do health check up of all workers from competent agencies and reports will be submitted to Engineer In-Charge within fifteen (15) days of health check up of workers as per statutory requirement.
24. THAT the Contractor shall submit information alongwith documentary evidences in regard to compliance to various statutory requirements as applicable which are enclosed at **Annexure – 10A (SP)**.

The Contractor shall also submit details of Insurance Policies taken by the Contractor for insurance coverage against accident for all employees are enclosed at **Annexure – 10B (SP)**.

25. THAT a check-list in respect of aforesaid enclosures alongwith the Contractor's remarks, wherever required, is attached as **Annexure – Check List** herewith.

THE CONTRACTOR shall incorporate modifications/changes in this 'Safety Plan' necessitated on the basis of review/comments of the Engineer In-Charge/Project Manager

for Unique Structures & Towers Ltd

(VAIBHAV JAIN)
Chief Operating Officer

within fourteen (14) days of receipt of review/comments and on final approval of the Engineer In-Charge/Project Manager of this 'Safety Plan', the Contractor shall execute the works under the Contract as per approved 'Safety Plan'. Further, the Contractor has also noted that the first progressive payment towards Services Contract shall be made on submission of 'Safety Plan' alongwith all requisite documents and approval of the same by the Engineer In-Charge/Project Manager.

IN WITNESS WHEREOF, the Contractor has hereunto set its hand through its authorised representative under the common seal of the Company, the day, month and year first above mentioned.

For and on behalf of

M/s. Unique Structures & Towers Ltd

WITNESS

1. Signature [Signature]

Name Sri I.P. Singh

Address U.S.T.L. Shillong
2nd floor, "S+ Centre"
G.S. Road, Shillong - 793002

2. Signature [Signature]

Name Prasidh Kumar

Address U.S.T.L. Shillong
2nd floor, "S+ Centre"
G.S. Road, Shillong - 793002

Signature [Signature]

Name Vishnu Jais

Address

Authorised representative



Note:


All the annexure referred to in this "Safety Plan" are required to be enclosed by the contractor as per the attached "Check List"

1. Safety Plan is to be executed by the authorised person and (i) in case of contracting Company under common seal of the Company or (ii) having the power of attorney issued under common seal of the company with authority to execute such contract documents etc., (iii) In case of (ii), the original Power of Attorney if it is specifically for this Contract or a Photostat copy of the Power of Attorney if it is General Power of Attorney and such documents should be attached to this Safety Plan.
2. For all safety monitoring/ documentation, Engineer In-charge / Regional In-charge of safety at RHQ will be the nodal Officers for communication.

CHECK LIST FOR SEFETY PLAN

S. N.	Details of Enclosure	Status of Submission of information/ documents	Remarks
1.	<p>Annexure – 1A (SP)</p> <p>Safe work procedure for each activity i.e. foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc. to be executed at site.</p>	Yes/No	
2.	<p>Annexure – 1B (SP)</p> <p>Manpower deployment plan, activity wise foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc.</p>	Yes/No	
3.	<p>Annexure – 2 (SP)</p> <p>List of Lifting Machines i.e. Crane, Hoist, Triffor, Chain Pulley Blocks etc. and Lifting Tools and Tackles i.e. D shackle, Pulleys, come along clamps, wire rope slings etc. and all types of ropes i.e. Wire ropes, Poly propylene Rope etc. used for lifting purposes along with test certificates.</p>	Yes/No	
4.	<p>Annexure – 3 (SP)</p> <p>List of Personal Protective Equipment (PPE), activity wise including the following along with test certificate of each as applicable:</p> <ol style="list-style-type: none"> 1. Industrial Safety Helmet to all workmen at site. (EN 397 / IS 2925) with chin strap and back stay arrangement. 2. Safety shoes without steel toe to all ground level workers and canvas shoes for workers working on tower. 3. Rubber Gum Boot to workers working in rainy season / concreting job. 4. Twin lanyard Full Body Safety harness with shock absorber and leg strap arrangement for all workers working at height for more than three meters. Safety Harness should be with attachments of light weight such as of aluminium alloy etc. and having a feature of automatic locking arrangement of snap/hook 	Yes/No	

for Unique Structures & Towers Ltd


(RAIBHAV JAIN)
 Chief Operating Officer

S. N.	Details of Enclosure	Status of Submission of information/ documents	Remarks
	<p>and comply with EN 361 / IS 3521 standards.</p> <p>5. Mobile fall arrestors for safety of workers during their ascending / descending from tower / on tower. EN 353 -2 (Guided type fall arrestors on a flexible anchorage line.)</p> <p>6. Retractable type fall arrestor (EN360: 2002) for ascending / descending on suspension insulator string etc.</p> <p>7. Providing of good quality cotton hand gloves / leather hand gloves for workers engaged in handling of tower parts or as per requirement at site.</p> <p>8. Electrical Resistance hand gloves to workers for handling electrical equipment / Electrical connections. IS :4770</p> <p>9. Dust masks to workers handling cement as per requirement.</p> <p>10. Face shield for welder and Grinders. IS : 1179 / IS : 2553</p> <p>11. Other PPEs, if any, as per requirement etc.</p>		
5.	<p>Annexure – 4 (SP)</p> <p>List of Earthing Equipment / Earthing devices with Earthing lead conforming to IECs for earthing equipments are – (855, 1230, 1235 etc.) gang wise for stringing activity/as per requirement</p>	Yes/No	
6.	<p>Annexure – 5A (SP)</p> <p>List of Qualified Safety Officer(s) alongwith their contact details</p>	Yes/No	
7.	<p>Annexure – 5B (SP)</p> <p>Details of Explosive Operator (if required), Safety officer / Safety supervisor for every erection / stringing gang, any other person nominated for safety, list of personnel trained in First Aid as well as brief information about safety set up by the Contractor alongwith copy of organisation of the Contractor in regard to safety</p>	Yes/No	
8.	<p>Annexure – 6 (SP)</p> <p>Copy of Safety Policy/ Safety Document of the Contractor's company</p>	Yes/No	
9.	<p>Annexure – 7 (SP)</p> <p>'Emergency Preparedness Plan' for different</p>	Yes/No	

for Unique Structures & Towers Ltd

(AIBHAV JAIN)
 etc.

S. N.	Details of Enclosure	Status of Submission of information/ documents	Remarks
	incidences i.e. Fall from height, Electrocutation, Sun Stroke, Collapse of pit, Collapse of Tower, Snake bite, Fire in camp / Store, Flood, Storm, Earthquake, Militancy etc. while carrying out different activities under execution i.e. foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc.		
10.	Annexure – 8 (SP) Safety Audit Check Lists (Formats to be enclosed)	Yes/No	
11.	Annexure – 9 (SP) Copy of the module of Safety Training Programs on Safety, Health and Environment, safe execution of different activities of works for Contractor's own employees on regular basis and sub-contractor employees.	Yes/No	
12.	Annexure – 10A (SP) Information alongwith documentary evidences in regard to the Contractor's compliance to various statutory requirements including the following:		
(i)	Electricity Act 2003 _____ [Name of Documentary evidence in support of compliance]	Yes/No	
(ii)	Factories Act 1948 _____ [Name of Documentary evidence in support of compliance]	Yes/No	
(iii)	Building & other construction workers (Regulation of Employment and Conditions of Services Act and Central Act 1996) and Welfare Cess Act 1996 with Rules. _____ [Name of Documentary evidence in support of compliance]	Yes/No	
(iv)	Workmen Compensation Act 1923 and Rules	Yes/No	

for Unique Structures & Towers Ltd


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ANNEXURE - 9

***SAFETY/PENALTY PROVISIONS IN
CONTRACT CONDITIONS***

PC 21.3.4 Replace the word 'may' in line no. 10 with 'is'.

Addition of New Clauses (PC 21.3.5, PC21.3.6) after GC 21.3.4

PC 21.3.5 **Packing**

The Contractor shall provide such packing of the Goods as it is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods final destination and the absence of heavy handling facilities at all points in transit.

PC 21.3.6 The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract and, subject to any subsequent instruction ordered by the Employer consistent with the requirements of the Contract.

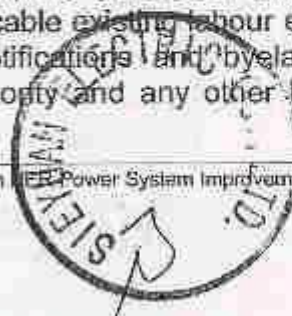
PC 21.4 Replacing sub-clause GC 21.4

The Contractor shall, at its own expense, handle all imported Plant and Equipment and Contractor's Equipment at the point(s) of import and shall handle any formalities for customs clearance, including liabilities for port charges, if any, subject to the Employer's obligations under GC Sub-Clause 14.4, provided that if applicable laws or regulations require any application or act to be made by or in the name of the Employer, the Employer shall take all necessary steps to comply with such laws or regulations. In the event of delays in customs clearance that are not the fault of the Contractor, the Contractor shall be entitled to an extension in the Time for Completion, pursuant to GC Clause 40.

Addition of Sub-Clauses (PC22.2.3.1, PC22.2.3.2, PC22.2.3.3, PC 22.2.3.4) of GC 22.2.3

PC 22.2.3.1 **Compliance with Labour Regulations**

During continuance of the contract, the Contractor and his sub-contractors shall abide at all times by all applicable existing labour enactments and rules made thereunder, regulations notifications and byelaws of the State or Central Government or local authority and any other labour law (including



rules), regulations by laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. The employees of the Contractor and the Sub-contractor in no case shall be treated as the employees of the Employer at any point of time.

PC 22.2.3.2 The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made thereunder, regulations or notifications including amendments.

PC 22.2.3.3 If the Employer is caused to pay under any law as principal employer such amounts as may be necessary to cause or observe, or for non observance of the provisions stipulated in the notifications/ byelaws/Acts/ Rules/regulations including amendments, if any, on the part of the Contractor, the Employer shall have the right to deduct any money due to the Contractor under this contract or any other contract with the employer including his amount of performance security for adjusting the aforesaid payment. The Employer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

PC 22.2.3.4 Salient features of some major laws applicable to establishments engaged in building and other construction works are indicated at **Appendix-I** to PC.

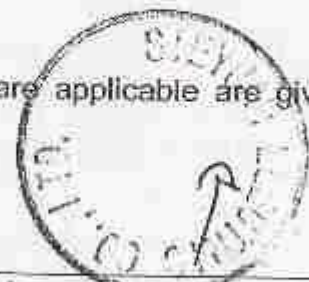
Addition of New Sub-Clauses (PC22.4.1 to 22.4.3 including its sub-clauses) of GC 22.4

PC 22.4.1 Protection of Environment

The Contractor shall take all reasonable steps to 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 consequence of his methods of operation.

During continuance of the Contract, the Contractor and his Sub-contractors shall abide at all times by all existing enactments on environmental protection and rules made thereunder, regulations, notifications and by-laws of the State or Central Government, or local authorities and any other law, bye-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority.

Salient features of some of the major laws that are applicable are given below:



The Water (Prevention and Control of Pollution) Act, 1974. This provides for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. 'Pollution' means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms.

The Air (Prevention and Control of Pollution) Act, 1981. This provides for prevention, control and abatement of air pollution. 'Air Pollution' means the presence in the atmosphere of any 'air pollutant', which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.

The Environment (Protection) Act, 1986. This provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. 'Environment' includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.

The Public Liability Insurance Act, 1991. This provides for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for matters connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under Environment (Protection) Act, 1986, and exceeding such quantity as may be specified by notification by the Central Government.

PC 22.4.2

- (i) The Contractor shall (a) establish an operational system of managing environmental impacts, (b) carry out all the monitoring and mitigation measures set forth in the environment management plan attached to the Particular Conditions as **Appendix-II**, and (c) allocate the budget required to ensure that such measures are carried out. The Contractor shall submit to the Employer (quarterly) semi-annual) reports on the carrying out of such measures.
- (ii) The Contractor shall adequately record the conditions of roads, agricultural land and other infrastructure prior to transport of material and construction commencement, and shall fully reinstate roads/ pathways, other local infrastructure and agricultural land to



at least their pre-project condition upon construction completion.

- (iii) The Contractor shall undertake detailed survey of the affected persons during transmission line alignment finalization under the Project, where applicable, and
- (iv) The Contractor shall conduct health and safety programme for workers employed under the Contract and shall include information on the risk of sexually transmitted diseases, including HIV/AIDS in such programs.

PC 22.4.3 Safety Precautions

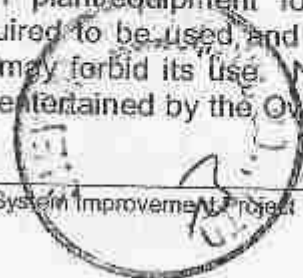
PC 22.4.3.1 The Contractor shall observe all applicable regulations regarding safety on the Site.

Unless otherwise agreed, the Contractor shall, from the commencement of work on Site until taking over, provide:

- a) fencing, lighting, guarding and watching of the Works wherever required, and
- b) temporary roadways, footways, guards and fences which may be necessary for the accommodation and protection of Employer / his representatives and occupiers of adjacent property, the public and others.

PC 22.4.3.2 The Contractor shall ensure proper safety of all the workmen, materials, plant and equipment belonging to him or to POWERGRID or to others, working at the Site. The Contractor shall also be responsible for provision of all safety notices and safety equipment required both by the relevant legislations and the Engineer, as he may deem necessary.

PC 22.4.3.3 The Contractor will notify well in advance to the Engineer of his intention to bring to the Site any container filled with liquid or gaseous fuel or explosive or petroleum substance or such chemicals which may involve hazards. The Engineer shall have the right to prescribe the conditions, under which such container is to be stored, handled and used during the performance of the works and the Contractor shall strictly adhere to and comply with such instructions. The Engineer shall have the right at his sole discretion to inspect any such container or such construction plant/equipment for which material in the container is required to be used, and if in his opinion, its use is not safe, he may forbid its use. No claim due to such prohibition shall be entertained by the Owner and



the Owner shall not entertain any claim of the Contractor towards additional safety provisions/conditions to be provided for/constructed as per the Engineer's instructions.

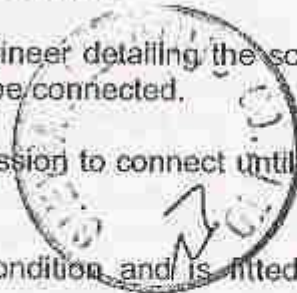
Further, any such decision of the Engineer shall not, in any way, absolve the Contractor of his responsibilities and in case, use of such a container or entry thereof into the Site area is forbidden by the Engineer, the Contractor shall use alternative methods with the approval of the Engineer without any cost implication to POWERGRID or extension of work schedule.

- PC 22.4.3.4 Where it is necessary to provide and/or store petroleum products or petroleum mixtures and explosives, the Contractor shall be responsible for carrying-out such provision and/or storage in accordance with the rules and regulations laid down in Petroleum Act 1934, Explosives Act, 1948 and Petroleum and Carbide of Calcium Manual published by the Chief Inspector of Explosives of India. All such storage shall have prior approval of the Engineer. In case, any approvals are necessary from the Chief Inspector (Explosives) or any statutory authorities, the Contractor shall be responsible for obtaining the same.
- PC 22.4.3.5 All equipment used in construction and erection by Contractor shall meet Indian/International Standards and where such standards do not exist, the Contractor shall ensure these to be absolutely safe. All equipment shall be strictly operated and maintained by the Contractor in accordance with manufacturer's Operation Manual and safety instructions and as per Guidelines/rules of POWERGRID in this regard.
- PC 22.4.3.6 Periodical examinations and all tests for all lifting/hoisting equipment & tackles shall be carried-out in accordance with the relevant provisions of Factories Act 1948, Indian Electricity Act 1910 and associated Laws/Rules in force from time to time. A register of such examinations and tests shall be properly maintained by the Contractor and will be promptly produced as and when desired by the Engineer or by the person authorised by him.
- PC 22.4.3.7 The Contractor shall be fully responsible for the safe storage of his and his Sub-Contractor's radioactive sources in accordance with BARC/DAE Rules and other applicable provisions. All precautionary measures stipulated by BARC/DAE in connection with use, storage and handling of



such material will be taken by the Contractor.

- PC 22.4.3.8 The Contractor shall provide suitable safety equipment of prescribed standard to all employees and workmen according to the need, as may be directed by the Engineer who will also have right to examine these safety equipment to determine their suitability, reliability, acceptability and adaptability.
- PC 22.4.3.9 Where explosives are to be used, the same shall be used under the direct control and supervision of an expert, experienced, qualified and competent person strictly in accordance with the Code of Practice/Rules framed under Indian Explosives Act pertaining to handling, storage and use of explosives.
- PC 22.4.3.10 The Contractor shall provide safe working conditions to all workmen and employees at the Site including safe means of access, railings, stairs, ladders, scaffoldings etc. The scaffoldings shall be erected under the control and supervision of an experienced and competent person. For erection, good and standard quality of material only shall be used by the Contractor.
- PC 22.4.3.11 The Contractor shall not interfere or disturb electric fuses, wiring and other electrical equipment belonging to the Owner or other Contractors under any circumstances, whatsoever, unless expressly permitted in writing by POWERGRID to handle such fuses, wiring or electrical equipment
- PC 22.4.3.12 Before the Contractor connects any electrical appliances to any plug or socket belonging to the other Contractor or Owner, he shall:
- Satisfy the Engineer that the appliance is in good working condition;
 - Inform the Engineer of the maximum current rating, voltage and phases of the appliances;
 - Obtain permission of the Engineer detailing the sockets to which the appliances may be connected.
- PC 22.4.3.13 The Engineer will not grant permission to connect until he is satisfied that:
- The appliance is in good condition and is fitted with



suitable plug;

- b. The appliance is fitted with a suitable cable having two earth conductors, one of which shall be an earthed metal sheath surrounding the cores.

PC 22.4.3.14 No electric cable in use by the Contractor/Owner will be disturbed without prior permission. No weight of any description will be imposed on any cable and no ladder or similar equipment will rest against or attached to it.

PC 22.4.3.15 No repair work shall be carried out on any live equipment. The equipment must be declared safe by the Engineer and a permit to work shall be issued by the Engineer before any repair work is carried out by the Contractor. While working on electric lines/equipment, whether live or dead, suitable type and sufficient quantity of tools will have to be provided by the Contractor to electricians/workmen/officers.

PC 22.4.3.16 The Contractors shall employ necessary number of qualified, full time electricians/electrical supervisors to maintain his temporary electrical installation.

PC 22.4.3.17 The Contractor employing more than 250 workmen whether temporary, casual, probationer, regular or permanent or on contract, shall employ at least one full time officer exclusively as safety officer to supervise safety aspects of the equipment and workmen, who will coordinate with the Project Safety Officer. In case of work being carried out through Sub-Contractors, the Sub-Contractor's workmen/employees will also be considered as the Contractor's employees/workmen for the above purpose.

The name and address of such Safety Officers of the Contractor will be promptly informed in writing to Engineer with a copy to Safety Officer-In charge before he starts work or immediately after any change of the incumbent is made during currency of the Contract.

PC 22.4.3.18 In case any accident occurs during the construction/ erection or other associated activities undertaken by the Contractor thereby causing any minor or major or fatal injury to his employees due to any reason, whatsoever, it shall be the responsibility of the Contractor to promptly inform the same to the Engineer in prescribed form and also to all the authorities envisaged under the applicable laws.



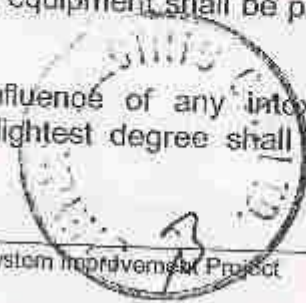
PC 22.4.3.19 The Engineer shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and/or property, and/or equipment. In such cases, the Contractor shall be informed in writing about the nature of hazards and possible injury/accident and he shall comply to remove shortcomings promptly. The Contractor after stopping the specific work can, if felt necessary, appeal against the order of stoppage of work to the Engineer within 3 days of such stoppage of work and decision of the Engineer in this respect shall be conclusive and binding on the Contractor.

PC 22.4.3.20 The Contractor shall not be entitled for any damages/compensation for stoppage of work due to safety reasons as provided in para GCC 22.4.3.19 above and the period of such stoppage of work will not be taken as an extension of time for completion of work and will not be the ground for waiver of levy of liquidated damages.

PC 22.4.3.21 It is mandatory for the Contractor to observe during the execution of the works, requirements of Safety Rules which would generally include but not limited to following:

Safety Rules

- a) Each employee shall be provided with initial indoctrination regarding safety by the Contractor, so as to enable him to conduct his work in a safe manner.
- b) No employee shall be given a new assignment of work unfamiliar to him without proper introduction as to the hazards incident thereto, both to himself and his fellow employees.
- c) Under no circumstances shall an employee hurry or take unnecessary chance when working under hazardous conditions.
- d) Employees must not leave naked fires unattended. Smoking shall not be permitted around fire prone areas and adequate fire fighting equipment shall be provided at crucial location.
- e) Employees under the influence of any intoxicating beverage, even to the slightest degree shall not be

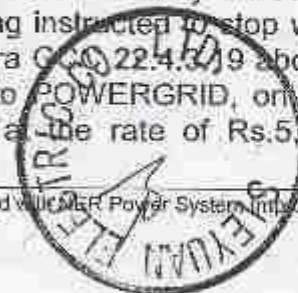


permitted to remain at work.

- f) There shall be a suitable arrangement at every work site for rendering prompt and sufficient first aid to the injured.
- g) The staircases and passageways shall be adequately lighted.
- h) The employees when working around moving machinery, must not be permitted to wear loose garments. Safety shoes are recommended when working in shops or places where materials or tools are likely to fall. Only experienced workers shall be permitted to go behind guard rails or to clean around energized or moving equipment.
- i) The employees must use the standard protection equipment intended for each job. Each piece of equipment shall be inspected before and after it is used.
- j) Requirements of ventilation in underwater working to licensed and experienced divers, use of gum boots for working in slushy or in inundated conditions are essential requirements to be fulfilled.
- k) In case of rock excavation, blasting shall invariably be done through licensed blasters and other precautions during blasting and storage/transport of charge material shall be observed strictly.

PC 22.4.3.22 The Contractor shall follow and comply with all POWERGRID Safety Rules, relevant provisions of applicable laws pertaining to the safety of workmen, employees, plant and equipment as may be prescribed from time to time without any demur, protest or contest or reservations. In case of any discrepancy between statutory requirement and POWERGRID Safety Rules referred above, the latter shall be binding on the Contractor unless the statutory provisions are more stringent.

PC22.4.3.23 If the Contractor fails in providing safe working environment as per POWERGRID Safety Rules or continues the work even after being instructed to stop work by the Engineer as provided in para 22.4.3.19 above, the Contractor shall promptly pay to POWERGRID, on demand by the Owner, compensation at the rate of Rs.5,000/- per day of part



thereof till the instructions are complied with and so certified by the Engineer. However, in case of accident taking place causing injury to any individual, the provisions contained in para GCC 22.4.3.24 shall also apply in addition to compensation mentioned in this para.

PC 22.4.3.24

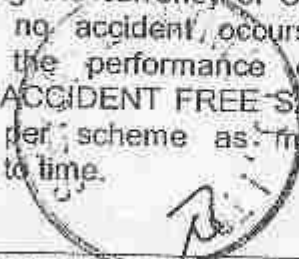
If the Contractor does not take adequate safety precautions and/or fails to comply with the Safety Rules as prescribed by POWERGRID or under the applicable law for the safety of the equipment and plant or for the safety of personnel or the Contractor does not prevent hazardous conditions which cause injury to his own employees or employees of other Contractors or POWERGRID employees or any other person who are at Site or adjacent thereto, then the Contractor shall be responsible for payment of a sum as indicated below to be deposited with POWERGRID, which will be passed on by POWERGRID to such person or next to kith and kin of the deceased:

a.	Fatal injury or accident causing death	Rs. 1,000,000/- per person
b.	Major injuries or accident causing 25% or more permanent disablement	Rs. 100,000/- per person

Permanent disablement shall have same meaning as indicated in Workmen's Compensation Act. The amount to be deposited with POWERGRID and passed on to the person mentioned above shall be in addition to the compensation payable under the relevant provisions of the Workmen's Compensation Act and rules framed there under or any other applicable laws as applicable from time to time. In case the Contractor does not deposit the above mentioned amount with POWERGRID, such amount shall be recovered by POWERGRID from any monies due or becoming due to the Contractor under the contract or any other on-going contract.

PC22.4.3.25

If the Contractor observes all the Safety Rules and Codes, Statutory Laws and Rules during the currency of Contract awarded by the Owner and no accident occurs then POWERGRID may consider the performance of the Contractor and award suitable 'ACCIDENT FREE SAFETY MERITORIOUS AWARD' as per scheme as may be announced separately from time to time.



PC22.4.3.26 The Contractor shall also submit 'Safety Plan' as per proforma specified in Section IX: Contract Forms, Part-3 of Bidding Documents alongwith all the requisite documents mentioned therein and as per check-list contained therein to the Engineer In-Charge for its approval within 60 days of award of Contract.

Further, one of the conditions for release of first progressive payment / subsequent payment towards Services Contract shall be submission of 'Safety Plan' alongwith all requisite documents and approval of the same by the Engineer In-Charge.

PC 22.6 Emergency Work (GC Clause 22.6)

Replace the words "Otherwise" with "In case such work is not in the scope of the Contractor", in the second last line of second paragraph of GC clause 22.6.

PC 23.3 Supplementing sub-clause GC 23.3

For notification of testing, four weeks shall be deemed as reasonable advance notice.

PC 23.7 Test and Inspection (GC Clause 23.7)

Replace the words "GC Sub-Clause 6.1" with "GC Sub-Clause 46.1", in the last line of GC clause 23.7.

PC 24.4 Replacing Sub-Clause GC 24.4

As soon as all works in respect of Precommissioning are completed and, in the opinion of the Contractor, the Facilities or any part thereof is ready for Commissioning, the Contractor shall commence Commissioning as per procedures stipulated in Technical Specification, and as soon as Commissioning is satisfactorily completed, the Contractor shall so notify the Project Manager in writing.

PC 24.5 Replacing Sub-Clause GC 24.5 with the following

The Project Manager shall, within fourteen (14) days after receipt of the Contractor's notice under GC Sub-Clause 24.4, notify the Contractor in writing of any defects and/or deficiencies.

If the Project Manager notifies the Contractor of any defects and/or deficiencies, the Contractor shall correct such defects and/or



deficiencies, and shall repeat the procedure described in GC Sub-Clause 24.4. If the Project Manager is satisfied that the Facilities or that part thereof have passed Precommissioning, the Project Manager shall, within fourteen (14) days after receipt of the Contractor's notice/ seven (7) days after receipt of the Contractor's repeated notice, advise the Contractor to proceed with the Commissioning of the Facilities or that part thereof. If the Project Manager is not so satisfied, then it shall notify the Contractor in writing of any defects and/or deficiencies within seven (7) days after receipt of the Contractor's repeated notice, and the above procedure shall be repeated.

PC 24.6 Replacing Sub-Clause GC 24.6

If the Project Manager fails to advise the Contractor to proceed with the Commissioning of the Facilities or the relevant part thereof or inform the Contractor of any defects and/or deficiencies within fourteen (14) days after receipt of the Contractor's notice under GC Sub-Clause 24.4 or within seven (7) days after receipt of the Contractor's repeated notice under GC Sub-Clause 24.5, then the Facilities or that part thereof shall be deemed to have passed Precommissioning, as of the date of the Contractor's notice or repeated notice, as the case may be

Existing Sub-clause GC24.7 stands amended and renumbered as GC 24.9 and following Sub-Clauses stand added as new Sub-Clauses GC 24.7, 24.7.1, 24.7.2, 24.7.3, 24.7.4, 24.7.5, 24.7.5.1 & 24.7.6

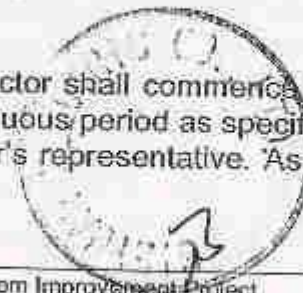
PC 24.7 GC 24.7 Commissioning

PC 24.7.1 Commissioning of the Facilities (or specific part thereof where specific parts are specified in the GC 1.1) shall be commenced by the Contractor immediately after being advised by the Project manager, pursuant to GC sub-clause 24.5 or immediately after the deemed Completion except for Commissioning Precommissioning (including deemed Precommissioning) under GC sub-clause 24.6.

PC 24.7.2 The Employer shall, to the extent specified in Appendix-6 (scope of works and supply by the Employer), deploy the operating and maintenance personnel and supply raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other materials required for Commissioning.

PC 24.7.3 On passing of the Precommissioning and charging of the Facilities at rated voltage, Commissioning would be attained.

PC 24.7.4 Immediately after the Commissioning, the Contractor shall commence Trial-run of the Facilities or any part thereof for a continuous period as specified in Technical specifications, in presence of Employer's representative. As soon



as, the Trial-run is completed, the Contractor shall so notify the Project Manager in writing.

PC 24.7.5 The Project Manager shall, within fourteen (14) days after receipt of the Contractor's notice under GC Sub-Clause 24.7.4, either issue a Completion (Taking Over) Certificate in the form specified in the Sample Forms and Procedures section in the Bidding Documents or in another form acceptable to the Employer, stating that the Facilities or that part thereof have reached Completion as of the date of the Contractor's notice under GC Sub-Clause 24.7.4, or notify the Contractor in writing of any defects and/or deficiencies:

If the Project Manager notifies the Contractor of any defects and/or deficiencies, the Contractor shall then correct such defects and/or deficiencies, and shall repeat the procedure described in GC Sub-Clause 24.7.4. If the Project Manager is satisfied that the Facilities or that part thereof have reached Completion, the Project Manager shall, within seven (7) days after receipt of the Contractor's repeated notice, issue a Completion (Taking Over) Certificate stating that the Facilities or that part thereof have reached Completion as of the date of the Contractor's repeated notice. If the Project Manager is not so satisfied, then it shall notify the Contractor in writing of any defects and/or deficiencies within seven (7) days after receipt of the Contractor's repeated notice, and the above procedure shall be repeated.

PC 24.7.5.1 If the Project Manager fails to issue the Completion (Taking Over) Certificate and fails to inform the Contractor of any defects and/or deficiencies within fourteen (14) days after receipt of the Contractor's notice under GC Sub-Clause 24.7.4 or within seven (7) days after receipt of the Contractor's repeated notice under GC Sub-Clause 24.7.5, or if the Employer makes use of the Facilities or part thereof, then the Facilities or that part thereof shall be deemed to have reached Completion as of the date of the Contractor's notice or repeated notice, or as of the Employer's use of the Facilities, as the case may be.

PC 24.7.6 If for reasons not attributable to the Contractor, the Pre-commissioning/Commissioning of the Facilities or the relevant part thereof cannot be successfully attained within the Time for Completion specified in the PC or any other period agreed upon by the Employer, provisions of Clause GC 25.5 and its sub-clauses shall apply.

PC 24.9 Replacing the Sub-Clause GC 24.9

As soon as possible after Completion, the Contractor shall complete all outstanding minor items, as per the Schedule mutually agreed between the Employer and the Contractor, so that the Facilities of the relevant part thereof, are fully in accordance with the requirements of the Contract, failing



ANNEXURE – 10

***APPROVED LABOUR LICENSE &
INSURANCE POLICY BY CONTRACTOR***

Regd.A/D/



GOVERNMENT OF INDIA
MINISTRY OF LABOUR & EMPLOYMENT
OFFICE OF THE ASSISTANT LABOUR COMMISSIONER(CENTRAL)
KENDRIYA SHRAM SADAN, R.K.MISSION.ROAD, BIRUBARI, GUWAHATI-16

No.GH.46(286)/2016-L

dated:-27.09.19

To
M/s. Techno Electric & Engineering Co. Ltd.
Chandrarup, House No.2
Bishnu Path, Ghuramora Chariali,
Guwahati-781028

Subject:-Contract Labour(Regulation & Abolition)Act, 1970 and Contract Labour
(Regulation & Abolition) Central Rules, 1971- Renewal of labour licence No.
GH.46/286/2016-L dated 07.11.2016.

Dear Sir,

Please refer to your application dtd.20.09.19 received by the office on
26.09.19 for renewal of Labour Licence under Contract Labour (Regulation & Abolition)
Act, 1970.

In this connection please find enclose herewith the original copy of
Licence duly renewed upto 06.11.20.

Please acknowledge receipt.

Yours faithfully,

Encl:-Original Licence

(Hari Om Gautam)

Assistant Labour Commissioner(Central)
& Licencing Officer under CL(R&A)Act, 1970.
Contract Labour (R&A) Act, 1970

FORM-VI

[(See Rule 25(1))]

Government of India

Ministry of Labour & Employment

Office of the Licencing Officer & Assistant Labour Commissioner (Central)

KENDRIYA SHRAM SADAN R.K.Mission Road Guwahati-781016



Licence No. GH.46/286/2016-L

Dated: 07.11.2016

1) Licence is hereby granted to Techno Electric & Engineering Co.Ltd (Rep.by:-Sri P.P.Gupta,M.D) 2nd & 3rd Floor, Park Plaza(North Block) 71, Park Street Kolkata-700 016 under section 12(1) of the Contract Labour (Regulation and Abolition) Act 1970 subject to the conditions specified in the Annexure.

2) This licence is for doing the work of ON-SHORE SERVICES CONTRACT FOR GIS SUBSTATION PACKAGE MEG-SS02 under NER Power Systems Improvement Project-World Bank Funded, Intra-State Meghalaya vide No. CC-CS-91-NER/GIS-2631/1/G4/NOA-III/5616 dt. 0.16 in the exp. The Dy. General Manager, POWERGRID, Donyitieh, Lower Nongrah, Lapaia, Shillong-783006, MEGHALAYA

3) The licence shall remain in force till 06.11.2017

(HARTOM GAUTAM)

Assistant Labour Commissioner (Central)
and Licencing Officer under C.L(R&A) Act 1970
Contract GUWARATI Act 1970

Date: 07.11.2016

(RENEWAL)

(See Rule 29)

Date of Renewal	Fee Paid for renewal	Date of expiry	
17.10.2017	Rs.100.00 (ONE HUNDRED)	06.11.2018	
25.09.2018	Rs. 100.00	06.11.2019	
26.09.2019	Rs. 100.00	06.11.2020	

Date: ANNEXURE

The Licence is subject to the following conditions:-

- 1) The Licence shall be non transferable
- 2) The number of workmen employed as contract labour in the establishment shall not, on any day exceed 100 (One hundred) only

Contd. Page 2

- 3) Except as provided in the rules, the fees paid for the grant or as the case may be for renewal of the licence shall be non-refundable.
- 4) The rates of wages payable to the workmen by the contractor shall not be less than the rates prescribed for the Schedule of employment under the Minimum Wages Act, 1948 where applicable and where the rates have been fixed by agreement, settlement or award, not less than the rates fixed.
- 5) In case where the workman employed by the contractor performs the same or similar kind of work as the workmen directly employed by the Principal Employer of the establishment, the wage rates, holidays, hours of work and other conditions of service of the workman of the contractor shall on the same as applicable to the workman directly employed by the Principal Employer of the establishment on the same or similar kind of work provided that in the case of any disagreement with regard to the type of work the same shall be decided by the Chief Labour Commissioner (Central) whose decision shall be final.
- 6) In other cases the wage rates, holidays, hours of work and conditions of service of the workman of the contractor shall be such as may be specified in this behalf by the Chief Labour Commissioner (Central).
- 7) In every establishment where twenty or more female workmen are ordinarily employed as contract labour there shall be provided two rooms of reasonable dimensions for the use of their children under the age of six years. One of such rooms would be used as a play room for the children and the other as bedroom for the children. For this purpose, the contractor shall supply adequate number of toys and games in the play room and sufficient number of cot and bedding in the sleeping room. The standard of construction and maintenance of the rooms may be specified in this behalf by the Chief Labour Commissioner (Central).
- 8) The contractor shall notify any change in the number of workmen or the conditions of work to the Licensing Officer.
- 9) A copy of the licence shall be displayed prominently at the premises where the contract work is being carried on.
- 10) The contractor shall terminate within 15 days the case commencing completion of the work to the Licensor in form VI-A under rule 81(3).

(HARI OM GAUTAM)

Assistant Labour Commissioner (Central)
Assistant Labour Commissioner (C)
& Licensing & Regulating Officer under
Contract Labour (R&A) Act, 1970

Regd.A/D/



GOVERNMENT OF INDIA
MINISTRY OF LABOUR & EMPLOYMENT
OFFICE OF THE ASSISTANT LABOUR COMMISSIONER(CENTRAL)
KENDRIYA SHRAM SADAN,R.K.MISSION.ROAD,BIRUBARI,GUWAHATI-16

No.GH.46/229/2016-L

dated:-06.08.19

To
M/s. Necon Power & Infra Ltd.
(Rep.by Shri J.P.Khetan,Director)
Souni Ali,A.T.Road.,
Jorhat-785001,Assam.

Subject:-Contract Labour(Regulation & Abolition)Act,1970 and Contract Labour
(Regulation & Abolition) Central Rules,1971-renewal of Labour licence and renewal
of labour licence No. GH.46/229/2016-L dated 05.09.16.

Dear Sir,

Please refer to your application dtd.30.07.19 received by the office on
01.08.19 for renewal of Licence under Contract Labour (Regulation & Abolition)
Act,1970.

In this connection please find enclose herewith the original copy of
Licence duly renewed upto 04.09.20.

Please acknowledge receipt.

Yours faithfully,

Encl:-Original Licence

(Hari Om Gautam)

Assistant Labour Commissioner(Central)
& Licencing & Registering Officer under
Contract Labour (R&A) Act, 1970.

FORM-VI
 [(See Rule 25(1))
 Government of India
 Ministry of Labour & Employment
 Office of the Licencing Officer & Assistant Labour Commissioner (Central)
 KENDRIYA SHRAM SADAN, R.K. Mission Road, Guwahati-781016



Licence No. GH.46/229/2016-L

Dated: 5.9.16

1) Licence is hereby granted to M/s Necon Power & Infra Ltd (Rep.by: Shri J.P. Khelan, Director) Seuni Ali, A.T. Road, Jorhat-785001, ASSAM under section 12(1) on the Contract Labour (Regulation and Abolition) Act, 1970 subject to the conditions specified in the Annexure.

2) This licence is for doing the work of Ex-works Supply Contract for DMS Package MEG-DMS-03 associated with NER Power System Improvement Project, Vide No. CC-CS/474-NER/REW-2957/1/G5/NOAH/5802 dated: 27.05.2016 in the establishment of The Dy. General Manager, PGCIL, Dongtiéh, Lower Nongrah Lapalang, Shillong-793006, Meghalaya

3) The licence shall remain in force till **04.09.2017**

Date: 5.9.16

(HARI OM GAUTAM)

Assistant Labour Commissioner (Central)
 and Licencing Officer under C.L.R&A Act, 1970
 Contract GUWAHATI, Act. 1970

(RENEWAL)
 (See Rule 29)

Date of Renewal	Fee Paid for renewal	Date of expiry	
7.8.2017	Rs.50.00 (FIFTY) only	04.09.2018	
01.08.2018	Rs.100.00	04.09.2019	
05.08.2019	Rs.100.00	04.09.2020	

Date:

ANNEXURE

The Licence is subject to the following conditions:-

- 1) The Licence shall be non transferable.
- 2) The number of workmen employed as contract labour in the establishment shall not, on any day exceed **50** (Fifty) only

- 3) Except as provided in the rules the fees paid for the grant, or as the case may be for renewal of the licence shall be non refundable.
- 4) The rates of wages payable to the workmen by the contractor shall not be less than the rates prescribed for the Schedule of employment under the Minimum Wages Act, 1948, where applicable and where the rates have been fixed by agreement settlement or award, not less than the rates fixed.
- 5) In case where the workman employed by the contractor perform the same or similar kind of work as the workman directly employed by the Principal Employer of the establishment, the wage rates, holidays, hours of work and other conditions of service of the workman of the contractor shall be the same as applicable to the workman directly employed by the Principal Employer of the establishment on the same or similar kind of work provided that in the case of any disagreement with regard to the type of work the same shall be decided by the Chief Labour Commissioner(Central) whose decision shall be final.
- 6) In other cases the wage rates, holidays, hours of work and conditions of service of the workmen of the contractor shall be such as may be specified in this behalf by the Chief Labour Commissioner(Central).
- 7) In every establishment where twenty or more female workmen are ordinarily employed as contract labour there shall be provided two rooms of reasonable dimensions for the use of the children under the age of six years. One of such rooms would be used as a play room for the children and the other as bedroom for the children. For this purpose the contractor shall supply adequate number of toys and games in the play room and sufficient number of cots and beddings in the sleeping room. The standard of construction and maintenance of the creches may be specified in this behalf by the Chief Labour Commissioner(Central).
- 8) The licensee shall notify any change in the number of workmen or the conditions of work to the Licensing Officer.
- 9) A copy of the licence shall be displayed prominently at the premises where the contract work is being carried on.
- 10) The licensee shall intimate within 15 days the date commencement / completion of the work to the Inspector in form VI-A under Rule 81(3)

(HARI OM GAUTAM)

Assistant Labour Commissioner(Central)
and Licensing & Registration Officer under
Contract Labour (Regulation & Abolition) Act, 1970



MARINE-CUM-ERECTION INSURANCE POLICY

Insured's Name	: NECCON POWER & INFRA LTD.		
Insured's Details		Issuing Office Details	
Customer ID	: PO73023329	Office Code	: DISPUR BRANCH (530702)
Address	: B.C. SYIEN APARTMENT, LAITUMKRAH OPP. NEEPCO, EAST KHASI HILLS SHILLONG ASSAM RIFLES ,MEGHALAYA, 793011	Address	: NILGIRI MANSION, OPPOSITE TO NEMCARE HOSPITAL, BHANGAGARH, G.S.ROAD,781005
Phone No	:	Phone No	: 03612529463
E-mail/Fax	: neccon@necconpower.com, /	E-mail/Fax	: nia.530702@newindia.co.in/
PAN No	: AABCN1603J	S.Tax Regn. No	: AAACN4165CST178
GSTIN/UIN	: 17AABCN1603J3ZP/NA	GSTIN	: 18AAACN4165C2ZP
		SAC	: 997139 (Other non-life insurance services excl RI)

Policy Details			
Policy Number	: 53070244200800000001	Business Source Code	
Period of Insurance	: 28/04/2020 02:30:41 PM to 13/09/2020 11:59:59 PM	Dev.Off. level/Broker/Corp. Agent	: Mr. PRADIP MEDHI - (DE7795252)
Date of Proposal	: 28-Apr-20	Agent/Bancassurance	: Mrs. DOLLY SINGH (NIAAG00116342) DOLLY SINGH (SI00199200)
Prev. Policy no.	:	Phone No	: NA / 9864032185
Client Type	: Corporate	E-mail/Fax	: 2019dollygghy@gmail.com / pradip.medhi@newindia.co.in, / /

Premium:	GST:	Stamp Duty	Total (₹)	Receipt No. & Date:
398213	71679	1	469893	53070281200000000113 - 28/04/20

Limit : By Rail/ Road ₹: 50000000	PERIOD: The cover commences from the date of the first consignment of despatch from the manufacturer's/ supplier's warehouse either in India or abroad and remains in force for the period as mentioned above (the said period starting from the arrival of the first consignment or despatch at the site of erection) or the completion of erection including test period not exceeding ----- weeks, whichever is earlier.
Limit : By Air / Sea ₹: 1 any one vessel	
Limit as per Location Clause ₹: 50000000	
LOCATION CLAUSE : In case of loss and/ or damage before shipment after discharge to the Insured interest in any one locality the underwriter notwithstanding anything to the contrary contained in this contract, shall not be liable in respect of any one accident or series of accidents arising, out of the same event for more than its proportion of an amount upto, but not exceeding, the sum of ₹ _____. The conveyance of the insured interest upon interior or by land transit shall not be deemed to be shipment within the meaning of this clause.	Special Conditions: EXCESS 5% OF CONSIGNMENT VALUE SUBJECT TO MINIMUM OF ₹10,000/-
Excess for Cargo: 0	PREMIUM: As per Premium Endorsement hereunder:

Voyage		
Sl. No.	From	To
1	ANY PART OF INDIA	PROJECT SITE

CLAIMS PAYABLE: On the basis of the actual loss sustained at the time of claim. NOTICE of loss or damage to be given and survey arranged and a certificate obtained from the Company's Agent at port of discharge or in case where the Company has no agent, by a Certificate from Lloyd's Agents, without which Certificates no claim for loss will be paid. In the event of loss or damage which may result in claim under this Insurance, immediate notice must be given to policy issuing Office/ any office nearest to the destination who are the Company's agent at port of discharge, in order they may examine the goods and issue a survey report. Where the Company has no agent, the notice must be given to W. K. Webster's

Digitally signed
by Srinivasan
Vaideswaran
Date: 2020.04.28
16:31:22 IST



Closing Particulars - All shipments are to be declared to the Company immediately upon receipt of shipping documents and stamped certificates to be obtained from the Company's Office at the issuing Office.

*** Premium subject to adjustment on completion of the Project**

Sl. No.	Type of Project/Description of Project
1	181010 - Transmission Lines / 1) PACKAGE MEG-DMS-03, CONSTRUCTION OF 33/11Kv, SUB-STATION AND LINE AT MAWPAT, NEW SHILLONG, MAWRENGKHENG, MAWKYNREW, LANDONOGKREM IN THE STATE OF MEGHALAYA. 2) EXTENSION OF POLICY NO. 53070244160800000005, 53070244190800000019

Site of Erection	Risk Address : 1 MAWPAT, NEW SHIONG, MAWRYNGKHENG, LANDONOGKREM,, JONGKSHA, MEGHALAYA, ML001, SHILLONG, ML, MEGHALAYA, INDIA, 793001
------------------	--

Principal(s)/ Contractor/ sub-contractor Details:		
Sl. No.	Name	Address
1	POWER GRID CORPORATION OF INDIA LTD	SHILLONG , MEGHALAYA
2	NECCON POWER & INFRA LTD	SEUNI ALI , A.T. ROAD, JORHAT

Sl. No.	Period of Insurance
1.	Period of Insurance From : 28/04/2020 02:30:41 PM To : 13/09/2020 11:59:59 PM (including 1 months Testing) plus 1 months Extended Maintenance period

Section I - Material Damage :

1. Plant & Equipments to be erected (New Machine)

a) Landed Cost of Imported machinery as at Factory site at exchange Rate : 0 (sub divided as)

Sl. No.	Invoice Cost	Freight insurance, handling, Clearing and Forwarding charges up to Factory site	Custom duty
1	0	0	0

b) On machinery fabricated or manufactured in India (sub divided as)

Sl. No.	Invoice Cost including Insurance, handling, clearing and transport up to Factory site	Excise Duty
1	0	0

Second Hand Machinery(to be Erected)

i) Landed cost of Imported machinery as at Factory site at exchange rate : «SHEXchange Rate ER ME» (sub divided as)

Sl. No.	Invoice Cost	Freight insurance, handling, Clearing and Forwarding charges up to Factory site	Custom duty
1	NA	NA	NA

ii) On machinery fabricated or manufactured in India (sub divided as)

Sl. No.	Invoice Cost including Insurance, handling, clearing and transport up to Factory site
1	0

c) On Cost of erection including salaries of all Foreign and Indian Technicians and Wages of all skilled and unskilled labour employed at Factory Site during erection :

1	675364001
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d) On Building in which the above Plant and Machinery is to be erected

Sl. No.	a) Permanent Civil Engineering Works	b) Temporary Works	Completely erected value



1	0	0	675364001
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2. Contractors Plant and Machinery (Memo 4) as per list enclosed								
Item No.	Quantity	Description of Items (Type, Manufacture, Capacity)	Year of Manufacture	Sum Insured (In ₹)	Risk Code	Excess due to AOG Perils	Excess due to Other than AOG Perils	Excess for Boom Section

3. Add on Covers		
1. Owners Surrounding Property		
Sl. No.	Limit of Indemnity	Excess
1	0	0

2. Additional Custom Duty		
Sl. No.	Limit of Indemnity	Excess
1	0	0

3. Removal of Debris per occurrence		
Sl. No.	Limit of Indemnity	Excess
1	0	0

4. Professional Fees		
Sl. No.	Limit of Indemnity	Excess
1	0	0

5. Expediting Cost including Air Freight & Express Freight		
Sl. No.	Limit of Indemnity	Excess
1	0	0

6. Offsite Storage/ Fabrication		
Sl. No.	Limit of Indemnity	Excess
1	0	0

7. on increased replacement value (including duty on such additional replacement value) which may have to be paid on replacement of imported Plant and Machinery as per 1(a) above		
Sl. No.	Limit of Indemnity	Excess
1	0	0

8. on increased replacement value which may have to be paid on replacement of indigenous Plant and Machinery as per 1(b) above		
Sl. No.	Limit of Indemnity	Excess
1	0	0

on increased replacement value which may have to be paid on replacement of Plant and Machinery as per 1(d) a) above		
Sl. No.	Limit of Indemnity	Excess
1	0	0

9. Dismantling cover for Used /Second Hand Machinery		
Sl. No.	Limit of Indemnity	Excess
1	0	0

10. Automatic Reinstatement clause		
Sl. No.	Limit of Indemnity	Excess



1	0	0
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11. Loss minimisation expenses

Sl. No.	Limit of Indemnity	Excess
1	0	0

12. Cover for valuable documents

Sl. No.	Limit of Indemnity	Excess
1	0	0

13. Continuity of cover during operational phase for unit / plant tested but awaiting integral testing (along with other units / plants)

Sl. No.	Limit of Indemnity	Excess
1	0	0

14. Design Defect Cover

Sl. No.	Limit of Indemnity	Excess
1	DE-4 of Munich Re	5 times AOG excess

15. Waiver of Subrogation clause

Sl. No.	Limit of Indemnity	Excess
1	NA	0

Section II - Third Party Liability :

Limit of Indemnity

Sl. No.	For any one accident	For all accidents during the period	Any One Person
1	1000000	25000000	1000000

EXCESS for Section I and II :

Sl. No.	For Storage & Erection Claims	For Testing Period Claims/ maintenance period claims	For Acts of God Claims (as per Memo 6)/Maintenance Cover (to be removed)	For Fire / Explosion Claims	Terrorism
1	5 % of the claim amount subject to a minimum of ₹ 50000	5 % of the claim amount subject to a minimum of ₹ 150000	10 % of the claim amount subject to a minimum of testing period excess & a maximum of ₹ 5 Crores	10% of the claim amount subject to a minimum of testing period excess & a maximum of ₹ 2 Crores	0.5 % of Total Sum Insured subject to minimum of ₹ 1,00,000/-for each and every claim

Excesses For Specific AddOn Covers :

Sl. No.	Description Of Cover	Excess
	Terrorism Covered	Terrorism Premium
	YES	40776

Deductibles Opted for Terrorism Pool : 5% of the claim amount for each and every claim subject to Minimum of ₹1,00,000 and Maximum of ₹2,50,00,000

Risk Serial No.	STFI Cover
1	YES

Risk Serial No.	Earth Quake Cover
1	YES

Installment Details



Installment Number	Installment Date	Installment Amount (₹)
1	28/04/2020	421776
2	28/04/2020	48116

The policy is subject to endorsements, warranties attached.

ENDORSEMENTS ATTACHED TO & FORMING PART OF THE POLICY		
Sl. No.	Endorsement Number	Endorsement Title
	ENG 002	Extension of terrorism damage
	SLEC	Section Limitation and Exclusion Clause

Risk Code	Excess
181010	₹10,000/₹ 30,000, * Excess for Theft & Burglary claims shall be 25 % of claim amount subject to minimum of ₹15,000

In witness whereof the undersigned being duly authorized by the Insurers and on behalf of the Insurers has (have) hereunder set his (their) hand(s) on this 28th day of April,2020

For and on behalf of
The New India Assurance Company
Limited

Duly Constituted Attorney(s)

Premium and GST Details

	Rate of Tax	Amount in INR
Premium		₹398213
SGST	0	0
CGST	0	0
IGST	18	71679

In witness whereof the undersigned being duly authorized by the Insurers and on behalf of the Insurers has (have) hereunder set his (their) hand(s) on this 28th day of April,2020

For and on behalf of
The New India Assurance Company
Limited

Duly Constituted Attorney(s)

Tax Invoice No : 53070220P0000203

IRDA Registration Number: 190





MARINE-CUM-ERECTION INSURANCE POLICY

Insured's Name	PGCIL & USTL		
Insured's Details		Issuing Office Details	
Customer ID	PO48199886	Office Code	BHILAI BR. (460301)
Address	1-A, LIGHT INDUSTRIAL AREA, BHILAI (PROJECT AT SHILONG) UPPER SHILONG, MEGHALAYA, 793305	Address	BRANCH OFFICE-460301, DUBEY COMPLEX, 01ST FLOOR, GF. ROAD, NEAR BASANT TALKIES, CAMP-2, BHILAI 460023
Phone No		Phone No	07882296220 / 07882296020 / 7882296220
E-mail/Fax	hr_dept@ustl.co.in /	E-mail/Fax	nia.460301@newindia.co.in/
PAN No	AAACU4655Q	S. Tax Regn. No	AAACN4165CST178
GSTIN/UIN	17AAACU4655Q1ZY/NA	GSTIN	22AAACN4165C1Z1
		SAC	997139 (Other non-life insurance services excl RI)

Policy Details			
Policy Number	46030144200800000004	Business Source Code	
Period of Insurance	02/06/2020 12:00:01 AM to 01/09/2020 11:59:59 PM	Dev.Off. level/Broker/Corp. Agent	EXCLUSIVE INSURANCE BROKING SERVICES LTD. - (208442893) BROKER_SITE_00905119905119 (208443235)
Date of Proposal	02-Jun-20	Agent/Bancassurance	
Prev. Policy no.		Phone No	(0731) 2528084 / NA
Client Type	Non-Corporate	E-mail/Fax	dillo@exclusiveinsurance.in / /

Premium:	GST:	Stamp Duty	Total (₹)	Receipt No. & Date:
382581	68883	1	451565	4603018120000000097 1 - 29/05/20

Limit: By Rail/ Road ₹: 1.	PERIOD: The cover commences from the date of the first consignment of despatch from the manufacturer's/ supplier's warehouse either in India or abroad and remains in force for the period as mentioned above (the said period starting from the arrival of the first consignment or despatch at the site of erection) or the completion of erection including test period not exceeding — weeks, whichever is earlier.
Limit: By Air / Sea ₹: 1 any one vessel	
Limit as per Location Clause ₹: 1	
LOCATION CLAUSE: In case of loss and/ or damage before shipment after discharge to the insured interest in any one locality the underwriter notwithstanding anything to the contrary contained in this contract, shall not be liable in respect of any one accident or series of accidents arising, out of the same event for more than its porportion of an amount upto, but not exceeding, the sum of ₹ _____. The conveyance of the insured interest upon interior or by land transit shall not be deemed to be shipment within the meaning of this clause.	Special Conditions: .5% OF CONSIGNMENT OR RS.10000/- WHICH EVER IS HIGHER
Excess for Cargo: 0	PREMIUM: As per Premium Endorsement hereunder.

Voyage		
Sl. No.	From	To
1	ANYWHERE IN INDIA (WAREHOUSE TO WAREHOUSE BASIS)	220 KV D/C Killing (Byrnhat)-MAWNGAP-New Shilong TL-122KM
2	ANYWHERE IN INDIA (WAREHOUSE TO WAREHOUSE BASIS)	AMPATI-RONGKHONG(69KMS), RONGKHONG- NANGALBIRA(69KMS)
3	ANYWHERE IN INDIA (WAREHOUSE TO WAREHOUSE BASIS)	NANGALBIRA-NONGSTAIN(57KMS), NONGSTAIN- SHILONG(MAWLAI)(72KMS)

Signature valid

Digitaly Sign
by
Vikas
Date: 29/05/20
16:55:47 IST

Policy No. : 46030144200800000004 Document generated by 21119 at 29/05/2020 16:55:47 Hours.

Regd. & Head Office: New India Assurance Bldg., 87 M.G. Road, Fort, Mumbai - 400 001. TOLL FREE No. 1 800 209 1415.



Sl. No.	From	To
4	ANYWHERE IN INDIA (WAREHOUSE TO WAREHOUSE BASIS)	SHILONG(MAWLAI)0 NEHU(WB)(9KMS)
5	ANYWHERE IN INDIA (WAREHOUSE TO WAREHOUSE BASIS)	KHELERIATE(PG)(WB)KHELERIATE(ME)7KM- KHELERIATE(ME)-MLHEP-50KM
6	ANYWHERE IN INDIA (WAREHOUSE TO WAREHOUSE BASIS)	MAWNGAP-UMTRU(WB) (30KM)

CLAIMS PAYABLE: On the basis of the actual loss sustained at the time of claim. NOTICE of loss or damage to be given and survey arranged and a certificate obtained from the Company's Agent at port of discharge or in case where the Company has no agent, by a Certificate from Lloyd's Agents, without which Certificates no claim for loss will be paid. In the event of loss or damage which may result in claim under this insurance, immediate notice must be given to policy issuing Office/ any office nearest to the destination who are the Company's agent at port of discharge, in order they may examine the goods and issue a survey report. Where the Company has no agent, the notice must be given to W. K. Webster's local agent.

Closing Particulars - All shipments are to be declared to the Company immediately upon receipt of shipping documents and stamped certificates to be obtained from the Company's Office at the issuing Office.

* Premium subject to adjustment on completion of the Project

Sl. No.	Type of Project/Description of Project
1	181010- Transmission Lines / 1) Specification no CC-C5/91-NER/TWT-2468/1/G4/CA-I/5841 & 5842 (TW-01) 2) 220 KV D/C KILLING (YRNIHAT)-MAWNGAP-NEW SHILONG TL-122 KM

Site of Erection	Risk Address : 1 220 KV D/C KILLING(BYRNIHAT)-MAWNGAP-NEW SHILONG TL-122KMS,AMPATI-RONGKHONG(69KMS),RONGKHONG-NANGALB,NONGSTAIN-SHILONG(MAWLAI)(72KMS),SHILONG(MAWLAI)0 NEHU(WB)(9KMS)KHELERIATE(PG)(WB)-KHELERIATE(ME)7KM,ML043,UPPER SHILLONG, ML MEGHALAYA, INDIA. 793005
------------------	--

Principal(s)/ Contractor/ sub-contractor Details:		
Sl. No.	Name	Address
1	POWER GRID CORPORATION OF INDIA	GURGAON HARYANA
2	UNIQUE STRUCTURES & TOWERS LIMITED	1-A, LIGHT INDUSTRIAL AREA, BHILAI

Sl. No.	Period of Insurance
1.	Period of Insurance From : 02/06/2020 12:00:01 AM To : 01/09/2020 11:59:59 PM (including 1 months Testing) plus 0 months maintenance period

Section I - Material Damage :

1. Plant & Equipments to be erected (New Machine)

a.) Landed Cost of Imported machinery as at Factory site at exchange Rate : 0 (sub divided as)

Sl. No.	Invoice Cost	Freight insurance, handling, Clearing and Forwarding charges up to Factory site	Custom duty
1	0	0	0

b.) On machinery fabricated or manufactured in India (sub divided as)

Sl. No.	Invoice Cost including Insurance, handling, clearing and transport up to Factory site	Excise Duty
1	904622754	0

Second Hand Machinery(to be Erected)

i) Landed cost of Imported machinery as at Factory site at exchange rate : «SHEXchange Rate ER ME» (sub divided as)

Sl. No.	Invoice Cost	Freight insurance, handling, Clearing and Forwarding charges up to Factory site	Custom duty



Sl. No.	Invoice Cost	Freight insurance, handling, Clearing and Forwarding charges up to Factory site	Custom duty
1	NA	NA	NA

ii) On machinery fabricated or manufactured in India (sub divided as)

Sl. No.	Invoice Cost including Insurance, handling, clearing and transport up to Factory site
1	0

Sl. No.	c) On Cost of erection including salaries of all Foreign and Indian Technicians and Wages of all skilled and unskilled labour employed at Factory Site during erection :
1	721984326

d) On Building in which the above Plant and Machinery is to be erected

Sl. No.	a) Permanent Civil Engineering Works	b) Temporary Works	Completely erected value
1	0	0	1626607080

2. Contractors Plant and Machinery (Memo 4) as per list enclosed

Item No.	Quantity	Description of Items (Type, Manufacture, Capacity)	Year of Manufacture	Sum Insured (In ₹)	Risk Code	Excess due to AOG Perils	Excess due to Other than AOG Perils	Excess for Boom Section
----------	----------	--	---------------------	--------------------	-----------	--------------------------	-------------------------------------	-------------------------

3. Add on Covers

1. Owners Surrounding Property

Sl. No.	Limit of Indemnity	Excess
---------	--------------------	--------

2. Additional Custom Duty

Sl. No.	Limit of Indemnity	Excess
---------	--------------------	--------

3. Removal of Debris per occurrence

Sl. No.	Limit of Indemnity	Excess
---------	--------------------	--------

4. Professional Fees

Sl. No.	Limit of Indemnity	Excess
---------	--------------------	--------

5. Expediting Cost including Air Freight & Express Freight

Sl. No.	Limit of Indemnity	Excess
---------	--------------------	--------

6. Offsite Storage/ Fabrication

Sl. No.	Limit of Indemnity	Excess
---------	--------------------	--------

7. on increased replacement value (including duty on such additional replacement value) which may have to be paid on replacement of imported Plant and Machinery as per 1(a) above

Sl. No.	Limit of Indemnity	Excess
1	0	0

8. on increased replacement value which may have to be paid on replacement of indigenous Plant and Machinery as per 1(b) above

Sl. No.	Limit of Indemnity	Excess
1	0	0

on increased replacement value which may have to be paid on replacement of Plant and Machinery as per 1(d) a) above



Sl. No.	Limit of Indemnity	Excess
1	0	0

9. Dismantling cover for Used /Second Hand Machinery		
Sl. No.	Limit of Indemnity	Excess

10. Automatic Reinstatement clause		
Sl. No.	Limit of Indemnity	Excess

11. Loss minimisation expenses		
Sl. No.	Limit of Indemnity	Excess

12. Cover for valuable documents		
Sl. No.	Limit of Indemnity	Excess

13. Continuity of cover during operational phase for unit / plant tested but awaiting integral testing (along with other units / plants)		
Sl. No.	Limit of Indemnity	Excess

14. Design Defect Cover		
Sl. No.	Limit of Indemnity	Excess

15. Waiver of Subrogation clause		
Sl. No.	Limit of Indemnity	Excess

Section II - Third Party Liability :			
Limit of Indemnity			
Sl. No.	For any one accident	For all accidents during the period	Any One Person
1	5000000	100000000	500000

EXCESS for Section I and II :					
Sl. No.	For Storage & Erection Claims	For Testing Period Claims/ maintenance period claims	For Acts of God Claims (as per Memo 6)/Maintenance Cover (to be removed)	For Fire / Explosion Claims	Terrorism
1	5 % of the claim amount subject to a minimum of ₹ 50000	5 % of the claim amount subject to a minimum of ₹ 150000	10 % of the claim amount subject to a minimum of testing period excess & a maximum of ₹ 5 Crores	10% of the claim amount subject to a minimum of testing period excess & a maximum of ₹ 2 Crores	0.5 % of Total Sum Insured subject to minimum of ₹ 1,00,000/- for each and every claim

Excesses For Specific AddOn Covers :		
Sl. No.	Description Of Cover	Excess
	Terrorism Covered	Terrorism Premium
	NO	0
	Risk Serial No.	STFI Cover
	2	YES
	Risk Serial No.	Earth Quake Cover
	1	NO

Installment Details



Installment Number	Installment Date	Installment Amount (₹)
1	02/06/2020	451564

The policy is subject to endorsements, warranties attached.

ENDORSEMENTS ATTACHED TO & FORMING PART OF THE POLICY		
Sl. No.	Endorsement Number	Endorsement Title
	EN(003	Exclusion of terrorism damage

Risk Code	Excess
181010	₹10,000/₹ 30,000, * Excess for Theft & Burglary claims shall be 25 % of claim amount subject to minimum of ₹15,000

In witness whereof the undersigned being duly authorized by the Insurers and on behalf of the Insurers has (have) hereunder set his (their) hand(s) on this 29th day of May, 2020

For and on behalf of
The New India Assurance Company
Limited

Duly Constituted Attorney(s)

Premium and GST Details

	Rate of Tax	Amount in INR
Premium		₹382681
SGST	0	0
CGST	0	0
IGST	18	68883

In witness whereof the undersigned being duly authorized by the Insurers and on behalf of the Insurers has (have) hereunder set his (their) hand(s) on this 29th day of May, 2020

For and on behalf of
The New India Assurance Company
Limited

Duly Constituted Attorney(s)

Tax Invoice No : 46030120E0001179

IRDA Registration Number: 190

ANNEXURE - 11
SAFETY CHECKLISTS

Name of Line : 220 KV D/C Killing - Mawngap - New Shillong (TW-01)

Loc. No.: AP 110/0

Name of the Contractor: Unique Structures & Towers Ltd.

Type of tower: DC+0

ITEM CHECKED

RESULT OBSERVATION

- | ITEM CHECKED | RESULT OBSERVATION |
|--|--------------------|
| 1 Setting period of foundation is allowed for at least 14 days as per specn. Back filling is OK | Yes / No |
| 2 All tested tools and plants and safety equipments in working condition are available at site | Yes / No |
| 3 All tower member nuts/ bolts are available at site with out any damage. bend or rushing | Yes / No |
| 4 Benching/revetment, if any, completed, if not then Programme of Completion | Yes / No |
| 5 Shutdown of power line, if required, is arranged. | Yes / No - NA - |
| 6 Reqd. no of safety helmets, safety belts & safety shoes are being used | Yes / No |
| 7 First section is completely braced and all plane Diagonals | Yes / No |
| 8 Guying of tower provided as per approved drawing and norms. Guying to be terminated on firm ground. | Yes / No |
| 9 All nuts / bolts flat/spring washers are provided as per approved drawings. | Yes / No |
| 10 All horizontal bolt heads are facing inside and vertical bolts head facing upwards. | Yes / No |
| 11 Subsequent section are erected only after completed erection and bracing of previous section | Yes / No |
| 12 Any undue stress, bending or damage of member during erection noticed. | Yes / No - |
| 13 Any filling of holes or cutting of members during erection observed. | Yes / No - |
| 14 Any heavy hammering of bolts causing damage of threads noticed | Yes / No - |
| 15 Any substitute of tower member erected, if yes, members nos. | Yes / No - |
| 16 Tightening is done progressively from top to bottom. | Yes / No |
| 17 All bolts at the same level and tightened simultaneously | Yes / No |
| 18 Slipping running over nuts/bolts are replaced by new ones | Yes / No |
| 19 Threaded portion projected outside of nut is not less than 3 mm | Yes / No |
| 20 Punching of threads projected outside is done at three positions | Yes / No |
| 21 All left over holes are filled with correct size of bolt /nut | Yes / No |
| 22 Verticality of tower is checked with help of theodolite for both longitudinal & transverse direction. This is with in specified limits. | Yes / No |
| 23 Details of missing members, nuts/bolts etc. | Yes / No - NA - |

24. TOWER ACCESSORIES.

All the following tower accessories are fixed as per specification approved drawing

- a) Number Plate Yes / No
- b) Danger plate Yes / No
- c) Phase plate Yes / No
- d) Anti-climbing Device/ Barbed wire Yes / No
- e) Bird Guard Yes / No
- f) Aviation signals/paints as per requirement specification Yes / No

25 Tack welding is done as per specification using standard tack welding Yes / No

26 Zinc rich (90%) cold galvanizing paint applied over tack welding Yes / No

27 Earthing

Tower footing resistance Ohm

Type of earthing approved Pipe type / Counter Poise

A Pipe type Earthing

- a) Earthing provided on Leg A Yes / No
- b) G.S. Pipe, flat tightened with Nut & Bolt and placed as per apprd. Drg Yes / No
- c) There is no sharp bend/damage in earthing strips/flat Yes / No
- d) Finely broken coke (Max. size 25mm) and salt in ratio 10:1 filled in bore holes Yes / No
- e) Backfilling done properly Yes / No

B Counter Poise Earthing

- a) Excavation done upto required depth (min 1 M) and length (Min 15M) in four radial directions. Yes / No
- b) G.S. wire placed in excavation and lugs firmly tightened with nut and bolt Yes / No
- c) Backfilling done as per specn. Yes / No
- d) Value of tower footing resistance after Earthing in dry season (Permissible limit - 10 ohm) Ohm

Certificate : Tower erection is complete in all respects and footing resistance is with in permissible limit.

FOR CONTRACTOR

Signature [Signature]
 Name
 Designation **PRASONJEET SUN**
PROJECT MANAGER
MANJALpur SHELLING
USTL
 Date

FOR POWER GRID

Signature [Signature]
 Name
 Designation **Manohar Singh**
Chief Engineer (NEH) (S)
Manjapur Shelling
 Date

[Signature]
 Field Supervisor
 Manjapur Shelling
 USTL

[Signature]
 Manjapur Shelling
 Manjapur Shelling
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 Manjapur Shelling

ANNEXURE - 12

PHOTOGRAPHS OF HSE COMPLIANCE

Photographs of Health and Safety Compliance



Tool Box Talk and Muck Drill on Fire Fighting at 220 /132 New Shillong Substation



CPR training at 220/132 kV New Shillong S/S



Basic safety training at 220/132 kV Mawngap



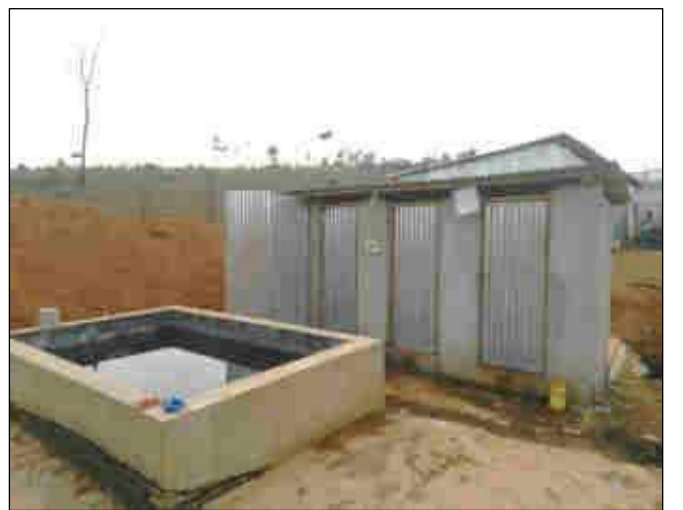
Height work training at Mawngap GIS Substation



Training program on Use of PPEs, Safe material handlings GIS Substation



Labour camp at 220 kV New Shillong SS



Toilet facilities at 220 kV New Shillong SS

ANNEXURE – 13

***DETAILS OF SAFEGUARD
CONSULTATION***

Details of Consultation

Public Consultation Meeting			
Date of meeting	Venue of Meeting	No. of Persons attended	Persons Attended
12.09.2014	Office of the Superintending Engineer, T & T circle, Byrnihat	28	POWERGRID and MePTCL officials, Project affected Persons, Senior members, Village Headman & General Public
19.09.2014	HRD Center, MeECL, Umium	35	POWERGRID and MePTCL officials, Project affected Persons, Senior members, Village Headman & General Public

MEGHALAYA POWER TRANSMISSION CORPORATION LIMITED

OFFICE OF THE SUPERINTENDING ENGINEER (TRANSMISSION)

BYRNIHAT - 793101

KA JING PYNBNA (NOTICE)

Ha

U Rangbah Shnong,

Kane ka long ka jing pynbna ba kan don ka jing ia lang paidbah ha office jong u Suprintending Engineer (T & T) Circle, MeECL, Byrnihat ha ka 12 tarik u bna! September 2014 naduh ka por 11:00 baje mynstep ha kaba ki Engineer na MePTCL bad Power Grid (PGCIL) kin pynshal ha phi ia ka jing shna ia u tower line ba 220 KV na Killing sha Mawphlang bad na Mawphlang sha New Shillong. Lada don kino kino ha shnong jong phi ki ba kwah ban tip bniah shaphang kane ka jing shna kin sngew bha ban poi khnang khnang ha ka tei ka sngi bala buh.

Khublei Shibun.



(Shri. R. Syiem)

4863065704

Superintending Engineer (T & T Circle)

MePTCL, Byrnihat.

Khan Verma

MEGHALAYA POWER TRANSMISSION CORPORATION LIMITED

OFFICE OF THE SUPERINTENDING ENGINEER (TRANSMISSION)

BYRNihat:- 793101

(PROJECT SUMMARY)

KATTO KATNE SHAPHANG KA PROJECT

Khnanng ban kham pynbiang ia ka jing sam bording ha baroh ki jylla Shateilammihngi jong ka ri India kynthup ia ka jylla Meghalaya, ka sorkar India da ka jing iarap jong ka World Bank, ka la shna ia ka project ba ia khot ka **North Eastern Region Power System Improvement Project (NERPSIP)**. Na kane ka project yn don kam ban shna ia ki Transmission line bad Distribution line ki ba thymmai ryngkat bad ki jing pynkhlain ia ki mashin bording ne tower line ki ba la don lya. Kane ka project ha Meghalaya kalong kumne :-

- Ban pynkhlain ia ki sainar ba sam ia ka bording bad ban pynduna ia ka jing sepei (Loss) ka bording electric.
- Ban pynbiang ia ka rukom sam ia ka bording kat kum ka jing don kam.

Ka Meghalaya Power Transmission Corporation Limited (MePTCL) ka dei ka kompani ba pynthei ia kine kam ha ka jylla Meghalaya bad ka thmu ban shna ia ka 220 KV Double Ckt line na Killing, Ri Bhoi sha Mawphlang bad Mawphlang sha New Shillong (110 KM). Ka jingshna ia kane ka line kan nym donkam ban shim duh ia ki jaka bad lada don kano kano ka jing julor ha kaba iadei bad kano kano ka longing longsem haka por ba shna yn siew ia ka bai lut ksan kat ba pynshong dor ha ka project. Ka jingwan jong kane ka project (NERPSIP) kan iarap ia ka jylla Meghalaya baroh kawei da kaba kyntiew ia ka ionh ka kot jong baroh.

(Shri. R. Syiem)

Superintending Engineer (T & T Circle)
MePTCL, Byrnihat.

MEGHALAY POWER TRANSMISSION CORPORATION LIMITED

OFFICE OF THE SUPERINTENDING ENGINEER T&T CIRCLE
MePTCL: BYRNihat

Subject: Public Meeting
 Agenda: Construction of 220KV D/C Killing (Byrnihat) - Mawngap - New Shillong Line (110Km approximately)
 Venue: Office of the Superintending Engineer T&T Circle, MePTCL, Byrnihat
 Date: 12/09/2014

Name of the Participants

Sl.No	Full Name	Signature
1	Shri Leott Leonard H Soltzer	
2	Shri Rocco Siffon	
3	Shri Sukumar Mishra, DGM, Powergen	
4	Shri K.C. Barman, Chief Engineer	
5	Shri Jinyoti Sarkar, POWERGRID	
6	Shri Subha Rana Barua	
7	Shri Erick Lyngdoh	
8	Shri J. Boro	
9	Shri David Lyngdoh	
10	Shri Lalendar Shikong	
11	Shri L. Mangon	
12	Shri Prakash Mangoch	
13	Shri Tribu Sanyal	
14	Rehman Sangma	
15	Shri. Harin Mangon	
16	Dr. Dilipjot	
17	Hita Rani	
18	Shri. Mahanta	
19	Shri. Durina Lyngdoh	
20	Shri. Protoni Dala	
21	Shri. Bernard Sanyal	
22	Shri. RBL Kharbuda	
23	Shri. Mayan	
24	Shri. A.T. Godphol	

25	M. G. R. Loranferi	<u>P. S. S. S.</u>
26	C. C. Prayubi	<u>u. u. u.</u>
27	M. D. D. D. D.	<u>u. u. u.</u>
28	P. S. S. S. S.	<u>P. S. S. S.</u>
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MEGHALAYA POWER TRANSMISSION CORPORATION LIMITED
OFFICE OF THE CHIEF ENGINEER (Transmission)
LUM JINGSHAI:: Shillong : 793001.

KATTO KATNE SHAPHANG KA PROJECT

Khngang ban kham pynbiang ia ka jingsam bording ha baroh ki jylla Shatei lam mihngi jong ka ri India kynthup ia ka jylla Meghalaya, ka sorkar India da ka jingiarap jong ka World Bank, ka la shna ia ka project ba la khot ka **North Eastern Region Power System Improvement Project (NERPSIP)**. Na kane ka project yn don kam ban shna ia ki Transmission line bad Distribution line kiba thymmai ryngkat bad ki jingpynkhlain ia ki mashin bording ne tower line kiba la don lya. Kane ka project ha Meghalaya ka long kumne :-

- Ban pynkhlain ia ki sainar ba sam ia ka bording bad ban pynduna ia ka jingsepei (Loss) ka bording electric.
- Ban pynbiang ia ka rukom sam ia ka bording kat kum ka jingdonkam.

Ka Meghalaya Power Transmission Corporation Limited (MePTCL) ka dei ka kompani ba pyntrei ia kine kam ha ka jylla Meghalaya bad ka thmu ban shna ia ka 220 KV Double Ckt line na Killing, Ri Bhoi sha Mawphlang bad nangta pat, na Mawphlang sha New Shillong (110 KM). Ka jingshna ia kane ka line kan ym donkam ban shim duh ia ki jaka bad lada don kano kano ka jingjulor ha kaba iadei bad kano kano ka longing longsem ha ka por ba shna, yn siew la ka bai lut san kat kum ba la pynshong dor ha ka project. Ka jingwan jong kane ka project (NERPSIP) kan iarap ia ka jylla Meghalaya baroh kawei da kaba kyntiew ia ka ioh ka kot jong baroh.

Handwritten signature
26/8/19

Shri K.N.War
Chief Engineer (Transmission)
MePTCL, Lumjingshai.



MEGHALAYA POWER TRANSMISSION CORPORATION LIMITED
OFFICE OF THE CHIEF ENGINEER (Transmission)
LUM JINGSHAI : : Shillong : 793001.

PROJECT SUMMARY

In order to strengthen the power scenario of the North Eastern States including Meghalaya, the Government of India with the financial assistance of the WORLD BANK, has formulated the **North Eastern Region Power System Improvement Project (NERPSIP)** which envisages in construction of new power Sub-stations, Transmission & Distribution lines and simultaneously augmentation/expansion of the existing Sub-stations and Transmission lines. The NERPSIP in the state of Meghalaya broadly aims at:-

- Load enhancement of the transmission and distribution network of Meghalaya as well as reducing the transmission and distribution (T & D) loss.
- To adequately address the demand side management for ensuring adequate supply of electricity.

• **Meghalaya Power Transmission Corporation Limited (MPTCL)** is the owner for the projects in the state of Meghalaya under NERPSIP. Under the scope of NERPSIP, inter-alia, construction of 220 KV D/C Killing (Byrnihat) – Mawngap – New Shillong (Appx. 110 KM) will be taken up by MPTCL. The construction of the above transmission line doesn't require any permanent land acquisition and the temporary damages caused will be adequately compensated. Adequate provision has been made in NERPSIP for payment of compensation to the project affected families for any damages caused during the project.

We hope that implementation of the North Eastern Power System Improvement Project (NERPSIP) in the state of Meghalaya will definitely contribute in the socio-economic development of the state.

18/2/14

Shri K.N.War
Chief Engineer (Transmission)
MePTCL, Lumjingshai



MEGHALAYA POWER TRANSMISSION CORPORATION LIMITED
OFFICE OF THE CHIEF ENGINEER (Transmission)
LUM JINGSHAI:: Shillong : 793001.

KA JINGPYNBNA (NOTICE)

Ha

U Rangbah Shnong .

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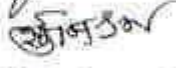
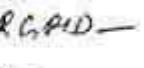
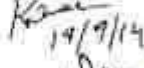
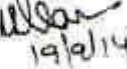
Kane ka long ka jingpynbna ba kan don ka jingialang paidbah ha HRD Centre jong ka MeECL, Umiam ha ka 19 tarik bnai September 2014, naduh ka por 11 baje mynstep ha ka ba ki Engineers jong ka MePTCL bad ka Power Grid (PGCIL) kin pynshai ha phi ia ka jingshna ia u tower line ba 220 KV na Killing sha Mawphlang bad na Mawphlang sha New Shillong. Lada don kino kino ki briew ki ba shong ha shnong jong phi, ki ba kwah ban tip bniah shaphang kane ka jingshna, kin sngewbha ban ia poi khnang khnang ha ka tei ka sngi bad por bala buh.

Khublei Shibun.

K.N.War
26/8/14
Shri K.N.War
Chief Engineer (Transmission)
MePTCL, Lumjingshai

PUBLIC HEARING HELD ON 19th SEPTEMBER 2014 FOR CONSTRUCTION OF 220KV KILLING - MAWPHLANG, MAWPHLANG - NEW SHILLONG.

<u>Sl No.</u>	<u>Name</u>	<u>Address</u>	<u>Signature</u>
1	Shri. H. Lyngdoh	Mawphlang	
2	Shri. R. Schliya	Mawphlang	
3	Shri. J. R. Kharsayndan	Mawfanas.	
4	Sri. K. S. Nongdhar	- do -	
5	Sri. B. Jana	- do -	
6	Shri. E. S. Umrong	- Songpangla	
7	Shri. I. K. Lyngdoh (Mawfanas)	- do	
8	Shri. R. Kuebak	- Mawphlang	
9	Shri. L. Sun	- Umtyommit	
10	Shri. J. Wallang	- Mawphlang	
11	Shri. Th. Nongdhar	- Nongpalthaw	
12	Sri. S. Palthaw	- Mawfanas.	
13	Sri. S. Dkhot	- Umiam.	
14	Sri. W. Tongpang	- Umiam.	
15	Shri. T. Dokhty	- Mawfanas	
16	Shri. B. Nongdhar	- Umiam	
17	Shri. L. Kharmatke	- Umiam	
18	Shri. R. Mawfanas	- Mawfanas	
19	Shri. D. Mawfanas	- Mawfanas	
20	Shri. J. Lyngdoh	- Umiam	
21	Shri. R. Gankemi	- Umiam	
22	Shri. P. Lyngdoh	- Umiam	
23	Shri. L. S. Khambuli	- Mawfanas	

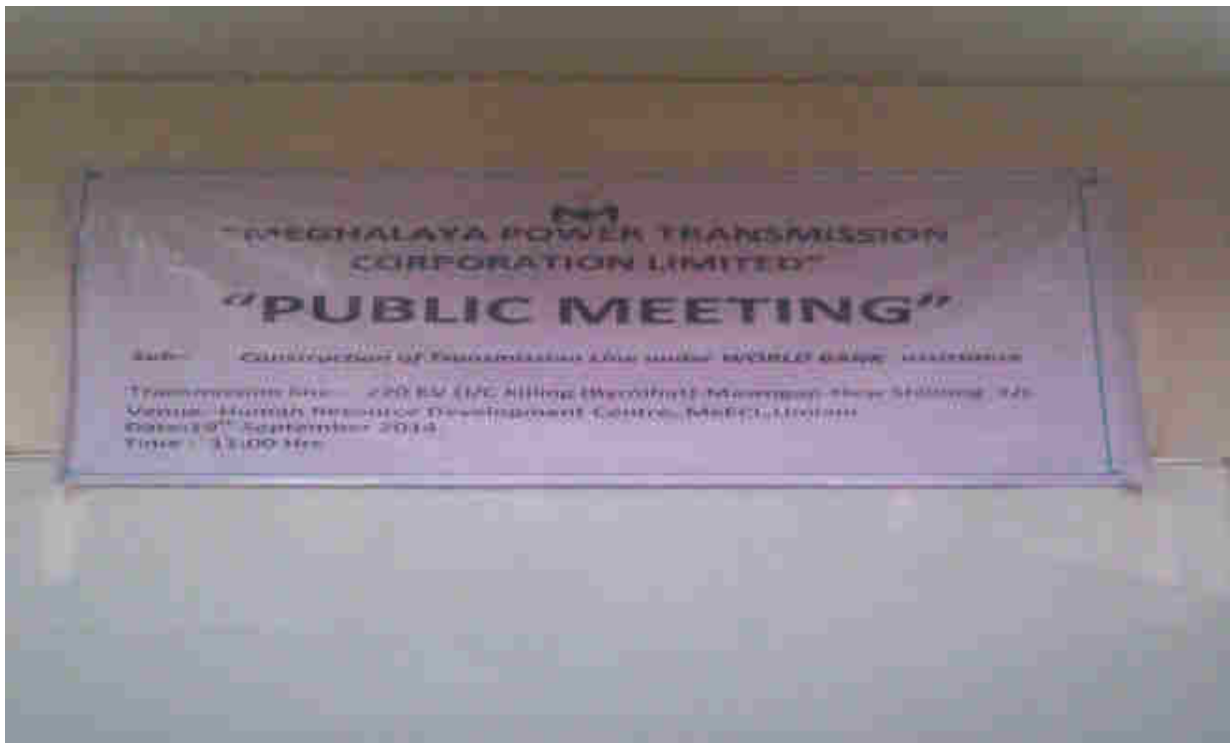
<u>Sl No</u>	<u>Name</u>	<u>Address</u>	<u>Signature</u>
24	Shri. W. E. Pakyatin	Maulai	
25	Shri. R. War	Umsam	
26	Shri. K. Lyngwa	Umpih	
27	Shri. L. Phamwar	U.P.P. Shillong	
28	Shri. S. Nongpyij	Mawtaosa	
29	Shri. P. Nylhmlong	Nongpattro	
30	Sri. K. C. Berman, U. Mys	POWERGRID, Aiz	
31	Shri M. Marbanang	MePTCL	
32	Shri Sukumar Mishra, DGM	POWERGRID	
33	Shri N. M. S. Laskar, Dy. MGR (CRM)	MePTCL POWERGRID	
34	Shri K. N. War	CE (T), MePTCL, Shillong	 14/9/14
35	Shri P. P. Kar	Dy Dir (HRDG), MeECL, Umsam	 19/9/14

M. J. L.
19.

Photographs of Public Consultation held at Byrnihat on 12.09.2014



Public Consultation held at Umium on 19.09.2014



Informal Group Meeting			
Date of meeting	Venue of Meeting	No. of Persons attended	Persons Attended
12.05.2019	Lamkyv village, East Khasi Hills	9	Project affected families, Village headman & general public
18.06.2019	Mynkre village, East Khasi Hills	14	Project affected families, Village headman & general public
27.06.2019	Village- Mynkre, East Khasi Hills	12	Project affected families, Village headman & general public

Informal Group Meetings held at Nongkohlew on 12.05.2019



Informal Group Meetings held at Mawripih on 18.06.2019



Informal Group Meetings held at Lamlyer on 27.06.2019



ANNEXURE - 14

***NOTIFICATION OF GRIEVANCE
REDRESSAL COMMITTEE***

MEGHALAYA POWER TRANSMISSION CORPORATION LTD.

OFFICE OF THE DIRECTOR, (TRANSMISSION)

Corporate Identification No: U40101ML2009SGC008393

Registered Office: Lum Jingshai, Short Round Road, Shillong-793001

Phone No (0364)2590610 (Extn) – 319, (0364)2592022, Fax: 0364-2590422

Email: directormeptcl@gmail.com Website address: www.meeclnic.in



No. MePTCL/DT/T-126(Pt-II)/2017/139

Dated 24th February 2017

To,

The Deputy General Manager (NERPSIP)

Power Grid Corporation of India Limited

Dongtiah, Lower Nongrah, Lapalang, Shillong -793006.

Sub: Constitution of Site Level Grievance Redressal Committee (GRC).

Ref: Letter No. NERPSIP/Shillong/Grievance/MePTCL dated 10.02.2017

Sir,

With reference to the above, I am directed to convey the approval of the Director (Transmission) for nominating members from MePTCL for the site level Grievance Redressal Committee as follows:

Package Name	Package Description	Nominated members from MePTCL for site level GRC
A.	SUB-STATION PACKAGES:	
MEG SS-01	132/33 kV Mynkre sub-station (new)	Assistant Executive Engineer, Tower Line Maintenance Sub-Division, Khliehriat
	132/33 kV Phulbari sub-station (new)	Assistant Executive Engineer, Tower Line Construction Sub-Division-I, Tura
	132/33 kV Ampati sub-station (Bay extension – 2 nos.)	
MEG SS-02	220/132 kV / 33 kV GIS New Shillong sub-station (new)	Resident Engineer, 132 kV NEHU sub-station.
	220/132 kV (GIS) Mawngap sub-station (Upgradation)	Resident Engineer, 132 kV Mawphlang sub-station.
	220 kV Byrnihat (Killing) AIS sub-station (Bay extension-2 nos.)	Executive Engineer, 220/132 kV Killing sub-station
B.	TRANSMISSION LINE PACKAGES:	
TW01	220 kV D/C line Killing (Byrnihat – Mawngap – New Shillong T/L – 122 km	(i) Executive Engineer, 220/132 kV Killing sub-station. (ii) Assistant Executive Engineer, Tower Line Construction & Maintenance Sub-division, Byrnihat (iii) Assistant Executive Engineer, Tower Line Maintenance Sub-Division, Umiam (iv) Resident Engineer, 132 kV NEHU sub-station, Shillong

Package Name	Package Description	Nominated members from MePTCL for site level GRC
TW02	132 kV D/C Ampati -Phulbari T/L	Assistant Executive Engineer, Tower Line Construction Sub-Division-I, Tura
	LILO of 132 kV D/C MLHEP-Khliehriat line at Mynkre	Assistant Executive Engineer, Tower Line Maintenance Sub-Division, Khliehriat

In this regard, the detail list of the GRC members from PGCIL (as enclosed in letter under reference above) and MePTCL is at Annexure for the substation packages and the transmission line packages.

This is for information and kind action.

Enclosed: As stated

Yours faithfully,



(M. Chetri)

Superintending Engineer (Elect)-I

Dated 24th February 2017

Memo No. MePTCL/DT/T-126(Pt-II)/2017/139(a)

Copy to:

1. The Commissioner & Secretary to the Government of Meghalaya, Power Department, Shillong.
2. The Chief Engineer (Transmission), MePTCL, Shillong, along with a copy of the enclosure.
3. The Additional Chief Engineer (T&T), MePTCL, Shillong, along with a copy of the enclosure.
4. The Joint Secretary (Corporate Affairs), MeECL, Shillong.
5. The Superintending Engineer, T&T Circle, MePTCL, Shillong / Tura, along with a copy of the enclosure.
6. The Executive Engineer, T&T Division / 220/132 kV sub-station, MePTCL, Shillong / Umiam / Byrnihat / Tura, along with a copy of the enclosure.
7. The Assistant Executive Engineer, TLM&SD / TLC&MSD / TLCSD-I, MePTCL, Umiam / Byrnihat / Khliehriat / Tura, along with copy of the enclosure for information and kind action.
8. The Resident Engineer, 132 kV Grid sub-station, MePTCL, NEHU / Mawphlang along with copy of the enclosure for information and kind action.

Superintending Engineer (Elect)-I

ANNEXURE

LIST OF MEMBERS FOR THE SITE LEVEL GRIEVANCE REDRESSAL COMMITTEE (GRC) FOR THE NORTH EASTERN REGION POWER SYSTEM IMPROVEMENT PROJECTS (NERPSIP) TRANCHE # I (TRANSMISSION) FOR MEGHALAYA

Package Name	Package Description	Nominated members from POWERGRID for site level GRC	Nominated members from MePTCL for site level GRC
A.	SUB-STATION PACKAGES:		
MEG SS-01	132/33 kV Mynkre sub-station (new)	Biswajit Medhi, Manager, Khliehriat	Assistant Executive Engineer, Tower Line Maintenance Sub-Division, Khliehriat
	132/33 kV Phulbari sub-station (new)	Hitendra Kumar Phukan, Manager, Phulbari	Assistant Executive Engineer, Tower Line Construction Sub-Division-I, Tura
	132/33 kV Ampati sub-station (Bay extension – 2 nos.)		
MEG SS-02	220/132 kV / 33 kV GIS New Shillong sub-station (new)	Vikash Chandra, Dy. Manager, Shillong	Resident Engineer, 132 kV NEHU sub-station.
	220/132 kV (GIS) Mawngap sub-station (Upgradation)	P. Bhattacharjya, Manager, Mawngap	Resident Engineer, 132 kV Mawphlang sub-station.
	220 kV Byrnihat (Killing) AIS sub-station (Bay extension-2 nos.)	J.C. Sarmah, Manager, Nongpoh	Executive Engineer, 220/132 kV sub-station, Killing
B.	TRANSMISSION LINE PACKAGES:		
TW01	220 kV D/C line Killing (Byrnihat – Mawngap – New Shillong T/L – 122 km		(i) Executive Engineer, 220/132 kV sub-station, Killing
	From AP-1 to AP-140	J.C. Sarmah, Manager, Nongpoh	(ii) Assistant Executive Engineer, Tower Line Construction & Maintenance Sub-division, Byrnihat
	From AP-140 to AP-245	P. Bhattacharjya, Manager, Mawngap	(iii) Assistant Executive Engineer, Tower Line Maintenance Sub-Division, Umiam
	From AP-245 to AP-338	Vikash Chandra, Dy. Manager, Shillong	(iv) Resident Engineer, 132 kV NEHU sub-station.
TW02	132 kV D/C Ampati -Phulbari T/L	Hitendra Kumar Phukan, Manager, Phulbari	Assistant Executive Engineer, Tower Line Construction Sub-Division-I, Tura
	LILO of 132 kV D/C MLHEP-Khliehriat line at Mynkre	Biswajit Medhi, Manager, Khliehriat	Assistant Executive Engineer, Tower Line Maintenance Sub-Division, Khliehriat


 Superintendent Engineer (Elect)-I

GOVERNMENT OF MEGHALAYA
POWER DEPARTMENT

No. POWER- 113/2013/Pt-I/21.

Dated Shillong, the 22nd March, 2017.

From :- Smti E. Raptap,
Under Secretary to the Govt. of Meghalaya,
Power Department.

To
The Director (Transmission),
Meghalaya Power Transmission Corporation Limited,
"Lumjingshai" Short Round Road,
Shillong - 793 001.

Subject :- *Constitution of Site Level Grievance Redressal Committee (GRC) for the North Eastern Region Power System Improvement Project (NERPSIP) Tranche # 1 (Transmission) for Meghalaya.*


Reference :- *No.MePTCL/DT/T-126(Pt-II)/2017/138, dated 22-02-2017.*

Sir,

With reference to the above cited subject, I am directed to furnish herewith the nominations for representatives from the local administration to the Grievance Redressal Committee (GRC) as per annexure enclosed, for your kind information and necessary action.

This has the approval of the Competent Authority.

Yours faithfully,


Under Secretary to the Govt. of Meghalaya,
Power Department.

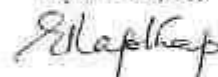
Memo. No. POWER-113/2013/Pt-1/21-A

Dated Shillong, the 22nd March, 2017

Copy for kind information to:-

1. Chairman-cum-Managing Director, MeECL.
2. Deputy Commissioner, East Khasi Hills, Shillong.
3. Deputy Commissioner, East Jaintia Hills, ~~Rhewant~~
4. Deputy Commissioner, West Garo Hills, Tura.
5. Deputy Commissioner, Ri Bhoi, Nongpoh.
6. Deputy Commissioner, South West Garo Hills, Ampati.
7. Shri. Vikram Chand, DGM (NERPSIP), Power Grid Corporation Of India Limited, Dongteh, Lower Nongrah, Lapalang, Shillong-793006.
8. Guard File.

By Order, etc



Under Secretary to the Govt. of Meghalaya,
Power Department

Copy To : 1) D. Boruh, DM
2) DGM (Guwahati)
3) DGM (P&SM)
4) GM (GHH)

for kind information please


10/4/17

Transmission Packages:

Package Name	Package Description	Nominated members from Government for Site Level Grievance Redressal Committee
A.	SUB-STATION PACKAGES:	
MEG SS-01	132/33 kV Mynkre sub-station (new)	Nominee of Deputy Commissioner, East Jaintia Hills.
	132/33 kV Phulbari sub-station (new)	Nominee of Deputy Commissioner, West Garo Hills.
	132/33 kV Ampati sub-station (Bay extension - 2 nos.)	Nominee of Deputy Commissioner, Southwest Garo Hills.
MEG SS-02	220/132 kV / 33 kV GIS New Shillong sub-station (new)	Nominee of Deputy Commissioner, East Khasi Hills.
	220/132 kV (GIS) Mawngap sub-station (Upgradation)	Nominee of Deputy Commissioner, East Khasi Hills.
	220 kV Byrnihat (Killing) AIS sub-station (Bay extension-2 nos.)	Nominee of Deputy Commissioner, Ri Bhoi.
B.	TRANSMISSION LINE PACKAGES:	
TW 01	220 kV D/C line Killing (Byrnihat - Mawngap - New Shillong T/L - 122 km	(i) Nominee of Deputy Commissioner, East Khasi Hills. (ii) Nominee of Deputy Commissioner, Ri Bhoi.
TW 02	132 KV D/C Ampati - Phulbari T/L	(i) Nominee of Deputy Commissioner, Southwest Garo Hills. (ii) Nominee of Deputy Commissioner, West Garo Hills.
	LILO of 132 kV D/C MLHEP-Khliehriat line at Mynkre	Nominee of Deputy Commissioner, East Jaintia Hills

**GOVERNMENT OF MEGHALAYA
POWER DEPARTMENT**

No. POWER-113/2013/Pt-I/22.

Dated Shillong, the 22nd March, 2017.

From :- Smti E. Rapthap,
Under Secretary to the Govt. of Meghalaya,
Power Department.

To
The Director (Distribution),
Meghalaya Power Distribution Corporation Limited,
"Lumjingshal" Short Round Road,
Shillong - 793 001.

Subj:- **Constitution of Site Level Grievance Redressal Committee (GRC) for the North Eastern Region Power System Improvement Project (NERPSIP) Tranche # 1 (Transmission) for Meghalaya.**

Reference:- No.MePDCL/CE(D)/T-464 (Pt-II)/2016-17/115(a) dated 28-02-2017.

Sir,
With reference to subject cited above, I am directed to furnish herewith the nominations for representatives from the local administration to the Grievance Redressal Committee (GRC) as per annexure enclosed, for your kind information and necessary action.

This has the order of the Competent Authority.

Yours faithfully,

Under Secretary to the Govt. of Meghalaya,
Power Department

No. POWER-113/2013/Pt-I/22-A.

Dated Shillong, the 22nd March, 2017.

Copy for kind information to:-

1. Chairman-cum-Managing Director, MeECL.
2. Deputy Commissioner, East Khasi Hills, Shillong.
3. Deputy Commissioner, East Jaintia Hills, *Khliehnaat*
4. Deputy Commissioner, West Garo Hills, Tura.
5. Shri. Vikram Chand, DGM (NERPSIP), Power Grid Corporation Of India Limited, Dongtiah, Lower Nongrah, Lapalang, Shillong-793006.
6. Guard File.

Copy To:
1) GM (GHY) - for kind information please

2) DGM (GHY) - do

3) DGM (RESM) - do

4) DGM (Envy) - do

By Order, etc

E. Rapthap

Under Secretary to the Govt. of Meghalaya,
Power Department

Distribution Packages:

Package Name	Package Description	Nominated members from Government for Site Level Grievance Redressal Committee
MEG DMS 01	New 33/11KV Substations	Nominee of Deputy Commissioner, East Jaintia Hills
	33/11KV Mynkre (New) S/s-2X5 MVA	
	33/11KV Rymbai(New) S/s-1X5 MVA	
	33/11KV Latyrke(New) S/s-2X10 MVA	
	33/11KV Byndihati (New) S/s - 1X5 MVA	
	33KV Transmission Lines	
	132/33 KV Mynkre (New) S/s to 33/11 KV Mynkre (New) S/s – 6 km	
	132/33 KV Mynkre (New) S/s to 33/11 KV Rymbai (New) S/s – 15km	
	132/33 KV Mynkre(New) S/s to 33/11 KV Byndihati (New) S/s -10km	
MEG DMS 02	New 33/11kV Substations	Nominee of Deputy Commissioner, West Garo Hills.
	Chibinang(New) S/s-1X5 MVA	
	Raksambre (Potamati) (New) S/s-1X5 MVA	
	Rajabala (New) S/s-1X5 MVA	
	Augmentation at existing 33/11 kV s/s	
	Phulbari (Existing) S/s – Augmented to 2x5 MVA	
	Bay Extensions at existing 33/11KV Substations	
	33/11 KV Tikrikilla (Existing) S/s – 1no	
	33KV Transmission Lines (on ACSR WOLF conductor	
	132/33 KV Phulbari (New) S/s to 33/11 KV Rajaballa Bhaitbari S/s – 10km	
	132/33 KV Phulbari (New) S/s to 33/11 KV Chibinang (New) S/s – 6km	
	33/11KV Tikrikilla (Existing) S/s to 33/11KV Raksambre(New) S/s – 35km	
	132/33 KV Phulbari (New) S/s to 33/11 KV Phulbari (Existing) S/s – 6km	

Package Name	Package Description	Nominated members from Government for Site Level Grievance Redressal Committee
MEG DMS 02	LILO Existing Tikrikilla-Phulbari at 132/33 KV Phulbari (New) S/s - 6km	Nominee of Deputy Commissioner, West Garo Hills.
	Reconductoring (From Raccoon to Wolf): Part of existing 33 KV Tikrikilla Phulbari line from tapping point to Trikikila S/S - 30km	
MEG DMS 03	New 33/11kV Substations	Nominee of Deputy Commissioner, East Khasi Hills.
	Mawkynrew (New) S/s - 2X5 MVA	
	Mawryngkneng (New) S/s - 2X7.5 MVA	
	New Shillong (New) S/s - 2X10 MVA	
	Mawpat (New) S/s - 2X10 MVA	
	Augmentation at existing 33/11 KV s/s	
	SE Falls(Existing) S/s - Augmented to 2X10 MVA	
	Bay Extensions at existing 33/11KV Substations	
	Jongksha Existing 33/11KV S/s -1no.	
	33KV Transmission Lines (on ACSR WOLF conductor)	
	220/132/33 kV New Shillong (New) S/s to 33/11KV Mawpat (New) S/s - 25km	
	Existing 33/11 kV SE Falls S/s to 33/11 KV Mawpat(New) S/s -10km	
	220/132/33 KV New Shillong(New)S/s to 33/11 KV New Shillong S/s - 6km	
	220/132/33 KV New Shillong(New) S/s to 33/11 KV Mawryngkneng S/s - 26km	
LILO Existing Jowai -Ladnongkrem 33 KV at 33/11 KV Mawryngkneng S/s - 4km		
Existing 33/11 KV Jongksha S/s to 33/11KV Mawkynrew S/s - 8km		
Reconductoring (From Raccoon to Wolf): 33/11 KV Jowai-Ladnongkrem-Jongksha S/s - 35km		