

**FINAL ENVIRONMENT ASSESSMENT REPORT (FEAR)
FOR
T & D NETWORK IN EAST JAINTIA HILLS DISTRICTS
UNDER NERPSIP TRANCHE-1, MEGHALAYA**



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ABBREVIATIONS

AP	-	Affected Persons
CA	-	Compensatory Afforestation
CEA	-	Central Electricity Authority
CFC	-	Chlorofluorocarbon
CPIU	-	Central Project Implementation Unit
CPR	-	Common Property Resources
CPTD	-	Compensation Plan for Temporary Damage
CRM	-	Contractor's Review Meeting
DC	-	Deputy Collector
DPR	-	Detailed Project Report
EMF	-	Electro Magnetic Field
EMP	-	Environment Management Plan
EN	-	Endangered
EPA	-	Environment Protection Act
ESMU	-	Environment and Social Management Unit
ESPPF	-	Environment and Social Policy & Procedures Framework
FEAR	-	Final Environment Assessment Report
FSI	-	Forest Survey of India
GA	-	Geographical Area
GCC	-	General Conditions of Contract
GHG	-	Green House Gas
GIS	-	Geographical Information System
GoI	-	Government of India
GoMe	-	Government of Meghalaya
GPS	-	Global Positioning System
GRC	-	Grievance Redress Committee
GRM	-	Grievance Redressal Mechanism
GW	-	Green Wash
HFL	-	High Flood Level
HQ	-	Head Quarter
IA	-	Implementing Agency
ICNIRP	-	International Commission on Non-Ionizing Radiation Protection
IEAR	-	Initial Environment Assessment Report
ISFR	-	India State of Forest Report
IUCN	-	International Union for Conservation of Nature
Km	-	Kilometer
kV	-	KiloVolt
LC	-	Least Concerned
LILO	-	Loop-In Loop-Out
MDF	-	Moderately Dense Forest

MePTCL	-	Meghalaya Power Transmission Corporation Limited
MePDCL	-	Meghalaya Power Distribution Corporation Limited
MoEF&CC	-	Ministry of Environment Forest & Climate Change
MVA	-	Mega Volt Ampere
MW	-	MegaWatt
NA	-	Not Assessed
NBSS&LUP	-	National Bureau of Soil Survey & Land Use Planning
NER	-	North East Region
NERPSIP	-	North Eastern Region Power System Improvement Project
NH	-	National Highway
NOC	-	No Objection Certificate
NPV	-	Net Present Value
NT	-	Near Threatened
NTFP	-	Non Timber Forest Product
OF	-	Open Forest
PCB	-	Poly Chlorinated Biphenyl
PF	-	Protected Forest
PGCIL	-	Powergrid Corporation of India Limited
PIU	-	Project Implementation Unit
PRA	-	Participatory Rural Appraisal
PWD	-	Public Works Department
RF	-	Reserved Forest
RFA	-	Recorded Forest Area
RFCTLARRA	-	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act
ROW	-	Right of Way
RSET	-	R S Envirolink Technologies Pvt. Ltd.
S/S	-	Substation
SH	-	State Highway
SIA	-	Social Impact Assessment
SMF	-	Social Management Framework
SPCU	-	State Project Coordination Unit
Sq km	-	Square Kilometer
ST	-	Scheduled Tribes
T&D	-	Transmission and Distribution
TOF	-	Tree Outside Forest
TRC	-	Terrace Rice Cultivation
VDF	-	Very Dense Forest
VU	-	Vulnerable
WB	-	World Bank
ZSI	-	Zoological Survey of India

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EXECUTIVE SUMMARY

North Eastern Region Power Supply Improvement Project (NERPSIP) is a World Bank funded project aimed at improving the impoverished power transmission and distribution system in the North Eastern states of India with Power Grid Corporation of India Ltd. (POWERGRID), the single transmission utility of the country as the implementing agency (IA). The present Final Environmental Assessment Report (FEAR) is for the transmission and distribution system in East Jaintia Hills district and has been undertaken to verify the actual locational details of the project elements, to report any impacts on the biodiversity and protected area and the project affected people, and to assess the compliance of the Initial Environmental Assessment Report (IEAR) /Environment Management Plan (EMP) prepared and submitted by the IA for the instant project. The elements of the present project include one 132 kV LILO line of 27.193 km, construction of one new transmission sub-station, four 33 kV distribution lines of 39.521 km and construction of four new distribution sub-stations.

The topography of the district is hilly. Hence, transmission and distribution components of the project are in hilly terrain. About 40% of the landscape has a forest cover, around 8% is not available for cultivation i.e. barren land, around 39% is other uncultivated land excluding fallow land, around 7% of the area is fallow land and the rest 3% is the net sown area.

The final layout of transmission line has been carefully selected from three alternatives. The alignment has successfully avoided all ecological and social sensitive areas such as protected areas, sacred groves, community conserved areas, important bird areas, wetlands, settlements, common property resources, etc. The land use along the RoW (27 m for 132 kV) of lines comprises of agricultural land, private forest and fallow land. The original length of the line has been increased to 27.193 km from earlier 27 km due to further optimization during ground truthing survey. However, there is no change in the environmental footprints and impacts as envisaged in IEAR. A total of 88 towers are erected for the proposed transmission line.

Similarly, the distribution lines too have been aligned mostly along the existing roads and by avoiding dense forest areas, ecological and social sensitive areas such as protected areas, sacred groves, community conserved areas, important bird areas, wetlands, settlements, common property resources, etc. Here, the RoW corridor being narrower (15m) will further reduce the necessity of tree felling. Much of the line would only need lopping of branches for unhindered passage. The land use along the RoW of lines comprises of agricultural land, private plantation, scrub land and fallow land. The original length of the line has been increased to 39.521 km from earlier 37.9 km due to change in the locations of all the distribution substations. Though line length has marginally increased however, considering that distribution line has minimum environmental footprints and 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 around 1185 poles are being/to be erected for the proposed finalized distribution lines.

Sub-station locations are based on environment and social aspects and technical requirement. Various site-specific parameters that include availability of infrastructure facilities such as

access roads, water, distance from railheads, type of land (Government/ revenue/private land); social impacts such as number of families getting affected; CPR including feasibility of acquisition were considered for analysis. The social aspects are provided due weightage after technical requirement in decision making for selection/finalization of land for substation. In the instant case land for all the proposed substations have been purchased on willing seller–willing buyer basis.

Impacts due to project have been analyzed for all the phases of project i.e. during design, construction and operation. Since, no involuntary acquisition was involved and fresh lands were secured only through private purchase there is no R & R and resettlement issues. Due to electricity supply, land value is expected to increase, therefore, possibility of land value depreciation is not envisaged. Final routes of lines and sites for construction of new substations don't involve any monuments of historical or cultural significance. Due to the diversion of 11.566 ha of private forest (forest by dictionary meaning) provisions of the Forest (Conservation) Act, 1980 shall prevail. Additionally, in case of felling of trees in non-designated forest areas MePTCL/MePDCL/IA shall provide fund for compensation. 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 laws compensation for all damages (tree/crop) are paid to the individual land owner. Govt. of Meghalaya has already adopted the MoP guidelines on RoW compensation on 15th Dec. 2020. As per said notification the guidelines shall be effective from the date of notification in official gazette. Hence, provision for land compensation for corridor area as per said notification is not applicable in instant case as construction of 132 kV line has already been completed before actual date of effectiveness of notification. However, as per prevailing practice 100% compensation for tower footing area have been paid to all affected land owners/farmers. Execution of the projects covered in this report has not resulted in any steep rise in traffic volume. The project does not require availing clearances from Department of Railways, Department of Telecommunications, and the Ministry of Aviation. Further, the present project requires very less vehicular movement and that too restricted to construction period only. Hence, neither any interference with other utility nor steep rise in traffic volume is anticipated/ observed. The lines proposed under this scheme don't involve any tower/ pole to be placed in river bed which could interfere with existing drainage patterns. In sub-stations, 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.

Detailed specification with respect to equipment design and substation drainage and sewage design has been included in tender document to avoid any incidence of land and water contamination. Adequate safety measures are in place to avoid any potential fire/ explosion hazard. 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. Top soil 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. Hence, possibility of erosion of exposed area due to construction activity is negligible. To contain the noise level within the permissible limits, measures like providing sound and vibration dampers and rectification of equipment are undertaken. In addition, plantations of sound absorbing species like Casuarinas, Tamarind, and Neem are raised at the substations that reduce the sound level appreciably. The proposed lines are not passing through any forest area, wildlife area. Since there is no protected area or demarcated/ documented migration path of wildlife like

elephant corridor existing near to subproject locations, hence, possibility of any disturbance to wildlife is not imminent. No bird migration/fly path found in project area.

During construction limited quantity of excavated material is generated from tower/pole foundations. Moreover, excavated soil is backfilled and compacted immediately after erection of tower/ pole. Additionally, other preventative measures such as utilization of leg extension, construction of revetment retaining walls are in place so as to eliminate the chances of uncontrolled silt runoff. Further, excavation is avoided in rainy days. Hence, uncontrolled silt run off is not anticipated. So far there are no instances with potential of erosion during construction of above said lines. Any adverse impact arising during the construction is limited to the boundaries of proposed substation only and neither impacts nearby habitat/property nor health & safety of neighboring community. In case of substations, generally the sites are selected in such a manner that the volume of cutting is equal to volume of filling so as to avoid borrowing of the area. Issues relating to operational health and safety has 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 injury and death has been ensured through provisions in Safety Plan & Contract condition. 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 indicative of the strict vigil of the 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/MePDCL 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.

Public is informed about the project at every stage of execution. Public consultation using different technique like Public Meeting, Small Group Meeting, informal meetings have been carried out during different activities of project cycle. For the Participatory Rural Appraisal (PRA), informal meetings were held with various stakeholders such as IA, contractors, labours, villagers etc. to capture their view about the project. It emerged from the survey that the PAPs were appreciative of the project and hoped that the power scenario would improve after commissioning of the project. Local people are also getting benefited through project related employment that was being generated. However, following suggestions may be considered to further improve the safeguard measures and also enhance the environmental sustainability of project.

- 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.
- Along with labours, supervisors, engineers and Staff of Implementing Agency (IA) should also need to follow the health and safety precautions.
- Need of regular induction and training program for labours and engineers at all sites.

- Training for PMU staff regarding monitoring and implantation of EMP as proposed in IEAR.
- Records of labour registration, health checkup of labours and other working staff need to be maintained at all sites and strictly monitoring to avoid engagement of child labour.
- Training and awareness regarding cleanliness and solid waste disposal to maintain the hygiene in the labour camps and construction sites.
- Demarcation and protection for sites where work has been on hold due to various reasons to avoid accidents and runoff of excavated soil from construction sites
- Project staff of the implementing agency should be well versed with the contents of the IEAR so as to ensure proper compliance by the contractors.

Overall, the planning and layout of the project elements have been undertaken in a judicious manner so as to ensure minimum environmental impact. Also, commissioning of the project will augment the power distribution and availability in the region which will further catalyze economic activity and development of the area/region.

Chapter 1

INTRODUCTION & PROJECT DESCRIPTION

1.1 PROJECT BACKGROUND

India's North East Region (NER) stretches across the eastern foothills of the Himalayan mountain range and is comprised of seven states including Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura.

Recognizing that intrastate Transmission & Distribution (T&D) systems in the NER states have remained very weak and that there is a critical need to improve the performance of these networks, the Central Electricity Authority (CEA) developed a comprehensive scheme for the NER in consultation with Power Grid Corporation of India Limited (PGCIL/ POWERGRID) and the concerned state governments. This scheme is intended to (a) augment the existing T&D infrastructure to improve the reliability of service delivery across all the NER states and (b) build institutional capacity of the power utilities and departments in the NER. This scheme is part of the Government of India's (GoI) wider efforts to develop energy resources in the NER for electricity supply within the region, to strengthen transmission networks, expand and strengthen sub-transmission systems, and extend last mile electricity connectivity to household.

GoI requested for World Bank's (WB) support in implementing a set of priority investments in six NER States. In 2016, the WB has approved a loan (IBRD 470 USD Million) to the GoI for **North Eastern Region Power System Improvement Project (NERPSIP)** which aims to create a robust intrastate transmission and distribution network in all the six (6) North Eastern States. The project being funded on 50:50 (WB loan: GoI) basis except the component of capacity building for Rs. 89 crore, which GoI will bear entirely. The scheme is to be taken up under a new Central Sector Plan Scheme of Ministry of Power (MoP).

MoP, GoI has appointed POWERGRID as Implementing Agency (IA) to six North Eastern States for the said 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 Utilities/State Government which upon progressive commissioning shall be handed over to them for taking care of Operation and Maintenance of assets. 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 in **Table 1.1**.

Table 1.1: State Wise Scope of Work Proposed Under Tranche-1

State	Transmission/ Sub-transmission (132 kV & above)			Distribution (33 kV)		
	Line (km)	New S/s (No.)	Total MVA (New & Aug.)	Line (km)	New S/s (No.)	Total MVA (New & Aug.)
Assam	225	11	1668	356	16	240
Manipur	223	2	139	99	13	275
Meghalaya	205	4	940	174	11	150

State	Transmission/ Sub-transmission (132 kV & above)			Distribution (33 kV)		
	Line (km)	New S/s (No.)	Total MVA (New & Aug.)	Line (km)	New S/s (No.)	Total MVA (New & Aug.)
Mizoram	116	3	100	4	1	6
Nagaland	193	5	245	76	10	200
Tripura	236	9	1389	950	34	510
Total	1198	34	4481	1659	85	1381

Source: https://cea.nic.in/wp-content/uploads/transmission/2020/09/mpr_cfs.pdf and updated based upon Monthly Progress Report of Meghalaya PSIP, February 2022

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. 5111.33 Crore** with financing from both Gol and Bank on 50:50 basis. The Bank is providing financial support to the tune of US\$ 470 million (**Rs. 2511.165 Crore**) 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 Gol funding. Details of State wise funding is placed below in **Table 1.2**.

Table 1.2: Details of State Wise Funding

State	World Bank	Government of India		Total (Rs. in Cr.)
	Project Cost (Rs. in Cr.)	Project Cost (Rs. in Cr.)	Capacity Building (Rs. in Cr.)	
Assam	729.485	729.485	14.83	1473.803
Manipur	213.690	213.690	14.83	442.213
Meghalaya	381.050	381.050	14.83	776.933
Mizoram	150.965	150.965	14.83	316.763
Nagaland	357.290	357.290	14.83	729.413
Tripura	678.685	678.685	14.83	1372.203
Total	2511.165	2511.165	89.00	5111.33

Source: https://www.powergridindia.com/sites/default/files/Our_Business/Domestic_Consultancy/NER_Agreements_and_MoUs/sanctions/NERPSIP%20SANCTION%20ORDER.pdf

1.2 PROJECT JUSTIFICATION

The state of Meghalaya is spread over an area of about 22429 sq. km with a population of more than 29 Lakhs. The present per capita energy consumption is of the order of 675 units (kWh) against the regional per capita consumption of about 258 units and national per capita consumption of about 779 units. The state meets its power requirement through about 392 MW of self-generation and about 163 MW of power allocation from various central sector generation projects of NHPC and NEEPCO. The present demand (met) is of the order of 285 MW whereas the un-restricted demand is about 296 MW. As most of the generation projects in the north eastern region are hydro in nature, the state faces shortage of power during low-hydro generation condition.

Presently, the state draws its share of power from central sector generating stations through following inter-state transmission system (ISTS):

- Badarpur (POWERGRID) – Khliehriat (POWERGRID) 132kV S/C
- Khandong HEP (NEEPCO) – Khliehriat (POWERGRID) 132kV D/C
- Khliehriat (POWERGRID) – Khliehriat (Meghalaya) 132kV D/C (one circuit is owned by POWERGRID and the other by Meghalaya)
- Silchar (POWERGRID) – Byrnihat (Meghalaya) 400kV D/C
- Misa (POWERGRID) – Byrnihat (Meghalaya) 220kV D/C
- Sarusajai (Assam) – Umtru (Meghalaya) 132kV D/C
- Kahilipara (Assam) – Umtru (Meghalaya) 132kV D/C

As per the 18th Electric Power Survey of CEA, the future demand of the state is expected to grow to about 445 MW by year 2016-17 and 596 MW by year 2021-22. This shall be met through various hydro and thermal projects coming up in the north-eastern region in near future, which are as follows:

- Pallatana GBPP: 726 MW
- Bongaigaon TPS: 750 MW
- Kameng HEP: 600 MW
- Lower Subansiri HEP: 2000 MW

The State has a share of about 196 MW from these future generation schemes. With this, the total share of the state from central sector generating stations shall be about 359 MW. Following transmission lines have been planned to transfer power from these future generation schemes to the state of Meghalaya:

- Byrnihat (Meghalaya) – Bongaigaon (POWERGRID) 400kV D/C line: The Silchar – Byrnihat and Byrnihat-Bongaigaon D/c lines would be operated as Silchar - Bongaigaon 400kV D/c line, one circuit via Byrnihat.

Besides this, the present Intra-State transmission system of the State is quite old & weak and is unable to cater to the growing power requirements of the State. Although the present transmission and distribution (T&D) system covers many areas of the State, it is inadequate in its reach and due to non-availability of redundant T&D system, outage of any transmission system element results in long term power shortages making the system highly unreliable. Besides, some of the network elements have undergone long term outage due to breakdown. Therefore, it has become essential to address the above situation through remedial measures in the T&D 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 204.92 km of 132 kV Transmission Lines (TL) & associated 4 new substations and 174.249 km of 33 kV Distribution Lines (DL) & associated 11 new substations along with augmentation & strengthening of transmission and distribution spread across the State.

The Power Map of Meghalaya indicating the existing and proposed T&D network is placed in **Figure 1.1**. Summary of subprojects to be implemented in the State in Tranche-1 under NERPSIP along with capacity addition and cost is shown in **Table 1.3** below.

Table 1.3: Summary of Subprojects in Tranche- I Under NERPSIP

S. No.	Name of the subproject	Quantity (Nos.)	Capacity Addition (km/MVA)	Estimated Cost (Rs. in Cr.)
1	132 kV Transmission lines	3	204.92 km	776.933
2	132/33kV substations (New/Augmentation)	6	940 MVA	
3	33 kV Distribution lines	17	174.249 km	
4	33/11kV substations (New/Extension/Augmentation)	15	150 MVA	

Source: Monthly Progress Report of Meghalaya PSIP, February 2022

1.3 PROJECT BENEFIT

The proposed transmission and distribution schemes will not only improve overall power supply situation but will also improve reliability, quality, security and enhancement of power supply in the North Eastern Region.

1.4 PROJECT SCOPE & PRESENT STUDY

In line with Meghalaya Power Transmission Corporation Limited's (MePTCL)/ Meghalaya Power Distribution Corporation Limited's (MePDCL), Electricity Department, Government of Meghalaya (GoMe), Environment and Social Policy & Procedures Framework (ESPPF), POWERGRID carried out comprehensive environment and social assessment of each subprojects and prepared Initial Environment Assessment Report (IEAR). 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 mandated in 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 identified in IEAR including implementation of EMP provisions by IA/ Contractor. However, as per Project Agreement signed between POWERGRID and Bank such study is required to be undertaken by Independent Agencies as per Term of Reference agreed with Bank. As a part of this development, POWERGRID appointed **R S Envirolink Technologies Pvt. Ltd. (RSET)** as Independent consultant vide Letter of Award (LOA) Ref No.: **NEGW/C&M/2021-22/NERPSIP/900-23/FEAR/LOA-96** dated **11/11/2021** to carry out FEAR study.

The present FEAR is a document developed as a consultancy assignment to validate the work undertaken and to critically examine any deviation, if any with respect to management measures as outlined in the IEAR which is based on MePTCL/MePDCL's 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 132 kV transmission line and associated 132/33 kV substations, 33 kV distribution lines and associated 33/11 kV substations which are being implemented in East Jaintia Hills District of Meghalaya. Detail of T&D network are given below and shown in **Figure 1.2**.

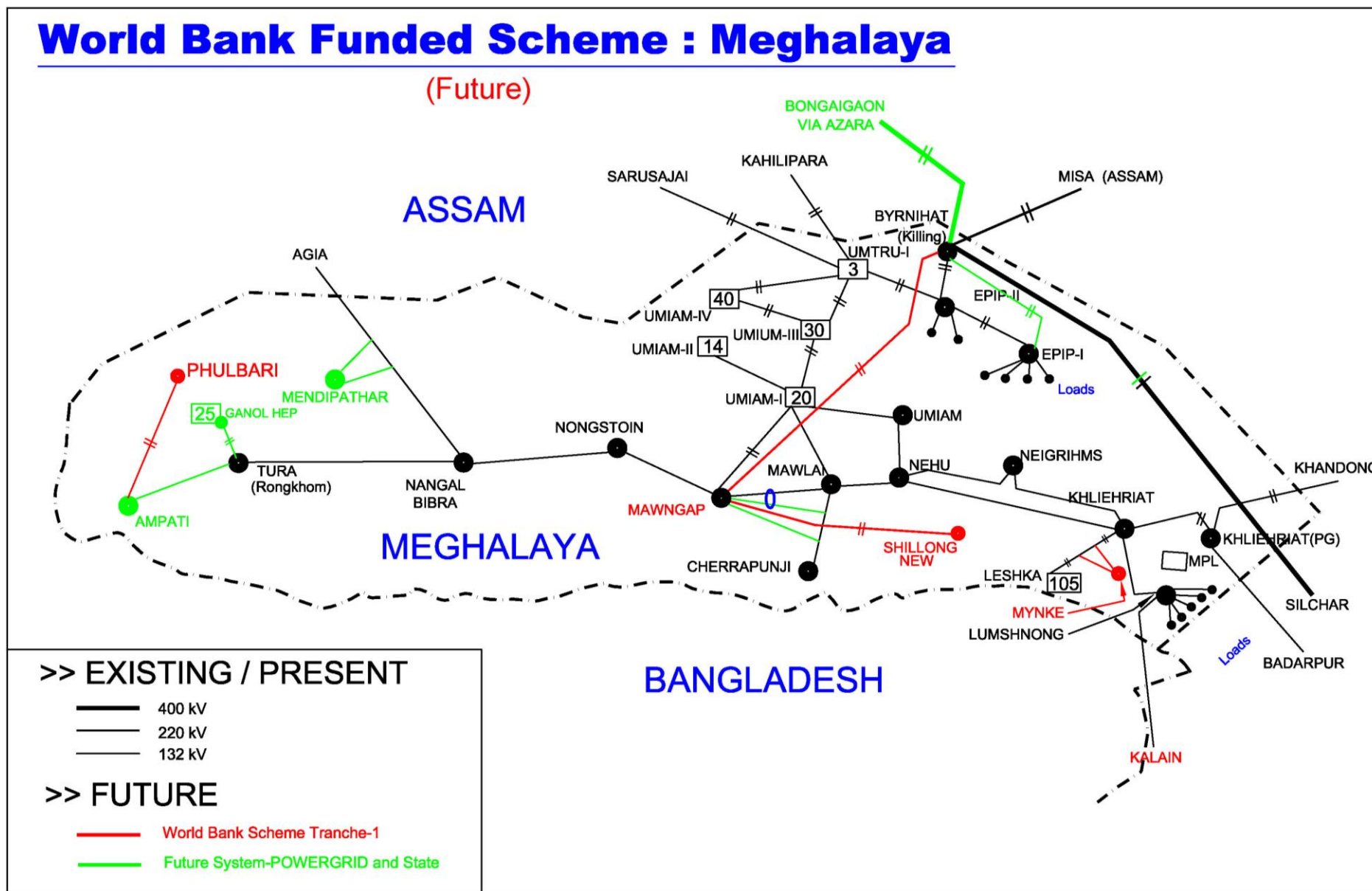


Figure 1.1: Power Map of Meghalaya

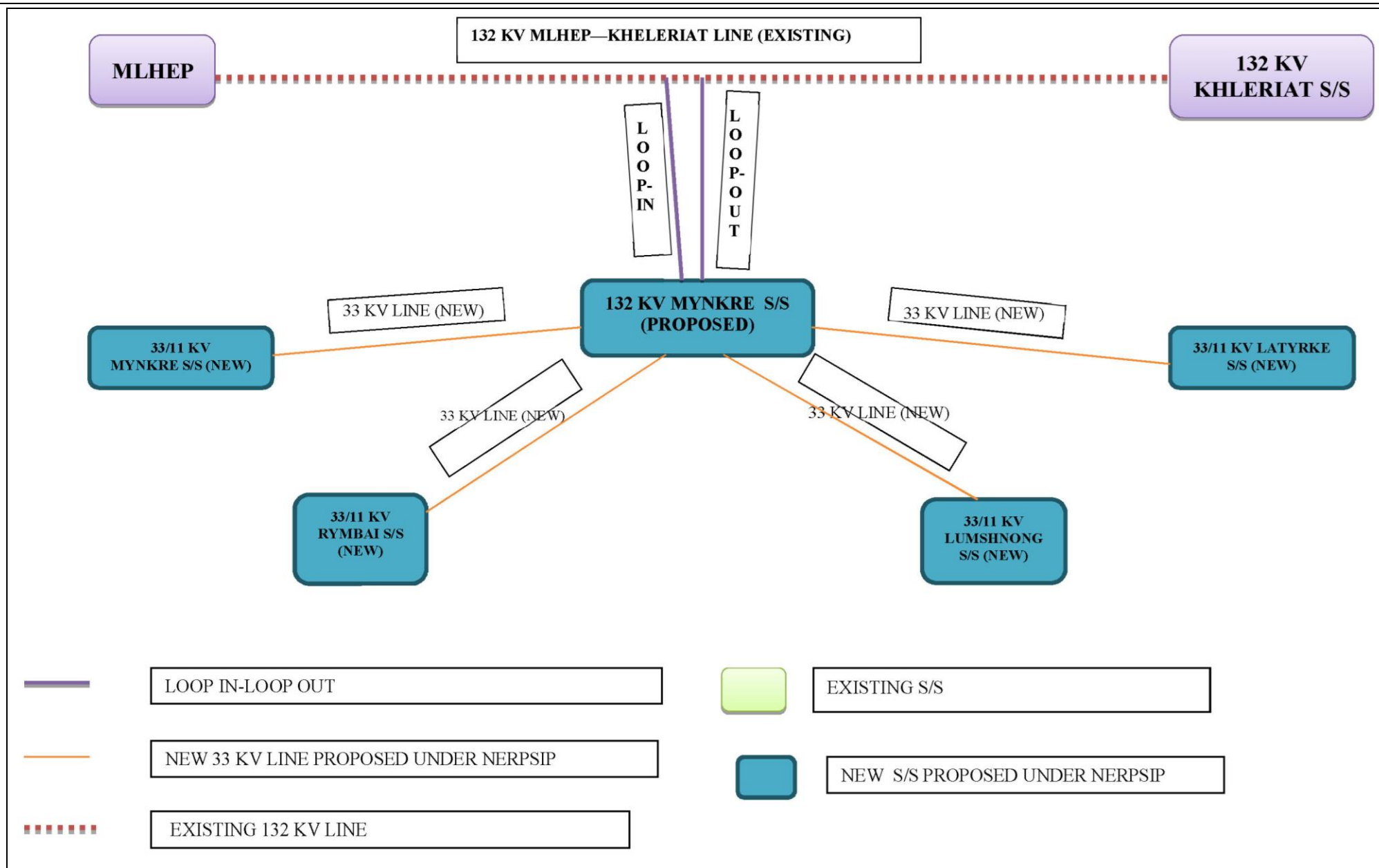


Figure 1.2: Proposed T&D Network in East Jaintia Hills Districts under NERPSIP

1.4.1 Transmission Components

The present study includes one 132 kV transmission line and associated one 132/33 kV substation being implemented in East Jaintia Hills District of Meghalaya. Details of Transmission network are given below in **Table 1.4**.

Table 1.4: Details of Transmission Network

S. No.	Name of the Line	Name of New/ Existing Sub-station
1	LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre – 27.193 km	Establishment of 2x5 MVA, 132/33 kV new substation at Mynkre

1.4.2 Distribution Components

The present study includes four 33 kV distribution lines and associated four 33 kV substations being implemented in East Jaintia Hills District of Meghalaya. Details of Distribution network are given below in **Table 1.5**.

Table 1.5: Details of Distribution Network

S. No.	Name of the Line	Name of New/ Existing Sub-station
1	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Mynkre (New) S/S – 1.618 km	Establishment of 2x5 MVA, 33/11 kV new substation at Mynkre
2	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Rymbai (New) S/S – 15.806 km	Establishment of 1x5 MVA, 33/11 kV new substation at Rymbai
3	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S – 10.386 km	Establishment of 1x5 MVA, 33/11 kV new substation at Lumshnong
4	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S – 11.711 km	Establishment of 2x10 MVA, 33/11 kV new substation at Latyrke

1.5 OVERALL PROJECT PROGRESS

A brief status on project implementation progress of various transmission & distribution components till February, 2022 is given below in **Table 1.6**.

Table 1.6: Brief Status on Project Implementation Progress

S. No.	Name of the T & D Components	Progress as on February, 2022
A	Transmission and Distribution Line	
1	LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre – 27.193 km	➤ Apart from stringing operation in the forest land falling under Loop In section of the line all the works are completed.
2	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Mynkre (New) S/S – 1.618 km	➤ Route alignment survey completed ➤ Supply, foundation and erection of poles work in progress
3	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Rymbai (New) S/S – 15.806 km	➤ Completed on 31/03/2021
4	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S – 10.386 km	➤ Completed on 31/03/2021
5	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S – 11.711 km	➤ Route alignment survey completed ➤ Supply, foundation and erection of poles work in progress
B	Transmission and Distribution Sub-stations	

S. No.	Name of the T & D Components	Progress as on February, 2022
1	Establishment of 2x5 MVA, 132/33 kV new substation at Mynkre	<ul style="list-style-type: none"> ➤ 95% of the site levelled ➤ 280 RM out of 1475 RM of boundary wall constructed ➤ All other work under progress
2	Establishment of 2x5 MVA, 33/11 kV new substation at Mynkre	<ul style="list-style-type: none"> ➤ 1st 5 MVA Xmer Commissioned on 29/08/2020
3	Establishment of 1x5 MVA, 33/11 kV new substation at Rymbai	<ul style="list-style-type: none"> ➤ 1st 5 MVA Xmer Commissioned on 31/01/2021
4	Establishment of 1x5 MVA, 33/11 kV new substation at Lumshnong	<ul style="list-style-type: none"> ➤ 90% of the site levelled ➤ 175 RM out of 186 RM of boundary wall constructed ➤ 75% of the Control Room/ GIS Building construction work completed ➤ Tower and equipment foundation work completed ➤ Tower, beam, transformer and panel erection work completed ➤ All other work under progress
5	Establishment of 2x10 MVA, 33/11 kV new substation at Latyrke	<ul style="list-style-type: none"> ➤ 1st 10 MVA Xmer Commissioned on 26/02/2020

1.6 OBJECTIVE & METHODOLOGY ADOPTED FOR FEAR STUDY

The main objectives of the FEAR study are to assess the mitigative measures as 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, RSET undertook a comprehensive biophysical, environmental, socioeconomic 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 measure/ actions listed in IEAR/EMP. The methodologies adopted for instant FEAR are as follows:

Defining Study Area: Environmental impacts of Transmission & Distribution (T&D) projects are not far reaching and are mostly localized to RoW (refer **Table 1.7**). However, T & D projects have some effects on natural and socio-culture resources. Study area has been defined as RoW of transmission line i.e. 27 m corridor for 132 KV transmission line and 15 m corridor for 33 KV transmission line. Also, area in immediate vicinity of substations has been included in the study area.

Table 1.7: RoW Width

Transmission Voltage	Max. RoW (m)
132 kV	27
33 kV	15

Review of existing reports: Review of existing reports and data prepared and generated by POWERGRID such as Initial Environment Assessment Report (IEAR), Environment and Social Policy & Procedures Framework (ESPPF), Compensatory Plan for Temporary Damage (CPTD) etc. was undertaken and suitably incorporated in the present report.

Literature review: Review of existing literature was undertaken for collection of secondary baseline data related to physiography, climatic conditions, demography, natural resources including forests/wildlife, protected area and socio-economic features of the study area. Sources and data so collected have been mentioned below:

- 'A Revised Survey of the Forest Types of India' by Champion and Seth (1968) was used for forest type classification of forests in the study area.
- Data collected from published literature of Zoological Survey of India, Forest Survey of India, Botanical Survey of India, Website of Directorate of Environment, Govt. of Meghalaya and other research and government publications for floral and faunal diversity of the study area.
- Conservation status of flora and fauna of the study area as per Indian Wildlife (Protection) Act (1972), threatened status according to IUCN Red List 2020.1, Red Data Book of Indian Plants by Botanical Survey of India, Kolkata.
- Census of India 2011 for demography of the study area.

Collection of primary data and Physical verification of construction elements: To gather primary data/ physical verification, a field visit/ survey of the project area along with IA and Contractor staff was made in December 2021. The data which has been collected from field visit are implementation status of proposed environmental management plan and mitigation measures as suggested in IEAR.

Ground truthing/ physical verification was made with photographic evidence and verification of record maintained by IA and Contracts for various activities for monitoring the compliance of mitigation measures like Health and Safety measures, Solid waste and sanitation, construction of protection wall/ retaining walls, status of labour camps location of proposed substations, towers, and Transmission & Distribution Lines alignments. Findings of field survey were consolidated along with secondary data for interpretation and finding the gaps for immediate necessary action.

Surveys for flora and fauna: Being a transmission line project, ecological surveys for assessment of vegetation structure/ profile in the proximity of the proposed transmission lines, corridors of transmission line routes, sub-stations, etc. were conducted wherein line transect methodology has been followed.

The terrestrial ecological surveys were undertaken to prepare a comprehensive checklist of flora (angiosperm, gymnosperm, pteridophyte, and bryophytes) and fauna (mammals, birds, herpetofauna and butterflies) of the study area. The study area was divided into different strata based on topography and vegetation pattern covering different land use/ land cover

categories like scrub land, forest land, fallow/ barren land, and vegetation growing along the project components (RoW of transmission line, near towers and sub-stations).

As the topography along the routes varied from foothills to top of the hills. In the valley region, most of the transmission line route passes through the bunds of paddy fields. The coverage of the study area was hampered by inaccessibility of certain areas due to inhospitable terrain. It was therefore, not feasible to chart the entire routes of proposed/completed transmission line as large part of the routes has steep slopes and due to issues of accessibility at present. However, during the field surveys at least 10% of the route was covered for the collection of baseline data, which in some cases constituted a continuous stretch and, in some cases, could be covered in parts.

A series of transects were identified along the routes of transmission line covering the corridors between the ROW of transmission line and substations. Area covered under different sub-components (ROW of transmission line) of project is given below in **Table 1.8**. Faunal surveys also were conducted along the same transects.

Table 1.8: Transmission & Distribution Lines and Transects Locations for Sampling

S. No.	Name of Transmission Line	Status of Project	Distance Covered
1	LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre – 27.193 km	Apart from stringing operation in the forest land falling under Loop In section of the line all the works are completed.	Loop In Line <ul style="list-style-type: none"> Location Ext 62 to AP-19A/0 = 4.7 km Location AP-40A/0 to Gantry = 1.5 km Loop Out Line <ul style="list-style-type: none"> Location Ext 66 to AP-16B/0 = 4.9 km Location AP-38B/0 to Gantry = 1.4 km Total Distance Covered = 12.5 km
2	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Mynkre (New) S/S – 1.618 km	<ul style="list-style-type: none"> ➤ Route alignment survey completed ➤ Supply, foundation and erection of poles work in progress 	<ul style="list-style-type: none"> Location FP-1 to DP-1 = 0.4 km Location DP-6 to FP-5 = 0.1 km Total Distance Covered = 0.5 km
3	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Rymbai (New) S/S – 15.806 km	Work completed	<ul style="list-style-type: none"> Location FP-1 to SP-35 = 2.3 km Location FP-11 to FP-14 = 5.6 km Total Distance Covered = 7.9 km
4	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S – 10.386 km	Work completed	<ul style="list-style-type: none"> Location FP-1 to DP-15 = 0.8 km Location DP-103 to DP-120 = 1.2 km Location DP-147 to FP-12 = 0.2 km Location DP-154 to FP-14 = 1.1 km Total Distance Covered = 3.3 km
5	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S – 11.711 km	<ul style="list-style-type: none"> ➤ Route alignment survey completed ➤ Supply, foundation and erection of poles work in progress 	<ul style="list-style-type: none"> Location FP-1 to DP-15 = 0.8 km Location DP-103 to DP-120 = 1.2 km Location DP-147 to DP-154 = 0.9 km Location DP-194 to DP-202 = 0.5 km Location FP-17 to DP-209 = 0.2 km Total Distance Covered = 3.6 km

The results of the primary field surveys were supplemented with secondary data to fill the gaps and further with the information generated through PRA. In addition, at all the sites bird walks were also undertaken, particularly areas under private plantations nearby the routes to locate nesting sites and for bird sightings.

Consultation: Consultation was carried out with stakeholders like POWERGRID officials, Contractor, migratory labours, local labours, affected community/local people etc. to collect data with respect to compliance of suggested Environmental Management Plan and implementation of mitigation measures.

Development of Maps: Geo-referenced and Google maps with superimposed coordinates of project elements were generated to verify locational details and details of physical features of terrain of the project locations.

**Chapter
2****POLICY, LEGAL AND REGULATORY
FRAMEWORK****2.1 INTRODUCTION**

Power transmission and distribution project activities by their inherent nature and flexibility have negligible impacts on environmental and social attributes. Indian laws relating to environmental and social issues have strengthened in the last decade both due to local needs and international commitments. MePTCL/MePDCL, IA and contractors 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 World Bank's Operational Policies.

2.2 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.

Sixth Schedule, In Meghalaya, 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. These institutions are expected to integrate these areas with the modern system of administration while preserving the traditional autonomy and local self-governing institutes of the tribal people. There are three Autonomous District Councils (ADCs) in Meghalaya viz.

- a) Khasi Hills Autonomous District Council
- b) Jaintia Hills Autonomous District Council
- c) Garo Hills Autonomous District Council

2.3 ENVIRONMENTAL PROVISIONS

Environmental issues of T&D projects are manageable given the inherently small 'foot print' of towers and flexibility in siting facilities within a relatively large host area and are mostly localized to RoW. However, transmission line project may have some adverse effects on natural resources. These impacts can be minimized by careful route selection and siting of substations. The applicable acts, rules, and relevant policies in the context of the project and its status of compliance are presented in **Table 2.1**.

2.4 SOCIAL PROVISIONS

The applicable acts, rules, and relevant policies in the context of the project and its status of compliance are presented in **Table 2.2**.

2.5 WORLD BANK OPERATIONAL POLICY

When World Bank provide governments with financing to invest in projects such as building a road, connecting people to electricity, or treating waste water, World Bank we aim to ensure that the people and the environment are protected from potential adverse impacts. World Bank do this through policies that identify, avoid, and minimize harm to people and the environment. These policies require the borrowing governments to address certain environmental and social risks in order to receive World Bank support for investment projects. The mandatory environment and social requirements with respect to World Bank Safeguard Policies are presented in **Table 2.3**.

Table 2.1: Environmental Provisions

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
1.	Electricity Act, 2003	To consolidate the laws relating to generation, transmission, distribution, trading and use of electricity. Under the provisions of Section 68(1):- Prior approval of the GoMe is a mandatory requirement to undertake any new transmission and distribution project in the State.	Applicable - Transmission line projects are constructed under the ambit of Electricity Act, 2003 following the provisions of Section 67 & 68 of act.	Complied with: MoP, GoI approved the NERPSIP comprehensive scheme for six North Eastern States including Meghalaya under vide its Office Memorandum dated 1 st December 2014.
2.	Forest (Conservation) Act, 1980	To protect and conserve Forest Areas and Tree Cover. Any transmission/ distribution line traverses forest land, prior clearance is mandatorily required from Ministry of Environment, Forest & Climate Change (MoEF&CC), GoI under the Forest (Conservation) Act, 1980.	Applicable – 11.566 ha of notified forest area is required to be diverted for the construction of LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre	Complied with: Applied for forest clearance as per the Forest (Conservation) Act, 1980. Stage I clearance has been received for Loop Out section. Proposal for Loop In section is pending with State Govt.
3.	Environment (Protection) Act, 1986	To protect and improve the overall environment. It is umbrella legislation for the protection and improvement of environment.	Applicable – Though some limited compliance measures notified under this EPA, 1986 are to be adhered to relevant rules and regulations under the EPA, 1986 applicable to the operations of MePTCL/MePDCL.	Complied with: Though applicable as it is umbrella legislation, however, as such statutory permission/ license is not required.
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	Applicable - As per the notification, certain control and regulation has been imposed on manufacturing, import, export, and use of these compounds.	Complied with: 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.	Applicable during operation phase only – Used batteries to be disposed to dealers, manufacturer, registered recycler, reconditioners or at the designated collection centers only. A half-yearly return to be filed as per Form-8 to the	Batteries are used during operation phase. Hence, the issue of proper handling and disposal of batteries as per rules not

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
			Meghalaya State Pollution Control Board	an issue during construction stage.
iii)	Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008	To ensure that the hazardous wastes are managed in a manner which shall protect the health and the environment against the adverse effects that may result from such waste. The used transformer oil has been declared as a hazardous waste vide this notification.	Applicable – Requires proper handling, storage and disposed only to authorized disposal facility (registered recyclers/ reprocessors). In case it is decided to outsource the process of recycle of used oil to registered recycler as per the provisions of notification then MePTCL/MePDCL shall submit the desired return in prescribed form to concerned State Pollution Control Board at the time of disposal of used oil.	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.
iv)	E-waste (Management and Handling) Rules, 2011	To ensure that e-waste is 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 centre(s) or registered dismantler(s) or recycler(s) or is returned to the pick-up of take back services provided by the producer.	Applicable – To dispose e-waste generated in environmentally sound manner by channelizing to authorized collection centres/ registered dismantler/ recyclers/ return to producers. MePTCL/MePDCL, being a bulk consumer of electrical and electronics equipment's shall maintain record as per Form-2 for scrutiny by State Pollution Control Board.	E-waste disposal is not an issue during construction phase.
4.	The Biological Diversity Act, 2002	To 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. All restrictions applicable to protected areas like National Park & Sanctuaries are also applicable to these reserves.	Not Applicable - The present project does not involve any biosphere reserves.	Not Required
5.	Ancient Monuments & Archaeological Sites and Remains Act, 1958	To prevent damage to archaeological sites and its maintenance. It also places restriction on activities which can cause harm to the monument /property. The law is however applicable only in monuments identified by the Archaeological Survey of India.	Not Applicable - All such areas have been completely avoided.	Not Required

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
6.	The Scheduled Tribes & Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006	This act recognizes and vests the forest rights and occupation in forest land to forest dwelling Scheduled Tribes and other traditional forest dwellers who have been residing in such forests for generations but whose rights could not be recognized.	Not Applicable – For linear projects including transmission lines, obtaining NoC from the Gram sabha (Village Council) has been exempted for the requirement of FRA compliance as per MoEF&CC circular dated 5 th February 2013 & 15 th January 2014.	Not Required
7.	Meghalaya Tree (Preservation) Act, 1976	This Act deals with felling of trees outside forest areas within 10 Km radius of the municipal areas of Shillong and Shillong Cantonment area.	Not Applicable – All the components of the project are outside the 10 Km radius of the municipal areas of Shillong and Shillong Cantonment area.	Not Required
8.	Meghalaya Forest regulation (Amendment) Bill 2012	The Act 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".	Applicable – 11.566 ha of notified forest area is required to be diverted for the construction of LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre	Complied with: Applied for forest clearance as per the Forest (Conservation) Act, 1980. Stage I clearance has been received for Loop Out section. Proposal for Loop In section is pending with State Govt.

Table 2.2: Social Provisions

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
1.	The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013	<p>Act ensures appropriate identification of the affected families/ households, fair compensation and rehabilitation of titleholders and non-titleholders.</p> <p>The Act authorizes State Govt. (i.e. GoMe) or its authorized Government agency to complete the whole process of acquisition of private land including Social Impact Assessment (SIA), Action Plan for R&R (i.e. Rehabilitation and Resettlement) & its implementation and the MePTCL/MePDCL responsibility is limited to identification and selection of suitable land based on technical requirement and ensuring budget allocation.</p>	Not Applicable – Land has been purchased on willing buyer and willing seller basis.	Not Required
2.	Sixth Schedule of the Constitution	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.	Applicable - Since the project is being implemented in the jurisdiction of Jaintia Hills Autonomous District Council, therefore, consent of ADC is required.	Complied with: NoC from Village Headman/ Land owner obtained by IA.
3.	Rights of Way (RoW) and Compensation	The Electricity Act, 2003 has a provision for notifying transmission company under section 164 (B) to avail benefits of eminent domain provided under the Indian Telegraph Act, 1885.	Applicable – MePTCL/ MePDCL may seek for GoMe authorization to exercise all the powers that the Telegraph authority possesses and can spot, construct and erect towers without acquiring the land. Moreover, all damages due to its activity shall be compensated at market rate. In case of agricultural or private land the provisions of section- 67 and or section-68 (5 & 6) of the Electricity Act, 2003 and section-10 of the Indian Telegraph Act, 1885 are followed for assessment and payment of compensation towards such damages.	Complied with: Implementing Agency has already been vested with powers of telegraph authority by GoI vide Gazette Notification dated Dec.24, 2003. 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
4.	The Right to	To provide for setting out the practical regime of right	Applicable - Designated authorities to be in	Complied with: Designated

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
	Information Act, 2005	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 Information Commissions and for matters connected therewith or incidental thereto.	place.	authorities are already in place in MePTCL/ MePDCL.
5.	Indian Treasure Trove Act, 1878 as amended in 1949	To provide for procedures to be followed in case of finding of any treasure, archaeological artifacts etc. during excavation.	Not Applicable - No such instances reported.	Not Required
6.	The Meghalaya Transfer of Land (Regulation) Act, 1971 (Act 1 of 1972)	Act prohibits transfer of land from tribal to non-tribal	Not applicable - GoMe 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	Not Required
7.	Workmen's Compensation Act, 1923	This act provides for compensation in case of injury by accidents arising out of and during the course of employment.	Applicable during construction, operation and decommissioning phases – Since labours are engaged during different phases.	Complied with: No such instances of violation of act have been reported.
8.	Minimum Wages Act, 1948	As per this act, the employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government.	Applicable during construction, operation and decommissioning phases – Since labours are engaged during different phases.	Complied with: No such instances of violation of act have been reported.
9.	The Child Labour (Prohibition and Regulation) Act, 1986	This Act prohibits employment of children below 14 years of age in Building and Construction Industry covering Railway.	Applicable during construction, operation and decommissioning phases – Since are engaged during different phases.	Complied with: No such instances of violation of act have been reported.
10	The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013	To provide protection against sexual harassment of women at workplace and for the prevention and redressal of complaints of sexual harassment and for matters connected therewith or incidental thereto.	Applicable during construction, operation and decommissioning phases – Since labours are engaged during different phases.	Complied with: No such instances of violation of act have been reported.

Table 2.3: World Bank Safeguard Policies

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
1.	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.	Applicable - E & S aspects of the project have already been integrated into management procedures based on comprehensive environment assessment undertaken by IA.	Complied with: E & S aspects of the project have already been integrated into management procedures based on comprehensive environment assessment undertaken by IA during 2015.
2.	OP- 4.04: Natural Habitats	To promote and supports natural habitat conservation and improved land use to integrate into national and regional development the conservation of natural habitats and the maintenance of ecological functions. Furthermore, to promote the rehabilitation of degraded natural habitats.	Not Applicable - The present project does not involve any natural habitats such as biodiversity area, protected area, sacred groves etc. However, NoC from Village Council/ Headman (Dorbar)/ Land owner have been obtained in this regard.	Not Required
3.	OP-4.11: Physical Cultural Resources (PCR)	To preserve PCR and in avoiding their destruction or damage. PCR includes resources of archaeological, paleontological, historical, architectural, and religious (including graveyards and burial sites), aesthetic, or other cultural significance.	Not Applicable - The Present project does not encroach upon any such resources.	Not Required
4.	OP-4.36: Forests	To harness 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	Applicable – Though all line routes and substation locations successfully avoided encroachment into any Protected and Reserve forests. However, line routes pass through notified forests and community and private forests. To minimise adverse impact on forests, management measure already provided in MePTCL/ MePDCL's ESPPF	Complied with: To minimise adverse impact on forests, management measure already provided in MePTCL/ MePDCL's ESPPF of June, 2015
5.	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	Applicable - EHS guidelines are being followed during project implementation.	Complied with: EHS guidelines are being followed during project implementation.

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
		considered to be achievable in new facilities by existing technology at reasonable costs.		
6.	OP 4.12 – Involuntary Resettlement	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 levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.	Not Applicable - As no involuntary acquisition invoked for securing land for proposed substations. However, fresh land required for construction of new substations were secured through direct Purchase on Willing Buyer Willing Seller basis on negotiated rate	Not Required.
7.	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.	Not Applicable - 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 from Village Council/ Headman (Dorbar)/ Land owner have been obtained in this regard.	Complied with: NoC from Village Headman/ Land owner have been obtained.

2.6 STATUTORY PERMISSION/LICENSES/NOC OBTAINED

The applicability of acts, notifications and policies have already been described in above paragraphs and table. As per the applicability, necessary permission/ licenses/ NOC so far obtained by IA or contractor are:

- Under the provisions of Section 68(1) of Electricity Act, 2003, prior approval GoMe is a mandatory requirement to undertake any new transmission project 66kV upward and for distribution project of 33kV system in the State. As a part of permission/ approval, GoI approved the NERPSIP comprehensive scheme for six North Eastern States including Meghalaya under vide its Office Memorandum dated 1st December 2014. In addition, Implementation/ Participation agreement between MePDCL and PGCIL and between MePTCL and PGCIL has been signed on 19th March, 2015 and 23rd March, 2015 respectively.
- All the 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.
- All the contractors have obtained requisite insurance policy as per provisions of Employee Compensation Act, 1923 for its employed workforce.
- Since the locations of LILO are coming under various villages of districts, No Objection Certificates (NoC) from Village Council/ Headman (Dorbar)/ Land owner have been obtained.

Chapter 3

BASELINE DATA

3.1 INTRODUCTION

This chapter deals with the baseline status of physical, biological, socio-economic environment in the study area as well as districts belonging to study area. The baseline data presented in this chapter has been prepared from primary data collected during field studies as well as data/information gathered from available literature and reports published by various institutions and organizations.

3.2 DEFINING STUDY AREA

Environmental impacts of T&D projects are not far reaching and are mostly localized to RoW (refer **Table 3.1**). However, T&D projects have some effects on natural and socio-culture resources. Study area has been defined as RoW of transmission line i.e., 27m corridor for 132 kV transmission line and 15 m corridor for 33 kV transmission line. Also, area in immediate vicinity of substations has been included in the study area.

Table 3.1: RoW Width

Transmission Voltage	Max. RoW (m)
132 kV	27
33 kV	15

3.3 DISTRICT BELONGING TO STUDY AREA

The project is an intra-state power sector project located in the State of Meghalaya and study area covers East Jaintia Hills district of Meghalaya. The district lies between 92°10'E and 92°48'E Longitudes and 25°02'N and 25°27'N Latitudes the total geographical area of the district is 2040 km². It is bounded by Bangladesh in the South, North Cachar Hills District in the East and West Jaintia Hills District in the North and West. Its distance from the state capital is 97 kms and the National Highway 44 Connecting Shillong and the eastern part of Assam pass through the district.

3.4 PHYSICAL ENVIRONMENT OF DISTRICTS BELONGING TO STUDY AREA

3.4.1 Physiography

The district is divided into three lateral sections running east and west and is corresponding to those of Khasi Hills of which they are extensions. The south is the War area, and it extends to the plain of Bangladesh and the Surma Valley of Assam. In the centre and north, the central highland, which reaches its highest point at Maryngksih Peak about 1,627 meters above mean sea level. Towards the southeast, the highlands merge into the jungle tracts extending into the N.C. Hills of Assam.

Taking the natural factors like physiography, soil, geology, rainfall, temperature and forest coverage into account, the district can be delineated into two sub-micro divisions, (1) The East Shillong Plateau Region and (2) The Narpuh-Saipung Forest Region.

East Shillong Plateau Region

The region is dominated by hilly and dissected terrain which is mainly composed of Jaintia Series/ Disang Series and Shillong group of rocks. There is a good deposit of minerals like coal, limestone, etc., in this region. The central highland of this region forms a watershed where most of the rivers of the region finds their sources. The important river like Kharkor along with its tributaries drains through the region to join the Kopili River in the east. Other important rivers of the region are Myntdu, Prang and Lubha. The region is occupied by red loamy soils except a limited belt on the North and South. It has rich vegetation ranging from tropical to temperate. The major settlements are confined either along the rivers or roads. Most of the settlements are small in size. Villages are not uniformly distributed due to topographic conditions.

This region exhibits a hilly type of landscape in general with numerous rivers, streams and interspersed by plateaus. It is an extension of the Shillong Plateau with an elevation of 800 - 1,200 m above the mean sea level. However, the region has low hills and peaks in comparison to the central Shillong Plateau region of East Khasi Hills District. The presence of peaks like Nongjngi (1,389 m), Larmaiphlong (1,307 m) etc. brings out a clear picture of the region. The hills of the eastern part extend towards Karbi Anglong and North Cachar Hills district of Assam. The Southern foothills ultimately merge with the plain of Bangladesh. The rivers of the region make two distinct drainage system: (1) rivers flowing towards the north and (2) rivers flowing towards the south. The river Kharkor along with their tributaries join the river Kopili in the eastern part of the region. Among the south flowing rivers, Myntdu is important. A narrow belt along the central part of the region, which runs from west to east, is a watershed which separates the north flowing and south flowing rivers. The region has a rich vegetal cover from tropical evergreen to sub-tropical pine.

Geologically, the Region is mainly underlined by the Jaintia Series / Disang Series (with ultrabasic in deep shades) rocks, while the northern part of the region is made up of Shillong group and gneissic rocks. The other group of rocks like Barail Series-Simsang formation (Garo Hills), granite and Khasi Group, Axial group, etc. appear in some patches. Most of the area of the region is occupied by red loamy soils. A narrow belt in the northern part is composed of laterite soils. Red and yellow soils are found in the southern belt. According to NBSS and LUP (ICAR), Nagpur, the region has three types of soil, (1) Udalfs-Ochrepts, (2) Ustalfs-Ochrepts-Orthents and (3) Udalfs-Ochrepts-Fluvents-Orthents.

Narpuh-Saipung forest region

Lying on the south-eastern part of the district, the region spreads over 1,269 sq. km. It extends over a part of Khliehriat C.D. Block only. The region is characterized by hilly and rugged terrain which reflects its geology consisting of rocks of Jaintia Series / Disang Series and Barail Series and Simsang formation (Garo Hills). The region is traversed by numerous rivers and streams. Laterite and red and yellow soil cover the entire area of the region. The region is heavily forested throughout. Tropical vegetation occupies almost the entire area of the region.

This region is dominated by hilly and irregular landscape criss-crossed by numerous rivers and streams with an average altitude of 500-1200 m. The region has several high peaks viz., Lakadong (781 m), Lumpdeng (1330 m), Tharanyang (976 m), Moobyrtap (1269 m), Tangpui

(1482 m), Didasip (1585 m), Lakorsing (1448 m) and Maryngksih (1627 m). The rivers of the region can be classified into two groups: (1) North flowing rivers and (2) South flowing rivers. The central highland is a watershed, and it is the originating source of most of the rivers. The river Kopili along with its tributaries, Umtalang, Umphung, WahKhyrniam and Dikisim flow along the eastern boundary of the region and ultimately meets the river Brahmaputra, whereas the river Hari and Lubha along with their tributaries, Prang, WahLariang, Umlunai, Umsngat, Lenju etc. flow south to Bangladesh. The region is characterized by rich vegetation of tropical evergreen type. Almost the entire area of the region is occupied by the Narpuh and Saipung reserved forests.

Geologically, the region is mainly composed of rocks of Barail Series, Simsang formation (Garo Hills) and Jaintia Series, Disang Series (with Ultrabasic in deep shades). Other groups of rocks like gneiss with old inliers Sela group, Khasi group/Axial group, Tipam Series and Chengapara formation (Garo Hills) and Surma Series and Baghmara formation (Garo Hills) etc. appear in some parts. The region is mostly covered by Ustalfs-Ochrepts-Orthents type of soils. A small area in the north-eastern and north-western parts of the region has Udalfs-Ochrepts and Udalfs-Ochrepts-Fluvents-Orthents soils.

3.4.2 Water Resources

The river system of Meghalaya comprises mainly of rivers draining to the Brahmaputra Basin in the north and the Meghna Basin in the South. Similarly, rivers flowing through East Jaintia Hills district drains into Brahmaputra as well as Meghna basins. The two sub-basins flowing through the district are Kopli sub-basin of Brahmaputra basin and Myntdu sub-basin of Meghna basin. The important tributaries draining in to Kopli sub-basin are Kharkor (Um Khyrniam), Um Tarang, Rashu, Litang, Um Pawal, Um Talang, Um Phung, Wah Khyrniam and Dikisim. While the important tributaries draining in to Myntdu sub-basin are Um Latang, Lynriang, Prang, Lubha and Balichara.

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

The main rivers flowing through districts belonging to study area are shown in **Figure 3.1**.

3.4.3 Meteorology

The climate of the area is cool round the year. The average temperature of the area ranges from a maximum of 20.47° C to a minimum of 18.59°C. The hottest months are from June-August and coldest during the months from December to February. The period of rainfall starts from June to September. In June 2011, the highest rainfall was recorded as 752.42 mm. The lowest rainfall was recorded during the months of October, November, December, January and February. The district is humid all throughout the year. The suitable climate for field work is during the period from April to October.



Figure 3.1: Map Showing Rivers Flowing Through West Jaintia Hills and East Jaintia Hills District (erstwhile Jaintia Hills District), East Jaintia Hills district comprises of Khliehriat and Saipung C. D. Blocks

Source: District Census Handbook, Jaintia Hills

3.4.4 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) Complex, Shillong revealed that about 40% of the soils of the state contain micronutrients below the critical level.

3.4.5 Minerals and Mining

Limestone and coal are the important economic minerals associated with the rock formations of the area. Coal occurs as impersistent bands of variable thickness associated with Sylhet sandstone in the south of Rymbai and NE of Sutnga. Coal is of lignite to bituminous quality, hard, lumpy and contains high moisture and Sulphur. Limestone is exposed in the southeastern part of the district. Upper Sylhet Limestone member of Shella Formation has been targeted for limestone resources majorly belonging to Cement (Blendable and Beneficial) grades and minor amount of SMS grade. The major exploration activities for limestone are concentrated only in Litang Valley and Mawlong-Ishamati areas. a total resource of 10,119.28 million Tonnes (including reserves published by DMR in Siju and adjoining areas). Out of this total reserve, 8468.76 million Tonnes are under "Indicated" category and 1650.52 million Tonnes are under "Inferred" category. Limestone exploration was launched during F.S.1992-93 and is being continued up to 2018-2019 in different blocks (27 blocks) in order to assess the reserves of limestone. Good quality Kaolin occurs around Smit and Laitlyngkot in East Khasi Hills, Thadlaskein, Shangpung, Mulieh and Mynsngat in Jaintia hills and Darugiri in East Garo Hills districts. China clay, suitable for pottery manufacture, has been reported from several places in Sutnga area. It occurs associated with Sylhet Sandstone or as an altered product of feldspar in granites and gneisses.

3.4.6 Landuse Pattern

Total geographical area of the East Jaintia Hills district is 2040 sq km. As per the reporting area for landuse (1991.24 sq km) considered for the land use pattern classification by the Land use statistics, Ministry of Agriculture, GOI, 2018-19, area of 840.77 sq km falls under forests, area

of 165.23 sq km falls under uncultivated land, area of 772.22 sq km falls under other uncultivated land excluding fallow land, area of 145.78 sq km falls under fallow land and the balance 67.24 sq km is net sown area. A brief description about the type and use of land in the district belonging to the study area is given in **Table 3.2**.

Table 3.2: Landuse Pattern of the District Belonging to the Study Area

S. No.	Land Use			Area (ha)
1	Total Geographical Area			204000
2	Reporting Area for Landuse (S. No. 3+6+10+13+14)			199124
3	Classification of Reporting Area	Forests		84077
4		Not Available for Cultivation	Area Under Non-Agricultural Uses	9423
5			Barren and Unculturable Land	7100
6			Total	16523
7		Other Uncultivated Land Excluding Fallow Land	Permanent Pasture and Other Grazing Land	0
8			Land Under Misc. Tree Crops and Groves not Included in Net Area Sown	9510
9			Culturable Waste Land	67712
10			Total	77222
11		Fallow Land	Fallow Lands Other Than Current Fallows	9168
12			Current Fallow	5410
13			Total	14578
14	Net Area Sown		6724	
15	Cropped Area		6779	
16	Area Sown More Than Once (S. No. 15–14)			55

Source: Land use statistics, Ministry of Agriculture, GOI, 2018-19

3.5 BIOLOGICAL ENVIRONMENT OF DISTRICTS BELONGING TO STUDY AREA

To analyze the impacts and plan mitigation measures, it is imperative to study baseline information broadly for districts belonging to study area and specifically for transmission line and surrounding or proximity area as well (study area), which includes forest areas under the control of individual/community/village councils. The same has been described in ensuing paragraphs.

3.5.1 Forest Types

As per the 'A Revised Survey of the Forest Types of India' by Champion and Seth (1968) forests in the district belonging to study area can be classified into four Forest Type Groups which are further divided into 5 Forest Types (**Table 3.3**).

Table 3.3: Forest types found in the Study Area

Group	Sub-Group	Forest Type
1- Tropical Wet Evergreen Forests	1B-Northern Tropical Wet Evergreen Forests	1B/C3 Cachar Tropical Evergreen Forests
2-Tropical Semi Evergreen Forests	Northern Tropical Wet Evergreen Forests	2B/C1a Assam Alluvial Plains Semi-Evergreen Forests
	2B-Northern Tropical Semi Evergreen Forests	2/2S1 Secondary Moist Bamboo Brakes
8-Sub Tropical Broad	8A-Northern Sub-Tropical	8B/C2 Khasi Sub-Tropical Wet

Group	Sub-Group	Forest Type
Leaved Hill Forests	Broadleaved Wet Hill Forests	Hill Forests
9-Sub Tropical Pine Forests		9/C2/DS1 Assam Sub-Tropical Pine Savannah

3.5.2 Forest Cover

Total forest cover in the district is 2537.89 km², which is 66.45% of the geographical area of the district. In terms of forest canopy density classes, the district has 103.31 km² under Very Dense Forest, 1448.69 km² under Moderately Dense Forest and 985.89 km² under Open Forest. The details of forest cover are given below in **Table 3.4**.

Table 3.4: Forest Cover in District Belonging to Study Area

S. No.	Name of District	Geographical Area (GA) (km ²)	2019 Assessment (Area in km ²)				% of GA	Scrub
			Very Dense Forest	Moderately Dense Forest	Open Forest	Total Area		
1	Jaintia Hills*	3819	103.31	1448.69	985.89	2537.89	66.45	104.59

Source: India State of Forest Report 2019, Meghalaya

*Now bifurcated into West Jaintia Hills and East Jaintia Hills district

3.6 BIOLOGICAL ENVIRONMENT OF THE STUDY AREA (RoWs & SUB-STATIONS' VICINITY)

3.6.1 Floristics Elements

The study area for the floristic surveys has already been defined in the Chapter 1 which is defined as area in the proximity of the proposed transmission lines on both left and right sides, corridors of transmission line routes and substations. The description of the vegetation is based upon these observations and data collected around each site collected through transects' survey.

In general, the vegetation in and areas around sampling sites is characterized with two landforms valley and hills. Vegetation in valley region is comprised of Tropical moist and deciduous forest, while East Himalayan sub-tropical wet hill forests, and Secondary Moist Bamboo Brakes are prevalent in the hills.

A series of transects were identified along the routes of transmission line covering the corridors between the RoW of transmission line and substations. Details of transmission line and locations (transects) selected for ecological survey are as given in **Table 3.5**.

Table 3.5: Transmission Lines and Transects Locations for Vegetation Sampling

S. No.	Name of Transmission & Distribution Line	Status of Project	Distance Covered
1	LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre – 27.193 km	Work completed	Approx. 12.5 km (From Ext. Tower 62 to 19A/0 and Tower 40A/0 to Gantry of Loop In Line and From Ext. 66 to 16B/0 and Tower 38B/0 to Gantry of Loop Out Line)
2	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV	Route alignment survey completed. Supply,	Approx. 0.5 km (From FP-1 to DP-1 and DP-6 to FP-5)

S. No.	Name of Transmission & Distribution Line	Status of Project	Distance Covered
	Mynkre (New) S/S – 1.618 km	foundation and erection of poles work in progress	
3	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Rymbai (New) S/S – 15.806 km	Work completed	Approx. 7.9 km (From FP-1 to SP-35 and FP-11 to FP-14)
4	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S – 10.386 km	Work completed	Approx. 3.3 km (From FP-1 to DP-15, DP-103 to DP-120, DP-147 to FP-12 and DP-154 to FP-14)
5	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S – 11.711 km	Route alignment survey completed. Supply, foundation and erection of poles work in progress	Approx. 3.6 km (From FP-1 to DP-15, DP-103 to DP-120, DP-147 to DP-154, DP-194 to DP-202 and FP-17 to DP-209)

3.6.1.1 Floral Diversity

As per field surveys and based upon secondary data an inventory of 183 plant species in the study area has been prepared. Group-wise breakup of families, genera and species is given below.

Group	Angiosperms	Gymnosperms	Pteridophytes	Bryophytes	Total
Families	73	3	5	3	84
Genera	150	3	7	3	163
Species	169	3	8	3	183

A brief description of number of plant species recorded in various taxonomic groups is given in the following paragraphs.

a) Angiosperms

During the field surveys conducted in the study area 169 plant species of angiosperms belonging to 73 families were recorded (For detailed list see **Annexure I**). These include trees, shrubs, herbs, and climbers. trees are comprised of 59 species, shrubs are 45, herbaceous component comprises of 58 species, and climbers were represented by 7 species. Most common families recorded from the study area are Poaceae, Fabaceae, Asteraceae, Urticaceae, Malvaceae, and Euphorbiaceae.

b) Gymnosperms

Three species of gymnosperms recorded from the study area are given below in table.

S. No.	Family	Botanical name
1	Cycadaceae	<i>Cycas pectinata</i>
2	Cupressaceae	<i>Platycladus orientalis</i> (Syn. <i>Thuja orientalis</i>)
3	Pinaceae	<i>Pinus kesiya</i>

c) Pteridophytes:

During field survey 8 species belonging to 5 families of Pteridophytes were recorded from the area:

S. No.	Family	Botanical Name
1	Equisetaceae	<i>Equisetum diffusum</i>
2	Lygodiaceae	<i>Lygodium flexuosum</i>
3	Polypodiaceae	<i>Polypodium lachnopus</i>
4	Pteridaceae	<i>Adiantum edgeworthii</i>
5	Pteridaceae	<i>Adiantum lunulatum</i>
6	Pteridaceae	<i>Pieris eniformis</i>
7	Pteridaceae	<i>Pteris wallichiana</i>
8	Selaginellaceae	<i>Selaginella gracilis</i>

d) Bryophytes

Three species of Bryophytes were recorded from the study area are as follows.

S. No.	Family	Name of Species
1	Andreaeaceae	<i>Andreaea sp.</i>
2	Bryaceae	<i>Bryum mildeanum</i>
3	Marchantiaceae	<i>Marchantia polymorpha</i>

3.6.1.2 Rare Threatened and Endangered Species

Conservation status of plant species found in the ‘Study Area’ was assessed using IUCN Red list of Threatened Species Version 2021.2 (accessed in December 2021) and Botanical Survey of India Red Data Book. Out of 164 species reported from the study area only 49 species have been assessed by IUCN Red list of Threatened Species Version 2021-2. All the plant species assessed by IUCN Red list of Threatened Species Version 2021-2 are listed under ‘Least Concern’ category (Table 3.6).

Table 3.6: RET Plant Species Reported from Study Area

S. No.	Family	Name of Species	Conservation Status IUCN 2021-2
1	Altingiaceae	<i>Altingia excelsa</i>	LC
2	Anacardiaceae	<i>Mangifera sylvatica</i>	LC
3	Apiaceae	<i>Centella asiatica</i>	LC
4	Araceae	<i>Alocasia fornicata</i>	LC
5	Araliaceae	<i>Brassaiopsis glomerulata</i>	LC
6	Araliaceae	<i>Trevesia palmata</i>	LC
7	Arecaceae	<i>Caryota urens</i>	LC
8	Arecaceae	<i>Calamus tenuis</i>	LC
9	Asteraceae	<i>Acmella paniculata</i>	LC
10	Bombacaceae	<i>Bombax ceiba</i>	LC
11	Cannabaceae	<i>Celtis australis</i>	LC
12	Commelinaceae	<i>Commelina benghalensis</i>	LC
13	Cyperaceae	<i>Carex longipes</i>	LC
14	Cyperaceae	<i>Cyperus rotundus</i>	LC
15	Dilleniaceae	<i>Dillenia indica</i>	LC
16	Euphorbiaceae	<i>Balakata baccata</i>	LC
17	Euphorbiaceae	<i>Macaranga denticulata</i>	LC
18	Euphorbiaceae	<i>Ostodes paniculata</i>	LC
19	Fabaceae	<i>Albizia procera</i>	LC
20	Fabaceae	<i>Albizia saponaria</i>	LC
21	Fabaceae	<i>Erythrina variegata</i>	LC

S. No.	Family	Name of Species	Conservation Status IUCN 2021-2
22	Fabaceae	<i>Mimosa pudica</i>	LC
23	Fagaceae	<i>Castanopsis indica</i>	LC
24	Juglandaceae	<i>Engelhardtia spicata</i>	LC
25	Lamiaceae	<i>Callicarpa arborea</i>	LC
26	Lauraceae	<i>Cinnamomum bejolghota</i>	LC
27	Lythraceae	<i>Duabanga grandiflora</i>	LC
28	Magnoliaceae	<i>Magnolia champaca</i>	LC
29	Magnoliaceae	<i>Magnolia liliifera</i>	LC
30	Malvaceae	<i>Pterospermum acerifolium</i>	LC
31	Malvaceae	<i>Urena lobata</i>	LC
32	Meliaceae	<i>Azadirachta indica</i>	LC
33	Meliaceae	<i>Chukrasia tabularis</i>	LC
34	Meliaceae	<i>Toona ciliata</i>	LC
35	Moraceae	<i>Ficus auriculata</i>	LC
36	Moraceae	<i>Ficus semicordata</i>	LC
37	Musaceae	<i>Musa balbisiana</i>	LC
38	Pandanaceae	<i>Pandanus dubius</i>	LC
39	Phyllanthaceae	<i>Bischofia javanica</i>	LC
40	Plantaginaceae	<i>Plantago major</i>	LC
41	Poaceae	<i>Dendrocalamus giganteus</i>	LC
42	Poaceae	<i>Phragmites karka</i>	LC
43	Poaceae	<i>Poa annua</i>	LC
44	Poaceae	<i>Saccharum spontaneum</i>	LC
45	Rubiaceae	<i>Luculia pinceana</i>	LC
46	Theaceae	<i>Schima wallichii</i>	LC
47	Urticaceae	<i>Debregeasia longifolia</i>	LC
48	Urticaceae	<i>Urtica dioica</i>	LC
49	Zingiberaceae	<i>Alpinia nigra</i>	LC

3.6.1.3 Vegetation Profile of the Sampling Area

During the field surveys vegetation profile of the study area i.e., areas along the transmission and distribution lines were studied. Based upon these observations the information of vegetation along the transmission/ distribution lines is discussed below.

1. LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre

The area between extension Tower 62 to 19A/0, and between tower 40A/0 to Gantry of Loop In Line and From Ext. 66 to 16B/0 and Tower 38B/0 to Gantry of Loop Out Line were surveyed.

Most of the area along extension Tower 62 to 19A/0 and Ext. 66 to 16B/0 were comprised of scrub land. While in between tower 40A/0 and 38B/0 to Gantry of Loop Out Line is represented by low canopy open forest area. Vegetation in the area was mainly represented by grass species like *Arundinella nepalensis*, *Eragrostis amabilis* and *Poa annua* along with herb species like *Justicia mollissima*, *Ageratum conyzoides*, *Chenopodium album* and *Senna tora*.

Among tree species *Pinus kesiya* was observed along the line near tower Ex 62 to 2A/0, 11A/0 and *Castanopsis indica*, *Calophyllum polyanthum*, *Betula alnoides*, *Chukrasia tabularis*,

Artocarpus heterophyllus and *Schima wallichii* are the tree species recorded and stretch between 13A to 14A. Shrub species along the surveyed area was represented by species like *Artemisia capillaris*, *Lantana camara*, *Ricinus communis*, *Buddleja asiatica*, *Garcinia lanceifolia*, *Justicia adhatoda*, and *Urena lobata*. Scattered patches of bamboo clumps were also observed near Gantry.

2. 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Mynkre (New) S/S

132/33 kV Mynkre (New) S/S and 33/11 kV Mynkre (New) S/S are located on Scrub land featured with grass species like *Phragmites karka* and *Saccharum spontaneum*. Herbaceous flora around the Substations was represented by *Abutilon indicum*, *Ageratum conyzoides*, *Solanum americanum*, *Physalis minima*, *Euphorbia hirta*, *Adiantum edgeworthii* and *Mikania micrantha*.

A very small stretch of line pass through the forested area comprised of tree species of *Schima wallichii*, *Artocarpus heterophyllus*, *Trema orientalis*, *Albizia procera*, *Castanopsis indica*, *Oroxylum indicum*, *Chukrasia tabularis*, *Lagerstroemia parviflora* and *Chenopodium album* along with culms of *Dendrocalamus hamiltonii*. *Phyllanthus niruri*, *Commelina benghalensis*, *Physalis minima*, *Mikania micrantha*, *Eragrostis amabilis*, and *Poa annua* are the herb species recorded under tree cover in the surveyed area. Shrub species in the area was represented by species like *Triumfetta bartramia*, *Sida rhombifolia*, *Sauropus androgynus*, *Lantana camara*, *Girardinia diversifolia*, *Chromolaena odorata*, *Buddleja asiatica*, *Garcinia lanceifolia*, *Rubus paniculatus* and *Euphorbia pulcherrima*.

3. 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Rymbai (New) S/S

Area between 132/33 kV Mynkre (New) S/S to Pole SP35 and From Pole FP-11 to FP 14 were surveyed in the stretch of 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Rymbai (New) S/S. Most of the surveyed area under the line is comprised of scrub/ grass land. Few patches of forested area were observed along the RoW in the area.

In between Pole FP-11 at Rymbai (New) S/S to FP 14, vegetation was mainly comprised of Scattered patches of *Pinus kesiya* as upper storey, shrub species in the area was represented by species like *Justicia adhatoda*, *Triumfetta bartramia*, *Sida rhombifolia*, *Chromolaena odorata* and *Garcinia lanceifolia*. Ferns and grasses represent ground flora comprised of *Adiantum edgeworthii*, *Polypodium lachnopus* and *Dryopteris ramosa* *Imperata cylindrica* *Arundinella nepalensis*, species.

Along the line between FP1 at 132/33 kV Mynkre (New) S/S to Pole SP35 vegetation cover is mainly comprised of herb and shrub species along with bamboo clumps. Some of the tree species recorded along the RoW are *Trema orientalis*, *Castanopsis indica*, *Chukrasia tabularis*, *Schima wallichii* and *Chenopodium album*.

Among shrub and herb species *Buddleja asiatica*, *Garcinia lanceifolia*, *Justicia adhatoda* *Urena lobata* *Justicia mollissima*, *Ageratum conyzoides*, *Chenopodium album* and *Senna tora* were recorded during survey. Fern species in the area was represented by *Adiantum edgeworthii* and *Dryopteris ramosa*. *Phragmites karka* and *Saccharum spontaneum* are the grass species spread over the area.

4. 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S

To understand the distribution of vegetation along the line between 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S, five different stretches were covered depend on land features, vegetation cover and accessibility. Most of the area along RoW is comprised of grassland/ barren land.

In the upper reaches, between Lumshnong (New) S/S to Pole FP12, patches of open forest were observed along the ROW. The other tree species recorded from the area are *Albizia Saponaria*, *Dalbergia pinnata*, *Toona ciliata* *Moringa oleifera*, *Syzygium tetragonum*, *Bischofia javanica* and *Schima wallichii*. Ground cover was mostly covered with grass species represented by *Arundinella nepalensis*, *Thysanolaena latifolia* *Eragrostis amabilis* and *Poa annua*.

In the stretch between Pole DP103 to DP120, the is comprised of grass species along the RoW represented by *Saccharum spontaneum* and bamboo species on the edges of road and *Thysanolaena latifolia* on the hill slopes.

Among the tree species *Bischofia javanica*, *Schima wallichii*, *Artocarpus heterophyllus*, *Terminalia myriocarpa*, *Docynia hookeriana*, *Ficus auriculata*, *Moringa oleifera*, *Syzygium tetragonum*, and *Alangium chinense* were recorded from the area. Shrub species in the area were represented by species like, *Garcinia lanceifolia*, *Desmodium triflorum*, *Osbeckia crinite*, *Myrsine semiserrata*, *Triumfetta bartramia*, *Sida rhombifolia*, *Sauropus androgynus*, *Buddleja asiatica*, *Ageratum conyzoides* along with bamboo species. Among the lower plants *Adiantum edgeworthii*, *Pteris wallichiana* and *Dryopteris ramosa* are the fern species recorded from the area.

5. 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S

The 33 kV distribution line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S is bifurcated from FP 12 pole for 33/11kV Latyrke (New) S/S.

From the bifurcation point from pole FP12, the line is aligned parallel to Urle nala (stream) upto pole DP154. From pole DP 154 to pole DP155, line cross the stream. The vegetation along the stream was mainly comprised of grass species represented by *Saccharum spontaneum* and *Thysanolaena latifolia*. *Adiantum lunulatum*, *Selaginella gracilis* and *Dryopteris ramosa* are the fern species observed along the banks of the stream. *Terminalia myriocarpa*, *Docynia hookeriana*, and *Ficus auriculata*, are the tree species associated with along with dense patches of bamboo clumps in the area.

Other tree species recorded from the RoW of the alignment are *Dalbergia pinnata*, *Toona ciliata* *Moringa oleifera*, *Syzygium tetragonum*, *Bischofia javanica*, *Moringa oleifera* and *Alangium chinense* and *Schima wallichii*. Shrub species in the area were represented by species like, *Garcinia lanceifolia*, *Justicia adhatoda*, *Urena lobata*, *Triumfetta bartramia*, *Sida rhombifolia*, *Sauropus androgynus*, *Buddleja asiatica*, *Ageratum conyzoides* along with bamboo species.

In the upper reaches, between Latyrke (New) S/S to Pole DP15, scattered patches of *Pinus kesiya* was observed along the ROW. Ground cover was mostly covered with grass and fern species. *Imperata cylindrica*, *Thysanolaena latifolia* and *Phragmites karka* are the grass species recorded from scrub land. Among the lower plants *Adiantum edgeworthii*, *Pteris wallichiana* and *Dryopteris ramosa* are the fern species recorded from the area.

3.6.1.4 Economically Important Plant Species

Forest and forest products are integral part of the people in the area. Along with the cultivated crops, people of the area also use wild plants as fodder, fuel wood, fibre, timber, vegetables, fruits, medicine, and various minor forest products. According to Agro-Ecological Sub Region (ICAR) classification, the study area falls under North-Eastern Hills (Purvachal), Warm Perhumid Eco-Region. (17.1) Assam and Bengal Plain, Hot Subhumid to Humid (Inclusion of Perhumid) Eco-Region (15.2). As per the Agro Climatic Zone (NARP) and Agro Climatic zone classification of the Planning Commission it falls in Eastern Himalayan Division.

Major food crops are Rice, Maize soybean, and rapeseed/mustard are main crops cultivated. Potato, Ginger, Turmeric, Black Pepper, Areca nut, and Ginger, etc. are some of the important cash crops in the study area. Besides food crops, the state is also renowned for its horticultural crops like Orange, Lemon, and Pineapple.

Medicinal Plants

Plant species are used for various medicinal purposes for treating various ailments by local tribals. In order to collect the information on medicinal plants used in the area, published literature on ethnomedicinal plants of the region by Sajem and Gosai (2006), Bokolia and Lytan (2019), Damiki and Siva (2011) were consulted.

Based upon the studies quoted above and information gathered during interaction with local people while conducting field surveys a list of important medicinal plant species used for treating various ailments was prepared and the same is given in **Table 3.7**.

Table 3.7: Plant Species Used for Medicinal Purposes in the Study Area

Family	Scientific name	Local name	Part(s) used	Use
Acanthaceae	<i>Justicia adhatoda</i>	Toh-phaileng	Flowers & Leaves	Decoction to cure nose bleeding, dysentery, and blood vomiting
Acanthaceae	<i>Barleria cristata</i>	Sajhia	Aerial parts	A decoction is used against skin infections
Amaranthaceae	<i>Achyranthes aspera</i>	Soh-berthid	Leaf	Crushed leaves are applied on boils
Apiaceae	<i>Centella asiatica</i>	Wangrake	Whole	A decoction is used for conjunctivitis, indigestion, and flatulence
Apiaceae	<i>Coriandrum sativum</i>	Loruphi	Fruits	Powdered to cure stomach-ache
Apocynaceae	<i>Alstonia scholaris</i>	Gumbuthen	Bark	A decoction is used to cure asthma
Apocynaceae	<i>Catharanthus roseus</i>	Santujri-so	Leaves	Leaves are taken for diabetes and high blood pressure; to cure nasal bleeding
Apocyanaceae	<i>Tabernaemontana</i>	Santu-jri-iong	Latex	Latex is used to prevent cavity

Family	Scientific name	Local name	Part(s) used	Use
	<i>divaricata</i>			formation
Araceae	<i>Arum dioscoridis</i>	Wang-yong	Stem	Stems extract is used to cure boils
Asparagaceae	<i>Asparagus racemosus</i>	Lamardoh	Leaves	Dried leaves are taken orally to cure stomach-ache and urinary disorders
Asteraceae	<i>Ageratum conyzoides</i>	Tuah-dain	Leaves	Crushed leaves are used directly on cuts and wounds
Asteraceae	<i>Mikania micrantha</i>	Jarma repuji	Leaves	The extract is used to cure diarrhoea and dyspepsia
Asteraceae	<i>Acmella paniculata</i>	Santustem	Flowers	The extract is used to relieve toothache and cure cavity formation
Bignoniaceae	<i>Begonia roxburghii</i>	Jajau-mo	Rhizome/Bulb	The extract is used on the thorns that are stuck to prevent further infection
Crassulaceae	<i>Bryophyllum pinnatum</i>	Dawaiein	Leaves	Leaves extract is used on burns and bruises
Cucurbitaceae	<i>Momordica charantia</i>	Daipiat	Leaf and fruit	Leaves extract to get rid of chest pain and other rheumatic pain
Fabaceae	<i>Senna tora</i>	Dain-trut	Leaves, barks & roots	Extract applied externally on skin diseases such as ringworms, leprosy
Fabaceae	<i>Mimosa pudica</i>	Klim-tchakaw	Roots	Fresh roots extract for curing piles
Lamiaceae	<i>Ocimum tenuiflorum</i>	Lapane	Leaves	Leaves extract is used for curing stomachache and headache
Lamiaceae	<i>Clerodendrum glandulosum</i>	Jhr-khtung	Leaves	For curing diabetes and high blood pressure
Lamiaceae	<i>Rotheca serrata</i>	Khr-khtung	Leaves	The paste is applied to cure fever
Lamiaceae	<i>Clerodendrum viscosum</i>	Jhr-khtung	Leaves	For curing diabetes, high blood pressure, and asthma
Malvaceae	<i>Gossypium arboreum</i>	Kamphat	Seeds	Young and premature seeds are used to improve memory power
Malvaceae	<i>Urena lobata</i>	That-thu	Leaves	A decoction is used to reduce blood pressure, for rheumatic pain and body ache
Melastomaceae	<i>Melastoma malabathricum</i>	Sarudong	Leaves/Young twigs	To cure dysentery
Oxalidaceae	<i>Oxalis debilis</i>	Sakhia-palleh	Whole	Entire plant extract to cure dyspepsia and jaundice
Phyllanthaceae	<i>Phyllanthus niruri</i>	Santu-plain-jarmi	Leaves & roots	Leaves to cure diarrhoea; roots to cure fever
Piperaceae	<i>Piper longum</i>	Samaran	Fruit & Roots	Leaves extract curing malaria and to cure body ache
Plantaginaceae	<i>Plantago major</i>	Chhakur-bleng	Leaves	Leaves extract to cure jaundice; for curing earache, toothache, and gum bleeding
Plantaginaceae	<i>Scoparia dulcis</i>	Gymbat-pdyp	Whole plant	A decoction is used for gargles; root extract to prevent cavity formation
Polygonaceae	<i>Persicaria chinensis</i>	Salandem	Leaves	Leaves extract is taken to cure

Family	Scientific name	Local name	Part(s) used	Use
				dyspepsia
Polygonaceae	<i>Polygonum affine</i>	Jarian	Leaves	Leaves are crushed and applied to the wounds to stop bleeding
Solanaceae	<i>Nicotiana tabacum</i>	Duma-sla	Aerial parts	The entire plant is used for skin infections
Solanaceae	<i>Solanum indicum</i>	Sabangang	Fruit	Decoction used for curing high blood pressure
Zingiberaceae	<i>Amomum dealbatum</i>	Salaphiah	Roots/Rhizome	To cure joint pains
Zingiberaceae	<i>Curcuma longa</i>	Chyrmith	Rhizome	Pills are used for dyspepsia

Source: Sajem and Gosai (2006), Bokolial and Lytan (2019), Damiki and Siva (2011)

Wild Edible Plants

List of wild edible plants used by villagers in the study area was prepared with consultation of published literature by Sawian, 2007 (<http://nopr.niscair.res.in/bitstream/123456789/7895/1/NPR%206%285%29%20410-426.pdf>); Sajem and Gosai (2006), Bokolial and Lytan (2019), Damiki and Siva (2011) and the same is given at **Table 3.8**.

Table 3.8: Wild Edible Plant Species Used by Tribes in the Study Area

S. No.	Botanical name	Local name	Edible part
1	<i>Actinidia callosa</i>	Mei-soh-khan	Fruits
2	<i>Arisaema concinnum</i>	Saru-bsein	Leaves
3	<i>Artocarpus heterophyllus</i>	Arm (G)	Fruit
4	<i>Azadirachta indica</i>	Dieng-neem	Leaves, Shoot
5	<i>Bauhinia purpurea</i>	Me-gong (G)	Flower
6	<i>Begonia palmata</i>	Sla-lajaw	Leaves
7	<i>Buddleja asiatica</i>	Dieng-tuti- mynneng	Flower
8	<i>Calamus erectus</i>	Soh-thri	Fruit
9	<i>Callicarpa arborea</i>	Dieng-lakhoit	Bark
10	<i>Caryota urens</i>	Kwai-cha	Fruit
11	<i>Castanopsis indica</i>	Dieng-sarag (J)	Fruit
12	<i>Centella asiatica</i>	Badmaina	Leaves
13	<i>Colocasia esculenta</i>	Shriew	Leaves, Rhizome
14	<i>Combretum decandrum</i>	Mei-long-kha-saw	Bark
15	<i>Cycas pectinata</i>	Dieng-sia-goda	Fruit
16	<i>Debregeasia longifolia</i>	Soh-tyrsim	Fruit
17	<i>Dendrocalamus hamiltonii</i>	Seij-lai	Shoot
18	<i>Desmodium trifolium</i>	-	Leaves
19	<i>Dillenia indica</i>	Soh-kyrbam	Fruit, Calyx
20	<i>Emblia officinalis</i>	Soh-mylleng	Fruit
21	<i>Fagopyrum acutatum</i>	Jarian	Leaves
22	<i>Ficus auriculata</i>	-	Fruit
23	<i>Ficus cunia</i>	Dieng-thylliang- sang (J)	Fruit
24	<i>Garcinia lanceaefolia</i>	Dieng-soh-jadu	Fruit, Leaves
25	<i>Gmelina arborea</i>	Dieng-lophiang	Fruit
26	<i>Grewia hirsuta</i>	Soh-synting	Fruit
27	<i>Ipomoea racemosa</i>	Soh-lah	Tuber
28	<i>Justicia adhatoda</i>	-	Leaves, Flower
29	<i>Lantana camara</i>	Dieng-sohpang-khlieh	Fruit
30	<i>Mangifera indica</i>	Dieng-soh-pieng	Fruit

S. No.	Botanical name	Local name	Edible part
31	<i>Melastoma malabathricum</i>	<i>Dieng-soh-khing</i>	Fruit
32	<i>Moringa oleifera</i>	-	Fruit, Leaves, Flower
33	<i>Mussaenda roxburghii</i>	-	Leaves, Flower
34	<i>Phlogacanthus thyrsoiflorus</i>	<i>Dieng-soh-kajut</i>	Fruit, Leaves
35	<i>Piper betle</i>	<i>Sla-tympew</i>	Leaves
36	<i>Plantago erosa</i>	<i>Skhor-bleng</i>	Leaves
37	<i>Rhus javanicus</i>	<i>Sa-ma</i>	Pulp
38	<i>Tetrastigma angustifolium</i>	-	Leaves, Stem
39	<i>Trevesia palmata</i>	<i>Dieng-soh- kynthur</i>	Flower
40	<i>Vaccinium griffithianum</i>	<i>Soh-ryngkham</i>	Pulp
41	<i>Viburnum foetens</i>	-	Fruit
42	<i>Xanthium strumarium</i>	<i>Lokra (G)</i>	Shoot
43	<i>Ziziphus mauritiana</i>	<i>Soh-broi</i>	Fruit

Timber yielding Tree species

Some of the plant species used by local people for various purposes like timber, fodder, fuelwood, and other day-to-day needs found in the study area have been given in **(Table 3.9)**.

Table 3.9: Plant Species used as timber, fodder, and fuelwood

S. No.	Plant name	Uses
1	<i>Altingia excelsa</i>	Timber
2	<i>Bambusa pallida</i>	Timber
3	<i>Calamus erectus</i>	Thatch
4	<i>Dendrocalamus hamiltonii</i>	Timber
5	<i>Duabanga grandiflora</i>	Timber
6	<i>Ficus roxburghii</i>	Fodder, fruits edible
7	<i>Kydia calycina</i>	Timber
8	<i>Macaranga denticulata</i>	Fuel
9	<i>Pandanus dubius</i>	Fibre
10	<i>Pinus kesiya</i>	Timber
11	<i>Saurauia napaulensis</i>	Fodder
12	<i>Terminalia myriocarpa</i>	Timber
13	<i>Tectona grandis</i>	Timber
14	<i>Thysanolaena maxima</i>	Broom, fodder

3.6.2 Faunal Elements

Meghalaya harbours a variety of wildlife distributed throughout the state. The fauna of the state has been compiled with the help of secondary sources. Data was compiled from published literature viz; <https://megbiodiversity.nic.in/sites/default/files/mbsap-6th-march-2017.pdf>, <https://megbiodiversity.nic.in/faunal-diversity>, Zoological Survey of India (ZSI) and <http://www.megforest.gov.in/wildlife.html>.

For management and preservation of wildlife in the State, the Department of Forests, Environment & Ecology and Wildlife has a full-fledged wildlife Wing under the Chief Wildlife Warden.

3.6.2.1 Mammals

As per the data compiled, 41 species of mammals belonging 18 families of 8 orders are reported from the districts belonging to study area.

As per the International Union for Conservation of Nature (IUCN) Red List of Threatened Species, 2021-2, 5 species are in Endangered (EN) category, 2 species are in Near Threatened (NT) category, 9 species are in Vulnerable (VU) category and 25 species are in Least Concerned (LC) category. List of important mammals found in the districts belonging to study area along with their conservation status is given in **Table 3.10**. The classification and nomenclature of mammals is as per <https://www.iucnredlist.org/>.

Table 3.10: List of Mammals

S. No	Order/ Family	Taxa	Common name	Conservation Status (IUCN 2021-2)
	Cetartiodactyla			
1	Suidae	<i>Sus scrofa</i>	Indian Wild Boar	LC
2	Cervidae	<i>Muntiacus vaginalis</i>	Indian Muntjac	LC
3	Cervidae	<i>Axis porcinus</i>	Hog Deer	EN
4	Cervidae	<i>Rusa unicolor</i>	Sambar	VU
5	Bovidae	<i>Bos gaurus</i>	Gaur	VU
	Carnivora			
6	Felidae	<i>Felis chaus</i>	Jungle Cat	LC
7	Felidae	<i>Prionailurus bengalensis</i>	Leopard Cat	LC
8	Felidae	<i>Prionailurus viverrinus</i>	Fishing Cat	VU
9	Felidae	<i>Panthera pardus</i>	Leopard	VU
10	Felidae	<i>Panthera tigris</i>	Tiger	EN
11	Viverridae	<i>Paguma larvata</i>	Himalayan Palm Civet	LC
12	Viverridae	<i>Paradoxurus hermaphroditus</i>	Common Palm Civet	LC
13	Viverridae	<i>Viverra zibetha</i>	Large Indian Civet	LC
14	Herpestidae	<i>Herpestes javanicus</i>	Small Indian Mongoose	LC
15	Herpestidae	<i>Herpestes edwardsii</i>	Indian Grey Mongoose	LC
16	Canidae	<i>Canis aureus</i>	Golden Jackal	LC
17	Canidae	<i>Cuon alpinus</i>	Wild Dog	EN
18	Canidae	<i>Vulpes bengalensis</i>	Indian Fox	LC
19	Ursidae	<i>Ursus thibetanus</i>	Asiatic Black Bear	VU
20	Mustelidae	<i>Lutra lutra</i>	Common Otter	NT
21	Mustelidae	<i>Lutrogale perspicillata</i>	Smooth-coated Otter	VU
22	Mustelidae	<i>Arctonyx collaris</i>	Hog Badger	VU
23	Mustelidae	<i>Martes flavigula</i>	Yellow-throated Marten	LC
24	Mustelidae	<i>Mustela kathiah</i>	Yellow-bellied Weasel	LC
	Eulipotyphla			
25	Soricidae	<i>Crocidura fuliginosa</i>	Southeast Asian Shrew	LC
26	Soricidae	<i>Crocidura attenuata</i>	Asian Grey Shrew	LC
	Pholidota			
27	Manidae	<i>Manis crassicaudata</i>	Indian Pangolin	EN
	Primates			
28	Lorisidae	<i>Nycticebus bengalensis</i>	Bengal Slow Loris	EN
29	Cercopithecidae	<i>Macaca assamensis</i>	Assamese Macaque	NT
30	Cercopithecidae	<i>Macaca mulatta</i>	Rhesus Macaque	LC
31	Cercopithecidae	<i>Trachypithecus pileatus</i>	Capped Langur	VU
32	Hylobatidae	<i>Hoolock hoolock</i>	Western Hoolock Gibbon	VU
	Rodentia			
33	Sciuridae	<i>Belomys pearsonii</i>	Hairy-footed Flying Squirrel	DD
34	Sciuridae	<i>Petaurista petaurista</i>	Red Giant Flying Squirrel	LC

S. No	Order/ Family	Taxa	Common name	Conservation Status (IUCN 2021-2)
35	Sciuridae	<i>Petaurista philippensis</i>	Indian Giant Flying Squirrel	LC
36	Sciuridae	<i>Funambulus pennanti</i>	Five-striped Palm Squirrel	LC
37	Sciuridae	<i>Tamiops macclellandii</i>	Himalayan Striped Squirrel	LC
38	Hystriidae	<i>Atherurus macrourus</i>	Asiatic Brush-Tailed Porcupine	LC
39	Hystriidae	<i>Hystrix brachyura</i>	Himalayan Crestless Porcupine	LC
	Lagomorpha			
40	Leporidae	<i>Lepus nigricollis</i>	Indian Hare	LC
	Scandentia			
41	Tupaiaidae	<i>Tupaia glis</i>	Common Tree Shrew	LC

Source: <https://megbiodiversity.nic.in/sites/default/files/mbsap-6th-march-2017.pdf>, <https://megbiodiversity.nic.in/faunal-diversity>, Zoological Survey of India (ZSI) and <http://www.megforest.gov.in/wildlife.html>

3.6.2.2 Avifauna

As per the data compiled, 55 species of avifauna belonging to 30 families of 12 orders are reported from the districts falling within study area. As per the IUCN Red List of Threatened species, 2021-2, all other bird species reported from the study area fall under the Least Concern category of IUCN. List of important avifauna found in the districts belonging to study area along with their conservation status is given in **Table 3.11**.

Table 3.11: List of Avifauna

S. No.	Order/ Family	Scientific name	Common name	Conservation Status IUCN 2021-2
	Anseriformes			
1	Anatidae	<i>Mergus merganser</i>	Common Merganser	LC
	Apodiformes			
2	Apodidae	<i>Aerodramus brevirostris</i>	Himalayan Swiftlet	LC
3	Apodidae	<i>Apus affinis</i>	House Swift	LC
	Charadriiformes			
4	Charadriidae	<i>Vanellus indicus</i>	Red-wattled Lapwing	LC
5	Scolopacidae	<i>Tringa ochropus</i>	Green Sandpiper	LC
	Columbiformes			
6	Columbidae	<i>Chalcophaps indica</i>	Emerald Dove	LC
7	Columbidae	<i>Columba livia</i>	Rock Pigeon	LC
8	Columbidae	<i>Streptopelia chinensis</i>	Spotted Dove	LC
9	Columbidae	<i>Streptopelia orientalis</i>	Oriental Turtle Dove	LC
10	Columbidae	<i>Treron apicauda</i>	Pintailed Green Pigeon	LC
11	Columbidae	<i>Treron sphenurus</i>	Wedge-tailed Green Pigeon	LC
	Coraciiformes			
12	Alcedinidae	<i>Alcedo atthis</i>	Common Kingfisher	LC
13	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	LC
14	Coraciidae	<i>Coracias benghalensis</i>	Indian Roller	LC
15	Meropidae	<i>Merops orientalis</i>	Green Bee-eater	LC
	Cuculiformes			
16	Cuculidae	<i>Centropus bengalensis</i>	Lesser Coucal	LC
17	Cuculidae	<i>Hierococcyx sparveroides</i>	Hawk Cuckoo	LC
18	Cuculidae	<i>Phaenicophaeus tristis</i>	Green-billed Malkoha	LC
	Galliformes			
19	Phasianidae	<i>Gallus gallus</i>	Red Jungle Fowl	LC

S. No.	Order/ Family	Scientific name	Common name	Conservation Status IUCN 2021-2
	Passeriformes			
20	Campephagidae	<i>Pericrocotus ethologus</i>	Long-tailed Minivet	LC
21	Corvidae	<i>Cissa chinensis</i>	Green Magpie	LC
22	Corvidae	<i>Corvus macrorhynchos</i>	Large-billed Crow	LC
23	Corvidae	<i>Urocissa flavirostris</i>	Yellow-billed Blue magpie	LC
24	Dicruridae	<i>Dicrurus aeneus</i>	Bronzed Drongo	LC
25	Dicruridae	<i>Dicrurus macrocercus</i>	Black Drongo	LC
26	Lanidae	<i>Lanius schach</i>	Grey Backed Shrike	LC
27	Leiothrichidae	<i>Leiothrix argentauris</i>	Silver Eared Mesia	LC
28	Motacillidae	<i>Dendronanthus indicus</i>	Forest Wagtail	LC
29	Muscicapidae	<i>Chaimarrornis leucocephalus</i>	White-capped Water-redstart	LC
30	Muscicapidae	<i>Copsychus saularis</i>	Oriental Magpie Robin	LC
31	Muscicapidae	<i>Cyornis concretus</i>	White-tailed Flycatcher	LC
32	Muscicapidae	<i>Cyornis rubeculoides</i>	Blue-throated Flycatcher	LC
33	Muscicapidae	<i>Enicurus immaculatus</i>	Black-backed Forktail	LC
34	Muscicapidae	<i>Ficedula strophilata</i>	Rufous gorgeted flycatcher	LC
35	Muscicapidae	<i>Monticola cinclorhynchus</i>	Blue caped rock thrush	LC
36	Muscicapidae	<i>Rhyacornis fuliginosus</i>	Plumbeous Water Redstart	LC
37	Muscicapidae	<i>Saxicoloides fulicata</i>	Indian Robin	LC
38	Nectariniidae	<i>Cinnyris asiaticus</i>	Purple Sunbird	LC
39	Passeridae	<i>Motacilla alba</i>	White wagtail	LC
40	Passeridae	<i>Passer domesticus</i>	House sparrow	LC
41	Passeridae	<i>Passer montanus</i>	Eurasian Tree Sparrow	LC
42	Phylloscopidae	<i>Abrornis maculipennis</i>	Ashy Throated Warbler	LC
43	Phylloscopidae	<i>Phylloscopus fuscatus</i>	Dusky Warbler	LC
44	Pycnonotidae	<i>Pycnonotus cafer</i>	Red Vented Bulbul	LC
45	Sittidae	<i>Sitta castanea</i>	Chestnut billed nuthatch	LC
46	Sturnidae	<i>Acridotheres fuscus</i>	Jungle myna	LC
47	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	LC
48	Sylviidae	<i>Psittiparus gularis</i>	Grey headed parrotbill	LC
	Pelecaniformes			
49	Phalacrocoracidae	<i>Phalacrocorax fuscicollis</i>	Indian Cormorant	LC
	Piciformes			
50	Picidae	<i>Dendrocopos macei</i>	Fulvous breasted Woodpecker	LC
51	Ramphastidae	<i>Psilopogon asiaticus</i>	Blue throated barbet	LC
52	Ramphastidae	<i>Psilopogon virens</i>	Great Barbet	LC
	Psittaciformes			
53	Psittaculidae	<i>Psittacula alexandri</i>	Red breasted parakeet	LC
	Strigiformes			
54	Strigidae	<i>Athene brama</i>	Spotted Owlet	LC
55	Strigidae	<i>Strix leptogrammica</i>	Brown wood owl	LC

Source: Field Survey; <https://avibase.bsc-eoc.org/checklist.jsp?region=INneml&list=howardmoore>; <https://ebird.org/region/IN-ML>

3.6.2.3 Herpetofauna

As per the data compiled, 5 species of amphibians and 10 species of reptiles are reported from the district belonging to study area. List of important herpetofauna found in the

districts belonging to study area is given in **Table 3.12**. The classification and nomenclature of reptiles is based upon <http://www.reptile-database.org/> and that of amphibians is <https://amphibiansoftheworld.amnh.org/>.

Table 3.12: List of Herpetofauna Reported from the Study Area

Family	Scientific name	Common name
CLASS: AMPHIBIA		
Order Anura		
Bufo	<i>Duttaphrynus melanostictus</i>	Common toad
Dicroglossidae	<i>Euphlyctis cyanophlyctis</i>	Indian Skipping Frog
Dicroglossidae	<i>Fejervarya limnocharis</i>	Indian Cricket Frog
Rhacophoridae	<i>Zhangixalus smaragdinus</i>	White-lipped Treefrog
Ranidae	<i>Amolops formosus</i>	Assam Sucker Frog
CLASS: REPTILIA		
Order: Squamata		
Agamidae	<i>Calotes versicolor</i>	Indian Garden Lizard
Colubridae	<i>Amphiesma stolatum</i>	Buff Striped Keelback
Colubridae	<i>Boiga gocoool</i>	Arrowback Tree Snake
Colubridae	<i>Ptyas korros</i>	Indo-Chinese Rat Snake
Colubridae	<i>Rhabdophis subminiatus</i>	Red-necked Keelback
Elapidae	<i>Ophiophagus hannah</i>	King Cobra
Pareidae	<i>Pareas monticola</i>	Common Slug Snake
Typhlopidae	<i>Argyrophis diardii</i>	Diard's Blindsnake
Varanidae	<i>Varanus bengalensis</i>	Indian monitor
Viperidae	<i>Ovophis monticola</i>	Chinese Mountain Pit Viper

Source: Field Survey; https://www.inaturalist.org/check_lists/35134-Jaintia-Hills-Check-List?iconic_taxon=26036&view=plain&without%5B%5D=page&without%5B%5D=q

3.6.2.4 Butterflies

As per the data compiled, 19 species of butterflies belonging 4 families are reported from the districts belonging to study area. Of which, 9 species belong to Nymphalidae family, Papilionidae and Pieridae families were represented by 4 species each. List of butterflies found in the districts belonging to study area is given in **Table 3.13**.

Table 3.13: List of Butterflies

S. No.	Family	Scientific name	Common name
1	Lycaenidae	<i>Acytolepis puspa</i>	Common Hedge Blue
2	Lycaenidae	<i>Heliophorus epicles</i>	Purple Sapphire
3	Nymphalidae	<i>Aglais caschmirensis</i>	Indian Tortoiseshell
4	Nymphalidae	<i>Cirrochroa tyche</i>	Common Yeoman
5	Nymphalidae	<i>Danaus genutia</i>	Striped Tiger
6	Nymphalidae	<i>Mycalesis visala</i>	Long-branded Bushbrown
7	Nymphalidae	<i>Parantica melaneus</i>	Chocolate Tiger
8	Nymphalidae	<i>Phalanta phalantha</i>	Common Leopard
9	Nymphalidae	<i>Symbrenthia lila</i>	Common Jester
10	Nymphalidae	<i>Tirumala septentrionis</i>	Dark Blue Tiger
11	Nymphalidae	<i>Vanessa indica</i>	Indian Red Admiral
12	Papilionidae	<i>Graphium eurypylus</i>	Great Jay
13	Papilionidae	<i>Papilio crino</i>	Common Banded Peacock
14	Papilionidae	<i>Papilio memnon</i>	Great Mormon

S. No.	Family	Scientific name	Common name
15	Papilionidae	<i>Papilio polytes</i>	Common Mormon
16	Pieridae	<i>Appias lyncida</i>	Chocolate Albatross
17	Pieridae	<i>Eurema hecabe</i>	Common Grass Yellow
18	Pieridae	<i>Pieris canidia</i>	Indian Cabbage White
19	Pieridae	<i>Pieris melete</i>	Asian Green Veined White

Source: Field Survey; <https://megbiodiversity.nic.in/sites/default/files/atanu-bora-butterflies.pdf>

3.6.3 Protected Areas

The Protected Area (PA) network in Meghalaya occupies 1133.9 km² area, which constitute about 5.06% of the state's geographical area. The Protected Area Network includes 2 National Park (NP) and 4 Wildlife Sanctuaries (WLS) and 1 Biosphere Reserve (BR). Out of these, 1 protected area i.e. Narpuh WLS falls in district belonging to study area. However, the proposed transmission and distribution lines do not pass through this protected area. In the instant scheme, all such areas are completely avoided through careful route selection. Details of the protected area is presented below in **Table 3.14**. Map showing location of protected area in the district is given at **Figure 3.2**.

Table 3.14: Protected Area Network in District Belonging to Study Area

S. No.	Protected Areas	Area (km ²)	Year of Notification	ESZ Area (km ²)	Year of ESZ Notification
1	Narpuh Wildlife Sanctuary	59.90	2014	194.23	2017

Source: [https://moef.gov.in/wp-](https://moef.gov.in/wp-content/uploads/2017/06/Narpuh%20Wildlife%20Sanctuary%20Meghalaya%20Final.pdf)

[content/uploads/2017/06/Narpuh%20Wildlife%20Sanctuary%20Meghalaya%20Final.pdf](https://moef.gov.in/wp-content/uploads/2017/06/Narpuh%20Wildlife%20Sanctuary%20Meghalaya%20Final.pdf)

The nearest subproject from Narpuh WLS is 33/11 kV Mynkre (new) S/S, which is at an aerial distance of approx. 8.6 km (refer to **Figure 3.3**). Therefore, there will not be any impact of any magnitude on the PA as the proposed subprojects are located far away from the PA.

3.6.4 Elephant Reserve

Meghalaya Landscape, the Elephant range in the state comprises of Garo Hills Elephant Reserve and Khasi Hills Elephant Reserves. Total area of both the Elephant Reserves is 4831 sq km. Since none of the Elephant Reserve falls under the East Jaintia Hills district, therefore, there will not be any impact of any magnitude on the Elephant Reserve due to the construction of subprojects.

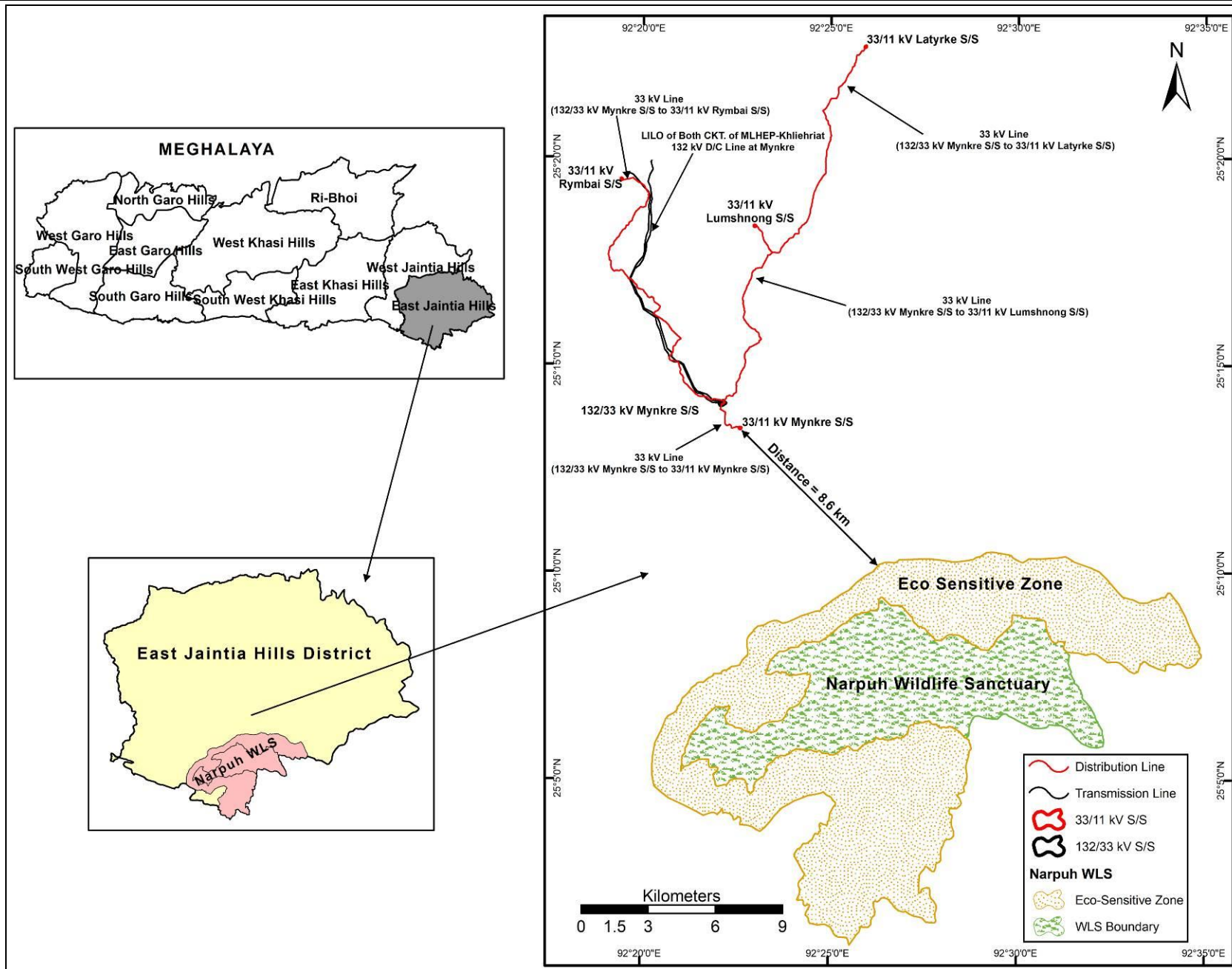


Figure 3.2: Map Showing Protected Area w.r.t. Sub Project Locations

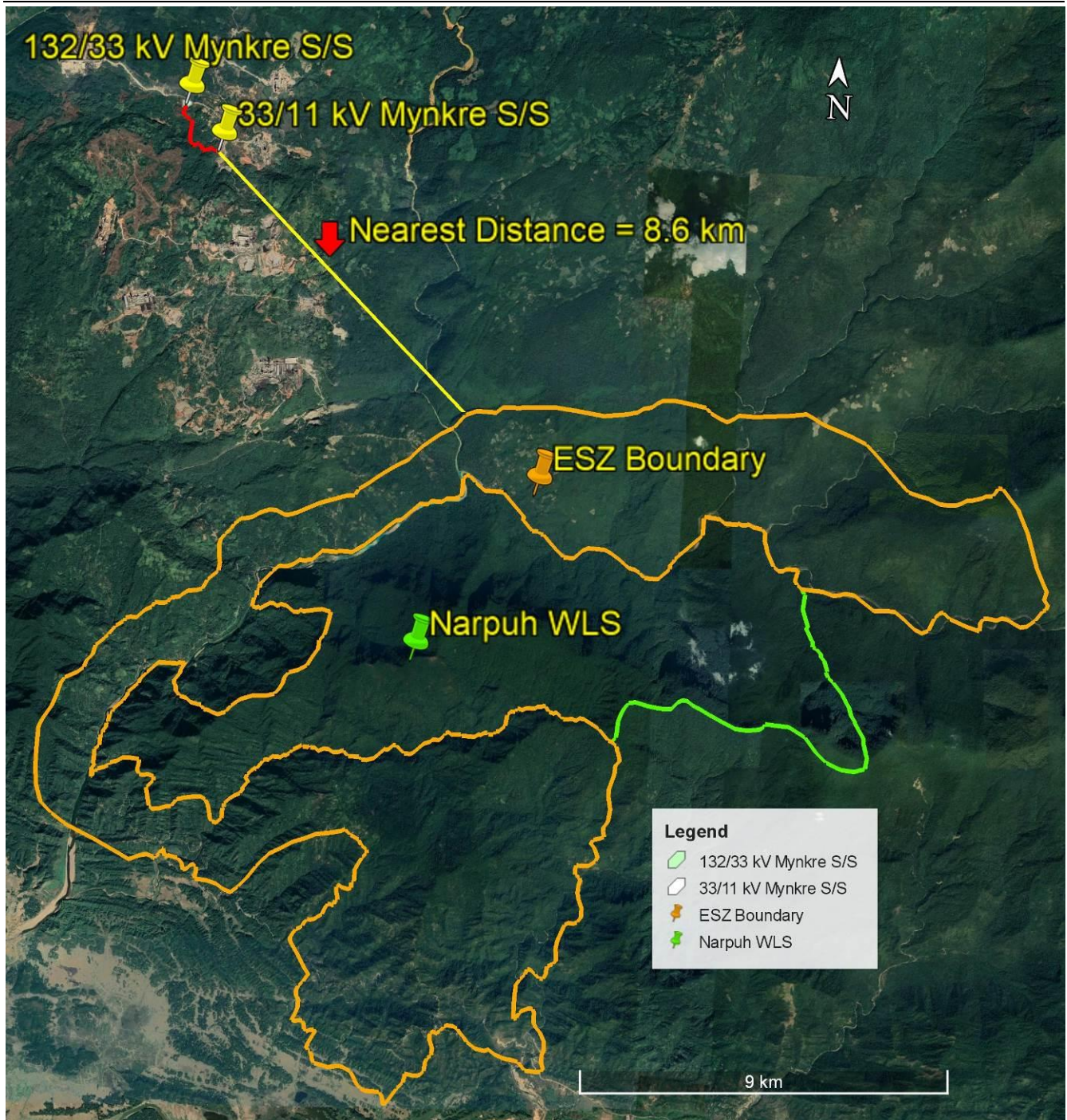


Figure 3.3: Distance of Sub-Projects from Narpuh WLS

3.6.5 Community Reserves

Community Reserves are the biodiversity abundant lands that are privately or community-owned and are managed by the individual(s)/communities in possession of the area. These reserves allow for extraction of natural resources, the levels of which are governed by a multi-stakeholder Reserve Management Committee. Community Reserve Management Committee is to consist of five representatives nominated by the local Village Panchayat or the Gram Sabha, and one representative each from the State Department of Forest and Wildlife.

As per information available from State forest department and ENVIS Centre on Wildlife & Protected Areas, the State Government of Meghalaya had Notified 74 Community Reserves under section 36C(1) of the Wildlife (Protection) Act, 1972. Out of these 10 community

reserves, 7 community reserves fall within the district belonging to study area (refer **Table 3.15**).

Table 3.15: List of Community Reserves in District belonging to Study Area

S. No.	Name of Community Reserve	Year of Notification	Area (km ²)
1	Khloo Blai Sein Raij Tuber	2013	89.43
2	Ka Khloo Thangbru Umsymphu	2014	19.6
3	Ka Khloo Pohblai Mooshutia	2014	33.5
4	Smaw Der Khli	2020	0.209
5	Ka Khlaw Umthalong	2020	2.401
6	Ka Krem Labit Umkyrpong	2020	4.80
7	Ka Khloo Moopyai Wapung Shnong	2021	68.462

Source: http://www.megforest.gov.in/wildlife_community.html &
http://www.wiienviis.nic.in/database/community%20reserves_8228.aspx

The nearest community reserve to the subproject is Wapung Shnong Community Reserve. The nearest subproject from the community reserve is tapping point of Loop Out Line of LILO of both Circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre. Distance from the community reserve to the tapping point of Loop Out Line is approx. 9.1 km. The other subproject which are at similar distance from the community reserve are tapping point of Loop In Line of LILO of both Circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre, 33/11 kV Rymbai S/S and 33/11 kV Latyrke S/S. The distance from the community reserve to the tapping point of Loop In Line is approx. 9.4 km, from the community reserve to the 33/11 kV Rymbai S/S is approx. 9.6 km and from the community reserve to the 33/11 kV Latyrke S/S is approx. 12.6 km. Distance of all the mentioned components of the subproject w.r.t. community reserve is shown in **Figure 3.4**. Since the location of the community reserve is far away from the subproject location therefore, there will not be any impact of any magnitude on the community reserve due to the construction of the subproject.

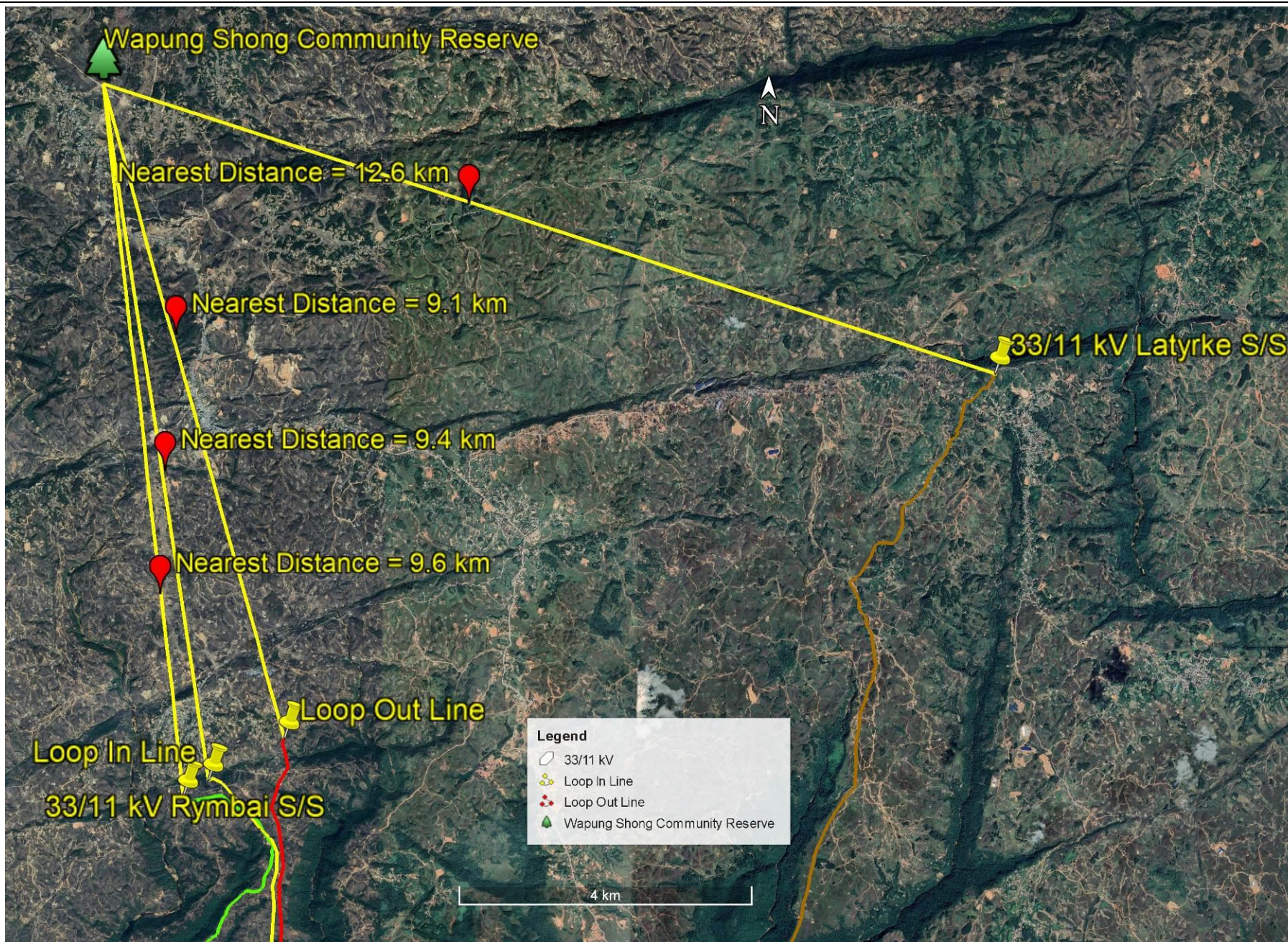


Figure 3.4: Distance of Sub-Projects from the Community Reserve

3.6.6 Sacred Groves and Community Conserved Areas (CCA)

Sacred Groves are the tracts of virgin forests that are left untouched by the local inhabitants and are protected by the local people due to their culture and religious beliefs. Sacred groves are relic vegetation of once dominant flora. They are repositories of our rich biodiversity; they are also the last bastion where the rich culture and the customs of the indigenous people are still preserved.

In Meghalaya, sacred groves represent an age old tradition of environmental conservation based on indigenous knowledge, culture and religious beliefs. Sacred Groves originated in Meghalaya since time immemorial much before the advent of Christianity. They are unique feature of Khasi and Jaintia Hills. They are among the few least disturbed forest patches which are serving as the natural treasure house of biodiversity and a refuge for a large number of endemic, endangered and rare taxa. A baseline floristic survey revealed the presence of at least 514 species representing 340 genera and 131 families in these sacred groves.

As part of religious beliefs, an estimated 1,000 sq. kms of forest areas (Survey carried out by the regional centre of NAEB), under the administrative control of District Councils have been preserved through the ages by the indigenous tribal communities as 'sacred groves'. There are 125 Sacred groves in Meghalaya. These forests with areas ranging from 0.01 to 900 hectares are unique features of the state.

The local tribal people believe that 'U Basa' or goddess dwell among these thick and virgin forests. Various rites and rituals are performed periodically in these forests. According to their belief that pleasing 'U Basa' through sacrifice of animals (pig, goat, cow, buffalo and fowl) together with performing dances, the Basa will protect their villages or clans from famine and other sufferings or bad omens and keeps the evil spirits away.

In the past, people did not dare to enter or destroy these forests. It is interesting to know that till date, in some sacred groves, people are not allowed even to pluck twigs of plants, use wire or steel, wear shoes/ slippers take photography or attend a nature's call. No timber of forest produce shall be removed for sale or trade but allowed for religious purpose.

Apart from being repository of rich bio-diversity harbouring many rare, endangered & threatened plant species including rare medicinal and aromatic plants, sacred groves are living example of strong symbiotic relationship between the forests and indigenous tribal population of the state.

Out of the total 125 sacred groves in the state only 1 sacred grove i.e. Dpepat Myndihati near Sutnga village falls in the East Jaintia Hills district (refer **Table 3.16**). With the careful route selection of 33 kV line from 132/33 kV Mynkre S/S to 33/11 kV Latyrke S/S and location of 33/11 kV Latyrke substation, interference with sacred grove has been completely avoided.

Table 3.16: List of Sacred Groves in District Belonging to Study Area

S. No.	Sacred Grove Name	Sacred Grove Location	Area (ha)
1	Dpepat Myndihati	Sutnga	15.0

Source: http://www.cpreecenvis.nic.in/Database/Meghalaya_899.aspx

3.6.7 Important Bird & Biodiversity Areas (IBAs)

Bird Life International (www.birdlife.org) has identified 9 Important Bird & Biodiversity Areas (IBAs) in Meghalaya. These IBAs cover 815.92 sq km area, which constitute about 3.6% of the state's geographical area. Out of these 9 IBAs, only 2 IBAs i.e. Narpuh Reserve Forests and Saipung falls in project district. Details of the IBAs are presented below in **Table 3.17**. Map showing location of IBAs in the district is given at **Figure 3.5**.

Table 3.17: Important Bird & Biodiversity Areas in District Belonging to Study Area

S. No.	IBA Code	IBA Name	Criteria	Important Species	Area (sq km)
1	IN416	Narpuh Reserve Forests	A1, A2	<i>Aceros nipalensis</i> , <i>Phylloscopus cantator</i> , <i>Yuhina bakeri</i> , <i>Spelaeornis longicaudatus</i> , <i>Heterophasia gracilis</i>	161.10
2	IN418	Saipung	A3	<i>Aceros nipalensis</i> , <i>Sitta formosa</i> , <i>Cairinia scutulata</i>	150.00

Source: <http://www.birdlife.org/datazone/country/india>

International Bird Areas are achieved through the application of quantitative ornithological criteria, grounded in up-to-date knowledge of the sizes and trends of bird populations. The Global criteria are as follows:

A1. Globally threatened species

Criterion: The site is known or thought regularly to hold significant numbers of a globally threatened species, or other species of global conservation concern.

A2. Restricted-range species

Criterion: The site is known or thought to hold a significant component of a group of species whose breeding distributions define an Endemic Bird Area (EBA) or Secondary Area (SA).

A3. Biome-restricted species

Criterion: The site is known or thought to hold a significant component of the group of species whose distributions are largely or wholly confined to one biome.

The nearest component of the project from the Narpuh Reserve Forest IBA is the new 33/11 kV Mynkre sub-station. The distance from the sub-station to the IBA is approx. 9.8 km (**Figure 3.6**). The nearest component of the project from the Saipung IBA is Pole No. DP-167 of 33 kV line from 132/33 kV Mynkre S/S to 33/11 kV Latyrke S/S. The distance from the pole to the IBA is approx. 17.3 km (**Figure 3.6**).

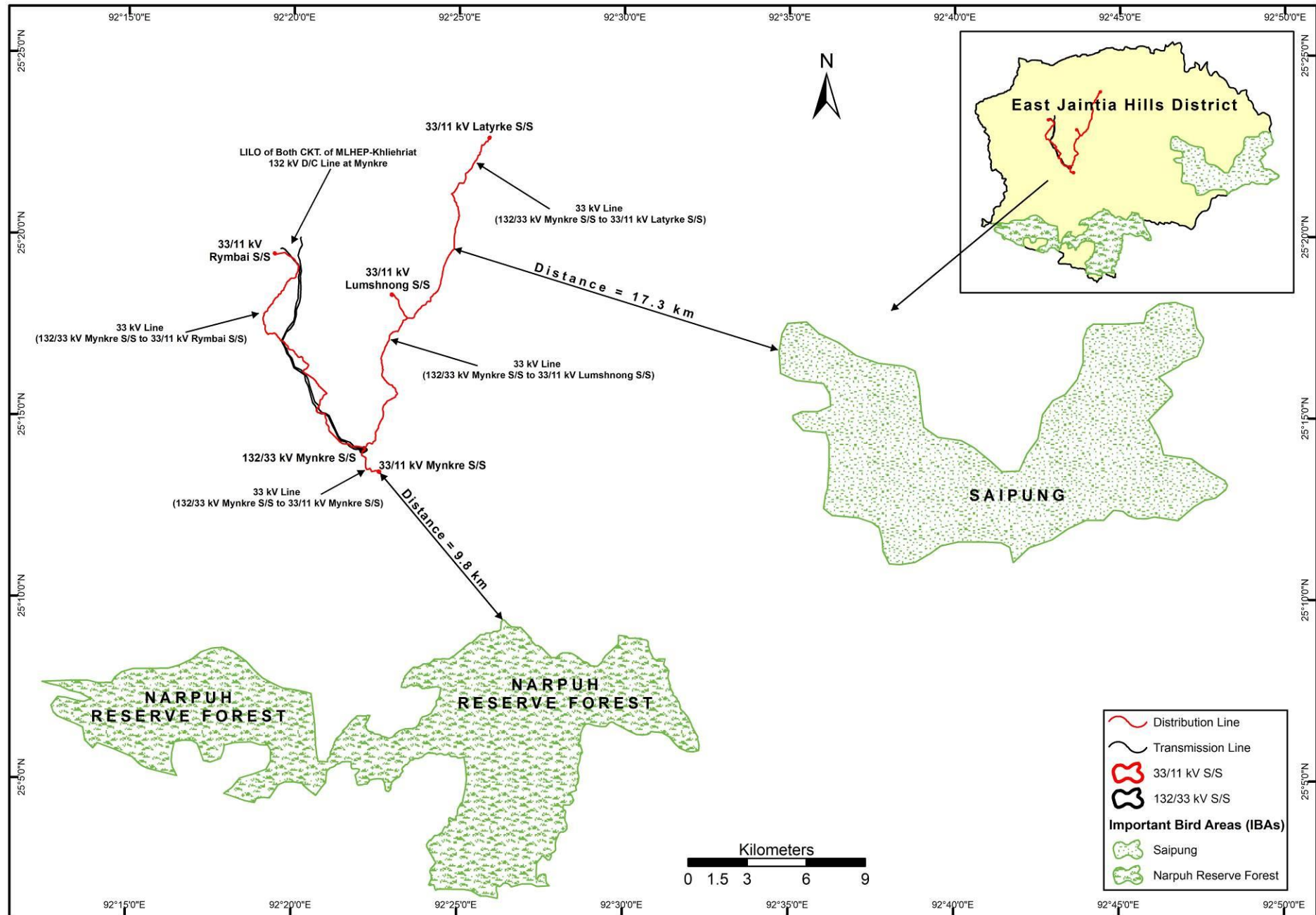


Figure 3.5: Map Showing IBAs w.r.t. Sub Project Locations

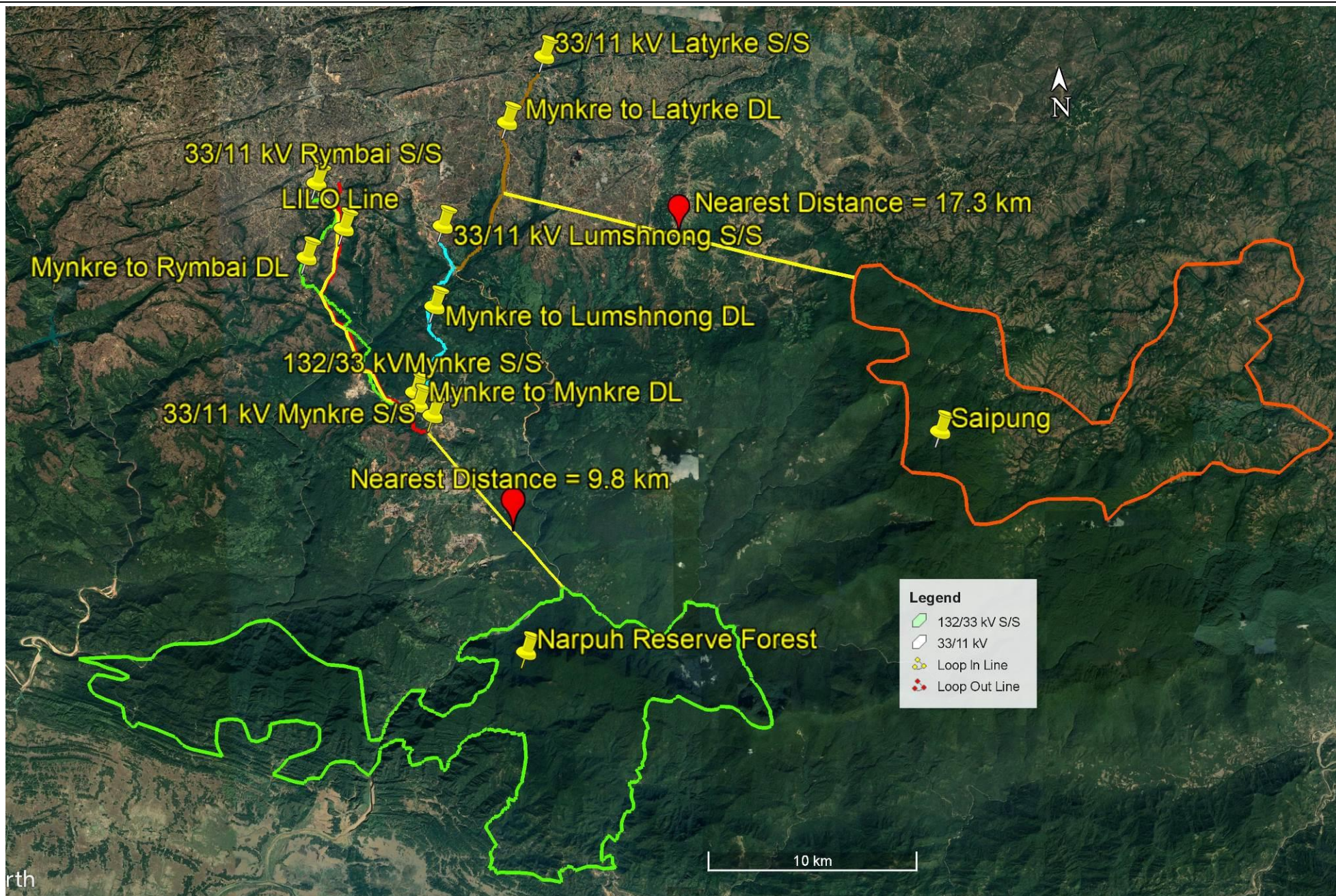


Figure 3.6: Distance of Sub-Projects from IBAs

3.6.8 Wetland

As per the National Wetland Atlas of Meghalaya, the estimated wetland area of the state is 29987 ha area, which is 1.34% of total geographic area of the state. It includes 167 small wetlands (<2.25 ha) also. Total number of wetlands present in the State is 426. Important wetlands of the state include, Umiam lake, Nongkhnum island and Ranikor riverine area. None of the important wetland falls in the East Jaintia Hills district, hence, no impact is envisaged on any of the important wetland of the state.

3.7 SOCIO-ECONOMIC ENVIRONMENT

For sustainable development, it is important to understand social and economic conditions of the community in the region, impacts of development on the community, measures to mitigate negative impacts and enhance the positive impacts. For new development initiatives, socio economic assessment plays an important role to ensure community participation and their acceptance of the development activity. It also helps in planning the activities for local area development. The population of Meghalaya as per census 2011 was 29,66,889 out of which 14,91,832 were males and 14,75,057 were females.

East Jaintia Hills district has a population of 1,22,939. The district has a sex ratio of 1008 female per 1000 male, which is much better than the corresponding National figures. The population of Schedule Caste and Schedule Tribes constitute 0.4% and 96.1% respectively of the total population (**Table 3.18**). The literacy rate of the district stands at 59.2%. (**Table 3.18**).

Khliehriat C. D. Block, where all the subprojects in the instant project are located has 14,503 households and a population of 85,832. The C. D. Block has a sex ratio of 1014 female per 1000 male, which is slightly better than the corresponding district figures. The population of Schedule Caste and Schedule Tribes constitute 0.5% and 95.1% respectively of the total population (**Table 3.18**). The literacy rate of the C. D. Block stands at 59.5%, which again is slightly higher than the corresponding district figures (**Table 3.18**).

Table 3.18: Demographic & Literacy Profile of the District Belonging to Study Area

Particulars		District Total	Khliehriat C. D. Block
No. of House Holds	1	20756	14503
Population	Total	122939	85832
	Male	61233	42628
	Female	61706	43204
Sex Ratio	5 = $(4/3 \times 1000)$	1008	1014
Population (above 6 Years)	Total	93083	65406
	Male	46182	32322
	Female	46901	33084
Scheduled Caste	Total	473	451
	Male	305	288
	Female	168	163
	%	12 = $(9/2 \times 100)$	0.4
Scheduled Tribe	Total	118158	81634
	Male	58492	40198
	Female	59666	41436

Particulars			District Total	Khliehriat C. D. Block
	%	16 = (13/2*100)	96.1	95.1
Literate	Total	17	54255	38445
	Male	18	26469	18774
	Female	19	27786	19671
Literacy Rate	Total	20 = (17/6*100)	58.3	58.8
	Male	21 = (18/7*100)	57.3	58.1
	Female	22 = (19/8*100)	59.2	59.5

Source: Census of India, 2011

Work participation rate in the district is about 36.8%, out of which 57.5% are male workers and 42.5% are female workers. Among the total work force, 74.1% are Main Workers and 25.9% are Marginal Workers (**Table 3.19**). Among the main workers, about 38.1% workers are cultivators, 17.4% are agricultural labourers, about 1.2% of work force is engaged as household industrial workers and the rest 43.2% are engaged in other than agricultural activities (**Table 3.19**).

Work participation rate in the C. D. Block is about 35.5%, out of which 59.1% are male workers and 40.9% are female workers. Among the total work force, 80.5% are Main Workers and 19.5% are Marginal Workers (**Table 3.19**). Among the main workers, about 31.8% workers are cultivators, 16.5% are agricultural labourers, about 1.2% of work force is engaged as household industrial workers and the rest 50.5% are engaged in other than agricultural activities (**Table 3.19**).

Table 3.19: Occupational Pattern of the District Belonging to Study Area

Particulars					District Total	Khliehriat C. D. Block	
Population			Total	1	122939	85832	
Working Population	Total Worker		Total	2	45296	30441	
			Male	3	26051	17997	
			Female	4	19245	12444	
			%	5 = (2/1*100)	36.8	35.5	
			Main Worker		Total	6	33583
		Male			7	20575	15046
		Female			8	13008	9444
		%			9 = (6/2*100)	74.1	80.5
		Cultivators		Total	10	12799	7797
				Male	11	7783	4734
				Female	12	5016	3063
				%	13 = (10/6*100)	38.1	31.8
		Agricultural Labour		Total	14	5851	4040
				Male	15	3467	2305
				Female	16	2384	1735
				%	17 = (14/6*100)	17.4	16.5
		Household Industry Labour		Total	18	419	297
				Male	19	223	153
				Female	20	196	144
				%	21 = (18/6*100)	1.2	1.2
		Other	Total	22	14514	12356	

Particulars						District Total	Khliehriat C. D. Block
		Worker	Male	23		9102	7854
			Female	24		5412	4502
			%	25 = (22/6*100)		43.2	50.5
		Marginal Worker	Total	26		11713	5951
			Male	27		5476	2951
			Female	28		6237	3000
			%	29 = (26/2*100)		25.9	19.5
		Non Worker	Total	30		77643	55391
			Male	31		35182	24631
			Female	32		42461	30760
			%	33 = (30/1*100)		63.2	64.5

Source: Census of India, 2011

**Chapter
4****MAJOR FEATURES OF FINAL ROUTE****4.1 INTRODUCTION**

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. 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 in the ensuing paragraphs.

4.2 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 of concerned Forest Department and the Department of Revenue. Although under National law, MePTCL/ MePDCL 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 away from major towns, whenever possible, to account for future urban expansion (refer **Figure 4.1 to Figure 4.5** for final route of all T&D network).
- 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 highways, 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 flythrough 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 owner's approval along with report containing other information / details as mentioned above.

The route finalized after detailed survey by contractor follows all the environmental criteria laid down for consideration of route selection. The major features encountered in the finalized route are elaborated in the ensuing paragraphs.

4.2.1 Transmission Line

The transmission line scope includes following subproject:

- i. LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre – 27.193 km

In the instant project also, criteria for route selection as mentioned above, has been duly adhered to and the proposed LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre have been selected from analysis of three (03) alternatives routes as described in the IEAR/ CPTD. Subsequently, the proposed route was considered for detail survey by Contractor Agency (after awarding of contract).

During detailed survey of all the three alternatives, involvement of private forest (forest as per dictionary meaning) in all the three alternatives was also ascertained. The total forest land required for the project is 11.566 ha, out of which 4.85 ha is required for the Loop In section and 6.716 ha is required for the Loop Out section of the line. MePTCL vide Proposal Nos. FP/ML/TRANS/38514/2019 dated 22-01-2019 and FP/ML/TRANS/38536/2019 dated 23-01-2019 has already applied for the diversion of forest for the Loop In and Loop Out sections of the line respectively. Currently, Stage-I approval has been accorded for the Loop Out section of the line, while, the proposal for the Loop In section of the line is pending at State Government due to EDS raised by Regional Office. Out of the three alternatives, the finalized route is based on following considerations:

- All Towers/Angle points are on safe places considering the required clearances
- Less forest area is involved as compared to other two routes

- Minimum tree cutting involved, as no tower is required to be constructed in forest area for Loop In section of the line and only one (1) no of tower is required to be constructed in forest area for Loop Out section of the line.
- Only area below the conductor falls under forest area as per inspection of Forest Department

Apart from the above, during detailed survey some 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/ minimizing forest/private plantation areas, settlements, Common Property Resource (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. Efforts of IA/MePTCL/MePDCL in effectively integrating safeguard and engineering measures successfully minimized impact on forest and environment. For changes in scope of work with respect to IEAR/ CPTD scope i.e. changes in the route alignment based upon alternatives studies and detailed survey for transmission line is given is **Table 4.1**.

4.2.2 Distribution Lines

The distribution line scope includes following subprojects:

- 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Mynkre (New) S/S – 1.618 km;
- 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Rymbai (New) S/S – 15.806 km;
- 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S – 10.386 km;
- 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S – 11.711 km

Distribution lines not exceeding 10 kms and intending for providing power supply to the predestined areas have negligible environmental and social impacts. Hence alternative analysis study is not required for these lines. However, for distribution lines having line length of more than 10 kms, details of alternative route alignment study has been carried out. Here also, criteria for route selection as mentioned above, has been duly adhered to and the proposed distribution lines having length of more than 10 km have been selected from analysis of three (03) alternatives routes as described in the IEAR/ CPTD. Subsequently, the proposed route was considered for detail survey by Contractor Agency (after awarding of contract).

Meanwhile location of all the 33/11 kV substations were changed as land owners & MePTCL/ MePDCL could not reach a common agreement for the purchase of private land on “willing buyer willing seller” basis. Due to the change in substation location length of all the distribution line except 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S increased. Hence, study of alternatives which during the preparation of IEAR/ CPTD was required for distribution lines mentioned at S. No. ii and iv was needed for the distribution line mentioned at S. No. iii also.

During detailed survey, study of alternatives was carried out for the lines mentioned at S. No. ii, iii and iv. Here also, routes were finalized with prime objective of avoiding/ minimizing forest/private plantation areas, settlements, Common Property Resource (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. Efforts of IA/MePTCL/MePDCL in effectively integrating safeguard and engineering measures successfully minimized impact on forest and environment. For changes in scope of work with respect to IEAR/ CPTD scope i.e. changes in the route alignment based upon alternatives studies and detailed survey for distribution line is given is **Table 4.1**.

It is pertinent to mention here that the route of 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S and 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S is common for a length of 8.818 km i.e. from 132/33 kV Mynkre (New) S/S to Pole No. FP-12. Since the route is common therefore all the poles on this route are either Double Pole or Four Pole. The line length considered for the 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S is from Pole No. FP-12 to 33/11 kV Latyrke (New) S/S constructed at Stunga.

Table 4.1: Change in Scope of Work w.r.t. IEAR/ CPTD

S. No.	Scope as per IEAR/ CPTD	Current Status	Justification/ Remarks
Transmission Component			
1	LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre – 27.0 km	LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre – 27.193 km	No change in the route, however, length has slightly increased when optimized during ground truthing survey.
Distribution Component			
1	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Mynkre (New) S/S – 0.5 km	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Mynkre (New) S/S – 1.618 km	Change in current status is due to the change in route as location of 33/11 kV Mynkre substation has been changed as land owner & MePTCL/ MePDCL could not reach a common agreement. With the change in substation location length of line was increased by 1.118 km. Although there is a substantiate increase in the route length, however, all the criteria for route selection as mentioned above, has been duly adhered to.
2	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Rymbai (New) S/S – 11.90 km	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Rymbai (New) S/S – 15.806 km	Change in current status is due to a negligible change in route as location of 33/11 kV Rymbai substation has been slightly changed as land owner & MePTCL/ MePDCL could not reach a common agreement. Although the route length has been increased by 3.906 km there is no change on the impacts anticipated on environmental and social aspects as length has increased when optimized during ground truthing survey.
3	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S – 7.70 km	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S – 10.386 km	Complete change of the route as location of 33/11 kV substation has been changed from Lumshnong to Byndihati as land owner & MePTCL/ MePDCL could not reach a common agreement. All the criteria for route selection as mentioned above, has been duly adhered to during finalization of

S. No.	Scope as per IEAR/ CPTD	Current Status	Justification/ Remarks
			this new route.
4	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S – 17.8 km	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S – 11.711 km	<p>Complete change of the route as location of 33/11 kV substation has been changed from Latyrke to Sutnga as land owner & MePTCL/ MePDCL could not reach a common agreement.</p> <p>All the criteria for route selection as mentioned above, has been duly adhered to during finalization of this new route. Moreover, length of route decreased by 6.089 km.</p>

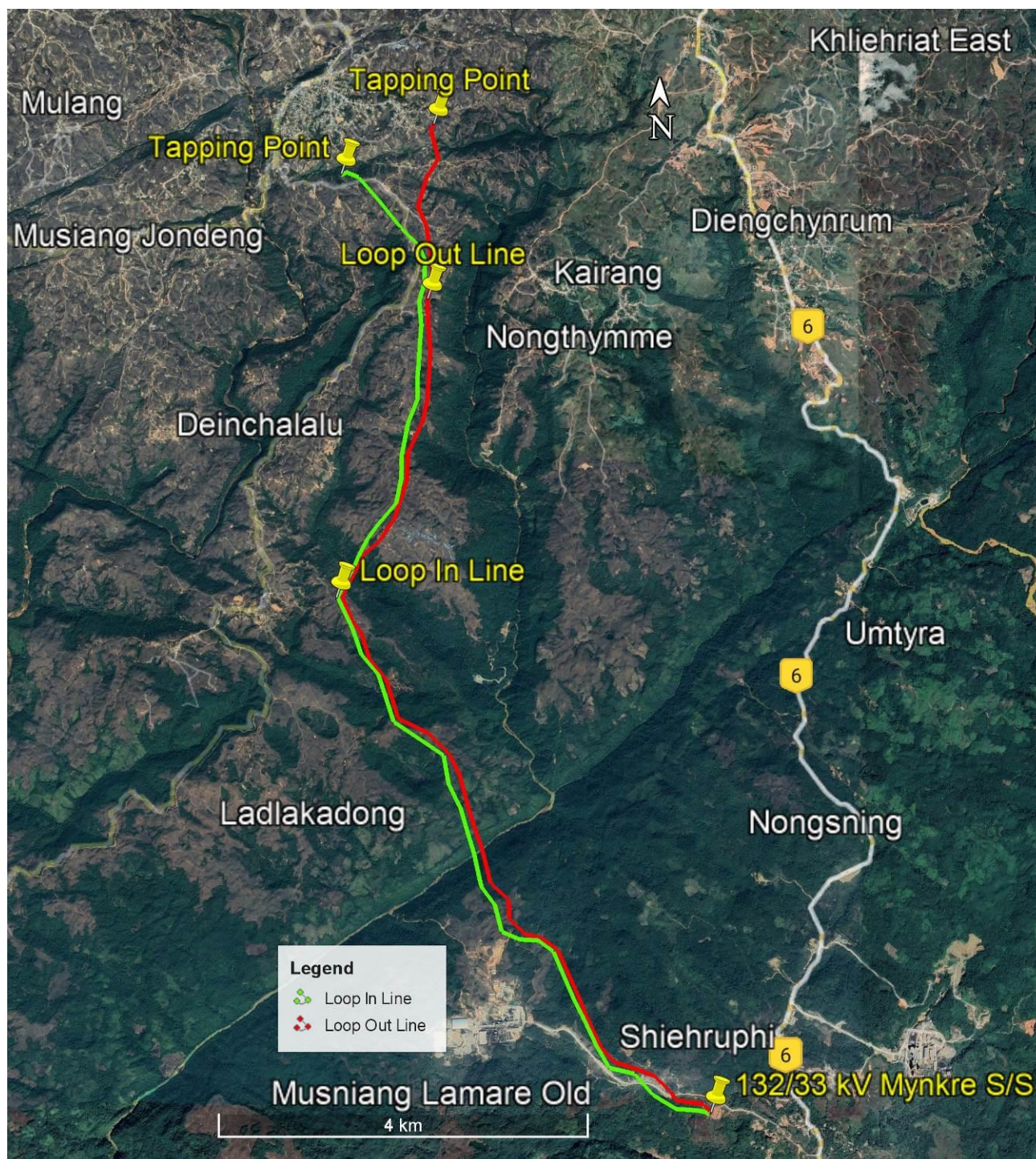


Figure 4.1: Satellite Imagery Showing Route of LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre



Figure 4.2: Satellite Imagery Showing Route of 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Mynkre (New) S/S

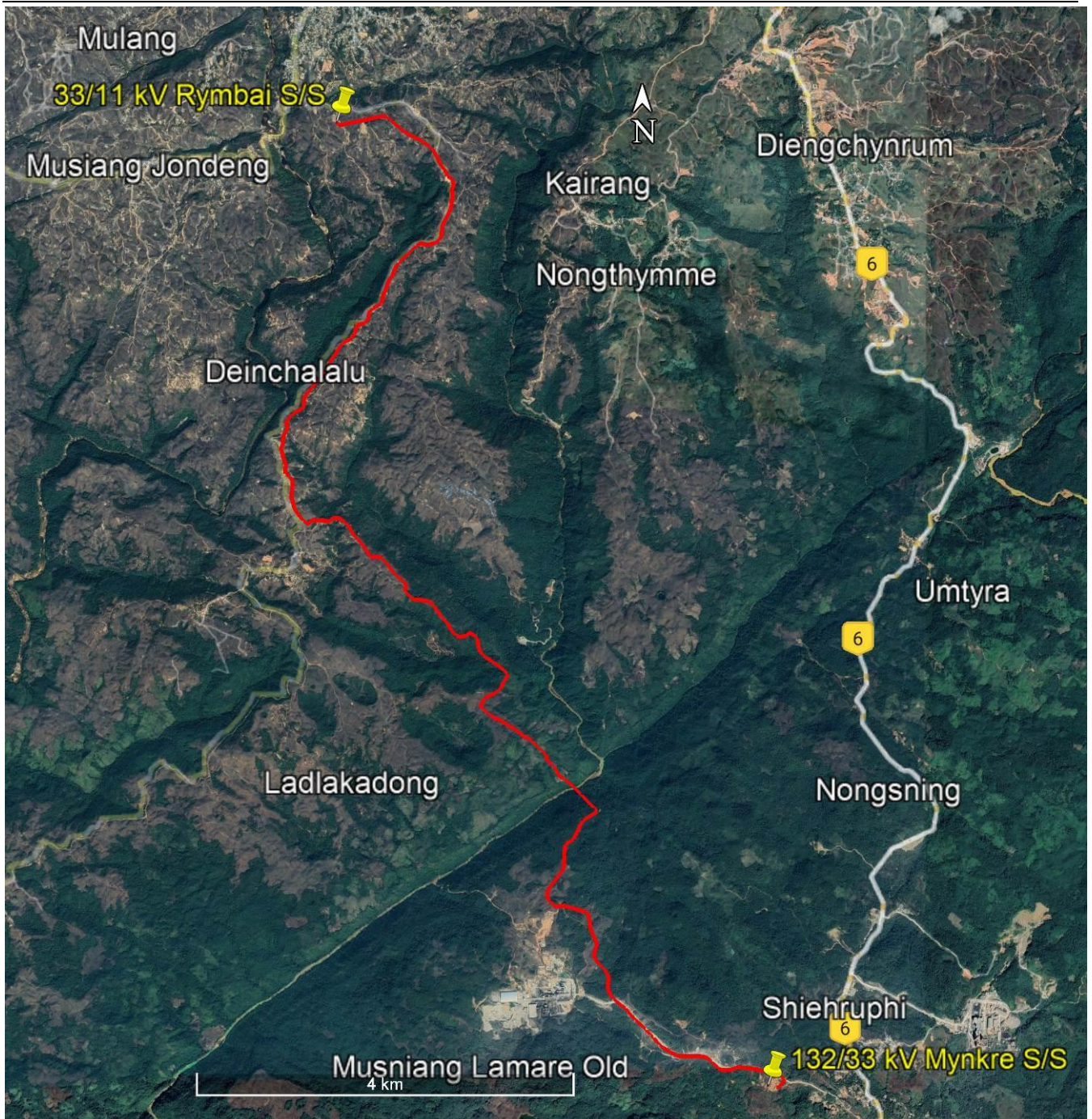


Figure 4.3: Satellite Imagery Showing Route of 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Rymbai (New) S/S

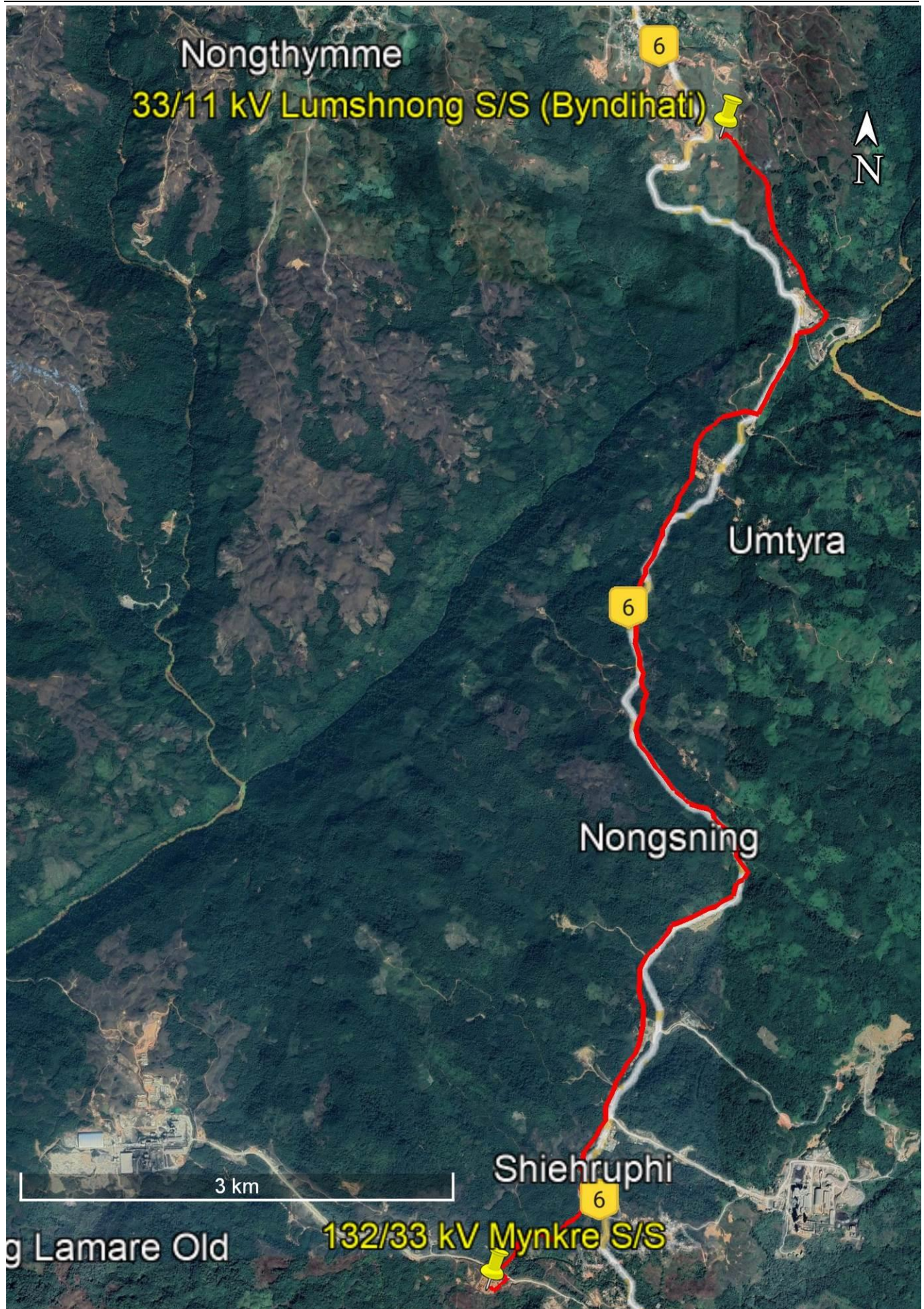


Figure 4.4: Satellite Imagery Showing Route of 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S

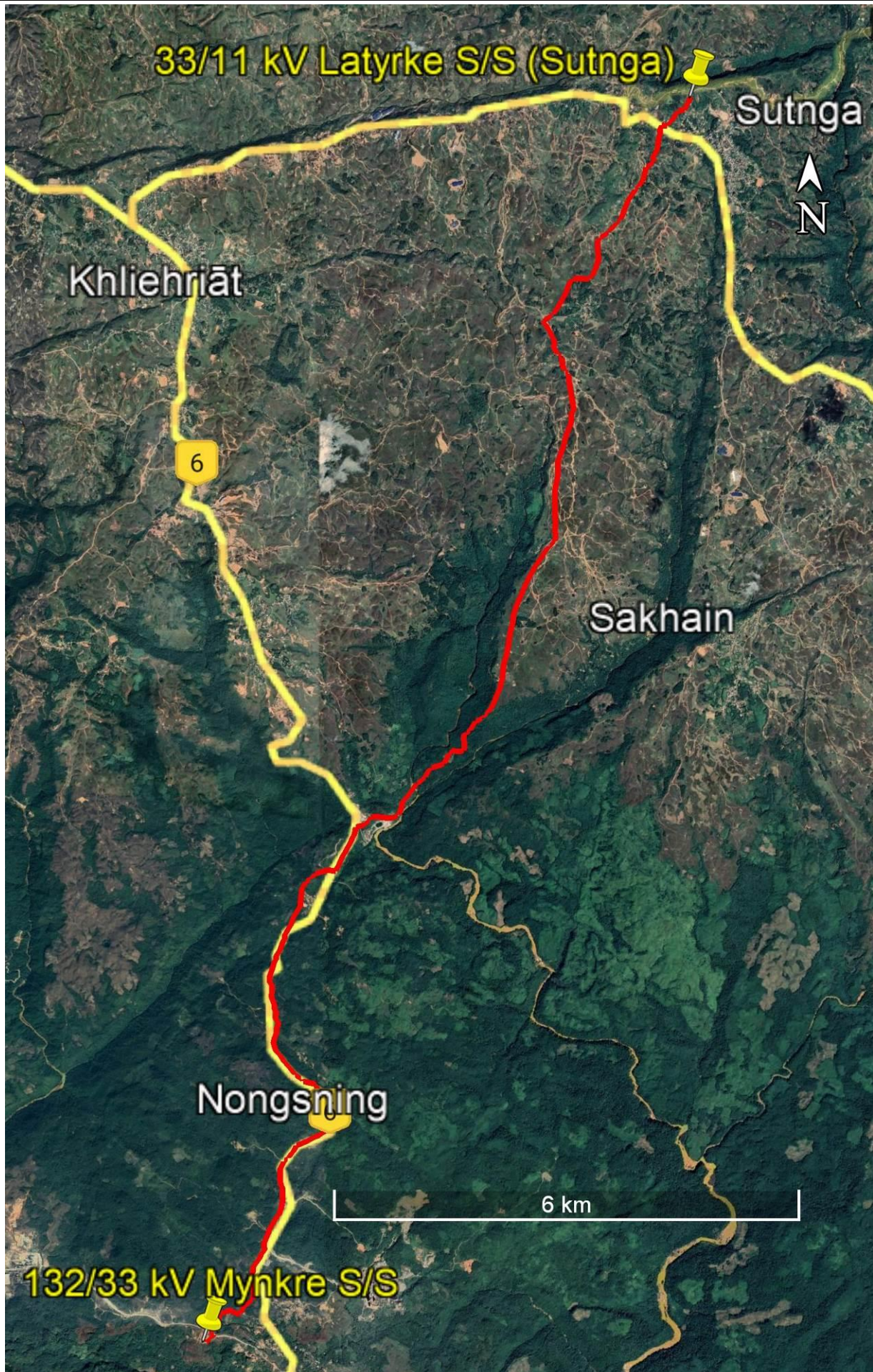


Figure 4.5: Satellite Imagery Showing Route of 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S

4.2.3 Sub-stations

For sub-station, site selection analysis of 2-3 alternatives sites is usually carried out based on environment and social aspects and technical requirement. Such analysis considers various site-specific parameters that include availability of infrastructure facilities such as access roads, water, distance from railheads, type of land (Government/ revenue/private land); social impacts such as number of families getting affected; CPR including feasibility of acquisition. The finalization of substation land is done based on above analysis and site visit/verification. The social aspects are provided due weightage after technical requirement in decision making for selection/finalization of land for substation.

In the instant case also land for all the proposed substations, purchased on willing seller – willing buyer basis were acquired as per above mentioned analysis and site visit/ verification. Also, as per the provisions of ESPPF, all land directly purchased were reviewed/ approved by a broad-based committee comprising representatives of different sections including those from the IA and Govt. of Meghalaya. The finalized location of transmission and distribution substations is given below in **Table 4.2**.

Table 4.2: Finalized Location of Transmission & Distribution Substation

S. No.	Name of Substation	Earlier Identified Land as per IEAR	Finalized Land (Actual)	Reason for Change
A	Transmission Substation			
1	132/33 kV substation at Mynkre (New)	The proposed land was located adjacent to the road towards Amrit Cement factory which bifurcates from the NH-44 at a distance of around 1.4 km. Co-ordinates: 25°14'05.11" N, 92°22'5.87" E	New location is adjacent to the road towards Amrit Cement factory. Around 1.4 km after this road bifurcates from the NH-44. Co-ordinates: 25°14'05.11" N, 92°22'5.87" E	Remain Unchanged
B	Distribution Substation			
2	33/11 kV substation at Mynkre (New)	Adjacent to the road towards Amrit Cement factory, around 1 km from NH-44 and almost opposite to 132/33 kV Mynkre (new) substation. Co-ordinates: 25°14'05.52" N, 92°22'16.38" E	New location is around 120 m from NH-44 near Mynkre Service Station. The location is around 650 m towards south on NH-44 from where road leading to Amrit Cement factory bifurcates from NH-44. Co-ordinates: 25°13'27.77" N, 92°22'36.90" E	Land owner & MePTCL/ MePDCL could not reach a common agreement.
3	33/11kV substation at Rymbai (New)	Proposed location was situated near to Rymbai village and adjacent to the Lad-Rymbai-MLHEP Road.	New location is around 130 m towards east from the previously identified location on the main road and around 100 m towards	Land owner & MePTCL/ MePDCL could not reach a common agreement.

S. No.	Name of Substation	Earlier Identified Land as per IEAR	Finalized Land (Actual)	Reason for Change
		Co-ordinates: 25°19'32.34" N, 92°19'22.44" E	south from the main road. Co-ordinates: 25°19'28.30" N, 92°19'25.65" E	
4	33/11kV substation at Lumshnong (New)	Proposed location was beside the existing 33/11 kV Lumshnong Substation and was just adjacent to NH-44. Co-ordinates: 25°10'23.7" N, 92°23'33.54" E	New location is at the end of Byndihati village on NH-44 and while going from Khliehriat to Mynkre it is located on the left hand side of NH-44 around 450 m before Bharat Petroleum, Petrol Pump - NES Byndihati. Approach road from NH-44 is around 80 m. Co-ordinates: 25°18'20.84" N, 92°22'58.80" E	Land owner & MePTCL/ MePDCL could not reach a common agreement.
5	33/11kV substation at Latyrke (New)	The proposed land was situated on the western side on the outskirts of Moolamylliang village and close to Tluh road. Co-ordinates: 25°20'36.54" N, 92°28'21.42" E	New location is on the road leading to Syrpoo village, around 1.1 km from its bifurcation from Sutnga road. Co-ordinates: 25°22'40.62" N, 92°25'55.05" E	Land owner & MePTCL/ MePDCL could not reach a common agreement.



Location of 132/33 kV Mynkre Substation



132/33 kV Mynkre Substation (New)



Location of 33/11 kV Mynkre Substation



33/11 kV Mynkre Substation (New)



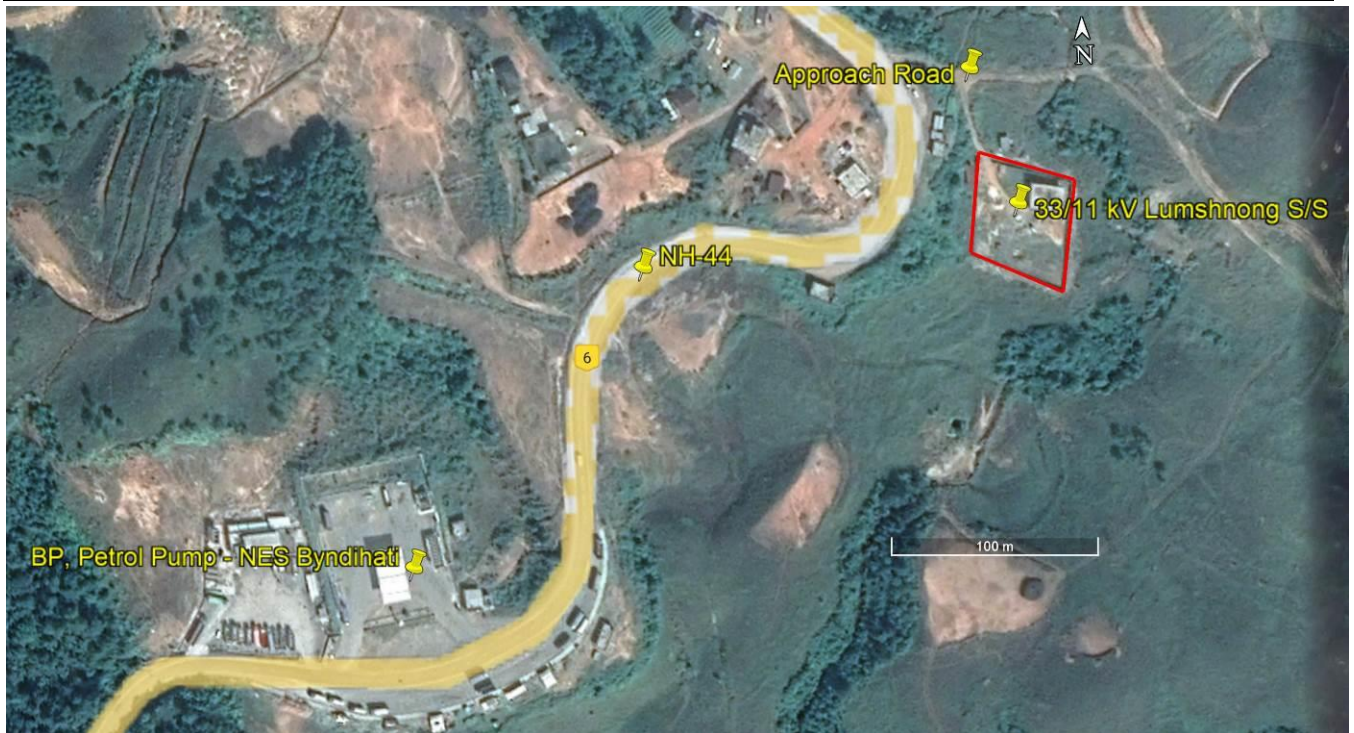
Location of 33/11 kV Rymbai Substation



33/11 kV Rymbai Substation (New)



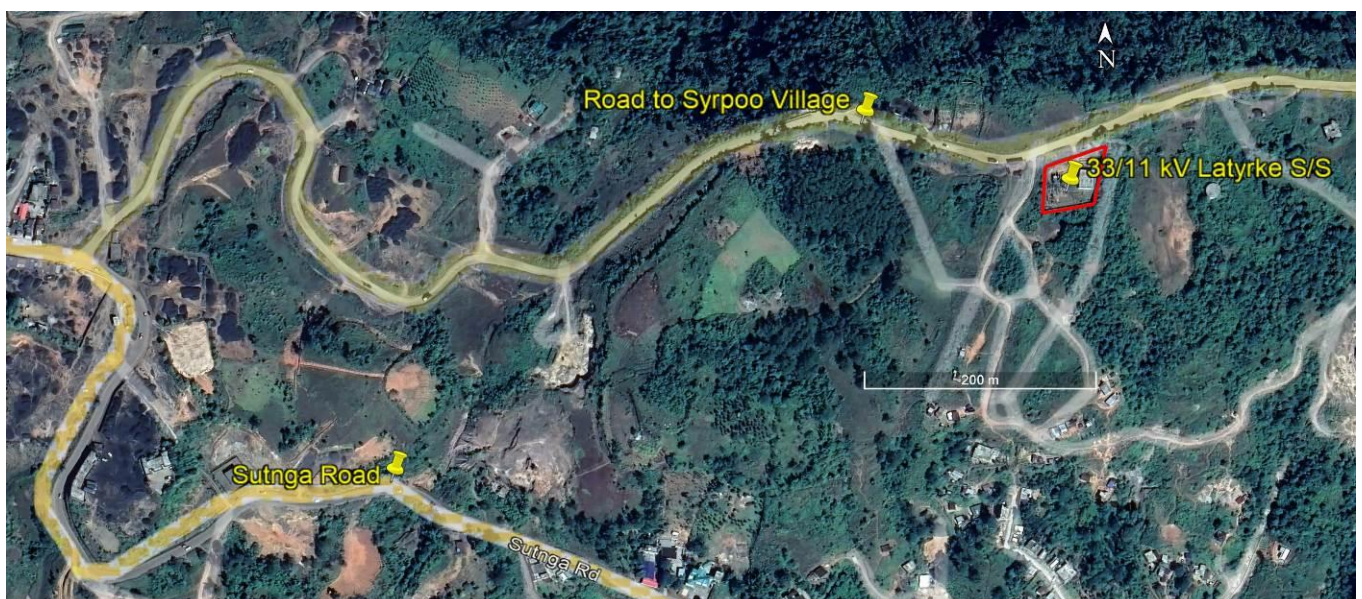
33/11 kV Lumshnong Substation at Byndihati (New)



Location of 33/11 kV Lumshnong Substation at Byndihati



33/11 kV Latyrke Substation at Sutnga (New)



Location of 33/11 kV Latyrke Substation at Sutnga

4.3 MAJOR FEATURES OF FINAL ROUTE

4.3.1 Transmission Line

LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre has two sections namely, Loop In and Loop Out section. Total length of the line is 27.193 km, of which length of Loop In section is 13.557 km and Loop Out section is 13.636 km. Both the sections passes through hilly terrain. The landuse beneath the line is private forest (forest as per dictionary meaning), barren land and agricultural land (refer **Figure 4.1**). Out of the total 13.557 km of Loop In section of line, 1.796 km of stretch passes through private forest and the rest 11.761 km passes through barren land and agricultural land. Out of the total 13.636 km of Loop Out section of line, 2.484 km of stretch passes through private forest and the rest 11.152 km passes through barren land and agricultural land. The line do not pass through any settlement.

Since the line passes through forest land therefore it is mandatory to get forest clearance under Forest (Conservation) Act, 1980. The total forest land required for the project is 11.566 ha, out of which 4.85 ha is required for the Loop In section and 6.716 ha is required for the Loop Out section of the line. MePTCL vide Proposal Nos. FP/ML/TRANS/38514/2019 dated 22-01-2019 and FP/ML/TRANS/38536/2019 dated 23-01-2019 has already applied for the diversion of forest for the Loop In and Loop Out sections of the line respectively. Currently, Stage-I approval has been accorded for the Loop Out section of the line, while, the proposal for the Loop In section of the line is pending at State Government due to EDS raised by Regional Office. Besides all protected areas like National Parks, Wildlife Sanctuaries, Biosphere Reserve etc.; Natural habitats, IBAs, Sacred groves, Wetlands etc. have been completely avoided.

Major crossing en route of the Loop In section of the line are:

- 400 kV D/C P-B Line tower AP-34A1/0 and tower AP-G-I.
- 132 kV D/C line tower AP-42A/0 and tower AP-43A/0.
- 11 kV line between tower AP-3A/0 and tower AP-4A/0 and between tower AP-4A/0 and tower AP-5A/0.
- Sesyenmpa river between tower AP-29A/0 and tower AP-31A/0.
- Nala between tower AP-1A/0 and tower AP-2A/0, between tower AP-8A/0 and tower AP-9A/0, between tower AP-10A/0 and tower AP-11A/0, between tower AP-11A/0 and tower AP-12A/0, between tower AP-18A/0 and tower AP-19A/0, between tower AP-28A/0 and tower AP-29A/0, between tower AP-32A/0 and tower AP-33A/0, between tower AP-33A/0 and tower AP-34A/0 and between tower AP-44A/0 and tower AP-44A1/0.
- Main road between tower AP-2A/0 and tower AP-3A/0, between tower AP-4A/0 and tower AP-5A/0, between tower AP-5A/0 and tower AP-6A/0, between tower AP-7A/0 and tower AP-8A/0, between tower AP-8A/0 and tower AP-9A/0, between tower AP-15A/0 and tower AP-16A/0 and Cement road between tower AP-42A/0 and tower AP-43A/0.

Major crossing en route of the Loop Out section of the line are:

- 400 kV D/C P-B Line tower AP-32B/0 and tower AP-33B/0.

- 132 kV D/C line tower AP-42B/0 and tower AP-43B/0.
- Sesyenmpa river between tower AP-27B/0 and tower AP-29B/0.
- Nala between tower AP-1B/0 and tower AP-2B/0, between tower AP-3B/0 and tower AP-3B1/0, between tower AP-3B1/0 and tower AP-4B/0, between tower AP-4B/0 and tower AP-5B/0, between tower AP-26B/0 and tower AP-27B/0, between tower AP-31B/0 and tower AP-32B/0, between tower AP-40B/0 and tower AP-41B/0, between tower AP-43B/0 and tower AP-44B/0 and between tower AP-44B/0 and Gantry.
- Main road between tower AP-7B/0 and tower AP-8B/0, between tower AP-13B/0 and tower AP-14B/0 and Cement road between tower AP-42B/0 and tower AP-43B/0.

When optimized during ground truthing survey, line length of final route (**Table 4.1**) has been increased by just 193 m i.e. from 27 km to 27.193 km. Though there is negligible increase in line length, no additional impacts of any kind apart from earlier identified impacts in IEAR/EMP were found. Moreover, environment & social safeguard issues which have been taken care off are: -

- Habitation areas along the route have been completely avoided
- It is ensured that common property resources (CPR) are not impacted.
- Any areas/monuments of archaeological importance are also not encountered along the route.
- All critical environmental area, except forest area which was unavoidable have been completely avoided.

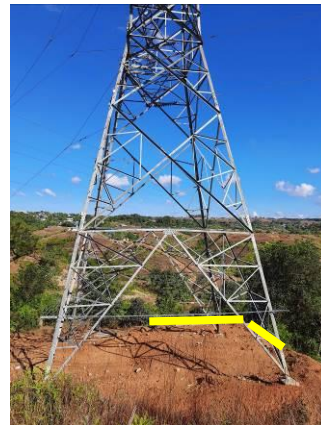
The line has a total 88 towers, out of which 45 towers are in Loop In section and 43 towers are in Loop Out section. The types of towers used are double circuit (DB, DC, DD and one LLG) towers. Due to various type of crossings height of 7 towers have been increased by 3 m, 5 towers by 6 m, 2 towers by 7.5 m, 4 towers by 9 m and 1 tower 18 m in the Loop In section of the line. Height of 12 towers have been increased by 3 m, 3 towers by 6 m, 1 tower by 7.5 m, 4 towers by 9 m and 1 tower 18 m in the Loop Out section of the line.

Since the terrain is hilly, leg extension has been utilized in towers to minimize/avoid benching/ revetment and to provide great stability. Out of the total 45 angle towers in Loop In section, 17 towers are provided with leg extension and Out of the total 43 angle towers in Loop Out section, 18 towers are provided with leg extension. In addition to that retaining wall has been constructed at 15 tower locations in Loop In section and 14 tower locations in Loop Out section so as to eliminate the chances of soil erosion. Also, in order to minimize tree cutting almost all the towers are constructed on hill top and span length has been increased in valley portion. The maximum span length of 879 m has been provided between tower AP-29A/0 and tower AP-31A/0 in Loop In section and 848 m between tower AP-27B/0 and tower AP-29B/0 in Loop Out section to cross Sesyenmpa river.

All the tower locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Details of tower schedule of final route alignment describing important features of line route are placed as **Annexure II**.



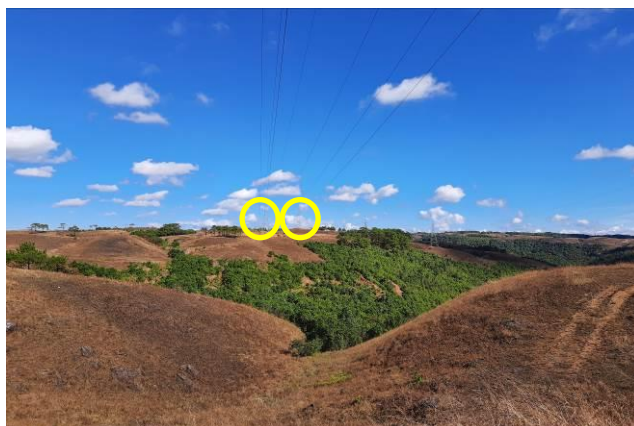
Retaining Wall at Tower AP-42A/0



Retaining Wall at Tower AP-1A/0



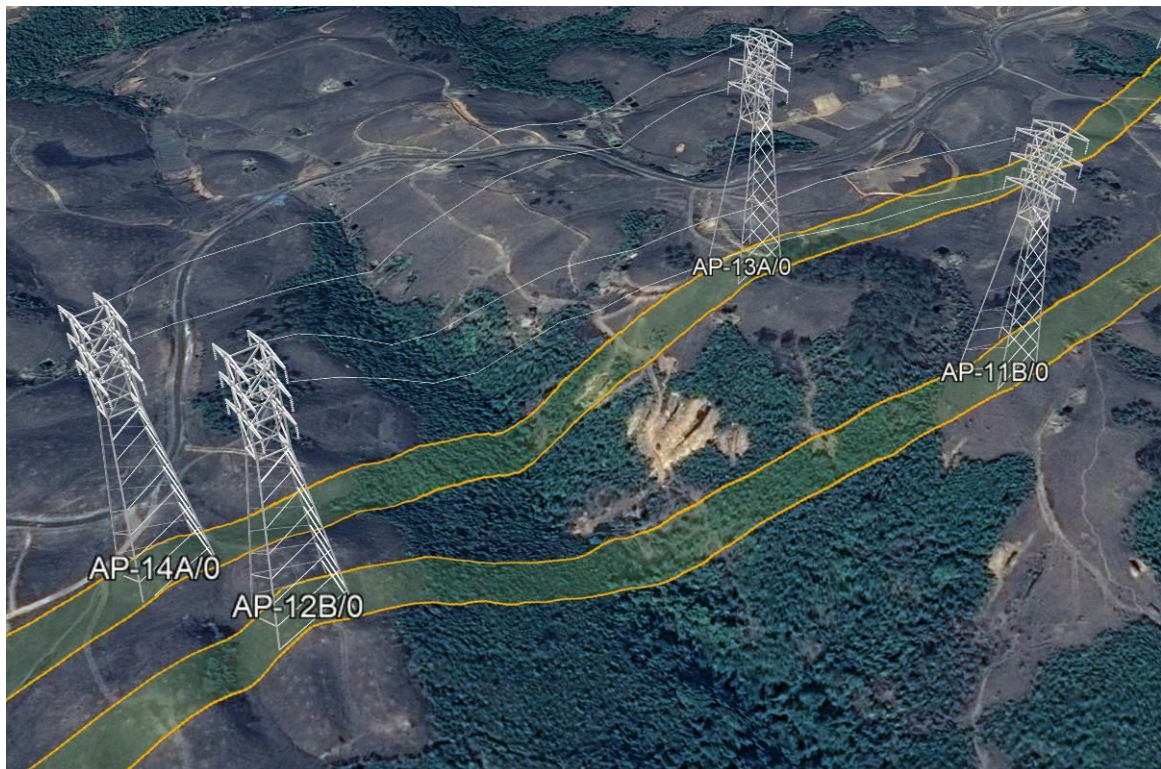
Tower on Hill Top to Minimize Tree Cutting



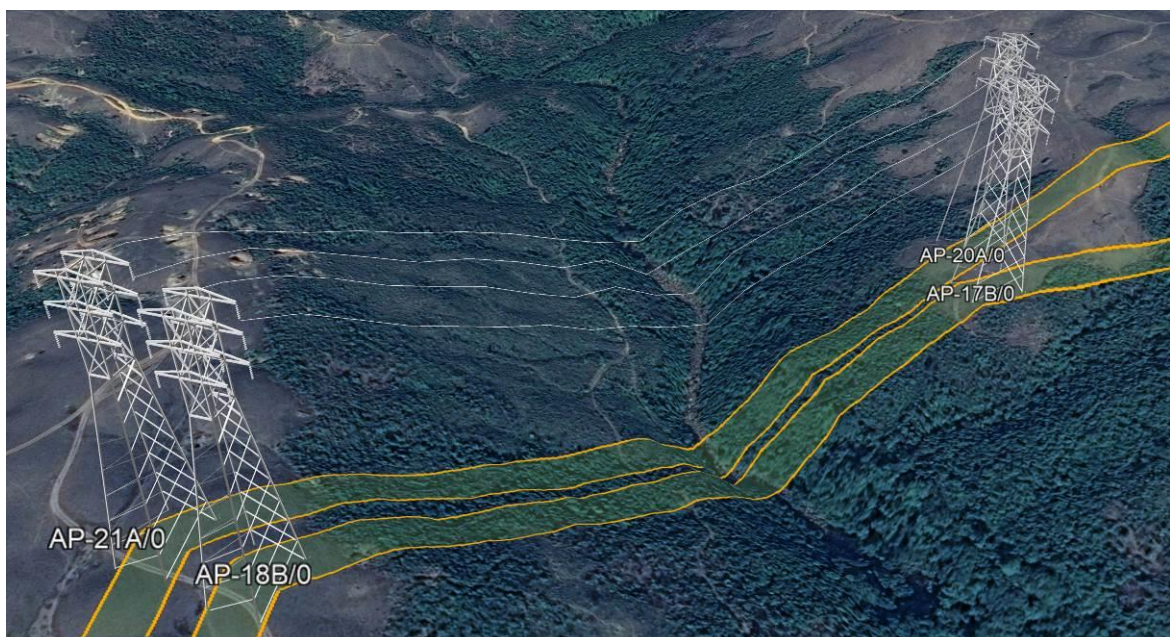
Tower on Hill Top to Minimize Tree Cutting



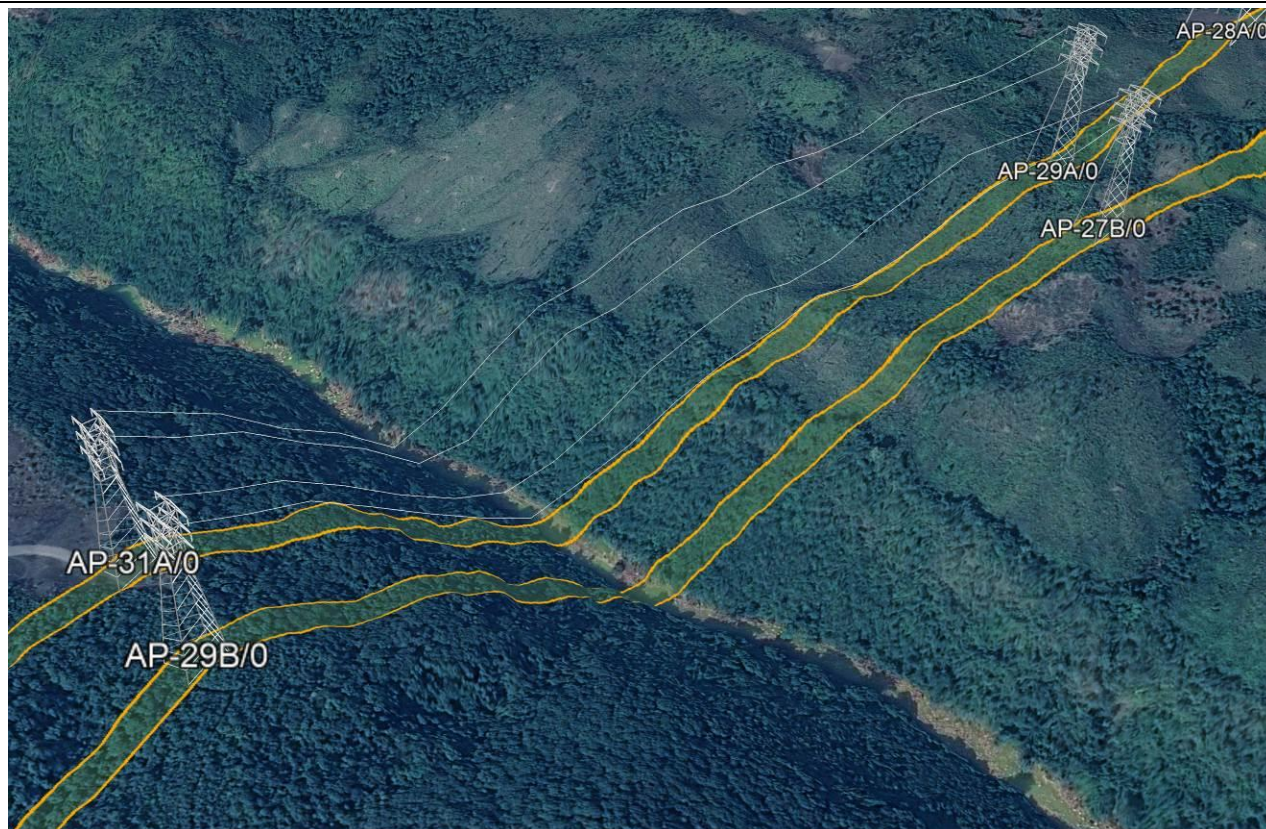
Strategic Location of Tower to avoid Vegetation Area



Tower on Hill Top to Minimize Tree Cutting



Tower on Hill Top to Minimize Tree Cutting



The maximum span length of 879 m has been provided between tower AP-29A/0 and tower AP-31A/0 in Loop In section and 848 m between tower AP-27B/0 and tower AP-29B/0 in Loop Out section to cross Sesyenmpa river

4.3.2 Distribution Lines

All the distribution lines are passing through hilly terrain. The land use beneath the lines comprises of private forest, scrub land, fallow land, barren/ waste lands and along existing roads and bunds (refer Figure 4.2-4.5). It has been observed that there are variations in final route length of lines from earlier routes as locations of all the 33/11 kV substations were changed. Due to the change in substation location the length of 4 final routes has been slightly increased by 1.621 km i.e. from 37.9 km to 39.521 km.

Considering that distribution line has minimum environmental footprints 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 around 1185 poles are erected for all 4 finalised distribution lines having a total line length of 39.521 km.

4.3.2.1 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Mynkre (New) S/S

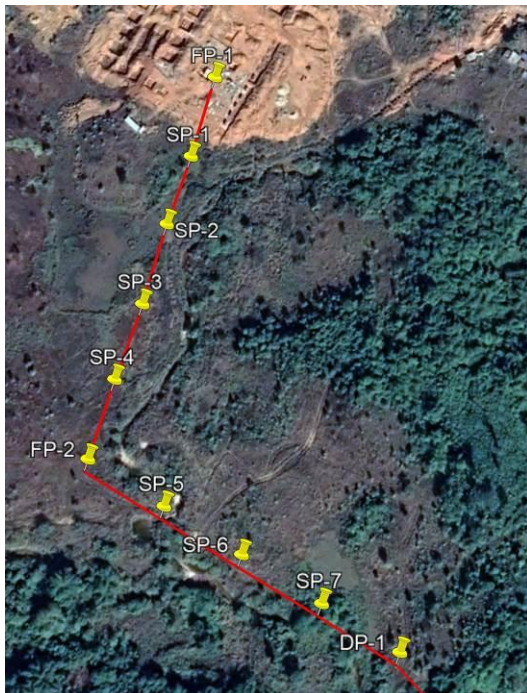
Total length of the line is 1.618 km, of which, 0.651 km of the line passes through fallow land and the rest 0.967 km passes through private forest land. The selected line does not pass through any National Highway, Railway crossings, settlement or any other critical environmental area. However, the line is crossing a Nala between Four Pole (FP) 02 and Single Pole (SP) 01, between Double Pole (DP) 01 and DP 02 and a stream between DP 03 and DP 04; Katcha road between SP-13 and SP-14.

Since the location of 33/11 kV Mynkre (new) S/S has been changed, therefore the line length of final route (Table 4.1) has been increased by 1.118 km i.e. from 0.5 km to 1.618 km. Due to

this change in line length and route, resultant impacts on environment have also increased. In the earlier route there were no trees in the ROW as the substation was proposed just opposite to the 132/33 Mynkre (new) substation. However, due to the passing of 0.967 km of section of final route through private forest land 176 trees are falling in the ROW. Though no felling of tree will be required, only lopping of tree branches will suffice for ROW clearance. The line has total 60 poles. The types of poles used are SP, DP and FP. All the pole locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Detail of pole schedule of final route alignment is placed as **Annexure II**.



Poles erected on Fallow Land



Route passing through Fallow Land



Route passing through Private Forest Land involving Tree Looping (Between DP-2 and DP-6)

4.3.2.2 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Rymbai (New) S/S

Total length of the line is 15.806 km, of which, 6.043 km of the line passes through fallow land, 2.160 km through private forest, 0.678 km through scrub land and the rest 6.925 km runs along the road. The selected line does not pass through any National Highway, Railway crossings, settlement or any other critical environmental area. However, the line is crossing 132 kV line between FP-5 and DP-14; 11 kV line between DP-8 and DP-9, between DP-58 and DP-59, between DP-60 and DP-61 and SP-207 and DP-84 and Sesyenmpa river between DP-23 and DP-24.

Since the location of 33/11 kV Rymbai (new) S/S has been slightly changed, therefore the line length of final route (**Table 4.1**) has been increased by 3.906 i.e. from 11.90 km to 15.806 km. Although the route length has been increased there is no change on the impacts anticipated on environmental and social aspects as length has increased when optimized during ground

truthing survey. The only environmental impact anticipated due to the change in the final route and due to the outcome of detailed survey is involvement of 137 trees on the 2.160 km section of line passing through private forest, which was earlier anticipated to be 27 trees. Though no felling of tree will be required, only lopping of tree branches will suffice for ROW clearance.

The line has total 439 poles. The types of poles used are SP, DP and FP. The maximum span length of 133 m has been provided between DP-23 and DP-24 to cross Sesyenmpa river. All the pole locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Detail of pole schedule of final route alignment is placed as **Annexure II**.



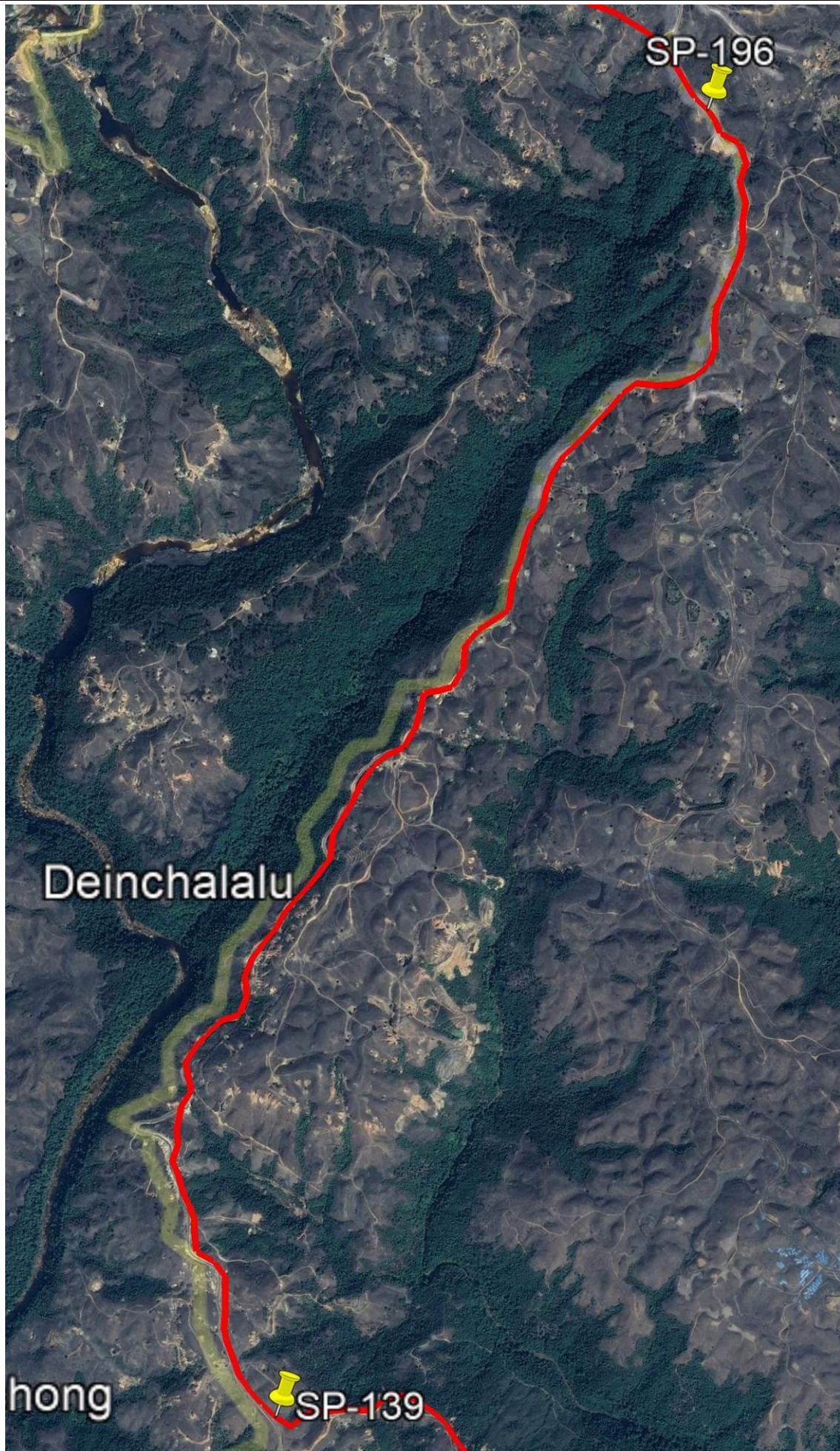
Poles erected on Fallow Land



Poles erected Along the Road



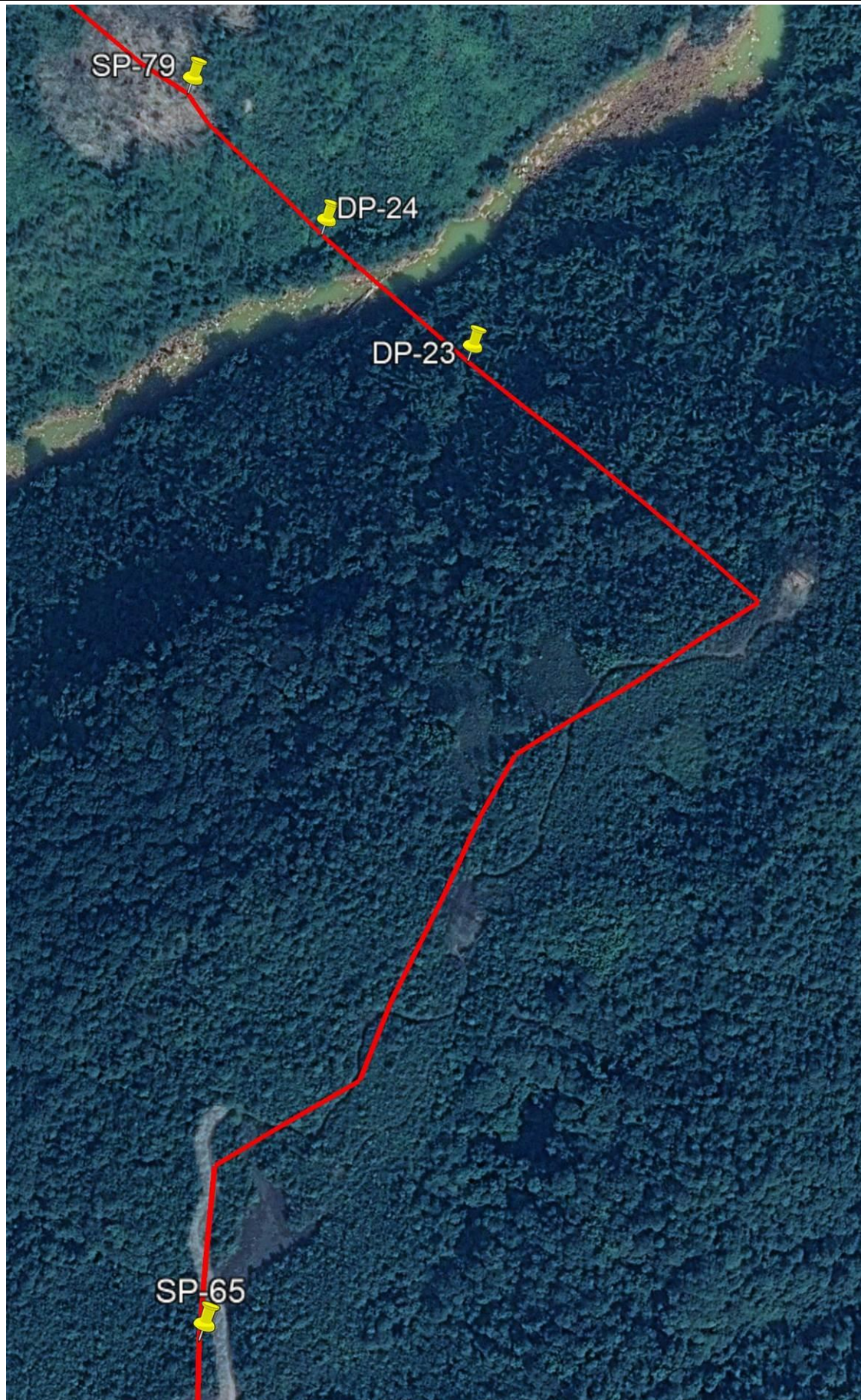
Route Along the Private Forest



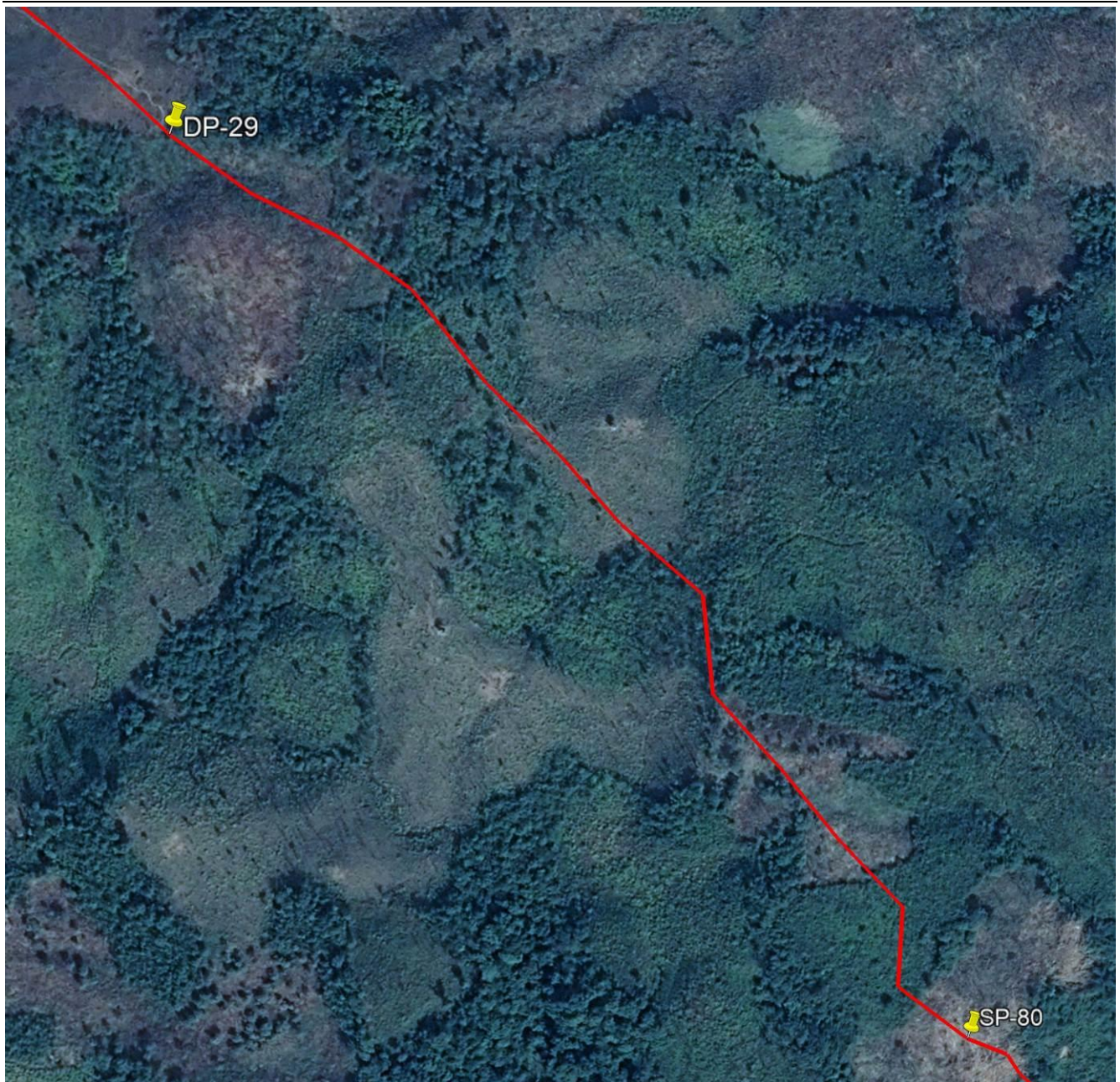
Section of Route Along the Road (SP-139 to SP-196)



Section of Route Passing through Fallow Land (SP-41 to SP-64)



Section of Route Passing through Private Forest Land (SP-65 to SP-79) and Maximum Span of route between DP-23 and DP-24



Section of Route Passing through Scrub Land (SP-80 to DP-29)

4.3.2.3 **33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S**

Total length of the line is 10.386 km, of which, 2.909 km of the line passes through fallow land, 1.220 km through private forest, 4.784 km through scrub land and the rest 1.473 km runs along the road. The selected line does not pass through any Railway crossings, settlement or any other critical environmental area. However, the line is crossing National Highway between DP-74 and FP-5, between FP-6 and FP-7, between FP-11 and DP-147; 132 kV line between DP-125 and FP-8, between DP-146 and FP-11, between SP-1 and SP-2; 11 kV line between DP-46 and DP-47, between DP-132 and DP-133; village road between FP-4 and DP-2.

Since the location of 33/11 kV Lumshnong (new) S/S has been changed from Lumshnong village to Byndihati village, therefore the route has completely changed. As a result, line length of final route (**Table 4.1**) has been increased by 2.686 km i.e. from 7.70 km to 10.386 km. Since the length of the line has increased therefore, resultant environmental and social

footprints have also increased. The only environmental impact anticipated due to the change in the final route and due to the outcome of detailed survey is involvement of 58 trees on the 1.220 km section of line passing through private forest, which was earlier anticipated to be 35 trees. Though no felling of tree will be required, only lopping of tree branches will suffice for ROW clearance.

The line has total 395 poles. The types of poles used are SP, DP and FP. The maximum span length of 245 m has been provided between FP-8 and FP-9 by placing the poles on hill top and cross the valley area, followed by 135 m provided between FP-6 and FP-7 to cross NH-44. All the pole locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Detail of pole schedule of final route alignment is placed as **Annexure II**.



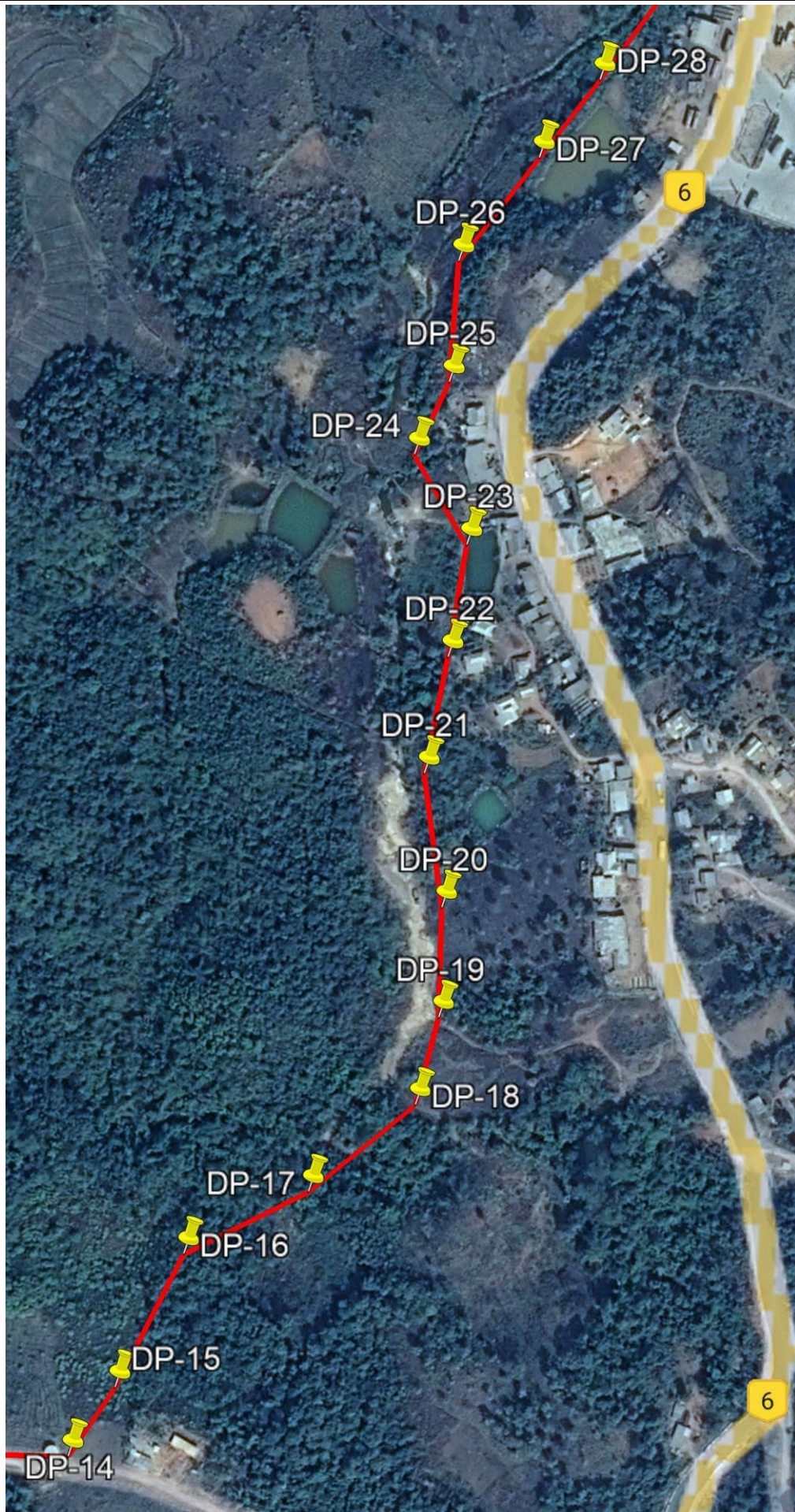
Line Route through Different Landuse



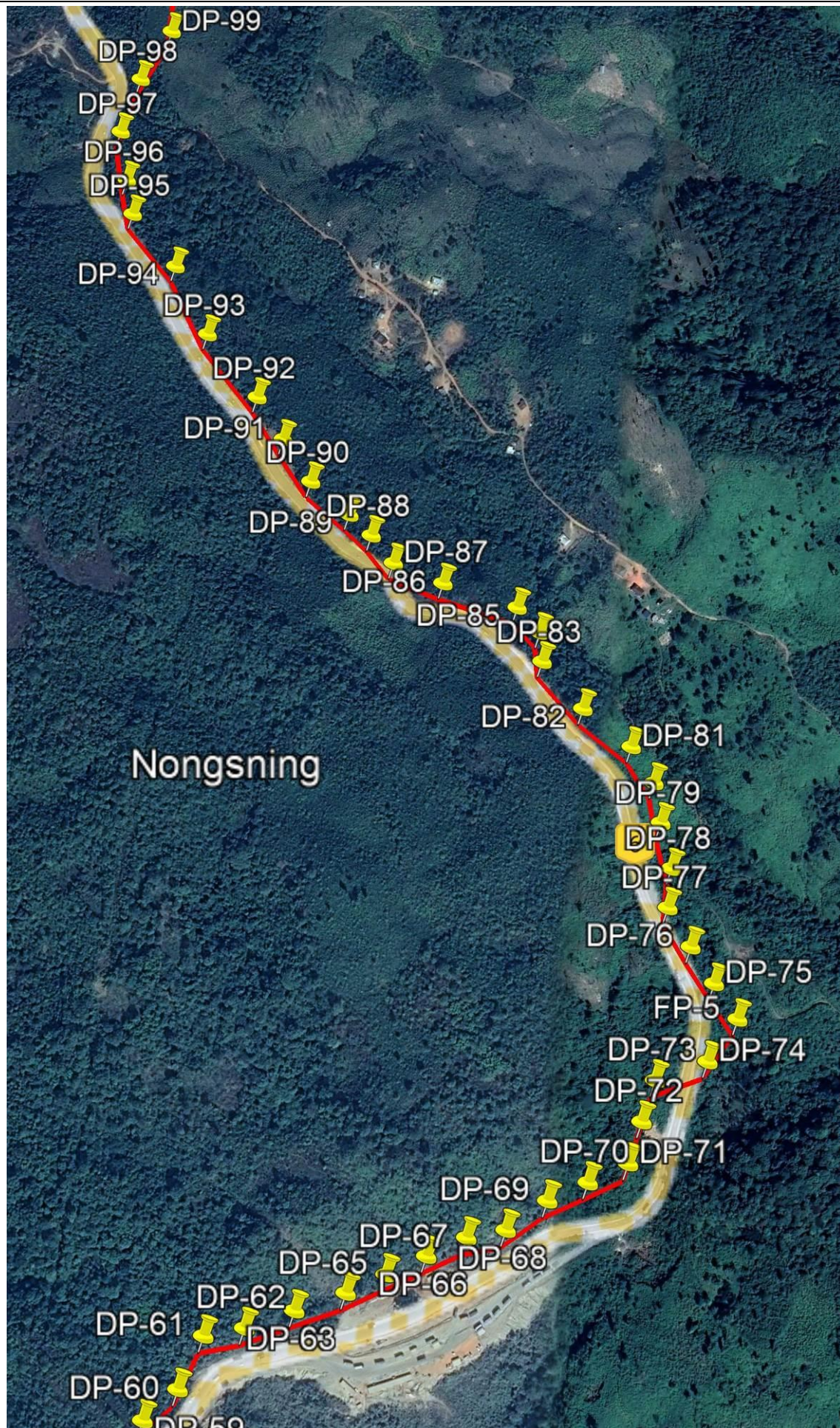
Pole Erected Along the Road



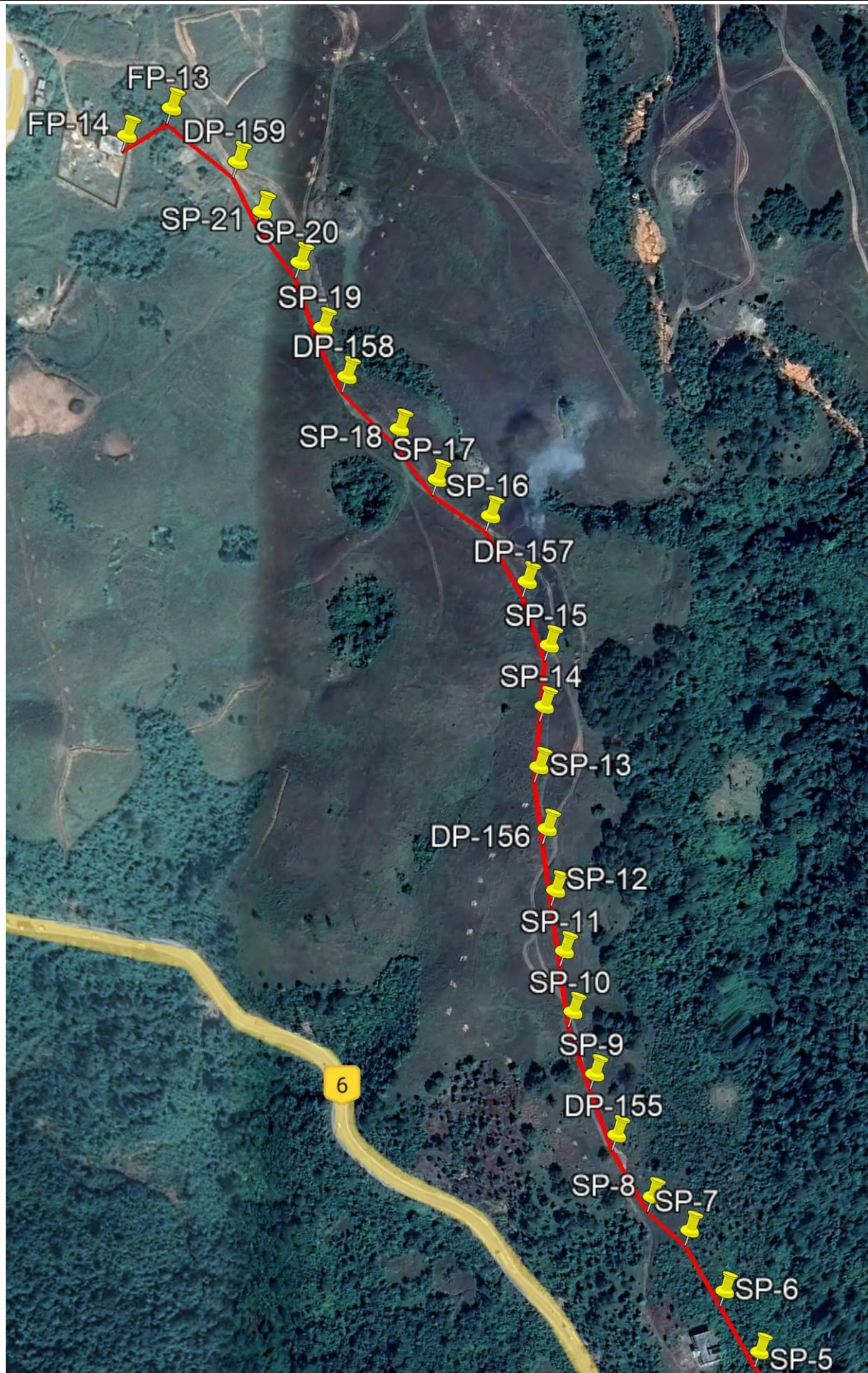
Line Route through Fallow Land



Route Passing through Private Forest Land



Route along the National Highway



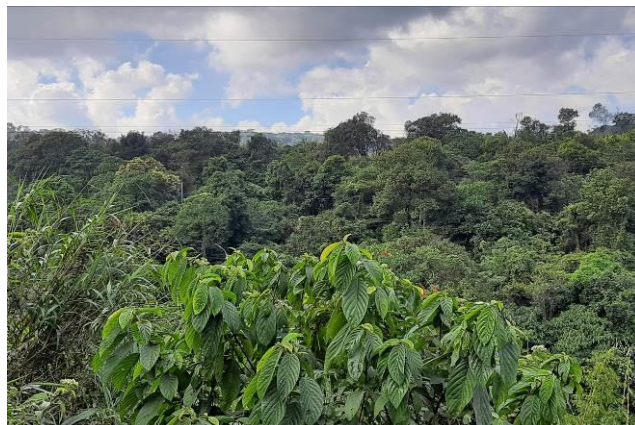
Route Passing through Fallow Land

4.3.2.4 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S

As already mentioned in Section 4.2.2, length of the 33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S is considered from Pole No. FP-12 to 33/11 kV Latyrke (New) S/S constructed at Stunga. Total length of the line is 11.711 km, of which, 8.459 km of the line passes through fallow land, 1.790 km through private forest and the rest 1.462 km through scrub land. The selected line does not pass through any National Highway, Railway crossings, settlement or any other critical environmental area. However, the line is crossing Urle nala between DP-154 and DP-155; unnamed nala between DP-189 and DP-190 and Sutnga road between FP-15 and DP-202.

Since the location of 33/11 kV Latyrke (new) S/S has been changed from Latyrke village to Sutnga village, therefore the route has completely changed. However, line length of final route (**Table 4.1**) has been decreased by 6.089 km i.e. from 17.8 km to 11.711 km. Since the length of the line has decreased therefore, resultant environmental and social footprints have also decreased. As a result, involvement of trees also reduced from 74 to 65 nos. It may be noted that no felling of tree will be required, only lopping of tree branches will suffice for ROW clearance.

The line has total 291 poles. The types of poles used are SP, DP and FP. The maximum span length of 139 m has been provided between FP-12 and DP-151 and 97 m between DP-205 and FP-15 by placing the poles on hill top and cross the valley area, followed by 92 m provided between DP-154 and DP-155 to cross Urle nala. All the pole locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Detail of pole schedule of final route alignment is placed as **Annexure II**.



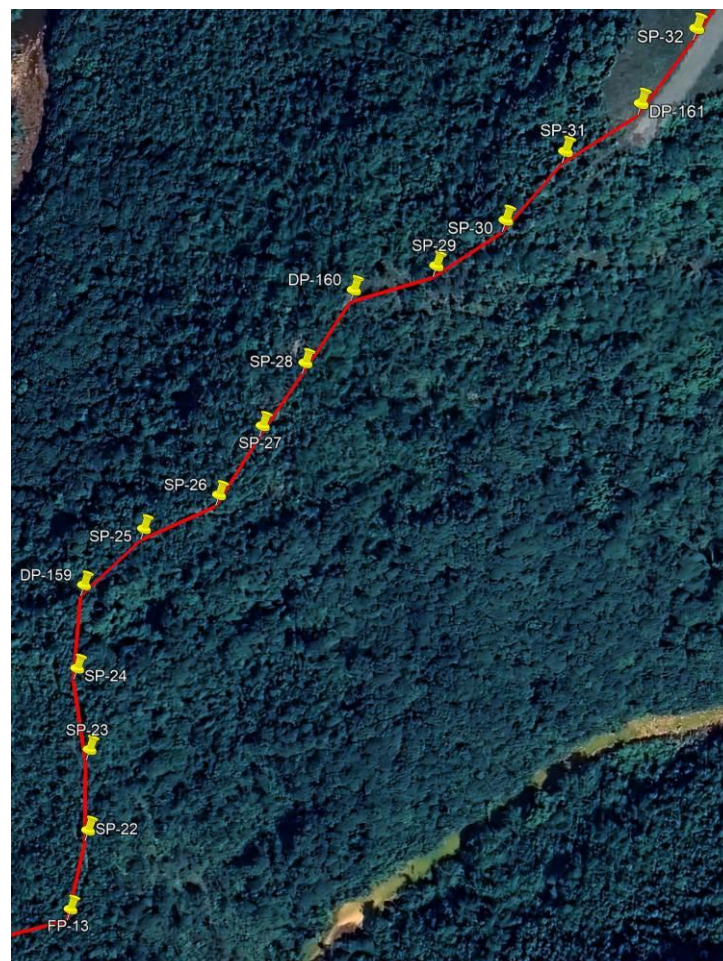
Line Route through Different Landuse



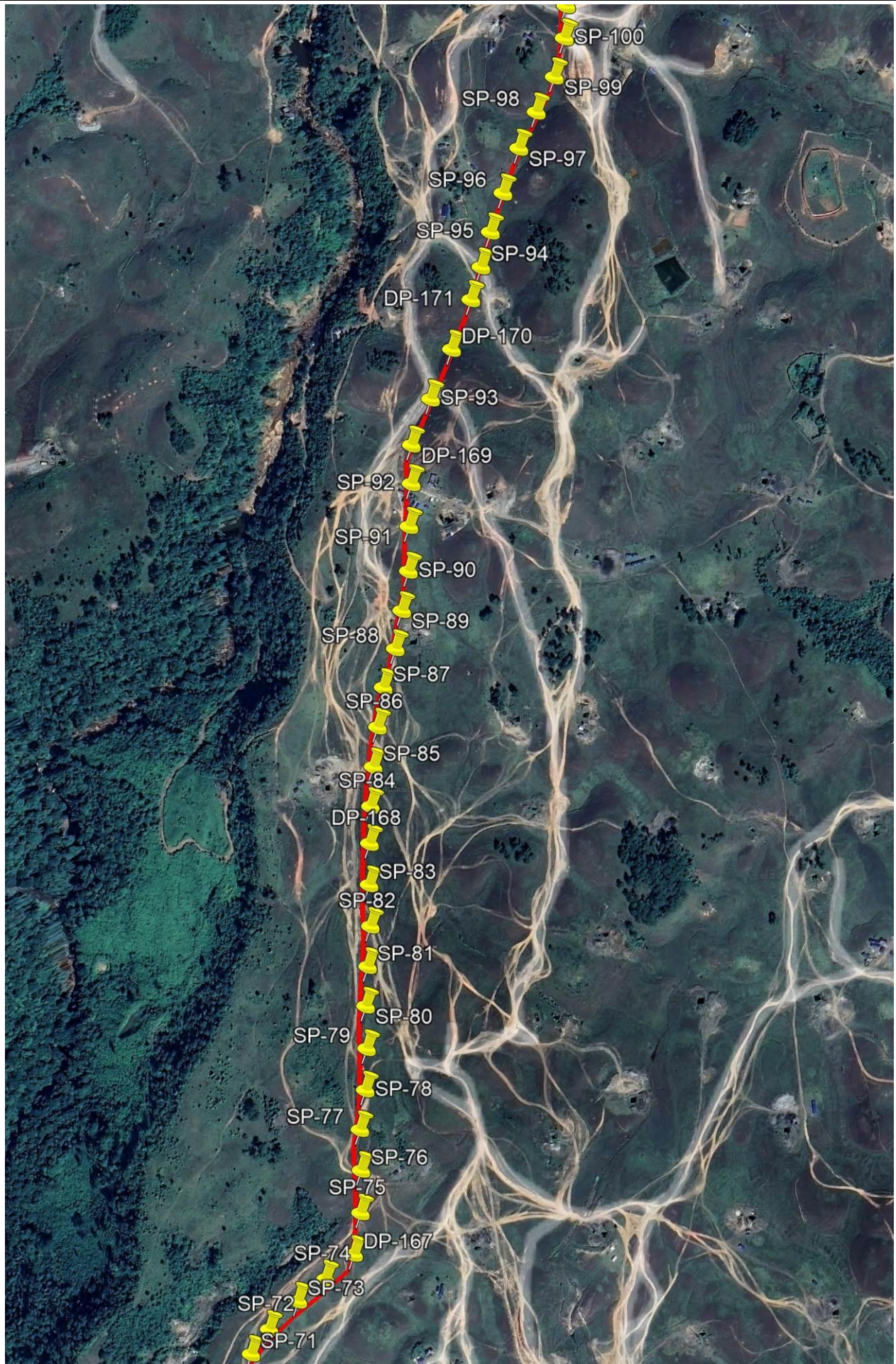
Pole Erected Along the Road



Line Route through Fallow Land



Route Passing through Private Forest Land (FP-13 and DP-161)



Route Passing through Fallow Land

Chapter 5

POTENTIAL ENVIRONMENTAL IMPACTS, EVALUATION AND ITS MANAGEMENT

5.1 INTRODUCTION

Environmental impacts of Transmission & Distribution (T & D) projects are not far reaching and are mostly localized to RoW (refer **Table 5.1**). However, T & D projects have some effects on natural and socio-culture resources. All possible measures have been taken during the finalization of route alignment as described in the earlier chapter for the proposed transmission/distribution system, however, due to the peculiarity of terrain 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 given in ensuing paragraph.

Table 5.1: RoW Width

Transmission Voltage	Max RoW (m)
132 kV	27
33 kV	15

5.2 IMPACT DUE TO PROJECT LOCATION

5.2.1 Resettlement

Land is required for

- construction of substations and
- erection of transmission line

5.2.1.1 Construction of Substation

The project component consists of establishment of one new 132/33 kV sub-station at Mynkre and four new 33/11 kV sub-stations at Mynkre, Rymbai, Lumshnong (Byndihati) and Latyrke (Sutnga). For the establishment of sub-stations fresh lands were secured through private purchased on negotiated rates based on “willing buyer-willing seller basis” on negotiated/market rate. A total of 18.85 acre land has been secured for these sub-stations from 5 private persons who willing sold their land. Since, no involuntary acquisition was involved and fresh lands were secured only through private purchase there is no R & R and resettlement issues. The details are provided below in **Table 5.2**.

Table 5.2: Details of Land Securing Method for New Sub-stations

S. No.	Name of Sub-station	Land Area (acre)	No. of Land Owner	Land Securing Method
A	Transmission Scheme			
1	132/33 kV at Mynkre	16.40	1	willing buyer-willing seller basis
B	Distribution Scheme			
2	33/11 kV at Mynkre	0.49	1	willing buyer-willing seller basis
3	33/11 kV at Rymbai	1.26	1	

S. No.	Name of Sub-station	Land Area (acre)	No. of Land Owner	Land Securing Method
4	33/11 kV Lumshnong at Byndihati	0.36	1	
5	33/11 kV Latyrke at Sutnga	0.34	1	

Source: Detailed Survey of POWERGRID/ Contractor

5.2.1.2 Erection of Transmission Line

In respect of land required for the erection of transmission line, no permanent acquisition is envisaged. Land for tower and right of way is not acquired as existing activities can continue. As explained in previous chapter during line routing stage itself all measures have been undertaken by MePTCL/MePDCL/IA to avoid settlements such as cities, villages etc. in line with the guiding principle of avoidance as per ESPPF. From the description of proposed route alignments and also keeping in mind that no permanent acquisition of land is involved for tower foundation as per existing law, the project does not require any resettlement of villagers. However, some temporary damages/ disturbances can happen. Same is being compensated by the project under Compensation Plan for Temporary Damage (CPTD) to minimize the damages and provide compensation for temporary damages in consultation with the state government and affected persons and/ or community. Details of the loss on the land due to the temporary damages/ disturbances is provided in the ensuing paragraphs.

5.2.1.2.1 Loss of Land for Tower Base & Pole

As per the assessment carried out in CPTD by PGCIL, the land requirement for erection of tower legs is very small i.e. for each leg of tower actual construction is done on a small square area with side length ranging from 0.20 to 0.30 meter depending on the types of tower. Four such square pieces of land will be required to place the legs of tower. The area that becomes unavailable because of the erection of tower legs for an average 132 kV D/c transmission tower ranges from 0.16-0.36 sq m of land. Thus, the actual impact is restricted to 4 legs of the tower and existing activities can continue as clearly depicted in the **Figure 5.1**. In case of 33 kV distribution line area that becomes unavailable because of the erection of pole is insignificant as approx. 1 sq. ft. land area is occupied for one pole (refer **Figure 5.2**). Due diligence confirms that current land use is not altered and resumed after construction.

As already explained, the impact of transmission line is restricted to 4 legs of the tower and existing activities can continue after construction activity is over. The average land area will be unavailable for existing activities after erection of one 132 kV T/L tower and one pole for 33 kV D/L is approx. 0.25 sq m & 0.092 sq m, respectively. Based on above, total land loss for construction of 27.193 km of 132 kV LILO line and 39.521 km of 33 kV distribution line proposed under the present scheme is estimated 131.02 sq m. Details of land loss for tower base & pole are given in **Table 5.2**.

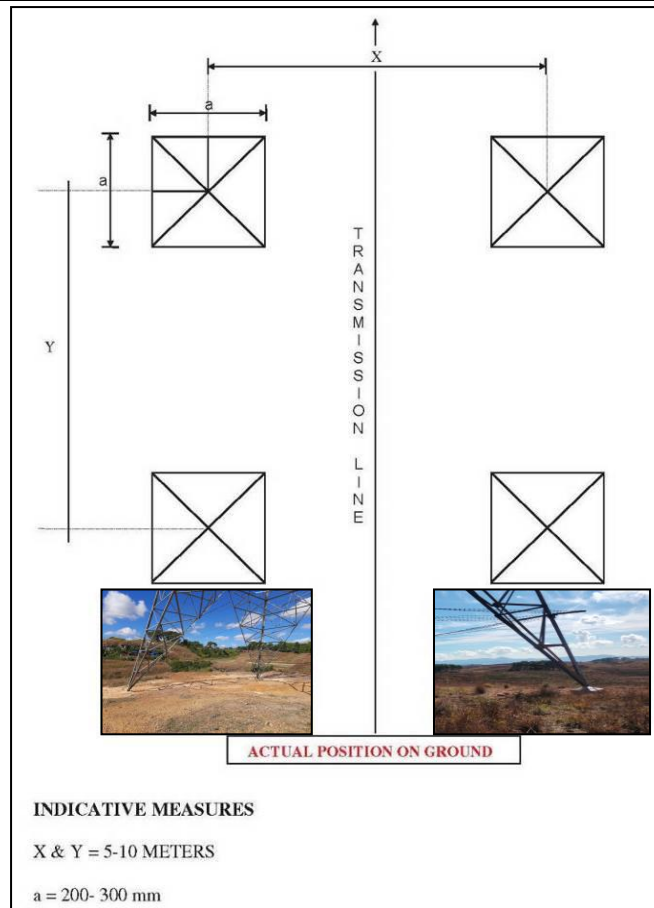


Figure 5.1: Typical Plan of Transmission Line Tower Footing Showing actual Ground Position and Extent of Impact



Figure 5.2: 33 kV Lines (Single & H Pole) Depicting Base Area Impact

Table 5.3: Estimation of Actual Loss of Land for Tower Base & Pole

S. No.	Name of Line	Line Length (Kms.)	Total Tower/ Pole (Nos.)	Land loss per tower/ pole base (sq m)	Total land loss area for tower & pole base (sq m)
A	Transmission Lines				
1	LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre	27.193	88	0.25	22
	TOTAL - A	27.193	88	0.25	22
B	Distribution Lines				
2	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Mynkre (New) S/S	1.618	60	0.092	5.52
3	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Rymbai (New) S/S	15.806	439	0.092	40.388
4	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S	10.386	395	0.092	36.34
5	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S	11.711	291	0.092	26.772
	TOTAL - B	39.521	1185	0.092	109.02
	TOTAL A+B	66.714			131.02

Source: Detailed Survey of POWERGRID/ Contractor

5.2.2 Impact on Crop Area (RoW Corridor & Tower/ Pole)

Construction of line in crop season is avoided as far as possible. In case when installation of towers/poles impacts on agricultural activity, detailed assessment/survey is conducted looking at existing crops, general crop patterns, seasonal particulars, nature and extent of yield. This data is compiled and analysed to study the extent and nature of impact.

For the temporary loss of crops, only agricultural land and private plantation land are considered for estimation. The damages are not done in complete RoW of line (27 m for 132 kV D/c) but mostly restricted to tip to tip of the conductor and tower base area where average affected width/corridor would be limited to 20 m (maximum). In 33 kV distribution lines, damages are minimal (mostly near bi-pole/quad-pole structure) however, 10 m corridor is considered for accessing the damages. Moreover, all efforts were made to reduce the damages to crops and to minimize the impacts whatsoever. One of the reasons is that schedules of construction activities are undertaken in lean season or post-harvest periods. Assets of any sorts were not acquired but during construction, only temporary damages occurred for which the compensation has been/ is being paid to affected persons as per entitlement matrix. As per the entitlement matrix, compensation for the damage to the crop area is paid to the actual cultivator at market rate.

In the present project, impact on the crop area has been occurred due to the installation of tower, stringing of line and construction of approach road for the substations. The type of crop damaged/ impacted are Paddy (Hybrid), Broom Stick and Sapling/ nursery for fruit bearing trees. The details of the impact on crop area and the compensation paid/ being paid is given in **Table 5.4**, **Table 5.5** and **Table 5.6**.

Table 5.4: Details of Impact on Crop Area (Paddy)

S. No.	Loc. No.	Area Damaged (ha)	Yield (Kg/ ha)	Rate/ Kg (Rs.)	Total Amount payable (Rs.)
1	34A2	0.0370	4500	340	56,610
2	34A1/0	0.0754	4500	340	1,15,362
3	32B/0	0.0766	4500	340	1,17,137
4	34A1/0	0.0420	4500	340	64,260
5	32B/0	0.0660	4500	340	1,00,980
6	Gantry	0.0546	4500	340	83,538
TOTAL					5,37,887

Source: Detailed Survey of POWERGRID/ Contractor

Table 5.5: Details of Impact on Crop Area (Broom Stick)

S. No.	Span	Area (Sqm)	Yield/Sqm (kgs)	Total Qty (Kgs)	Rate/Kg (Rs)	Total Amount (Rs.)
1	1A/0 TO 2A/0 & 2A/0 TO 3A/0	80	4	320	70	22,400
2	31B/0 TO 32B/0	64	4	256	70	17,920
3	30B/0 TO 31B/0	243	4	972	70	68,040
4	29A/0 & 27B/0					
a	For Approach Road	1488	4	5952	70	4,16,640
b	During stringing work	360	4	1440	70	1,00,800
		360	4	1440	70	1,00,800
c	For Tower Area (2 nos.)	225	4	900	70	63,000
		225	4	900	70	63,000
5	35B/0,36B/0,37A/0 & 38A/0					
a	For Approach Road	1152	4	4608	70	3,22,560
b	During stringing work	240	4	960	70	67,200
		240	4	960	70	67,200
		240	4	960	70	67,200
		240	4	960	70	67,200
c	For Tower Area (4 nos.)	225	4	900	70	63,000
		225	4	900	70	63,000
		225	4	900	70	63,000
		225	4	900	70	63,000
6	42A/0 to 43A/0	75.9	4	303.6	70	21,252
7	21B/0 to 22B/0	107.9	4	431.6	70	30,212
8	5A/0 to 6A/0	109.5	4	438	70	30,660
9	34A1/0 to Gantry	721	4	2884	70	2,01,880
10	32B/0 to 33B/0					
a	During stringing work	582	4	2328	70	1,62,960
b	For Approach Road	205	4	820	70	57,400
						22,00,324

Source: Detailed Survey of POWERGRID/ Contractor

Table 5.6: Details of Impact on Crop Area (Sapling/ nursery for fruit bearing trees)

S. No.	Span	Name of Sapling Tree	Total Qty (Nos)	Rate/ Sapling	Total Amount (Rs.)
1	1A/0 TO 2A/0 & 2A/0 TO 3A/0	Orange	50	25	1,250
2		Mosambi/Valencia	200	40	8,000
3		Plum	100	30	3,000
	Total				12,250

Source: Detailed Survey of POWERGRID/ Contractor

5.2.3 Impact on Trees

Construction of line in fruit bearing season is avoided as far as possible. Tree compensation is calculated on the basis of tree enumeration, tree species and an estimate of the compensation will be calculated on the basis of 8 years yield (assessed by revenue/horticulture department).

Total number of trees affected due to the construction of 27.193 km of LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre line are 1625 nos. Similarly, estimated number of trees affected/ to be affected due to the construction of 4 distribution lines are 436. It is pertinent to mention here that no tree has been felled, only pollarding/ pruning of trees have been carried out during stringing operation.

The details of the impact on trees and the compensation paid/ being paid is given in **Table 5.7** and **Annexure III**. In addition, MePTCL while applying for the diversion of 11.566 ha of forest land for the sections of Loop In and Loop Out of the LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre have given undertaking to bear the cost of Net Present Value (NPV), cost of raising and maintenance of compensatory afforestation (CA) and/ or penal CA as well as protection and regeneration of safety zone etc.

Table 5.7: Details of Impact on Trees

S. No.	Span	Local Name of Trees	Girth (m)	No. of Trees	Total Volume (Cum)	Class	Rate per Cum. (Rs.)	Total Amount (Rs.)
1	AP 23A/0 To AP 24A/0	Dieng Ngan	0.45	3	0.17	B	2,280.00	392.45
2			0.75	3	0.54		2,280.00	1,226.39
3		Pine	1.05	1	0.47	B	2,280.00	1,068.32
4		Dieng Lyngshing	0.45	2	0.13	B	2,280.00	294.33
5			1.05	3	1.41		2,280.00	3,204.97
6	AP 24A/0 To AP 25A/0	Dieng Ngan	0.45	76	6.70	B	2,280.00	15,280.83
7			0.75	39	12.37		2,280.00	28,206.98
8			1.05	3	2.11		2,280.00	4,807.45
9		Dieng Lakaru	0.45	27	2.41	B	2,280.00	5,494.23
10			0.75	5	1.61		2,280.00	3,679.17
11			1.05	2	0.47		2,280.00	1,068.32
12		Dieng sohpieng	0.45	4	0.32	B	2,280.00	735.83
13		Dieng Lyngshing	0.45	93	7.04	B	2,280.00	16,041.19
14			0.75	17	4.78		2,280.00	10,901.25
15			1.05	5	2.46		2,280.00	5,608.69
16			1.35	7	6.20		3,090.00	19,147.19
17	AP 26A/0 To AP 27A/0	Dieng Ngan	0.45	3	0.13	B	2,280.00	294.33
18			0.75	4	1.05		2,280.00	2,384.65
19		Dieng sohpieng	0.75	3	0.84	B	2,280.00	1,907.72
20		Dieng Lyngshing	1.05	3	0.70	B	2,280.00	1,602.48
21	AP 27A/0 To AP 28A/0	Dieng Nang	0.45	29	1.46	B	2,280.00	3,335.78
22			0.75	13	2.24		2,280.00	5,109.96
23			1.05	3	1.64		2,280.00	3,739.13
24		Dieng sohpieng	0.75	5	1.08	B	2,280.00	2,452.78
25		Dieng Lyngshing	0.45	18	1.13	B	2,280.00	2,575.42
26			0.75	15	3.23		2,280.00	7,358.34

S. No.	Span	Local Name of Trees	Girth (m)	No. of Trees	Total Volume (Cum)	Class	Rate per Cum. (Rs.)	Total Amount (Rs.)
27			1.05	5	2.81		2,280.00	6,409.94
28	AP 22B/0 To AP 23B/0	Dieng Ngan	0.45	48	3.61	B	2,280.00	8,241.35
29			0.75	22	6.22		2,280.00	14,171.63
30			1.05	6	2.87		2,280.00	6,543.48
31			1.35	4	3.39		3,090.00	10,471.12
32			1.95	3	6.46		3,090.00	19,974.53
33		Dieng Lakaru	0.45	15	1.16	B	2,280.00	2,649.00
34			0.75	7	1.91		2,280.00	4,360.50
35			1.05	3	1.41		2,280.00	3,204.97
36		Pine	0.75	4	1.34	B	2,280.00	3,065.98
37			1.05	4	2.64		2,280.00	6,009.31
38		Dieng Lyngshing	0.45	63	4.78	B	2,280.00	10,890.35
39			0.75	18	5.02		2,280.00	11,446.31
40			1.05	7	4.69		2,280.00	10,683.23
41			1.35	4	3.87		3,090.00	11,966.99
42		Dieng sohpieng	0.45	4	0.27	B	2,280.00	613.20
43	AP 23B/0 To AP 24B/0	Dieng Ngan	0.45	14	0.69	B	2,280.00	1,569.78
44			0.75	9	2.30		2,280.00	5,246.23
45			1.05	4	2.64		2,280.00	6,009.31
46		Dieng Lyngshing	0.45	25	1.56	B	2,280.00	3,556.53
47			0.75	9	2.30		2,280.00	5,246.23
48			1.05	4	2.34		2,280.00	5,341.61
49			1.65	6	8.10		3,090.00	25,027.26
50		Dieng Lakaru	0.75	8	2.15	B	2,280.00	4,905.56
51	AP 26B/0 To AP 27B/0	Dieng Ngan	0.45	27	1.72	B	2,280.00	3,924.45
52			0.75	14	3.05		2,280.00	6,949.55
53			1.05	3	2.34		2,280.00	5,341.61
54		Dieng Lakaru	0.45	3	0.10	B	2,280.00	220.75
55		Dieng Lyngshing	0.45	8	0.48	B	2,280.00	1,103.75
56			0.75	4	1.05		2,280.00	2,384.65
57	AP 01A/0 To AP 02A/0	Dieng Ngan	0.45	1	0.05	B	2,280.00	115.43
58		Deing Sohpieng	0.80	1	0.12	B	2,280.00	273.60
59		Pine	0.35	1	0.03	B	2,280.00	69.83
60			0.30	1	0.02		2,280.00	51.30
61			1.00	1	0.31		2,280.00	712.50
62	AP 02A/0 To AP 03A/0	Dieng Nang	0.36	1	0.06	B	2,280.00	129.28
63			0.35	1	0.05		2,280.00	104.74
64			0.35	1	0.03		2,280.00	69.83
65		Dienglieng	1.00	1	0.50	B	2,280.00	1,140.00
66			1.50	1	1.27		2,280.00	2,885.63
67			0.45	1	0.08		2,280.00	173.14
68			0.80	1	0.28		2,280.00	638.40
69			0.35	1	0.05		2,280.00	104.74
70			0.40	1	0.07		2,280.00	159.60
71		Pine	0.80	1	0.28	B	2,280.00	638.40
72			0.80	1	0.24		2,280.00	547.20
73			1.10	1	0.53		3,090.00	1,635.77
74			0.35	1	0.05		2,280.00	104.74
75			0.60	4	0.54		2,280.00	1,231.20

S. No.	Span	Local Name of Trees	Girth (m)	No. of Trees	Total Volume (Cum)	Class	Rate per Cum. (Rs.)	Total Amount (Rs.)
76			0.40	1	0.07		2,280.00	159.60
77			0.40	1	0.08		2,280.00	182.40
78			0.30	1	0.03		2,280.00	76.95
79			1.00	3	1.50		2,280.00	3,420.00
80			2.00	1	2.00		3,090.00	6,180.00
81	AP 31B/0 To AP 32B/0	Dieng Ngan	0.75	3	0.63	B	2,280.00	1,442.81
82		Dieng Lakaru	0.75	4	1.27	B	2,280.00	2,885.63
83		Dieng Lyngshing	0.45	3	0.19	B	2,280.00	432.84
84			0.75	3	1.05		2,280.00	2,404.69
85			1.05	3	1.86		2,280.00	4,241.87
86		Pine	0.75	2	0.35	B	2,280.00	801.56
87	2A/0 to 3A/0	Dieng Nang	0.35	1	0.05	B	2,280.00	122.19
88			1.60	1	1.28		2,280.00	2,918.40
89		Dienglieng	0.35	1	0.06		2,280.00	139.65
90			0.80	1	0.36		2,280.00	820.80
91		Pine	1.80	1	3.04		3,090.00	9,385.88
92			1.10	1	0.76		3,090.00	2,336.81
93			1.60	1	1.60		3,090.00	4,944.00
94	AP 30B/0 To AP 31B/0	Dieng Ngan	0.45	3	0.11	B	2,280.00	259.71
95			1.05	2	0.69		2,280.00	1,571.06
96		Pine	0.45	4	0.15	B	2,280.00	346.28
97	38B/0 to 39B/0	Dieng ngan	0.45 to 1.20	9	0.4384	B	2,280.00	999.28
98		Dienglieng		2	0.3306	B	2,280.00	753.83
99		Dieng Sohphoh		2	0.1838	D	910.00	167.21
100		Dieng Lyngshning		3	0.3600	B	2,280.00	820.80
101	39B/0 to 40B/0	Dieng ngan	0.45 to 1.20	15	2.8064	B	2,280.00	6,398.61
102		Dieng Lyngshning	1.21 & above	3	4.4400	B	3,090.00	13,719.60
103		Dieng Lyngshning	0.45 to 1.20	18	2.2967	B	2,280.00	5,236.52
104	40B/0 to 41B/0	Dieng Laphiang	0.45 to 1.20	19	1.7822	A-II	3,490.00	6,219.83
105		Dieng Laphiang	1.21 & above	2	0.9766	A-II	5,230.00	5,107.42
106		Dieng Lyngshning	0.45 to 1.20	4	0.4242	B	2,280.00	967.22
107		Dienglieng		18	2.2803	B	2,280.00	5,199.11
108	40A/0 to 41A/0	Dieng ngan	0.45 to 1.20	156	27.8818	B	2,280.00	63,570.32
109		Dien Lakaru		5	0.2278	B	2,280.00	519.41
110		Dieng Lyngshning		16	2.9344	B	2,280.00	6,690.38
111		Dienglieng		17	0.884	B	2,280.00	2,016.38
112		Dieng ngan	1.21 & above	9	9.0564	B	3,090.00	27,984.30
113	41A/0 to 42A/0	Dieng ngan	0.45 to 1.20	58	14.9517	B	2,280.00	34,089.92
114		Dieng Lakaru		10	0.6584	B	2,280.00	1,501.24
115		Dienglieng		217	34.2395	B	2,280.00	78,066.13
116		Dienglieng	1.21 & above	10	8.7558	B	3,090.00	27,055.36

S. No.	Span	Local Name of Trees	Girth (m)	No. of Trees	Total Volume (Cum)	Class	Rate per Cum. (Rs.)	Total Amount (Rs.)
117	42A/0 to 43A/0	Dieng ngan	0.45 to 1.20	24	3.016	B	2,280.00	6,876.48
118		Deing Laphiang		2	0.076	A-II	3,490.00	265.24
119		Deing Lakaru		11	0.708	B	2,280.00	1,614.24
120		Dieng Lyngshning		9	0.752	B	2,280.00	1,714.56
121		Dienglieng		28	3.063	B	2,280.00	6,983.64
122	43A/0 to 44A/0	Dieng ngan	0.45 to 1.20	56	4.877	B	2,280.00	11,119.56
123		Dieng Lyngshning		3	0.114	B	2,280.00	259.92
124	1A/0 to 2A/0	Dieng ngan	0.45 to 1.20	2	0.127	B	2,280.00	289.56
125		Dieng sohpieng	0.45 to 1.20	1	0.246	B	2,280.00	560.88
126		Pine	0.45 to 1.20	4	2.756	B	2,280.00	6,283.68
127		Pine	1.21 & above	3	3.809	B	3,090.00	11,769.81
128	4A/0 to 12A/0	Pine	0.45 to 1.20	9	4.737	B	2,280.00	10,800.36
129		Pine	1.21 & above	3	2.392	B	3,090.00	7,391.28
130		Dieng ngan	0.45 to 1.20	3	0.152	B	2,280.00	346.56
131		Dieng Lakaru	0.45 to 1.20	4	0.354	B	2,280.00	807.12
132	22A/0 to 23A/0	Dieng ngan	0.45 to 1.20	5	0.644	B	2,280.00	1,468.32
133		Dieng Lakaru	0.45 to 1.20	1	0.482	B	2,280.00	1,098.96
134		Dieng Lyngshning	0.45 to 1.20	3	1.654	B	2,280.00	3,771.12
135		Pine	0.45 to 1.20	1	0.482	B	2,280.00	1,098.96
136	2B/0 to 3B/0	Pine	0.45 to 1.20	3	1.447	B	2,280.00	3,299.16
137			1.21 & above	5	3.865		3,090.00	11,942.85
138	6B/0 to 11B/0	Pine	0.45 to 1.20	28	9.368	B	2,280.00	21,359.04
139	21B/0	Dieng Ngan	0.45 to 1.20	12	1.108	B	2,280.00	2,526.24
140	to 22B/0		1.21 & above	6	8.779		3,090.00	27,127.11
TOTAL								8,39,163.28

Source: Detailed Survey of POWERGRID/ Contractor

5.2.4 Affected Persons

Affected Persons (APs) are those who are affected due to the various civil works like damage to trees due to pollarding/ pruning or some partial damage to produces during stringing. Though the impact is temporary. The estimated number of affected persons are approximately 40. It is once again pertinent to mention here that persons got affected due to some temporary damages which lasted during construction phase only. The persons details are given in **Table 5.8**. The number of APs in the table refers to the most conservative option. State Utilities/ POWERGRID scheduled the civil works in such a way to minimize impacts and substantially reduce the damages to crops and therefore the number of affected persons and Agricultural Households (AHH).

Table 5.8: Details of Affected Persons

S. No.	Name of Line	Total Affected Persons
A	Transmission Lines	
1	LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre	19
B	Distribution Lines	
2	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Mynkre (New) S/S	1
3	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Rymbai (New) S/S	4
4	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Lumshnong (New) S/S	10
5	33 kV line from 132/33 kV Mynkre (New) S/S to 33/11 kV Latyrke (New) S/S	6
	TOTAL	40

Source: Detailed Survey of POWERGRID/ Contractor

5.2.5 Other Damages

Till date, other damages like bunds, water bodies, fish ponds, approach paths, drainage and irrigation canals etc. have been avoided. However, if damaged in future, the Revenue Department will assess the cost of damage as per State Govt. norms. The total estimate will be submitted for approval to the competent authority. Payments will be made to owners in the presence of local revenue authorities or village head/ Sarpanch and respective acknowledgements will be obtained and POWERGRID/ MePTCL/ MePDCL will pay the compensation. Hindrances to power, telecom carrier & communication lines etc. will be paid as per Govt. norms.

5.2.6 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. In the present project, transmission lines pass through agriculture fields, private plantation area and govt. land (mostly uninhabited and scrub land), where the land-use is not going to change in foreseeable future. Therefore, the value of land is not adversely affected to a significant degree. Moreover, distribution lines are primarily intended to provide power supply to populated area which boost the economic status as well as land price of the area, thus, outweighing possible negative impacts, if any.

5.2.7 Historical/Cultural Monuments/Value

Final routes of transmission and distribution line and sites for construction of new sub-stations don't involve any monuments of historical or cultural significance.

5.2.8 Encroachment into Precious Ecological Areas

In accordance with the policy of route selection, IA/Utility takes all precautions right from the planning stage itself to avoid routing of line through forest, protected areas like national park, wildlife sanctuary, biosphere reserve/ biodiversity hotspot and other ecological sensitive areas. However, involvement of 11.566 ha of forest land for the LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre could not be avoided. As mandated in the Forest (Conservation) Act, 1980, MePTCL vide Proposal Nos. FP/ML/TRANS/38514/2019 dated 22-01-2019 and FP/ML/TRANS/38536/2019 dated 23-01-2019 has already applied for the

diversion of forest. Currently, Stage-I approval has been accorded for the Loop Out section of the line, while, the proposal for the Loop In section of the line is pending at State Government due to EDS raised by Regional Office.

As a compensatory measure, MePTCL while applying for the diversion forest land have given undertaking to bear the cost of Net Present Value (NPV), cost of raising and maintenance of compensatory afforestation (CA) and/ or penal CA as well as protection and regeneration of safety zone etc.

5.2.9 Line into Other Valuable Lands

Other valuable land includes land acquired, though temporarily, for tower base and width of RoW corridor. GoMe has adopted the MoP guidelines on RoW compensation on 15th Dec. 2020. As per said notification the guidelines shall be effective from the date of notification in official gazette. Hence, the provision 15% land compensation for corridor area as per said notification is not applicable in instant case as construction of 132KV line has already been completed before actual date of effectiveness of notification. However, as per prevailing practice 100% compensation for tower footing area have been paid to all affected land owners/farmers. The details about the cost of land compensation is given below in **Table 5.9**.

Table 5.9: Cost of Land Compensation for Tower Base & RoW Corridor

S. No.	Loc. No	Total Area (sq. m)	Rate Per sq. m	Land Compensation Amount (Rs.)	Name of the Land Owner	Name of Village
1	1A/0	90.081	880	79,271.28	Rymbai village	Rymbai
2	2A/0	108.05	3229.00	348893.00	Mr. Pyniaid Lyngdoh	Rymbai
3	3A/0	51.941	880	45,708.08	Rymbai village	Rymbai
4	4A/0	84.126	880	74,030.88	Rymbai village	Rymbai
5	5A/0	58.003	880	51,042.64	Rymbai village	Rymbai
6	6A/0	58.003	880	51,042.64	Rymbai village	Rymbai
7	7A/0	58.003	880	51,042.64	Rymbai village	Rymbai
8	8A/0	58.003	880	51,042.64	Rymbai village	Rymbai
9	9A/0	51.941	880	45,708.08	Rymbai village	Rymbai
10	10A/0	51.941	880	45,708.08	Rymbai village	Rymbai
11	11A/0	67.076	880.00	59,026.88	Smt. Sapha Rymbai	Rymbai
12	12A/0	64.95	880.00	57,156.00	Smt. Sapha Rymbai	Rymbai
13	13A/0	56.34	880.00	49,579.20	Smt. Sapha Rymbai	Rymbai
14	14A/0	51.941	880	45,708.08	Rymbai village	Rymbai
15	15A/0	51.941	880	45,707.95	Rymbai village	Rymbai
16	16A/0	108.535	880	95,510.56	Rymbai village	Rymbai
17	18A/0	67.067	880	59,026.97	Rymbai village	Rymbai
18	19A/0	90.081	880	79,271.21	Rymbai village	Rymbai
19	20A/0	90.081	880	98,931.29	Rymbai village	Rymbai
20	21A/0	108.535	880	95,510.56	Rymbai village	Rymbai
21	22A/0	51.941	880	45,707.95	Rymbai village	Rymbai
22	23A/0	58.003	880	51,042.64	Village Land	Umsatai
23	24A/0	83.73	880	73,682.40	Village Land	Umsatai
24	25A/0	163.40679	880	1,43,797.98	Village Land	Umsatai
25	26A/0	79.779652	880	70,206.09	Village Land	Umsatai
26	27A/0	93.031	880	81,867.28	Village Land	Umsatai
27	28A/0	99.308	880	87,391.04	Village Land	Umsatai

S. No.	Loc. No	Total Area (sq. m)	Rate Per sq. m	Land Compensation Amount (Rs.)	Name of the Land Owner	Name of Village
28	29A/0	186.099	880	1,63,767.12	Village Land	Umsatai
29	31A/0	216.2	880.00	1,90,256.00	Shri. Daplin Dkhar	Umlaper
30	32A/0	58.003	880.00	51,042.64	Shri. Lum Langshiang	Umlaper
31	33A/0	84.181	880.00	74,079.28	Shri. Lum Langshiang	Umlaper
32	34A/0	58.003	880.00	51,042.64	Shri. Lum Langshiang	Umlaper
33	34A1/0	62.917	3228.00	2,03,096.08	Smt. Wilet Nongtdu W/o Sh.P.Rymbai	Umlaper
34	34A2/0	62.917	880	55,366.96	Mr. Phulwot Nongtdu S/o Smt. Risa Nongtdu	Umlaper
35	35A/0	166.539	880	1,46,554.32	Mr. Shibun Lyngdoh S/o Smt. Mon Lyngdoh	Umlaper
36	37A/0	131.92	880.00	116089.00	Sh. Daplin Dkhar	Umlaper
37	38A/0	184.86	880.00	162676.00	Sh. Daplin Dkhar	Umlaper
38	40A/0	88.759	880.00	78,107.92	Shri. Daplin Dkhar	Umlaper
39	41A/0	122.075	880.00	1,07,426.00	Shri. Daplin Dkhar	Umlaper
40	42A/0	315.229	880.00	2,77,401.52	Shri. Daplin Dkhar	Umlaper
41	43A/0	156.85	3229.20	5,06,500.02	Smt. Hino Pala	Umlaper
42	44A/0	139.72	880	1,22,953.60	Mr. Phone Syih	Umlaper
43	44A1/0	55.6	880	48,928.00	Mr. Phone Syih	Umlaper
44	1B/0	145.83	880.00	1,28,330.00	Dorbar Shnong, Rymbai	Rymbai
45	2B/0	84.181	880	74,078.95	Rymbai village	Rymbai
46	2B/0 (New)	176.59	880.00	1,55,399.17	Smt. Poihun Dkhar	Rymbai
47	3B/0	154.35	880.00	82,676.00	Dorbar Shnong, Rymbai	Rymbai
48	3B1/0	196.44	880.00	95,506.00	Dorbar Shnong, Rymbai	Rymbai
49	4B/0	58.003	880	51,042.64	Rymbai village	Rymbai
50	5B/0	51.941	880	45,707.95	Rymbai village	Rymbai
51	6B/0	58.003	880	51,043.04	Rymbai village	Rymbai
52	7B/0	51.941	880	45,707.95	Rymbai village	Rymbai
53	8B/0	51.941	880	45,708.08	Rymbai village	Rymbai
54	9B/0	67.076	880	59,026.88	Rymbai village	Rymbai
55	10B/0	51.941	880	76,872.97	Rymbai village	Rymbai
56	11B/0	60.047	880	80,079.08	Rymbai village	Rymbai
57	12B/0	58.003	880	51,042.64	Rymbai village	Rymbai
58	13B/0	58.003	880	51,042.64	Rymbai village	Rymbai
59	14B/0	74.909	880	65,919.92	Rymbai village	Rymbai
60	16B/0	136.002	880	1,19,681.76	Rymbai village	Rymbai
61	17B/0	66.317	880	58,358.96	Rymbai village	Rymbai
62	18B/0	90.081	880	79,271.28	Rymbai village	Rymbai
63	19B/0	51.941	880	45,708.08	Rymbai village	Rymbai
64	20B/0	58.003	880	61,117.40	Rymbai village	Rymbai
65	21B/0	58.003	880	51,042.64	Village Land	Umsatai
66	22B/0	62.091	880	54,640.08	Village Land	Umsatai
67	23B/0	118.738	880	1,04,489.44	Village Land	Umsatai
68	24B/0	58.003	880	51,042.64	Village Land	Umsatai
69	25B/0	81.849	880	72,027.12	Village Land	Umsatai
70	26B/0	90.081	880	79,271.28	Village Land	Umsatai
71	27B/0	207.25	880	1,82,380.00	Village Land	Umsatai
72	30B/0	108.53	880	95,506.40	Mr. Daplin Dkhar	Umlaper

S. No.	Loc. No	Total Area (sq. m)	Rate Per sq. m	Land Compensation Amount (Rs.)	Name of the Land Owner	Name of Village
73	31B/0	84.181	880	74,079.28	Mr. Michel Dkhar S/o Mr. KO Sianshai	Umlaper
74	32B/0	62.917	3228.00	2,03,096.08	Smt. Wilet Nongtdu W/o Sh.P.Rymbai	Umlaper
75	33B/0	77.89	880	68,543.20	Mr. Phulwot Nongtdu S/o Smt. Risa Nongtdu	Umlaper
76	34B/0	62.091	880	54,640.08	Elaka land	Umlaper
77	34B1/0	204.5	880	1,79,960.00	Mr. Sibun Lyngdoh S/o Smt. Mon Lyngdoh	Umlaper
78	35B/0	136.426	880.00	120054.00	Sh. Daplin Dkhar	Umlaper
79	36B/0	117.36	880.00	103276.00	Sh. Daplin Dkhar	Umlaper
80	38B/0	79.536	880.00	69,991.68	Shri. Daplin Dkhar	Umlaper
81	39B/0	115.208	880.00	1,01,383.04	Shri. Daplin Dkhar	Umlaper
82	40B/0	53.77	880.00	47,317.60	Shri. Daplin Dkhar	Umlaper
83	41B/0	58	880	51,040.00	Mr. Daplin Dkhar	Umlaper
84	42B/0	161.21	3229.20	5,20,579.00	Smt. Batskhem Lapasam	Umlaper
85	42B/0	161.21	3229.20	520579.33	Smt. Batskhem Lapasam	Umlaper
86	43B/0	307.427	880.00	2,70,535.76	Mr. Phone Syih	Umlaper
87	44B/0	141.143	880	1,24,205.84	Mr. Phone Syih	Umlaper
88	Gantry	57.82	880.00	50881.60	Mr. Phulwot Nongtdu S/o Smt. Risa Nongtdu	Umlaper

Source: Detailed Survey of POWERGRID/ Contractor

In case of 33 kV distribution line, area that becomes unavailable because of the erection of pole is insignificant as approximately one sq. ft. land area is occupied for one pole. As already mentioned in Table 5.2, total land loss area for 1185 poles is only 109.02 acre, therefore, land value for pole base is not considered for land compensation.

In line with the compensation procedures laid down in ESPPF & CPTD, compensation have been/ are being paid to affected persons after assessment of actual damage based on market rate and verification by concerned revenue authorities. 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 IV**.

5.2.10 Interference with Other Utilities and Traffic

As per regulations, it is mandatory for IA/MePTCL/ MePDCL 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.

The major connectivity to subproject district is NH-44 that connects Shillong, the state capital of Meghalaya with Sabroom, near India-Bangladesh in Tripura. NH-44 is the main lifeline of

State as it occupies a very strategic position, serving the development needs of surrounding areas, while linking it with other parts of the country. Considering the high traffic load, NHAI has recently undertaken the widening/upgradation work of for safe and smooth movement of traffic in this stretch. The main approach road for accessing the construction sites including five substations is directly through NH or by connecting district roads/ village roads as all proposed substation sites are situated just close to NH (within a distance of 50 m - 15km). Though the traffic density is little high due it strategic position, no steep rise in traffic volume is anticipated/ observed in volume of traffic due to mobilization for said projects.

5.2.11 Interference with Drainage Pattern

As the transmission 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. The transmission & distribution lines proposed under this scheme don't involve any tower/ pole to be placed in river bed which could interfere with existing drainage patterns. The only major river falling en route of the transmission line is Sesyenmpa river. To avoid any interfere, DD towers are being used instead DB/ DC tower as single span limit is crossed in this stretch, further, heights of the tower have been increased by 9 m to avoid any interference, cross-arm strengthening has been suggested. 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.

5.2.12 Impact on Indigenous People

Government of India, under Article 342 of the Constitution, considers the following characteristics to define indigenous peoples [Scheduled Tribes (ST)]:

- i. tribes' primitive traits;
- ii. distinctive culture;
- iii. shyness with the public at large;
- iv. geographical isolation; and
- v. social and economic backwardness before notifying them as a Scheduled Tribe.

Essentially, indigenous people have a social and cultural identity distinct from the 'mainstream' society that makes them vulnerable to being overlooked or marginalized in the development processes. STs, who have no modern means of subsistence, with distinctive culture and are characterized by socio-economic backwardness, could be identified as Indigenous Peoples. Indigenous people are also characterized by cultural continuity. Constitution of India identifies schedule areas which are predominately inhabited by such people. In the whole Meghalaya State, special provisions also have been extended to the Tribal Areas under the 6th Schedule [Articles 244(2) and 244(A) 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.

The project is being implemented in the tribal areas governed by Jaintia Hills Autonomous District Council (JHADC) as per the provisions of Sixth Schedule of the Indian Constitution.

Around 86% of the population of Meghalaya belongs to Schedule Tribes. So, the benefits arising out of the project will largely accrue to tribal population. However, in such ADC area No Objection Certificate (NoC) from concerned land owner/ Headman /Village Council shall be obtained. As stipulated, NoCs have been obtained from all the Headman/ Village Council (refer **Annexure V**). Besides, all social issues shall be dealt separately in accordance with the provisions of Social Management Framework (SMF, A-C) placed in the ESPPF of MePTCL/MePDCL. The SMF has been given as **Annexure VI**.

5.2.13 Environmental & Social Impact Matrix Due to Route Alignment

Based on the above analysis of final route of transmission and distribution lines and location of EHV and DMS sub-stations, the summarized environmental & social impact matrix is presented below in **Table 5.10**.

Table 5.10: Summary of Impacts

S. No.	PARAMETERS	EXTENT OF IMPACT
1. A.	Total Line length - (TL -27.193 km, DL- 39.521 km)	The TL length has increased by just 0.193 km, while the DL length has been increased by approx. 1.621 km. Thus, the total line length has been increased by 1.814 km. Length of the TL has slightly increased when optimized during ground truthing survey. Main reason for the increase of DLs is complete change in the locations of all the four 33/11 kV S/S. Though the length has been increased however, no additional impacts of any kind apart from earlier identified impacts in IEAR/ EMP are anticipated as all the environmental criteria for route selection were adhered to. The only change in the impact as anticipated in IEAR and after detailed survey of new routes is the involvement of no. of trees in the DLs. Though it may be noted that no felling of tree will be required, only lopping of tree branches will suffice for ROW clearance.
B.	Terrain: Hilly	Total 66.714 km of T/L and D/L passes through hilly terrain. Land use beneath this TL is mostly barren/ waste land followed by private forest and agricultural land. Similarly, land use beneath DLs is mostly barren/ waste/ fallow land, followed by scrub land. Provision of revetment retaining walls and drainage channels have been provided to eradicate any impact on soil & surface geology, therefore, no adverse impact is recorded/ anticipated.
2.	Forest land (km)	11.566 ha of private forest (forest as per dictionary meaning) is required to be diverted for the TL. As mandated in the Forest (Conservation) Act, 1980, MePTCL has applied for diversion of this unavoidable forest land. Compensatory measures as stipulated in yet to be awarded Forest Clearance will be strictly adhered to.
3.	Forest type	Private Forest (Forest as per dictionary meaning)
4.	Forest density	0.5
5.	Rare/ endangered flora	No rare/endangered flora found in project area.
6.	Rare/ endangered fauna	No rare/endangered fauna found in project area.
7.	Migrating Wildlife/ breeding ground	NA
8.	National Park / sanctuaries	No protected areas involved
9.	Wet land	None
10.	Soil erodibility	Since the terrain is hilly therefore there is possibility of soil erodibility.

S. No.	PARAMETERS	EXTENT OF IMPACT
		However, adequate measures at tower location and substation have been/ are being undertaken by IA to minimize any such impact. Preventive measures includes construction retaining wall/revetment wall, Unequal Leg Extension (ULE), drainage channels. Accordingly, IA has constructed revetment walls at total 29 locations and ULE at 18 tower locations of LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre line.
11.	Historical / Cultural monuments	None
12.	Total Affected Persons (APs)	As per assessment carried out under CPTD, total APs are 40, of which 19 are due to TLs and 21 are due to DLs. All APs will be compensated as per the Govt. norms.
13.	Relocation of villagers	None
14.	Area of actual land loss under Tower Base	Total 131.02 sq m of actual loss of land will be taking place under tower/ pole base, of which 22 sq m will be under tower base and 109.02 under pole. This loss is temporary in nature i.e. during construction time only. APs are being compensated for actual land loss.
15.	Affected Structures	Nil
16.	Temporary Damage to Crop	The type of crop damaged/ impacted are Paddy (Hybrid), Broom Stick and Sapling/ nursery for fruit bearing trees. The total Paddy area damaged/ impacted is 0.3516 ha, total broom stick area damaged/ impacted is 0.78583 ha and total 350 no of sapling will be damaged/ impacted due to the TL. This loss is temporary in nature i.e. during construction time only. APs are being compensated for actual loss.
17.	Loss/ Hindrance to Public Utilities	Negligible, restricted to construction phase only.

5.3 ENVIRONMENTAL PROBLEMS DUE TO DESIGN

5.3.1 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 and sewage design has been included in tender document to avoid any incidence of land and water contamination. Transformers have been designed with oil spill containment systems having sump of capacity of 200% of oil volume of largest transformer, and purpose-built oil, lubricant and fuel storage system, complete with spill cleanup equipment. Substations include 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 the sites periodically to avoid any contamination.



Oil Spill Containment Systems and Septic Tank at 33/11 kV Mynkre (new) S/S



Oil Spill Containment Systems at 33/11 kV Lumshnong and Latyrke S/S

5.3.2 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. Fires due to flashover from lines can be a more serious problem in forest. However, adequate safety measures are taken to avoid such incidence. In the present project, 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, automatic tripping mechanism for transmission/distribution and substations are being installed so that line gets disconnected in fraction of seconds to prevent fire hazards. Also, fire wall between transformers are being constructed to prevent fire from spreading. Firefighting instruments including fire extinguishers are kept in appropriate place for immediate action in case of any fire hazard.



Fire Wall at 33/11 kV Mynkre and Latyrke S/S

5.3.3 Erosion Hazards due to Inadequate Provision for Resurfacing of Exposed Area

Construction of 132 kV line involves only small-scale excavation of area i.e. 3m L x 3m W x 3m H for tower footing that may result in generation of 108 m³ of excavated material from each tower. In case of 132/33 kV substation foundation, excavation of soil to the tune of 7500 m³ is required depending on site condition. Similarly, in case of 33 kV line, soil excavation is limited to 0.72 m³ for each pole, and for 33/11 kV sub-station, excavation of around 2000 m³ is required. It has been worked out that a total of approximately 25,857.2 m³ (88x108 + 1x7500 + 1185x0.72 + 4x2000) of excavated materials gets generated for construction of 88 towers, 1 new 132/33 kV sub-station, 1185 poles and 4 new 33/11 KV substations proposed under present scheme. However, all the soil excavated for pole footings and substations construction are optimally (about 80-90%) utilized for backfilling and the remaining soil being spread evenly and compacted. Top soil disturbed during the development of sites are used to restore the surface of the platform. Infertile and rocky material are used as fill for substation/ and tower/pole foundations. Hence, possibility of erosion of exposed area due to construction activity is negligible.

5.3.4 Environmental Aesthetics

Since spacing between the towers/poles in case of 132 kV transmission & 33 kV distribution lines is approximately 300 meters and 100 meters, respectively, these don't affect the visual aesthetics of the localities particularly when it is ensured to route the lines as far away from the localities as possible. MePTCL/ MePDCL takes up plantation of trees to buffer the visual effect around its substations and to provide better living conditions. Wherever MePTCL/ MePDCL feels it appropriate, discussions are held with local Forest Department officials to determine feasibility of planting trees along roads running parallel to transmission lines to buffer visual effect in these areas. In addition, towers are painted grey or green to merge with the background.

5.3.5 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. 85 dB as per Indian standards. Transformers with maximum noise emitting level of 75 dB and DG set with proper enclosures are part of equipment specification/ design criteria. 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, regular monitoring by IA/Contractors and due maintenance of equipment are ensured to keep the noise level well within the prescribed limit. Further, to contain the noise level within the permissible limits whenever noise level increases beyond permissible limits, measures like providing sound and vibration dampers and rectification of equipment are undertaken. In addition, plantations of sound absorbing species like Casuarinas, Tamarind, and Neem are raised at all the substations that reduce the sound level appreciably.

5.3.6 Blockage of Wildlife Passage/ Impact on Avifauna

The proposed transmission & distribution lines are passing through mostly waste/ fallow land. Since there is no protected area or demarcated/ documented migration path of wildlife like

elephant corridor existing near to subproject locations, hence, possibility of any disturbance to wildlife is not imminent.

Avian hazards are mostly encountered in bird sanctuaries area, IBAs and fly path of migratory bird predominantly related to nesting site. 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 distance between the conductors, however, as an additional measure to prevent any avian hazards, bird guards/ anti perch devices are integral part of tower design (drawing attached as **Annexure VII**).

5.4 ENVIRONMENTAL PROBLEMS DURING CONSTRUCTION PHASE

5.4.1 Uncontrolled Silt Runoff

As already mentioned, the instant project involves transmission and distribution components. Transmission components involves establishment of one 132/33 kV substation and one 132 kV D/C line. Distribution components involves establishment of four 33/11 kV substations and four 33 kV distribution lines. As per the latest project implementation progress, work of 132 kV D/C line is complete which includes erection of all the 88 towers and stringing of 27.193 km of line, whereas work on 33 kV distribution lines is on hold since March, 2021. Out of the total 1185 poles, most of the poles have been erected whiles major part of the stringing operation is still pending.

As already explained, during construction limited quantity of excavated material is generated from tower/pole foundations. Moreover, excavated soil is backfilled and compacted immediately after erection of tower/ pole. Additionally, other preventative measures such as utilization of leg extension, construction of revetment retaining walls are in place so as to eliminate the chances of uncontrolled silt runoff. Further, excavation is avoided in rainy days. Hence, uncontrolled silt run off is not anticipated. So far there are no instances with potential of erosion during construction of above said lines.

During site visit, it was observed that the work has been on hold since March, 2021. Due to pending works and sites left unattended, chances of silt run off increase at substations. In case of distribution substations, chances of silt run off are still under control as boundary walls have already been constructed and the run off will be confined to the substation area only. However, chances of silt run off at 132/33 kV substation are high as major portion of the work is still pending and the excavated material is left unattended.

During site visit, it was also observed that during construction at 132/33 kV Mynkre substation site, large number of boulders were excavated. (Refer photographs shown below). Such high quantity of boulders were not anticipated during planning stage. Therefore, the contractor had sought advice from IA regarding the disposal of these boulders. Also, there is a seasonal stream at the southern boundary of the substation, and if preventative measures are not undertaken and the site remains left unattended then this stream will get blocked due to the uncontrolled silt runoff coming from this substation.

It may also be noted that the substation land is prone to flash floods during rains. The entire substation site gets submerged in the first Monsoon as the site is located on the down slopes of the surrounding hills with levels ranging from 102 m to 97 m and the natural water drains in the vicinity of the area cannot carry or accommodate water flowing during the heavy rains. As reported, there was no inundation problem prior to the construction of the road leading the Amrit cement Factory. The problem has cropped up due to the blockage of the natural discharge channel after construction of the road. Subsequently, there have been various joint site visits by the committees from MePTCL and POWERGRID to find out the solution to the inundation issue. It was recommended to facilitate the construction of open channel/culvert near the substation area by obtaining the necessary NOC from the village. However, village have not given NOC for the above so far. Meanwhile, POWERGRID has cleaned the drain channel along with the fixing of grating near mouth head of entrance point and thus, there was no such inundation issue observed during last season.

Recently, IA has advised/ instructed contractor to utilize the boulders for stone pitching, a strong and long-lasting method for slope protection, controlling silt runoff and stopping gully development. Thus, it will not only solve the problem of uncontrolled silt runoff but will also provide slope stability and will ensure free flow of stream at the southern boundary of the substation. Moreover, the work has resumed w.e.f. January, 2022 at 132/33 kV Mynkre substation.

With the resumption of work, IA's instruction for utilization of excavated boulders and estimated time of completion of work prior to arrival of monsoon, it is anticipated that uncontrolled silt runoff will not be an issue.



Unattended site at 132/33 kV Mynkre S/S



Excavated Material to be Disposed Off at 132/33 kV Mynkre S/S



Excessive Boulders Requiring Disposal at 132/33 kV Mynkre S/S



Seasonal Stream at the Southern Boundary of the S/S



Nala Cleaning and Grating Work Carried out by PGCIL



Unattended and Unlevelled site at 33/11 kV Mynkre S/S



Unattended and Unlevelled site at 33/11 kV Lumshnong (Byndihati) S/S



Unattended and Unlevelled site at 33/11 kV Latyrke (Sutnga) S/S



Unattended and Unlevelled site at 33/11 kV Rymbai S/S



5.4.2 Nuisance to Nearby Properties

During site selection due care is taken to keep the transmission & distribution lines and substations away from settlements. Further, all the construction activities are 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. The construction activities are normally undertaken in lean period and post harvesting to avoid/minimize such impact. All construction sites of new sub-station are prohibited for general public both due to its separation/demarcation by boundary wall and also due to statutory provisions. Hence, any adverse impact arising during the construction of substation is temporary i.e. will last during construction phase only, and limited to the boundaries of proposed substation only and neither impacts nearby habitat/property nor health & safety of neighboring community.

Boundary wall of all the four distribution substations have been completed. However, at 132/33 kV Mynkre substation, out of 1475 m only 190 m have been constructed. It may be noted that unlike distribution substation where RCC boundary wall have been constructed, boundary wall at 132/33 kV Mynkre substation is to be constructed by RCC material along the northern and western boundary and chain linked/ barbed wire along the southern and eastern boundary. Since there is a seasonal stream and water logging area along the southern boundary, also to keep the substation area inundation free chain linked/ barbed wire fencing have been proposed.



Boundary Wall at 132/33 kV Mynkre Substation



Proposed Site for Boundary Wall at 132/33 kV Mynkre Substation



Boundary Wall and Gate at 33/11 kV Mynkre Substation



Boundary Wall and to be Constructed Gate at 33/11 kV Lumshnong at Byndihati Substation



Boundary Wall and Gate at 33/11 kV Latyrke at Sutnga Substation



Boundary Wall and to be Constructed Gate at 33/11 kV Rymbai Substation

5.4.3 Interference with Utilities and Traffic and Blockage of Access Way

Since all the locations of subprojects are not well connected through rail link, transportation of construction materials was mostly through road network. Access to the site was along existing roads or village paths; minor improvements to paths has been made where necessary.

The transmission and distribution lines do not interfere with telecommunication towers. Further, railway lines and aviation routes are not present in the project locations. Therefore, interfere with utilities and block the access way in this regard is also not at all expected. As and when a transmission line crosses any road, the 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.

5.4.4 Inadequate Resurfacing for Erosion Control

On hill slopes where soil is disturbed and prone to erosion is suitably protected by revetment, breast walls, and proper drainage. In the instant project also, wherever needed revetment retaining wall have been provided at tower location and provision for drainage have been provided in all the substations. In all, revetment retaining wall have has been constructed at 15 tower locations in Loop In section and 14 tower locations in Loop Out section of the LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre. Details of the tower locations provided with revetment retaining wall is given below in **Table 5.11** and shown in the photographs.

Table 5.11: Tower Locations with Revetment Retaining Wall

S. No.	Tower Location (Loop In Section)	S. No.	Tower Location (Loop Out Section)
1	1A/0	1	2B/0
2	20A/0	2	3B/0
3	22A/0	3	3B1/0
4	24A/0	4	10B/0
5	25A/0	5	11B/0
6	26A/0	6	20B/0
7	29A/0	7	27B/0
8	31A/0	8	29B/0
9	34A2/0	9	33B/0
10	37A/0	10	34B1/0
11	38A/0	11	35B/0
12	41A/0	12	39B/0
13	42A/0	13	43B/0
14	43A/0	14	44B/0
15	45A/0		



Retaining Wall at Tower AP-42A/0



Retaining Wall at Tower AP-1A/0

The present project involves establishment of one 132/33 kV substation and four 33/11 kV substations. All the substations are at various stages of construction, therefore, drainage network within the substations is yet not complete. Till date, 33/11 kV Mynkre (new) substation is the only substation where drainage network have been constructed, though not complete. The constructed drainage network till date is shown in the photographs below.



Drainage within the 33/11 kV Mynkre (New) S/S

5.4.5 Inadequate Disposition of Borrow Area

As mentioned earlier the tower/pole foundations involve excavations on small scale basis and the excavated soil is utilized for back filling. In case of substations, generally the sites are selected in such a manner that the volume of cutting is equal to volume of filling avoiding borrowing of the area. In the instant project also, except the 132/33 kV Mynkre substation where excavated material is in excess against the volume required for filling, excavated material is disposed off in the same premises at all the distribution substation only. During site visit it was informed that excess soil may be required for 33/11 kV Latyrke substation at Sutnga. Playground near Syrpoo village has been identified as borrow site if needed, consent from village headman has been taken.



Borrow Site identified, Playground near Syrpoo village (if needed)

5.4.6 Protection of Worker's Health/Safety

All health & safety issues and their management aspects are integral part of project/contract specific safety plan (**Annexure VIII**), which is also part of contract conditions. Various aspects such as, work and safety regulations, workmen's compensation, insurance are adequately covered under the General Conditions of Contract (GCC), a part of bidding documents. 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 Rs 1.0 lakh for each injury and is deducted from the contractor's payment and paid to the deceased/affected family (**Annexure IX**).

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 X**.

Efforts are being made to hire labourers locally to the extent possible, else same have been outsourced. The workers have been provided with PPEs such as boots and helmets. Mock drills 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 is shown to workers for better awareness. Proper drinking water has also been provided. First aid boxes and provisions for treatment in case of emergencies were arranged locally/ nearby towns.

Besides, the COVID-19 pandemic outbreak which not only created unprecedented situation all over world but has also impacted every aspects/ activities including project implementation. Since such pandemic was totally unforeseen/ unexpected, impacts associated with such events/situations were not been specifically included in existing EMPs. However, the existing safety plan and other contract conditions particularly related to labours do have provisions to deal with such extraordinary situations.

Since Govt. of India has enforced The Disaster Management Act, 2005 and Epidemic Diseases Act, 1897, w.e.f. March,2020 in whole of India which empower the GoI & State Govt. to take special measures and prescribe regulations in an epidemic to control the spread of the virus. Provisions of these acts which are also enforceable on all provide that all the protocols of Govt of India and State Govt in respect of COVID-19 are to be mandatorily followed. Individual protocols also required necessary permission from Govt. Therefore, POWERGRID and all its contractors were duty bound to follow the instructions of government including closing of all construction activities during lockdown and the guidelines issued after detailed assessment regarding unlock which allows work to start with certain conditions. Based on this, POWERGRID's Corporate Safety Cell has also prepared a detailed guideline / plan to be followed at all its establishments, Construction sites and O&M during resumption of work in COVID-19 situation and site officials/contractors directed for ensuring strict implementation of the said guidelines. Besides, POWEGRID has provided food relief/exgratia payment to stranded workers and also financial assistance for improvement of health infrastructure/other medical facility/equipment. Measures undertaken at construction Sites in response to COVID-19 are:

- Arrangement of RT PCR /Rapid Antigen test for the labour as per requirement based on symptoms, on contact tracing, upon new workforce joining the existing workforce or upon completion of the quarantine period, as required.
- If the construction works have been stopped due to COVID conditions in the local areas and labour have to be kept idle, providing of food/amenities during such period are being ensured.
- Covid-19 positive labours have been kept in designated quarantine center and all expenditures are being borne by POWERGRID.
- Sanitizers, Face masks, Gloves and other COVID related PPEs are provided for construction workers along with employees. Thermal scanning is being done on daily basis.





Since the work is on halt since March, 2021 compliance for protection of worker's health/ safety could not be carried out. However, the site incharges have ensured full compliance of worker's health/ safety during construction time. No instance of any sort of mis happening with worker's health/ safety also justifies compliance of worker's health/ safety. Staff of IA i.e. PGCIL designated as Environment, Health and Safety Engineer also confirmed the compliance of worker's health/ safety during construction time and has maintained the records of site inspection (**Annexure XI**)

5.5 ENVIRONMENTAL PROBLEMS RESULTING FROM OPERATION

5.5.1 O&M Staff/Skills Less Than Acceptable Resulting in Variety of Adverse Effects

The O& M program is normally 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 is 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. Monthly monitoring reports are generated and appraised to Management, including a report of corrective action taken and a schedule for future action.

MePTCL/ MePDCL follows the best international practices while designing its system to maintain acceptable prescribed Electro Magnetic Field (EMF) level. The ICNIRP guideline for acceptable EMF level for the general public (up to 24 hours a day) is a maximum exposure level of 1,000 mG or 100 μ T. Further, because of health and safety issues such as fire safety, safe voltages on metallic parts of buildings, and safety clearances to avoid flashover, the transmission lines do not pass directly over any residential properties and as such the potential for EMF effects to occur is further diminished.

Poly Chlorinated Biphenyls (PCBs) due to their high heat capacity, low flammability and low electrical conductivity were extensively used as insulating material in capacitors and transformers. But after the finding that these PCBs are non-biodegradable and have carcinogenic tendency, their use in electrical equipment as insulating medium has been banned all over the world long back. However, it has been reported in some studies that

chances of contamination of oil with PCB is possible. Keeping that in mind, MePTCL/ MePDCL has discontinued procurement of electrical equipment containing PCB more than 2 mg/kg and specification (as per IEC 61619 or ASTM D4059) is being stated in the tender document. Moreover, the subject scheme doesn't involve replacement of any PCB containing equipment, hence no disposal of such equipment is anticipated.

5.6 CRITICAL ENVIRONMENTAL REVIEW CRITERIA

5.6.1 Loss of Irreplaceable Resources

In the instant project none of the project elements encroach upon any protected areas and ecologically sensitive areas hence, the problem of losing natural resources is not anticipated. However, acquisition of 11.566 ha of private forest (forest by dictionary meaning) is unavoidable due to the technical, financial and operation & maintenance viability of the 4.28 km section of the LILO of both circuits of MLHEP – Khliehriat 132 kV D/C line at Mynkre line passing through this private forest. As per the inspection/ assessment of state Forest Department no endangered species is involved in this 11.566 ha of forest land. As a mitigation measure/ management plan/ compensation to the impact caused due to the unavoidable acquisition of forest land, MePTCL, while applying for the diversion of forest land has given undertakings to provide all the compensation for compensatory afforestation and NPV as laid down in the to be obtained Forest Clearance.

5.6.2 Accelerated Use of Resources for Short-term Gains

The subprojects are not making use of any natural resources occurring in the area during construction and are not utilizing the same during maintenance phases. The construction material such as tower members, cement etc. are being sourced from factories while the excavated soil is being reused for backfilling to restore the surface. During construction of transmission line, very small quantity of water is required which is met from nearby existing source or through tankers. However, for substation water requirement is met mostly by ground water derived by digging a borewell during construction as well as for operational stage. Moreover, provision of rain water harvesting in all proposed substations under the present scheme has been made to conserve precious water resources and enhance the ground water level. The aggregates used for construction are already available within substation area due to cutting, thus no new borrow area will be created. 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.

5.6.3 Endangering of Species

As described earlier, no endangered species of flora and fauna exist in the subprojects area getting affected and considering aerial nature of transmission and distribution project, there is no possibility of endangering/ causing extinction of any species.

5.6.4 Promoting Undesirable Rural-to Urban Migration

The subprojects will not cause 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.

5.7 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. Public is informed about the project at every stage of execution. During survey, MePTCL/ MePDCL & POWERGRID site officials met people and informed them about the routing of transmission and distribution lines. During the construction, every individual, on whose land tower is erected and people affected by RoW, were consulted. Apart from this, Public consultation using different technique like Public Meeting, Small Group Meeting, informal Meeting have been 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 MSPCL approach to minimizing and solving them;
- Trees and crop compensation process.

In the instant project also, many group meetings were organized (informally and formally) by IA & MePTCL/ MePDCL in all villages where the interventions are happening. These meetings were attended by Village Panchayat members, senior/respected person of village, interested villagers/general public and representatives from MePTCL/ MePDCL & IA. To ensure maximum participation, prior intimation in local language was given and such notices were also displayed at prominent places/panchayat office etc. During consultations/interaction processes with people of the localized areas, MePTCL/ MePDCL field staffs explained benefit of the project, impacts of transmission line, payment of compensation for damaged of crops, trees, huts etc. as per The Indian Electricity Act, 2003 and The Indian Telegraph Act, 1885 and measures to avoid public utilities such as schools, hospital etc. People more or less welcomed the construction of the proposed project. Various issues inter alia raised by the people during public consultation and informal group meetings are as follows;

- To involve village headman during survey work/finalization of line corridor;
- To engage local people in various works associated with construction of line and if required proper training may be provided to engage them.
- To provide flexibility in disbursement of compensation;
- Direct payment of compensation to affected land owners and expeditious disbursement of compensation.

Also, during site visits, consultations were conducted with various stake holders belonging to community and affected people. Target group included contractor, IA & MePTCL/ MePDCL Staff and villagers. These consultations were carried out to capture the views of stakeholders about the project plan, design and layout of the project, environmental and social impacts, compensation process, benefits or drawback of the project etc.

It needs to be emphasized that public consultation was kept restricted due to the apprehensions of IA and contractors for security and other law & order related issues which were communicated and advised to field team at onset of field surveys itself and hence limited stakeholder consultations have been carried out. However, it was ensured that consultations representatively covered most stakeholders involved. Major findings of the consultations are summarized below:

- People are well aware about the project, its various components and confirmed that IA & MePTCL/ MePDCL informs about the project at every stage of execution.
- Considering that the state of electricity supply in the state is very weak, 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 IA & MePTCL/ MePDCL 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 also confirmed that their common property resources such as cemetery, school, community hall, habitation areas etc. have been 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
- The contractor labor informed that they have been provided with PPEs such as boots and helmets.
- Mock drills such as fire safety, first aid etc. are conducted periodically to enhance the preparedness level. Safety induction & awareness programme including HIV/AIDS are also conducted. Safety film for transmission project in local language is shown for better awareness.
- First aid boxes and provisions for treatment in case of emergencies are arranged locally/ nearby towns.
- It was revealed that contractor and IA work with close coordination with village heads and community to avoid any misunderstanding during work

Details of public consultation meetings carried out during site visit and public consultation using different technique like Public Meeting, Small Group Meeting, informal Meeting undertaken by IA & MePTCL/ MePDCL including minutes of meeting, list of participants and photographs are enclosed as **Annexure XII**.

5.8 COMPLIANCE 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 its proper 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. As part of the present study, mitigation measures as stipulated in the IEAR have been critically assessed/evaluated for compliance through physical inspection, verification of record/ documents/ drawing, interaction with project officials/contractor/ villagers/construction workers and PRA etc. Based on above, a detailed compliance status w.r.t. each identified impacts enlisted in EMP have been prepared and is presented in **Table 5.12**.

Table 5.12: Compliance of EMP

Cl. 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 clearances as stipulated under CEA's regulations, 2010 (Measures related to safety & electric supply) are 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 equipments are being procured.
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. MePTCL/ MePDCL follows the best international practices while designing its system to maintain acceptable prescribed Electro Magnetic Field (EMF) level. Designed as per guidelines of ICNIRP and ACGIH and checked by CPRI & M/s PTI, USA
4	Substation location and design	Exposure to noise	Design of plant enclosures to comply with noise regulations.	Complied with. Transformers with maximum noise emitting level of 75 dB specified in tender specifications. Sound proof enclosures used for D.G sets
		Social inequities	Careful selection of site to avoid encroachment of socially, culturally and archaeological	Complied with. No encroachment of any socially sensitive areas

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
			sensitive areas (i. g. sacred groves, graveyard, religious worship place, monuments etc.)	due to proposed substations.
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	Partially Complied with. Part of detailed alignment survey and design. No tower/pole located in water bodies. The work is on halt since March, 2021 and if the work is not completed before monsoon than the unattended excavated material at 132/33 kV Mynkre substation will block the stream near the southern boundary of the substation.
		Social inequities	Careful route selection to avoid existing settlements and sensitive locations	Complied with. Part of detailed tower/pole alignment survey design. All socially sensitive areas including habitated areas avoided for TLs. However, DLs due to their functional mandate are bound to pass through habited areas.
			Minimise impact on agricultural land	Complied with. 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. 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. e. sacred groves, graveyard, religious worship place, monuments etc.)	Complied with. All settlements & ecologically sensitive areas avoided.

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
6	Involuntary acquisition or permanent land acquisition for substation.	Social inequities	Compensation and R&R measures as per provision of RFCTLARRA, 2013	Since no involuntary acquisition of land is involved, there is no R&R issue.
7	Line through protected area/ precious ecological area	Loss of precious ecological values/ damage to precious species	Avoid siting into such areas by careful site and alignment selection (National Parks, Wildlife Sanctuary, Biosphere Reserves/ Biodiversity Hotspots) Minimize the need by using RoW wherever possible	Complied with. Part of detailed siting and alignment survey/design. All such areas are avoided
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 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., if applicable	Not Applicable as there are no wildlife corridors Complied with. All such identified/ established birds migratory path have been avoided.
9	Line through forestland	Deforestation and loss of biodiversity, edge effect	Avoid siting of line by careful site and alignment selection Minimise the need by using existing towers, tall towers and RoW, wherever possible Measures to avoid invasion of alien species	Complied with. All efforts and criteria laid down for route selection have been adhered to avoid forest land. However, considering the financial, technical, operation and maintenance viability of the project, acquisition of 11.566 forest is unavoidable for the establishment of TL. Complied with. Only one tower is proposed in the forest land. Towers are constructed on hill top to minimize the impact due to RoW. Height of the towers have also been increased. Invasion of alien species not anticipated

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
			Obtain statutory clearances from the Government	Complied with. As per the Forest Conservation Act, 1980, MePTCL has already applied for the diversion of forest land.
			Consultation with autonomous councils wherever required	Complied with. NOC have been obtained from the village councils.
10	Lines through farmland	Loss of agricultural production/ change in cropping pattern	Use existing tower or footings wherever possible	Complied with. While passing through agricultural land construction activities are scheduled mostly during lean period so that damage to standing crop is avoided. However, full compensation as per assessment of revenue authorities is paid to land owner/farmer in case of inevitable damages.
			Avoid siting new towers on farmland wherever feasible	
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, 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.	Complied with. Part of detailed equipment design /drawings. Designed with oil spill containment systems having sump of capacity of 200% of oil volume of largest transformer.
			Substations to include drainage and sewage disposal systems to avoid offsite land and water	Complied with. Proper drainage and sewage system are part of

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
			pollution.	detailed substation layout and design /drawings based on site condition.
14	Equipment 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 firefighting equipment	Complied with. Part of detailed substation layout and design /drawings. Compliance assured by site manager
			Provision of firefighting equipment to be located close to transformers	Complied with. Part of detailed substation layout and design /drawings. Compliance assured by site manager
Construction				
16	Equipment layout and installation	Noise and vibrations	Construction techniques and machinery selection seeking to minimize ground disturbance.	Complied with (Refer Section 5.3.5). Noise produced by 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 (Refer Section 5.2.3). Excavations not done during monsoon which is the cropping period. However, full compensation as per assessment of revenue authorities are being paid to land owner/ farmer by IA/MePTCL/MePDCL in case of inevitable damages. Till date no grievance has been received in this regard
18	Mechanized construction	Noise, vibration and operator safety, efficient operation	Construction equipment to be well maintained.	Complied with (Refer Section 5.3.5). Some noise is unavoidable during day time but no noise at night as no work is being undertaken at night. Noise levels’ measurements are done regularly by IA & Construction contractor. Noise level measured during site visits to all active sites found to be

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
				within permissible limits (<75 dB). Till date no grievance has been received in this regard
		Noise, vibration, equipment wear and tear	Turning off plant not in use.	Complied with.
19	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. Existing roads and tracks have been used for construction and maintenance.
		Increased land requirement for temporary accessibility	New access ways restricted to a single carriageway width within the RoW.	Complied with. Most of the tower locations are easily accessible through existing roads/ paths. All substations sites are located close to existing road.
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 (Refer Section 5.4.2). Excavated areas are barricaded and restriction to enter work site during construction have been strictly followed. Till date no grievance has been received in this regard
		Local traffic obstruction	Coordination with local authority/ requisite permission for smooth flow of traffic	Complied with. 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 authorities wherever necessary.
21	Temporary blockage of utilities	Overflows, reduced discharge	Measure in place to avoid dumping of fill materials in sensitive drainage area	Complied with (Refer Section 5.3.5). No dumping is observed. All overburden is 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.	Complied With. Prior to undertaking clearance, marking has been undertaken to ensure minimal removal of

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
				vegetation during detailed survey. Minimum trees have been felled for construction of T&D network and sub-stations.
			No use of herbicides and pesticides	Not Applicable
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 With. Regulated felling in RoW is being carried out with the permission of owner and revenue authorities keeping required 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.	Complied With. Actual damage/tree felling is minuscule and limited 3m strip below each conductor and not in entire RoW. However, after stringing natural vegetation is allowed to regrowth in all these cleared strips except for one strip which is kept clear of vegetation for maintenance purpose. In remaining RoW area, only pruning/ pollarding is done to maintain electrical clearance.
			Felled trees and other cleared or pruned vegetation to be disposed of as authorized by the statutory bodies.	Complied With. Felled trees are handed over to land owner. IA/MePTCL/MePDCL 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 is being 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	Partially Complied with (Refer Section 5.4.1). Soil backfilled and excess spread out evenly and compacted in case of tower/ pole. In case of substation, excavated soil is not properly stored

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
				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 (Refer Section 5.4.1, 5.4.4 & 5.4.5). Excavated soil used optimally for backfilling and distribution within the substations' boundary is adequate. However, excess soil may be required for 33/11 kV Latyrke substation at Sutnga. Playground near Syrpoo village has been identified as borrow site if needed, consent from village headman has been taken.
		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.
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 Already explained at clause no. 23.
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	Partially Complied with (Refer Section 5.4.1 & 5.4.4) Excavated soil optimally used. Backfilling and spreading of excess soil within substation area undertaken by project authorities. However, quantity of the boulders excavated at 132/33 kV Mynkre substation is more than expected and more than the required quantity for filling within sub-station The contractor has sought advice from IA regarding the disposal of these boulders.
29	Storage of chemicals and	Contamination of	Fuel and other hazardous materials securely	Proper compliance to be ensured.

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
	materials	receptors (land, water, air)	stored above high flood level.	To be stored in designated area inside the premise at most sites.
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 (Refer Section 5.4.6). As assured by the IA.
32	Influx of migratory workers	Conflict with local population to share local resources	Using local workers for appropriate asks	Complied with (Refer Section 5.4.6). Local workforces have been given preference based on skill levels.
33	Lines through farmland	Loss of agricultural productivity	Use existing access roads wherever possible	Complied with. Observation already provided at Clause no 19 above. Repair/restoration done immediately wherever required. Till date no grievance has been received in this regard.
			Ensure existing irrigation facilities are maintained in working condition	
			Protect /preserve tops soil and reinstate after construction completed	
			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 being paid to land owner after assessment by revenue authorities. It is suggested that project authorities expedite process for early payment
34	Uncontrolled erosion/silt runoff	Soil loss, downstream siltation	Need for access tracks minimised, use of existing roads.	Complied with (Refer Section 5.4.1). Observation already provided at Clause no 19 above. Construction during monsoon avoided as far as possible.
			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	
35	Nuisance to nearby properties	Losses to neighbouring land uses/ values	Contract clauses specifying careful construction practices.	Complied with (Refer Section 5.4.2). Good construction practices with proper

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
			As much as possible existing access ways will be used	scheduling of construction activities observed in all active sites. No major deviation with respect to contract conditions by the contractor found/reported
			Productive land will be reinstated following completion of construction	
		Social inequities	Compensation will be paid for loss of production, if any.	Observation already provided at Clause no 33 above.
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 with. Good construction management practices are being employed at sites to avoid blockage of natural drainage and resultant flooding.
37	Equipment submerged under flood	Contamination of receptors (land, water)	Equipment stored at secure place above the high flood level (HFL)	Proper compliance to be ensured (Refer Section 5.4.1). Substations are constructed above HFL. However, if work is not completed before monsoon and proper mitigation measures are undertaken that there are chances of inundation at 132/33 kV Mynkre substation.
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. Observation already provided at Clause no 26 above.
39	Health and safety	Injury and sickness of workers and members of the public	Safety equipment's (PPEs) for construction workers	Complied with (Refer Section 5.4.6). As assured by the IA.
			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	More specific and periodic awareness/ training on IEAR, ESPPF etc. requirements for effective implementation/ monitoring of provisions of IEAR, ESPPF and contract conditions to achieve
			Implementation of effective environmental monitoring and reporting system using checklist of all contractual environmental	

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
			requirements	100% compliance.
			Appropriate contract clauses to ensure satisfactory implementation of contractual environmental mitigation measures.	
Operation and Maintenance				
41	Location of line towers/poles and overhead/ underground 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.	Complied/Being complied. Route alignment criterion is part of survey contract which was followed thoroughly during construction and no incident have been reported so far.
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	Complied/Being complied. The line routes don't form part of any such areas. Moreover, no incident of injury /mortality of avifauna due to construction of lines have been reported from any sites so far.
43	Equipment submerged under flood	Contamination of receptors (land, water)	Equipment installed above the high flood level (HFL) by raising the foundation pad.	Complied/ Being complied. Already part of detailed substation design.
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.	Complied/ being complied Oil sump of sufficient capacity already provided for each transformer which was also part of detailed substation design. However, no spillage of transformer oil is observed/ reported so far.
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	Complied/ being complied. Regular monitoring and controlled inventory is ensured to avoid any leakage of SF6.
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	Complied/ being complied. All safety related precautions/ systems/ plans are in place. Proper safety training for workers are being conducted on regular interval including mock drills on fire and other
			Safety awareness raising for staff.	
			Preparation of fire emergency action plan and training given to staff on implementing	

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
			emergency action plan	occupational hazards. However, more training to be conducted to create awareness on use of PPEs /safety gear.
			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	Complied/ being complied. Used of technology like tripping line/substation in milliseconds in case of any hazards. Boundary and Security fences are maintained at each substation. Sufficient barriers with warning signages are maintained at appropriate places of line/substation. Further, regular awareness/ mock drill on electrical safety and other occupational hazards are being undertaken.
			Security fences around substations	
			Barriers to prevent climbing on/ dismantling of transmission	
			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.	Being complied. Regular trainings are being imparted to staffs engaged in O & M activity based on their skill at regular interval
			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.	Being complied.
50	Equipment specifications and design parameters	Release of chemicals and gases in receptors (air, water, land)	Processes, equipment and systems using chlofluorocarbons (CFCs), including halon, should be phased out and to be disposed of in a manner consistent with the requirements of the Govt.	Complied/ Being complied. Already part of equipment specification (CFC Free)
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	Complied/ Being complied. Designed as per guidelines of ICNIRP and ACGIH and checked by CPRI &M/s PTI, USA.
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	Being complied.
53	Noise related	Nuisance to neighbouring	Substations sited and designed to ensure noise	Complied/ being complied.

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
		properties	will not be a nuisance.	The average noise level reported at the boundary of substation is well within permissible limit.

5.9 CONCLUSIONS

It is vivid from the above discussion that all transmission & distribution line routes and substations location have been selected judiciously by considering the 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 as a result careful route selection IA could able to avoid ecologically & socially sensitive areas including forest, protected areas, PCR etc. completely in all the lines and substations being implemented under this project.

The provisions of IEAR & EMP are being implemented at ground level and strict compliance by construction contractors is ensured through regular monitoring by IA. So far, no major impacts apart from earlier identified impacts are anticipated due to such changes in scope. 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.

It has also emerged from the survey & PRA exercise that the PAPs were appreciative of the project and hoped that the power scenario would improve after commissioning of the project. Local people also benefited through project related employment that was being generated. However, following suggestions may be considered to further improve the safeguard measures and also enhance the environmental sustainability of project.

- 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.
- Along with labours, supervisors, engineers and Staff of Implementing Agency (IA) should also need to follow the health and safety precautions.
- Need of regular induction and training program for labours and engineers at all sites.
- Training for PMU staff regarding monitoring and implantation of EMP as proposed in IEAR.
- Records of labour registration, health checkup of labours and other working staff need to be maintained at all sites and strictly monitoring to avoid engagement of child labour.
- Training and awareness regarding cleanliness and solid waste disposal to maintain the hygiene in the labour camps and construction sites.
- Demarcation and protection for sites where work has been on hold due to various reasons to avoid accidents and runoff of excavated soil from construction sites
- Project staff of the implementing agency should be well versed with the contents of the IEAR so as to ensure proper compliance by the contractors.

Overall, the commissioning of the project will augment the power distribution and availability in the region which will further catalyze economic activity and development of the area/region.

Chapter 6

MONITORING AND ORGANIZATION 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 consists 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) make 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 meeting. 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 IA, POWERGRID endeavours 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 Unit (ESMU) 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, MoEF&CC 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 MoEF&CC 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 is religiously complied in time bound manner. Additionally, review meeting among MoP, GoI, 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 GoI/ 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/ MePDCL 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 adherences to the clauses by the contractors are regularly monitored especially in respect of various implementations of 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 was 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, it was observed that mitigation measures as suggested in IEAR are mostly complied with even though some gaps were found with respect to proper documentation and condition of labour camp at one of the DMS sub-station.

6.4 GRIEVANCE REDRESSAL MECHANISM (GRM)

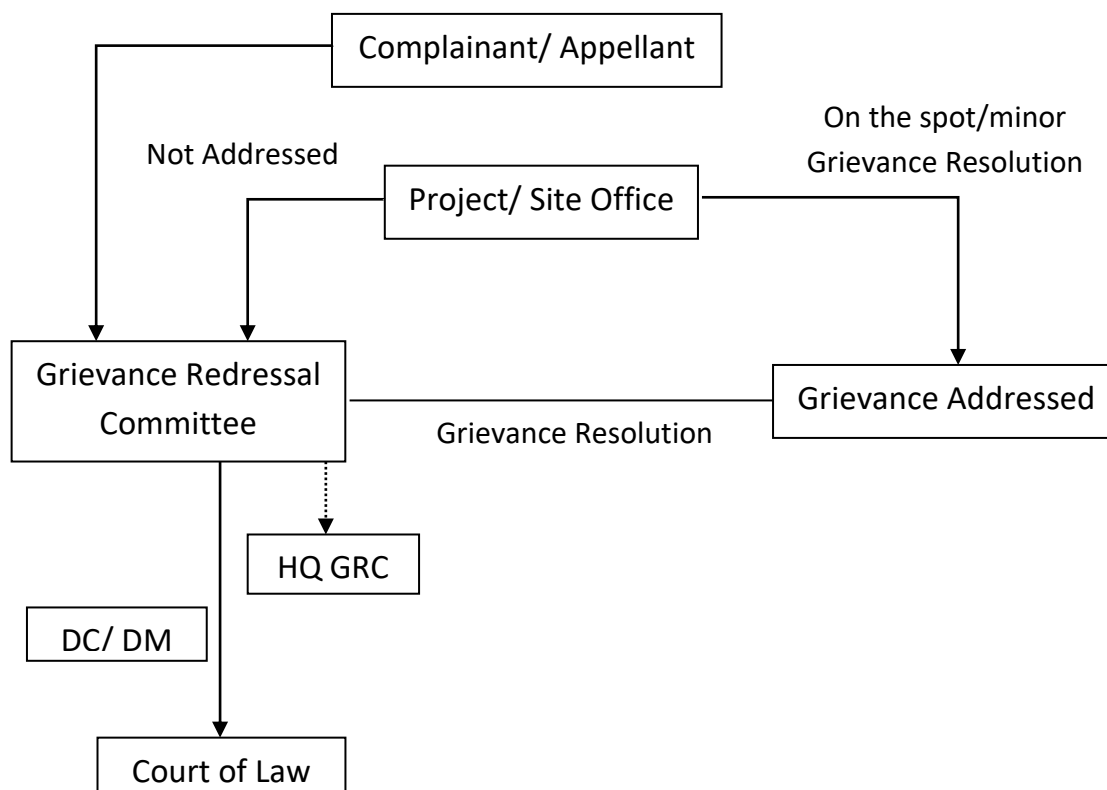
Grievance Redress Mechanism (GRM) is an integral and important mechanism for addressing/resolving the concern and grievances in a transparent and swift manner. In accordance with the provision in ESPPF, Grievance Redress Committees (GRC) have to be constituted in Meghalaya both at the project/site level 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 XIII**.

Apart from above, grievance redressal is in built in crop/tree/tower footing 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 random checking by the district 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.

The flow chart showing Grievance Redressal Mechanism is presented below.



The above referred GRCs are meant to act as supplement/ complement and in no way substitute the legal systems, especially embedded within RFCTLARR Act 2013, The Electricity Act, 2003, and Right to Information Act.

6.4.1 Grievances Received & Resolved

Till date only verbal grievances have been received at site during project execution. These grievances were resolved at the site itself. Details of complaints received up to November, 2021 are given in **Table 6.1**.

Table 6.1: Details of Complaints

S. No.	Name of the Subproject /State	Location	Name of complainants	Date of complaints	Main Issue of complaints	Status of complaint
A. Court Cases						
No Court Case has been registered so far against any subprojects under NERPSIP						
B. Written Complaints						
No written complaint has been received so far						
C. Verbal Complaints						
No verbal complaint has been received so far						

ANNEXURE I

List of Angiosperm

List of Angiosperms

A. Trees

S. No.	Family	Scientific Name	S. No.	Family	Scientific Name
1	Altingiaceae	<i>Altingia excelsa</i>	31	Lamiaceae	<i>Callicarpa arborea</i>
2	Anacardiaceae	<i>Mangifera indica</i>	32	Lamiaceae	<i>Gmelina arborea</i>
3	Anacardiaceae	<i>Mangifera sylvatica</i>	33	Lamiaceae	<i>Tectona grandis</i>
4	Apocynaceae	<i>Alstonia scholaris</i>	34	Lauraceae	<i>Cinnamomum bejolghota</i>
5	Araliaceae	<i>Brassaiopsis glomerulata</i>	35	Lythraceae	<i>Lagerstroemia parviflora</i>
6	Araliaceae	<i>Trevesia palmata</i>	36	Lythraceae	<i>Duabanga grandiflora</i>
7	Arecaceae	<i>Caryota urens</i>	37	Magnoliaceae	<i>Magnolia champaca</i>
8	Betulaceae	<i>Alnus nepalensis</i>	38	Magnoliaceae	<i>Magnolia liliifera</i>
9	Bignoniaceae	<i>Oroxylum indicum</i>	39	Malvaceae	<i>Kydia calycina</i>
10	Bombacaceae	<i>Bombax ceiba</i>	40	Malvaceae	<i>Pterospermum acerifolium</i>
11	Burseraceae	<i>Canarium strictum</i>	41	Meliaceae	<i>Azadirachta indica</i>
12	Burseraceae	<i>Garuga pinnata</i>	42	Meliaceae	<i>Chukrasia tabularis</i>
13	Calophyllaceae	<i>Mesua ferrea</i>	43	Meliaceae	<i>Toona ciliata</i>
14	Cannabaceae	<i>Trema orientalis</i>	44	Moraceae	<i>Artocarpus heterophyllus</i>
15	Cannabaceae	<i>Celtis australis</i>	45	Moraceae	<i>Ficus auriculata</i>
16	Combretaceae	<i>Terminalia myriocarpa</i>	46	Moraceae	<i>Ficus cunea</i>
17	Cornaceae	<i>Alangium chinense</i>	47	Moraceae	<i>Ficus semicordata</i>
18	Dilleniaceae	<i>Dillenia indica</i>	48	Moraceae	<i>Morus macroura</i>
19	Euphorbiaceae	<i>Balakata baccata</i>	49	Moringaceae	<i>Moringa oleifera</i>
20	Euphorbiaceae	<i>Macaranga denticulata</i>	50	Myrtaceae	<i>Syzygium tetragonum</i>
21	Euphorbiaceae	<i>Ostodes paniculata</i>	51	Pandanaceae	<i>Pandanus dubius</i>
22	Fabaceae	<i>Acrocarpus fraxinifolius</i>	52	Phyllanthaceae	<i>Bischofia javanica</i>
23	Fabaceae	<i>Albizia chinensis</i>	53	Phyllanthaceae	<i>Phyllanthus emblica</i>
24	Fabaceae	<i>Albizia procera</i>	54	Rhamnaceae	<i>Ziziphus jujuba</i>
25	Fabaceae	<i>Albizia saponaria</i>	55	Rubiaceae	<i>Haldina cordifolia</i>
26	Fabaceae	<i>Bauhinia purpurea</i>	56	Rubiaceae	<i>Mussaenda roxburghii</i>
27	Fabaceae	<i>Dalbergia pinnata</i>	57	Simaroubaceae	<i>Ailanthus integrifolia</i>
28	Fabaceae	<i>Erythrina variegata</i>	58	Simaroubaceae	<i>Rhus javanicus</i>
29	Fagaceae	<i>Castanopsis indica</i>	59	Theaceae	<i>Schima wallichii</i>
30	Juglandaceae	<i>Engelhardtia spicata</i>			

B. Shrubs

S. No.	Family	Scientific Name	S. No.	Family	Scientific Name
1	Acanthaceae	<i>Barleria cristata</i>	12	Asteraceae	<i>Chromolaena odorata</i>
2	Acanthaceae	<i>Justicia adhatoda</i>	13	Clusiaceae	<i>Garcinia lanceifolia</i>
3	Acanthaceae	<i>Phlogacanthus thyrsoiflorus</i>	14	Combretaceae	<i>Combretum decandrum</i>
4	Acanthaceae	<i>Strobilanthes auriculatus</i>	15	Costaceae	<i>Costus speciosus</i>
5	Actinidiaceae	<i>Actinidia callosa</i>	16	Ericaceae	<i>Vaccinium griffithianum</i>
6	Adoxaceae	<i>Viburnum grandiflorum</i>	17	Euphorbiaceae	<i>Ricinus communis</i>
7	Araliaceae	<i>Trevesia palmata</i>	18	Fabaceae	<i>Desmodium triflorum</i>
8	Arecaceae	<i>Calamus erectus</i>	19	Lamiaceae	<i>Ocimum tenuiflorum</i>
9	Arecaceae	<i>Calamus floribundus</i>	20	Lamiaceae	<i>Rotheca serrata</i>
10	Arecaceae	<i>Calamus tenuis</i>	21	Malvaceae	<i>Sida rhombifolia</i>
11	Asteraceae	<i>Artemisia capillaris</i>	22	Malvaceae	<i>Triumfetta bartramia</i>
			23	Malvaceae	<i>Urena lobata</i>

S. No.	Family	Scientific Name
24	Malvaceae	<i>Grewia hirsuta</i>
25	Melastomataceae	<i>Melastoma malabathricum</i>
26	Melastomataceae	<i>Osbeckia crinita</i>
27	Melastomataceae	<i>Oxyspora paniculata</i>
28	Musaceae	<i>Musa balbisiana</i>
29	Oleaceae	<i>Jasminum elongatum</i>
30	Phyllanthaceae	<i>Sauropus androgynus</i>
31	Poaceae	<i>Bambusa khasiana</i>
32	Poaceae	<i>Bambusa pallida</i>
33	Poaceae	<i>Chimonobambusa callosa</i>
34	Poaceae	<i>Dendrocalamus giganteus</i>

S. No.	Family	Scientific Name
35	Poaceae	<i>Dendrocalamus hamiltonii</i>
36	Poaceae	<i>Dendrocalamus strictus</i>
37	Primulaceae	<i>Myrsine semiserrata</i>
38	Rosaceae	<i>Rubus paniculatus</i>
39	Rubiaceae	<i>Luculia pinceana</i>
40	Rutaceae	<i>Murraya paniculata</i>
41	Scrophulariaceae	<i>Buddleja asiatica</i>
42	Solanaceae	<i>Datura stramonium</i>
43	Urticaceae	<i>Debregeasia longifolia</i>
44	Urticaceae	<i>Girardinia diversifolia</i>
45	Verbenaceae	<i>Lantana camara</i>

C. Herbs

S. No.	Family	Scientific Name
1	Acanthaceae	<i>Justicia mollissima</i>
2	Amaranthaceae	<i>Achyranthes aspera</i>
3	Apiaceae	<i>Centella asiatica</i>
4	Apocynaceae	<i>Catharanthus roseus</i>
5	Araceae	<i>Alocasia fornicata</i>
6	Araceae	<i>Arisaema concinnum</i>
7	Araceae	<i>Colocasia esculenta</i>
8	Asteraceae	<i>Acmella paniculata</i>
9	Asteraceae	<i>Ageratum conyzoides</i>
10	Asteraceae	<i>Bidens pilosa</i>
11	Asteraceae	<i>Chromolaena odorata</i>
12	Begoniaceae	<i>Begonia palmata</i>
13	Caryophyllaceae	<i>Brachystemma calycinum</i>
14	Caryophyllaceae	<i>Drymaria diandra</i>
15	Chenopodiaceae	<i>Chenopodium album</i>
16	Commelinaceae	<i>Commelina benghalensis</i>
17	Commelinaceae	<i>Cyanotis vaga</i>
18	Convolvulaceae	<i>Turbina racemosa</i>
19	Crassulaceae	<i>Bryophyllum pinnatum</i>
20	Cyperaceae	<i>Carex longipes</i>
21	Cyperaceae	<i>Cyperus rotundus</i>
22	Euphorbiaceae	<i>Euphorbia hirta</i>
23	Fabaceae	<i>Desmodium triflorum</i>
24	Fabaceae	<i>Mimosa pudica</i>
25	Fabaceae	<i>Senna tora</i>
26	Lamiaceae	<i>Leucas ciliata</i>
27	Malvaceae	<i>Abutilon indicum</i>
28	Orchidaceae	<i>Calanthe mannii</i>
29	Orchidaceae	<i>Corybas purpureus</i>

S. No.	Family	Scientific Name
30	Orchidaceae	<i>Cymbidium elegans</i>
31	Orchidaceae	<i>Dendrobium chrysanthum</i>
32	Orchidaceae	<i>Vanda coerulea</i>
33	Oxalidaceae	<i>Oxalis corniculata</i>
34	Phyllanthaceae	<i>Phyllanthus niruri</i>
35	Plantaginaceae	<i>Plantago asiatica</i>
36	Plantaginaceae	<i>Plantago major</i>
37	Poaceae	<i>Arundinella nepalensis</i>
38	Poaceae	<i>Chrysopogon aciculatus</i>
39	Poaceae	<i>Cynodon dactylon</i>
40	Poaceae	<i>Eragrostis amabilis</i>
41	Poaceae	<i>Imperata cylindrica</i>
42	Poaceae	<i>Phragmites karka</i>
43	Poaceae	<i>Poa annua</i>
44	Poaceae	<i>Saccharum spontaneum</i>
45	Poaceae	<i>Thysanolaena latifolia</i>
46	Polygonaceae	<i>Fagopyrum acutatum</i>
47	Polygonaceae	<i>Persicaria capitata</i>
48	Polygonaceae	<i>Persicaria chinensis</i>
49	Solanaceae	<i>Physalis minima</i>
50	Solanaceae	<i>Solanum americanum</i>
51	Urticaceae	<i>Elatostema sessile</i>
52	Urticaceae	<i>Pilea glaberrima</i>
53	Urticaceae	<i>Pouzolzia fulgens</i>
54	Urticaceae	<i>Urtica dioica</i>
55	Violaceae	<i>Viola diffusa</i>
56	Zingiberaceae	<i>Alpinia nigra</i>
57	Zingiberaceae	<i>Globba marantina</i>
58	Zingiberaceae	<i>Hedychium spicatum</i>

D. Climber

S. No.	Family	Scientific Name
1	Araceae	<i>Pothos scandens</i>
2	Asteraceae	<i>Mikania micrantha</i>
3	Primulaceae	<i>Embelia subcoriacea</i>
4	Ranunculaceae	<i>Clematis gouriana</i>
5	Combretaceae	<i>Combretum decandrum</i>
6	Piperaceae	<i>Piper betle</i>
7	Vitaceae	<i>Tetrastigma angustifolium</i>

ANNEXURE II

Details of Tower & Pole Schedule

UNIQUE STRUCTURES & TOWERS LTD

TW-02 LILO of both circuits of 132kV D/C MLHEP - Khliehriat TL at Mynkre

Client:- Power Grid Corporation of India Limited.

TOWER SCHEDULE OF LOOP-IN LINE

Sl. No.	Location No.	Tower No.	Type of Tower	GPS Coordinate (UTM)		Angle of Deviation	Reduced level at the center of location	Span (M)	Section Length (M)	Cum. Route Length (M)	Crossing details & Remarks if any	Village (Area)
				Easting	Northing							
1	2		3	4	5	6	7	8	9	10	11	12
1	EXT 62	EXT 62	DB+0	432274	2801255		1137.795					RYMBAI
2	AP-1A/0	45	DD+0	432323	2801276	48°44'50" RT	1132.393		66.000	66.000		RYMBAI
3	AP-2A/0	44	DC+7.5	432482	2801225	27°22'15" RT	1153.200	180.000		246.000	NALLA	RYMBAI
4	AP-3A/0	43	DB+0	432689	2800971	02°28'02" LT	1146.470	305.000		551.000	M. ROAD	RYMBAI
5	AP-4A/0	42	DB+6	432949	2800693	05°59'35" LT	1129.808	407.000		958.000	11KV LINE	RYMBAI
6	AP-5A/0	41	DC+0	433138	2800498	22°02'40" RT	1120.312	275.000		1233.000	M. ROAD, 11KV LINE	RYMBAI (MOOIANG)
7	AP-6A/0	40	DC+0	433203	2800328	22°24'40" RT	1119.696		180.000	1413.000	M. ROAD	RYMBAI (FEFE)
8	AP-7A/0	39	DC+0	433213	2800088	16°23'35" RT	1112.300	245.117		1658.117		RYMBAI (FEFE)
9	AP-8A/0	38	DC+0	433162	2799860	20°13'55" LT	1108.449	230.000		1888.117	M. ROAD	RYMBAI (FEFE)
10	AP-9A/0	37	DB+0	433196	2799599	11°43'40" RT	1106.259	259.000		2147.117	NALLA, M. ROAD	RYMBAI (FEFE)
11	AP-10A/0	36	DB+0	433171	2799389	02°28'50" LT	1099.100	213.000		2360.117		RYMBAI (FEFE)
12	AP-11A/0	35	DB+3	433146	2799019	03°54'15" LT	1080.542	379.000		2739.117	NALLA	RYMBAI (FEFE)

Arvind Kumar
Field Engineer
NEKPSIP, POWER GRID
Khliehriat, Meghalaya

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Field Engineer
NEKPSIP, POWER GRID
Khliehriat, Meghalaya

Sl. No.	Location No.	Tower No.	Type of Tower	GPS Coordinate (UTM)		Angle of Deviation	Reduced level at the center of location	Span (M)	Section Length (M)	Cum. Route Length (M)	Crossing details & Remarks if any	Village (Area)
				Easting	Northing							
13	AP-12A/O	34	DC+0	433146	2798773	21°19'40" RT	1087.934	246.000	246.000	2985.117	NALLA	RYMBAI (FEFE)
14	AP-13A/O	33	DB+0	433113	2798638	10°14'50" LT	1072.469	274.000	274.000	3259.117	3	RYMBAI (FEFE)
15	AP-14A/O	32	DB+0	432982	2798153	11°30'20" LT	1061.491	369.000	369.000	3628.117	VALLEY	RYMBAI (P.H.E. AREA)
16	AP-15A/O	31	DB+0	432981	2797903	11°40'20" RT	1051.867	252.000	252.000	3880.117		RYMBAI (P.H.E. AREA)
17	AP-16A/O	30	DD+3	432926	2797623	30°05'18" RT	1047.246	358.100	285.000	4165.117	M. ROAD	RYMBAI (P.H.E. AREA)
18	AP-18A/O	29	DB+3	432695	2797349	03°37'37" RT	1041.145	161.500	358.100	4523.217	NALLA	RYMBAI (P.H.E. AREA)
19	AP-19A/O	28	DD+0	432599	2797220	06°35'15" LT	1017.764	149.800	161.500	4684.717		RYMBAI (P.H.E. AREA)
20	AP-20A/O	27	DD+0	432525	2797090	05°25'35" LT	976.583	548.200	149.800	4834.517	VALLEY	RYMBAI (P.H.E. AREA)
21	AP-21A/O	26	DD+3	432298	2796591	50°16'09" LT	1010.183	353.000	548.200	5382.717	CART TRACK	RYMBAI (P.H.E. AREA)
22	AP-22A/O	25	DB+0	432452	2796271	05°40'44" RT	1006.488	320.000	353.000	5735.717	VALLEY	RYMBAI (P.H.E. AREA)
23	AP-23A/O	24	DC+0	432561	2795973	19°18'32" LT	981.885	291.340	320.000	6055.717	VALLEY	UMSATAI
24	AP-24A/O	23	DC+0	432745	2795748	20°34'41" RT	962.340	543.200	291.340	6347.057	VALLEY	UMSATAI
25	AP-25A/O	22	DD+6	432920	2795237	38°46'31" LT	947.471	252.100	543.200	6890.257	VALLEY	UMSATAI
26	AP-26A/O	21	DB+0	433132	2795102	02°44'28" RT	926.768		252.100	7142.357		UMSATAI

Amir

28/11/2023

Amir (F.E.)

Amir Kumar
Field Engineer
POWER GRID
Mazda

28/11/2023

Amir

Sl. No.	Location No.	Tower No.	Type of Tower	GPS Coordinate (UTM)		Angle of Deviation	Reduced level at the center of location	Span (M)	Section Length (M)	Cum. Route Length (M)	Crossing details & Remarks if any	Village (Area)
				Easting	Northing							
27	AP-27A/0	20	DD+0	433464	2794882	46°38'15" RT	917.742	395.236	395.236	7537.593		UMSATAI
28	AP-28A/0	19	DD+0	433520	2794566	05°59'19" LT	891.708	324.140	324.140	7861.733	VALLEY	UMSATAI
29	AP-29A/0	18	DD+9	433651	2794306	11°27'22" RT	843.095	294.100	294.100	8155.833	NALLA	UMSATAI
30	AP-31A/0	17	DD+9	433873	2793459	22°58'12" LT	792.486	879.000	879.000	9034.833	SESYENMPA RIVER	UMLAPER
31	AP-32A/0	16	DC+0	434031	2793275	22°31'30" RT	827.121	241.365	241.365	9276.198		UMLAPER
32	AP-33A/0	15	DD+0	434110	2792977	52°48'31" LT	818.292	300.855	300.855	9577.053	NALLA	UMLAPER
33	AP-34A/0	14	DC+0	434301	2792899	15°19'28" LT	814.293	210.000	210.000	9787.053	NALLA	UMLAPER
34	AP-34A1/0	13	DD-3	434373	2792885	04°16'02" LT	804.388	74.412	74.412	9861.465	EARTWIRE D. CUT	UMLAPER
35	AP-G-1	12	LLG	434474	2792883	00°00'00"	805.528	100.000	100.000	9961.465	400KV D/C P-B LINE & HILL CUTTING	UMLAPER
36	AP-34A2/0	11	DD-3	434503	2792881	31°54'00" RT	806.046	30.768	30.768	9992.233	EARTWIRE D. CUT	UMLAPER
37	AP-35A/0	10	DD+9	434668	2792769	35°51'35" RT	814.621	198.770	198.770	10191.003		UMLAPER
38	AP-37A/0	9	DC+7.5	434899	2792244	07°52'10" LT	829.644	583.373	583.373	10774.376	VALLEY	UMLAPER
39	AP-38A/0	8	DD+6	434981	2792087	07°42'08" RT	818.101	175.084	175.084	10949.460		UMLAPER
40	AP-40A/0	7	DB+6	435134	2791770	07°35'43" LT	769.903	352.721	352.721	11302.181	VALLEY	UMLAPER

2/9/2020

(F.E)

Amud Kumar
F.E

POWER GRID

2/9/2020

Sl. No.	Location No.	Tower No.	Type of Tower	GPS Coordinate (UTM)		Angle of Deviation	Reduced level at the center of location	Span (M)	Section Length (M)	Cum. Route Length (M)	Crossing details & Remarks if any	Village (Area)
				Easting	Northing							
41	AP-41A/0	6	DD+3	435272	2791528	45°35'37" LT	748.501	279.120	279.120	11581.301	CART TRACK	UMLAPER
42	AP-42A/0	5	DD+18	435549	2791458	34°01'22" RT	728.786	283.420	283.420	11864.721	CART TRACK	UMLAPER
43	AP-43A/0	4	DC+9	435771	2791255	16°15'11" LT	726.471	288.102	288.102	12152.823	AMRIT CEMENT ROAD, 132KV D/C LINE	UMLAPER
44	AP-44A/0	3	DD+6	436008	2791090	32°37'17" LT	735.906	301.750	301.750	12454.573	NALLA	UMLAPER
45	AP-44A1/0	2	DB+0	436227	2791078	11°00'38" RT	721.106	219.622	219.622	12674.195		UMLAPER
46	AP-45A/0	1	DD+0	436322	2791053	14°54'17" RT	706.670	98.365	98.365	12772.560		UMLAPER
47	GANTRY			436352	2791024	00°00'00"	705.343	43.316	43.316	12815.876		UMLAPER
Route Length:- 12.816 Kms.												

For- UNIQUE STRUCTURES & TOWERS LIMITED		For- POWER GRID CORPORATION OF INDIA LIMITED	
Survey by 	Checked by 	Submitted by 	Recommended by 
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			

UNIQUE STRUCTURES & TOWERS LTD

TW-02 LILO of both circuits of 132kV D/C MLHEP - Khliehriat TL at Mynkre

Client:- Power Grid Corporation of India Limited.

TOWER SCHEDULE OF LOOP-OUT LINE

Sl. No.	Location No.	Tower No.	Type of Tower	GPS Coordinate (UTM)		Angle of Deviation	Reduced level at the center of location	Span (M)	Section Length (M)	Cum. Route Length (M)	Crossing details & Remarks if any	Village (Area)
				Easting	Northing							
1	2	3		4	5	6	7	8	9	10	11	12
1	EXT 66	EXT 66	DC+0	433291	2801865	21°29'02" RT	1135.441					RYMBAI
2	AP-1B/0	43	DD+6	433269	2801803	37°06'34" LT	1124.589	66.000	66.000	66.000		RYMBAI
3	AP-2B/0 (N)	42	DD+3	433342	2801461	45°58'19" RT	1131.193	344.000	344.000	410.000		RYMBAI
4	AP-3B/0	41	DC+6	433228	2801276	17°38'25" LT	1130.683	230.660	230.660	640.660		RYMBAI
5	AP-3B1/0	40	DD+3	433137	2800925	37°32'50" LT	1131.130	364.177	364.177	1004.837		RYMBAI
6	AP-4B/0	39	DC+0	433176	2800782	14°15'35" RT	1132.736	236.240	236.240	1241.077		RYMBAI (MOOIANG)
7	AP-5B/0	38	DB+0	433270	2800403	02°56'30" RT	1124.668	308.040	308.040	1549.117		RYMBAI (FEFE)
8	AP-6B/0	37	DC+0	433302	2800138	17°26'45" RT	1117.777	270.370	270.370	1819.487		RYMBAI (FEFE)
9	AP-7B/0	36	DB+0	433254	2799900	13°23'56" LT	1111.820	245.680	245.680	2065.167		RYMBAI (FEFE)
10	AP-8B/0	35	DB+0	433257	2799618	02°20'41" LT	1109.628	275.060	275.060	2340.227		RYMBAI (FEFE)
11	AP-9B/0	34	DB+3	433257	2799311	04°23'15" RT	1090.272	310.450	310.450	2650.677		RYMBAI (FEFE)
								528.400				

Arind

28/06/2021

Arind Kumar

Arind Kumar
Civil Engineer

POWER GRID

Arind Kumar

Sl. No.	Location No.	Tower No.	Type of Tower	GPS Coordinate (UTM)		Angle of Deviation	Reduced level at the center of location	Span (M)	Section Length (M)	Cum. Route Length (M)	Crossing details & Remarks if any	Village (Area)
				Easting	Northing							
12	AP-10B/0	33	DB+0	433256	2798785	07°08'25" RT	1082.284	255.160	528.400	3179.077	VALLEY	RYMBAI (FEFE)
13	AP-11B/0	32	DC+0	433208	2798531	15°25'16" RT	1062.296	389.020	255.160	3434.237	VALLEY	RYMBAI (FEFE)
14	AP-12B/0	31	DC+0	433035	2798168	22°59'43" LT	1062.169	305.030	389.020	3823.257	VALLEY	RYMBAI (FEFE)
15	AP-13B/0	30	DC+0	433046	2797881	15°52'11" RT	1056.975	442.120	305.030	4128.287	VALLEY, M. ROAD	RYMBAI (FEFE)
16	AP-14B/0	29	DC+3	432927	2797493	17°13'08" RT	1047.706	303.890	442.120	4570.407		RYMBAI (P.H.E. AREA)
17	AP-16B/0	28	DD+6	432736	2797221	18°26'15" RT	1026.131	250.100	303.890	4874.297	VALLEY	RYMBAI (P.H.E. AREA)
18	AP-17B/0	27	DC+0	432546	2797045	28°32'22" LT	971.123	491.020	250.100	5124.397		RYMBAI (P.H.E. AREA)
19	AP-18B/0	26	DD+0	432372	2796601	46°55'45" LT	1007.058	291.390	491.020	5615.417		RYMBAI (P.H.E. AREA)
20	AP-19B/0	25	DB+0	432464	2796343	13°20'15" LT	1008.974	166.240	291.390	5906.807		RYMBAI (P.H.E. AREA)
21	AP-20B/0	24	DC+0	432557	2796195	16°49'30" RT	996.727	297.507	166.240	6073.047	VALLEY	RYMBAI (P.H.E. AREA)
22	AP-21B/0	23	DC+0	432648	2795916	18°07'15" LT	975.719	284.114	297.507	6370.554	VALLEY	UMSATAI
23	AP-22B/0	22	DC+0	432837	2795693	20°04'10" RT	957.184	445.210	284.114	6654.668	VALLEY	UMSATAI
24	AP-23B/0	21	DD+3	432962	2795268	45°08'11" LT	943.459	349.587	445.210	7099.878	VALLEY	UMSATAI
25	AP-24B/0	20	DC+0	433307	2795123	18°33'10" RT	938.748		349.587	7449.465	VALLEY	UMSATAI

Arif

27/06/20

Arif (F.E)

Arif (F.E) near GRID
NERPSIP

for

Arif

Sl. No.	Location No.	Tower No.	Type of Tower	GPS Coordinate (UTM)		Angle of Deviation	Reduced level at the center of location	Span (M)	Section Length (M)	Cum. Route Length (M)	Crossing details & Remarks if any	Village (Area)
				Easting	Northing							
26	AP-25B/0	19	DC+3	433524	2794884	20°01'05" RT	916.050	340.197	340.197	7789.662		UMSATAI
27	AP-26B/0	18	DD+0	433635	2794672	11°35'46" RT	897.575	244.594	244.594	8034.256		UMSATAI
28	AP-27B/0	17	DD+9	433737	2794300	02°16'41" LT	832.591	387.053	387.053	8421.309	NALLA	UMSATAI
29	AP-29B/0	16	DD+9	433982	2793486	33°23'20" LT	791.479	847.967	847.967	9269.276	SYSEMPA RIVER	UMLAPER
30	AP-30B/0	15	DD+3	434180	2793325	47°53'42" RT	827.987	262.593	262.593	9531.869		UMLAPER
31	AP-31B/0	14	DD+0	434191	2793114	31°39'30" LT	828.001	215.000	215.000	9746.869		UMLAPER
32	AP-32B/0	13	DD-3	434362	2792947	30°57'53" LT	803.805	235.000	235.000	9981.869	NALLA	UMLAPER
33	AP-33B/0	12	DD-3	434515	2792912	10°40'35" RT	809.512	163.520	163.520	10145.389	EARTWIRE D. CUT 400KV D/C P-B LINE & HILL CLIPPING	UMLAPER
34	AP-34B/0	11	DC+0	434568	2792893	16°04'35" RT	814.640	53.374	53.374	10198.763		UMLAPER
35	AP-34B1/0	10	DD+9	434715	2792792	30°03'05" RT	807.973	181.920	181.920	10380.683		UMLAPER
36	AP-35B/0	9	DC+9	434961	2792248	04°18'20" RT	845.233	592.397	592.397	10973.080	VALLEY	UMLAPER
37	AP-36B/0	8	DD+3	435012	2792117	02°23'41" LT	833.462	140.592	140.592	11113.672		UMLAPER
38	AP-38B/0	7	DC+3	435180	2791757	17°36'04" LT	766.349	403.539	403.539	11517.211	VALLEY	UMLAPER
								208.370			CART TRACK	

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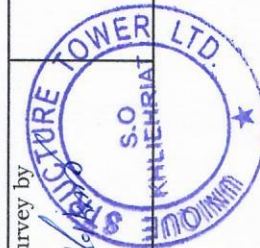
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Sl. No.	Location No.	Tower No.	Type of Tower	GPS Coordinate (UTM)		Angle of Deviation	Reduced level at the center of location	Span (M)	Section Length (M)	Cum. Route Length (M)	Crossing details & Remarks if any	Village (Area)
				Easting	Northing							
39	AP-39B/0	6	DD+3	435314	2791595	31°45'32" LT	756.939		208.370	11725.581		UMLAPER
								252.230			CART TRACK	
40	AP-40B/0	5	DB+0	435552	2791513	01°26'49" LT	739.134		252.230	11977.811		UMLAPER
								220.993			NALLA	
41	AP-41B/0	4	DC+0	435767	2791452	17°18'43" RT	736.740		220.993	12198.804		UMLAPER
								252.295				
42	AP-42B/0	3	DD+7.5	435943	2791271	18°20'47" RT	742.351		252.295	12451.099		UMLAPER
								106.798			AMRIT CEMENT ROAD, 132KV D/C LINE	
43	AP-43B/0	2	DD+18	436010	2791188	41°53'37" LT	733.313		106.798	12557.897		UMLAPER
								293.569			NALLA	
44	AP-44B/0	1	DD+0	436299	2791135	14°35'09" RT	724.708		293.569	12851.466		UMLAPER
								101.596			NALLA	
45	GANTRY		DD+0	436366	2791058	00°00'00"	705.766		101.596	12953.062		UMLAPER
Route Length:- 12.953 Kms.												

For- UNIQUE STRUCTURES & TOWERS LIMITED

For- POWER GRID CORPORATION OF INDIA LIMITED

Survey by 	Checked by 	Submitted by 	Recommended by 	Approved by 
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Subkanta Debnath / SUKANTA DEBNATH

अभिज्ञा / Engineer

एनईआरपीएसआईपी / NERPSIP

पावरग्रिड, खिलेरियाट

POWERGRID, Khliehriat

Sanjeev Baren

F. E (Civil)

POWERGRID, NERPSIP

Khliehriat

बि.मोधि / B. MODHI

उप महा प्रबंधक / Dy. Gen Manager

एनईआरपीएसआईपी / NERPSIP

पावरग्रिड खिलेरियाट

POWERGRID, Khliehriat

POLE SCHEDULE											
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED						33kV S/C MYNKRE TO MYNKRE LINE					
LOA Ref.No: 1.CC-CS/474-NER/REW-24449/I/G5/NOA-I/6849; Dated : 13.07.2016 (Supply)						CONTRACTOR: NECCON POWER & INFRA LIMITED					
2.CC-CS/474-NER/REW-24449/I/G5/NOA-II/6850; Dated : 13.07.2016 (Service)						PACKAGE:MEG-DMS-01					
3.CC-CS/474-NER/REW-24449/I/G5/NOA-III/6851; Dated : 13.07.2016 (Maintenance)											
Sl No	Location	Pole Type	Angle	Span Length (m)	Cumm Span (m)	Latitude	Longitude	Description of Land	Crossing Details	Village Name	Remarks
1	FP-1	FP		49		25 233982	92 368690	Sub-station area			
2	SP-1	SP	1°61'29"		49	25 233554	92 368575	Fallow Land-Pvt			
3	SP-2	SP	2°75'96"		43	25 233183	92 368463	Fallow Land-Pvt			
4	SP-3	SP	3°19'56"		49	25 232751	92 368357	Fallow Land-Pvt			
5	SP-4	SP	2°11'69"		46	25 232349	92 368232	Fallow Land-Pvt			
6	FP-2	FP	74°66'21"		48	25 231930	92 368120	Fallow Land-Pvt	Nala		
7	SP-5	SP	0°15'95"		51	25 231709	92 368562	Fallow Land-Pvt			
8	SP-6	SP	0°26'23"		52	25 231482	92 369019	Fallow Land-Pvt			
9	SP-7	SP	0°47'58"		53	25 231255	92 369481	Fallow Land-Pvt			
10	DP-1	DP	14°40'84"		52	25 231030	92 369930	Fallow Land-Pvt	Nala		
11	DP-2	DP	50°70'75"		62	25 230646	92 370379	Forest Land - Pvt			
12	SP-8	SP	0°28'00"		48	25 230217	92 370345	Forest Land - Pvt			
13	SP-9	SP	0°36'48"		50	25 229770	92 370312	Forest Land - Pvt			
14	SP-10	SP	0°02'79"		50	25 229325	92 370276	Forest Land - Pvt			
15	SP-11	SP	0°33'69"		50	25 228877	92 370240	Forest Land - Pvt			
16	SP-12	SP	0°43'30"		50	25 228430	92 370207	Forest Land - Pvt			
17	SP-13	SP	8°21'48"		50	25 227980	92 370170	Forest Land - Pvt			
18	SP-14	SP	0°02'83"		45	25 227575	92 370201	Forest Land - Pvt	Kutch Road		
19	SP-15	SP	1°02'41"		51	25 227121	92 370236	Forest Land - Pvt			

Sanjeev Barsh
F.E (Civil)
POWERGRID, NERPS
Kharidhat

Necon Power & Infra Ltd
Jaintia Hills Division
Kharidhat

Necon Power & Infra Ltd
Jaintia Hills Division
Kharidhat

20	SP-16	SP	0°11'24"	54	0	25 226632	92 370264	Forest Land - Pvt.		
21	DP-3	DP	32°32'76"	53	0	25 226160	92 370290	Forest Land - Pvt.		
22	DP-4	DP	58°88'01"	105	0	25 225390	92 370890	Forest Land - Pvt.	Stream	
23	SP-17	SP	10°57'86"	33	0	25 225411	92 371217	Forest Land - Pvt.		
24	SP-18	SP	20°76'90"	30	0	25 225480	92 371509	Forest Land - Pvt.		
25	SP-19	SP	10°05'90"	38	0	25 225680	92 371820	Forest Land - Pvt.		
26	FP-3	FP	72°44'08"	55	0	25 225890	92 372310	Forest Land - Pvt.		
27	SP-20	SP	7°12'15"	50	0	25 225563	92 372646	Forest Land - Pvt.		
28	SP-21	SP	14°69'62"	46	0	25 225223	92 372911	Forest Land - Pvt.		
29	SP-22	SP	3°37'65"	47	0	25 224826	92 373075	Forest Land - Pvt.		
30	FP-4	FP	84°04'26"	50	0	25 224400	92 373220	Forest Land - Pvt.		
31	SP-23	SP	4°41'35"	49	0	25 224486	92 373702	Forest Land - Pvt.		
32	SP-24	SP	2°17'07"	50	0	25 224607	92 374182	Forest Land - Pvt.		
33	SP-25	SP	17°21'11"	48	0	25 224707	92 374646	Forest Land - Pvt.		
34	DP-5	DP	34°88'27"	53	0	25 224950	92 375100	Forest Land - Pvt.		
35	DP-6	DP	43°33'82"	75	0	25 224900	92 375840	Forest Land - Pvt.		
36	SP-26	SP	5°82'21"	50	0	25 224568	92 376175	Fallow Land-Pvt.		
37	DP-7	DP	35°50'35"	48	0	25 224218	92 376462	Fallow Land-Pvt.		
38	FP-5	FP		48	0	25 224086	92 376913	Fallow Land-Pvt.		

POWERGRID, NERPSIP
Killehret
F. E. (Civil)
Barah

Meccon Power & Infra Hills District
Killehret
East Jaintia Hills District

East Jaintia Hills District
Killehret
Meccon Power & Infra Hills District
Barah

Annexure-													
POLE SCHEDULE													
33KV S/S MYNKE TO RYMBALI LINE													
CONTRACTOR: NECCON POWER & INFRA LIMITED													
PACKAGE:MEG-DMS-01													
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED													
LOA Ref.No: 1.CC-CS/474-NER/REW-24449/I/GS/NOA-I/6849; Dated : 13.07.2016 (Supply) 2.CC-CS/474-NER/REW-24449/I/GS/NOA-II/6850; Dated : 13.07.2016 (Service) 3.CC-CS/474-NER/REW-24449/I/GS/NOA-III/6851; Dated : 13.07.2016 (Maintenance)													
Sl No	Location	Pole Type	Angle	Span Length (m)	Cumm. Span (m)	Latitude	Longitude	Description of Land Sub-station Area	Crossing Details	Village Name	No of poles per Km	Cummulative No of Poles	Remarks
1	FP-1	Four Pole		21		25 23410775	92 36915892	Sub-station Area					
2	FP-2	Four Pole	74°60'56"	61	21	25 23402288	92 36934936	Sub-station Area					
3	DP-1	Double Pole	107°77'16"	53	82	25 23443076	92 36975112	Sub-station Area					
4	FP-3	Four Pole	76°65'41"	68	135	25 23484287	92 37002364	Sub-station Area					
5	FP-4	Four Pole	28°47'11"	52	203	25 23527001	92 36954016	Sub-station Area					
6	SP-1	Single Pole	1°00'29"	51	255	25 23539772	92 36904156	Along the road -Pvt					
7	SP-2	Single Pole	1°41'56"	51	306	25 23553065	92 36855736	Along the road -Pvt					
8	SP-3	Single Pole	1°40'16"	50	357	25 23565377	92 36806452	Along the road -Pvt					
9	SP-4	Single Pole	1°52'99"	49	407	25 23576366	92 36757924	Along the road -Pvt					
10	SP-5	Single Pole	4°07'69"	53	456	25 23586050	92 36710116	Along the road -Pvt					
11	SP-6	Single Pole	0°21'07"	53	509	25 23592377	92 36658132	Along the road -Pvt					
12	SP-7	Single Pole	2°22'80"	52	562	25 23598560	92 36606292	Along the road -Pvt					
13	SP-8	Single Pole	2°39'78"	50	614	25 23602907	92 36555172	Along the road -Pvt					
14	DP-2	Double Pole	28°94'28"	45	664	25 23605202	92 36505348	Along the road -Pvt					
15	SP-9	Single Pole	12°99'03"	39	709	25 23587391	92 36464956	Along the road -Pvt					
16	SP-10	Single Pole	10°00'00"	49	748	25 23579399	92 36426796	Along the road -Pvt					
17	SP-11	Single Pole	01°50'27"	40	797	25 23579624	92 36378232	Along the road -Pvt					
18	SP-12	Single Pole	19°35'63"	36	837	25 23580740	92 36338704	Along the road -Pvt					
19	SP-13	Single Pole	26°65'87"	47	873	25 23592260	92 36305476	Along the road -Pvt					
20	SP-14	Single Pole	0°39'07"	44	920	25 23623832	92 36273940	Along the road -Pvt					
21	SP-15	Single Pole	7°05'54"	49	964	25 23653811	92 36243196	Along the road -Pvt					
22	SP-16	Single Pole	10°14'00"	50	1013	25 23682017	92 36206476	Along the road -Pvt					
23	DP-3	Double Pole	21°43'46"	47	1063	25 23701376	92 36161764	Along the road -Pvt				36 nos pole (1013 m)	36
24	SP-17	Single Pole	2°22'20"	48	1110	25 23704526	92 36115144	Along the road -Pvt					

Power & Infra
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Deuter

NECCON Power & Infra Ltd. 2016
 2. East Antilla Hills Dist. 1
 2016-10-10
 Sr. M. K. D. B.

Arund Kumar G. G.

25	SP-18	Single Pole	0°79'44"		1158	25 23705957	92 36067012	Along the road -Pvt.			
26	SP-19	Single Pole	4°88'53"	49	1207	25 23706920	92 36018700	Along the road -Pvt.			
27	SP-20	Single Pole	7°46'40"	48	1255	25 23704058	92 35970892	Along the road -Pvt.			
28	SP-21	Single Pole	0°53'79"	49	1304	25 23706965	92 35922148	Along the road -Pvt.			
29	SP-22	Single Pole	22°70'96"	31	1335	25 23709062	92 35891188	Along the road -Pvt.			
30	SP-23	Single Pole	0°04'90"	33	1368	25 23722670	92 35861704	Along the road -Pvt.			
31	SP-24	Single Pole	8°09'13"	52	1420	25 23744045	92 35815372	Along the road -Pvt.			
32	SP-25	Single Pole	7°28'46"	48	1468	25 23769002	92 35775988	Along the road -Pvt.			
33	SP-26	Single Pole	13°72'61"	48	1516	25 23789000	92 35734012	Along the road -Pvt.			
34	SP-27	Single Pole	8°00'27"	54	1570	25 23821004	92 35694016	Along the road -Pvt.			
35	SP-28	Single Pole	3°65'62"	53	1623	25 23857004	92 35659996	Along the road -Pvt.			
36	SP-29	Single Pole	10°49'56"	49	1672	25 23891996	92 35631016	Along the road -Pvt.			
37	DP-4	Double Pole	5°82'80"	41	1713	25 23916998	92 35600992	Along the road -Pvt.			
38	DP-5	Double Pole	3°54'83"	70	1783	25 23963996	92 35554984	Along the road -Pvt.			
39	DP-6	Double Pole	0°76'07"	58	1841	25 24001004	92 35514016	Along the road -Pvt.			
40	DP-7	Double Pole	5°46'01"	46	1887	25 24030002	92 35481004	Along the road -Pvt.			
41	SP-30	Single Pole	10°69'64"	52	1939	25 24059000	92 35441008	Along the road -Pvt.			
42	SP-31	Single Pole	1°07'146"	51	1990	25 24094001	92 35409004	Along the road -Pvt.			
43	SP-32	Single Pole	4°71'487"	52	2042	25 24129002	92 35374984	Along the road -Pvt.			
44	SP-33	Single Pole	16°45'20"	52	2094	25 24166001	92 35343988	Along the road -Pvt.			
45	SP-34	Single Pole	00°00'00"	49	2143	25 24192002	92 35305000	Along the road -Pvt.			
46	DP-8	Double Pole	8°05'23"	49	2192	25 24218003	92 35266012	Along the road -Pvt.			
47	DP-9	Double Pole	1°67'78"	62	2254	25 24257279	92 35221660	Along the road -Pvt.			
48	SP-35	Single Pole	14°89'47"	37	2291	25 24281489	92 35195992	Forest - Pvt.			
49	SP-36	Single Pole	7°30'20"	39	2330	25 24312377	92 35177092	Forest - Pvt.			
50	SP-37	Single Pole	13°96'93"	38	2368	25 24344300	92 35163124	Forest - Pvt.			
51	SP-38	Single Pole	10°30'95"	38	2406	25 24378464	92 35158012	Forest - Pvt.			
52	SP-39	Single Pole	2°12'28"	49	2455	25 24422249	92 35164204	Forest - Pvt.			
53	DP-10	Double Pole	35°57'06"	53	2508	25 24470003	92 35168992	Forest - Pvt.			
54	DP-11	Double Pole	4°52'47"	70	2578	25 24524003	92 35134000	Forest - Pvt.			
55	SP-40	Single Pole	17°98'86"	47	2625	25 24559004	92 35107000	Forest - Pvt.			
56	SP-41	Single Pole	14°01'46"	39	2664	25 24580037	92 35076256	Fallow Land-Pvt			
				34	0						

25 nos pole (1990 m)

61

11KV Line

Sanjay

Western Power & Infra Corp.
Basu Swintia Hills Dist. : 65
Samartha Dist.
Amulji

89	SP-66	Single Pole	0°8'20.5"	4289	25 25672106	92 34712008	Forest - Pvt				
90	DP-19	Double Pole	52°98'70"	55	4344	25 25721003	Forest - Pvt				
91	SP-67	Single Pole	1°23'11"	48	0	25 25742999	Forest - Pvt				
92	DP-20	Double Pole	38°29'91"	54	0	25 25767002	Forest - Pvt				
93	DP-21	Double Pole	4°88'37"	50	0	25 25808996	Forest - Pvt				
94	DP-22	Double Pole	1°87'40"	75	0	25 25868999	Forest - Pvt				
95	SP-68	Single Pole	5°06'51"	49	0	25 25908527	Forest - Pvt				
96	SP-69	Single Pole	28°72'09"	45	0	25 25943321	Forest - Pvt				
97	SP-70	Single Pole	1°32'12"	41	0	25 25962356	Forest - Pvt				
98	SP-71	Single Pole	3°81'87"	47	0	25 25983524	Forest - Pvt				
99	SP-72	Single Pole	2°43'95"	42	0	25 26004323	Forest - Pvt				
100	FP-6	Four Pole	98°71'32"	47	0	25 26026004	Forest - Pvt				
101	SP-73	Single Pole	0°01'37"	45	0	25 26053877	Forest - Pvt				
102	SP-74	Single Pole	0°03'24"	48	0	25 26083487	Forest - Pvt				
103	SP-75	Single Pole	0°13'71"	50	0	25 26114357	Forest - Pvt				
104	SP-76	Single Pole	0°18'62"	50	0	25 26144939	Forest - Pvt				
105	DP-23	Double Pole	0°11'12"	48	0	25 26174477	Forest - Pvt				
106	DP-24	Double Pole	0°06'37"	133	0	25 26256278	Forest - Pvt				
107	SP-77	Single Pole	0°07'00"	46	0	25 26284457	Forest - Pvt				
108	SP-78	Single Pole	11°64'03"	51	0	25 26316002	Forest - Pvt				
109	SP-79	Single Pole	26°57'28"	19	0	25 26329997	Forest - Pvt				
110	SP-80	Single Pole	10°27'17"	31	0	25 26343002	Forest - Pvt				
111	DP-25	Double Pole	50°46'37"	54	0	25 26372999	Forest - Pvt				
112	DP-26	Double Pole	42°57'23"	47	0	25 26415002	Forest - Pvt				
113	SP-81	Single Pole	3°94'45"	51	0	25 26447996	Forest - Pvt				
114	SP-82	Single Pole	2°83'25"	51	0	25 26483195	Forest - Pvt				
115	DP-27	Double Pole	35°96'53"	53	0	25 26517998	Forest - Pvt				
116	DP-28	Double Pole	43°15'85"	52	0	25 26563997	Forest - Pvt				
117	SP-83	Single Pole	7°76'16"	55	0	25 26596001	Forest - Pvt				
118	SP-84	Single Pole	4°41'05"	46	0	25 26656997	Forest - Pvt				
119	SP-85	Single Pole	7°47'25"	48	0	25 26657003	Forest - Pvt				
120	SP-86	Single Pole	16°33'47"	56	0	25 26696000	Forest - Pvt				
				43	0	25 26714357	Forest - Pvt				
						25 26144939	Forest - Pvt				
						25 26174477	Forest - Pvt				
						25 26256278	Forest - Pvt				
						25 26284457	Forest - Pvt				
						25 26316002	Forest - Pvt				
						25 26329997	Forest - Pvt				
						25 26343002	Forest - Pvt				
						25 26372999	Forest - Pvt				
						25 26415002	Forest - Pvt				
						25 26447996	Forest - Pvt				
						25 26483195	Forest - Pvt				
						25 26517998	Forest - Pvt				
						25 26563997	Forest - Pvt				
						25 26596001	Forest - Pvt				
						25 26656997	Forest - Pvt				
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						25 26343002	Forest - Pvt				
						25 26372999	Forest - Pvt				

121 SP-87	Single Pole	9°00'02"	45	5919	25 26717861	92 34340884	Scrub Land - Pvt				
122 SP-88	Single Pole	9°24'02"	5964	5964	25 26735438	92 34300528	Scrub Land - Pvt				
123 DP-29	Double Pole	7°62'283"	46	6010	25 26759000	92 34263016	Scrub Land - Pvt				
124 SP-89	Single Pole	3°65'62"	40	6050	25 26783003	92 34234000	Fallow Land - Pvt			27 nos pole (6010 m)	170
125 SP-90	Single Pole	12°02'13"	57	6107	25 26814998	92 34190008	Fallow Land - Pvt				
126 SP-91	Single Pole	8°32'19"	52	6159	25 26836004	92 34144000	Fallow Land - Pvt				
127 SP-92	Single Pole	10°05'39"	54	6213	25 26864084	92 34099828	Fallow Land - Pvt				
128 DP-30	Double Pole	8°92'77"	56	6269	25 26891003	92 34052992	Fallow Land - Pvt				
129 DP-31	Double Pole	5°42'59"	67	6336	25 26914997	92 33992008	Fallow Land - Pvt				
130 SP-93	Single Pole	16°35'36"	48	6384	25 26936003	92 33949996	Fallow Land - Pvt				
131 DP-32	Double Pole	8°93'14"	46	6430	25 26965640	92 33917632	Fallow Land - Pvt				
132 SP-94	Single Pole	13°8'094"	46	6476	25 26990066	92 33880768	Fallow Land - Pvt				
133 FP-7	Four Pole	74°65'28"	58	6534	25 27029999	92 33844012	Fallow Land - Pvt				
134 SP-95	Single Pole	4°72'31"	53	6587	25 27068996	92 33874000	Fallow Land - Pvt				
135 DP-33	Double Pole	41°29'00"	50	6637	25 27108002	92 33898984	Fallow Land - Pvt				
136 SP-96	Single Pole	6°59'51"	49	6686	25 27121997	92 33944992	Fallow Land - Pvt				
137 SP-97	Single Pole	8°01'38"	52	6738	25 27142004	92 33992008	Fallow Land - Pvt				
138 SP-98	Single Pole	14°11'10"	42	6780	25 27162857	92 34027288	Forest - Pvt				
139 SP-99	Single Pole	18°14'25"	47	6827	25 27193637	92 34058608	Forest - Pvt				
140 SP-100	Single Pole	6°92'27"	52	6879	25 27236000	92 34079992	Forest - Pvt				
141 SP-101	Single Pole	7°58'46"	44	6923	25 27270002	92 34102996	Forest - Pvt				
142 FP-8	Four Pole	68°31'85"	57	6980	25 27317000	92 34126000	Forest - Pvt				
143 DP-34	Double Pole	6°13'27"	92	7072	25 27376004	92 34061992	Forest - Pvt			29 nos pole (6980 m)	199
144 SP-102	Single Pole	4°85'06"	34	7106	25 27395390	92 34035892	Forest - Pvt				
145 SP-103	Single Pole	1°08'35"	56	7162	25 27424001	92 33989992	Forest - Pvt				
146 SP-104	Single Pole	4°07'37"	46	7208	25 27448004	92 33952884	Forest - Pvt				
147 SP-105	Single Pole	4°65'87"	44	7252	25 27468911	92 33915436	Forest - Pvt				
148 SP-106	Single Pole	18°29'43"	53	7305	25 27497000	92 33872992	Forest - Pvt				
149 SP-107	Single Pole	14°85'88"	45	7350	25 27530003	92 33847000	Forest - Pvt				
150 SP-108	Single Pole	10°36'55"	47	7397	25 27569927	92 33830404	Forest - Pvt				
151 SP-109	Single Pole	8°94'43"	47	7444	25 27611363	92 33822088	Forest - Pvt				
152 DP-35	Double Pole	44°39'55"	49	7493	25 27655004	92 33821008	Forest - Pvt				
			48	0							

Quota

Section Power & Infra
Kant Sainda Hills Jct. 1, Sainda Hills
Kodumuru

Amul Khan
(S.D.)

153	SP-110	Single Pole	14°82'13"	52	7541	25 27685001	92 33786988	Forest - Pvt				
154	FP-9	Four Pole	63°63'77"	53	7593	25 2707996	92 33741988	Forest - Pvt				
155	SP-111	Single Pole	22°20'46"	48	7646	25 27680996	92 33697996	Forest - Pvt				
156	SP-112	Single Pole	22°79'21"	53	7694	25 27671996	92 33651016	Forest - Pvt				
157	DP-36	Double Pole	38°87'52"	47	7747	25 27680996	92 33598996	Forest - Pvt				
158	SP-113	Single Pole	5°00'54"	50	7794	25 27713000	92 33569008	Fallow Land-Pvt				
159	SP-114	Single Pole	8°03'30"	47	7844	25 27749999	92 33541000	Fallow Land-Pvt				
160	SP-115	Single Pole	13°43'52"	53	7891	25 27787997	92 33520984	Fallow Land-Pvt				
161	SP-116	Single Pole	9°05'81"	51	7944	25 27824996	92 33488008	Fallow Land-Pvt				
162	SP-117	Single Pole	18°02'66"	56	7995	25 27856001	92 33449992	Fallow Land-Pvt		26 nos pole (7995 m)	225	
163	SP-118	Single Pole	5°06'45"	48	8051	25 27900002	92 33421984	Fallow Land-Pvt				
164	SP-119	Single Pole	10°43'11"	39	8099	25 27935003	92 33394012	Fallow Land-Pvt				
165	SP-120	Single Pole	23°71'98"	39	8138	25 27966422	92 33377452	Fallow Land-Pvt				
166	SP-121	Single Pole	17°51'99"	51	8177	25 27989390	92 33348148	Fallow Land-Pvt				
167	SP-122	Single Pole	12°43'52"	38	8228	25 28007534	92 33301708	Fallow Land-Pvt				
168	SP-123	Single Pole	5°09'38"	47	8266	25 28013672	92 33264880	Fallow Land-Pvt				
169	SP-124	Single Pole	10°52'77"	51	8313	25 28020359	92 33218872	Fallow Land-Pvt				
170	DP-37	Double Pole	44°54'64"	62	8364	25 28019333	92 33168256	Fallow Land-Pvt				
171	SP-125	Single Pole	1°36'53"	61	8426	25 28057286	92 33123508	Fallow Land-Pvt				
172	DP-38	Double Pole	54°72'63"	69	8487	25 28096004	92 33079984	Fallow Land-Pvt				
173	DP-39	Double Pole	43°62'05"	55	8556	25 28156997	92 33091000	Fallow Land-Pvt				
174	DP-40	Double Pole	23°83'97"	49	8611	25 28198001	92 33060004	Fallow Land-Pvt				
175	SP-126	Single Pole	10°56'43"	52	8660	25 28220969	92 33018964	Fallow Land-Pvt				
176	SP-127	Single Pole	5°31'43"	51	8712	25 28252802	92 32981704	Fallow Land-Pvt				
177	SP-128	Single Pole	3°41'56"	52	8763	25 28287731	92 32949484	Fallow Land-Pvt				
178	SP-129	Single Pole	0°27'28"	44	8815	25 28325234	92 32918920	Fallow Land-Pvt				
179	SP-130	Single Pole	9°07'51"	41	8867	25 28363241	92 32888176	Fallow Land-Pvt				
180	SP-131	Single Pole	0°45'42"	52	8911	25 28390457	92 32856784	Fallow Land-Pvt				
181	DP-41	Double Pole	43°42'16"	52	8952	25 28415999	92 32827012	Fallow Land-Pvt				
182	SP-132	Single Pole	1°29'30"	49	9004	25 28415999	92 32774992	Fallow Land-Pvt		25 nos pole (9004 m)	250	
183	FP-10	Four Pole	62°20'00"	50	9053	25 28415000	92 32725996	Fallow Land-Pvt				
184	SP-133	Single Pole	2°72'77"	49	9103	25 28433997	92 32701984	Fallow Land-Pvt				

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Western Power & Infra Services
West Virginia Hills (Xxx)
10/10/2020

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217 DP-53	Double Pole	25°30'48"	43	10850	25 29462996	92 31825996	Along the road -Pvt.				
218 DP-54	Double Pole	17°13'86"	64	10893	25 29502002	92 31824016	Along the road -Pvt.				
219 DP-55	Double Pole	20°72'28"	56	10957	25 29558000	92 31840000	Along the road -Pvt.				
220 DP-56	Double Pole	42°46'56"	80	11013	25 29599004	92 31872004	Along the road -Pvt.	28 nos pole (11013 m)	309		
221 DP-57	Double Pole	42°37'16"	49	11093	25 29669996	92 31861996	Along the road -Pvt.				
222 SP-154	Single Pole	9°56'46"	50	11142	25 29705996	92 31890004	Along the road -Pvt.				
223 SP-155	Single Pole	7°01'04"	63	11192	25 29738000	92 31924996	Along the road -Pvt.				
224 DP-58	Double Pole	24°63'42"	52	11255	25 29773001	92 31973992	Along the road -Pvt.	11KV Line			
225 DP-59	Double Pole	51°54'24"	58	11307	25 29783999	92 32023996	Along the road -Pvt.				
226 DP-60	Double Pole	25°79'67"	57	11365	25 29830997	92 32048008	Along the road -Pvt.	11KV Line			
227 DP-61	Double Pole	27°65'19"	52	11422	25 29888000	92 32047000	Along the road -Pvt.				
228 SP-156	Single Pole	14°39'58"	59	11474	25 29924030	92 32070256	Along the road -Pvt.				
229 SP-157	Single Pole	2°07'73"	52	11533	25 29964053	92 32108884	Along the road -Pvt.				
230 SP-158	Single Pole	9°86'60"	53	11585	25 29998001	92 32143984	Along the road -Pvt.				
231 SP-159	Single Pole	10°77'88"	45	11638	25 30037997	92 32173000	Along the road -Pvt.				
232 SP-160	Single Pole	4°30'02"	55	11683	25 30067004	92 32203996	Along the road -Pvt.				
233 SP-161	Single Pole	5°27'01"	46	11738	25 30099998	92 32245000	Along the road -Pvt.				
234 SP-162	Single Pole	3°40'22"	52	11784	25 30130004	92 32275996	Along the road -Pvt.				
235 DP-62	Double Pole	28°46'03"	70	11836	25 30166004	92 32309008	Along the road -Pvt.				
236 DP-63	Double Pole	23°39'24"	51	11906	25 30227672	92 32322508	Along the road -Pvt.				
237 SP-163	Single Pole	1°39'91"	54	11957	25 30265607	92 32351380	Along the road -Pvt.				
238 SP-164	Single Pole	7°26'15"	50	12011	25 30304694	92 32382808	Along the road -Pvt.	25 nos pole (12011 m)	334		
239 SP-165	Single Pole	8°74'45"	65	12061	25 30344339	92 32406784	Along the road -Pvt.				
240 SP-166	Single Pole	16°58'38"	49	12126	25 30390860	92 32446348	Along the road -Pvt.				
241 SP-167	Single Pole	15°19'65"	54	12175	25 30416753	92 32485804	Along the road -Pvt.				
242 DP-64	Double Pole	36°18'28"	66	12229	25 30433997	92 32535988	Along the road -Pvt.				
243 DP-65	Double Pole	13°28'27"	53	12295	25 30484001	92 32571988	Along the road -Pvt.				
244 SP-168	Single Pole	4°42'50"	47	12348	25 30528515	92 32589700	Along the road -Pvt.				
245 FP-12	Four Pole	70°23'42"	43	12395	25 30568997	92 32602012	Along the road -Pvt.				
246 SP-169	Single Pole	7°40'68"	38	12438	25 30572003	92 32644996	Along the road -Pvt.				
247 DP-66	Double Pole	43°84'51"	61	12476	25 30578996	92 32682004	Along the road -Pvt.				
248 DP-67	Double Pole	25°16'46"	63	12537	25 30623996	92 32715988	Along the road -Pvt.				

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*Western Power & Infra ...
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Sanjiv Kumar*

249 DP-68	Double Pole	33°70'52"	56	12600	25 30680003	92 32725996	Along the road -Pvt.			
250 DP-69	Double Pole	28°05'55"	51	12656	25 30717002	92 32764012	Along the road -Pvt.			
251 SP-170	Single Pole	22°25'47"	52	12707	25 30731996	92 32812000	Along the road -Pvt.			
252 DP-70	Double Pole	36°24'18"	47	12759	25 30763001	92 32850988	Along the road -Pvt.			
253 SP-171	Single Pole	0°27'24"	49	12806	25 30803996	92 32860996	Along the road -Pvt.			
254 SP-172	Single Pole	12°33'14"	54	12855	25 30847304	92 32871796	Along the road -Pvt.			
255 SP-173	Single Pole	6°38'48"	52	12909	25 30890999	92 32895016	Along the road -Pvt.			
256 SP-174	Single Pole	4°59'04"	55	12961	25 30935000	92 32912008	Along the road -Pvt.			
257 SP-175	Single Pole	16°54'87"	50	13016	25 30980000	92 32934004	Along the road -Pvt.	29 nos pole (13016 m)	363	
258 DP-176	Single Pole	25°00'88"	53	13066	25 31014002	92 32966008	Along the road -Pvt.			
259 SP-177	Single Pole	9°43'79"	53	13119	25 31060001	92 32980012	Along the road -Pvt.			
260 SP-178	Single Pole	9°78'05"	51	13172	25 31103003	92 33002008	Along the road -Pvt.			
261 SP-179	Single Pole	14°07'38"	52	13223	25 31141001	92 33030988	Along the road -Pvt.			
262 SP-180	Single Pole	0°84'88"	46	13275	25 31171997	92 33070012	Along the road -Pvt.			
263 SP-181	Single Pole	3°45'81"	43	13321	25 31198997	92 33105004	Along the road -Pvt.			
264 SP-182	Single Pole	1°07'55"	53	13364	25 31225997	92 33136000	Along the road -Pvt.			
265 SP-183	Single Pole	4°77'98"	49	13417	25 31258001	92 33174988	Along the road -Pvt.			
266 SP-184	Single Pole	14°08'40"	49	13466	25 31289996	92 33208000	Along the road -Pvt.			
267 DP-71	Double Pole	43°18'51"	56	13515	25 31313999	92 33249004	Along the road -Pvt.			
268 SP-185	Single Pole	9°06'47"	53	13571	25 31304999	92 33304012	Along the road -Pvt.			
269 SP-186	Single Pole	18°57'99"	56	13624	25 31304000	92 33357004	Along the road -Pvt.			
270 SP-187	Single Pole	19°36'42"	50	13680	25 31319003	92 33409996	Along the road -Pvt.			
271 SP-188	Single Pole	26°81'53"	50	13730	25 31340003	92 33449992	Along the road -Pvt.			
272 DP-72	Double Pole	23°80'34"	66	13786	25 31385999	92 33471988	Along the road -Pvt.			
273 DP-73	Double Pole	7°18'89"	53	13846	25 31445003	92 33475012	Along the road -Pvt.			
274 SP-189	Single Pole	19°41'08"	54	13899	25 31492001	92 33484012	Along the road -Pvt.			
275 SP-190	Single Pole	0°94'77"	53	13953	25 31534004	92 33510004	Along the road -Pvt.			
276 SP-191	Single Pole	1°51'08"	54	14006	25 31575998	92 33534988	Along the road -Pvt.	22 nos pole (14006 m)	385	
277 SP-192	Single Pole	10°23'47"	43	14060	25 31619000	92 33559000	Along the road -Pvt.			
278 SP-193	Single Pole	15°07'68"	46	14103	25 31655999	92 33570988	Along the road -Pvt.			
279 SP-194	Single Pole	11°52'67"	62	14149	25 31697003	92 33571996	Along the road -Pvt.			
280 DP-74	Double Pole	24°34'67"	62	14211	25 31751003	92 33586000	Along the road -Pvt.			

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Section Power & Infra ...
Vast Santa Hills ...
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281 DP-75	Double Pole	34°09'14"	57	14273	25 31806002	92 33574012	Along the road -Pvt			
282 DP-76	Double Pole	37°54'00"	60	14330	25 31853000	92 33596008	Along the road -Pvt			
283 DP-77	Double Pole	43°00'68"	59	14390	25 31905092	92 33587236	Along the road -Pvt			
284 DP-78	Double Pole	42°17'52"	37	14449	25 31933001	92 33530992	Along the road -Pvt			
285 SP-195	Single Pole	14°42'44"	37	14486	25 31965068	92 33520768	Along the road -Pvt			
286 SP-196	Single Pole	12°72'54"	48	14523	25 31993742	92 33502156	Along the road -Pvt			
287 SP-197	Single Pole	16°51'04"	49	14571	25 32025251	92 33469396	Along the road -Pvt			
288 DP-79	Double Pole	1°87'03"	44	14620	25 32064860	92 33447436	Along the road -Pvt			
289 SP-198	Single Pole	3°43'93"	42	14664	25 32101130	92 33428932	Along the road -Pvt			
290 SP-199	Single Pole	0°92'56"	41	14706	25 32134646	92 33408952	Along the road -Pvt			
291 SP-200	Single Pole	12°95'08"	51	14744	25 32167001	92 33389098	Fallow Land-Pvt			
292 DP-80	Double Pole	14°71'56"	53	14798	25 32201003	92 33349888	Fallow Land-Pvt			
293 SP-201	Single Pole	3°55'34"	54	14851	25 32227004	92 33310996	Fallow Land-Pvt			
294 DP-81	Double Pole	11°62'70"	123	14905	25 32256002	92 33268012	Fallow Land-Pvt			
295 DP-82	Double Pole	5°04'84"	50	15028	25 32303000	92 33156988	Fallow Land-Pvt		28 nos pole (15028 m)	413
296 SP-202	Single Pole	3°96'96"	50	15078	25 32325644	92 33114256	Fallow Land-Pvt			
297 SP-203	Single Pole	6°55'78"	51	15128	25 32350916	92 33073288	Fallow Land-Pvt			
298 SP-204	Single Pole	1°64'87"	54	15179	25 32381138	92 33034732	Fallow Land-Pvt			
299 SP-205	Single Pole	0°47'43"	53	15233	25 32411774	92 32993080	Fallow Land-Pvt			
300 SP-206	Single Pole	6°03'01"	56	15286	25 32442239	92 32952616	Fallow Land-Pvt			
301 DP-83	Double Pole	48°17'37"	52	15342	25 32477996	92 32913988	Fallow Land-Pvt			
302 SP-207	Single Pole	4°27'60"	48	15394	25 32475998	92 32862004	Fallow Land-Pvt			
303 DP-84	Double Pole	10°82'88"	46	15442	25 32471003	92 32814988	Fallow Land-Pvt		11KV Line	
304 SP-85	Double Pole	5°50'53"	48	15488	25 32458610	92 32771572	Fallow Land-Pvt			
305 SP-208	Single Pole	0°08'93"	57	15536	25 32448098	92 32724988	Fallow Land-Pvt			
306 SP-209	Single Pole	0°03'90"	54	15595	25 32438909	92 32669836	Fallow Land-Pvt			
307 SP-210	Single Pole	1°05'35"	53	15647	25 32428712	92 32617096	Fallow Land-Pvt			
308 SP-211	Single Pole	0°72'67"	43	15700	25 32420306	92 32565112	Fallow Land-Pvt			
309 SP-212	Single Pole	1°59'18"	49	15743	25 32413034	92 32522092	Fallow Land-Pvt			
310 SP-213	Single Pole	2°14'39"	52	15792	25 32403521	92 32475400	Fallow Land-Pvt			
311 FP-13	Four Pole	75°22'56"	38	15844	25 32395115	92 32424280	Fallow Land-Pvt			
312 FP-14	Four Pole		0	15882	25 32426048	92 32408332	Fallow Land-Pvt		26 nos pole (15882 m)	439

Sanjay

Western Power & Infra Services
West Sumatra Hills Div.
Samarinda
A. Andhika (S.E.)

POLE SCHEDULE

33kV S/S & D/C Line MYNKR132 kvs/s TO BYNDIHATI 33kv s/s

CLIENT: POWER GRID CORPORATION OF INDIA LIMITED

CONTRACTOR: NECCON POWER & INFRA LIMITED

LOA Ref.No: 1.CC-CS/474-NER/REW-24449/1/G5/NOA-I/6849; Dated : 13.07.2016 (Supply)
2.CC-CS/474-NER/REW-24449/1/G5/NOA-II/6850; Dated : 13.07.2016 (Service)
3.CC-CS/474-NER/REW-24449/1/G5/NOA-III/6851; Dated : 13.07.2016 (Maintenance)

PACKAGE: MEG-DMS-01

Sl No	Location	Pole Type	Angle	Span Length (m)	Cumm. Span (m)	Latitude	Longitude	Description of Land	Village Name	NOS OF POLE PER (KM)	Cummulative No of Poles	Remarks
1	FP-1	Four Pole				25.2342	92.3689					
2	FP-2	Four Pole	89°35'76"	45		25.2339	92.3692					Mynkre S/S
3	DP-1	Double Pole	6°37'60"	67								Composite pole
4	FP-3	Four Pole	89°47'87"	60		25.2343	92.3697					Composite pole
5	FP-4	Four Pole		82		25.2347	92.3701					Composite pole
6	DP-2	Double Pole	108°41'54"	23		25.2352	92.3695					Composite pole
7	DP-3	Double Pole	18°03'69"	45		25.2353	92.3697	Road				Composite pole
8	DP-4	Double Pole	00°00'00"	45		25.2356	92.37					Composite pole
9	DP-5	Double Pole	00°00'00"	45		25.2359	92.3703					Composite pole
10	DP-6	Double Pole	17°09'49"	49		25.2362	92.3706					Composite pole
11	DP-7	Double Pole	24°33'62"	33		25.2366	92.3708					Composite pole
12	DP-8	Double Pole	42°13'10"	30		25.2369	92.3708					Composite pole
13	DP-9	Double Pole	11°47'83"	37		25.2371	92.371					Composite pole
14	DP-10	Double Pole	20°09'10"	42		25.2373	92.3713					Composite pole
15	DP-11	Double Pole	8°40'57"	55		25.2374	92.3717					Composite pole
16	DP-12	Double Pole	52°07'77"	46		25.2376	92.3722					Composite pole
						25.2374	92.3726					Composite pole

Submitted By: *[Signature]*
Checked By: *[Signature]*
Date: *[Date]*

40	DP-36	Double Pole	11°59'29"	46	1986	25.2466	92.3772				38 NOS POLE (1986 M)	88	Composite pole
41	DP-37	Double Pole	18°34'79"	39	2032	25.247	92.3773						Composite pole
42	DP-38	Double Pole	3°06'20"	54	2071	25.2473	92.3775						Composite pole
43	DP-39	Double Pole	9°81'70"	49	2125	25.2477	92.3778						Composite pole
44	DP-40	Double Pole	9°81'70"	54	2174	25.2481	92.378						Composite pole
45	DP-41	Double Pole	7°97'73"	45	2228	25.2485	92.3783						Composite pole
46	DP-42	Double Pole	22°23'88"	59	2273	25.2488	92.3786						Composite pole
47	DP-43	Double Pole	3°11'20"	35	2332	25.2493	92.3788						Composite pole
48	DP-44	Double Pole	6°52'39"	56	2367	25.2496	92.3789						Composite pole
49	DP-45	Double Pole	00°00'00"	56	2423	25.2501	92.379						Composite pole
50	DP-46	Double Pole	10°25'34"	44	2479	25.2506	92.3791						Composite pole
51	DP-47	Double Pole	00°00'00"	56	2523	25.251	92.3791			11KV Line			Composite pole
52	DP-48	Double Pole	00°00'00"	44	2579	25.2515	92.3791						Composite pole
53	DP-49	Double Pole	24°33'35"	49	2623	25.2519	92.3791						Composite pole
54	DP-50	Double Pole	11°59'25"	46	2672	25.2523	92.3789						Composite pole
55	DP-51	Double Pole	12°74'08"	56	2718	25.2527	92.3788						Composite pole
56	DP-52	Double Pole	00°00'00"	44	2774	25.2532	92.3788						Composite pole
57	DP-53	Double Pole	00°00'00"	56	2818	25.2536	92.3788						Composite pole
58	DP-54	Double Pole	24°33'31"	49	2874	25.2541	92.3788						Composite pole
59	DP-55	Double Pole	4°15'36"	63	2923	25.2545	92.379						Composite pole
60	DP-56	Double Pole	20°01'92"	67	2986	25.255	92.3793				40 NOS POLE (2986 M)	128	Composite pole
61	DP-57	Double Pole	6°37'90"	45	3053	25.2554	92.3798						Composite pole
62	DP-58	Double Pole	7°97'20"	54	3098	25.2557	92.3801						Composite pole
63	DP-59	Double Pole	7°97'72"	3152	25.2561	92.3804							Composite pole

Amudikumar
(P.E.)

Santha Hills Desai
45 mmted
45 mmted

[illegible]

Amid Kuer
(S. J.)

S. maritima

POLE SCHEDULE

33kV S/C & D/C Line MYNKRE TO SUTANGA											
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED						CONTRACTOR: NECCON POWER & INFRA LIMITED					
LOA Ref.No: 1.CC-CS/474-NER/REW-24449/1/G5/NOA-I/6849; Dated : 13.07.2016 (Supply) 2.CC-CS/474-NER/REW-24449/1/G5/NOA-II/6850; Dated : 13.07.2016 (Service) 3.CC-CS/474-NER/REW-24449/1/G5/NOA-III/6851; Dated : 13.07.2016 (Maintenance)						PACKAGE: ASST MEG-DMS-01					
Sl No	Location	Pole Type	Angle	Span Length (m)	Cumm. Span (m)	Latitude	Longitude	Description of Land	Crossing Details	Village Name	Remarks
1	FP-1	Four Pole		45		25.2342	92.3689				Composite pole
2	FP-2	Four Pole	89°35'76"		45	25.2339	92.3692				Composite pole
3	DP-1	Double Pole	6°37'60"		112	25.2343	92.3697				Composite pole
4	FP-3	Four Pole	89°47'87"		172	25.2347	92.3701				Composite pole
5	FP-4	Four Pole	108°41'54"		254	25.2352	92.3695				Composite pole
6	DP-2	Double Pole	18°93'69"		277	25.2353	92.3697		Road		Composite pole
7	DP-3	Double Pole	00°00'00"		322	25.2356	92.37				Composite pole
8	DP-4	Double Pole	00°00'00"		367	25.2359	92.3703				Composite pole
9	DP-5	Double Pole	17°79'49"		412	25.2362	92.3706				Composite pole
10	DP-6	Double Pole	24°33'62"		461	25.2366	92.3708				Composite pole
11	DP-7	Double Pole	42°13'10"		494	25.2369	92.3708				Composite pole
12	DP-8	Double Pole	11°47'83"		524	25.2371	92.371				Composite pole
13	DP-9	Double Pole	20°94'10"		561	25.2373	92.3713				Composite pole
14	DP-10	Double Pole	8°40'57"		603	25.2374	92.3717				Composite pole
15	DP-11	Double Pole	52°78'77"		658	25.2376	92.3722				Composite pole
				46	0						

MYNKRE
132 S/S

Avishet Anand
 12/1/2016
 13/7/2016

Srimate Dots

39	DP-35	Double Pole	00°00'00"		1937	25.2462	92.377			Composite pole
40	DP-36	Double Pole	11°59'29"	49	0					Composite pole
41	DP-37	Double Pole	18°34'79"	46	0	25.2466	92.3772			Composite pole
42	DP-38	Double Pole	3°06'20"	39	0	25.247	92.3773			Composite pole
43	DP-39	Double Pole	9°81'70"	54	0	25.2473	92.3775			Composite pole
44	DP-40	Double Pole	9°81'70"	49	0	25.2477	92.3778			Composite pole
45	DP-41	Double Pole	7°97'73"	54	0	25.2481	92.378			Composite pole
46	DP-42	Double Pole	22°23'88"	45	0	25.2485	92.3783			Composite pole
47	DP-43	Double Pole	3°11'20"	59	0	25.2488	92.3786			Composite pole
48	DP-44	Double Pole	6°52'39"	35	0	25.2493	92.3788			Composite pole
49	DP-45	Double Pole	00°00'00"	56	0	25.2501	92.379			Composite pole
50	DP-46	Double Pole	10°25'34"	56	0	25.2506	92.3791			Composite pole
51	DP-47	Double Pole	00°00'00"	44	0	25.251	92.3791		11KV Line	Composite pole
52	DP-48	Double Pole	00°00'00"	56	0	25.2515	92.3791			Composite pole
53	DP-49	Double Pole	24°33'35"	44	0	25.2519	92.3791			Composite pole
54	DP-50	Double Pole	11°59'25"	49	0	25.2523	92.3789			Composite pole
55	DP-51	Double Pole	12°74'08"	46	0	25.2527	92.3788			Composite pole
56	DP-52	Double Pole	00°00'00"	56	0	25.2532	92.3788			Composite pole
57	DP-53	Double Pole	00°00'00"	44	0	25.2536	92.3788			Composite pole
58	DP-54	Double Pole	24°33'31"	56	0	25.2541	92.3788			Composite pole
59	DP-55	Double Pole	4°15'36"	49	0	25.2545	92.379			Composite pole
60	DP-56	Double Pole	20°01'92"	63	0	25.255	92.3793			Composite pole
61	DP-57	Double Pole	6°37'90"	67	0	25.2554	92.3798			Composite pole
				45	0					Composite pole

20/5/11
12/11/11

Aishek Anand

Srimanta Das

Khilafat

62	DP-58	Double Pole	7°9'20"		3098	25.2557	92.3801			Composite pole
63	DP-59	Double Pole	7°9'72"	54	0					
64	DP-60	Double Pole	22°23'82"	45	0	25.2561	92.3804			Composite pole
65	DP-61	Double Pole	54°65'97"	59	0	25.2564	92.3807			Composite pole
66	DP-62	Double Pole	8°40'67"	42	0	25.2569	92.3809			Composite pole
67	DP-63	Double Pole	00°00'00"	55	0	25.2572	92.3813			Composite pole
68	DP-64	Double Pole	5°07'22"	55	0	25.2574	92.3818			Composite pole
69	DP-65	Double Pole	00°00'00"	46	0	25.2576	92.3823			Composite pole
70	DP-66	Double Pole	00°00'00"	46	0	25.2578	92.3827			Composite pole
71	DP-67	Double Pole	13°48'40"	46	0	25.258	92.3831			Composite pole
72	DP-68	Double Pole	24°21'61"	42	0	25.2581	92.3835			Composite pole
73	DP-69	Double Pole	10°73'21"	52	0	25.2584	92.3839			Composite pole
74	DP-70	Double Pole	00°00'00"	46	0	25.2586	92.3843			Composite pole
75	DP-71	Double Pole	48°32'34"	46	0	25.2588	92.3847			Composite pole
76	DP-72	Double Pole	00°00'00"	46	0	25.2592	92.3851			Composite pole
77	DP-73	Double Pole	51°62'62"	59	0	25.2596	92.3852			Composite pole
78	DP-74	Double Pole	34°44'52"	56	0	25.25983	92.3853			Composite pole
79	FP-5	Four Pole	69°16'50"	45	0	25.26027	92.38583		NH	Composite pole
80	DP-75	Double Pole	1°74'31"	46	0	25.26058	92.38611			Composite pole
81	DP-76	Double Pole	2°37'81"	49	0	25.26091	92.38583			Composite pole
82	DP-77	Double Pole	35°12'25"	43	0	25.26127	92.38555			Composite pole
83	DP-78	Double Pole	31°40'49"	52	0	25.26166	92.38527			Composite pole
84	DP-79	Double Pole	5°40'18"	49	0	25.262103	92.38527			Composite pole
							92.385114			Composite pole

Avishet Anand
11/12/2020

Avishet Anand

Srimanta Das

East Jaintia Hills
Kullabheri

85 DP-80	Double Pole	36°67'76"		47	4223	25.2625	92.385				Composite pole
86 DP-81	Double Pole	20°23'40"			4270	25.26284	92.38472				Composite pole
87 DP-82	Double Pole	11°04'96"		67	4337	25.26317	92.38416				Composite pole
88 DP-83	Double Pole	35°60'95"		69	4406	25.2636	92.38367				Composite pole
89 DP-84	Double Pole	35°11'42"		34	4440	25.2639	92.38361				Composite pole
90 DP-85	Double Pole	32°60'05"		40	4480	25.26415	92.38333				Composite pole
91 DP-86	Double Pole	4°46'56"		85	4565	25.26431	92.3825				Composite pole
92 DP-87	Double Pole	30°33'85"		59	4624	25.26446	92.38194				Composite pole
93 DP-88	Double Pole	7°16'73"		41	4665	25.26473	92.38166				Composite pole
94 DP-89	Double Pole	3°87'24"		37	4702	25.26494	92.38138				Composite pole
95 DP-90	Double Pole	16°31'40"		57	4759	25.26524	92.38092				Composite pole
96 DP-91	Double Pole	0°88'61"		61	4820	25.26567	92.38055				Composite pole
97 DP-92	Double Pole	6°01'41"		58	4878	25.26609	92.3802				Composite pole
98 DP-93	Double Pole	12°10'23"		96	4974	25.26672	92.37955				Composite pole
99 DP-94	Double Pole	12°74'72"		96	5070	25.26746	92.37906				Composite pole
100 DP-95	Double Pole	25°33'41"		85	5155	25.26801	92.37848				Composite pole
101 DP-96	Double Pole	6°42'84"		48	5203	25.26842	92.37833				Composite pole
102 DP-97	Double Pole	42°87'84"		65	5268	25.26895	92.378181				Composite pole
103 DP-98	Double Pole	1°80'85"		72	5340	25.26955	92.37833				Composite pole
104 DP-99	Double Pole	23°95'18"		69	5409	25.27012	92.37861				Composite pole
105 DP-100	Double Pole	22°82'95"		59	5468	25.27065	92.37861				Composite pole
106 DP-101	Double Pole	58°51'22"		70	5538	25.27123	92.37888				Composite pole
107 DP-102	Double Pole	18°52'29"		47	5585	25.27157	92.37861				Composite pole
				48	0						

Saimanta Das

Neelam Puri & Inna
East Jharkhand Hills District

Aishik Anand

12/11/2020

12/11/2020

108 DP-103	Double Pole	31°10'09"	58	5633	25.27198	92.37847			Composite pole
109 DP-104	Double Pole	42°42'41"		0					Composite pole
110 DP-105	Double Pole	27°48'67"	57	5691	25.27249	92.37861			Composite pole
111 DP-106	Double Pole	17°03'58"	58	5748	25.27294	92.37834			Composite pole
112 DP-107	Double Pole	24°66'95"	102	5806	25.27346	92.37833			Composite pole
113 DP-108	Double Pole	5°73'75"	50	5908	25.27433	92.378			Composite pole
114 DP-109	Double Pole	00°00'00"	50	5958	25.27478	92.37805			Composite pole
115 DP-110	Double Pole	31°08'34"	46	6008	25.27523	92.37805			Composite pole
116 DP-111	Double Pole	31°08'33"	55	6054	25.27564	92.37805			Composite pole
117 DP-112	Double Pole	13°72'77"	66	6109	25.27606	92.37777			Composite pole
118 DP-113	Double Pole	18°68'11"	135	6175	25.27665	92.37777			Composite pole
119 DP-114	Double Pole	3°04'47"	48	6310	25.27778	92.3782		NH	Composite pole
120 DP-115	Double Pole	29°36'68"	57	6358	25.27822	92.37833			Composite pole
121 DP-116	Double Pole	16°71'07"	39	6415	25.27867	92.37861			Composite pole
122 DP-117	Double Pole	32°72'02"	50	6454	25.27902	92.37861			Composite pole
123 DP-118	Double Pole	0°95'46"	51	6504	25.2794	92.37888			Composite pole
124 DP-119	Double Pole	12°39'96"	96	6555	25.27978	92.37916			Composite pole
125 DP-120	Double Pole	29°36'33"	57	6651	25.28061	92.37944			Composite pole
126 DP-121	Double Pole	31°08'22"	44	6708	25.28106	92.37972			Composite pole
127 DP-122	Double Pole	1°71'89"	55	6752	25.28146	92.37972			Composite pole
128 DP-123	Double Pole	5°53'41"	57	6807	25.28188	92.38			Composite pole
129 DP-124	Double Pole	18°31'05"	47	6864	25.28233	92.38028			Composite pole
130 DP-125	Double Pole	18°53'11"	99	6911	25.28268	92.38055			Composite pole
131 DP-126	Double Pole	18°53'11"	7010	7010	25.28353	92.38083			Composite pole
132 DP-127	Double Pole	18°53'11"	49	0					Composite pole

Aut
6.5.1, 12/10/2020
Vijayalakshmi

Aishwarya Arund

Srikanth Dadi

East Jaundia Hills District
Khammam

131	DP-124	Double Pole	7°16'14"		58	7059	25.28389	92.38111			Composite pole
132	DP-125	Double Pole	12°20'56"			7117	25.28435	92.38138			Composite pole
133	FP-8	Four Pole	33°56'72"		44	7161	25.28465	92.38166		132KV Line	Composite pole
134	FP-9	Four Pole	26°39'55"		245	7406	25.28684	92.38194			Composite pole
135	DP-126	Double Pole	1°90'88"		52	7458	25.28723	92.38222			Composite pole
136	DP-127	Double Pole	29°53'77"		55	7513	25.28765	92.3825			Composite pole
137	DP-128	Double Pole	18°49'95"		63	7576	25.28793	92.38305			Composite pole
138	DP-129	Double Pole	2°88'15"		42	7618	25.28821	92.38333			Composite pole
139	DP-130	Double Pole	35°03'94"		45	7663	25.28852	92.38361			Composite pole
140	DP-131	Double Pole	0°26'72"		57	7720	25.28866	92.38416			Composite pole
141	DP-132	Double Pole	0°26'72"		58	7778	25.2888	92.38472			Composite pole
142	DP-133	Double Pole	24°70'17"		57	7835	25.28894	92.38527		11KV Line	Composite pole
143	DP-134	Double Pole	4°47'03"		57	7892	25.28886	92.38583			Composite pole
144	FP-10	Four Pole	80°15'42"		38	7930	25.28878	92.3862			Composite pole
145	DP-135	Double Pole	7°78'61"		51	7981	25.2892	92.3864			Composite pole
146	DP-136	Double Pole	6°75'37"		39	8020	25.2895	92.3866			Composite pole
147	DP-137	Double Pole	00°00'00"		49	8069	25.2899	92.3868			Composite pole
148	DP-138	Double Pole	00°00'00"		49	8118	25.2903	92.387			Composite pole
149	DP-139	Double Pole	9°81'52"		49	8167	25.2907	92.3872			Composite pole
150	DP-140	Double Pole	9°81'51"		54	8221	25.2911	92.3875			Composite pole
151	DP-141	Double Pole	9°81'51"		49	8270	25.2915	92.3877			Composite pole
152	DP-142	Double Pole	9°81'51"		54	8324	25.2919	92.388			Composite pole
153	DP-143	Double Pole	00°00'00"		49	8373	25.2923	92.3882			Composite pole
					49	0					Composite pole

Arund
12/1/2020

Avishek Anand

Srimanta Das
East Jaintia Hills District
Khehriat

154	DP-144	Double Pole	6°35'76"		8422	25.2927	92.3884			Composite pole
155	DP-145	Double Pole	18°34'30"	39	0					Composite pole
156	DP-146	Double Pole	2°48'69"	46	0	25.293	92.3886			Composite pole
157	FP-11	Four Pole	67°27'68"	56	0	25.2934	92.3887		132KV Line	Composite pole
158	DP-147	Double Pole	00°00'00"	51	0	25.2939	92.3888		NH	Composite pole
159	DP-148	Double Pole	27°20'33"	51	0	25.294	92.3893			Composite pole
160	DP-149	Double Pole	00°00'00"	52	0	25.2941	92.3898			Composite pole
161	DP-150	Double Pole	25°99'73"	52	0	25.2944	92.3902			Composite pole
162	FP-12	Four Pole	69°30'77"	49	0	25.2947	92.3906			Composite pole
163	DP-151	Double Pole	9°78'82"	139	0	25.2951	92.3908			Composite pole
164	SP-1	Single Pole	15°24'91"	60	0	25.295021	92.392176			
165	SP-2	Single Pole	11°14'86"	52	0	25.294895	92.39276			
166	SP-3	Single Pole	19°31'80"	50	0	25.29491	92.39328			
167	DP-152	Double Pole	30°46'68"	50	0	25.29501	92.39376			
168	SP-4	Single Pole	11°54'46"	61	0	25.29525	92.39418			
169	SP-5	Single Pole	3°74'46"	55	0	25.29574	92.394459			
170	DP-153	Double Pole	25°64'52"	55	0	25.296213	92.394606			
171	SP-6	Single Pole	3°16'83"	69	0	25.2967	92.39472			
172	SP-7	Single Pole	2°30'35"	51	0	25.297192	92.395139			
173	SP-8	Single Pole	3°55'16"	50	0	25.297536	92.395467			
174	DP-154	Double Pole	0°36'04"	48	0	25.29789	92.395778			
175	DP-155	Double Pole	26°35'50"	92	0	25.298245	92.396052		Nala	
176	SP-9	Single Pole	11°03'16"	49	0	25.29892	92.39658			
				46	0	25.29913	92.39701			

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Seimanta Das
East Jaintia Hills District
Kheichariat

177	SP-10	Single Pole	2°92'15"		9745	25.29939	92.39736			
178	SP-11	Single Pole	25°64'83"	46	0					
179	SP-12	Single Pole	12°11'84"	46	0	25.29967	92.3977			
180	SP-13	Single Pole	10°46'43"	48	0	25.30005	92.39787			
181	DP-156	Double Pole	28°67'65"	52	0	25.30041	92.39814			
182	SP-14	Single Pole	1°79'74"	41	0	25.30074	92.3985			
183	SP-15	Single Pole	22°79'43"	40	0	25.300847	92.398894			
184	DP-157	Double Pole	53°11'46"	49	0	25.30094	92.39928			
185	SP-16	Single Pole	19°93'45"	49	0	25.30088	92.39976			
186	SP-17	Single Pole	1°61'56"	53	0	25.30119	92.4001			
187	SP-18	Single Pole	3°65'53"	50	0	25.30162	92.40032			
188	SP-19	Single Pole	23°16'04"	50	0	25.30202	92.40054			
189	DP-158	Double Pole	42°01'26"	50	0	25.30241	92.40079			
190	SP-20	Single Pole	2°94'33"	48	0	25.30268	92.40119			
191	SP-21	Single Pole	24°88'66"	47	0	25.30264	92.40167			
192	FP-13	Four Pole	91°96'35"	50	0	25.30258	92.40213			
193	SP-22	Single Pole	11°35'96"	51	0	25.30271	92.40261			
194	SP-23	Single Pole	10°47'68"	50	0	25.30316	92.40271			
195	SP-24	Single Pole	11°62'77"	50	0	25.30361	92.40271			
196	DP-159	Double Pole	43°52'65"	50	0	25.30405	92.40262			
197	SP-25	Single Pole	19°14'31"	50	0	25.3045	92.40263			
198	SP-26	Single Pole	33°11'22"	50	0	25.30482	92.40298			
199	SP-27	Single Pole	1°60'79"	49	0	25.30502	92.40343			
				45	0	25.305399	92.403679			

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East Jampur
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200	SP-28	Single Pole	0°04'64"		51	10859	25.305742	92.403919				
201	DP-160	Double Pole	40°82'04"			10910	25.30613	92.40419				
202	SP-29	Single Pole	15°93'21"		50	10960	25.30626	92.404663				
203	SP-30	Single Pole	17°66'01"		45	11005	25.30648	92.40504				
204	SP-31	Single Pole	16°93'05"		49	11054	25.30682	92.40535				
205	DP-161	Double Pole	22°05'07"		48	11102	25.30706	92.40575				
206	SP-32	Single Pole	2°95'93"		50	11152	25.30743	92.40603				
207	SP-33	Single Pole	3°35'37"		48	11200	25.3078	92.40628				
208	SP-34	Single Pole	4°77'27"		49	11249	25.30819	92.40651				
209	SP-35	Single Pole	2°74'33"		51	11300	25.30861	92.40671				
210	SP-36	Single Pole	2°74'33"		49	11349	25.30902	92.40688				
211	SP-37	Single Pole	0°53'02"		51	11400	25.30944	92.40708				
212	SP-38	Single Pole	12°70'28"		52	11452	25.30987	92.40729				
213	DP-162	Double Pole	10°77'71"		52	11504	25.31033	92.40739				
214	SP-39	Single Pole	16°39'59"		54	11558	25.31078	92.40759				
215	SP-40	Single Pole	0°24'26"		53	11611	25.31125	92.40764				
216	SP-41	Single Pole	2°12'69"		50	11661	25.3117	92.40769				
217	SP-42	Single Pole	7°50'93"		48	11709	25.31213	92.40772				
218	SP-43	Single Pole	1°34'82"		52	11761	25.31259	92.40782				
219	SP-44	Single Pole	16°18'52"		47	11808	25.31301	92.4079				
220	DP-163	Double Pole	15°24'09"		48	11856	25.3134	92.40811				
221	SP-45	Single Pole	0°89'59"		49	11905	25.31383	92.4082				
222	SP-46	Single Pole	1°12'48"		50	11955	25.31427	92.4083				
					50	0						

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Avishk Anand

Swimanta Das
East Jaintia Hills District
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223	SP-47	Single Pole	3°18'78"			12005	25.31471	92.40841			
				48	0						
224	SP-48	Single Pole	4°9'527"		12053	25.31514	92.40849				
				50	0						
225	SP-49	Single Pole	4°15'33"		12103	25.31559	92.40853				
				53	0						
226	SP-50	Single Pole	4°57'24"		12156	25.31606	92.40861				
				48	0						
227	SP-51	Single Pole	0°58'52"		12204	25.31648	92.40872				
				50	0						
228	DP-164	Double Pole	4°39'33"		12254	25.31692	92.40883				
				51	0						
229	SP-52	Single Pole	11°26'25"		12305	25.31736	92.40898				
				49	0						
230	SP-53	Single Pole	0°12'95"		12354	25.3178	92.40903				
				50	0						
231	SP-54	Single Pole	8°74'59"		12404	25.31825	92.40908				
				48	0						
232	SP-55	Single Pole	6°69'53"		12452	25.31867	92.4092				
				50	0						
233	SP-56	Single Pole	4°33'30"		12502	25.31909	92.40938				
				50	0						
234	SP-57	Single Pole	6°83'78"		12552	25.31952	92.40952				
				48	0						
235	SP-58	Single Pole	1°08'42"		12600	25.31992	92.40971				
				49	0						
236	DP-165	Double Pole	00°00'00"		12649	25.32032	92.40991				
				49	0						
237	SP-59	Single Pole	1°59'28"		12698	25.32072	92.41011				
				49	0						
238	SP-60	Single Pole	0°50'85"		12747	25.32113	92.4103				
				48	0						
239	SP-61	Single Pole	1°08'42"		12795	25.32153	92.41049				
				49	0						
240	SP-62	Single Pole	1°63'23"		12844	25.32193	92.41069				
				48	0						
241	SP-63	Single Pole	2°10'78"		12892	25.32232	92.4109				
				49	0						
242	SP-64	Single Pole	0°41'20"		12941	25.32271	92.41113				
				51	0						
243	SP-65	Single Pole	0°85'82"		12992	25.32311	92.41137				
				47	0						
244	SP-66	Single Pole	5°53'70"		13039	25.32348	92.4116				
				50	0						
245	DP-166	Double Pole	16°77'55"		13089	25.32389	92.4118				
				47	0						

22/11/2020

22/11/2020

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East Jaintia Hills District

Soimanta Das

246	SP-67	Single Pole	8°48'59"		49	13136	25.324212	92.412105			
247	SP-68	Single Pole	1°02'98"			13185	25.324584	92.412363			
248	SP-69	Single Pole	0°14'77"		49	13234	25.324951	92.412637			
249	SP-70	Single Pole	3°32'16"		45	13279	25.325284	92.412887			
250	SP-71	Single Pole	3°38'51"		49	13328	25.325664	92.413138			
251	SP-72	Single Pole	8°09'541"		40	13368	25.325959	92.41336			
252	SP-73	Single Pole	5°66'51"		52	13420	25.3263	92.413714			
253	SP-74	Single Pole	2°12'76"		46	13466	25.326571	92.414057			
254	DP-167	Double Pole	39°02'11"		47	13513	25.326863	92.4144			
255	SP-75	Single Pole	8°07'61"		53	13566	25.327338	92.414471			
256	SP-76	Single Pole	2°19'19"		54	13620	25.32782	92.41446			
257	SP-77	Single Pole	9°10'86"		51	13671	25.32828	92.41443			
258	SP-78	Single Pole	5°73'50"		50	13721	25.32873	92.41448			
259	SP-79	Single Pole	3°23'33"		52	13773	25.3292	92.41448			
260	SP-80	Single Pole	4°38'40"		53	13826	25.32968	92.41445			
261	SP-81	Single Pole	1°09'98"		50	13876	25.33013	92.41446			
262	SP-82	Single Pole	5°55'23"		51	13927	25.33059	92.41448			
263	SP-83	Single Pole	2°20'02"		52	13979	25.33106	92.41445			
264	DP-168	Double Pole	1°10'17"		52	14031	25.33153	92.41444			
265	SP-84	Single Pole	2°30'04"		47	14078	25.33195	92.41444			
266	SP-85	Single Pole	2°29'30"		50	14128	25.3324	92.41446			
267	SP-86	Single Pole	2°27'83"		50	14178	25.33285	92.4145			
268	SP-87	Single Pole	9°17'27"		50	14228	25.3333	92.41456			
					51	0					

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East Jaintia Hills District

269	SP-88	Single Pole	7°67'41"		48	14279	25.33374	92.4147			
270	SP-89	Single Pole	0°96'20"			14327	25.33417	92.41477			
271	SP-90	Single Pole	10°36'77"		50						
272	SP-91	Single Pole	2°11'43"		56	14377	25.33461	92.41485			
273	SP-92	Single Pole	2°28'28"		53	14433	25.33511	92.41484			
274	DP-169	Double Pole	22°13'01"		48	14486	25.33559	92.41485			
275	SP-93	Single Pole	0°24'78"		62	14534	25.33602	92.41484			
276	DP-170	Double Pole	1°62'54"		67	14596	25.33654	92.41506			
277	DP-171	Double Pole	4°50'82"		66	14663	25.3371	92.4153			
278	SP-94	Single Pole	2°30'78"		43	14729	25.33766	92.41552			
279	SP-95	Single Pole	3°31'16"		46	14772	25.33803	92.41563			
280	SP-96	Single Pole	1°97'94"		51	14818	25.33843	92.41573			
281	SP-97	Single Pole	5°7'68"		58	14869	25.33887	92.41587			
282	SP-98	Single Pole	2°15'88"		50	14927	25.33937	92.41605			
283	SP-99	Single Pole	12°63'29"		48	14977	25.33978	92.41625			
284	SP-100	Single Pole	11°83'79"		48	15025	25.34017	92.41646			
285	DP-172	Double Pole	4°30'14"		39	15073	25.34059	92.41657			
286	DP-173	Double Pole	36°59'65"		61	15112	25.34094	92.41658			
287	DP-174	Double Pole	47°09'11"		67	15173	25.34149	92.41655			
288	SP-101	Single Pole	1°37'37"		48	15240	25.34199	92.41692			
289	SP-102	Single Pole	5°07'20"		53	15288	25.34241	92.41681			
290	SP-103	Single Pole	0°79'50"		50	15341	25.34288	92.4167			
291	SP-104	Single Pole	3°94'10"		53	15391	25.34333	92.41664			
					50	15444	25.3438	92.41657			

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Khehriat

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292	SP-105	Single Pole	7°01'41"		15494	25.34424	92.41647				
293	SP-106	Single Pole	8°40'04"	50	0						
					15544	25.34469	92.41643				
294	SP-107	Single Pole	7°12'96"	54	0						
					15598	25.34516	92.41631				
295	SP-108	Single Pole	3°66'13"	49	0						
					15647	25.3456	92.41626				
296	DP-175	Double Pole	44°18'13"	52	0						
					15699	25.34607	92.41624				
297	SP-109	Single Pole	8°62'11"	50	0						
					15749	25.34638	92.41588				
298	DP-176	Double Pole	27°99'52"	49	0						
					15798	25.34673	92.41558				
299	DP-177	Double Pole	2°74'16"	71	0						
					15869	25.34736	92.41546				
300	DP-178	Double Pole	44°92'54"	74	0						
					15943	25.34802	92.41537				
301	SP-110	Single Pole	14°67'86"	52	0						
					15995	25.34831	92.41496				
302	SP-111	Single Pole	7°45'55"	53	0						
					16048	25.34869	92.41464				
303	DP-179	Double Pole	39°14'75"	53	0						
					16101	25.3491	92.41438				
304	SP-112	Single Pole	11°63'10"	50	0						
					16151	25.34954	92.41446				
305	SP-113	Single Pole	29°15'58"	50	0						
					16201	25.34999	92.41444				
306	SP-114	Single Pole	13°24'51"	59	0						
					16260	25.350445	92.41432				
307	SP-115	Single Pole	17°84'34"	52	0						
					16312	25.35089	92.41397				
308	SP-116	Single Pole	8°87'49"	50	0						
					16362	25.35125	92.41368				
309	DP-180	Double Pole	14°23'92"	55	0						
					16417	25.35169	92.41343				
310	FP-14	Four Pole	93°06'49"	62	0						
					16479	25.35211	92.41302				
311	SP-117	Single Pole	8°27'10"	48	0						
					16527	25.352376	92.41392				
312	SP-118	Single Pole	7°73'70"	49	0						
					16576	25.352599	92.413818				
313	SP-119	Single Pole	10°16'47"	52	0						
					16628	25.352888	92.41423				
314	SP-120	Single Pole	10°55'49"	49	0						
					16677	25.353214	92.414555				
				50	0						

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Srimanta Das

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315	SP-121	Single Pole	1°24'33"		45	16727	25.353598	92.414815			
316	SP-122	Single Pole	1°61'55"			16772	25.353944	92.415038			
317	DP-181	Double Pole	2°23'25"		49	0					
318	SP-123	Single Pole	0°54'37"		48	0					
319	SP-124	Single Pole	3°73'68"		53	0					
320	SP-125	Single Pole	5°17'52"		47	0					
321	SP-126	Single Pole	1°22'82"		48	0					
322	SP-127	Single Pole	8°36'32"		52	0					
323	SP-128	Single Pole	15°85'12"		47	0					
324	DP-182	Double Pole	44°87'31"		46	0					
325	SP-129	Single Pole	1°31'23"		51	0					
326	SP-130	Single Pole	10°82'24"		54	0					
327	SP-131	Single Pole	9°87'34"		50	0					
328	DP-183	Double Pole	47°86'12"		57	0					
329	SP-132	Single Pole	11°39'35"		57	0					
330	SP-133	Single Pole	6°72'53"		50	0					
331	SP-134	Single Pole	2°25'94"		56	0					
332	SP-135	Single Pole	0°43'99"		55	0					
333	DP-184	Double Pole	24°00'38"		59	0					
334	SP-136	Single Pole	0°76'65"		57	0					
335	SP-137	Single Pole	2°07'96"		59	0					
336	SP-138	Single Pole	8°02'89"		56	0					
337	DP-185	Double Pole	33°73'11"		64	0					
					50	0					

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Dr. J. K. Das
12/1/2020

361	DP-194	Double Pole	44°08'87"		19230	25.37102	92.42711			Composite Pole
362	DP-195	Double Pole	10°20'05"	33	0	19263	25.37125	92.42732		Composite Pole
363	DP-196	Double Pole	15°12'38"	47	0	19310	25.37162	92.42755		Composite Pole
364	DP-197	Double Pole	8°27'79"	57	0	19367	25.37212	92.42769		Composite Pole
365	DP-198	Double Pole	5°39'13"	68	0	19435	25.37273	92.42776		Composite Pole
366	DP-199	Double Pole	5°64'86"	52	0	19487	25.37319	92.42786		Composite Pole
367	DP-200	Double Pole	17°73'78"	45	0	19532	25.37358	92.42799		Composite Pole
368	DP-201	Double Pole	28°54'30"	59	0	19591	25.37411	92.42798	Road	Composite Pole
369	FP-15	Four Pole	69°55'64"	56	0	19647	25.37456	92.42824		Composite Pole
370	DP-202	Double Pole	31°61'76"	63	0	19710	25.37449	92.42886		Composite Pole
371	DP-203	Double Pole	21°45'14"	25	0	19735	25.374606	92.429078		Composite Pole
372	DP-204	Double Pole	24°21'08"	66	0	19801	25.37507	92.42948		Composite Pole
373	DP-205	Double Pole	8°83'44"	49	0	19850	25.37543	92.42976		Composite Pole
374	FP-16	Four Pole	60°74'24"	97	0	19947	25.37616	92.43029		Composite Pole
375	FP-17	Four Pole	60°94'40"	77	0	20024	25.37622	92.43105		Composite Pole
376	DP-206	Double Pole	8°73'50"	35	0	20059	25.37649	92.43123		Composite Pole
377	DP-207	Double Pole	17°99'57"	53	0	20112	25.37693	92.43143		Composite Pole
378	DP-208	Double Pole	35°51'86"	48	0	20160	25.37726	92.43174		Composite Pole
379	DP-209	Double Pole		48	0	20208	25.37769	92.43178		Composite Pole
				20	0	20228				

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Srinananta Das

Necon Power & Infra Limited
East Jaintia Hills Dist
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ANNEXURE III

Details of the Impact on Trees and the Compensation Paid/ Being Paid

**Approximate estimate for tree cutting (in sections where it is completely unavoidable) in the corridor of 33 kV
DMS lines under MEG-DMS-01 package**

Sl. No.	Name of the DMS Line	Total line length (km)	Length of the section where unavoidable trees to be felled (km)	Amount (Rs.)	Remarks
1	132/33kV Mynkre S/s to 33/11kV Mynkre S/s DMS Line	1.618	0.967	81,234.15	
2	132/33kV Mynkre S/s to 33/11kV Rymbai S/s DMS Line	15.806	2.16	31,637.76	
3	132/33kV Mynkre S/s to 33/11kV Sutnga S/s DMS Line (Including Sutnga-Byndihati composite section)	20.209	2.608	15,732.00	
4	132/33kV Mynkre S/s to 33/11kV Byndihati S/s DMS Line	10.29	0.402	11,014.44	
Total				1,39,618.35	

Sambalpur Thubhu
Nesco Power & Infra Limited
 East Jaintia Hills District
 Shrimanta Deyhriat

14.09.2021

सुकान्त देबनाथ / SUKANTA DEBNATH
 अभियंता / Engineer
 एनईआरपीएसआईपी / NERPSIP
 पावरग्रिड, खिलेरियाट
 POWERGRID, Khliehriat

14.09.2021

बि.मेधि / B. MEDHI
 उप मा प्रबंधक / Dy. Gen Manager
 एन भारीपीएसआईपी / NERPSIP
 पावरग्रिड, खिलेरियाट
 POWERGRID, Khliehriat

132/33kV Mynkre S/s to 33/11kV Rymbai S/s DMS Line

Sl. No.	Between Spans		Span length (m)	Name of the trees	Girth (m)	No. of trees	Cutting rate (Rs.)	Amount (Rs.)	Remarks
1	SP-37	SP-39	87	Dieng Laphiang	0.45	9	108.12	973.08	Rate ref. taken from LOA of "Tree cutting/felling works of the LILO of 132kV D/C MLHEP-Khliehriat TL at Mynkre under NERPSIP, Mynkre
2					0.50	8	108.12	864.96	
3					0.80	4	503.64	2,014.56	
4				Dieng Ngan	0.70	6	503.64	3,021.84	
5					0.90	8	503.64	4,029.12	
6	DP-10	DP-11	70	Dieng Lyngshing	0.45	6	108.12	648.72	
7					0.65	11	503.64	5,540.04	
8	SP-68	SP-71	210	Pine	0.35	9	108.12	973.08	
9					0.40	6	108.12	648.72	
10					0.55	4	108.12	432.48	
11				Dieng Lakaru	0.40	12	108.12	1,297.44	
12					0.55	7	108.12	756.84	
13					0.75	4	503.64	2,014.56	
14					0.80	2	503.64	1,007.28	
15	DP-24	SP-85	355	Pine	0.30	9	108.12	973.08	
16					0.45	5	108.12	540.60	
17					0.65	6	503.64	3,021.84	
18	DP-45	SP-156	1438	Dieng Lakaru	0.45	3	108.12	324.36	
19					0.75	2	503.64	1,007.28	
20					0.90	1	503.64	503.64	
21					1.05	1	503.64	503.64	
22				Pine	0.30	6	108.12	648.72	
23					0.45	8	108.12	864.96	
Total								31,637.76	

Sambhlang Thubru
Naccon Power & Infra Limited
East Jaintia Hills District
Khliehriat
Srimanta Das

Sukanta
14.09.2021
सुकान्त देबनाथ / SUKANTA DEBNATH
अभियंता / Engineer
एनईआरपीएसआईपी / NERPSIP
पावरग्रिड, खिलेरियाट
POWERGRID, Khliehriat

Arind
14/09/2021
बि.मेधि / B. MEDHI
उप महा प्रबन्धक / Dy. Gen Manager
एनईआरपीएसआईपी / NERPSIP
पावरग्रिड खिलेरियाट/
POWERGRID, Khliehriat

132/33kV Mynkre S/s to 33/11kV Mynkre S/s DMS Line

Sl. No.	Between Spans		Span length (m)	Name of the trees	Girth (m)	No. of trees	Cutting rate (Rs.)	Amount (Rs.)	Remarks
1	DP-2	SP-8	967	Dieng Ngan	2.40	1	2253.69	2,253.69	Rate ref. taken from LOA of "Tree cutting/felling works of the LILO of 132kV D/C MLHEP-Khliehriat TL at Mynkre under NERPSIP, Mynkre
2					0.75	8	503.64	4,029.12	
3	SP-10	SP-11			1.00	10	503.64	5,036.40	
4	SP-11	SP-12			0.80	13	503.64	6,547.32	
5	SP-12	SP-13		Dieng Ngan	0.90	14	503.64	7,050.96	
6				Dieng Lyngshning	2.00	1	2253.69	2,253.69	
7	SP-13	SP-14		Dieng Lyngshning	0.70	8	503.64	4,029.12	
8	SP-14	SP-15			0.90	7	503.64	3,525.48	
9	SP-15	SP-16			1.00	8	503.64	4,029.12	
10	SP-16	DP-3			0.80	10	503.64	5,036.40	
11	DP-3	DP-4		Dieng Ngan	0.90	13	503.64	6,547.32	
12	DP-4	SP-17			0.80	5	503.64	2,518.20	
13	SP-17	SP-18			0.90	13	503.64	6,547.32	
14	SP-18	SP-19			0.80	6	503.64	3,021.84	
15	FP-3	SP-20		Dienglieng	0.70	7	503.64	3,525.48	
16	SP-20	SP-21			2.00	1	2253.69	2,253.69	
17					0.70	8	503.64	4,029.12	
18	SP-21	SP-22			0.60	5	108.12	540.60	
19	SP-22	FP-4			0.70	6	503.64	3,021.84	
20	FP-4	SP-23		Dieng Laphiang	0.70	5	503.64	2,518.20	
21	SP-23	SP-24			0.60	10	108.12	1,081.20	
22	SP-24	SP-25			0.60	8	108.12	864.96	
23	SP-25	DP-5		Dieng Lakaru	0.60	5	108.12	540.60	
24	DP-5	DP-6			0.60	4	108.12	432.48	
Total								81,234.15	

Sambalang Thubru

*Neecon Power & Infra Limited
East Jaintia Hills District
Khliehriat*

Saimanta Das

*सुकान्त देबनाथ
14.09.2024*

सुकान्त देबनाथ / SUKANTA DEBNATH
अभियंता / Engineer
एनईआरपीएसआईपी / NERPSIP
पावरग्रिड, खिलेरियाट
POWERGRID, Khliehriat

*बि.मेधि
14/09/2024*

बि.मेधि / B. MEDHI
उप महा प्रबंधक / Dy. Gen Manager
एनईआरपीएसआईपी / NERPSIP
पावरग्रिड, खिलेरियाट
POWERGRID, Khliehriat

**132/33kV Mynkre S/s to 33/11kV Sutnga S/s DMS Line
(Including Sutnga-Byndihati composite section)**

Sl. No.	Between Spans		Span length (m)	Name of the trees	Girth (m)	No. of trees	Cutting rate (Rs.)	Amount (Rs.)	Remarks
1	DP-14	DP-28	774	Dieng Ngan	0.30	9	108.12	973.08	Rate ref. taken from LOA of "Tree cutting/felling works of the LILO of 132kV D/C MLHEP-Khliehriat TL at Mynkre under NERPSIP, Mynkre
2					0.44	12	108.12	1,297.44	
3					0.60	3	108.12	324.36	
4				Dienglieng	0.35	10	108.12	1,081.20	
5					0.55	5	108.12	540.60	
6					0.65	2	503.64	1,007.28	
7	DP-122	FP-8	44	Dieng Sohphoh	0.45	11	108.12	1,189.32	
8				Pine	0.90	6	503.64	3,021.84	
9	FP-13	DP-161	1790	Dienglieng	0.80	4	503.64	2,014.56	
10				Dieng Lakaru	0.90	2	503.64	1,007.28	
11				Pine	0.44	7	108.12	756.84	
12					0.70	5	503.64	2,518.20	
Total								15,732.00	

Sambalang Thubtu
Necocon Power & Infra Limited
East Jaintia Hills District
Khliehriat
Skimanta Das

Skimanta
14.09.2021

सुकान्त देबनाथ / SUKANTA DEBNATH
अभियंता / Engineer
एनईआरपीएसआईपी / NERPSIP
पावरग्रिड, खिलेरियाट
POWERGRID, Khliehriat

(B. Medhi)
14/09/2021

बि.मेधि / B. MEDHI
उप महा प्रबंधक / Dy. Gen Manager
एनईआरपीएसआईपी / NERPSIP
पावरग्रिड, खिलेरियाट
POWERGRID, Khliehriat

132/33kV Mynkre S/s to 33/11kV Byndihati S/s DMS Line									
Sl. No.	Between Spans		Span length (m)	Name of the trees	Girth (m)	No. of trees	Cutting rate (Rs.)	Amount (Rs.)	Remarks
1	DP-153	DP-154	402	Dieng Laphiang	0.40	8	108.12	864.96	Rate ref. taken from LOA of "Tree cutting/felling works of the LILO of 132kV D/C MLHEP-Khliehriat TL at Mynkre under NERPSIP, Mynkre
2					0.55	3	108.12	324.36	
3					0.65	3	503.64	1,510.92	
4				Dienglieng	0.35	11	108.12	1,189.32	
5					0.55	4	108.12	432.48	
6				Dieng Ngan	0.40	4	503.64	2,014.56	
7					0.65	3	503.64	1,510.92	
8				Dieng Lyngshning	0.55	6	108.12	648.72	
9					0.65	3	503.64	1,510.92	
10					0.90	2	503.64	1,007.28	
Total								11,014.44	

Samborlang Thubtu
Neccon Power & Infra Limited
East Jaintia Hills District
Khliehriat
Ssimanta Das

14.09.2021

सुकान्त देबनाथ / SUKANTA DEBNATH
अभियंता / Engineer
एनईआरपीएसआईपी / NERPSIP
पावरग्रिड, खिलेरियाट
POWERGRID, Khliehriat

14/09/2021

बि.मेधि / B. MEDHI
उप महा प्रबंधक / Dy. Gen Manager
एनईआरपीएसआईपी / NERPSIP
पावरग्रिड, खिलेरियाट
POWERGRID, Khliehriat

ANNEXURE IV

Sample Case of Compensation Payment

Details of compensation for Land area towards construction of 132kV D/C MLHEP-Khliehriat T/L at Mynkre (TW-02 package) Annexure- V

S.N.	Loc. No	Type of Tower	Area of Gantry Tower from chimney to chimney (in Sq.M)	Rate Per Sq. Mtr	Total Amount payable (Rs.)	Name of the Land Owner	Location address	Bank details of Land owner	Compensation bill no.
1	2	3	4	5	6	7	8	9	10
1	Gantry	G-1	57.820	880.00	50881.60	Mr. Phulwot Nongtdu S/o Smt. Risa Nongtdu	Vill Umlaper	Name of bank-State Bank of India A/c no:- 30437323614 IFSC code:- SBIN0010763	36
2	Total -				50881.60				
3	Say -				50881.00				

तबिन्द्र कुमार
12/5/21

तबिन्द्र कुमार / TAWINDER KUMAR
उप प्रबन्धक / MANAGER
एनईआरपीएसआईपी / NERPSIP

बि.मोधि
12/5/21

बि.मोधि / B. MEDHI
उप महा प्रबन्धक / Dy. Gen Manager
एनईआरपीएसआईपी / NERPSIP
पावरग्रिड खिलेरयाद/
POWERGRID, Khliehriat

COMPENSATION BILL

36

MEGHALAYA POWER TRANSMISSION CORPORATION LIMITED

Name of the Project under NERPSIP Scheme: LILO OF 132 KV D/C MLHEP-Khliehriat Transmission Line at Mynkre.

1. Name of the Land Owner : MR. PHULWOT NONGTU
2. ~~Father's~~ ^{MOTHER} Name : SMT. RISA NONGTU
3. Village/Town/Locality : UMLAPER
4. District : EAST JAINTEA HILLS
5. Amount of Compensation in Rs. - 50,881/-

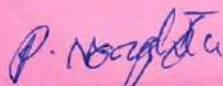
Bank Account No. 30437323614

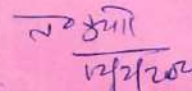
Branch Name STATE BANK OF INDIA, KHLIEHRIAT

IFSC No. SBIN0010763

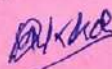
Branch Code 10763

Details of ~~Crops~~ ^{LAND} : (As per Annexure attached) - 36


Signature of Land Owner


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


Witness :

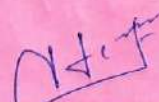
1. 
2. P. Sympu

Certified that the land under UMLAPER (LOC NO - GANTRY-LOOPIN) Village/Town/Locality,

District EAST JAINTEA HILLS belongs to Sri/ Smt. PHULWOT NONGTU

The ~~crops/trees~~ ^{LAND} 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 of Headman
Shri. L. Swar
Ac'ing Dollo
Maka Ry


On Behalf of MePTCL
Resident Engineer,
132kV Grid Substation, MePTCL
Lad Mongkrem, Mawlyndep-793021

ANNEXURE

36
 Details of Compensation - for Constⁿ of 132kv D/c MLHEP - Khllehriat J/L at Myntke (TW-02 part)

Sl. No.	Particulars (Location No)	Unit (Sq. m)	Qty. (No)	Rate (Per Sq. m)	Amount (in Rs)	Remarks
1.	GANTRY (Loop-IN)	57.82	01	880	50881/-	
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
Grand Total					50,881/-	

(Rupees Fifty thousand eight hundred eighty one) only.

Signature of Official with Seal

Resident Engineer,
 132KV Grid Substation, MePTCL
 Lad Nongkrem, Mawlyndep-793021

Shri. L. Sagar
 Acting Deputy
 Elaka Ryots
 P. Mawlyndep

COMPENSATION NOTICE

095

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

Name of the Project under NERPSIP Scheme: LILO of 132 kV D/C MLHEP-Khliehriat Transmission Lin
at Mynkre

To,

Shri/Smti. Phulust Nongtdu

Location. Gantoy - (G1)

Village/Town Locality Umlaper

P. O. Khliehriat District - East Jaintia Hills District

Date 10 / 07 / 2020

Sir/ Madam,

In exercise of power vested with MePTCL and POWERGRID 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 LILO of 132 kV D/C MLHEP-Khliehriat at Mynkre Transmission Line may pass through your land and the trees / plants belonging to you will have to be unavoidably damaged during construction/erection of the line by the MePTCL / POWERGRID and you will be compensated for the loss as per the norms of local revenue Authority/Departments. The crops/trees/plants so cut will be handed over to you at site after cutting. Kindly issue the NOC for the above.

P. Nongtdu

10/07/2020

10/07/2020

For POWERGRID

Junior Engineer/Engineer/Sr. Engineer/Manager

For MePTCL

Resident Engineer,
132kV Grid Substation, MePTCL,
Lad Nongkrem, Mawlyndep-793021

095

NO OBJECTION CERTIFICATE

Loc - Gantay - (G1)

I Shri/Smti. Phuluot Nongtdu S/o
D/o Smt. Risa Nmytdu aged aboutold
and residing at Nongthymme East Jaintia Hills, District and owner of land mentioned hereunder at clause (I), hereby
on this day the 25 / 07 / 2020 solemnly affirm and declare as follows:

- 1) That I have no objection whatsoever for MePTCL / PGCIL to construct LILO of 132 kV D/C MLHEP-
Khliehriat Transmission Line at Mynkre passing through my land located
at Mulapar village East Jaintia Hills District.
- 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 has agreed to pay compensation
to me, in accordance with the schedule of rates issued by the Deputy Commissioner
East Jaintia Hills District
Council.....

P. Nongtdu
Land Owner

Witness:

1. S. S. S.
2. F. Lyngdoh

343/0 - (2)



25/07/2008 3633470 10763
KHLIEHRIAT (10763)
P O KHLIEHRIAT (230608)
Mode of Operation :
Nom.Reg No :
Date of Issue: 25/07/2008

भारतीय स्टेट बैंक
State Bank of India

शाखा,
BRANCH

बचत खाता पास बुक
SAVINGS BANK PASS BOOK

नाम
Name(s) Mr. PHULWOT NONGTDU
पता
Address NONGTHYMME
व्यवसाय
RYMBAI
Occupation VILL NONGTHYMME 793200
JAINTIA HILLS

पास बुक क्र० :
651 Pass Book No. :
खाता-वही क्रमांक :
Ledge No. :
30437323614 :
खाता संख्या :
Account No. :



P. Nongtdu

34B/0



ELECTION COMMISSION OF INDIA

IDENTITY CARD HWV0578559



Name : PHULWOT NONGTDU

Mother's Name : RISA NONGTDU

P. Nongtdu

Sex : M

Age as on 1.1.2007 : 58

ANNEXURE V

**NoCs obtained from the
Headmen/ Village
Councils**

OFFICE OF THE WAHEH SHNONG(HEADMAN) ,BYNDIHATI
Byndihati ,East Jaintia Hills District,Khliehriat.

Meghalaya -793200.

Date 30/11/2017

(N.O.C)

This is to certify that I shri Maxi shylla the Waheh Shnong (Headman) of Byndihati village
Grant a No Objection Certificate for the MePDCL to carry out the construction of 33 KV
Distribution line under NERSIP Project in East Jaintia Hills from Mynkre village to Byndihati .

Therefore, I wish the MeDPCL a very successful future.

Thank you.

M. Shylla
Waheh Shnong
Byndihati
East Jaintia Hills
Village
East Jaintia Hil, District.
(Shri Maxi Shylla)

OFFICE OF THE ELAKA RYMBAI DOLLOISHIP



Head Quarter, Rymbai P.O. Ladrymbai
East Jaintia Hills District, Meghalaya - 793 160

Reference No. OERD/EJHD/2016-17 No - 01



To,
The Manager,
POWERGRID, NERPSIP
Khliehriat

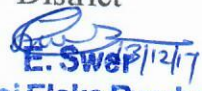
Sub – NOC for Construction of 33 KV Distribution Line

Ref: NERPSIP/KHT/2017/295 , Dated. 4th December 2017

Sir,

With reference to the subject cited above and with regards to your request letter no 295 dated 4/12/17. I have the honor to state that the Elaka of Rymbai Elaka, East Jaintia Hills District, Meghalaya have No Objection for the construction of 33 KV Distribution line from 132 KV sub- station, Mynkre to Rymbai at Umlaper Village which is under the jurisdiction of the Elaka.

We therefore hereby issue the N o Objection Certificate (NOC) to MePDCL/POWERGRID towards construction of the aforesaid line associated with North Eastern Power Improvement Project (NERPSIP)

(Shri Elios Swer)
Dolloi Elaka Rymbai
East Jaintia Hills
District

E. Swer
Dolloi Elaka Rymbai
East Jaintia Hills District

Local C.V.V.
MFA 901-01



OFFICE OF THE WAHEH SHNONG OF RYMBAI VILLAGE
P.O. LAD-RYMBAI, PIN. NO. 793160
East Jaintia Hills District, Meghalaya

Date: 7/04/2018.

NO OBJECTION CERTIFICATE

This is to certify that the Headman of village Rymbai have no objection for construction of MePDCL 33 KV line from 132 KV Mynkre Sub-Station to 33 KV Rymbai Sub-Station.

Thanking You


**Waheh Shnong
Rymbai
East Jaintia Hills, Dist**

(Shri. Sunshine Lyngdoh)
Headman of
Rymbai Village
East Jaintia Hills District

**UMSATAI VILLAGE
P.O. LAD RYMBAL, EAST JAINTIA HILLS DISTRICT,
MEGHALAYA - 793160**

To

The Manager,
POWERGRID, NERPSIP
Khliehriat

Subject: - "NOC for Construction of 33 KV Distribution Line".


Ref. NERPSIP/KHLT/2017/294 Dt. 4/12/17

Sir,

With reference to the subject cited above and with regards to your request letter no. NERPSIP/KHLT/2017/294 Dt. 4/12/17 I have the honour to state that the Dorbar Shnong of Umsatai Village, East Jaintia Hills District, Meghalaya have no objection for the construction of **33 KV** Distribution line from 132 KV Sub-Station, Mynkre to Umsatai Village under the jurisdiction of the village.

We therefore hereby issue the **No Objection Certificate (NOC)** to MePDCL/ POWERGRID towards construction of the aforesaid distribution line associated with North Eastern Power Improvement Project (NERPSIP).

Dated-Umsatai
The 16th December, 2017


(Shri. Lowel Shylla)
Waheh Shnong
Umsatai Village
East Jaintia Hills District

Waheh Shnong
Umsatai
Elaka Rym
East Jaintia Hills

**OFFICE OF THE WAHEH SHNONG (HEADMEN) NONGSNING
NONGSNING,EAST JAINTIA HILLS DISTRICT MEGHALAYA
PIN 793200**

TO WHOM IT MAY CONCERN

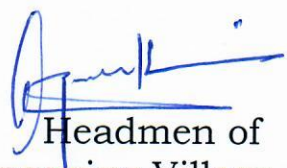
Date: 08-12-2017

SUBJECT :NO OBJECTION CERTIFICATE FOR CONSRUCTION OF 33KV LINE

Dear Sir,

This is to Certify that the Headmen of village Nongsning have no objection for construction of MePDCL 33kv lines from 132 KV Mynkre S/S to 33 KV Byndihati S/S and 132 KV Mynkre S/S to 33 KV Sutnga S/S.

Thanking You


Headmen of
Nongsning Village
East Jaintia Hills District

Waheh Shnong
Nongsning
East Jaintia Hills
Khliehriat

OFFICE OF THE SUTNGA VILLAGE DORBAR
SUTNGA ,EAST JAINTIA HILLS DISTRICT MEGHALAYA
PIN 793200

TO WHOM IT MAY CONCERN

Ref.....

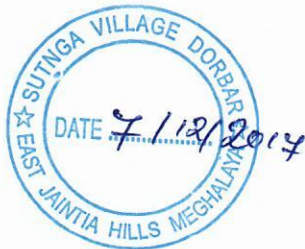
Date: 7/11/2014


SUBJECT :NO OBJECTION CERTIFICATE FOR CONSRUCTION OF 33KV LINE

Dear Sir,

This is to Certify that the Headmen of village Sutnga have no objection for construction of MePDCL 33kv lines from 132 KV Mynkre S/S to 33 KV Sutnga S/s.

Thanking You




Headmen of
Sutnga Village
East Jaintia Hills District

Waheh Shnong
Sutnga Village, P.O. Khliehriat
East Jaintia Hills, Meghalaya

OFFICE OF THE WAHEH SHNONG (HEADMEN) UMLAWANG
UMLAWANG, EAST JAINTIA HILLS DISTRICT MEGHALAYA
PIN 793200

TO WHOM IT MAY CONCERN

Date: 8/12/17

SUBJECT : NO OBJECTION CERTIFICATE FOR CONSTRUCTION OF 33KV LINE

Dear Sir,

This is to Certify that the Headmen of village Umlawang have no objection for construction of MePDCL 33kv line from 132 KV Mynkre S/S to Sutnga 33kv S/S.

Thanking You

Headmen of
Umlawang Village
East Jaintia Hills District

Be Abher
Waheh Shnong
Umlawang
East Jaintia Hills

OFFICE OF THE DORBAR SHNONG UMRASONG
ELAKA SUTNGA
EAST JAINTIA HILLS DISTRICT
MEGHALAYA - 793200

Dt 23.04.2018

To,

The Manager,
POWERGRID, NERPSIP
Khliehriat.

Sub- **NOC for Construction of 33 KV Distribution Lines.**

Ref: NERPSIP/KHT/2017/284 Dtd. 28/11/2017

Sir,

With reference to the subject cited above and with regards to your request letter no NERPSIP/KHT/2017/284 Dated 28.11.2017. I have the honor to state that the Dorbar of Umrasong Village, East Jaintia Hills District, Meghalaya have no objection for the construction of 33 kV Distribution lines from 132 kV Sub-station, Mynkre to 33/11 kV Sub-station, Byndihati and 132 kV Sub-station, Mynkre to 33/11 kV Sub-station, Sutnga passing through Umrasong Village which is under the jurisdiction of the village.

The undersigned, therefore, hereby issue the No Objection Certificate (NOC) to MePDCL/POWERGRID towards construction of the aforesaid distribution lines associated with North Eastern Power Improvement Project (NERPSIP).

Thanking You.

(Shri. Marius Tlang)
Headman,
Umrasong Village,
East Jaintia Hills District


Waheh Shnong
Umrasong
East Jaintia Hills Dist.

**OFFICE OF THE WAHEH SHNONG (HEADMEN) UMTYRA
UMTYRA, EAST JAINTIA HILLS DISTRICT MEGHALAYA
PIN 793200**

TO WHOM IT MAY CONCERN

Date: 05/12/2017

SUBJECT :NO OBJECTION CERTIFICATE FOR CONSRUCTION OF 33KV LINE

Dear Sir,

This is to Certify that the Headmen of village Umtyra have no objection for construction of MePDCL 33kv lines from 132 KV Mynkre S/S to 33 KV Byndihati S/S and 132 KV Mynkre S/S to 33 KV Sutnga S/S.

Thanking You

CS. Bares
Waheh Shnong
Umtyr-a Village
East Jaintia Hills Dist
Headman of
Umtyra Village
East Jaintia Hills District

ANNEXURE VI

Social Management Framework

SOCIAL MANAGEMENT FRAMEWORK

Part A: Acquisition of Lands and Structures.

1. The availability of land for substations is a potential social issue as fresh lands will be required for construction of substations. MSPCL shall secure/acquire the required land either through direct purchase on willing buyer & willing seller basis on negotiated rate or by invoking provisions of RFCTLARRA, 2013. The present land availability status of substations involved in tranche-1 is provided in **Table –1**.

Table – 1: Land Availability Status for Substation

Sl. No.	Name of the substation	Scope of work	Land Status
A. Transmission Substations			
1	132/33 kV Gamphajol	New	Land for all substations are available with MSPCL except for Gamphajol.
2	132/33 kV Imphal	Extension	
3	132/33 kV Ningthoukhong	Extension	
4	132 kV Kackching	Extension	
5	132 kV Yainganpokpi	Extension	
6	132/33 kV Kongba	Extension	
7	132 kV Churachandpur	Extension	
8	132/33 kV Rengpang	Augmentation	
9	132/33 kV Jiribam	Augmentation	
B. Distribution Substations			
1	33/11 kV Distribution Substation (24 Nos.)	New/ Augmentation	Land for 13 substations available with MSPCL. For remaining substation land being acquired through private purchase on negotiated rate.

2. As per the provisions of ESPPF land for substations covered under tranche-1 can be secured through following three methods;
 - i) Purchase of land on willing buyer & Willing Seller basis on negotiated rate;
 - ii) Voluntary Donation; and
 - iii) Involuntary Acquisition. .
3. In case of procurement of land through private purchase, MSPCL shall ensure that compensation/rate for land is not less than the rate provided in the new land acquisition act, 2013. The finalization of land price/negotiation shall be through a committee. In order to comply with this provision MSPCL may organize an awareness camp where provisions of new act in respect of basis/modalities of compensation calculation shall be explained to land owners with specific State provision if any.

4. In the case of voluntary donation of land, it is to be ascertained that the land owner/user(s) are not subjected to undue pressure for parting of land. Apart from this following shall also be ensured:
 - All out efforts shall be made to avoid any physical relocation/displacement due to loss of land;
 - The MSPCL shall facilitate in extending 'gratitude' to the land donor(s) in lieu of the 'contribution' if so agreed. The same shall be documented in the shape of MoU between donor and utility.
 - Subsequently title of land shall be transferred in the name of MSPCL.

All land donations (as well as purchases) will be subject to a review/ approval from a committee comprising representatives of different sections including those from the IA and GoMan.

5. In case of land acquired through involuntary acquisition, provisions of RFCTLARRA, 2013 shall be adopted. RFCTLARRA, 2013 has replaced the old Land Acquisition Act, 1894 and has come into force from 1st January 2014. The new act i.e. RFCTLARRA, 2013 authorizes State Govt. (i.e. GoMan) or its authorized Government agency to complete the whole process of acquisition of private land by following the laid down procedures in the act/rules which include detailed Social Impact Assessment (SIA) and preparation/disclosure of Social Impact Assessment Plan (SIMP). Responsibility for SIA and R&R rests with the government of Manipur and MSPCL's responsibility is limited to identification and selection of suitable land based on technical requirement and ensuring budget allocation.
6. The provisions of new RFCTLARR Act, 2013 has brought about synergies with the World Bank policy and practices. These imply provisions like Social Impact Assessment; R&R Provisions and Entitlements; Focus on those losing livelihoods; Census surveys and R&R Plan; Providing options and choices; Replacement cost of Land and Assets (Net of Taxes); Additional provisions for disadvantaged groups; Full payment of compensation and R&R prior to taking over of land and assets and Consultations & Disclosures, Post implementation social audit and impact evaluation etc that are also key to the World Bank Involuntary Resettlement Policy.

Safeguards against land acquisition:

7. The act has many provisions which will safeguard against indiscriminate acquisition of farm land and associated impacts like project specific SIA to conclude whether the proposed acquisition serves the public purpose; estimation of affected families and families likely to be displaced; extent of lands, public and private, houses, settlements and other CPRs likely to be affected; whether the extent of land proposed is absolutely bare minimum requirement; whether other alternative sites were considered and found not feasible and whether the social benefits outweigh social costs. Act has special provisions for land inhabited by SCs, STs; provisions restricting acquisition of land in excess of requirement. It discourages acquisition of multi-crop and irrigated land, and makes consent of land owners mandatory for private & PPP projects.

Entitlements:

8. The entitlements with regard to compensation and assistances towards land acquisition or loss of any assets or livelihood for all categories of people being affected due to land acquisition is briefly outlined in **Table – 2**.

Table -2 : Compensation and R & R Entitlement framework for Land Acquisition

A. Comprehensive Compensation Package	
Eligibility for Entitlement	Provisions
<p>The affected families</p> <ul style="list-style-type: none"> • Land Owners: includes any person <ul style="list-style-type: none"> i) whose name is recorded as (he owner of the land or building or part thereof, in the records of the authority concerned; or ii) any person who is granted forest rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 or under any other law for the time being in force; or iii) who is entitled to be granted Patta rights on the land under any law of the State including assigned lands; or iv) any person who has been declared as such by an order of the court or Authority; 	<p>Determination of Compensation :</p> <p>1. Market value of the land</p> <ul style="list-style-type: none"> • as specified in the Indian Stamp Act, 1899 or • the average of the sale price for similar type of land situated in the village or vicinity, or • consented amount of compensation as agreed in case of acquisition of lands for private companies or for public private partnership project. <p>whichever is higher</p> <p>Market value x Multiplier* between 1 to 2 in rural areas only (No multiplier in urban areas).</p> <p>2. Value of the assets attached to land:</p> <p>Building/Trees/Wells/Crop etc. as valued by relevant govt. authority;</p> <p>Land compensation = 1+2</p> <p>3. Solatium: 100% of total compensation</p> <p>Total Compensation : 1+2+3</p>
<p>(*) Precise scale shall be determined by the State Govt. The indicative values of multiplier factor based on distance from urban areas as provided in the act.</p>	
Radial Distance from Urban area (Km)	Multiplier Factor
0-10	1.00
10-20	1.20
20-30	1.40
30-40	1.80
40-50	2.00
B. R&R Package	
<p>Elements of Rehabilitation and Resettlement Entitlements for all the affected families (both land owners and the families whose livelihood is primarily dependent on land acquired) in addition to compensation provided above</p>	

Sl. No.	Elements of R& R Entitlements	Provision
1.	Subsistence grant/allowance for displaced families	Rs. 3000 per month per family for 12 months
2.	The affected families shall be entitled to:	a. Where jobs are created through the project, mandatory employment for one member per affected family; or b. Rupees 5 lakhs per family; or c. Rupees 2000 per month per family as annuity for 20 years, with appropriate index for inflation; The option of availing (a) or (b) or (c) shall be that of the affected family
3.	Housing units for displacement: i) If a house is lost in rural areas: ii) If a house is lost in urban areas	i. A constructed house shall be provided as per the Indira Awas Yojana specifications. ii. A constructed house shall be provided, which will be not less than 50 sq. mts. in plinth area. In either case the equivalent cost of the house may also be provided in lieu of the house as per the preference of the project affected family. The stamp duty and other fees payable for registration of the house allotted to the affected families shall be borne by the Requiring Body.
4.	Transportation cost for displaced families	Rs 50,000/- per affected family
5.	Resettlement Allowance (for displaced families)	Onetime Rs 50,000/- per affected family
6.	Cattle shed/ petty shop cost	Onetime financial assistance as appropriate for construction as decided by St. Govt. subject to minimum of Rs.25,000/-
7.	Artisan/small traders/others (in case of displacement)	Onetime financial assistance as appropriate as decided by St. Govt. subject to minimum of Rs.25,000/-
Special Provisions for SCs/STs In addition to the R&R package, <i>SC/ST families will be entitled to the following additional benefits:</i> <ol style="list-style-type: none"> One time financial assistance of Rs. 50,000 per family; Families settled outside the district shall be entitled to an additional 25% R&R benefits; Payment of one third of the compensation amount at very outset; Preference in relocation and resettlement in area in same compact block; Free land for community and social gatherings; In case of displacement, a <i>Development Plan is to be prepared</i> <i>Continuation of reservation and other Schedule V and Schedule VI area benefits from</i> 		

displaced area to resettlement area.

Social Impact Management Plan (SIMP):

Establishment of Institutions

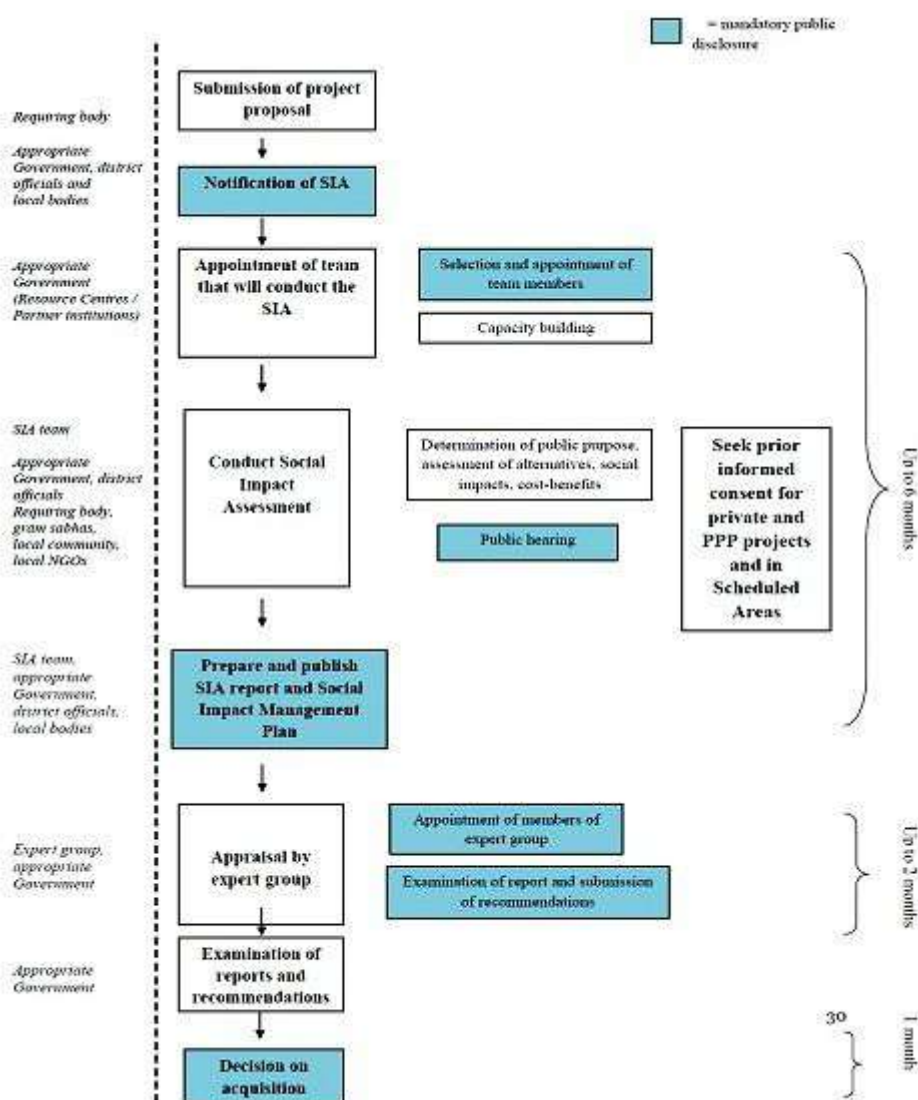
9. The following bodies are to be established permanently in the state (to cater to all projects proposed in future):
 - **The State Social Impact Assessment Unit;**
 - ✓ selecting the SIA team for each project from the individuals and institutions registered/empanelled in the State Database
 - ✓ To develop Project specific ToR
 - ✓ Ensuring no conflicts of interest involving the team members
 - **Land Acquisition Rehabilitation and Resettlement Authority**
 - ✓ Appointment of Presiding Officer
 - **The office of the Commissioner Rehabilitation & Resettlement**
 - ✓ Appointment of Commissioner Rehabilitation and Resettlement
 - ✓ Appointment of Project Specific Administrator for Rehabilitation and Resettlement
 - **The State Level Monitoring Committee**
 - **User-friendly website as a public platform to disclose entire work flow of each acquisition case.**
 - **Formulation of Expert group to study SIA report and recommendation**
 - ✓ Commissioner, R&R to appoint the members of the Expert Group
 - ✓ Names of group members to be publically disclosed
10. On confirmation of the scheme and finalization of land after exploring alternative site, the MSPCL would submit a proposal for acquisition of private selected land detailing the extent of land and its exact location. After due process of approval the government shall notify the affected area where selected land is situated for conducting detailed social assessment.

Social Impact Assessments

- A detailed Social Impact Assessment (SIA) studies shall be undertaken by an Independent Agency/Institution on a project specific TOR. The SIA agency shall first consult the concerned Panchayat, Municipality, District/Village Council at village level or ward level in the affected area to carry out SIA study. SIA shall assess the purpose of acquisition and estimate the affected families, gender, social group carry out analysis regarding impact on community properties, assets and infrastructure particularly roads, public transport, drainage, sanitation, sources of drinking water, sources of water for cattle, community ponds grazing land, plantations, public utilities electricity supply and health care facilities. The SIA agency shall also prepare a Social Impact Management Plan (SIMP) listing ameliorative measures required for addressing the likely impact vis-à-vis intended benefit of the project. The SIA report and SIMP shall be subject to public hearing in the affected area after giving adequate publicity for the venue, time etc to ascertain the views of affected families/communities which shall be included in the SIA.

The final SIA report shall be published including its translation in local language and shall also be made available to Panchyats, District/Village Councils & Deputy Collector/District Magistrate office for wider circulation. Explicit consent will be required in the case of lands in respect of tribal areas from the Village Councils. The process flowchart of SIA is presented in **Fig-1**.

Fig-1 Process Flow chart of Social Impact assessment (SIA)



Compensation and Rehabilitation and Resettlement (R&R):

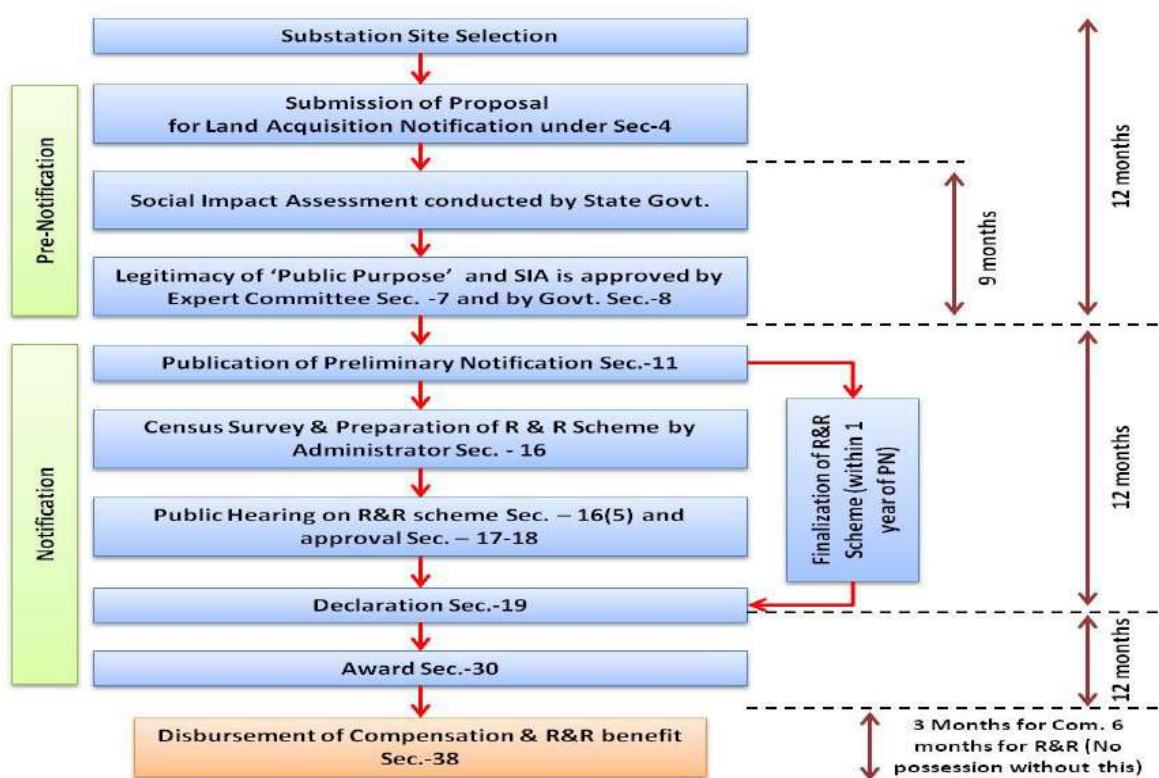
- Based on the SIMP, the Collector shall discuss the Package in a meeting with the Rehabilitation and Resettlement committee at project level, and submit the Package to Commissioner Rehabilitation and Resettlement along with his/ her remarks.
- The Commissioner Rehabilitation and Resettlement shall, after due vetting, accords approval to the scheme and make it available in public domain.
- After approval of R & R plan by Commissioner R & R, the Collector shall issue two awards one for land compensation based on procedures described in act & State's rules

and second for R & R as per approved SIMP .

- The Collector shall take possession of land after ensuring that full payment of compensation as well as rehabilitation and resettlement entitlements are paid or tendered to the entitled persons within a period of three months for the compensation and a period of six months for the monetary part of rehabilitation and resettlement entitlements as approved and commencing from the date of the award.
- The Collector shall be responsible for ensuring that the rehabilitation and resettlement process is completed in all its aspects before displacing the affected families.
- The Collector shall, as far as possible, not displace any family which has already been displaced by the appropriate Government for the purpose of acquisition under the provisions of this Act, and if so displaced, shall pay an additional compensation equivalent to that of the compensation determined under this Act for the second or successive displacements.

The complete activity flow chart is described in **Fig -2**. It may take about three years to complete the processes. It is also mandatory that no construction can start without the full payment of the compensations.

Fig. -2 : Activity Chart of RFCTLARRA,2013



PART B:

Compensation Plan for Temporary Damages (CPTD) towards Erection of Tower/ Poles for Transmission/ Distribution lines

1. Land requirements for erecting tower/ poles for transmission/ distribution lines are just minimal. All it requires is to place the foot, four of which warrants an area of 4-6 sq- ft. Lands in respect of the right of way are not acquired as agricultural activities can continue beneath the tower. Further, line alignments are done in such a way so as to avoid settlements and / or structures. Due to inherent flexibility in locating the poles, MSPCL avoids habituated area completely hence no relocation of population on account of TL/DL lines are envisaged. Thus, the actual impact is restricted to 4 legs of the tower. Agriculture can continue, as clearly depicted in the **Figure-3**. As per existing law, land for tower/pole and right of way is not acquired and agricultural activities are allowed to continue after construction activity. However, MSPCL pays compensation to the affected persons/ community for all damages including cost of land below tower to its owner without acquiring it. Thus, compensations are made for following:

- (i) Land cost of tower footings;
- (ii) Standing crops;
- (iii) Trees, if any;
- (iv) Other assets like well and
- (v) Any other damages/ effects.

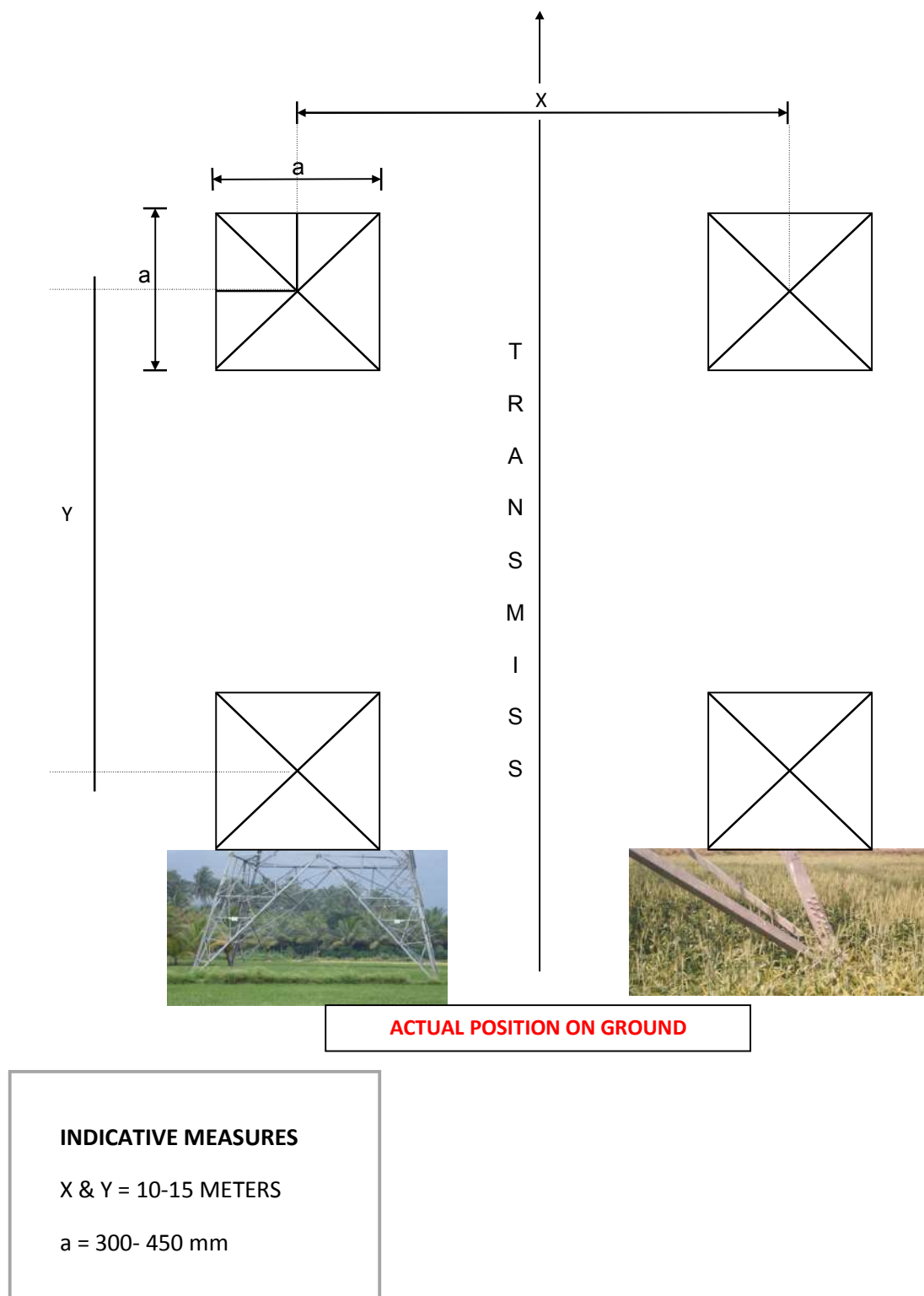
Capturing all these, the Implementing agency (IA) will prepare a Compensatory Plan for Temporary Damage (CPTD). The content/coverage of a typical CPTD is placed at the end.

2. **Process.** MSPCL through its “Bee” line survey (i.e. a desk review) on Survey of India (SOI) map (topo-sheets) preferably on 1:50,000 Scale, the Forest Atlas and or Google Earth map examine various route options at least 3 (Three) alternatives referring ‘Bee’ line as a guiding one between two or multiple origins of proposed transmission/distribution line avoiding/minimizing environmentally and socially sensitive areas based on base line data/information.

3. Taking reference to this desk review, a reconnaissance survey in-house or through other agency/ or walk-over survey is undertaken with hand-held GPS for on-site verifications to confirm findings of desk review survey or otherwise. During Recce or W/O survey it may also be possible to identify other better option of route following the criteria of avoidance & minimization, if so the same, after having collected/updated information/data may be considered as another alternative.

4. A Social (and Environmental) Assessment is conducted in respect of each of the chosen lines of alignment. The process involved extensive consultations with land owners/farmers and different stakeholders.

FIG. 3 : TYPICAL PLAN OF TRANSMISSION LINE TOWER FOOTING



5. During the process public views and necessary inputs about surroundings/ villages/crops etc. are also necessary and noted for screening/scoping. After comparison and analysis of all E & S parameters so gathered for all alternatives and considering other significant economic benefit associated with the project/subproject, the most optimum route having minimum environment & social impact is selected for further investigation.

6. Site office will consults with state forest departments if the line is passing through forest areas. Revenue authorities will be consulted for their views on revenue/other lands. Experts' assistance will be taken, as appropriate, on valuing crops, trees and other assets.

7. Social Assessment concludes with: (i) selection of an optimum line; and (ii) a Social Management Plan viz., CPTD. All these are disclosed widely among the stakeholders as well as on the internet and evince a feedback. Due approval will be sought from District/ Village Councils. In case the scheme/project is implemented in predominantly tribal area a separate and comprehensive analysis in respect of likely impact both positive and negative shall be carried out and will be incorporated in the CPTD.

8. Responsibility for the conduction of SA, preparation of CPTD rests with the IA. The ultimate authority for vetting the affected persons and the nature and extent of compensations rests with the Collector. The entitlement matrix for planning compensation for possible impact is as follows:

Entitlement Matrix for CPTD

S. No	ISSUE/IMPACT	BENEFICIARY	ENTITLEMENT OPTIONS
1.	Land area below tower base.	Owner	100% land cost at market value as ascertained by revenue authorities or based on negotiated settlement without actual acquisition/title transfer.
2.	Loss/damage to crops and trees in line corridor	Owner/Tenant/ sharecropper/ leaseholder	Compensation to actual cultivator at market rate for crops and 8 years income for fruit bearing trees*. APs will be given advance notice to harvest their crops. All timber* will be allowed to retain by the owner.
3.	Other damages (if applicable)	All APs	Actual cost as assessed by the concerned authority.
4.	Loss of structure		
(i)	House	Titleholders	Cash compensation at replacement cost (without deduction for salvaged material) plus Rs. 25,000/- assistance (based on prevailing GOI norms for weaker section housing) for construction of house plus transition benefits as per category-5 below.
(ii)	Shop/ Institutions/ Cattle shed	Individual/ Titleholders	Cash compensation plus Rs. 10000/- for construction of working shed/shop plus

S. No	ISSUE/IMPACT	BENEFICIARY	ENTITLEMENT OPTIONS
			transition benefits as per category-5 below
5.	Losses during transition under (i) & (ii) above for Shifting / Transport	Family/unit	Provision of transport or equivalent cash for shifting of material/ cattle from existing place to alternate place
6	Tribal/ Vulnerable APs	Vulnerable APs ¹	One time additional lump sum assistance not exceeding 25% of total compensation on recommendation of State Authority/ADC/VC.

* Assistance/help of Forest department for timber yielding trees and Horticulture department for fruit bearing trees shall be taken for assessing the true value.

9. A notice under Indian Telegraph Act/Electricity Act, 2003 is served to the landowners informing that the proposed transmission line is being routed through the property of the individual concerned. The notice shall contain the particulars of the land, ownership details and the details of the trees/crops inevitably likely to be damaged during the course of the construction of the proposed transmission line and acknowledgement received from land owner. A copy of said notice is further issued to the Revenue Officer, who has been authorized by the Manipur Govt. for the purpose of assessment/valuation and disbursement of compensation to the affected parties.

10. The revenue officer shall further issue a notice of intimation to the concerned landowner and inspect the site to verify the documents related to the proof of ownership and a detailed Mouja list is prepared for the identified trees and crops inevitably damaged during the course of the construction. For assessing the true value of timber yielding trees help of forest officials is taken and for fruit bearing trees help of Horticulture department is taken.

11. The Mouja list shall contain the land owner details type of tree/crop, its present age, variety, yielding pattern etc. and the same is prepared at site in the presence of the land owner. These Mouja lists are further compiled and a random verification is conducted by the concerned District Collector or his authorized representative in order to ascertain the assessment carried out by the revenue office is genuine and correct. After this process the District collector issues a tree cutting permit to MSPCL to enable removal / damage to the standing tree/crop identified in the line corridor.

12. Once the tree/crop is removed / damaged, MSPCL shall issue a tree cutting/crop damaged notice to the land owner with a copy to the Revenue Officer to process the compensation payment. Based on the above the compensation payment is generated by means of a computerized programme developed by the National Informatics Center exclusively for this purpose. The detailed Valuation statement thus generated using this programme is verified at various levels and approval of payment of compensation is accorded by the concerned District Collectors.

¹ Vulnerable APs include scheduled tribes residing in scheduled areas/ physically handicapped/ disabled families etc.

13. On approval of compensation, the revenue officer shall further intimate the amount payable to the different landowners and MSPCL arranges the payment by way of Demand Draft to the affected parties. The payment is further disbursed at the local village office after due verification of the documents in presence of other witnesses.

Content of Compensation Plan For Temporary Damages (CPTD)

Section - I: Project Description: Brief description of the background, benefits of the project, objective of compensation plan.

Section – II: Project Impacts : Minimization of impacts, description of alternative studies made for proposed route of transmission line including systematic analysis of different alternative studied with reference to particular environmental & social parameters like involvement of forest, protected areas, significant economic benefit associated with the project and without the project etc. and reason for selection of proposed route, analysis of impacts including numbers of affected persons/household, land use traversed etc.

Section – III: Socio-economic and Environmental Analysis for CPTD: Description of the physical, physiographical, socio-economic condition of the project area including other demographic features of the project area, Preliminary Social assessment, Impact due to project location and design and Critical social review criteria

Section -IV: Compensation Framework: Description of compensation plan, Procedure for tree/crops/land compensation.

Section – V: Stakeholders Participation & Compensation: Public Consultation during Preliminary Survey and peoples reaction/suggestion if any, Plan for further consultation during implementation

Section – VI: Institutional Arrangements for Implementation and Monitoring: Describing the implementation schedule, Grievances Redressal Mechanism, Disclosure, Evaluation and monitoring plan. Budget provision for compensation

Part C: Tribal People Development Framework

The preliminary assessments made during the project preparation have established that there are tribal people in the project area. It is also ascertained that they do have a collective attachment to the project area particularly in the scheduled area and that they may get affected by the project interventions. Accordingly, to ensure focused and exclusive attention towards such tribals it is envisaged to develop a “Tribal People Development Plan” (TPDP). Since proposed investment programs involve many sub-projects/schemes linear in nature running in different geographical area of state due to which precise information about the tribal people likely to be impacted is not yet firmed up. In order to overcome this limitation, a Tribal People Development Framework (TPDF) is developed which sets out approach and methodology for the preparation of a TPDP.

TPDF Objectives and Policies

1. The objectives of the TPDF are to ensure that if indigenous peoples²(referred to as tribal in India) tribal are affected by a project/scheme they:
 - i) are adequately and fully consulted;
 - ii) receive benefits and compensation equal to that of the mainstream population;
 - iii) are provided with special assistance as per laws and policies because of their vulnerabilities vis-à-vis the mainstream population; and
 - iv) receive adequate protection against project adverse impacts on their culture identities.

There are several policies which provide a legal framework for ensuring dedicate attention to the tribals. Article 366(25) of the Indian constitution refers to Scheduled Tribes (STs) as those communities who are scheduled in accordance with Article 342 of the Constitution. According to Article 342 of the Constitution, STs are the tribes or tribal communities or part of or groups within these tribes and tribal communities which have been declared as such by the President through a public notification. Identification of tribes is a State subject. Thus, classification of a tribe would

² * **Indigenous People (IP)** referred as tribal in India are the distinct groups identified based on their social, cultural, economic, and political traditions and institutions, which are distinct from the mainstream or dominant society and culture. Tribal with similar cultural characteristics are known as ‘Adivasi’ in Hindi and are recognized as Schedule Tribes (STs) as per the Indian Constitution.

As per OP-4.10 definition these are Members of a distinct indigenous cultural group, Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories, Customary cultural, economic, social, or political institutions that are separate from those of the dominant society or culture, An indigenous language, often different from the official language of the country or region

depend on the status of that tribe in the respective State. Further the Fifth and Sixth Schedule of the constitution provides special provision for tribals in selected regions of the country.

2. The World Bank's Operational Policy on Indigenous Peoples (OP 4.10) aims at ensuring that the development process fosters full respect for the dignity, human rights and cultures of indigenous peoples, thereby contributing to the Bank's mission of poverty reduction and sustainable development. It also recognizes that the identities, cultures, lands and resources of indigenous peoples are uniquely intertwined and especially vulnerable to changes caused by development programs hence require special measures to ensure that they are included in and benefit from these programs as appropriate.

Identification of Indigenous Peoples

3. The term "Indigenous Peoples" is used in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees:
 - (a) Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
 - (b) Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
 - (c) Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture;
 - (d) An indigenous language, often different from the official language of the country or region.
4. The hill areas of the State are governed by a special State legislation i.e the Manipur Hill Areas District Councils Act, 1971. This Act has provisions similar to those contained in the Sixth Schedule and has established six Autonomous Hill District Councils in Manipur, covering 5 districts.

Tribal People Development Framework (TPDF)

5. The TPDF seeks to ensure that tribal communities are informed, consulted, and mobilized to participate in the subproject preparation. The Framework is intended to guide selection and preparation of additional subprojects under the Project where impacts on tribal people are identified to ensure better distribution of the Project benefits and promote development of the indigenous peoples in the Project areas. The framework is prepared in accordance with both the Indian Constitution provisions, RFCTLARRA, 2013 and World Bank's OP-4.10 and serves the following purposes:
 - (a) Identification of the tribal people likely to be impacted by the project interventions;

- (b) Assess the nature and extent of impacts likely to occur as a result of the project interventions;
- (c) Prepare a plan (TPDP) outlining measures towards avoiding/ minimizing the negative impacts as well as enhance positive impacts;
- (d) Outlines an approach for the conduction of social assessment for ensuring free, prior, and informed consultation with the affected tribal communities at each stage of project preparation and implementation;
- (e) Putting in place an implementation arrangements of the TPDP, its disclosure and mechanisms to address any grievances.

TPDF – Land Acquisition and Resettlement

6. Whenever after initial screening it is found that some land belonging to tribal community /communities is being needed to be involuntary acquired for setting up of a substation demonstrating/substantiating such acquisition is done only as a last resort by completing the technical investigation including assessment of alternatives and detailed surveys. The detailed report along with land requirement is submitted to the Government of Manipur (GoMan) for further processing as per provisions of RFCTLARRA, 2013. GoMe then initiates a SIA through an Independent Agency with a project specific terms of reference. The SIA agency shall first consult the concerned Panchayat, Municipality, District/Village Council at village level or ward level in the affected area to carry out SIA study. SIA shall assess the purpose of acquisition and estimate the affected families, gender, social group carry out analysis regarding impact on community properties, assets and infrastructure particularly roads, public transport, drainage, sanitation, sources of drinking water, sources of water for cattle, community ponds grazing land, plantations, public utilities electricity supply and health care facilities. The SIA agency shall also prepare a Social Impact Management Plan (SIMP) listing ameliorative measures required for addressing the likely impact vis-à-vis intended benefit of the project. The SIA report and SIMP shall be subject to public hearing in the affected area after giving adequate publicity for the venue, time etc to ascertain the views of affected families/communities which shall be included in the SIA. The final SIA report shall be published including its translation in local language and shall also be made available to Panchayats, District/Village Councils & Deputy Collector/District Magistrate office for wider circulation. Detailing of the same is provided below:

- (i) the prior consent of the concerned Gram Sabha or the Panchayats or the autonomous District Councils at the appropriate level in Scheduled Areas under the Fifth Schedule to the Constitution, as the case may be, shall be obtained in all cases of land acquisition in such areas, before issue of a notification under this Act, or any other Central Act or a State Act for the time being in force.
- (ii) Provided that the consent of the Panchayats or the Autonomous Districts Councils shall be obtained in cases where the Gram Sabha does not exist or has not been constituted.
- (iii) In the case of a project involving land acquisition on behalf of a Requiring Body which

involves involuntary displacement of the Scheduled Castes or the Scheduled Tribes families, a Development Plan shall be prepared in such a form as may be prescribed. laying down the details of procedure for settling land rights due, but not settled and restoring titles of the Scheduled Tribes as well as the Scheduled Castes on the alienated land by undertaking a special drive together with land acquisition. This plan is targeted at both SCs and STs, but, for the current purpose, it is referred to as Tribal People Development Plan (TPDP) and contents of such a Development Plan are provided at the end.

- (iv) the TPDP also contain a program for development of alternate fuel, fodder and non-timber forest produce resources on non-forest lands within a period of five years sufficient to meet the requirements of tribal communities as well as the Scheduled Castes.
- (v) In the case of land being acquired from the members of the Scheduled Castes or the Scheduled Tribes, at least one-third of the compensation amount due shall be paid to the affected families initially as first instalment and the rest shall be paid after taking over of the possession of the land.
- (vi) The affected families of the Scheduled Tribes shall be resettled preferably in the same Scheduled Area in a compact block so that they can retain their ethnic, linguistic and cultural identity.
- (vii) The resettlement areas predominantly inhabited by the Scheduled Castes and the Scheduled Tribes shall get land, to such extent as may be decided by the appropriate Government free of cost for community and social gatherings.
- (viii) Any alienation of tribal lands or lands belonging to members of the Scheduled Castes in disregard of the laws and regulations for the time being in force shall be treated as Null and void. and in the case of acquisition of such lands, the rehabilitation and resettlement benefits shall be made available to the original tribal land owners or land owners belonging to the Scheduled Castes.
- (ix) The affected Scheduled Tribes, other traditional forest dwellers and the Scheduled Castes having fishing rights in a river or pond or dam in the affected area shall be given fishing rights in the reservoir area of the irrigation or hydel projects.
- (x) Where the affected families belonging to the Scheduled Castes and the Scheduled Tribes are relocated outside of the district, then they shall be paid an additional 25% rehabilitation and resettlement benefits to which they are entitled in monetary terms along with a one-time entitlement of Rs. 50,000/-.
- (xi) All benefits, including the reservation benefits available to the Scheduled Tribes and the Scheduled Castes in the affected areas shall continue in the resettlement area.
- (xii) Whenever the affected families belonging to the Scheduled Tribes who are residing in the Scheduled Areas referred to in the Fifth Schedule or the tribal areas referred to in the Sixth Schedule to the Constitution are relocated outside those areas, then, all the statutory safeguards, entitlements and benefits being enjoyed by them under this Act shall be extended to the area to which they are resettled regardless of whether the resettlement area is a scheduled Area referred to in the said Fifth Schedule or a tribal area referred to in the said Sixth Schedule, or not.
- (xiii) Where the community rights have been settled under the provisions of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. The same shall be quantified in monetary amount and be paid to the individual conceded who has been displaced.

Following entitlement matrix shall be the basis for providing compensation and compatible R&R measures for tribal peoples:

COMPENSATION & R&R ENTITLEMENTS FOR LAND ACQUISITION

A. Comprehensive Compensation Package														
Eligibility for Entitlement		Provisions												
<p>The affected families</p> <ul style="list-style-type: none">• <u>Land Owners: includes any person-</u><ul style="list-style-type: none">v) whose name is recorded as (he owner of the land or building or part thereof, in the records of the authority concerned; orvi) any person who is granted forest rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 or under any other law for the time being in force; orvii) who is entitled to be granted Patta rights on the land under any law of the State including assigned lands: orviii) any person who has been declared as such by an order of the court or Authority;		<p>Determination of Compensation :</p> <p>4. Market value of the land</p> <ul style="list-style-type: none">• as specified in the Indian Stamp Act, 1899 or• the average of the sale price for similar type of land situated in the village or vicinity, or• consented amount of compensation as agreed in case of acquisition of lands for private companies or for public private partnership project. <p>whichever is higher</p> <p>Market value x Multiplier* between 1 to 2 in rural areas only (No multiplier in urban areas).</p> <p>5. Value of the assets attached to land:</p> <p>Building/Trees/Wells/Crop etc. as valued by relevant govt. authority;</p> <p>Land compensation = 1+2</p> <p>6. Solatium: 100% of total compensation</p> <p>Total Compensation : 1+2+3</p>												
<p>(*) Precise scale shall be determined by the State Govt. The indicative values of multiplier factor based on distance from urban areas as provided in the act.</p> <table><tr><th>Radial Distance from Urban area (Km)</th><th>Multiplier Factor</th></tr><tr><td>0-10</td><td>1.00</td></tr><tr><td>10-20</td><td>1.20</td></tr><tr><td>20-30</td><td>1.40</td></tr><tr><td>30-40</td><td>1.80</td></tr><tr><td>40-50</td><td>2.00</td></tr></table>			Radial Distance from Urban area (Km)	Multiplier Factor	0-10	1.00	10-20	1.20	20-30	1.40	30-40	1.80	40-50	2.00
Radial Distance from Urban area (Km)	Multiplier Factor													
0-10	1.00													
10-20	1.20													
20-30	1.40													
30-40	1.80													
40-50	2.00													
B. R&R Package														
Elements of Rehabilitation and Resettlement Entitlements for all the affected families (both land owners and the families whose livelihood is primarily dependent on land acquired) in addition to compensation provided above														
Sl. No.	Elements of R& R Entitlements	Provision												
1.	Subsistence grant/allowance for displaced families	Rs. 3000 per month per family for 12 months												
2.	The affected families shall be entitled to:	<p>d. Where jobs are created through the project, mandatory employment for one member per affected family; or</p> <p>e. Rupees 5 lakhs per family;</p>												

		or f. Rupees 2000 per month per family as annuity for 20 years, with appropriate index for inflation; The option of availing (a) or (b) or (c) shall be that of the affected family
3.	Housing units for displacement: iii) If a house is lost in rural areas: iv) If a house is lost in urban areas	iii. A constructed house shall be provided as per the Indira Awas Yojana specifications. iv. A constructed house shall be provided, which will be not less than 50 sq. mts. in plinth area. In either case the equivalent cost of the house may also be provided in lieu of the house as per the preference of the project affected family. The stamp duty and other fees payable for registration of the house allotted to the affected families shall be borne by the Requiring Body.
4.	Transportation cost for displaced families	Rs 50,000/- per affected family
5.	Resettlement Allowance (for displaced families)	Onetime Rs 50,000/- per affected family
6.	Cattle shed/ petty shop cost	Onetime financial assistance as appropriate for construction as decided by St. Govt. subject to minimum of Rs.25,000/-
7.	Artisan/small traders/others (in case of displacement)	Onetime financial assistance as appropriate as decided by St. Govt. subject to minimum of Rs.25,000/-
Special Provisions for SCs/STs In addition to the R&R package, <i>SC/ST families will be entitled to the following additional benefits:</i> <ol style="list-style-type: none"> 8. One time financial assistance of Rs. 50,000 per family; 9. Families settled outside the district shall be entitled to an additional 25% R&R benefits; 10. Payment of one third of the compensation amount at very outset; 11. Preference in relocation and resettlement in area in same compact block; 12. Free land for community and social gatherings; 13. In case of displacement, a <i>Development Plan is to be prepared</i> 14. <i>Continuation of reservation and other Schedule V and Schedule VI area benefits from displaced area to resettlement area.</i> 		

Consultations and Participation Framework

7. The World Bank OP 4.10 on Indigenous Peoples too emphasizes “a process of free, prior, and informed consultation with the affected tribal People’s communities at each stage of the project, and particularly during project preparation, to fully identify their views and ascertain their broad community support for the project. To ensure peoples participation in the planning phase and aiming at promotion of public understanding and fruitful solutions of developmental problems various sections of project affected persons and other stakeholders were and will be engaged in consultations throughout the project planning and implementation stages. In this project, however,

it will go beyond consultations, as it is mandatory for the project to seek consent for all plans (SIMP and CPTD) from the Tribal Councils.

8. Public participation, consultation and information dissemination begins with initial phases of project preparation. Public consultation activities and information dissemination to PAPs and local authorities continues as the project preparation activities proceed in a project. Through respective local governments and civil society, PAPs are regularly provided with information on the project and the resettlement process prior to and during the project preparation and implementation stages. Information dissemination and consultations shall be a continuous process during preparation, implementation, Monitoring and Evaluation. The information dissemination and consultation with PAPs shall include but not be limited to the following:

- (i) project description and its likely impacts,
- (ii) objective of the surveys
- (iii) entitlement provisions for different impacts.
- (iv) Mechanisms and procedures for public participation and consultation
- (v) Resettlement options
- (vi) Grievance redress mechanisms and procedures
- (vii) Tentative implementation schedule
- (viii) Role and responsibilities of different actors
- (ix) Preferences for mode of compensating for affected fixed assets
- (x) Household consultations for skill improvement training, use of compensation amount and livelihood restoration

9. A detailed consultation and communication procedure placed at **Annexure-23** shall be used for each subproject as part of the TPDP. Some of the methods that can be used for the purpose of communication will include provisions of information boards, pamphlets distribution, wall paintings, drum beating, organizing meetings with key informants and village committees and opinion gathering through post cards, phones and Short Messaging services (SMSes). The GRM as detailed out in main document shall also be applicable without any discrimination for TPDP. The following information shall be included in the TPDP:

- Description followed by analysis of the social structure of the population.
- Inventory of the resources and analysis of the sources of income of the population
- Information about the systems of production practiced by tribals
- Relationship of tribal groups to the proposed project
- Examination of land tenure issues including lands under customary rule and assurance of continued use of these resources by the groups involved.
- Strategy for local participation including mechanisms defined with the assistance and in consultation with tribal peoples for their participation in decision making process throughout project planning, implementation and evaluation cycle.
- Summary of Public Consultation process.

- Identification of development interventions or mitigation activities including measures to enhance tribal participation in the activities proposed under the project
- An implementation schedule with benchmarks to assess progress
- Monitoring and evaluation, including specific indicators
- Detailed cost estimates/budget and financing plan and sources of funds for the TPDP covering planned activities.
- Organisation support/ institutional capacity like the government institutions responsible for tribal development
- Maps

Tribal Land Acquisition Process:

10. Land acquisition processes that need to be completed in a sequence has already been discussed in main ESPPF report and **Annexure-4**. However, special provisions as applicable to the lands acquisition in Tribal /scheduled areas are enumerated below:

S. No.	Aspects	Actions	Special provisions for tribal /Scheduled Areas
1	Preliminary Investigation for determination of Social Impact and public purpose.	Notification for the commencement of Social Impact assessment study to be made available in local language to concerned Panchayat/Municipality and to offices of district collector/sub-divisional magistrate/tehsil (hereinafter referred to as local bodies)	As far as possible, no acquisition of land shall be made in the Scheduled Areas Where such acquisition does take place it shall be done only as a demonstrable last resort
		Consultation with the concerned Panchayat, Municipality or Municipal Corporation, as the case may be and carry out a social impact assessment (SIA) study	Land for traditional tribal institutions and burial and cremation grounds taken into consideration while conducting the SIA
		SIA study to be made public in manner specified in the Act	
		Preparation of Social Impact Management Plan (SIMP)	In case of a project involving land acquisition /involuntary displacement of the Scheduled Castes or the Scheduled Tribes families, a Development Plan shall be prepared laying down the details of procedure for settling land rights due but not settled and restoring titles of the scheduled Tribes as well as the Scheduled Castes on the alienated land by undertaking a special drive together with land acquisition The Development Plan shall also contain a programme for development of alternate fuel, fodder and non-timber

			forest produce resources on non-forest lands within a period of five years sufficient to meet the requirements of tribal communities as well as the Scheduled Castes.
		Public hearing for Social Impact Assessment (when prepared under section-4 of the act)	
2	Appraisal of SIA by expert group	SIA report is evaluated by an independent multi-disciplinary Expert Group, as may be constituted by appropriate Govt.	
		Recommendations of the expert group made available to the local bodies and in the affected areas in local language	
		The appropriate govt. would recommend the such area for acquisition after examining the expert group report (and report from the collector if any)	
3	Publication of preliminary notification	Notification (hereinafter referred to as preliminary notification) to that effect along with details of the land to be acquired in rural and urban areas shall be published (Notification to be issued within 12 months from DoA of SIA)	In case of acquisition or alienation of any land in the Scheduled Areas, the prior consent of the concerned Gram Sabha or the Panchayats or the autonomous District Councils, at the appropriate level in Scheduled Areas under the Fifth Schedule to the Constitution, as the case may be, shall be obtained. in all cases of land acquisition in such areas, including acquisition in case of urgency, before issue of a notification under this Act, or any other Central Act or a State Act for the time being in force.
		Immediately after issuance of the notification, the concerned Gram Sabhas at the village level, municipalities in case of municipal areas and the Autonomous Councils in case of the areas referred to in the Sixth Schedule to the Constitution, shall be informed of the contents of the notification issued under the said sub-section in all cases of land acquisition at a meeting called especially for this purpose.	

		After issuance of notice, the Collector shall, before the issue of a declaration under section 19, undertake and complete the exercise of updating of land records as prescribed within a period of two months.	
		Preliminary survey of land	
		Payment for damage (if any) during survey	
4	Preparation of Rehabilitation and Resettlement Scheme by the Administrator	Upon the publication of the preliminary notification by the Collector, the Administrator for Rehabilitation and Resettlement shall conduct a survey and undertake a census of the affected families	
		The Administrator shall, based on the survey and census prepare a draft Rehabilitation and Resettlement Scheme (including time limit)	<p>The affected families of the Scheduled Tribes shall be resettled preferably in the same Scheduled Area in a compact block so that they can retain their ethnic, linguistic and cultural identity.</p> <p>The resettlement areas predominantly inhabited by the Scheduled Castes and the Scheduled Tribes shall get land, to such extent as may be decided by the appropriate Government free of cost for community and social gatherings.</p> <p>The affected Scheduled Tribes, other traditional forest dwellers and the Scheduled Castes having fishing rights in a river or pond or dam in the affected area shall be given fishing rights in the reservoir area of the irrigation or hydel projects.</p>
		The draft Rehabilitation and Resettlement scheme referred to in sub-section (2) shall be made known locally by wide publicity in the affected area and discussed in the concerned Gram Sabhas or Municipalities	
		A public hearing shall be conducted in such manner as may be prescribed, after giving adequate publicity about the	Provided further that the consultation with the Gram Sabha in Scheduled Areas shall be in accordance with the provisions of the Provisions of the

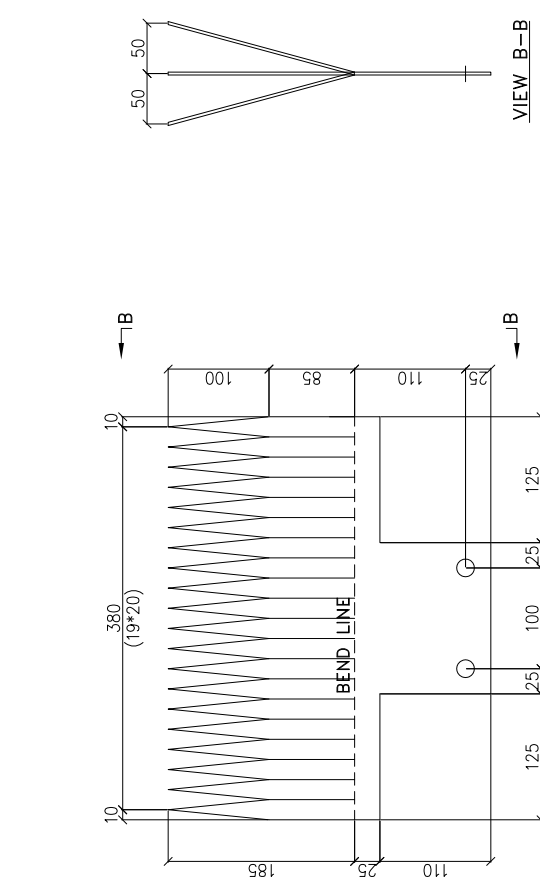
		date, time and venue for the public hearing at the affected area:	Panchayats (Extension to the Scheduled Areas) Act, 1996.
		The Administrator shall, on completion of public hearing submit the draft Scheme for Rehabilitation and Resettlement along with a specific report on the claims and objections raised in the public hearing to the Collector.	
		The Collector shall review the draft Scheme submitted by the Administrator with the Rehabilitation and Resettlement Committee at the Rehabilitation project level constituted under section 45:	
		The Collector shall submit the draft Rehabilitation and Resettlement Scheme with his suggestions to the Commissioner Rehabilitation and Resettlement for approval of the Scheme.	
		Approved Rehabilitation and Resettlement Scheme to be made public	
		Publication of declaration and summary of Rehabilitation and Resettlement.	
5	Land to be marked out, measured and planned including marking of specific areas	The Collector shall thereupon cause the land to be marked out and measured, and a plan to be made of the same.	
6	Notice to persons interested and making of statements	The Collector to publish the public notice on his website and cause public notice to be given at convenient places, to stating that the Government intends to take possession of the land, and that claims to compensations and rehabilitation and resettlement for all interests in such land may be made to him	
		The collector may require a statement containing the name	

		of every person possessing any interest in the land and nature of interest for three years preceding the date of statement	
7	Enquiry and land acquisition award by Collector	the Collector shall proceed to enquire into the objections (if any) which any person interested has stated	
		The Collector shall make an award within a period of twelve months from the date of publication of the declaration under section 19	
8	Determination of amount of compensation	Determination of market value of the land by the collector	In case of land being acquired from members of the Scheduled Castes or the Scheduled Tribes, at least one-third of the compensation amount due shall be paid to the affected families initially as first instalment and the rest shall be paid after taking over of the possession of the land.
		The market value is multiplied by a factor as described in the first schedule of the Act	
		Determination of value of things attached to land or building	
		Determination of value of things attached to land or building	
9	Rehabilitation and Resettlement Award for affected families	The Collector shall pass Rehabilitation and Resettlement Awards for each affected family in terms of the entitlements provided in the Second Schedule	<p>Where the affected families belonging to the Scheduled Castes and the Scheduled Tribes are relocated outside of the district, then, they shall be paid an additional twenty-five per cent R&R benefits to which they are entitled in monetary terms along with a one-time entitlement of fifty thousand rupees.</p> <p>Where the community rights have been settled under the provisions of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, the same shall be quantified in monetary amount and be paid to the individual concerned who has been displaced due to the acquisition of land in proportion with his share in such community rights.</p>
		Provision of infrastructural	All benefits, including the reservation

		amenities in resettlement area	<p>benefits available to the Scheduled Tribes and the Scheduled Castes in the affected areas shall continue in the resettlement area</p> <p>Whenever the affected families belonging to the Scheduled Tribes who are residing in the Scheduled Areas referred to in the Fifth Schedule or the tribal areas referred to in the Sixth Schedule to the Constitution are relocated outside those areas, then, all the statutory safeguards, Entitlements and benefits being enjoyed by them under this Act shall be extended to the area to which they are resettled regardless of whether the resettlement area is a Scheduled Area referred to in the said Fifth Schedule or a tribal area referred to in the said Sixth Schedule or not.</p>
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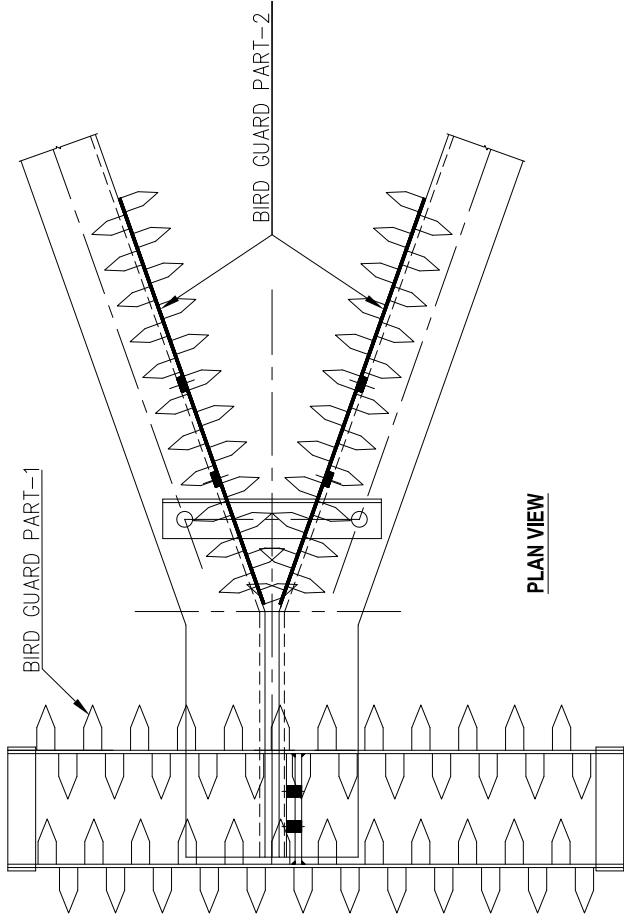
ANNEXURE VII

Drawing of Bird Guard/ Anti Perching Devises



BIRD GUARD PART-2

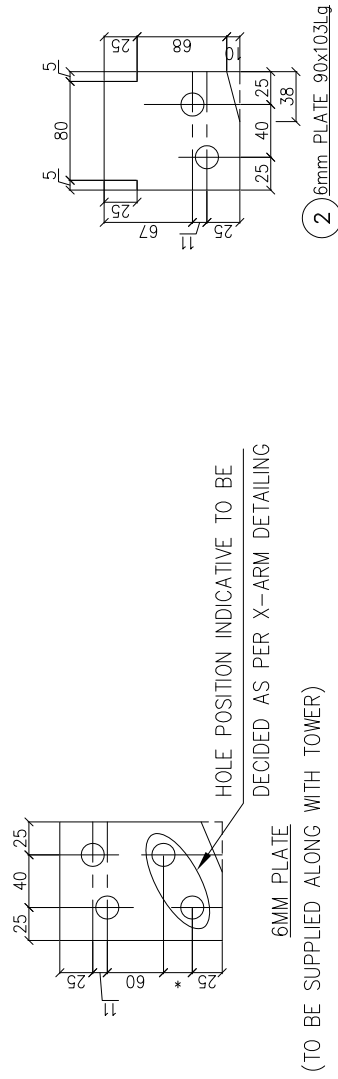
CROSS-ARM TIP DETAIL
(TYPE-1)



NOTES:

1. ALL DIMENSIONS ARE IN MM.
2. GALVANISED AFTER FABRICATION.
3. FIXING ARRANGEMENT TO BE CHECKED WITH TOWER.
4. SUITABLE PROVISION OF CLEAT/PLATE/HOLE TO BE PROVIDED ON SUSPENSION TOWER FACILITATING INSTALLATION OF BIRD GUARD AFTER STRINGING.
5. ONE SET OF BIRD GUARD FOR I-STRING (TYPE-1) INCLUDES.
 - A) BIRD GUARD PART-1(TYPE-1) = ONE NUMBER
 - B) BIRD GUARD PART-2 = TWO NUMBERS
6. HOLE FOR FIXING BG PART-2 TO BE ENSURED ON TOWER MEMBER.
7. 6MM PLATE & 2 Nos. M16x50 Lq. BOLT & NUT TO BE SUPPLIED ALONG WITH

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

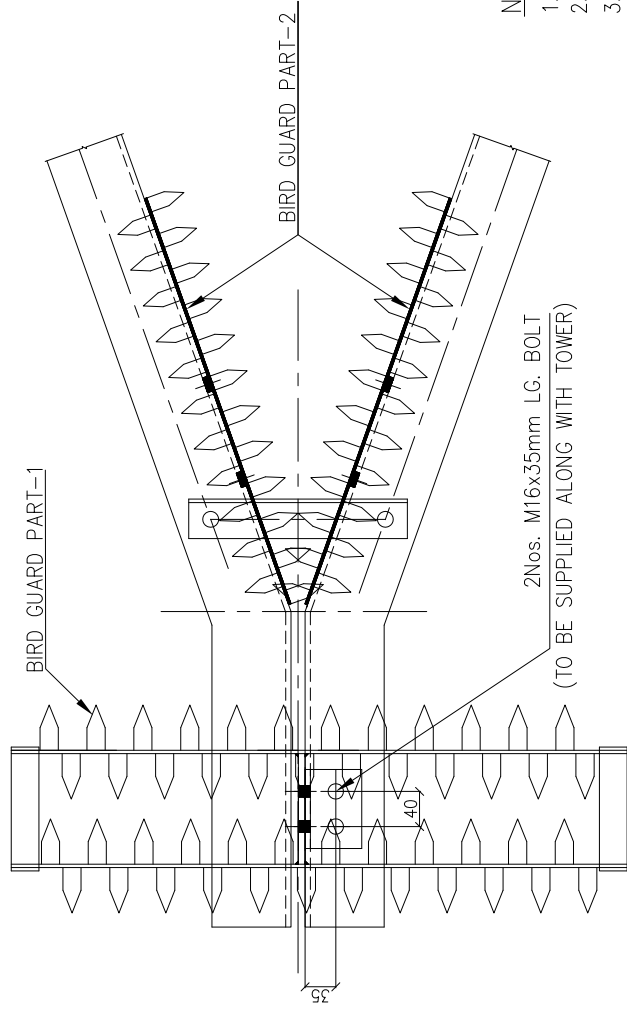
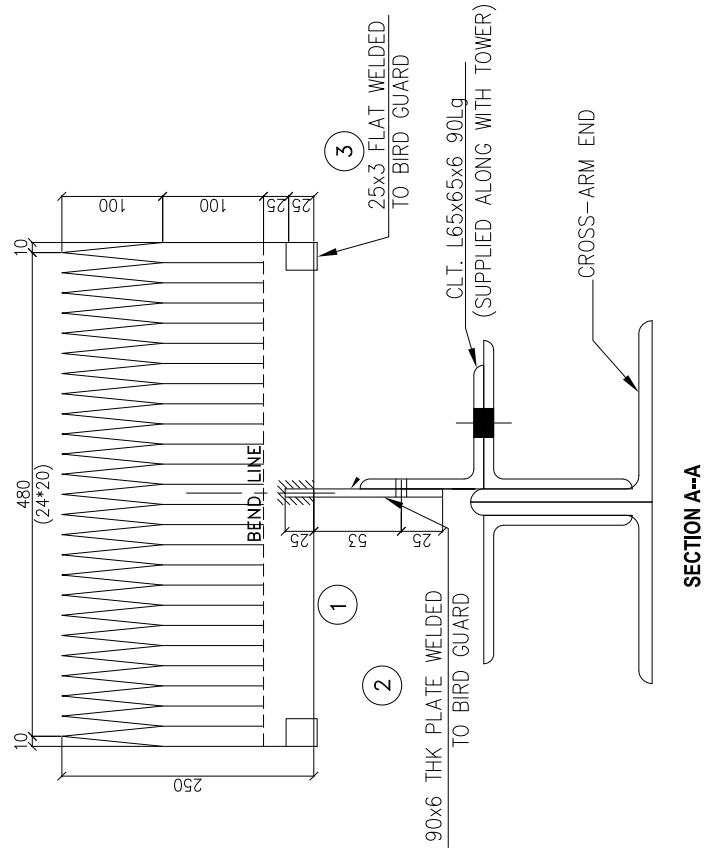
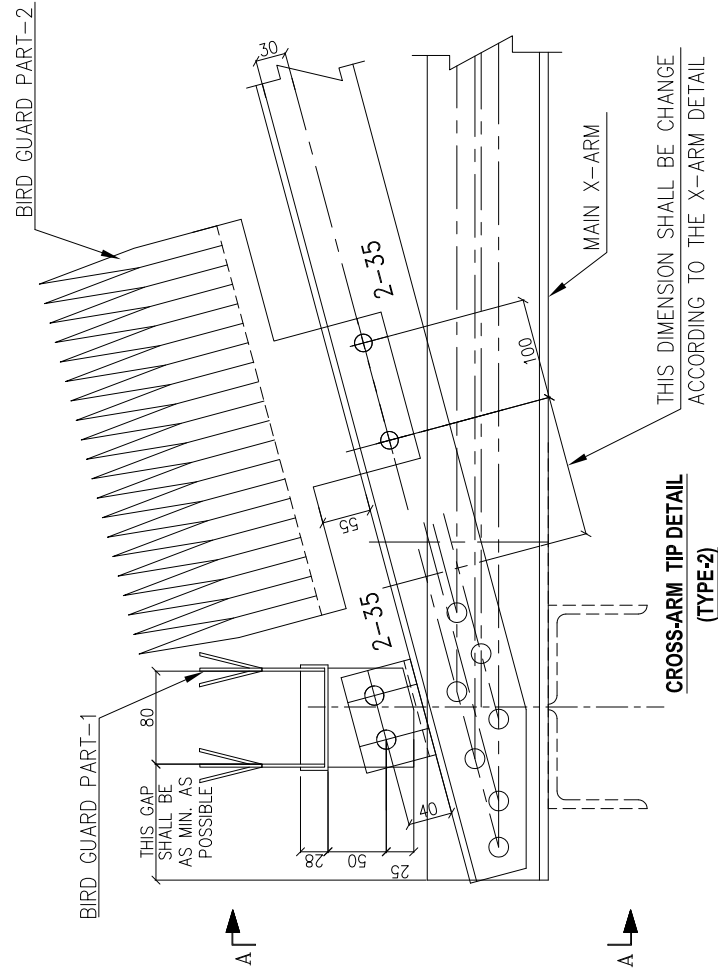


POWER GRID CORPORATION OF INDIA LIMITED

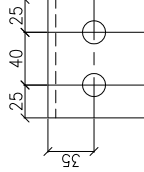
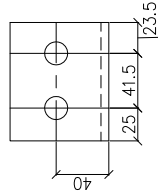
TITLE:

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

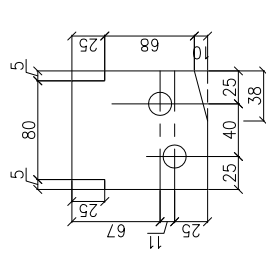
DRAWING No. CC:ENG:TLACC:BG (SHEET 1 of 2)



PLAN VIEW



CLT. L65x65x6 90Lg
(TO BE SUPPLIED ALONG WITH TOWER)



② 6mm PLATE 90x103Lg

MATERIAL LIST / SETS (TYPE-2)				
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= 13.288

NOTES:

1. ALL DIMENSIONS ARE IN MM.
2. GALVANISED AFTER FABRICATION.
3. FIXING ARRANGEMENT TO BE CHECKED WITH TOWER.
4. SUITABLE PROVISION OF CLEAT/PLATE/HOLE TO BE PROVIDED ON SUSPENSION TOWER FACILITATING INSTALLATION OF BIRD GUARD AFTER STRINGING.
5. ONE SET OF BIRD GUARD FOR I-STRING (TYPE-2) INCLUDES.
 - A) BIRD GUARD PART-1(TYPE-2) = ONE NUMBER
 - B) BIRD GUARD PART-2 = TWO NUMBERS
6. HOLE FOR FIXING BG PART-2 TO BE ENSURED ON TOWER MEMBER
7. L65x85x8-90Lq. & 2 Nos. M16x35 Lq. BOLT & NUT TO BE SUPPLIED ALONG



POWER GRID CORPORATION OF INDIA LIMITED

TITLE:

DETAILS OF BIRD GUARD FOR I-STRING (TYPE - 2)-REVISED

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

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

ANNEXURE VIII

**Signed Copy of Safety
Plan Submitted by
Contractor**

NECCON POWER & INFRA LIMITED

(Formerly : North Eastern Cables & Conductors (P) Ltd.)



REGISTERED OFFICE : SEUNI ALI, A.T. ROAD, JORHAT-785 001 (ASSAM) PHONE : (0376) 2351433, 2350894, FAX : 2351318, GRAM : NECCON
E-mail : neccon@necconpower.com, info@necconpower.com; Websit : http://www.khetan-group.com ♦ (CIN) : U27109AS1984PLC002275

Ref: NECCON/DGM/PGCIL/MEG-DMS-01/16-17

Date: Oct. 15, 2016

To

The Deputy General Manager (NERPSIP)
Power Grid Corporation of India Limited,
Dongtiah, Lower Nongrah,
Lapalang, Shillong, Meghalaya-793006

Sub:- Submission of Safety Plan against "Substation Packages MEG-DMS-01 Under North Eastern Region Power Improvement System Improvement Project in Meghalaya".

Ref:- 1. NOA No: CC-CS/474-NER/REW-2449/1/G5/NOA-I/6849; dated: 13/07/2016 (Supply)
2. NOA No: CC-CS/474-NER/REW-2449/1/G5/NOA-II/6850; dated: 13/07/2016 (Service)
3. NOA No: CC-CS/474-NER/REW-2449/1/G5/NOA-III/6851; dated: 13/07/2016 (Maint.)

Dear Sir,

With reference to the above, we are submitting herewith the Safety Plan for above said project for your kind information & record please.

Thanking you.

Yours faithfully,
For, Neccon Power & Infra Limited.

(T.R. Sharma)
Director (tech)

14/12/16

Best Productivity Performance National Award Winner (SSI Sector) 1995-96 & 2007



Unit(s)	1	: Industrial Estate, Cinnamara, Jorhat-785 008 (Assam), Phone : 2360503, 2360354
	2	: F44, Industrial Area, Sikar-332001 (Rajasthan), Phone : 01572-258929, 252741
	3	: Bapi Industrial Estate, Bapi, Dausa (Rajasthan)
Branch Office	1	: NECCON House, 37, Tulsibala Road, Ulubari, Guwahati-781 007, Phone : 0361-2523626, Fax : 2522789, E-mail : neccon@necconpower.com
	2.	: 416, (4 th Floor), City Plaza, Space Cinema Complex, Jaipur-302016 (Rajasthan), Tele Fax : (0141) 2281540, E-mail : necconjpr@necconpower.com

Productivity, Quality, Innovation and Management are the Pillars of our Success

Table of Contents For (Package MEG- DMS - 01)

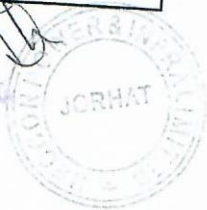
Sl. No.	Contents	Page
1	Safety Plan	1-15
2	Safe Work Procedures of different activities	16-28
3	Manpower Deployment Plan	29-29
4	List of Lifting Machine & other T & P for Erection	30-30
5	List of Personal Protective Equipments	31-31
6	List of Earthing Equipments	32-32
7	List of Qualified Safety officer	33-33
8	Environment, Health and Safety Policy	34-34
9	On Site Emergency Plan	35-46
10	Safety Check List for 3 Major activities	47-50
11	Safety Training Module	51-52
12	Safety Induction Training Record	53-53
13	Policy Schedule for Employees compensation Insurance	54-55
14	Labour Licence	56-57
15	Marine - Cum - Erection Insurance Policy, EAR Policy (Includes third party liability under section - II)	58-68
16	Certificate of Registration Under Building and Other Construction Works (Regulations Employment and Conditions of Service) Act, 1996.	69-70

Approved

वि. नं. 30/03/17

बि. मेधि / B. MEDHI
प्रबन्धक / Manager
एनईआरपीएसआईपी / NERPSIP
पावरग्रिड खिलेरवाट / POWERGRID Khilerahat

Amulya
East Jaintia Hills District
Kishorhat





অসম ASSAM

FORM - 18
SAFETY PLAN

19AA 385130

THIS SAFETY PLAN is made this 13th day of July 2016. by M/S NECCON POWER & INFRA LIMITED, India a Company incorporated under the laws of India and having its Registered Office at - Seuni Ali, A.T.Road, Jorhat-785001 (Assam) (hereinafter called as Contractor which shall include its successors and permitted assigns) for approval of M/S Power Grid Corporation of India Limited a company incorporated under the Company Act,1956 having its Registered Office at B-9, Quatab Institutional Area, Katwaria Sarai, New Delhi-110016 and its Corporate Office at Saudamini plot No.-2, Sector -29, Gurgaon-122001 and its Supply cum Installation Contract for Substation Package- MEG -DMS-01 Under North Eastern Region Power Improvement System Improvement Project in Meghalaya. (33/11kv New s/s), (33kv S/C overhead line (New), OPGW, ADSS Fiber Optic Cable, Fiber Optic Terminal Equipment. NOA No.: CC-CS/474-NER/REW-2449/1/G5/NOA-I/6849; Dated: 13th July 2016 (Supply). NOA No.: CC-CS/474-NER/REW-2449/1/G5/NOA-II/6850; Dated: 13th July 2016 (Service). NOA No.: CC-CS/474-NER/REW-2449/1/G5/NOA-III/6851; Dated: 13th July 2016 (Maintenance)

WHEREAS M/S Power Grid Corporation of India Limited has awarded to the Contractor the aforesaid Contract vide its Notification of Award No. CC-CS/474-NER/REW-2449/1/G5/NOA-1/6849 dated: 13.07.2016 2016. CC-CS/474-NER/REW-2449/1/G5/NOA=II/6850; dated:13.07.2016 (Service). CC-CS/474-NER/REW-2449/1/G5/NOA-III/6851; dated: 13.07.2016 (Maintenance). 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:

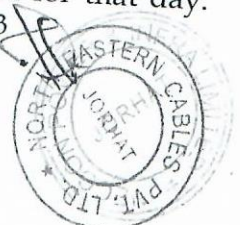


applicable for transmission line/ Sub Station works. In case gang is having Gang leader not on permanent roll of the company then additional Supervisor from company's own roll having thorough knowledge about the works would be deployed so as to percolate safety instructions upto the grass root level 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.

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 POWERGRID. 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.



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.
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 POWERGRID 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 POWERGRID 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



POWERGRID 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 POWERGRID 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 POWERGRID 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.

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 confirming 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.

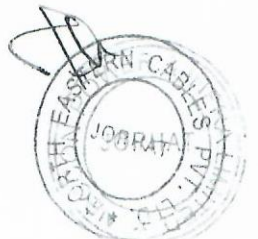
THAT the Contractor employing more than 250 workmen whether temporary, casual, probationer, regular or permanent or on contract, shall employ at least one full time officer exclusively as qualified safety officer having diploma in safety to supervise safety aspects of the equipment and workmen who will 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 POWERGRID 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 / POWERGRID 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 un safe 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 / POWERGRID 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 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 organize 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 POWERGRID 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 POWERGRID 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 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.....

WITNESS

1. Signature.....
Name.....Dhananjay Sharma
Address.....Khlichiat

Signature.....
Name.....
Address.....

2. Signature.....
Name.....B. Nisanth Rao
Address.....Khlichiat

Authorised representative
(Common Seal)
(In case of Company)



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.



ANNEXURE IX

Safety/Penalty Provisions in Contract Conditions

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

Addition of New Clauses (PC21.3.5, 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 destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit, 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 from their destination and the absence of heavy handling facilities at all points of 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 Replace the word 'materials' in line no. 2 with 'Plant and Equipment'.

Add the word 'including liabilities for port charges if any' after the word 'clearance' in line no. 3.

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 bye 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 there under, regulations, notifications and bye-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:



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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 road / pathways, other local infrastructure and agricultural land to atleast 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 THE EMPLOYER 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 THE EMPLOYER 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 THE EMPLOYER 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



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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 THE EMPLOYER 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:

- a. Satisfy the Engineer that the appliance is in good working condition;
- b. Inform the Engineer of the maximum current rating, voltage and phases of the appliances;
- c. 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;

- a. 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 Licenced 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 Licenced 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 THE EMPLOYER 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 THE EMPLOYER 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 THE EMPLOYER Safety Rules or continues the work even after being instructed to stop work by the Engineer as provided in para GCC 22.4.3.19 above, the Contractor shall promptly pay to THE EMPLOYER, 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 THE EMPLOYER 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 THE EMPLOYER 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 THE EMPLOYER, which will be passed on by THE EMPLOYER 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 THE EMPLOYER 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 THE EMPLOYER, such



amount shall be recovered by THE EMPLOYER 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 THE EMPLOYER 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.



ANNEXURE X

Approved Labour License & Insurance Policy by Contractor



GOVT.OF INDIA
MINISTRY OF LABOUR & EMPLOYMENT
OFFICE OF THE DEPUTY CHIEF LABOUR COMMISSIONER (CENTRAL)
KENDRIYA SHRAM SADAN, R.K.MISSION ROAD, BIRUBARI, GUWAHATI.
PIN: - 781016

NO:-57(103)/2016-G/A

Dated: - 16-11-2021

To
NECCON POWER & INFRA LIMITED
Seuni Ali, A.T.Road, Jorhat,
Pin-785001.

Subject: - Building & Other Construction Workers (RE & CS) Act, 1996:- Issue of amendment of Certificate of Registration No: GH. 57(103)/2016-G/A dated 30-09-2016.

Dear Sir,

Please refer to your application for amendment of Certificate of Registration dated 30-09-2021 under above mentioned subject, received in this Office on 04-10-2021

Further, in continuation of above reference letter, extension of work order has been received in this office on 11-11-2021.

In this connection, please find enclose herewith the Original Certificate of Registration duly amended up to **31-12-2021**.

Please acknowledge receipt.

Enclose: - As above.

Yours faithfully,


(S.K.CHAKMA)

Assistant Labour Commissioner (Central)
& Registering Officer under BOCW (RE & CS) Act, 1996
Guwahati.

CERTIFICATE OF REGISTRTION No: GH.57 (103)/2016/BOCW-REG

GOVT. OF INDIA
★
MINISTRY OF LABOUR
★
REGISTERING OFFICER
★
THE BUILDING & OTHER CONSTRUCTION
WORK (REG. & C.S.) ACT, 1956
★
ASSISTANT LABOUR COMMISSIONER

(See Rule 25)

[illegible]

FORM-II

{See Rule 24(1)}

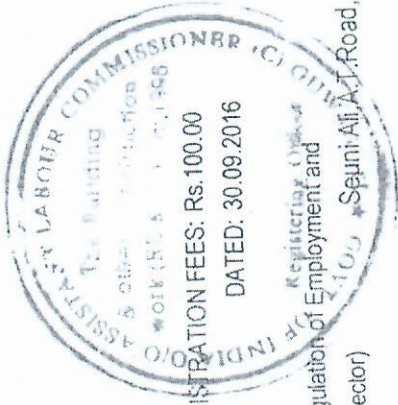
Government of India

Ministry of Labour & Employment

Office of the Registering Officer & Assistant Labour Commissioner(Central)

KENDRIYA SHRAM SADAN, R.K.Mission Road,Birubari,Guwahati-781016

NO:GH.57/103/2016/BOCW.REG



A Certificate of Registration is hereby granted under Sub-Section(3) of Section 7 of the Building and Other Construction Works (Regulation of Employment and Conditions of services)Act, 1996 and the Rules made thereunder to:- M/s Necon Power & Infra Ltd., (Rep.by:Shri J.P.Khetan,Director)

Jorhat-785001,ASSAM

1	Postal Address/location where building or other construction work is to be carried on by the employer:	M/s Necon Power & Infra Ltd., The Dy.General Manager,PGCIL,Dongliah,Lower Nongrah Lapalang, Shillong-793006, Meghalaya
2	Name and address of employer including location of building and other Construction Work:	M/s Necon Power & Infra Ltd., The Dy.General Manager,PGCIL,Dongliah,Lower Nongrah Lapalang, Shillong-793006, Meghalaya
3	Name and permanent address of the establishment:	M/s Necon Power & Infra Ltd., Jorhat-785001,ASSAM
4	Nature of work in which building workers are employed or are to be employed:	Services Contract for DMS Package MEG-DMS-01 Associated with NER Power System Improvement Project. Vide No.CC-CS/474-NER/REW-2449/1/GS/NOA-II/6850 dated: 13.07.2016
5	Maximum number of building workers to employed on any day by the employer:	50 (FIFTY)only
6	Probable date of commencement and completion of work:	13.07.16 to 10.10.2019 Anended upto 12.10.2019
7	Other particulars relevant to the employment of building workers:	dated 01.04.2019.

ANNEXURE:

The registration granted herein above is subject to the following condition namely:

(A) the certificate of Registration shall be non-transferable

(B) the number of workmen employed or building workers in the establishment shall not on any day exceed

the maximum number specified in the certificate of registration

(C) save or provided in these rules, the fees, paid for the grant of registration certificate shall be non-refundable

(D) the rates of wages payable to building workers by the employer shall not be less than the rates prescribed under the Minimum Wages Act, 1948

(E) for such employment where applicable and where the rates have been fixed by agreement settlement or award, not less than the rates so fixed, and

(F) the employer shall comply with the provisions of the Act and the rules make thereunder.

Anended upto 31.10.2020 dated 22.05.2020.

Assistant Labour Commissioner (Central)

Government of India

Guwahati

Anended upto 12.04.2020

dated 22.01.2020.

Assistant Labour Commissioner (Central)

Government of India

Guwahati

Anended upto 12.01.2020

dated 08.11.2019.

Assistant Labour Commissioner (Central)

Government of India

Guwahati

(HARI OM GAUTAM)

Assistant Labour Commissioner (Central)

Assistant Labour Commissioner (Central)

& Registering Officer under BOCW (RE&CS) Act

GUWAHATI

Assistant Labour Commissioner (Central)

Government of India

Guwahati

CLASS-I



GOVERNMENT OF ASSAM
LICENCE



[Under Regulation 13(2) & 14(s)]

FOR ELECTRICAL CONTRACTOR GRANTED UNDER ASSAM ELECTRICAL LICENCING BOARD REGULATION NOTIFIED BY GOVERNMENT OF ASSAM VIDE NOTIFICATION NO.PEL.245/89, DATED DISPUR THE 24TH JULY, 1992, FROM POWER (ELECTRICITY) MINES & MINERALS DEPARTMENT, UNDER PROVISION OF RULE 45 OF THE INDIAN ELECTRICITY RULES, 1956.

Registration No. 3153

This licence is hereby granted to Mr./Miss/Mrs/Messers **NECCON POWER & INFRA LIMITED, Souni Ali, A.T. Road, Jorhat-785001, District-Jorhat, Assam** of authorizing to carry out Electrical installation work in the state of Assam subject to the condition mentioned in the Assam Electrical Licensing Board Regulation, 1992 issued by the Government of Assam vide Notification No.PEL.245/89, dated Dispur the 24th July 1992.

Class of Licence : CLASS - I

Jurisdiction : ASSAM

Chairman,
Electrical Licensing Board, Assam

Secretary,
Electrical Licensing Board, Assam

Date of Issue	Installation & Voltage grade	Date of expiry	Member-Secretary / Vice-Chairman's initial
---------------	------------------------------	----------------	--

The licence is hereby renewed
From 17-08-2012 to 16-08-2013
The licence is hereby renewed
From 17-8-2017 to 16-8-2018

The licence is hereby renewed
From 17-8-2018 to 16-8-2019

The licence is hereby renewed
From 17-8-2019 to 16-8-2020

The licence is hereby renewed
From 17-08-2020 to 16-08-2021

17-08-2021 to 16-08-2022

Member-Secretary,
Electrical Licensing Board, Assam

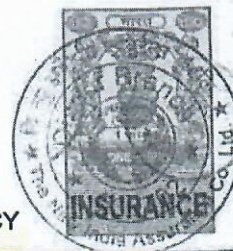
Secretary, E.L.B. Assam
Date & Seal

Secretary, E.L.B. Assam
Date & Seal

Member-Secretary,
Electrical Licensing Board, Assam
Date & Seal

Member-Secretary,
Electrical Licensing Board, Assam
Date & Seal

Member-Secretary,
Electrical Licensing Board, Assam
(ASSAM)



MARINE-CUM-ERECTION INSURANCE POLICY

Insured's Name	: NECCON POWER & INFRA LTD.	Issuing Office Details	
Insured's Details		Office Code	: DISPUR BRANCH (530702)
Customer ID	: PO73023329	Address	: NILGIRI MANSION, OPPOSITE TO NEMCARE HOSPITAL, BHANGAGARH, G.S.ROAD, 781005
Address	: B.C. SYIEN APARTMENT, LAITUMKRAH OPP. NEEPCO, EAST KHASI HILLS SHILLONG ASSAM RIFLES ,MEGHALAYA, 793011	Phone No	: 03612529463
Phone No	:	E-mail/Fax	: nia.530702@newindia.co.in/
E-mail/Fax	: neccon@necconpower.com, /	S.Tax Regn. No	: AAACN4165CST178
PAN No	: AABCN1603J	GSTIN	: 18AAACN4165C22P
GSTIN/UIN	: 17AABCN1603J3ZP/NA	SAC	: 997139 (Other non-life Insurance services excl R)
	:		

Policy Details			
Policy Number	: 53070244200800000002	Business Source Code	
Period of Insurance	: 28/04/2020 02:04:17 PM to 13/03/2022 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	: 2019dollyghy@gmail.com pradiip.medhi@newindia.co.in, / /

Premium:	GST:	Stamp Duty	Total (₹)	Receipt No. & Date:
1043970	187915		1231886	5307028120000000386 1 - 12/03/21

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 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: EXCESS 5 % OF CONSIGNMENT VALUE SUBJECT TO MINIMUM OF ₹10,000/-
Excess for Cargo: 10000	PREMIUM: As per Premium Endorsement hereunder:

Voyage		
Sl. No.	From	To
1	ANY PART OF INDIA	PROJECT SITE (MEGHALAYA)

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.

Policy No. : 53070244200800000002 Document generated by 25619 at 12/03/2021, 16:02:26 Hours.
Regd. & Head Office: New India Assurance Bldg., 87 M.G. Road, Fort, Mumbai - 400 001. TOLL FREE No. 1 800 209 1415.
Guwahati-781 005
Phone : 0361-2529463



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-01) CONSTRUCTION OF 33/11Kv SUB-STATION AND LINES AT MYNKRE, RYMBAI, LUMSHNONG & LATYRKE IN THE STATE OF MEGHALAYA. 2) Extension of Policy Nos. 53070244160800000003 53070244190800000018

Site of Erection	Risk Address : 1 MYNKRE, RYMBAI, LUMSHNONG, LATYRKE, MEGHALAYA, ML063, KHLIEHRIAT, ML, MEGHALAYA, INDIA, 793200
------------------	--

Principal(s)/ Contractor/ sub-contractor Details:		
Sl. No.	Name	Address
1	POWER GRID CORPORATION OF INDIA	SHILLONG
2	NECCON POWER & INFRA LTD	SEUNI ALI ROAD, A.T. ROAD, JORHAT

Sl. No.	Period of Insurance
1.	Period of Insurance From : 28/04/2020 02:04:17 PM To : 13/03/2022 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

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	485230661

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

THE NEW INDIA ASSURANCE CO. LTD
Dispur Branch Office-530702
Gowahati-781005
Phone : 0361-2529463

Blueary



Sl. No.	a) Permanent Civil Engineering Works	b) Temporary Works	Completely erected value
1	0	0	485230661

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

दि न्यू इण्डिया एश्युरेन्स कम्पनी लिमिटेड
THE NEW INDIA ASSURANCE CO. LTD.

Policy No. : 53070244200800000002 Document generated by 25619 at 12/03/2021 16:02:26 Hours.

Regd. & Head Office: New India Assurance Bldg., 87 M.G. Road, Fort, Mumbai - 400 001. TOLL FREE No. 1 800 209 1415.

Gowahati-781 005

Phone : 0361-2529463



10. Automatic Reinstatement clause		
Sl. No.	Limit of Indemnity	Excess
1	0	0

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-2 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		55311

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
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Risk Serial No.	Earth Quake Cover
1	YES

Installment Details		
Installment Number	Installment Date	Installment Amount (₹)
1	28/04/2020	304135
2	28/04/2020	34569
3	18/09/2020	103708
4	18/09/2020	234997
5	12/03/2021	554476

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
	SLC	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 12th day of March, 2021

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		₹1043970
SGST	0	0
CGST	0	0
IGST	18	187915

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 12th day of March, 2021

दि न्यू इण्डिया एअरन्स कम्पनी लिमिटेड
THE NEW INDIA ASSURANCE CO. LTD.
Dispur Branch Office-630702
Nigiri Mansion, Opp.- Nemoare
Hospital, Bhargagarh, G.S. Road
Guwahati-781005
Phone : 0361-2629463

For and on behalf of
The New India Assurance Company
Limited

Blueang



COLLECTION RECEIPT CUM ADJUSTMENT VOUCHER

Issuing Office : DISPUR BRANCH (530702)
Address : NILGIRI MANSION,
OPPOSITE TO NEMCARE HOSPITAL,
BHANGAGARH, G.S. ROAD, 781005
GUWAHATI
Phone : 03612529463
Email : nia.530702@newindia.co.in
Fax :
Collection Number : 53070281200000003861
Collection Date : 12/03/2021
Business Source Code : 1D7795252
PAN No of Payor : AABCN1603J

Received with thanks from NECCON POWER & INFRA LTD..

The amount received/Adjusted is towards -

Policy No.	A/C Description	Amount ₹	A/C Code	Sub A/C Code
53070244200800000002	Bank-530702	554476.00	9100.530702	BA00012647-530702-9100

Total = ₹ 1888937.00

Your Payment/Adjustment Details are as under -

Mode	Amount ₹	Cheque No.	Cheque Date	Drawee Bank	Drawee Branch	Reference No.	Scroll/BG/A PD Balance
Cheque	554476.00	466525	12-MAR-21	PUNJAB NATIONAL BANK	BHANGAGARH BRANCH	53070244200800000002	N.A.

Total = ₹ 1888937.00

Utilization details of the Collected Amount :

Premium	GST	Stamp Duty	Excess Amount
1043970.00	187915.00	1.00	0
Sl no.	Agency Code	Agency Name	Department Code
1	NIAAG00116342	DOLLY SINGH	44

For The New India Assurance Company Limited
Revenue Stamp

Date of Issue: 12/03/2021

Cashier's Initial

Authorized Signatory

Note -

1. Please note the Policy Number, Collection Number and date in all future correspondence. This Receipt is subject to Realisation of Cheque..
2. NIA shall not be liable for any claim arising out of sales made during the period between the due date and date of payment of the installment if the premium paid has been exhausted by turnover declarations/ if there is insufficient premium balance.

Tax Invoice No : 53070220E0005706

IRDA Registration Number: 190

दि न्यू इण्डिया एश्युरेन्स कम्पनी लिमिटेड
THE NEW INDIA ASSURANCE CO. LTD
Dispur Branch Office-530702
Nilgiri Mansion, Opp - Nemcare
Hospital, Bhangagarh, G.S. Road
Guwahati-781005
Phone : 0361-2529463

Document generated by 25619 at 12/03/2021 16:00:59 Hours.

Regd. & Head Office: New India Assurance Bldg., 87 M.G. Road, Fort, Mumbai - 400 001. TOLL FREE No. 1 800 209 1415.

ANNEXURE XI

Filled Safety Checklist as Sample

Safety Related Check List during Construction of Substation

Region: NER Date of Safety Audit:

Name of Sub Stn. / Switching Stn.: 33/11 KV Mysore S/S

Name of Contractor: M/s Neelcon Power & Infra

Contractor License / Registration No.: Validity:

Name of Sub Contractor :

Sub-Contractor License / Registration
No.: Validity:

I. SUB STATION CIVIL WORKS :

SN	Description of Activity	Feed back	Remarks
i): Safety during Excavation :			
1.	Check Sub station area has been protected by constructing boundary wall all around the sub station to avoid entry of passerby / unauthorized person or animal in the sub station.	Yes / No. <input checked="" type="checkbox"/>	B/W is under progress
2.	De watering arrangement is available (If necessary)	Yes / No. <input checked="" type="checkbox"/>	water pump
3.	Check proper / adequate arrangement is made for extension of electric supply. (Proper size of cable, Use of fuse, No loose connection and no naked wire connection to Pumps / Illumination / Electric compressors etc. if applicable).	Yes / No. <input checked="" type="checkbox"/>	
4.	Check arrangement of illumination at construction site is available.	Yes / No. <input checked="" type="checkbox"/>	DS set up
5.	Check dumping of Excavated soil (Minimum 1.5 Mts. Or half the depth of the pit which ever is more from the edge of the pit.)	Yes / No. <input checked="" type="checkbox"/>	
6.	Check Shoring & Shuttering to protect the loose rock / soil against fall. (if required).	Yes / No. <input checked="" type="checkbox"/>	
7.	Check lone worker is not be allowed to work in the excavated area.	Yes / No. <input checked="" type="checkbox"/>	
8.	Ensure Laying of temporary cables used for operation of Machines used during construction should not cause any danger for electrocution of persons / animals.	Yes / No. <input checked="" type="checkbox"/>	
9.	Ensure that before undertaking excavation, the soil has been tested and in case of availability of any explosive / dangerous gas, necessary arrangement must be made to remove / dilute such gases.	Yes / No. <input checked="" type="checkbox"/>	Soil investigation made
10.	The positions of underground installations such as sewers, water pipes and electrical cables has been verified and in case of their existence, they must be isolated before further excavation works to ensure Human Safety.	Yes / No. <input checked="" type="checkbox"/>	Not applicable
11.	Check that the scaffolds are not overloaded in any case. Scaffolds are to be erected and supported properly.	Yes / No. <input checked="" type="checkbox"/>	
12.	Stability of the soil of the excavated pit for safe working is to be checked and certified by a competent person daily before start of work. A register at site is maintained where competent person can certify accordingly. No manhole should remain uncovered during night & off days.	Yes / No. <input checked="" type="checkbox"/>	
13.	Check the provision of sufficient strong ladder of suitable length is available near the working place during excavation.	Yes / No. <input checked="" type="checkbox"/>	
14.	Check if any permission is required from local statutory body before excavation.	Yes / No. <input checked="" type="checkbox"/>	
15.	Check for No undercutting / toe cutting in soil.	Yes / No. <input checked="" type="checkbox"/>	

SN	Description of Activity	Feed back	Remarks
16.	Check after excavation the work should be speedily completed without delay and back filling done at the earliest.	Yes / No.	
17.	Check for any possibility of seepage of water from nearby pond / river has been estimated and taken care of.	Yes / No	NA
18.	Check to avoid slide / collaps of side walls of excavated pit, the excavation is to be done in trapezoidal cross – section.	Yes / No.	
ii): Safety precaution during Storage, Handling and Use of Blasting Material:			
1	Check that the adequate arrangement is made for the storage of blasting material at safe place. (Temporary Magazine is to be installed observing all norms) as per Indian Explosive Act.	Yes / No.	No blasting in required till the date
2.	Check that the blasting materials is handled by licensed blaster with due care at site. (If applicable)	Yes / No.	
3.	Check smoking is prohibited in the vehicle carrying explosives.	Yes / No.	
4.	Check that the Blaster is holding proper license issued by the appropriate authority. As per Indian Explosive Act.	Yes / No.	
5.	Check that the length of the fuse wire used during blasting operation is adequate.	Yes / No.	
6.	Check while transportation, no unauthorized person is allowed in vehicle carrying explosives.	Yes / No.	
7.	Check that the loading and unloading of explosives is being done carefully.	Yes / No.	
8.	Check explosives and detonators or blasting caps is not being transported in the same vehicle.	Yes / No.	
9.	Check while transportation the detonators and explosives are not carried loose or mixed with other materials.	Yes / No.	
10	Check surplus explosives shall not be stacked near working area during loading / unloading.	Yes / No.	
11.	Check explosives shall not be held in hands when lightening the fuse.	Yes / No.	
12.	Check that blasting in the open has been carried out during the fixed hours every day or on fixed days in the week so that the public at large should know about this.	Yes / No.	
13.	Check that arrangement has been made to display sufficient warnings / sign board to enable the people to get out of the blasting area to get off the danger zone	Yes / No.	
14.	Check that the danger zone has been suitably cordoned off.	Yes / No.	
15.	Check during blasting operations begin / after the firing of explosives shall follow the loud siren.	Yes / No.	
16.	Check that during blasting operation, Labour / Workmen / Passerby are at safe places and arrangement is made to inform public by caution markings (Red Flag) / Public Notices etc.	Yes / No.	
17.	Check that PPEs i.e. Safety helmets, Safety Shoes, is used by blaster and their gang members during blasting and also the persons supervising the blasting operations.	Yes / No.	
18.	For covered blasting ensure placement of cover plates of proper thickness and sufficient numbers of sand filled bags.	Yes / No.	
19.	Ensure that permission for blasting has been obtained from the appropriate authority.	Yes / No.	
iii) Safety during casting of Foundation / Concreting :			
1.	Check construction materials are stacked at safe place and also does not cause any danger. (Away from pit) i.e. 1.5 Mtrs. or half the depth of the pit which ever is more.)	Yes / No.	
2.	Check proper arrangement of illumination at Construction Site of Sub station is available.	Yes / No.	

SN	Description of Activity	Feed back	Remarks
3.	Check that the Concreting Mixer/ Vibrator machines etc are placed at a safe place (Not very near to any pit at least 1.5 Mtr. from the edge of the pit) to avoid transfer of vibrations and should be operated by skilled persons.	Yes / No.	
4.	Check proper / adequate arrangement is made for extension of electric supply. (Proper size of cable, Use of fuse, No loose connection for De watering Pumps / Illumination / Electric compressors etc. if applicable).	Yes / No.	
5.	Check for laying of temporary cables used during construction activities should not cause any danger for electrocution to persons / animals.	Yes / No.	
6.	All bracing, struts and shuttering in excavations shall be adequately secured so as to prevent their accidental displacement.	Yes / No.	
7.	Ensure Shuttering and timbering has been made as detailed in I:S: 3764 for protecting the loose rock / soil against fall.	Yes / No.	
8.	Check for proper placing of Hydraulic jacks with stability and constant watch of these instruments (which are continuously loaded) to avoid any danger of displacement causing sever accident.	Yes / No.	

** work yet to be started.*

II. SAFETY DURING STRUCTURE, EQUIPMENT ERECTION & CABLE LAYING ETC. :

SN	Description of Activity	Feedback	Remarks
1.	Check Back filling done prior to erection activity.	Yes / No.	
2.	Check the derrick used before structure erection has been checked for adequate strength / size and no joints are permitted.	Yes / No.	Test certificate is required apart from visual inspection.
3.	Check that the pulleys used before structure erection / Equipment Erection has been checked for adequate strength / proper size (diameter), also in case of open type pulleys proper locking arrangements like providing of Safety Pin is made Safe working load should be punched.	Yes / No.	Test certificate is required apart from visual inspection.
4.	Check the ropes used before structure erection / Equipment Erection has been checked for adequate strength / physical condition (free from break of strands and knots etc.	Yes / No.	Test certificate is required apart from visual inspection.
5.	Check that the lifting tools and tackles are in healthy condition and has been tested periodically.	Yes / No.	Test certificate is required apart from visual inspection.
6.	Check permission has been obtained from Aviation Authority for erection of Lightning Mast which comes in the vicinity of flying zone. (Where necessary)	Yes / No.	
7.	Check that all Nuts and Bolts are fitted in the structure before undertaking the job of other section of the structure and are tightened.	Yes / No.	
8.	Check area has been cordoned off to prevent injuries to unauthorized persons from hitting against structural component or falling in the excavated pits.	Yes / No.	
9.	Check that danger plates are available on all the equipment & structures in the switchyard.	Yes / No.	
10.	Check demarcation of feeder is done for Double Circuit Line.	Yes / No.	
11.	Check only erection team members are allowed to stand near the structure / Equipment while erection is in process and should wear the safety helmet / Safety Shoes.	Yes / No.	

SN	Description of Activity	Feedback	Remarks
12.	Check proper guying arrangement has been made while lifting structure / Equipment, if necessary.	Yes / No.	
13.	Check that proper arrangement is made while lifting the structure members and fixing them at height i.e. Proper size and strength of the hook used for lifting the structure members.	Yes / No.	
14.	Check sufficient numbers of guys are made while lifting the assembled structure / heavy loads and also avoiding use of single sheeve pulleys while lifting the assembled structure / heavy load.	Yes / No.	
15.	Check arrangement has been made for equipment identification.	Yes / No.	
16.	Check that required painting made on tower falling in the vicinity of aviation zones. (Where necessary.)	Yes / No.	
17.	Check no live wires nearby. Take shut down if necessary.	Yes / No.	
18.	Check the structure has been permanently earthed.	Yes / No.	
19.	Check crane are preferably be used for erection of pipe structure in the sub station building works (if required.)	Yes / No.	
20.	Check all safety procedures for erection work like use of safety helmets, Safety belts, use of guy wires, lowering / lifting of tools by rope etc. are strictly adhered to during structure erection works is in progress in the switchyard.	Yes / No.	
21.	Check that correct size of spanner (Box or ring type) as well as DE spanners is being used.	Yes / No.	
22.	Check working area of the structure has been demarcated during erection.	Yes / No.	
23.	Check heavy structures are lifted with crane with proper safety.	Yes / No.	
24.	Only polypropylene ropes are to be used to tie the aluminium tube / Bus bar since this is soft material and will not damage aluminium tube / Bus bar during erection.	Yes / No.	
25.	Ensure that R clips in insulator caps are fixed properly to avoid disconnection of insulator discs.	Yes / No.	
26.	Ensure that all the necessary security pins (split pins) are fixed.	Yes / No.	
27.	Check all nuts of jumper fittings are properly tightened and live metal clearance have been maintained as per MePTCL/MePDCL specification.	Yes / No.	
28.	In case of tension fitting dead end joint dimensions before & after the compression are checked and recorded.	Yes / No.	
29.	No damaged component of any hardware fitting should be used on works.	Yes / No.	
30.	Length of jumpers has been measured properly to give it a parabolic shape. No sharp bend should exist.	Yes / No.	
31.	Check surge counter erection facilitates proper reading and that earthing is done with minimum bends.	Yes / No.	
32.	Check Surge monitor has been earthed by connecting it to main earth mat with (G I Flat 75 x 12 mm) and earth pit separately as per drawing.	Yes / No.	
33.	Check the alignment of earth switch with isolator, earth switch of isolator is put into operation and the contacts are cleaned. After completion of pre commissioning checks and formats are dully filled and signed.	Yes / No.	

SN	Description of Activity	Feedback	Remarks
34.	Ensure that the rubber beedings are kept in good condition.	Yes / No.	
35.	Check CT has been placed on the support structure very carefully and all nuts have been tightened. Earthing is done as per drawing.	Yes / No.	
36.	Ensure the lattice structure of CT has been earthed at two points.	Yes / No.	
37.	Check the marshalling box in the switchyard has proper illumination arrangement.	Yes / No.	
38.	Check the capacitor unit is short circuited & earthed, until erection and commissioning works are being done on CVT. (The capacitor get charged by the electrical fields in the vicinity and they keep these charges for a long time, which can be dangerous to human life. Hence the shorting of capacitor unit is necessary). It should be removed before tests / use.	Yes / No.	
39.	Check Fuses in the marshaling box are OK.	Yes / No.	
40.	Check proper earthing of CVT tank has been done.	Yes / No.	
41.	Check all housing accessories, mounting stools including bolts / Nuts for fixing Line Trap and insulators are of non magnetic material.	Yes / No.	
42.	Check H.F. point of CVTs on which the coupling device is not mounted has been earthed.	Yes / No.	
43.	Check the remaining CVTs have been earthed thro' coupling device.	Yes / No.	
44.	Cable drums after visual inspection should be stored preferably in the covered area. Cable ends should be clamped.	Yes / No.	
45.	Ensure each cable and conduit run should be tagged with cable identity numbering as per the approved that appear in the cable and conduit schedule.	Yes / No.	
46.	The tag should be of aluminium plate with ID number punched on it and securely attached to the cable conduit by not less than two turns. Cable tags should of rectangular shape for power cables and of circular shape for control cables.	Yes / No.	
47.	Check underground cable markers should project 150 mm above ground and spaced at an interval of 30 Mts. They shall be located on both sides of road and drain crossing and also at every change in direction.	Yes / No.	
48.	Check cable tags should be provided inside the switchgear, motor control centres, control and relay panels etc. wherever required for cable identification, where a number of cables enter together through a gland plate.	Yes / No.	
49.	The cable (power and control) between LT stations, Control room, DG set building and fire fighting pump house should be laid in the buried cable trenches. In addition to the above, for lighting purpose also, buried cable trench can be used in outdoor area.(as per Technical specification of specific contract)	Yes / No.	
50.	Cable route and joint markers and RCC warning covers should be provided wherever required. The voltage grade of cables should be engraved on the marker.	Yes / No.	
51.	Tray Identification Number on each run of trays at an interval of 10 Mtrs should be painted.	Yes / No.	

SN	Description of Activity	Feedback	Remarks
52.	In case the outer sheath of a cable is damaged during handling / installation, the same should be repaired to the satisfaction of the site. In case any other part of a cable is damaged, the same should be replaced by a healthy cable. Power cables should be at the top most layers. The armor of control cable is to be earthed.	Yes / No.	
53.	All cable termination should be appropriately tightened to ensure secure and reliable connections. All the exposed parts of cable lugs should be covered with tape, sleeve or paint.	Yes / No.	
54.	Power and control cables are laid on separate cable trays	Yes / No.	
55.	Co-axial cable is laid separately from power cable.	Yes / No.	
56.	All cable trays, racks and metallic ducts have been grounded by connecting each to earth / mat. (As per Scheme)	Yes / No.	
57.	Check sections of cable trays have been bridged by copper jumpers/ G I to retain continuity of earthing. (As per Scheme)	Yes / No.	
58.	Check earthing of panel is done by the erection contractor for connecting it with switchyard earth mat. (As per Scheme)	Yes / No.	
59.	Auxiliary bus wiring for AC and DC supplies, Voltage Transformer circuits, annunciation circuits and other common services is provided near the top of the panels running through out the entire length of the panels.	Yes / No.	
60.	All internal wiring to be connected to external equipment is terminated on terminal blocks, preferably vertically mounted on the side of each panel.	Yes / No.	
61.	Check whether Mimic Diagram is available preferably made of anodized aluminium or plastic of approved fast colour material and screwed on to the panel that can be easily cleaned.	Yes / No.	
62.	Check the panels all equipment mounted on front and rear side as well as equipment mounted inside are provided with individual name plates with equipment designated engraved.	Yes / No.	
63.	Check on top of each panel on front as well as rear side, large and bold name plates are provided for circuit / feeder designation.	Yes / No.	
64.	Check all front mounted equipments are provided at the rear with individual name plates engraved with tag numbers corresponding to panel internal wiring to facilitate easy tracing of the wiring.	Yes / No.	
65.	Check the name plates mounted directly by the side of the respective equipments should not be hidden by equipment wiring.	Yes / No.	
66.	Check availability of 240V single phase 50 HZ, AC socket with switch suitable to accept 5 Amps and 15 Amps pin round standard plug, is provided in the interior of each cubicle with ON-OFF switch for connection of hand lamps.	Yes / No.	
67.	Check that panels are provided with a fluorescent lighting fixture rated with 240 Volts single phase, 50 Hz supply for the interior illumination of the panel during maintenance. The fittings are complete with switch fuse unit and switching of the lighting is controlled by the respective panel door switch. Adequate lighting with fuse unit is also provided for the corridor in control panels.	Yes / No.	
68.	Check control panels are provided with necessary	Yes / No.	

SN	Description of Activity	Feedback	Remarks
	arrangements for receiving, distributing, isolating and fusing of DC and AC supplies for various control, signalling, lighting and space heater circuits. The incoming and sub circuits are separately with switch fuse units.		
69.	Check panels are provided with a space heater rated for 240 V, single phase, 50 Hz, AC supply for the internal heating of the panel to prevent condensation of moisture.	Yes / No.	
70.	Check all panels are equipped with an earth bus securely fixed	Yes / No.	
71.	Check when several panels are mounted adjoining each other, the earth bus is made continuous with necessary connectors and clamps for this purpose.	Yes / No.	
72.	Check provision is made for extending the earth bus bars to adjoining panels on either side.	Yes / No.	
73.	Check provision is made on each bus bar of the end panels for connecting earthing grid.	Yes / No.	
74.	Check all metallic cases of relays, instruments and panel mounted equipment including gland plates are connected to the earth bus by copper wires of specified size.	Yes / No.	
75.	Check the colour code of the earthing wire is green.	Yes / No.	
76.	Check that earthing made with equipment is with Nuts and Bolts i.e. For such connection lugs should be pressed and tightened to the terminals through Nuts and Bolts.	Yes / No.	
77.	Check that no equipment is mounted on the panel doors.	Yes / No.	
78.	Check each switch should bear clear inscription identifying its function.	Yes / No.	
79.	Check those who have sufficient knowledge of steel structural job have been employed in steel structural works only.	Yes / No.	
80.	Check necessary instruction has been communicated by supervisor before start of the day's works to workmen under his control.	Yes / No.	
81.	Storing of equipments is to be made properly to avoid any accident during handling.	Yes / No.	
82.	Check all Nuts and bolts are properly raised or lowered preferably using closed loop pulleys and gully bags / hand bags tied at the end for carrying nuts and bolts.	Yes / No.	
83.	Check that Fire resistant sheets are used before entrance of control cable in control room.	Yes / No.	
84.	Check air compressor tubing properly tightened.	Yes / No.	
85.	Check all carrying connectors / clamps properly tightened.	Yes / No.	

III. CONDUCTOR LAYOUT DURING CONSTRUCTION STAGE :

SN	Description of Activity	Feed back	Remarks
1.	Check all members are fixed in structure and ensure proper size of Nuts and Bolts are rigidly tightened and punching / tacking / tack welding is done in towers / structures before undertaking conductor laying job.	Yes / No.	
2.	Ensure proper scaffolding arrangements made during laying of conductor (While Power Line crossing etc).	Yes / No.	
3.	Ensure that all members are fitted in structure before undertaking conductor laying work.	Yes / No.	
4.	Ensure that the discharge rod is electrically tested before use.	Yes / No.	

15.	Proper unloading arrangement has been made at site (Preferably with crane) to unload the material.	Yes / No.	
16.	After unloading the material visual inspection of the materials has been carried out along with the erection contractor to check that the material has not been damaged or not (Galvanizing is proper or not) As per approved Field Quality Plan etc.	Yes / No.	
17.	While transporting the heavy laden equipment like transformer / Reactor by road from Rly Stn to Sub station check whether for all safety precaution taken. Like safe lifting capacity of crane, safe load on culvert / Bridge / Nala / Drain etc. and working plan is available at site with specific reference to safety e.g. local earthing, skilled & experience manpower, proper T&P, strength and LT wires / HT wires interrupting the height of equipment and the required clearance maintained etc. Permission to be obtained from concerned authority if required. "Impact recorder on the equipment like Reactor / Transformer must be installed during transportation"	Yes / No.	
18.	Check that the adequate and safe means of access and egress has been provided for all work places as far as reasonably practicable and is being used by the workers.	Yes / No.	
19.	Check proper illumination is provided at the work places and their approaches including passage ways.	Yes / No.	
20.	Check that the lamps have been protected by suitable guards where necessary to prevent danger, in case the lamp breaks.	Yes / No.	
21.	Check loose materials which are not required for use shall not be placed or left so as dangerously to obstruct work places or passage ways.	Yes / No.	
22.	Check all projected nails has been removed or bent over to prevent injury.	Yes / No.	
23.	Check scrap, waste and rubbish has not been allowed to accumulate on the site or the scrap materials has been stored at the isolated place.	Yes / No.	
24.	Check that the worker while working at height scaffold materials, waste materials and tools are not being thrown by them to cause injury to any person.	Yes / No.	

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	junction boxes lightning conductors has been done by a separate earthing conductor.		
6.	Check that the railway tracks within switchyard area has been earthed at a spacing of 30 Mts. / specified distance and also at both ends.	Yes / No.	
7.	Check cable trays has been connected to earthing flat of 50X6 mm / specified sized earthing flat at intervals specified in approved drawing.	Yes / No.	
8.	Check that this earthed flat is earthed at about 30 Mts. distance.	Yes / No.	
9.	All accessories in transformer and reactor like radiators tank, cooling banks etc are connected to the earthing grid at	Yes / No.	

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SN	Description of Activity	Feed back	Remarks
25.	Check whether contractor has procured required quantity of PPE considering maximum number of erection gangs deployed at one time. Check the quantity of PPEs.	Yes / No.	
26.	Check that the PPEs required by the workmen are being utilized by them always.	Yes / No.	
27.	Check the worker is under constant surveillance by the other person while working at height.	Yes / No.	
28.	Check construction site has been barricaded for unauthorized persons / animals.	Yes / No.	
29.	Check that lifting appliances and machines and vehicles used on the construction site is of sound material and good quality and is free from patent defects and is strong enough to with safely the load and stresses to which they will be subjected.	Yes / No.	
30.	Check structures and equipment is being used only for the purpose for which they were intended.	Yes / No.	
31.	Check equipment has been operated by the competent person.	Yes / No.	
32.	Check portable ladders shall not exceed 9 Mts. in length, other wise may cause danger while climbing of person and back legs shall be equally braced.	Yes / No.	
33.	Check unskilled labour are not utilized for skilled jobs and only experience persons are deployed for erection.	Yes / No.	
34.	Check a well planed and documented procedure for the entire Construction works of Sub station shall be prepared by contractor and get approved from Power Grid for distribution to Contractors' field staff and Power Grid for follow up.	Yes / No.	
35.	Check no metallic measuring tapes are being used during expansion of charged bays.	Yes / No.	
36.	Check metal ladders are not being used in the vicinity of exposed live electrical equipment.	Yes / No.	
37.	Check one bore well is available for water supply in case Municipal Construction supply is not available	Yes / No.	
38.	Check charged area of a yard should be properly fenced off.	Yes / No.	
39.	Check ladders / lengthy articles / lengthy equipments etc. should always be carried in horizontal position.	Yes / No.	
40.	Check insurance by contractor for the labour to provide adequate coverage for any accident etc.	Yes / No.	

Signature

Signature

Signature

Name :

Designation :

Representative of
Contractor

Name :

Designation:

MePTCL/MePDCL from Site.

Name :

Designation:

MePTCL/MePDCL from
Circle Office

R. K. Gupta
NECCON Power & Infra Limited
East Jaintia Hills District
Khliehriat

वि. मे. वि.
वि. मे. वि. / B. MEEDS
Manager
NERPSIP
POWERGRID Khliehriat

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड / POWER GRID CORPORATION OF INDIA LTD.
क्षेत्र का नाम / Name of the Region: उत्तरपूर्वी क्षेत्र / NER

मासिक सुरक्षा कार्यक्रम की रिपोर्ट-नवम्बर-2021 / Monthly Safety Activities Report-November-2021

A. ACCIDENTS / INCIDENTS, Including Fire Incidents:

ATTRIBUTES OF ACCIDENT / INCIDENT: Fall of person from height / struck by falling object / Electrocution / T&P failure / insulator failure / Tower / Cross Arm collapse / Falling of Tree / Foundation pit collapse.

S.No:	DATE OF ACCIDENT / INCIDENT	TYPE OF ACCIDENT (FATAL / NON-FATAL / NEAR MISS)	NAME OF AGENCY (POWERGRID / CONTRACTOR)	AREA OF ACCIDENT (CONST-TL / CONST-SS / O&M-TL / O&M-S/S / DMS / TELECOM / RE / OTHERS)	NAME OF LINE / STATION	ACTIVITY DURING ACCIDENT (FOUNDATION / ERECTION / STRINGING / OTHERS)	ATTRIBUTES OF ACCIDENT / INCIDENT	PERSONS INVOLVED	
								FATAL	NON-FATAL
1.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

B. SAFETY INSPECTIONS / AUDITS AT CONSTRUCTION SITES:

S.No:	INSPECTION CONDUCTED BY (Name & Designation)	DATE OF INSPECTION	NAME OF STATION / LINE	ACTIVITY (FOUNDATION / ERECTION / STRINGING / OTHERS)	REMARKS
1.	N/A	N/A	N/A	N/A	N/A

C. SAFETY TRAINING FOR CONTRACTORS' FITTERS / GANG LEADERS / SUPERVISORS / ENGINEERS:

S.No:	DATES	NO. OF DAYS OF PROGRAMME	PLACE / LOCATION	NAME OF THE AGENCY	LEVEL OF PARTICIPANTS	NO. OF PARTICIPANTS	REMARKS
1.	15.11.2021	01	132/33 kV Mykre S/s	Neccon Power & Infra Ltd	Supervisors / Fitter / Workers	10	TBT & First Aid Box Training

D. SAFETY BRIEFING / AWARENESS PROGRAMME FOR CONTRACTORS' FITTERS AT SITE:


S.No:	DATE	NAME OF STATION / LINE	NAME OF THE AGENCY	NO. OF PARTICIPANTS	REMARKS
1.	15.11.2021	132/33 kV Mykre S/s	Neccon Power & Infra Ltd	10	Preventive measures of Covid-19

E. MOCK DRILLS / FIRE DRILLS CONDUCTED:

S.No:	DATE	NAME OF STATION	TYPE OF DRILL	NO. OF PARTICIPANTS & LEVEL	REMARKS
1.	Nil	Nil	Nil	Nil	Nil

F. OTHER SAFETY ACTIVITIES (T&P Testing, Safety Competitions, Safety Day Celebrations, etc.):

S.No:	DATE	DESCRIPTION	PLACE / LOCATION	REMARKS
1.	N/A	N/A	N/A	N/A


हस्ताक्षर / Signature:

दिनांक /Date: 02/12/2021

नाम/पदनाम/Name/ Deg:

Sukanta Deb Nath /Engineer

ANNEXURE XII

Public Consultation

Details of Public Consultations







MEGHALAYA POWER TRANSMISSION CORPORATION LIMITED
OFFICE OF THE SUPERINTENDING ENGINEER (T & T) CIRCLE
LUM JINGSHAI : : Shillong : 793001.

**Minutes of Public Hearing held on 10th Nov 2014 at Hotel
Lyngwiar, Mynkre, E. Jaintia Hills.**

Subject - Construction of LILO of existing 132 KV D/C MLHEP – Khliehriat line at MYNKRE (under WORLD BANK assistance) and associated 33 KV distribution networks under NERPSIP in Meghalaya.

Annexure – Signatures of members of the public/village council and officials of Meghalaya Power Transmission Corporation Limited (MePTCL) and Power Grid Corporation of India Limited (PGCIL) who attended the meeting.

The public and officials of MePTCL and PGCIL who attended the meeting is enclosed in Annexure.

The Superintending Engineer, T&T of MePTCL, Shillong chair the hearing and welcomes all the public and officials who had spare there valuable time to attend the hearing. The Superintending Engineer gave a brief description about the project and he also inform that the project will be funded by the World Bank and the Central Government of India. He apprised the public that the project is He urged the public to co-operate and inform that the officials of PGCIL will brief them about the project.

Shri Dipjyoti Baruah of PGCIL also brief the public about the necessity of the project and inform the public that the corridor of the line is 27 mts for each line. He sought the co-operation of all the public to make this project successful. He Inform that this line (132 KV) will be loop in loop out from the existing 132 KV D/C MLHEP – Khliehriat line. He also inform that care will be taken to construct the line in such way as to avoid human habitat, but in case it is unavoidable, sufficient compensation will be paid by PGCIL.

The public enquired whether the compensation will be paid in the same manner as was done during the construction of 400 KV pallatana line and the PGCIL replied in the affirmative and they also inform that rate will be fix by the Deputy Commissioner.

The SE T&T, Shillong explain the tentative route of the line in the topo sheet to the public. The public want that during the final i.e check survey, the PGCIL should consult the respective headmen so that minimum damage to the properties is achieved. Some public also want to know, whether any contract work will be given to them, but it was explain that the contract will be awarded through the tender and it is upto the contractor to decide. They also want that before the work started, NOC from the villages and land owner should be obtained. The SE T&T, Shillong explain to the public about the benefit which will derived from the construction of this line and Sub station at Mynkre.

In conclusion, the public agreed that the construction of the transmission line and sub-stations is for the benefit of the State and the public, but care should be taken to inflict minimum damage to crops, forests and any structure during construction.


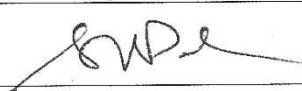
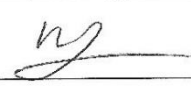
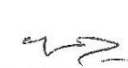
The hearing concluded with the vote of thanks from the Superintending Engineer and also assured that all stake holder will be taken into confident during the construction.

Shri M.Marbaniang
Superintending Engineer (T & T)
MePTCL, Lumjingshai, Shillong.

MEMBERS PRESENT DURING THE PUBLIC HEARING HELD ON 10TH Nov 2014 FOR DRAWING OF 132Kv
LILLO LINE AT PROPOSED 132/33Kv MYNKRE SUBSTATION.

Venue: Mynkre

Sl.No	Name & designation	Signature
1.	Shri. Preshor Singh (Headman)	P. Singh
2.	Shri. Karbal Pata (member)	K. Pata
3.	Shri. Pjmlung Nagtali	
4.	Shri. Treiber Lapasan (Longthymai)	T. Lap
5.	Shri. Cosiphin Muresor.	K. Muresor
6.	Shri. Lusting Muresor.	L. Muresor
7.	Matbiang Ki Bateh	
8.	S. Kharkayn.	
9.	S. Thang	
10.	S. Suling	
11.	Soljen A. Sungen	
12.	R. Amy	
13.	M. Marbariang	
14.	K. Lyngwa	
15.	L. Sungen	
16.	D. Pakyntai.	

17.	DIPJYOTI BARUAH (PGCIL)	
18.	SULAGNA SARMA (PGCIL)	Sulagna Sarma.
19.	S K PAZ (POWERGRID)	
20.	Shri Pijal Waryan Phukan	
21.	Shri Anurag Kumar	
22.		
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MEGHALAYA POWER TRANSMISSION CORPORATION LIMITED
OFFICE OF THE SUPERINTENDING ENGINEER (T & T) CIRCLE
LUMJINGSHAI : : Shillong : 793001.

**Ka Jingpynsngew Paidbah ba la long ha ka 10 tarik u Nohprah 2014 ha Hotel
Lyngwiar, Mynkre, East Jaintia Hills District.**

Ka Phang: - Ka jingshna ia ka 132KV D/C MLHEP-Khliehriat Line, 132/33KV Sub-Station ha Mynkre bad ka 33KV Distribution hapoh ka Scheme North Eastern Region Power System Improvement Project (NERPSIP) ha East Jaintia Hills District, Meghalaya.

Ki Nongwan Meeting: - Ki nongkit kam Shnong, ki paidbah bad ki heh MePTCL bad kumjuh ruh ki heh Power Grid Corporation of India Limited (PGCIL).

La pyniaid ia ka jingialang da u SE, T&T, Shillong. Ha kaba sdang, u la pdiang sngewbha ia baroh ki heh sorkar, ki paidbah kiba la pyllait por khnang khnang ban wan. U la batai bniah halor kane ka project bad u la ong ba ia kane ka project yn bei tyngka da ka World Bank bad ka Sorkar Kmie (Govt. of India). U la ong ruh ia ki paidbah ba kin ia mynjour bad ki heh sorkar jong ka PGCIL ha ka ban iatai bniah halor kane ka project.

U heh jong ka PGCIL u Shri. Dipjyoti Barua u la batai bniah ia ka jingdonkam jong kane ka project bad u la ong ba ka jingiar ka lynti jong ka line ka long 27 mitar (metre) pynkiang jongka. U la iathuh ruh ba kane ka Sub-Station 132KV D/C MLHEP- Khliehriat Line kin shna ha ka shnong Mynkre lyngba ka scheme NERPSIP. Na kane ka 132KV Mynkre S/S kin mih saw (4) tylli ki 33KV Distribution line ka ban don ha Mynkre, Rymbai, Lumshnong bad Latyrke. U la iathuh ruh ba na ka liang jong ki, kin leh katba lah ban lait na ki iing briew bad na ka bynta kito ki bym lah kiar yn sa siew ia ka bai lutksan jong ki.

Na ka liang ki paidbah ha kane ka sngi, ki la kylli ba ia ka bai lut bai sep jaka yn siew kumba la siew ha ka por ba shna ia ka 400KV Palatana line, bad na ka liang jong ka PGCIL ki la mynjour ia kata bad ka dor bai jaka yn sa pynshiongdor da u Deputy Commissioner, East Jaintia Hills District, Meghalaya.

U SE, T&T, Shillong u la batai ia ka jingiaid jong ka line bad na ka liang ki shnong ki kwah ba kin don ryngkat bad ki briew PGCIL ha ka por ba leit survey khnang ba kin lait na kano kano ka jingduh nong. Ki paidbah ha kane ka sngi ki kwah ban tip ba ki lah ban ioh ne em ki kam contract ha ka ban shna ia ki Tower line. Na ka liang ka MePTCL, u SE, T&T u la ong ba ia ka kam contract ban shna Tower line yn ia id katkum ki rule ka Sorkar. Shuh shuh, na ka liang ki shnong ki la kyrpad ba shwa ban trei ia ka kam ka Sorkar ka donkam ban ioh ia ka NOC na ka shnong. U SE, T&T, Shillong ula batai ruh ia ka jinmyntoi bad jingiohnong na ka jingwan jong kane ka project.

Ha kaba kut, ki paidbah ki la mynjour ia kane ka jingshna na ka bynta ka jylla baroh kawei da kaba peit ba kan nym don kano kano ka jingpynjutor ia ka thung ka tep, ki khlaw ki btap bad kino kino jingtei.

Ia ka meeting la pynkut da ki kyntien pynwai na u SE, T&T, Shillong.

ANNEXURE XIII

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,



(Mr. 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, TLMSD /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


 Superintending 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, Jorhat.
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, Dongteah, Lower Nongrah, Lapalang, Shillong-793006.
8. Guard File.

By Order, etc

E. Raptap

Under Secretary to the Govt. of Meghalaya,
Power Department

Copy To : 1) D. Boruh, DM
2) DGM (Guwahati)
3) DGM (PESM)
4) GM (GHH)

for kind information please

(Signature)
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

Dated Shillong, the 22nd March, 2017.

No. POWER-113/2013/Pt-I/22-A.

Copy for kind information to:-

1. Chairman-cum-Managing Director, MeECL.
2. Deputy Commissioner, East Khasi Hills, Shillong.
3. Deputy Commissioner, East Jaintia Hills, *Khliehriat*
4. Deputy Commissioner, West Garo Hills, Tura.
5. Shri. Vikram Chand, DGM (NERPSIP), Power Grid Corporation Of India Limited, Dongteh, 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	
	132/33 KV Mynkre(New) S/s to 33/11 KV Latyrke (New) S/s – 25km	
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 Tririkila 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 - 1 no.	
	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	