

COMPENSATION PLAN FOR TEMPORARY FOR T&D NETWORK IN MAMIT DISTRICT UNDER NERPSIP TRANCHE-1, MIZORAM



Prepared By

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For

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LIST OF ABBREVIATIONS

ADC	:	Autonomous District Council
AP	:	Affected Person
CADC	:	Chakma Autonomous District Council
CEA	:	Central Electricity Authority
Ckt-Km	:	Circuit-kilometer
CGWB	:	Central Ground Water Board
CP	:	Compensation Plan
CPTD	:	Compensation Plan for Temporary Damages
CPIU	:	Central Project Implementation Unit
CRM	:	Contractor Review Meeting
DC	:	District Collector
D/C	:	Double Circuit
DL	:	Distribution Line
DM	:	District Magistrate
DMS	:	Distribution Management System
EHV	:	Extra High Voltage
EHS	:	Environment Health & Safety
EMP	:	Environment Management Plan
E&S	:	Environmental & Social
ESPP	:	POWERGRID's Environmental and Social Policy & Procedures
ESPPF	:	PEDM's Environmental and Social Policy & Procedures Framework
GoI	:	Government of India
GRC	:	Grievance Redress Committee
GRM	:	Grievance Redress Mechanism
Ha	:	Hectare
HPC	:	High Powered Committee
IA	:	Implementing Agency
INRs	:	Indian National Rupees
IP	:	Indigenous People
IR	:	Involuntary Resettlement
JCC	:	Joint Coordination Committee
kV	:	Kilo volt
Km	:	Kilometer
LA	:	Land Acquisition
LADC	:	Lai Autonomous District Council
MCM	:	Million Cubic Meter
MoP	:	Ministry of Power
M&E	:	Monitoring and Evaluation
NOC	:	No Objection Certificate
NER	:	North Eastern Region
NERPSIP	:	North Eastern Region Power System Improvement Project
O&M	:	Operation and Maintenance
OP	:	Operational Policy
PAP	:	Project Affected Person
POWERGRID	:	Power Grid Corporation of India Limited
PPIU	:	PMC Project Implementation Unit
RFCTLARRA	:	The Right to Fair Compensation and Transparency in Land, Acquisition, Rehabilitation and Resettlement Act, 2013
RoW	:	Right of Way
RP	:	Resettlement Plan
R&R	:	Resettlement and Rehabilitation

S/C	:	Single Circuit
SC	:	Scheduled Caste
Sq. M.	:	Square Meters
SMF	:	Social Management Framework
SPCU	:	State Project Coordination Unit
ST	:	Scheduled Tribe
T & D	:	Transmission & Distribution
TL	:	Transmission Line
USD	:	United States Dollar
WB	:	The World Bank

GLOSSARY

Autonomous District Council/ Village Council	:	An autonomous body/institution formed under the provisions of 6 th Schedule of Constitution of India which provides tribal people freedom to exercise legislative, judicial, executive and financial powers.
Zila/ District	:	It is the first administrative division at the State level.
Sub-division	:	A revenue sub-division, within a district.
Block	:	An administrative sub-division within a district.
Panchayat	:	The third tier of decentralized governance.

EXECUTIVE SUMMARY

i. The Compensation Plan for Temporary Damages (CPTD) has been prepared for Transmission & Distribution (T & D) network in Mamit District of Mizoram State under North Eastern Region Power System Improvement Project (NERPSIP) which is being funded by Govt. of India (Gol) and the World Bank (WB). The Implementing Agency (IA) is Power Grid Corporation of India Limited (POWERGRID). The present CPTD is based on the Environmental and Social Policy & Procedures Framework (ESPPF) of Power and Electricity Department, Govt. of Mizoram's (PEDM).

ii. The project components include construction of one 132kV D/C lines of 50.265 km length along with associated 2 no. of 132/33kV substations at West-phaileng & Marpara and 1 no. 33kV lines of 100 m length (Bay connection between Existing West-Phaileng 33/11 kV substation with proposed West Phaileng 132/33 kV substation) located in Mamit district of Mizoram. The present CPTD has been prepared based on the detailed survey/investigation. However, the temporary impacts on land and loss of crops/ trees occurred only during the project implementation/ construction. Therefore, the CPTD remains as draft, as actual temporary impacts on crop/ tree including details of Affected Persons (AP) shall be ascertained during check survey and tower spotting once the construction contractor is mobilized for implementation. PEDM/ POWERGRID¹ provide compensation for actual damages after assessment by revenue authority. Check survey is done progressively during the construction of the transmission line. Normally the work is done in off season when there is no standing crop. The compensation for damage is assessed in actual after construction activities of transmission lines in three stages i.e. after completion of foundation, tower erection and stringing of conductor. The payment of compensation is also paid in three instances, if there are damages during all the above three stages. Assessment of damages at each stage and subsequent payment of compensation is a continuous process. Hence, CPTD updating will also be a continuous process during construction and updated data on APs shall be disclosed through semi-annual E & S monitoring report submitted by PEDM// POWERGRID.

iii. The project components under the scope of present CPTD include following transmission/ distribution lines and associated substations;

A. Transmission Scheme Component

Transmission Lines:

¹ For the purpose of CPTD, PEDM and POWERGRID may be referred as SPCU and PPIU, respectively. For further details, please refer Chapter - VII Institutional arrangements.

1. West Phaileng - Marapra 132 kV S/C line - 50.265 km

Substations:

1. Establishment of 2 x 12.5 MVA, 132/33kV substation at West-Phaileng and Marpara

B. Distribution Scheme Component

Distribution Lines:

1. Bay connection between Existing West-Phaileng 33/11 kV S/s with proposed West Phaileng 132/33 kV S/s 33kV line² – 100 m.

iv. As per existing law, land for tower/ pole and right of way is not acquired³ and agricultural activities are allowed to continue after construction activity. Land requirements for erecting tower for transmission lines are quite minimal and require placing of four legs which need an area of 4 to 6 sq.ft. Thereby, the actual impact is restricted to these 4 legs and some constraints in area coming in between these 4 legs of the tower. Further, line alignments are done in such a way so as to avoid settlements, structures etc. Hence, no relocation of affected persons on account of Transmission Line (TL) is envisaged. Most of the impacts are temporary in nature of loss of standing crops/ trees and other damages for which compensation will be paid to the affected persons including cost of land for tower base area to its owner without acquisition or transfer of title as per provisions of law and Entitlement matrix defined in ESPPF.

v. For the temporary loss of crops, only agricultural land and private plantation land are considered for estimation. Though Right of Way (RoW) for 132kV is 27 meter, but average affected width/ corridor would be limited to maximum 20 meter only. Accordingly, for construction of 132 kV transmission lines, actual impacted area for crops and other damages worked out to be approx. 57.06 acres. A total 3,450 trees likely to be affected in non-forest land due to construction of lines. Private trees will be compensated as per the entitlement matrix. The total number of affected persons is estimated to be 496.

vi. Public participation and community consultations have been taken up as an integral part of the project's social and environmental assessment process. Public is informed about the project at every stage of execution. During survey also PEDM & POWERGRID's site officials meet people and informed them about the routing of transmission/distribution line. During the construction, every individual, on whose land tower is erected and people affected by RoW, are consulted. There were

² Since the instant 33kv line is a bay connection between two substations within the same premise with length of approximately 100m, no compensation with respect to damages towards crop, tree, land/ structures are envisaged. Hence no compensation data has been provided against the said line in the subsequent chapters of this report.

³ As per the present provision in the Electricity Act, 2003 read with relevant provisions of Indian Telegraph Act, 1885 all the damages without acquisition of subject land accrued to person while placing the tower and line are to be compensated.

many informal group and public consultation meetings conducted during survey of the entire routes of transmission lines and substation sites. The process of such consultation will be continued during project implementation and even during Operation & Maintenance (O&M) stage. The draft/ summary CPTD will be disclosed to the affected households and other stakeholders by placing it on website. PEDM & POWERGRID's site officials visit construction sites frequently during construction and meet with APs and discuss about norms and practices of damages and compensation to be paid for them. The executive summary of the CPTD/ Entitlement Matrix in local language will be placed at construction offices/ sites.

vii. Grievance Redress Mechanism (GRM) is an integral part of project implementation, operation and maintenance stage of the project. For handling grievance, Grievance Redress Committee (GRC) has been established at two places, one at the project/ scheme level and another at corporate/ head quarter level. The GRC includes member from PEDM, POWERGRID, Local Administration, Village Panchayat Members, Affected Persons representative and reputed persons from the society and representative from the tribal autonomous district councils selected/decided on nomination basis under the chairmanship of project head. The composition of GRC has been disclosed in Panchayat/ village council office and concerned district headquarter for wider coverage. In case of any complaint, GRC meeting shall be convened within 15 days. If project level GRC is not able to take decision it may refer the complaint to corporate GRC for solution. GRC endeavors to pronounce its decision within 30-45 days of receiving grievances. In case complainant/ appellant is not satisfied with the decision of project level GRC they can make an appeal to corporate GRC for review. The proposed mechanism does not impede access to the country's judicial or administrative remedies at any stage. Further, grievance redressal is also having in-built tree/ crop compensation in the 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 also provides forum for raising the grievance towards any irregularity/ complaint.

viii. The CPTD is based on PEDM's ESPPF. Being a transmission project, the relevant national laws applicable for this project are (i) The Electricity Act, 2003 and (ii) The Indian Telegraph Act, 1885. The compensation principles adopted for the project shall comply with applicable laws and regulations of the Government of India, PEDM's ESPPF as well as the World Bank Safeguard Policies.

ix. APs will be entitled for compensation for temporary damages to crops/ trees/ structures etc. as per the Entitlement Matrix (EM) given in **E-1**. Temporary damage will occur during construction of transmission lines for which compensation will be paid as per eligibility criteria of EM and other

applicable norms. All APs are paid compensation for actual damages irrespective of their religion, caste and their economic status including non-title holders. However vulnerable households are provided additional onetime lump-sum assistance on recommendation of State/local Authorities. As per policy provision construction contractors shall be encouraged to hire local labor that has the necessary skills.

E-1: Entitlement Matrix

Sl.	Type of 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 and depreciation value) 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 transition benefits as per category-5 below
(iii)	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
(iv)	Tribal/ Vulnerable APs	Vulnerable APs ⁴	One-time additional lump sum assistance not exceeding 25% of total compensation on recommendation of State Authority/ADC/VC.

(#) Provisions of 100% compensation for tower base and no compensation for corridor area as per Govt. of Mizoram notification 01.05.19.

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

x. Due to inherent flexibility in routing of line, no major damages to structures or physical displacement is envisaged in transmission/distribution line. Hence, there are no adverse impacts such as permanent loss of assets, livelihood loss or physical resettlement/relocation due to project intervention. However, in case it is completely unavoidable, compensation for structures as decided

⁴ Vulnerable APs include scheduled tribes residing in scheduled areas/ physically handicapped/ disabled families etc.

by committee based on government norms and entitlement matrix shall be provided. A notice for damage is issued to APs and the joint measurement by PEDM / POWERGRID and APs is carried out before start of construction and same is assessed and verified by revenue official during/after construction for estimation of compensation against actual damages. Hence, compensation is paid in parallel with the construction activity of transmission/distribution line. The cost estimate for the project includes eligible compensation for loss of crops, trees and support cost for implementation of CPTD, monitoring, other administrative cost etc. The budget estimation presented in CPTD is tentative and may get revised during the course of implementation. The total indicative cost is estimated to be INR 297.165 Lakhs equivalent to USD 0.406 million.

xi. The implementation and monitoring are critical activities which shall be followed as per Implementation Chart/ Schedule provided in Chapter X. POWERGRID will be the Implementing Agency (IA) for the Project. For the day to day implementation of Project activities, PMC Project Implementation Units (PPIUs) located in each participating State, has been formed including members of Utility on deputation, with its personnel being distributed over work site & working in close association with the State Project Coordination Unit (SPCU)/ Central Project Implementation Unit (CPIU). PPIU report to State level "Project Manager" nominated by the Project In-charge of IA. The IA will have a Core team stationed at the CPIU on permanent basis and other IA officers (with required skills) will visit as and when required by this core team. This team shall represent IA and shall be responsible for all coordination with SPCU, PIU, within IA and MoP, GoI. CPIU shall also assist MoP, GoI in monitoring project progress and in its coordination with The Bank.

xii. Monitoring will be the responsibility of both PEDM & IA. PEDM / POWERGRID will submit semi-annual monitoring reports on their implementation performance and submit the reports to The World Bank. If required, PEDM / POWERGRID will engage the services of an independent agency/ external monitoring for which necessary provisions have been kept in the budget.

I. INTRODUCTION AND PROJECT DESCRIPTION

1.1. Project Background

1. Recognizing that intrastate T & D systems in the North Eastern States (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 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 GoI's 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.

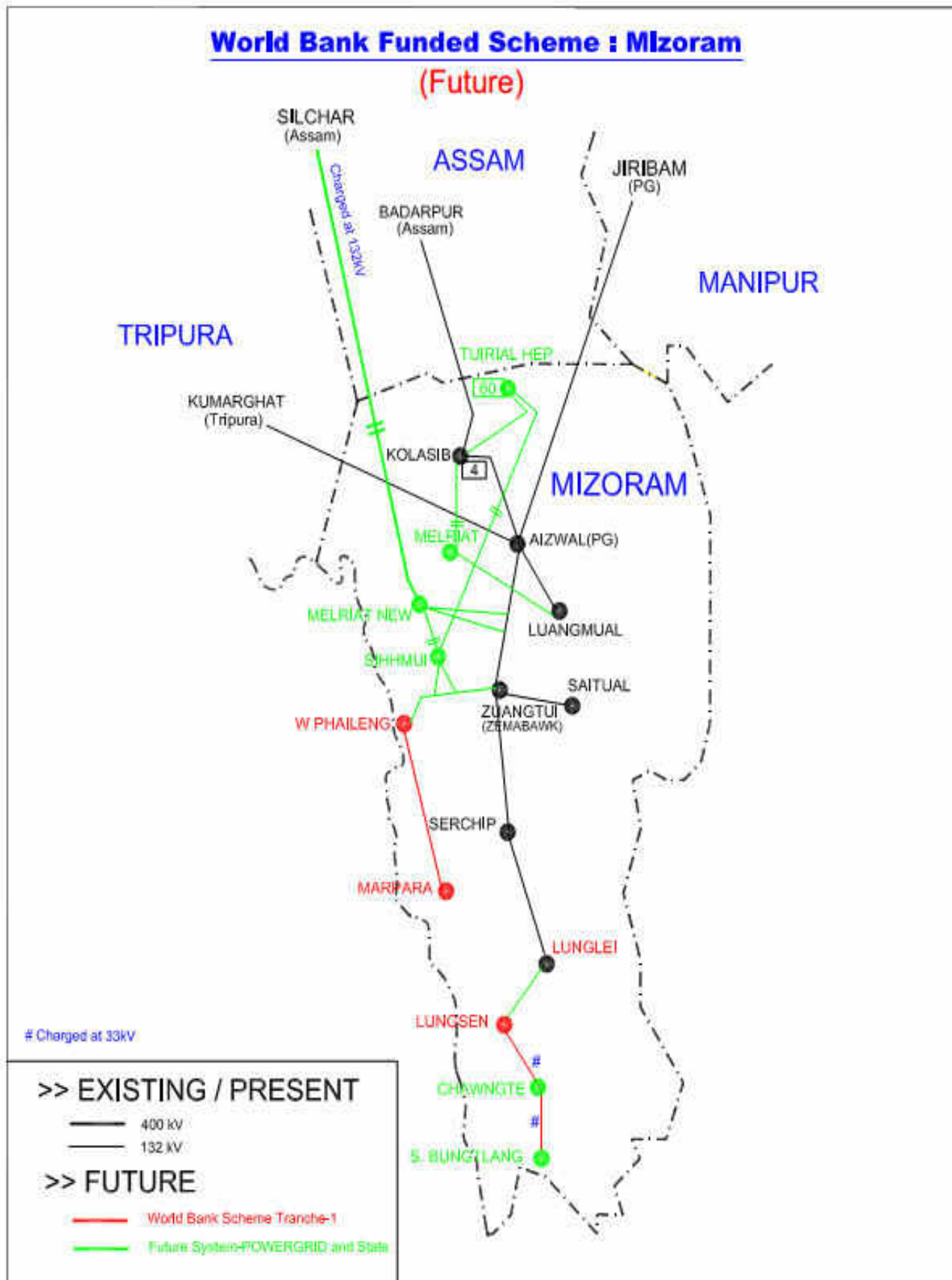
2. GoI requested for World Bank's support in implementing a set of priority investments in six NER states. In 2016, the World Bank (WB) has approved a loan (IBRD 470 USD Million) to the Government of India (GoI) for North Eastern Region Power System Improvement Project (NERPSIP) which aims to create a robust intrastate transmission and distribution network in all the six (6) North Eastern States including Mizoram. The project being funded on 50:50 (World Bank 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).

3. Ministry of Power, GoI has appointed POWERGRID as Implementing Agency (IA) to six North Eastern States for the said project. 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.

4. The project will be implemented over a seven-year period and 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.

5. The scope of work under NERPSIP in the state of Mizoram includes construction of 143 km of 132 kV transmission lines & associated 4 Nos. (03 No. New & 01 No. augmentation) and 5.0 km of 33kV distribution lines & associated 1 No. new 33/11 kV substation spread across the State. The power map of Mizoram indicating the existing intra-state transmission network along with proposed project under Tranche-1 of NERPSIP is presented in **Figure-1.1**.

Figure-1.1: Power Map of Mizoram along with proposed project



1.2. Project Components

6. The project components under the scope of present CPTD include following transmission/ distribution lines and associated substations proposed in Mamit district of Mizoram State;

A. Transmission Scheme Component

Transmission Lines:

1. West Phaileng - Marapra 132 kV S/C line - 50.265 km

Substations:

1. Establishment of 2 x 12.5 MVA, 132/33kV substation at West-Phaileng and Marpara

B. Distribution Scheme Component

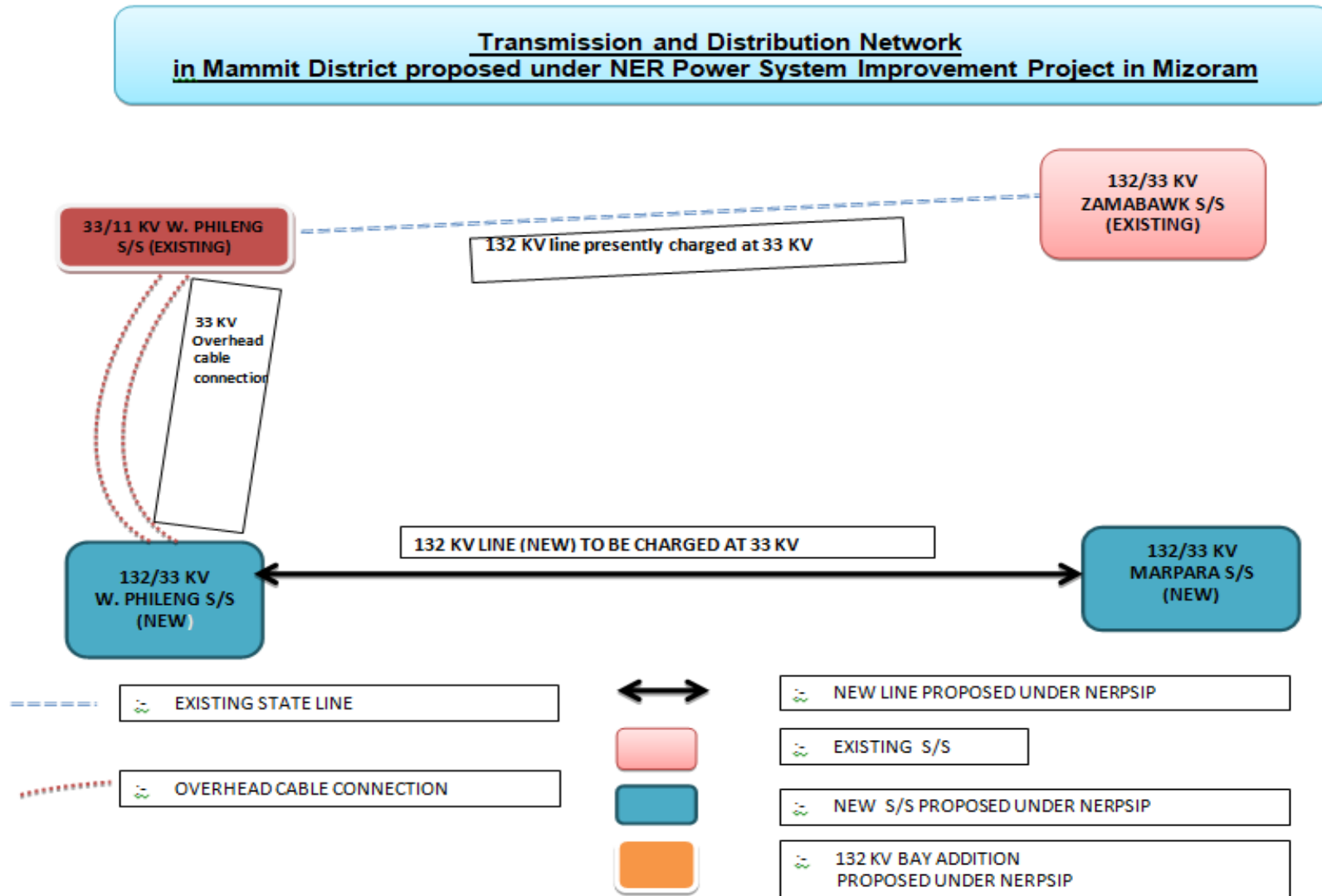
Distribution Line:

1. Bay connection between Existing West-Phaileng 33/11 kV S/s with proposed West Phaileng 132/33 kV S/s 33kV line⁵ – 100 m.

7. The schematic diagram of proposed transmission/ distribution network under Tranche-1 of NERPSIP is shown in **Figure-1.2**.

⁵ Since the instant 33kv line is a bay connection between two substations within the same premise with length of approximately 100m, no compensation with respect to damages towards crop, tree, land/ structures are envisaged. Hence no compensation data has been provided against the said line in the subsequent chapters of this report.

Figure-1.2: Proposed Transmission Network in Mammit District under NERPSIP



1.3. Objective of Compensation Plan for Temporary Damages (CPTD)

8. The primary objective of the CPTD is to identify impacts/damages and to plan measures to mitigate losses likely to be caused by the projects. The CPTD is based on the general findings of field visits, detailed survey and meetings with various project-affected persons in the project areas. The CPTD report includes (i) introduction and project description (ii) socio-economic information and profile (iii) legal & regulatory framework (iv) project impacts, (v) entitlement, assistance and benefit (vi) information disclosure, consultation and participation (vii) institutional arrangements (viii) grievance redress mechanism (ix) budget (x) implementation schedule & (xi) monitoring and reporting.

1.4. Scope and Limitation of the CPTD

9. Based on the assessment of proposed project components and intervention as well as provisions of existing law/regulations, it has been established that no permanent land acquisition is involved and only temporary impacts on land and loss of standing crops/ trees are anticipated. The present CPTD has been prepared based on the detailed survey/ investigation. However, the temporary impacts on land and loss of crops/ trees occurred only during the project implementation/ construction. Therefore, the CPTD remains as draft, as actual temporary impacts on crop/tree including details of Affected Persons (AP) shall be ascertained during check survey and tower spotting once the construction contractor is mobilized for implementation. PEDM/ POWERGRID⁶ provide compensation for actual damages after assessment by revenue authority. Check survey is done progressively during the construction of the transmission/distribution line. Normally the work is done in off season when there is no standing crop. The compensation for damage is assessed in actual after construction activities of transmission lines in three stages i.e. after completion of foundation, tower erection and stringing of conductor. The payment of compensation is also paid in three instances, if there are damages during all the above three stages. Assessment of damages at each stage and subsequent payment of compensation is a continuous process. Hence, CPTD updating will also be a continuous process during construction and updated data on APs shall be disclosed through semi-annual E & S monitoring report submitted by PEDM/ POWERGRID.

⁶ For the purpose of CPTD, PEDM and POWERGRID may be referred as SPCU and PPIU respectively. For further details, please refer Chapter - VII institutional arrangements.

1.5. Measures to Minimize Impact

10. In keeping with provisions of ESPPF and Bank's Safeguard Policies, PEDM/ POWERGRID has selected and finalized the routes of transmission line with due consideration of avoidance and minimization to the extent possible and same principles shall also be followed during construction stages of project to further restrict the possibility of temporary damages on crops/ trees/ structures etc. in the Right of Way (RoW). Similarly, the route of distribution lines are mostly selected/ finalized along the existing roads (PWD roads/ Village roads etc.) involving minimum habituated areas and also through barren lands wherever possible. Regular field visits and public consultations helped in developing the measures for further minimizing the possible social impacts.

11. For transmission line there is no permanent land acquisition involved as per applicable legal framework i.e. in exercise of the powers under Indian Telegraph Act-1885. Part 3, section 10 to 16 conferred under Section 164 of the Electricity Act, 2003 through Power & Electricity Dept., Govt. of Mizoram vide notification dated 3rd June 2016, PEDM have the mandate to place and maintain transmission lines under/ over/ along or across and posts in or upon, any immovable property. However, clause 10 (d) of same act stipulates that the user agency shall pay full compensation to all interested for any damages sustained during the execution of said work. Therefore, PEDM/ POWERGRID have developed a procedure which is designed to minimize impacts, during the preliminary survey/ investigation (for screening & scoping of the project with at least 3 alternative route alignments), thereafter during detailed survey (spot)/ design followed by foundation work, tower erection and during the stringing of conductors.

12. All tower foundations and tower footings are dug and laid, including transportation of material and land clearance, generally at the end of a crop season to avoid impacts on cultivations and need for compensation. After construction of transmission towers, farmers are allowed to continue agricultural activity below tower.

13. Because the concrete needs time to dry and settle, all towers are erected normally three weeks after casting of foundation. Thus, both foundation and erection works are generally completed in one gap between two crop seasons.

14. Given the limited time needed for the stringing, the latter can be done right after the tower construction, before the following crop season.

15. For this reason, no household is significantly affected due to the project. Thus, productive loss due to construction is negligible. However, due care shall be taken to avoid damages to crop/

trees by taking up the construction activities during lean period or post-harvest season. As per the prevailing norms farming activity shall be allowed after the construction work is completed. All affected farmers will be compensated for all sorts of damages during construction as per the laid down procedure.

1.6. Route Selection and Study of Alternatives

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

- (i) The route of the proposed transmission/ distribution lines does not involve any human displacement/ rehabilitation.
- (ii) Any monument of cultural or historical importance is not affected by the route of the transmission/ distribution line.
- (iii) The proposed line route does not create any threat to the survival of any community with special reference to Tribal Community.
- (iv) The proposed line route does not affect any public utility services like playgrounds, schools, other establishments etc.
- (v) The line route does not pass through any National Parks, Sanctuaries etc.
- (vi) The line route does not infringe with area of natural resources.

17. In order to achieve this, PEDM/ POWERGRID undertake route selection for individual line in close consultation with representatives of concerned Forest Department and the Department of Revenue. Although under the law, PEDM 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.

- a. As a rule, alignments are generally cited away from major towns, whenever possible, to account for future urban expansion.
- b. 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.
- c. Alignments are selected to avoid wetlands and unstable areas for both financial and environmental reasons.

18. In addition, care is also taken to avoid National Parks and Wildlife Sanctuaries and any other forest area rich in wildlife. Keeping above in mind the route of proposed lines have been so aligned that it takes care of above factors. As such different alternatives were studied with the help

of Govt. published data like Forest atlas, Survey of India topo maps, satellite imageries etc. to arrive at most optimum sections of the route which can be taken up for detailed survey and assessment of environmental & social impacts for their proper management.

19. The comparative details of three alternatives in respect of proposed lines are presented in **Annexure-1**.

II. SOCIOECONOMIC INFORMATION AND PROFILE

2.1. General

20. The socio-economic profile of the project area is based on general information collected from various secondary sources. As the assets of any sorts will not be acquired but for temporary damage to crops/ trees or any other structures adequate compensation as per norms shall be paid to all APs. This chapter provides broad socio-economic profile in terms of demography, literacy, employment and other infrastructure etc. in the State of Mizoram and project districts in particular i.e. Mamit through which the various lines will traverse. Following section briefly discuss socio-economic profile of the State and project area district in particular.

2.2. Socio-Economic Profile

2.2.1. Land Use

21. Mizoram is located in the north-eastern part of the country between 22°19' to 24°19' North latitudes and 92°16' to 93°26' East longitudes covering a geographical area of 21081 sq. km. It is a landlocked state surrounded by Myanmar in the east, Manipur and Assam in the north, Tripura and Bangladesh in the west and again Myanmar in the south. It has a total of 722 km international boundary with Myanmar (404 km) and Bangladesh (318 km). Geographically, it is 277 km from north to south, and 121 km from east to west with inter State boundary Assam (123 km), Tripura (277 km) and Manipur (95 km). The capital is Aizawl, in the north-central part of the state. Nearest railhead is Silchar, which is in Assam about 184 km away from the capital Aizawl. Besides Air service, at present through the gateway of N-E i.e. Guwahati, the State is connected to the Indian Road network through Silchar in Assam to the National Highway 54. Another highway, NH-150 connects the state's Seling Mizoram to Imphal Manipur and NH-40A links the State with Tripura. The general land use pattern of the State is given in **Table-2.1**.

Table-2.1: Land Use Pattern

Land Use	Area in '000 ha	Percentage
Total geographical area	2,108	
Reporting area for land utilization	2,075	100.00
Forests	1,585	76.39
Not available for cultivation	95	4.58
Permanent pastures and other grazing lands	05	0.24
Land under misc. tree crops & groves	41	1.98
Cultivable wasteland	07	0.34
Fallow lands other than current fallows	183	8.82
Current Fallows	61	2.94
Net area sown	97	4.97

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

22. Mamit district is located at 23.6474° N, 92.5396° E with total geographical area of the district is 3025.80 sq.km where more than 50% area is covered by dense forest and the rest by open forest.

2.2.2. Climate

23. The climate of Mizoram can be classified as Moist Tropical to Moist Sub-tropical. The winter temperature varies from 11° C to 24° C, while summer temperature varies from 18° C to 29° C. The region is influenced by monsoons, raining heavily from May to September, while winters are relatively rain free. As per National Disaster Management Authority (NDMA), the state is located in a region, where Cyclones and Landslides can cause weather related emergencies. The average annual rainfall of the state ranges from 2,160 mm to 3,500 mm.

24. The climate of the Mamit district is characterized by tropical humid climate with cool summer and cold winter. Winter temperature varies from 11⁰ to 13⁰ C in general. The winter season is however, without snow. The average annual rain fall is 2794 mm.

2.2.3. Water Resources

25. The most important and useful rivers of Mizoram are the Tlawng (also known as Dhaleswari or Katakhal), Tut (Gutur), Tuirial (Sonai) and Tuivawl which flow through the northern territory and eventually join river Barak in Cachar. The Koldoyne (Chhimtuipui) which originates in Myanmar, is an important river in the south Mizoram. It has four tributaries and the river is in patches. The Western part is drained by Karnaphuli (Khawthlang tuipui) and its tributaries.

26. The Lakes in the state are scattered all over the state. But the most important of them are Palak, Tamdil, Rungdil; and Rengdil. The Palak lake is situated in Chhimtuipui District in southern Mizoram and covers an area of 30 Ha. It is believed the lake was created as a result of an earthquake or a flood. The Tamdil lake is a natural lake situated 85 kms from Aizawal.

27. The main rivers flowing through project districts are Kaladan, Tuiphang Chhimtuipui, Ngengpui, Chawngte etc. However, the project activity is not going to impact these water bodies in any way as the route alignment of proposed transmission and distribution lines has only one river crossing of normal span over Tuichang River.

2.2.4. Soil

28. Typical soils in the state are sandy loam and clay loam, which have been heavily leached due to the high slopes leaving it porous and lacking in minerals or humus. The soils in the state are

near neutral to strongly acidic (pH 4.5 - 7.3).

2.2.5. Ecological Resources

29. The recorded forest area in the state is 16,717. sq. km which is around 79.30% of its geographical area. However, based on the interpretation of satellite data of January 2011, Forest cover of state is spread over an area of 19,054 sq.km. which is 90.38% of the State's geographical area. According to legal status, Reserve Forest constitutes 7909 sq. km, Protected Forests constitute 3568 sq. km and un-classed forests constitute 5240 sq. km of the total forest area. In terms of forest canopy density classes, the State has 138.00 sq.km. very dense forest, 5900 sq.km. moderately dense forest and 13,016 sq.km. open forest. Forest types occurring in the State are Tropical Semi Evergreen, Tropical Moist Deciduous, Subtropical Broadleaved Hill and Subtropical Pine Forests. Mizoram has two National Parks and eight Wildlife Sanctuaries covering an area of 1,240.75 Sq km which constitute 5.89% of the state's geographical area. Dampa Tiger Reserve is situated in the state covering an area of 500 sq km. Four protected areas are located in Lunglei and Lawngtlai districts. However, the proposed transmission and distribution lines don't pass through any forest area, protected area like national parks, sanctuaries, elephant reserves/corridors and biosphere reserves etc. and are sited at sufficient distance from these protected areas through careful route selection.

2.2.6. Crops

30. Jhum cultivation is still the most popular mode of cultivation carried out in the State. Paddy is the primary food crop of the state. Mandarin Orange, Hatkora, Lemon, Banana, Pineapple, Papaya, Grape, Avocado are the main fruits grown in the state. The major vegetables grown in the state include Squash, Potato, Cabbage, Brinjal, Tomato, French Bean, Lady's Finger, Pumpkin, French Mustard, Bitter gourd etc. Various spices like Turmeric, Chillies, Ginger and Chillies are also grown.

2.2.7. Human and Economic Development

31. Mizoram's gross state domestic product (GSDP) in 2012-2013 stood at Rs. 7714 crores. The state's gross state domestic product (GSDP) growth rate was nearly 10% annually over 2001-2013 period. Both Agriculture and Industries contribute around 20% each in state's economy, while the contribution of tertiary/service sector stands at 60%. Though, the contribution of Agriculture in economy is around 20%, about 60% of state's population depends upon agriculture and allied sector.

32. Industrial sector in Mizoram is limited to Micro and Small Industries. Upto 2010-11, 8088 small scale industrial units were registered in the state. (Ref: Economic Survey, Mizoram 2012-13). However, there is good potential for development of Agri based and Forest product based industries in the state. Zoram Industrial Development Corporation (ZIDCO) has been established by the state Govt in collaboration with the Industrial Development Bank of India (IDBI). The purpose of ZIDCO is to set up industrial units of its own as well as to assist various enterprises. Another similar organization called Zoram Electronics Development Corporation has been established to promote electronics industry. Similarly, a State Government Undertaking called Mizoram Food and Allied Industries Corporation has been established to develop industries based on agro-horticulture products. With abundant scenic beauty and a pleasant climate, Mizoram has huge potential to develop its tourism related industries.

33. The economy of the Mamit district is basically Agro-based. Paddy which is the staple food of the populace is the main crop. Jhum type cultivation is the most popular type of cultivation and comprises the main source of agricultural products. Soil is fertile and major crops production, which is paddy, in the district takes place during the Kharif season. In Rabbi season, Mustard, Cabbage, Radish, Carrot, Tomato, Potato, Pulses are grown. The district is famous for Oranges and Hatkora fruits. The vegetation is an admixture of species which ranges from bamboos and canes to fuel woods and timber species. The major allied activity in the district is Animal Husbandry (piggery and Poultry).

2.2.8. Demography Features

2.2.8.1. Total Population

34. Total population in Mizoram stands at 10,97,206 of which 5,25,435 (47.89%) population belong to rural area and 5,71,771 (52.11%) population belong to urban area. The Mamit district has a total population of 86,364 of which 82.75% resides in rural areas and 17.25% belongs to urban areas. Details are given in **Table-2.2**.

Table-2.2: Details on Total Population

Name	Total Population	Total (Rural)	Total (Urban)	Percentage (Rural)	Percentage (Urban)
Mizoram	10,97,206	5,25,435	5,71,771	47.89	52.11
Mamit	86,364	71,465	14,899	82.75	17.25

Source: Census of India, 2011

2.2.8.2. Male and Female Population

35. Out of total population 10,97,206 of the State, male population constitutes 5,55,339 (50.61%) and female population is 5,41,867 (49.39%). Total population in Mamit district stands at

86,364 of which male population stands at 44,828 (51.91%) and female population stands at 41,536 (48.09%) with sex ratio 927 which is lower than State's average of 976. Details are given in **Table-2.3**.

Table 2.3: Details on Male/ Female Population

Name /Particulars	Total Population	Total Male	Total Female	Percentage (Male)	Percentage (Female)	Sex Ratio
Mizoram	10,97,206	5,55,339	5,41,867	50.61	49.39	976
Mammit	86,364	44,828	41,536	51.91	48.09	927

Source: Census of India, 2011

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

36. As per census 2011, the Scheduled Caste (SC) & Scheduled Tribe (ST) population of the State stands at 1,218 (0.11%) and 10,36,115 (94.43%), respectively. The Mamit district has a total SC population of 51 (0.06%) and ST population of 82,080 (95.04%). Details are given in **Table-2.4**.

Table-2.4: Details on Percentage SC/ ST

Name/ Particulars	Total Population	Total SC Population	Percentage of SC Population	Total ST Population	Percentage of ST Population
Mizoram	10,97,206	1,218	0.11	10,36,115	94.43
Mamit	86,364	51	0.06	82,080	95.04

Source: Census of India, 2011

2.2.8.4. Literacy

37. The literacy rate of Mamit district stands at 69.69% which is less than State's average (77.30%). However, the female literacy rate of the district is 45.21%. Details are given in **Table-2.5**.

Table-2.5: Literate and Illiterate Population

Name/Particulars	Total Population	Total Literate	Percentage of Literate	Percentage (Male)	Percentage (Female)
Mizoram	10,97,206	8,48,175	77.30	51.70	48.30
Mamit	86,364	60,191	69.69	54.79	45.21

Source: Census of India, 2011

1.3.8.5. Total Workers (Male and Female)

38. Total population into work in Mizoram stands at 4,86,705 of which total Male (work) population stands at 2,90,740 (59.74%) and total female (Work) population stands at 1,95,965 (40.26%). The Mamit district has a total work population of 39,339 of which total Male (work) population stands at 24,016 (61.05%) and total female (Work) population stands at 15,323 (38.95%). Details are given in **Table-2.6**.

Table-2.6: Details on Workers

Name/ Particulars	Total Population (Work)	Total Male (Work)	Total Female (Work)	Percentage (Male)	Percentage (Female)
Mizoram	4,86,705	2,90,740	1,95,965	59.74	40.26
Mamit	39,339	24,016	15,323	61.05	38.95

Source: Census of India, 2011

2.3.8.6. Households

39. Total Households in Mizoram stands at 2,22,853 of which 1,05,812 (47.48%) households belong to rural area and 1,17,041 (52.52%) households belong to urban area. Mamit district has a total of 17,731 households of which 14,539 (82.00%) households belong to rural area and 3,192 (18.00%) households belong to urban area. Details are given in **Table-2.7**.

Table-2.7: Details on Households

Name/ Particulars	Total Households	Total (Rural)	Total (Urban)	Percentage (Rural)	Percentage (Urban)
Mizoram	2,22,853	1,05,812	1,17,041	47.48	52.52
Mamit	17,731	14,539	3,192	82.00	18.00

Source: Census of India, 2011

III. LEGAL & REGULATORY FRAMEWORK

3.1. Overview

40. In India, compensation for land acquisition (LA) and rehabilitation/resettlement of project affected persons/ families is governed by the National law i.e. "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (hereafter RFCTLARR, 2013)", effective from 1st January 2014. Since in case of transmission line project, land for tower/pole and right of way is not acquired and ownership of land remains with the owner this act is not applicable. However, as per existing laws⁶ compensation for all damages is paid to the individual land owner. The relevant national laws applicable for transmission project are (i) The Electricity Act, 2003 and (ii) The Indian Telegraph Act, 1885. The compensation principles adopted in the Entitlement Matrix for this project comply with applicable laws /regulations of the Go/ State Govt., World Bank's Safeguard Policies and PEDM's ESPPF.

3.2. Statutory Requirements

41. Transmission lines are constructed under the ambit of The Electricity Act, 2003. The provisions stipulated in section 67-68 of the Electricity Act, 2003 read with section 10 & 16 of the Indian Telegraph Act, 1885 governs the compensation as PEDM has been vested with the powers of Telegraph Authority vide Dept. of Power, Govt. of Mizoram notification dated 3rd June 2016, under Section - 164 of the Electricity Act. As per the provision of Indian Telegraph Act, 1885 under section 10 (b), PEDM is not authorized to acquire any land hence land under tower is not acquired. However, compensation for all damages is paid to the individual land owner as per the provision of Section-10 (d) of Indian Telegraph Act, 1885.

3.3. PEDM's ESPPF

42. To address the environmental and social issues related to its power transmission and distribution projects under NERPSIP, PEDM has adopted an Environmental and Social Policy & Procedures Framework (ESPPF) in 2015 based on the principles of avoidance, minimization, and mitigation. The adopted ESPPF fulfils requirements of all the relevant provisions under law of the land i.e. The Electricity Act, 2003, The Indian Telegraph Act, 1885, MoP guidelines dated 15th October, 2015 for payment of compensation toward damages in regard to RoW and World Bank's Environment and Social Safeguard Policies.

43. The ESPPF had been developed by POWERGRID on behalf of the State Utility based on

ESPP of POWERGRID who has proven credentials in management of environmental and social issues of large number of power transmission projects both within and outside the country after a comprehensive review of Utility's existing policies/provisions and consultation with stakeholders.

44. ESPPF's outlines Utility's approach and commitment in dealing with the environmental and social issues relating to its transmission projects, lays down the management procedures and protocols for the purpose that includes the framework for identification, assessment, and management of environmental and social concerns at both organizational and project levels.

45. ESPPF's provides compensation to affected persons in respect of temporary damages like crop/tree/structure etc during construction of transmission line as per the eligibility criteria stipulated in Entitlement Matrix (EM) (**Table-5.1**). Accordingly, compensation is paid to eligible APs for actual damages including non-title holders such as squatter, encroacher etc. As regard land compensation for transmission line, as per prevailing practice only compensation @100% of land cost for tower base shall be paid to affected land owner.

46. Specifically on social, the following criteria and approach are considered in the ESPPF;

- (i) Take due precautions to minimize disturbance to human habitations, tribal areas and places of cultural significance.
- (ii) Take due care of Project Affected Persons (PAP).
- (iii) Involve affected people from inception stage to operation and maintenance.
- (iv) Consult affected people in issues of RoW, land acquisition or loss of livelihood.
- (v) Encourage consultation with communities in identifying environmental and social implications of the project.
- (vi) Adopt the principles of Free, Prior and Informed Consent (FPIC) process in the consultation / interactions undertaken.
- (vii) Guarantee entitlements and compensation to affected people as per entitlement matrix.
- (viii) Share information with local communities about environmental and social implications.
- (ix) Always maintain highest standards of health and safety and adequately compensate affected persons in case of any eventuality.

47. Additionally, the issues related to the Right of Way (RoW) for the transmission/ distribution lines will be dealt with proper care especially for the temporary loss. For the loss of crops and trees and land cost for tower base area due compensation will be paid either by cheque/ through online

transfer during construction works. Similarly, compensation (by cheque/ online transfer) to the APs for any temporary loss of crop and trees, if occurred, during the time of major maintenance and repair shall also be disbursed.

3.4. World Bank’s Environmental & Social Safeguard Policies

48. The objective of Bank’s policies is to prevent and mitigate undue harm to people and their environment in the development process. Safeguard policies provide a platform for the participation of stakeholders in project design, and act as an important instrument for building ownership among local populations. Operational Policies (OP) are the statement of policy objectives and operational principles including the roles and obligations of the Borrower and the Bank, whereas Bank Procedures (BP) is the mandatory procedures to be followed by the Borrower and the Bank. Apart from these, World Bank Group Environmental, Health, and Safety (EHS) General Guidelines and EHS Guidelines for Electric Power Transmission and Distribution are also relevant for environmental protection and monitoring of transmission projects. The WB’s relevant social safeguard policies and their objective are given in **Table-3.1**.

Table-3.1: World Bank’s Operational Policies for Social Safeguard

Operational Policy (OP)	Policy Objectives
OP 4.11 - Physical Cultural Resources (PCR)	To preserve PCR and in avoiding their destruction or damage. PCR includes resources of archeological, paleontological, historical, architectural, and religious (including graveyards and burial sites), aesthetic, or other cultural significance.
OP 4.12 - Involuntary Resettlement	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.
OP 4.10 - Indigenous Peoples	To ensure that the Indigenous Peoples receive social and economic benefits those are culturally appropriate and gender and inter generationally inclusive. 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.

IV. PROJECT IMPACTS

4.1. General

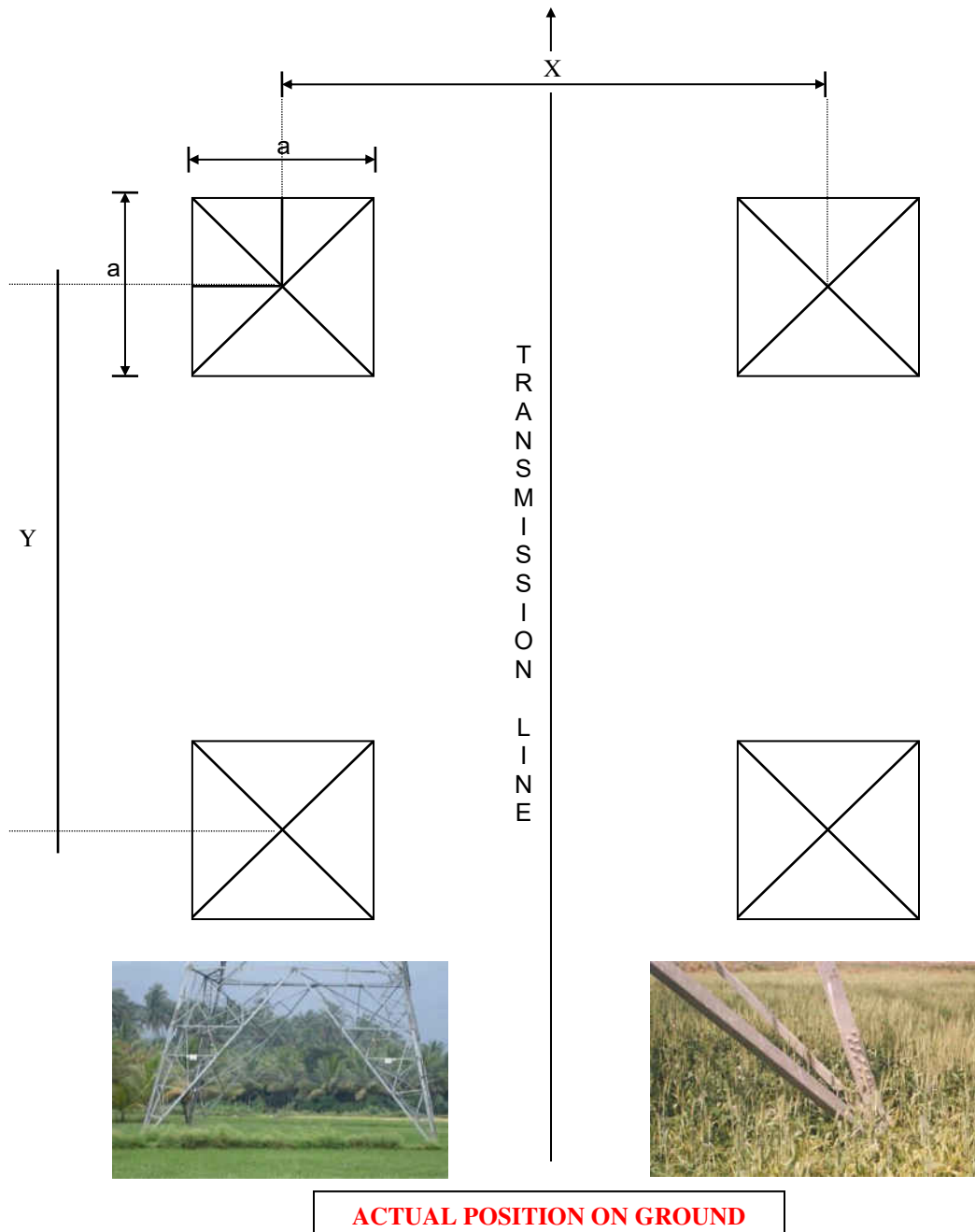
49. The project does not require any private land acquisition for construction of transmission/distribution lines. Due to inherent flexibility in routing of line, no major damages to structures or physical displacement is envisaged. Hence, there are no adverse impacts such as permanent loss of assets, livelihood loss or physical resettlement/relocation due to project intervention. However, there are some social impacts due to construction of lines/ placing of towers & poles which are temporary in nature in terms of loss of standing crops/ trees/ structures in the RoW. Preliminary investigation/ survey has been carried out for transmission/distribution line to estimate/ arrive at the selection of one best feasible alignment route out of at least 3 alternative alignments studied, for detailed survey to be undertaken during execution of main contracts. The details of tower schedule depicting location & its coordinate including major crossings in proposed route alignments is placed as **Annexure-2**. The compensation for damage is assessed in actual after construction activities of transmission lines in three stages i.e. after completion of foundation, tower erection and stringing of conductor. The payment of compensation is also paid in three instances, if there are damages during all the above three stages. Assessment of damages at each stage and subsequent payment of compensation is a continuous process. Hence, CPTD updating will also be a continuous process during construction. The details of land use have been gathered to have an idea about the temporary damages that might occur during construction of the transmission lines. The RoW width is 27 and 15 meter for 132kV transmission line & 33 kV distribution line respectively.

50. Soil & Surface Geology: In plain areas impact on soil & geology will be almost negligible as the excavated pit material is stacked properly and back filled as well as used for resurfacing the area. On hill slopes where soil is disturbed will be prone to erosion is suitably protected by revetment, breast walls, and proper drainage. Besides extensive leg/ chimney extension shall be used to avoid benching or cutting of slopes to minimize the impact on slope stability.

51. 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 agriculture can continue as clearly depicted in the **Figure-4.1**.

In case of 33kV 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-4.2** depicting actual base area impact). Due diligence confirms that land is either agricultural or barren, and

Figure-4.1: Typical Plan of Transmission Line Tower Footing

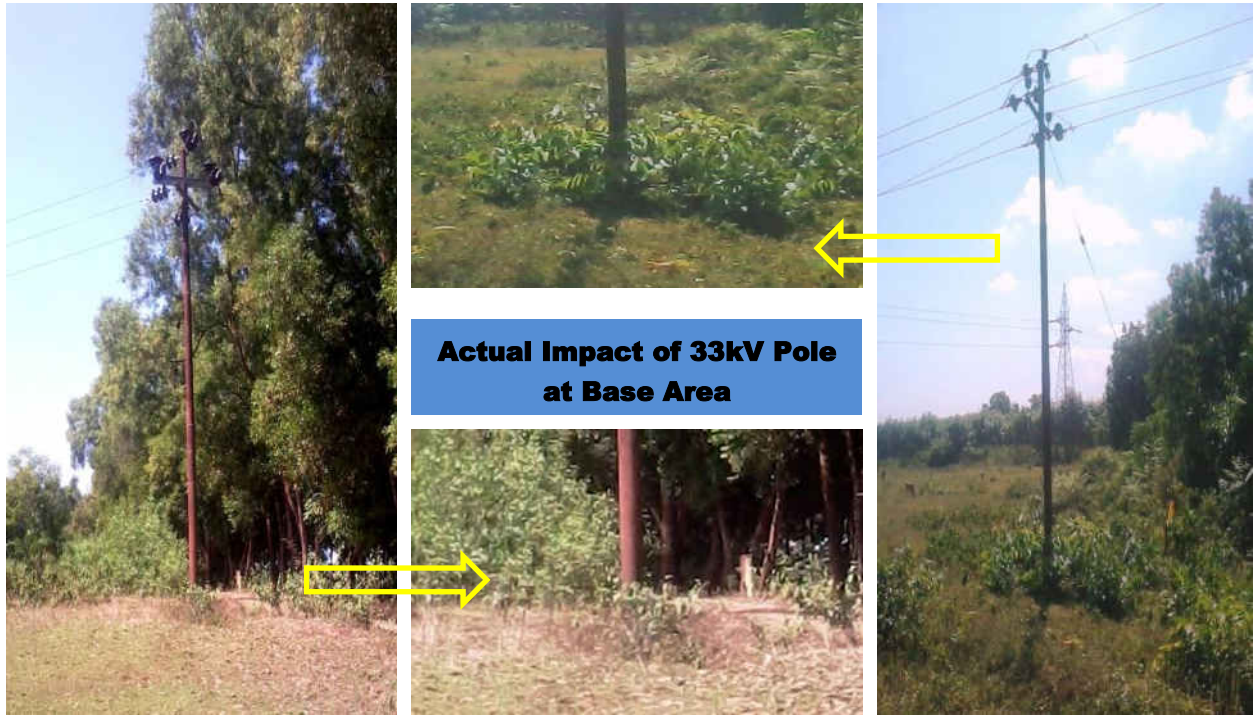


INDICATIVE MEASURES

X & Y = 5-10 METERS

a = 200- 300 mm

Figure-4.2: 33kV lines (Single & H pole) depicting base area impact



33kV line inside city area of Assam



33kV (H Pole) line inside substation

current land use is not altered and resumed after construction. As per present practices, full compensation (100%) towards land value in tower base areas as decided by the district authority is paid towards damages to the affected persons/land owners in addition to tree/crop damages. However, no payment will be paid for land compensation for RoW corridor as Govt. of Mizoram has not approved the adoption of MoP guidelines.

52. Crops: Construction of line in crop season is avoided as far as possible. During installation of towers, if there any 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. The compensation is in terms of yield/ hectare and rate/ quantity for prevailing crops in the area. Based on this, total compensation is calculated in consultation with revenue authorities. Compensation is paid to the owners and their acknowledgement obtained.

53. 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). Market rates of compensation are assessed by the relevant government authorities. The total estimate is submitted for approval of the competent authority. Payments are made to owners in the presence of local revenue authorities or village head/ Sarpanch and respective acknowledgements are obtained.

54. Other Damages: Any other damages like bunds, water bodies, fish ponds, approach paths, drainage and irrigation canals etc. are at best avoided. However, if damaged the Revenue Department assess the cost of damage as per State Govt. norms. The total estimate is submitted for approval to the competent authority. Payments are made to owners in the presence of local revenue authorities or village head/ Sarpanch and respective acknowledgements are obtained and POWERGRID/ PEDM pay the compensation. Hindrances to power, telecom carrier & communication lines etc. shall be paid as per Govt. norms.

4.2. Impact due to construction of New Substation and Bay extension

55. The project component comprises of establishment of 2 no. of 132/33kV substations at West-Phaileng and Marpara of Mizoram. Land for all proposed substations are already in possession with PEDM. Since no fresh land acquisition is involved, R&R will not be an issue in the instant project. The details are provided in **Table-4.1**.

Table-4.1: Details of Substation

Name of substation	Permanent Impact on Land Use	Temporary Impact on loss of crops	Impact on Loss of Trees	Details of Land			
				Land Area (acre)	No. of Land owner	Compensation (Rs. Million)	Land Type/ Securing method
132/33kV West-Phaileng	No	Nil	Nil	3.92	NA	NA	PEDM land
132/33kV Marpara	No	Nil	Nil	4.34	NA	NA	

4.3. Temporary Impacts Caused due to Transmission Line (Right of Way)

4.3.1. Type and Use of Land within Corridor Right of Way

56. The lines corridor will pass through mixed land uses which are generally agricultural land, private plantation, forest land, govt. land etc. The calculations are based on detailed survey/ investigation carried out along the route of T & D lines and considering the total line length of the line and its right of way. The total line length of transmission line is 50.265 kilometres (km) passing through mostly in agricultural land which will impact an estimated of 335.35 acres⁷ of land. A brief description about the type and use of land in the corridor is given in **Table-4.2**.

Table-4.2: Type and Use of Land within Corridor of RoW (in Km/Hectares)

Sl. No.	Name of the Line	RoW (in mtr)	Agricultural land	Private Plantation	Forest	Govt/ Barren	Total
A. Transmission Line							
1.	West Phaileng – Marpara 132 kV S/C	27	11.547 km/ (77.04 acre)	Nil	38.718 km/ (258.31 acre)	Nil	50.265 km/ (335.35 acre)
Total			11.547 km/ (77.04 acre)	Nil	38.718 km/ (258.31 acre)	Nil	50.265 km/ (335.35 acre)

Source: Detailed Survey

4.3.2. Total loss of crop area (RoW Corridor & Tower/Pole)

57. 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 132kV S/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 meter (maximum). Moreover, all efforts are made to reduce the damages to crops and to minimize the impacts whatsoever. One of the reasons is that

⁷ Total Line Length (kilometers) X Right of Way (meters)X1000/4,047= Area in Acre

schedule of construction activities are undertaken in lean season or post-harvest period. As the assets of any sorts will not be acquired but during construction, only temporary damages will occur for which the compensation shall be paid to affected persons as per entitlement matrix.

58. Based on the above estimation, the total land considered for crop compensation for the transmission/ distribution line corridor and tower/ pole foundation for the entire subproject covered under the scope of above CPTD is 57.06 acres. Details of estimated impacted area for crop damages are given in **Table-4.3**.

Table-4.3: Estimation on Loss of Land for Crop Damage due to Overhead Lines

Name of the line	Width Considered for Estimation of Loss of Crops & other impacts (Meter)	Total Agricultural Land (km)	Total Private Plantation (km)	Total Line Length Considered for Crop Compensation (km)	Total Land Area considered for Crop Compensation (Acre)
West Phaileng – Marpara 132 kV S/C line	20	11.547	Nil	11.547	57.06
Total		11.547	Nil	11.547	57.06

Source: Detailed Survey

4.3.3. Actual loss of land for Tower Base

59. As already explained, the impact of transmission line is restricted to 4 legs of the tower and agriculture can continue after construction activity is over. The average land area will be unavailable for erection of one 132kV T/L tower is approx. 0.25 sq. m. Based on above, total land lost for construction of 50.265 km of 132kV transmission lines proposed under the present scheme are estimated to be 0.0106 acre. However, compensation toward loss of land shall be provided to APs which is part of RoW compensation. Detail of land loss for tower base & pole is given in **Table-4.4**.

Table 4.4: Estimation of Actual Loss of Land for Tower Base & Pole

Name of the line	Line length (km)	Total Tower (Nos.)	Land loss per tower/ pole base (sq.m.)	Total land loss area for tower & pole base (sq.m.)
A. Transmission line				
West Phaileng – Marpara 132 kV S/C line	50.265	172	0.25	43
Total				43 ≅ 0.0106 acre

4.3.4. Land area for RoW compensation as per MoP Guidelines

60. Since Govt. of Mizoram has not approved the adoption of MoP guidelines dated 15.10.2015 no payment will be paid for land compensation for RoW corridor area. However, as per prevailing practice compensation @ 100% land value for tower base shall be paid to the affected persons/land owners. Details of estimation of land areas to be considered for such compensation are given in **Table-4.5**.

Table-4.5 Land area for RoW/ Tower base Compensation

Name of the line	Line length (km)	Nos. of Tower	Land area for Tower base per km (in acre)	Total land area for tower base (In acre)
West Phaileng – Marpara 132 kV S/C line	50.265	172	0.036	1.809
Total				1.809

4.3.5. Loss of Trees

61. Total numbers of trees likely to be affected in the non-forest portion due construction of line is approx. 3450. The major species to be affected are Teak (*Tectona grandis*), Sal (*Shorea robusta*), Pine (*Pinus khasiana*), Champa (*Magnolia champaca*), Gulmohar (*Delonix regia*), Gamari (*Gmelina arborea*), Needlewood (*Skima wallichii*), Bamboo (*Bambusa vulgaris*) etc. During construction, private trees will be compensated as per the entitlement matrix. Details on number of trees for each transmission line are given **Table-4.6**.

Table-4.6: Loss of Trees

Name of Line	Total Trees (Numbers)
West Phaileng – Marpara 132 kV S/C line	3450
Total	3450

Source: Detailed Survey

4.3.6. Loss of Other Assets (Small Shed in Agriculture Fields)

62. It has been observed during survey that no permanent or temporary structures exist along the right of way of proposed 132kV lines.

4.4. Details on Affected Persons

63. It is estimated that total 496 persons likely be impacted temporarily by construction of proposed 132 kV line. Details of APs are given in **Table-4.7**. However, the number of APs in the table refers to the most conservative option. State Utilities/ POWERGRID will schedule 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-4.7: Number of Affected Persons

Name of Line	Total APs
West Phaileng – Marpara 132 kV S/C line	496
Total	496

Source: Detailed Survey

4.5. Other Damages

64. As far as possible damage to bund, water body, fish pond, approach path, drainage & irrigation canal etc. are avoided. However, if damaged during construction activities, compensation as per practice is paid after assessment of the cost of damage by the State Govt. Revenue Department. The total estimate is submitted for approval to the competent authority. PEDM/ POWERGRID pay the compensation to owners in the presence of local revenue authorities or Village head/ Sarpanch and respective acknowledgements are obtained. Any hindrances to power, telecom carrier & communication lines etc. shall also be paid as per Govt. norms.

4.6. Impact on Indigenous People

65. 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; &
- (v) social and economic backwardness before notifying them as a Scheduled Tribe.

66. 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. The Sixth Schedule of the Constitution applies to a large part of the Mizoram state, which is under the jurisdiction of the "Chakma Autonomous District Council (CADC) and Lai Autonomous District Council" (LADC). The Sixth Schedule areas are governed through "Autonomous District Councils" (ADC) that has wide-ranging legislative and executive powers.

67. The instant project is being implemented in Lunglei and Lawngtlai districts which are also part of CADC and LADC area. Since, the project under NERPSIP is envisaged for economic uplifting of the NE region, hence, no indigenous population will be negatively impacted in the project area. However, It may be noted that all social issues shall be dealt separately in accordance with the provisions of Social Management Framework (SMF, A-C) placed in the PEDM's ESPPF.

4.7. Summary of Impacts

68. Based on the above assessment, temporary impacts on loss of crops, trees, other structures and number of APs are summarized below in **Table-4.8**.

Table-4.8 : Summary of Impacts

Particulars	Details	
	Transmission Lines	Distribution Lines
Length of Transmission/ Distribution line (km)	50.265	0
Number of Towers/ Poles (Nos.)	172	NA
Total Area under Tower base (in acre)	1.809	NA
Total APs (Nos.)	496	NA
Affected Structures (Small Sheds for agricultural purpose (Nos.)	Nil	NA
Area of Temporary Damages for crop compensation (in acre)	57.06	NA
Total Trees (Nos.)	3450	NA

Source: Detailed Survey

V. ENTITLEMENTS, ASSISTANCE AND BENEFITS

5.1. Entitlements

69. There is no involuntary acquisition of land involved; only temporary damage will occur during construction of transmission lines for which compensation is paid as per relevant regulations/ norms. APs will be entitled for compensation for land loss and other towards temporary damages to crops/ trees/ structures etc. as per the Entitlement Matrix given in **Table-5.1**. Compensation towards temporary damages to all eligible APs including non-title holders is paid after assessment by relevant authorities of State Govt.

70. All APs are paid compensation for actual damages irrespective of their religion, caste and their economic status. One-time additional lump sum assistance will be paid to vulnerable households not exceeding 25% of total compensation on recommendation of State Authority/ ADC/ VC. As an additional assistance, construction contractors are encouraged to hire local labour that has the necessary skills.

5.2. Entitlement Matrix

71. An Entitlement Matrix for the subprojects is given in **Table-5.1**.

Table-5.1: Entitlement Matrix

Sl.	Type of 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 and depreciation value) 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 transition benefits as per category-5 below

Sl.	Type of Issue/ Impact	Beneficiary	Entitlement Options
(iii)	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
(iv)	Tribal/ Vulnerable APs	Vulnerable APs ⁸	One-time additional lump sum assistance not exceeding 25% of total compensation on recommendation of State Authority/ADC/VC.

(#) Provisions of 100% compensation for tower base and no compensation for corridor area as per Govt. of Mizoram notification 01.05.19.

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

5.3. Procedure of Tree/ crop compensation

72. In exercise of the powers conferred by section 164 of the Electricity Act, 2003, Dept. of Power, Govt. of Mizoram vide notification dated 3rd June 2006, has authorized PEDM to exercise all the power vested in the Telegraph Authority under part-III of the Indian Telegraph Act, 1885, to place and maintain transmission lines under over along or across and posts in or upon, any immovable property. However, the provisions of same act in Section 10 (d) stipulates that the user agency shall pay full compensation to all interested for any damages sustained during the execution of said work. Accordingly, PEDM / POWERGRID shall pay compensation to land owners towards damages, if any for tree, crop etc. during implementation of project as well as during operation and maintenance phase. The procedure followed for such compensation is as follows:

73. PEDM follows the principle of Avoidance, Minimization and Mitigation in the construction of line in agricultural field and cropping areas due to inherent flexibility in phasing the construction activity and tries to defer construction in cropped area to facilitate crop harvesting. However, if it is unavoidable and is likely to affect project schedule, compensation is given at market rate for standing crops. All efforts are also taken to minimize the crop damage to the extent possible in such cases:

74. As regard of trees coming in the Right of Way (RoW) following procedure is adopted for enumeration:

- All the trees which are coming within the clearance belt of RoW on either side of the centre line are identified and marked/numbered from one AP to the other and documented.
- Type, Girth (Measured 1 m. above ground level), approximate height of the tree is also noted for each tree
- Trees belonging to Govt., Forest, Highways and other local bodies may be separately noted

⁸ Vulnerable APs include scheduled tribes residing in scheduled areas/ physically handicapped/ disabled families etc.

down or timely follow up with the concerned authorities for inspection and removal.

- Guava, Lemon, and other hybrid trees which are not of tall growing nature are not marked for cutting since these trees can be crossed using standard tower extensions if required.

75. A notice under Electricity Act, 2003/ Indian Telegraph Act, 1885 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/land inevitability likely to be damaged during the course of the construction of the proposed transmission line and acknowledgement received from land owners. A copy of said notice is further issued to the Revenue Officer/ SDM, who has been authorized by the Mizoram Govt. for the purpose of assessment/valuation and disbursement of compensation to APs.

76. The revenue officer shall further issue a notice of intimation to the concerned land owner 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/ crops/ land for tower footing inevitability 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.

77. The Mouja list contained 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 was conducted by the concerned DC or his authorized representative in order to ascertain the assessment carried out by the revenue office is genuine and correct. After this process the DC issue a tree cutting permission to PEDM to enable removal/ damage to the standing tree/crop identified in the line corridor.

78. Once the tree/ crop is removed/ damaged, PEDM 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 Centre 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 or Council Authority.

79. On approval of compensation, the revenue officer shall further intimate the amount payable to the different landowners and PEDM/ POWERGRID will arrange the payment by way Cheque/ online transfer 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. Process of tree/crop

compensation is depicted in **Figure-5.1**.

5.4. Land Compensation for Tower Footing & RoW Corridor

80. As per present practices, full compensation (100%) towards land value for tower base areas as decided by the district authority is paid to the affected persons/ land owners in addition to tree/crop damage compensation. Though Govt of Mizoram adopted the MoP guidelines vide notification 01.05.19, but it stipulates only 100% land compensation for tower base and has no provision for land compensation for corridor area.

5.5. Compensation for Structure

81. No physical displacement is envisaged in the proposed project. Displacement of structures is normally not envisaged due to flexibility of routing of transmission line. However, whenever it is necessary, compensation for structures as per entitlement matrix shall be provided (refer **Table-5.1**). In the instant case, no such small structures likely to be encountered in the right of way of proposed transmission lines. In case it is encountered these are most likely small sheds/ small storage which are associated with the agricultural fields. People do not use these small structures/ sheds for residential purpose. A notice for damage is issued to APs and the joint measurement by PEDM/ POWERGRID and APs will be done and verified by revenue official for actual damages. The compensation will be paid to the APs as decided by committee based on state government norms. Hence, compensation is paid parallel with the construction activity of line.

5.6. Compensation Disbursement Module

82. In order to streamline the compensation process, a disbursement module has been developed (**Table-5.2**) specifying the time period with respect to various process/ activities which will be implemented during the project execution.

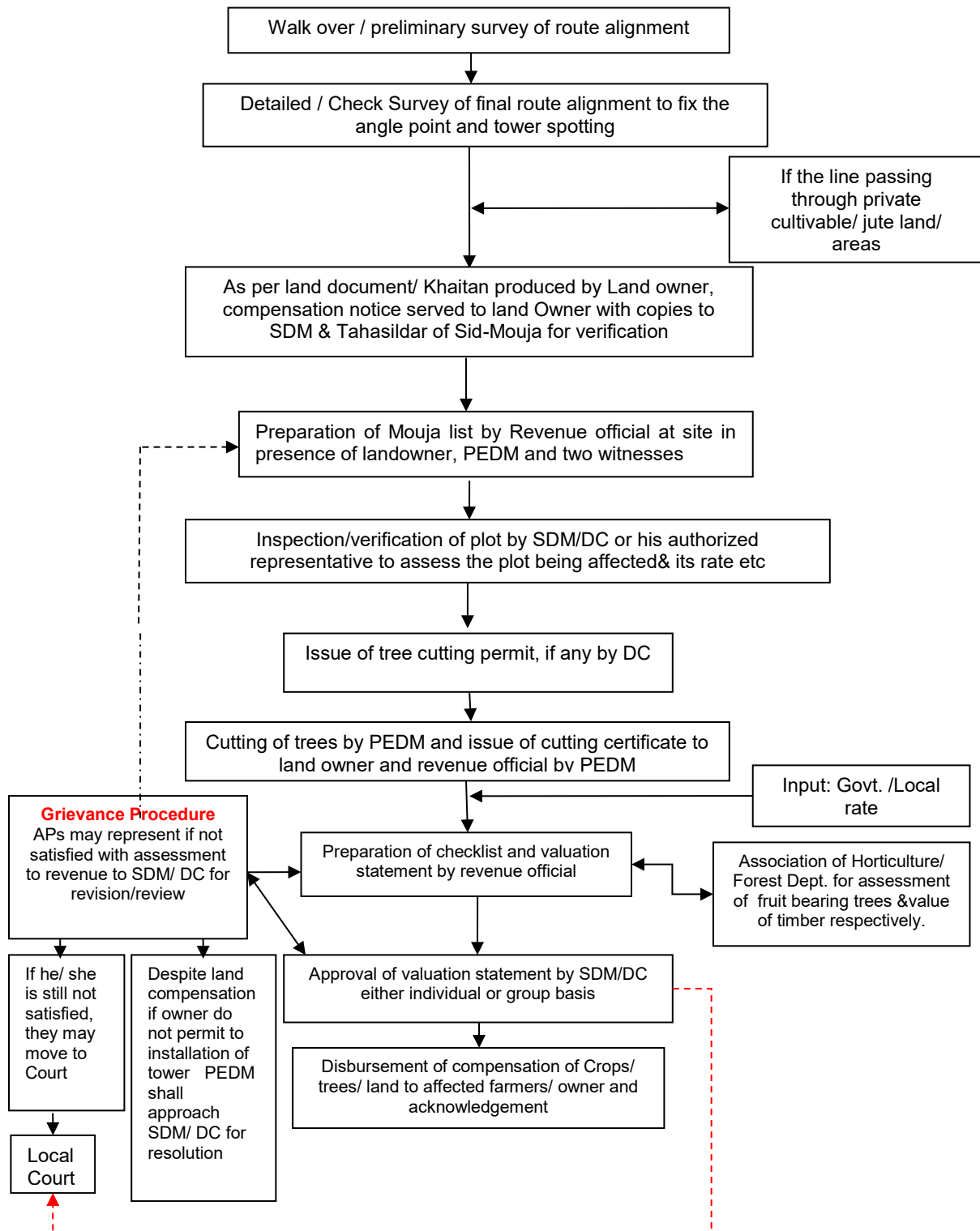
Table-5.2: Compensation Disbursement Module

Activity/Stage	Process	Maximum Time Period from Cut-Off date
Tower Foundation/ Erection/ Stringing	Serving of Notice (Cut-off date)	0 date
	Verification of Ownership by Revenue Dept.	15 days
	Assessment/Verification of damages by Revenue Dept.	45 days
	Online disbursement*	60 days**

* Provision of advance payment up to 25% (Rs. 1 lakh maximum) of total estimated land compensation already made in the RoW guidelines of POWERGRID and may also be implemented in the NERPSIP after consent of concerned State Utilities.

**60 days is on maximum side. However, based on past experience it's normally concluded within 30-45 days.

Figure-5.1: Tree/ Crop Compensation Process



VI. INFORMATION DISCLOSURE, CONSULTATION & PARTICIPATION

6.1. Consultations

83. Public consultation/ information is an integral part of the project implementation. Public is informed about the project at every stage of execution. During survey also PEDM & POWERGRID site officials meet people and inform them about the routing of transmission lines. During the construction, every individual, on whose land tower is erected and people affected by RoW, are consulted. Apart from this, Public consultation using different technique like Public Meeting, Small Group Meeting, informal Meeting shall also be carried out during different activities of project cycle. During such consultation the public are 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 lines and PEDM approach to minimizing and solving them; &
- Trees and crop compensation process etc.

84. In the instant project also, many group meetings were organized (informally and formally) in all villages where the interventions are likely to happen (**Table-6.1**). These meetings were attended by Village Panchayat members, senior/ respected person of village, interested villagers/ general public and representatives from PEDM & POWERGRID. Besides, gender issues have also been addressed to the extent possible during such consultation process (total 39 female out of 151 participants). To ensure maximum participation, prior intimation in local language was given and such notices were also displayed at prominent places/ panchayat office etc. Details of above public consultation meetings including minutes of meeting, list of participants and photographs are enclosed as **Annexure-3**.

Table-6.1 Details of Consultations

Date of meeting	Venue of Meeting	Persons attended	Persons Attended
Public Consultation Meeting			
15.09.2014	West-Phaileng, Mamit district	80	SDO (Electrical) West Phaileng, POWERGRID officials,

18.05.2017	Village Community Hall, Phuldungsei, Mamit District	49	Representatives of Panchayat including Chairman, Vice Chairman & Members and Village Pradhan etc, local villagers & public in general.
05.03.2020	Lallen Village, Mamit district	22	

85. During consultations/ interaction processes with people of the localized areas, PEDM/ POWERGRID field staffs explained benefit of the project & impacts of transmission line. People more or less welcomed the construction of the proposed project.

86. Various issues inter alia raised by the people during public consultation and informal group meetings are as follows;

- The employment for local people & procedure for the same;
- Electrical Safety while working in Agricultural fields below line;
- Improvement in Power supply/availability in villages;
- The width of ROW for cutting trees & compensation for the same; &
- If these lines passes through heavily populated/ house area.

87. PEDM & POWERGRID representative replied their queries satisfactorily and it was assured that all the genuine issues would be dully taken care during the implementation of the project.

6.2. Plan for further Consultation and Community Participation during Project Implementation

88. The process of such consultation to be continued during project implementation and even during O&M stage. The progress and proposed plan for Public consultation is described in **Table-6.2.**

89.

Table-6.2: Plan for Future Consultations

S. N.	Activity	Technique	Schedule
1.	Detailed/ Check survey	Formal/Informal Meeting at different places (20-50 km) en-route final route alignment of line.	Public meeting during pre-construction stage
2.	Construction Phase	Localized group meeting, Pamphlet/ Information brochures, Public display etc.	During entire construction period.
3.	O&M Phase	Information brochures, Operating field offices, Response to public enquiries, Press release etc.	Continuous process as and when required.

6.3. Information Disclosure

90. The CPTD will be disclosed to the affected households and other stakeholders by placing it on website. To maintain the uninterrupted communication channel, PEDM & POWERGRID site officials are meeting APs and inform about norms and practices of damage assessment and compensation thereof. A notice also issued to APs after the detailed/ checks survey and finalization of tower location during the construction. Affected persons also visited site/construction offices of PEDM & POWERGRID to know about the compensation norms and policies and to discuss their grievances. For wider circulation, executive summary of the CPTD/ Entitlement Matrix will be translated in local language and placed at construction offices/ sites. The CPTD will also be disclosed on the World Bank website. PEDM & POWERGRID will organize further public consultation meetings with the stakeholders to share the views of public and all possible clarifications. This consultation process will continue throughout the project implementation and even during operation and maintenance (O&M) stage.

VII. INSTITUTIONAL ARRANGEMENTS

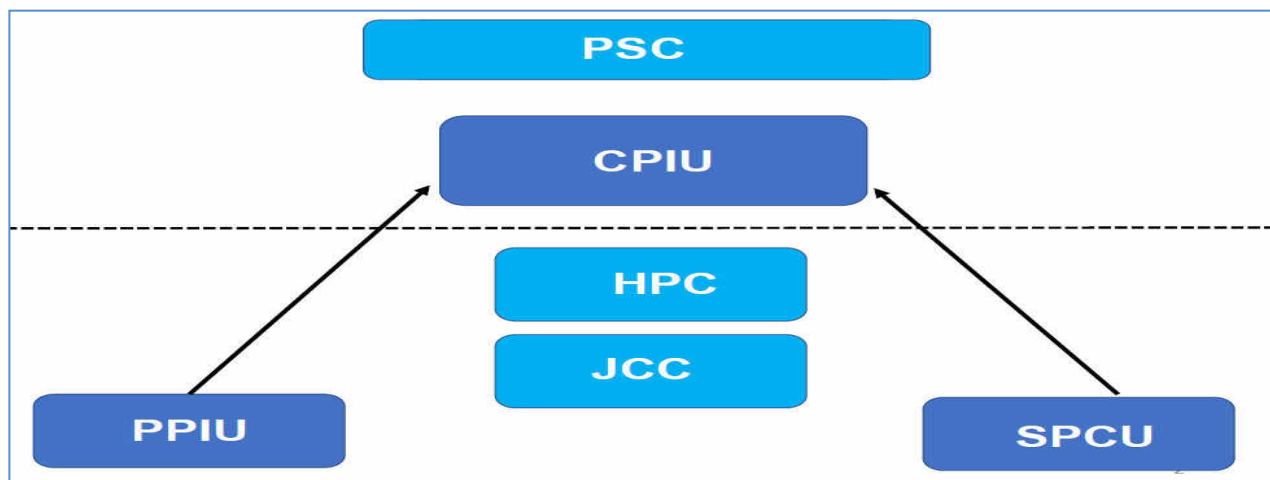
7.1. Administrative Arrangement for Project Implementation

91. Ministry of Power (MoP), GoI has appointed POWERGRID as Implementing Agency (IA) to implement the project in close coordination with the respective state power utilities and departments. POWERGRID will implement the project based on the Implementation/Participation agreements that were signed separately between POWERGRID and the power utilities. However, the ownership of the assets shall be with respective State government or State Utilities, which upon progressive commissioning shall be handed over to them for taking care of Operation and Maintenance of assets. The arrangement for monitoring and reviewing of project from the perspective of environment and social management will form part of overall arrangements for project management and implementation environment. Following implementation arrangement has been proposed at different levels for smooth implementation of this project;

Central Project Implementation Unit (CPIU) - A body responsible for coordinating the preparation and implementation of the project and shall be 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 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 and shall be headed by an officer of the rank not below Chief Engineer, from the Utility.

PMC Project Implementation Unit (PPIU) – 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 work site & working in close association with the SPCU/ CPIU. PIU report to State level "Project Manager" nominated by the Project-in-Charge of IA. The IA will have a Core team stationed at the CPIU on permanent basis and other IA officers (with required skills) will visit as and when required by this core team. This team shall represent IA and shall be responsible for all coordination with SPCU, PIU, within IA and MoP, GoI. CPIU shall also assist MoP, GoI in monitoring project progress and in its coordination with The Bank.



7.2. Review of Project Implementation Progress:

92. To enable timely implementation of the project/ subprojects, following committee has been setup 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 shall specify quarterly milestones or targets, which shall be reviewed by JCC through a formal monthly review meeting. This meeting forum shall be called as Joint Co-ordination Committee Meeting (JCCM). The IA shall convene & keep a record of every meeting. MoP, Gol and The Bank may join as and when needed. Minutes of the meeting will be shared with all concerned and if required, with Gol and The Bank.

B. High Power Committee (HPC): The Utility in consultation with its State Government shall arrange to constitute 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 shall meet on bimonthly basis or earlier, as per requirement. This forum shall be called as High Power Committee Meeting (HPCM) and the SPCU shall keep a record 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 will be 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 shall be 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. A review will be 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.

7.3. Arrangement for Safeguard Implementation

93. At the central project implementation level (CPIU) based at Guwahati, POWERGRID has set up an Environmental and Social Management cell (ESMC) which is headed by Executive Director (ED) to oversee Environmental and Social issues of the projects and to coordinate the SPCU & Site Offices.

94. At the State level, POWERGRID has already set up PPIU at the capital of each participating State. The PPIU is staffed with dedicated multidisciplinary team headed by Project Manager who is also responsible for overseeing and implementing the environmental and social aspects of project in their respective state. The PPIU team is assisted by a dedicated Field Officer (Environment & Social Management) who has been specifically recruited for this purpose by POWERGRID. Moreover, State Utilities have constituted State Project Coordination Unit (SPCU) at each state and also designated their Environmental & Social Officer within SPCU to work in close co-ordination with the PMC Project Implementation Unit of POWERGRID and CPIU team at Guwahati. Major responsibilities of Environment and Social team at State level are conducting surveys on environmental and social aspects to finalize the route/substation land, implementation Environment Management Plan (EMP)/CPTD, co-ordination with the various statutory departments, monitoring EMP/CPTD implementation and producing periodic progress reports to CPIU.

95. In the instant subprojects, POWERGRID will implement the CPTD in close co-ordination with PEDM which includes overall coordination, planning, implementation, financing and maintaining all databases & also work closely with APs and other stakeholders. A central database will also be maintained for regular updating of social assessment & compensation data. State Utilities & POWERGRID will ensure that local governments are involved in the CPTD implementation to facilitate smooth settlement of compensation related activities. Roles and responsibilities of various agencies for CPTD implementation are presented in **Table-7.1**.

Table-7.1: Agencies Responsible for CPTD Implementation

Activity	Agency Responsible	
	Primary	Secondary
Implementing CPTD	Field staffs of POWERGRID & PEDM	
Updating the CPTD	POWERGRID	PEDM
Review and Approval of CPTD	PEDM	POWERGRID
Verification survey for identification of APs	POWERGRID, PEDM field staffs	Revenue Officials
Survey for identification of plots for Crop/Tree/ other damages Compensation	POWERGRID, PEDM	Revenue Officials
Consultation and disclosure of CPTD to APs	POWERGRID, PEDM	Revenue Officials
Compensation award and payment of compensation	Revenue Dept. / Competent Authority	POWERGRID, PEDM
Fixing of replace cost and assistance	Revenue Dept. / Competent Authority	POWERGRID, PEDM
Payment of replacement cost compensation	POWERGRID & PEDM	Revenue Dept.
Takeover temporary possession of land/houses	POWERGRID & PEDM	Revenue Dept.
Hand over temporary possession land to contractors for construction	POWERGRID & PEDM	Contractor
Notify construction starting date to APs	POWERGRID, PEDM Field Staff	Contractor
Restoration of temporarily acquired land to its original state including restoration of private or common property resources	Contractor	POWERGRID & PEDM
Development, maintenance and updating of Compensation database	POWERGRID & PEDM	
Development, maintenance and updating of central database	POWERGRID & PEDM	
Internal monitoring	POWERGRID & PEDM	
External monitoring, if required	POWERGRID & PEDM	

7.4. Responsibility Matrix to manage RoW Compensation

96. In order to manage the RoW compensation effectively, a Work Time Breakdown (WTB) matrix depicting sequence of activities, timing, agencies responsible have been drawn both for Tree/ Crop and Land compensation which will be implemented during project execution.

a) WTB for Tree/ Crop Compensation

Activities	Responsibility		Time Schedule
	Primary	Secondary	
Identification of APs (During Tower spotting & Check Survey)	Contractor	PEDM & IA field staffs	In 3 different Stages i.e. before start of Foundation, Erection & Stringing Works
Serving Notice to APs	PEDM & IA field staffs	Revenue Dept.	0 date
Verification of ownership	PEDM, IA & Revenue Dept.	ADC (if applicable)	0-15 days
Joint Assessment of damages	Revenue Dept. & APs	PEDM / IA	16-45 days
Payment (online/DD) of compensation to AP*	PEDM & IA		46-60 days

b) WTB for Land Compensation for Tower base and RoW corridor**

Activities	Responsibility		Time Schedule
	Primary	Secondary	
Identification of APs (During Tower spotting and Check Survey)	Contractors	PEDM & IA field staffs	Before start of Foundation/ Erection & Stringing Works
Fixation of land rate	DC, ADC/ Executive Committee (if applicable)	PEDM & IA	0 date
Serving Notice to APs	PEDM, IA field staffs	Revenue Dept.,	0-7 days
Assessment of compensation/ Verification of ownership	Revenue Dept./ ADC	PEDM & IA	8-15 days
Payment (online/DD) of compensation to AP*	PEDM & IA		16-30 days

* AP can approach to DC for any grievance on compensation.

** Discussion for release of certain % as advance is also under progress with Utilities.

Note: Both a and b activities shall run parallel

VIII. GRIEVANCE REDRESS MECHANISM

97. Grievance Redress Mechanism (GRM) is an integral and important mechanism for addressing/resolving the concern and grievances in a transparent and swift manner. Many minor concerns of peoples were addressed during public consultation process initiated at the beginning of the project. For handling grievance, a two tier GRM consisting of Grievance Redress Committee (GRC) at two levels, i.e. project/scheme level and Corporate/ HQ level have been constituted. The project level GRCs include members from PEDM, POWERGRID, Local Administration, Village Council/ Panchayat Members, Affected Persons representative and reputed persons from the society and representative from the autonomous districts council in case of tribal districts selected/decided on nomination basis under the chairmanship of project head. The composition of GRC also disclosed in Panchayat/ Village council offices and concerned district headquarter for wider coverage.

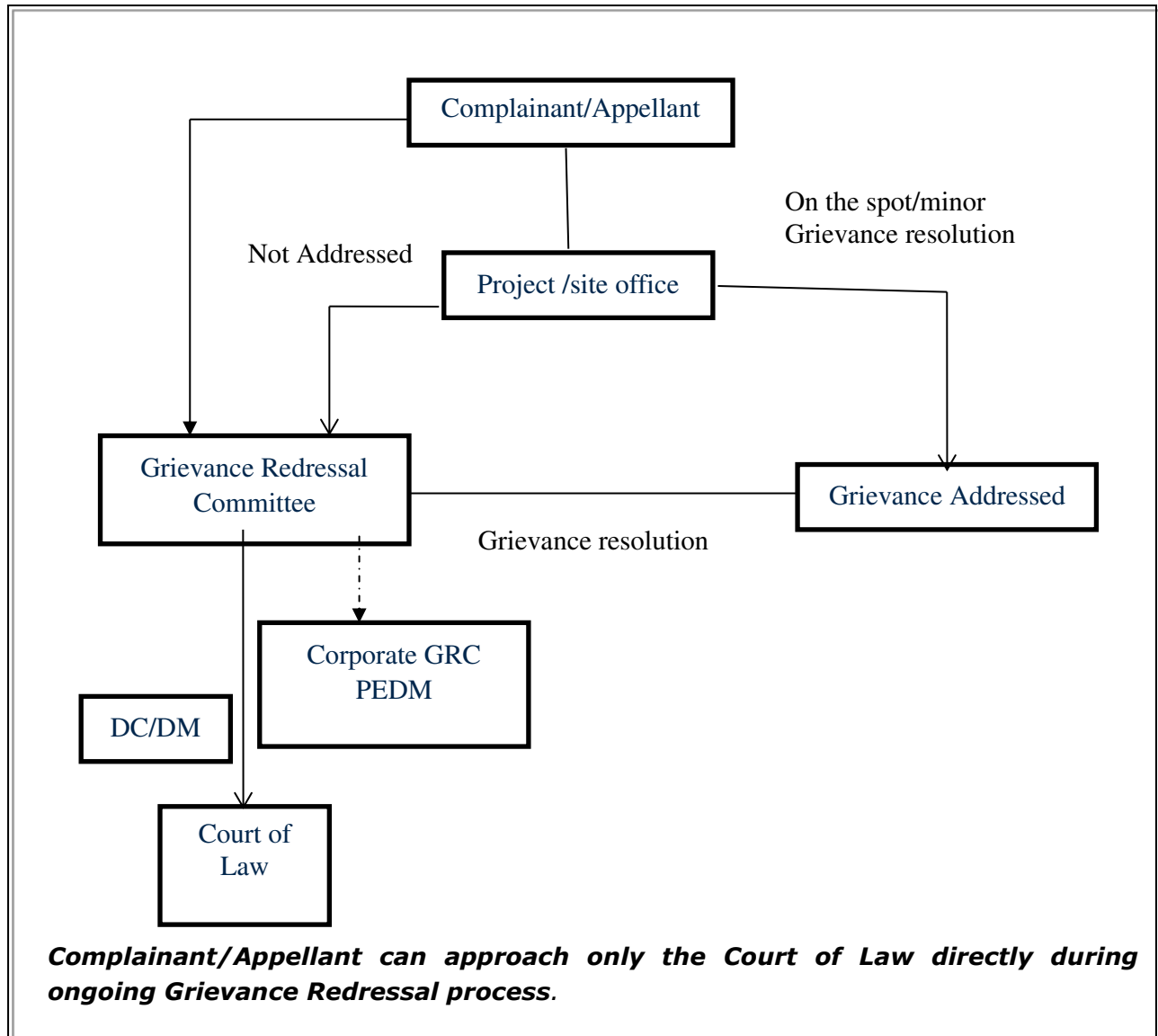
98. The complainant will also be allowed to submit its complaint to local project official who will pass it to GRC immediately but not more than 5 days of receiving such complaint. The first meeting of GRC will be organized within 15 days of its constitution/disclosure to formulate procedure and frequency of meeting. In case of any complaint, GRC meeting shall be convened within 15 days. If Project level GRC is not able to take decision it may refer the complaint to corporate GRC for solution. GRC endeavours to pronounce its decision within 30-45 days of receiving grievances. In case complainant/appellant is not satisfied with the decision of project level GRC they can make an appeal to corporate GRC for review. The proposed mechanism does not impede access to the country's judicial or administrative remedies at any stage.

99. The corporate level GRC shall function under the chairmanship of Engineer-In- Chief who will nominate other members of GRC including one representative from corporate ESMC who is conversant with the environment & social issues. The meeting of Corporate GRC shall be convened within 7-10 days of receiving the reference from project GRC or complainant directly and pronounce its decision within next 15 days.

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

representative also provides forum for raising the grievance towards any irregularity/ complain. Moreover, PEDM & POWERGRID officials also address to the complaints of affected farmers and the same are forwarded to revenue official for doing the needful. Details are depicted below in **Figure-8.1:**

Figure-8.1: Flow Chart showing Grievance Redress Mechanism



IX. BUDGET

101. The CPTD Implementation cost estimate for the project includes eligible compensation for loss of crops/ trees/ huts and support cost for implementation of CPTD, monitoring, other administrative cost etc. Though Govt. of Mizoram has not yet adopted MoP guidelines for RoW compensation for implementation, a budget provision has been made for compensation for Tower Base (@ 100% of the land cost and no compensation for RoW Corridor as per the prevailing practices. Accordingly, the cost has been estimated for proposed 132kV line only in the budget by including these provisions. However, this is a tentative budget which may change during the original course of implementation. The unit cost for the loss of crop has been derived through rapid field appraisal and based on PEDM & POWERGRID's previous experience of similar project implementation. Contingency provision equivalent to 3% of the total cost has also been made to accommodate any variations from this estimate. Sufficient Budget has been provided to cover all compensation towards land use restriction, crops losses, other damages etc. Structure will be avoided to the extent possible. However, if any structure is affected, budget provisions are available to cover all damages as per entitlement matrix. As detailed in above paras, initial study has confirmed that no residential structure shall be affected. Therefore, provisions of budget expenditure for implementation of CPTD for the subprojects considering corridor of 20 meter maximum for 132kV line, respectively.

9.1 Compensation for Land under Tower Base

102. The land area for 132kV tower base is estimated as 0.036 acre per km. The cost of land is estimated @ Rs. 15 lakh/ acre considering the land use type as agriculture land in rural setting. As Govt. of Mizoram has not approved the adoption of MoP guidelines dated 15.10.2015 no payment shall be paid for land compensation for RoW corridor. However, as per prevailing practice only land compensation @ 100% land value for tower base will be paid. Accordingly, the cost of land compensation towards tower base for overhead line is thus estimated as Rs. 27 Lakhs. A detail of cost is given below in **Table-9.1**.

Table-9.1: Cost of Land Compensation for Tower Base

Name of Line	Line Length (Km)	Land Area for Tower Base (acre)	Avg. Cost of Land (Lakhs / acre)	Total in Lakhs (Tower base @ 100%)
West Phaileng – Marpara 132 kV S/C line	50.265	1.81	15.00	27.15
Total				27.15\cong 27

* Effective RoW corridor has been considered after excluding tower base area

9.2 Compensation for Crops and Trees

103. The crop compensation is calculated in consultation with revenue authorities in terms of yield/ hectare and rate/ quantity for prevailing crops in the area. Similarly, tree compensation is calculated on basis of tree enumeration, tree species and an estimate of the yield. In case of fruit bearing trees compensation will be calculated on the basis of 8 years yield (assessed by revenue/horticulture department). Market rates of compensation are assessed by the relevant government authorities. The estimation of crop and tree damages are based on preliminary investigation and accordingly budgetary provisions are made which will be updated during implementation. Detail of line wise cost is given in **Table-9.2** below.

Table-9.2: Cost of Compensation for Crops and Trees

Sl. No	Name of the Line	Line Length in Non-forest area (Km)	Compensation /Km (In Lakh)	Total compensation cost for Crops & trees (Lakh)
1.	West Phaileng – Marpara 132 kV S/C line	50.265	5.0	251.325
Total				251.325

9.3. Summary of Budget

104. The total indicative cost is estimated to be **INR 297.165 Lakhs** equivalent to **USD 0.406 million**. Details are given in **Table-9.3**. The following estimated budget is part of complete project cost as on date. However, actual updating of the estimated cost shall be done during execution.

Table-9.3: Summary of Budget

Item	Amount in Lakh (INR)	Amount in (Million USD)
A. Compensation		
A-1: Loss of Crops and Trees	251.325	0.342
A-2: Land Compensation for Tower Base	27.15	0.037
Sub Total-A	278.475	0.378
B: Implementation Support Cost		
B-1: Man-power involved for CPTD Implem. & Monitoring	5.03	0.007
B-2: External Monitoring, if required	5.00	0.007
Sub Total- B	10.03	0.014
Total (A+B)	288.505	0.393
Contingency (3%)	8.66	0.013
Grand Total	297.165	0.406

X. IMPLEMENTATION SCHEDULE

105. Following work schedule has been drawn for implementation of CPTD considering letter of award for execution of work placed in end of 2016. Tentative implementation schedule for project including various sub tasks presented in **Table-10.1**.

106.

Table-10.1 Tentative Implementation Schedule

Sl. No.	Activity	1 st Yr		2 nd Yr				3 rd Yr				4 th	
		Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 3	Q 4
1.	Initial CPTD Matrix disclosure												
2.	Detailed Survey												
3.	Public Consultation												
4.	Compensation Plan Implementation												
i)	Compilation of land record, ownership,												
ii)	Finalization of list of APs, fixing rate by DC												
iii)	Serving of Notice to APs												
iv)	Joint assessment & acknowledgement by APs												
v)	Validation of Compensation amount												
vi)	Compensation Payment												
5.	Civil Works												
6.	Review/ Activity Monitoring												
i)	Monthly												
ii)	Quarterly												
iii)	Half yearly												
iv)	Annual												
7.	Grievance redress												
8.	CPTD Documentation												
9.	External Monitoring, if required												

XI. MONITORING AND REPORTING

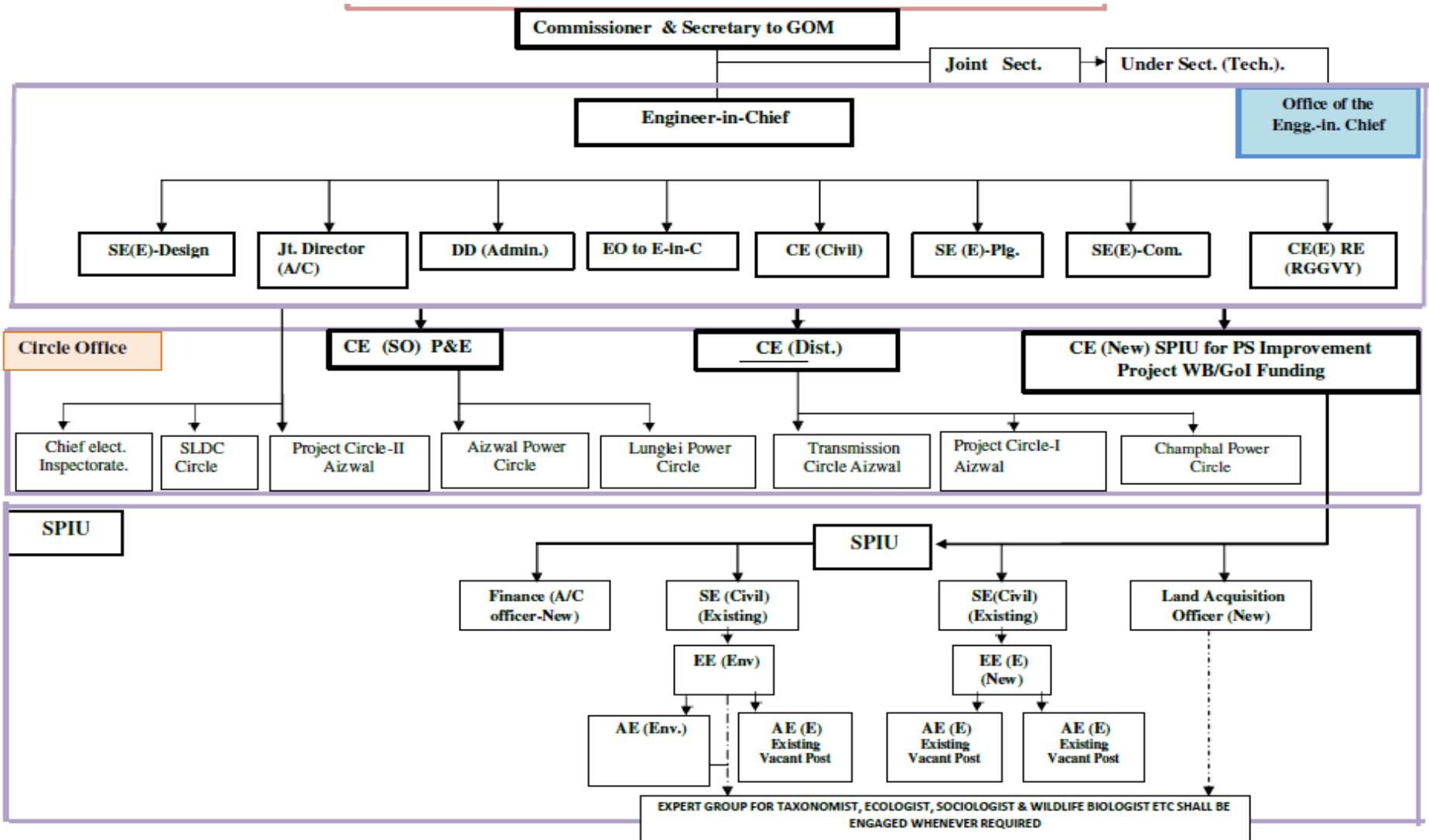
107. Monitoring is a continuous process at all stages of project. Monitoring of CPTD implementation will be the responsibility of POWERGRID as well as the State Utility.

108. Internal monitoring will include: (i) administrative monitoring: daily planning, implementation, feedback and troubleshooting, maintenance, and progress reports and (ii) socio-economic monitoring: compensation for land/crops/trees or any other damages, demolition if any, salvaging materials, dates for consultations and number of grievance/ complaints received etc. Monitoring and reports documenting progress on compensation/ implementation of CPTD will be provided by POWERGRID to World Bank for review semi-annually.

109. If required, POWERGRID/ State Utility will engage the services of an independent agency/ external monitoring and provisions for the same have been made in the budget component.

110. PEDM is well equipped to implement and monitor its environment and social management plan including CPTD. Organizational Support Structure of PEDM for monitoring of above is given in **Figure-11.1**.

Figure-11.1: PEDM Support Structure for Safeguard Monitoring



11.1 Status of Compensation (Tree/ Crop / Land / Structures)

111. As explained in previous chapters, compensation for the loss of crops, trees, land, structure etc. are paid to Affected Persons (APs) based on actual damages in 3 different stages i.e. during foundation work, tower erection & stringing as per norms. Till date, out of total 39 APs, 25 numbers of APs have been paid compensation to the tune of 8.9 lakhs in respect of tree/crop damage.

11.2 Status of Grievances

112. One written and two verbal complaints have been registered till date against the subprojects covered under present CPTD, which have already been resolved to the satisfaction of complainant.

Sl. No.	Name of the Subproject /State	Loc. No/ Village	Name of complainant	Date of complaints/ Court case	Main Issue of complaints	Status of complaint
Written Complaint:						
1	132kV Marpara substation (Mizoram)	Substation Premises	Security Persons	18.06.20	Delay of Salary/ Payment	Resolved on 22.06.20. Contracting agency took necessary action and solved the issue.
Verbal Complaints:						
2	132kV S/c West Phaileng-Marpara (Mizoram)	AP-168	Sh. Bosisto Moni	13.12.18	Compensation for crop/other damages during construction	Resolved on 14.12.18. Compensation framework explained to complainant to his satisfaction.
3	132kV D/c West Phaileng-Marpara (Mizoram)	Pukzing Vengthar	Local Task Force	06.06.2020	Not allowed to enter the village as part Covid-19 preventive measures by the task force	Resolved on 08.06.20. Matter informed to DC, Mamit & SDO/West Phaileng and relevant permission obtained.

ANNEXURE - 1

***EVALUATION OF ALTERNATIVES ROUTE
ALIGNMENT***

EVALUATION OF ALTERNATIVES ROUTE ALIGNMENT

Three different alignments were studied with the help of Google Maps / published data such as Forest Atlas, Survey of India topographic sheets, etc. and walkover survey to arrive at the most optimum route to be considered for detailed survey. The comparative details of these three alternatives in respect of the proposed lines are as follows;

1. WEST PHAILENG - MARPARA 132 kV S/C LINE – 50.265 km

S.N	Description	Alternative-I	Alternative-II	Alternative-III
1.	Route particulars			
i.	Route Length (km)	50.265	70.7	54
ii.	Terrain			
	Hilly	100 %	100%	100%
	Plain	Nil	Nil	Nil
2.	Environmental impact			
i.	Name of District(s) through which the line passes	Mamit	Mamit	Mamit
ii.	Towns in alignment	No major township along the route. Some linear settlement along the West-Phaileng-Marpara PWD road encountered are Kawnmawi, Lallen, Chhippui, Saithah, Phulbial, Hruiduk, Phuldungsei, West Philpui, Pukzing Vengthar, etc..	No major township along the route. However some minor settlements encountered along the route are West Lungdar, Hreichuk, North Kangmun, Darlung, South Sabual, Zopui, Pukzing Vengthar, Hruiduk etc..	No major or minor settlements are encountered along the proposed route corridor. The entire route is through relatively dense forest area.
iii.	House within RoW	Nil. However, actual involvement, if any shall be ascertained after detailed survey	Nil. However, actual involvement, if any shall be ascertained after detailed survey	Nil. However, actual involvement, if any shall be ascertained after detailed survey
iv.	Forest involvement in Ha/km	Approx. 90 ha./ 33km passing through buffer zone of the Dampa Tiger Reserve.	Approx. 16.2ha./6km {10.8ha (4km) passing through buffer zone of the Dampa Tiger Reserve & 5.4ha.(2 km) is passing through TUT Riverine Reserved Forest (RRF)}	Appx. 56.7 ha./ 21 km is passing through the buffer zone of the Dampa Tiger Reserve
		<i>As per the GoM Notification dated 16.03.2011(Annexure -2) the buffer zone of Dampa Tiger Reserve comprises both private land and forest land. However, the actual status of land coming within the RoW of the proposed route will be ascertained after joint survey with Forest Deptt. for which the process is already initiated by PEDM/POWERGRID.</i>		

S.N	Description	Alternative-I	Alternative-II	Alternative-III
v.	Type of Forest (RF/PF/Mangrove/ Wildlife Area/ Elephant corridor/ Biodiversity Hotspots/Biosphere Reserve/Wetlands or any other environmentally sensitive area.	Reserved Forest of buffer zone within the Dampa Tiger Reserve	Reserved Forest within buffer zone of the Dampa Tiger Reserve and also Riverine Reserved Forest (RRF) along the TUT river	Reserve forest within the buffer zone of DTR
vi.	Density of Forests	Moderate	Moderate	Dense
vii.	Type of flora	Macaranga peltat, Dipterocarpus, Trema orientalis, Duabanga grandiflora, Tectona grandis, Derris robusta, Bamboo species like Bombax insigne, Bombax ceiba, Mangifera indica, etc.	Macaranga peltat, Dipterocarpus, Trema orientalis, Duabanga grandiflora, Tectona grandis, Michelia champaca, Derris robusta, Bamboo species like Bombax insigne, Bombax ceiba, Mangifera indica, etc.	Macaranga peltat, Dipterocarpus, Albizzia procera, Erythrina variegata, Trema orientalis, Duabanga grandiflora, Tectona grandis, Derris robusta, Bamboo species like Bombax insigne, Bombax ceiba, Mangifera indica, etc.
viii.	Type of fauna	Treron phayei, Buceros bicornis, Macaca assamensis, Macaca arctoides, Trachypithecus pileatu, Orthotomus sutorius, Hoolock hoolock, Gracula religiosa, Felis chaus, Draco maculatus, etc.	Arborophila atrogularis, Treron phayei, Buceros bicornis, Great Hornbill, Macaca assamensis, Pteropus giganteus, Trachypithecus pileatu, Hoolock hoolock, Orthotomus sutorius, Felis chaus, Draco maculatus, etc	Arborophila atrogularis, Treron phayei, Buceros bicornis, Great Hornbill, Macaca assamensis, Pteropus giganteus, Trachypithecus pileatu, Hoolock hoolock, Orthotomus sutorius, Felis chaus, Draco maculatus, etc
ix.	Endangered species, if any	Hoolock hoolock	Hoolock hoolock	Hoolock hoolock
x.	Historical/cultural monuments	Nil	Nil	Nil
3.	Compensation Cost (Estimated)			
i.	Crop (Non Forest)	Approx. Rs. 85.00 lakhs (@ 5lakh/km)	Approx. Rs. 323.50 lakhs (@ 5lakh/km)	Approx. Rs. 150.00 lakhs (@ 5lakh/km)
ii.	Forest & Wildlife	Approx. Rs. 4086.30 lakhs	Approx. Rs. 517.4 lakhs	Approx. Rs. 2574.60 lakhs
4.	Major Crossings			
i.	Highway (National/State)	Nil	Nil	Nil
ii.	Power line	Nil	Nil	Nil
iii.	Railway line	Nil	Nil	Nil
iv.	River crossing	Nil	2	2

S.N	Description	Alternative-I	Alternative-II	Alternative-III
5	Overall Remarks	Most optimum route selected for detailed survey since the line route is running almost parallel to the existing West-Phaileng-Marpara State PWD road which is an already disturbed buffer area.	Spared as the most of the locations are inaccessible due to steep terrain, dense forest and non-availability of approach road.	Not considered due to very steep terrain, dense vegetation and nearly no approach roads for movement of man and machinery.

From the above comparative analysis, it has been observed that although Alternative-I is having highest involvement of Dampa Tiger Reserve Buffer Zone compared to Alt-II and Alt-III, the line route of Alt-I is only found feasible from construction point of view. Moreover, the route length is shorter and for most part the route is aligned parallel to existing corridor of West Phaileng - Marpara road thus having minimum ecological disturbance to buffer area and also involve less tree felling as it passes mostly through Jhum cultivated areas with low density tree cover area. Furthermore, Alt.- I is easily accessible due to its proximity to existing West Phaileng - Marpara road. Although alternative routes have been rigorously explored and walkover survey carried out to access the feasibility, but Alt-II and Alt-III are found practically not feasible from construction point of view due to geographical terrain. Hence, based on overall analysis of various components, **Alternative-I** is considered as the most optimized route and recommended for detailed survey.

ANNEXURE - 2

***DETAILS OF TOWER SCHEDULE OF
PROPOSED LINES ROUTE ALIGNMENT***

POWER GRID CORPORATION OF INDIA LIMITED
NERPSIP, AIZAWL, MIZORAM
Construction of 132kV S/C (on D/C tower) West Phaileng-Marpara Transmission Line

Executing agency: M/s sterling & Wilson Pvt.Ltd

15.11.2019

Consolidated Tower Schedule

Sl. No.	AP No.	Type of Tower	Un Equal Leg Extn				Raised Chimney				Angle of Deviation	Span Length (m)	Section Length (m)	Cumulative change (m)	Reduced Level (m)	C.P.D	Level Diff	Sum of Adjacent Span (m)	Wind Span (m)	Weight Span Hot (m)			Weight Span Cold (m)			Remarks	Major Crossing details	Village Name	GPS CO-ORDINATE	
			A	B	C	D	A	B	C	D										Left	Right	Total	Left	Right	Total				WGS-84	
																				EASTING		NORTHING								
1	WP Gantry													695	0.00		116			-44.27	-44.27		-185.66	-185.66	A&B pit 4mtr benching close to new village approach road near West phaileng s/s		W. Phaling	92°28'50.08"	23°40'29.29"	
											116					6.54									2 Times SH					
2	1/0	DD+6	9	9	6	6	1.5	3	-	-	13°58'29"LT	116	116	695.5	1.5		176	88	160.27	276.70	436.97	301.66	610.69	912.34		W. Phaling	92°28'51.30"	23°40'25.69"		
											60					-8.16														
3	2/0	DB+6	6	9	7.5	6	-	-	-	-	01°24'00"LT	60	176	685.5	-0.30		414	207	-216.70	-8.75	-225.45	-550.69	-131.40	-682.09		W. Phaling	92°28'52.40"	23°40'23.88"		
											354					36.3									11KV, 33KV, 2 Nos SH					
4	3/0	DC+3	3	3	4.5	6	-	-	-	-	16°03'17"LT	354	530	725.1	0.00		449	224.5	362.75	-52.75	310.01	485.40	-153.65	331.75		W. Phaling	92°28'58.92"	23°40'14.26"		
											95					5.85														
5	4/0	DD+3	3	3	4.5	6	-	-	-	-	37°31'34"RT	95	625	730.9	0.60		231	115.5	147.75	-795.64	-647.89	248.65	-1316.40	-1067.75	X-Arm Str approved		W. Phaling	92°29'1.43"	23°40'12.1"	
											136					64.8														
6	5/0	DD+6	9	6	6	9	-	-	-	-	32°26'38"LT	136	761	792.1	0.00		275	137.5	931.64	462.31	1393.95	1452.40	745.16	2197.57	X-Arm Str approved		W. Phaling	92°29'2.24"	23°40'7.79"	
											139					-30														
7	6/0	DB+3	3	6	6	3	-	-	-	-	02°59'23"RT	139	900	764.2	-0.80		325	162.5	-323.31	537.72	214.41	-606.16	793.85	187.69	X-Arm Str approved		W. Phaling	92°29'5.59"	23°40'4.5"	
											186					-46														
8	7/0	DD+0	0	1.5	1.5	-1.5	-	-	-	-	50°25'25"RT	186	1086	722.4	0.00		480	240	-351.72	579.39	227.68	-607.85	847.16	239.31		W. Phaling	92°29'9.78"	23°39'59.82"		
											294					-70										SH				
9	8/0	DC+0	0	0	1.5	1.5	-	-	-	-	14°34'06"RT	294	1380	652.6	0.30		833	416.5	-285.39	33.99	-251.41	-553.16	-120.65	-673.81	used DC Tower instead of DB due to Sum of Adj. Span Limit crossed.		Kawnmawi	92°29'7.9"	23°39'50.45"	
											539					70										Nala				
10	9/0	DC+3	3	3	3	3	-	-	-	-	02°30'59"LT	539	1919	720.1	0.80		781	390.5	505.01	827.92	1332.94	659.65	1273.14	1932.80	used DC Tower instead of DB due to Single Span Limit crossed. (X-Arm Str Suggested)		Kawnmawi	92°28'59.91"	23°39'34.54"	
											242					-94														
11	10/0	DC+0	0	0	0	0	-	-	-	-	02°11'19"LT	242	2161	628.9	0.90		823	411.5	-585.92	249.04	-336.89	-1031.14	231.96	-799.18	used DC Tower instead of DB due to Single Span Limit crossed. (X-Arm Str Suggested)		Kawnmawi	92°28'56.52"	23°39'27.29"	
											581					13.3										Nala, Cart Track				
12	11/0	DC+0	1.5	-1.5	-1.5	1.5	3.0	-	-	2.0	06°24'38"RT	581	2742	641.3	0.00		660	330	331.96	-717.32	-385.35	349.04	-1286.59	-937.55	used DC Tower instead of DB due to Single Span Limit crossed. (X-Arm Str Suggested)		Kawnmawi	92°28'49.51"	23°39'9.56"	
											79					33														
13	12/0	DD+0	0	-1.5	0	1.5	-	-	-	-	53°40'26"LT	79	2821	675.4	1.20		225	112.5	796.32	55.61	851.92	1365.59	79.09	1444.67	X-Arm Str approved		Kawnmawi	92°28'48.3"	23°39'7.29"	
											146					1.4														
14	13/0	DD+6	6	6	9	7.5	-	-	-	-	36°59'22"RT	146	2967	670	0.35		490	245	90.39	321.49	411.89	66.91	439.42	506.33		Kawnmawi	92°28'50.72"	23°39'3.06"		
											344					-28														
15	14/0	DC+3	3	3	4.5	4.5	-	-	-	-	15°43'34"RT	344	3311	643.3	-1.00		500	250	22.51	59.63	82.13	-95.42	29.00	-66.42		Kawnmawi	92°28'48.59"	23°38'52.05"		
											156					1.58														
16	15/0	DB+3	3	3	4.5	4.5	-	-	-	-	14°14'51"RT	156	3467	645.4	-0.50		477	238.5	96.37	-162.40	-66.03	127.00	-385.34	-258.34		Chhippui	92°28'46.23"	23°38'47.37"		
											321					57.1										Vill Road				
17	16/0	DB+3	4.5	3	3	4.5	-	-	-	-	12°58'55"RT	321	3788	703.5	0.50		681	340.5	483.40	652.34	1135.74	706.34	955.57	1661.90	X-Arm Str approved		Chhippui	92°28'39.22"	23°38'39.51"	
											360					-94										11KV				
18	17/0	DD+6	7.5	9	6	6	-	-	-	-	35°23'24"LT	360	4148	606.5	0.25		658	329	-292.34	223.39	-68.95	-595.57	259.55	-336.01		Kawnmawi	92°28'28.74"	23°38'32"		
											298					-12														
19	18/0	DC+0	0	0	0	0	-	-	-	-	16°50'20"RT	298	4446	600.8	0.80		851	425.5	74.61	362.70	437.32	38.45	421.58	460.03		Kawnmawi	92°28'25.93"	23°38'22.98"		
											553					-26										Nala				
20	20/0	DC+3	3	3	3	3	-	-	-	-	10°30'09"LT	553	4999	571.2	0.40		787	393.5	190.30	-300.68	-110.38	131.42	-558.85	-427.43	used DC Tower instead of DB due to Single Span Limit crossed.		Kawnmawi	92°28'15.18"	23°38'8.14"	
											234					53.9														
21	21/0	DB+0	0	0	1.5	1.5	-	-	-	-	02°25'12"RT	234	5233	627.8	0.15		651	325.5	534.68	-14.31	520.37	792.85	-170.33	622.52	X-Arm Str approved		Kawnmawi	92°28'11.85"	23°38'1.18"	
											417					51.2														

Submitted by M/s Sterling & Wilson Pvt. Ltd



Dubey

Checked by M/s Powergrid

[Signature]

[Signature]

Approved by M/s Powergrid

[Signature]

POWER GRID CORPORATION OF INDIA LIMITED
NERPSIP, AIZAWL, MIZORAM
Construction of 132kV S/C (on D/C tower) West Phaileng-Marpara Transmission Line

Executing agency: M/s sterling & Wilson Pvt.Ltd

15.11.2019

Consolidated Tower Schedule

Sl. No.	AP No.	Type of Tower	Un Equal Leg Extn				Raised Chimney				Angle of Deviation	Span Length (m)	Section Length (m)	Cumulative change (m)	Reduced Level (m)	C.P.D	Level Diff	Sum of Adjacent Span (m)	Wind Span (m)	Weight Span Hot (m)			Weight Span Cold (m)			Remarks	Major Crossing details	Village Name	GPS CO-ORDINATE		
			A	B	C	D	A	B	C	D										Left	Right	Total	Left	Right	Total				WGS-84		
22	22/0	DC+0	0	1.5	0	0	-	-	-	-	14°52'11"RT	417	5650	680.1	1.20		566	283	431.31	228.38	659.69	587.33	365.60	952.93	used DC Tower instead of DB due to Single Span Limit crossed.		Lallen	92°28'5.19"	23°37'48.91"		
											149					-13															
23	23/0	DB+0	0	0	0	0	-	-	-	-	12°56'49"LT	149	5799	666.4	0.20		369	184.5	-79.38	152.30	72.92	-216.60	176.39	-40.21			Lallen	92°28'1.87"	23°37'45.23"		
											220					-5.1									Cart Track						
24	24/0	DC+3	6	3	4.5	4.5	-	-	-	-	05°03'58"LT	220	6019	658.4	0.30		812	406	67.70	422.76	490.47	43.61	505.04	548.65	used DC Tower instead of DB due to Single Span Limit crossed.		Lallen	92°27'58.15"	23°37'38.95"		
											592					-41															
25	25/0	DC+3	3	3	6	6	-	-	-	-	12°31'48"LT	592	6611	616.8	0.10		792	396	169.24	68.07	237.31	86.96	41.93	128.89	used DC Tower instead of DB due to Sum of Adj. Span Limit crossed.		Lallen	92°27'50.17"	23°37'21.14"		
											200					3.52															
26	26/0	DC+3	3	3	6	6	-	-	-	-	15°10'57"LT	200	6811	620.5	0.30		570	285	131.93	204.41	336.34	158.07	225.52	383.59			Lallen	92°27'48.75"	23°37'15"		
											370					-4															
27	27/0	DC+3	3	6	6	3	-	-	2.0	-	03°01'07"RT	370	7181	616	-0.25		950	475	165.59	391.52	557.11	144.48	447.12	591.61	used DC Tower instead of DB due to Sum of Adj. Span Limit crossed.		Lallen	92°27'49.99"	23°37'2.7"		
											580					-32															
28	28/0	DC+0	0	0	-1.5	-1.5	-	-	-	-	01°12'00"RT	580	7761	587.4	0.60		973	486.5	188.48	47.04	235.52	132.88	-23.48	109.40	used DC Tower instead of DB due to Sum of Adj. Span Limit crossed.		Lallen	92°27'50.55"	23°36'43.88"		
											393					32.4															
29	29/0	DB+3	3	3	6	6	-	-	-	-	11°48'51"RT	393	8154	615.2	-1.00		694	347	345.96	-8.00	337.96	416.48	-167.42	249.05			Lallen	92°27'50.79"	23°36'31.17"		
											301					26.3															
30	30/0	DD+3	3	3	6	6	-	-	-	-	45°53'16"LT	301	8455	644.5	2.00		703	351.5	309.00	637.17	946.16	468.42	938.43	1406.85	X-Arm Str approved		Lallen	92°27'48.78"	23°36'21.56"		
											402					-97															
31	31/0	DC+3	3	4.5	6	6	-	-	-	-	06°17'57"LT	402	8857	546.1	0.30		912	456	-235.17	692.35	457.18	-536.43	966.98	430.55	used DC Tower instead of DB due to Sum of Adj. Span Limit crossed. (X-Arm Str Suggested)		Lallen	92°27'56.94"	23°36'10.88"		
											510					-123															
32	32/0	DD+0	0	0	0	0	-	-	-	-	47°35'09"RT	510	9367	426.4	0.50		984	492	-182.35	152.50	-29.84	-456.98	102.74	-354.23	Sum of Adj. Span Limit crossed Refer to Engineering (approved)		Lallen	92°28'8.84"	23°35'58.5"		
											474					22.1										Nala					
33	33/0	DD+3	3	3	6	6	-	-	-	-	34°21'04"RT	474	9841	445.2	0.20		716	358	321.50	-376.04	-54.54	371.26	-722.63	-351.37			Lallen	92°28'07"	23°35'43.14"		
											242					66.3															
34	34/0	DD+3	3	3	3	6	-	-	-	-	21°00'12"LT	242	10083	512.8	1.50		799	399.5	618.04	-68.24	549.80	964.63	-266.54	698.09	used DD Tower instead of DC due to Single Span Limit crossed. (X-Arm Str Suggested)		Lallen	92°28'01.56"	23°35'37.18"		
											557					106															
35	35/0	DC+6	6	6	9	9	-	-	1.5	1.0	09°05'26"LT	557	10640	614.2	-0.50		852	426	625.24	322.93	948.17	823.54	444.07	1267.61	used DC Tower instead of DB due to Sum of Adj. Span Limit crossed. (X-Arm Str Suggested)		Lallen	92°27'55.11"	23°35'20.04"		
											295					-29															
36	36/0	DB+6	6	6	9	9	-	-	3.0	2.5	02°23'43"LT	295	10935	585.2	-1.00		652	326	-27.93	-41.92	-69.85	-149.07	-198.10	-347.17			Lallen	92°27'53.30"	23°35'10.69"		
											357					43.4															
37	37/0	DD+6	6	6	7.5	9	-	-	-	-	33°00'08"RT	357	11292	629.6	0.00		947	473.5	398.92	337.71	736.63	555.10	366.76	921.86			Saithah	92°27'51.46"	23°34'59.06"		
											590					-14										11KV, Vill Road					
38	38/0	DC+3	4.5	4.5	3	3	-	-	-	-	15°11'31"RT	590	11882	618.5	-0.20		715	357.5	252.29	421.67	673.96	223.24	630.15	853.39	X-Arm Str approved		Lallen	92°27'37.88"	23°34'44.75"		
											125					-25															
39	38A/0	DB+0	0	1.5	1.5	-1.5	-	-	-	-	00°48'20"RT	125	12007	597.1	0.20		434	217	-296.67	618.21	321.54	-505.15	908.98	403.83	X-Arm Str approved		Lallen	92°27'34.04"	23°34'42.30"		
											309					-79										Cart Track					
40	39/0	DC+3	3	3	3	3	-	-	-	-	19°21'50"RT	309	12316	515.3	0.35		713	356.5	-309.21	114.13	-195.08	-599.98	59.95	-540.03	X-Arm Str approved		Lallen	92°27'25.16"	23°34'37.13"		
											404					19.6										Nala					
41	40/0	DB+3	3	3	3	6	-	-	-	-	05°07'37"RT	404	12720	534.8	0.25		798	399	289.87	-38.63	251.24	344.05	-188.60	155.45			Saithah	92°27'11.08"	23°34'34.04"		
											394					51.2										2 Nos Cart Track					
42	41/0	DC+9	9	9	9	9	-	-	-	-	23°21'11"LT	394	13114	580	0.30		839	419.5	432.63	99.84	532.48	582.60	15.51	598.11			Saithah	92°26'57.37"	23°34'32.16"		

Submitted by
M/s Sterling Wilson Pvt.Ltd



Dubey

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POWER GRID CORPORATION OF INDIA LIMITED
NERPSIP, AIZAWL, MIZORAM
Construction of 132kV S/C (on D/C tower) West Phaileng-Marpara Transmission Line

Executing agency: M/s sterling & Wilson Pvt.Ltd

15.11.2019

Consolidated Tower Schedule

Sl. No.	AP No.	Type of Tower	Un Equal Leg Extn				Raised Chimney				Angle of Deviation	Span Length (m)	Section Length (m)	Cumulative change (m)	Reduced Level (m)	C.P.D	Level Diff	Sum of Adjacent Span (m)	Wind Span (m)	Weight Span Hot (m)			Weight Span Cold (m)			Remarks	Major Crossing details	Village Name	GPS CO-ORDINATE			
			A	B	C	D	A	B	C	D										Left	Right	Total	Left	Right	Total				WG5-84			
85	84/0	DC+0	0	0	1.5	0	-	-	-	-	11°25'29"RT	186	27090	512.7	-0.30		678	339	-694.03	136.72	-557.31	-1240.21	53.06	-1187.15	used DC Tower instead of DB due to Single Span Limit crossed. (X-Arm Str Suggested)		Phuldungsei	92°25'38.93"	23°27'49.01"			
												492				29.6																
86	85/0	DB+0	0	0	0	1.5	-	-	-	-	04°15'49"LT	492	27582	543.5	0.90		717	358.5	355.28	82.99	438.27	438.94	69.57	508.51			Phuldungsei	92°25'38.23"	23°27'33.01"			
												225				3.66																
87	86/0	DD+6	6	7.5	9	6	-	-	3.0	-	31°14'58"RT	225	27807	541	0.70		653	326.5	142.01	347.21	489.22	155.43	445.41	600.83			Phuldungsei	92°25'38.65"	23°27'25.84"			
												428				-31																
88	87/0	DC+6	6	6	9	9	-	-	-	-	13°48'08"LT	428	28235	508.6	-0.30		659	329.5	80.79	112.12	192.91	-17.41	84.33	66.93	used DC Tower instead of DB due to Single Span Limit crossed.		Phuldungsei	92°25'31.41"	23°27'13.56"			
												231				0.43																
89	88/0	DD+0	0	-1.5	1.5	1.5	-	-	1.0	1.5	45°44'53"LT	231	28466	516	0.70		587	293.5	118.88	-83.14	35.74	146.67	-270.15	-123.48			Phuldungsei	92°25'29.42"	23°27'6.24"			
												356				51.3										SH, Vill Road						
90	89/0	DC+6	4.5	3	6	6	-	-	2.5	3.0	25°27'46"RT	356	28822	562.6	2.00		531	265.5	439.14	-218.18	220.96	626.15	-350.81	275.34	X-Arm Str approved		Phuldungsei	92°25'35.75"	23°26'56.24"			
												175				29.5										11KV, 33KV						
91	90/0	DC+3	3	3	4.5	4.5	-	-	-	-	15°54'44"RT	175	28997	593.2	0.20		324	162	393.18	-56.37	336.81	525.81	-131.30	394.51			Phuldungsei	92°25'36.51"	23°26'50.67"			
												149				10.8																
92	91/0	DB+3	3	3	4.5	4.5	-	-	-	-	14°45'27"LT	149	29146	603.8	0.00		344	172	205.37	221.59	426.97	280.30	269.79	550.09			Phuldungsei	92°25'35.46"	23°26'45.73"			
												195				-13																
93	92/0	DB+0	-1.5	0	0	0	-	-	-	-	03°27'12"RT	195	29341	594.5	1.00		532	266	-26.59	189.65	163.06	-74.79	217.12	142.32			Phuldungsei	92°25'36.07"	23°26'39.61"			
												337				-3.9										SH						
94	93/0	DB+0	0	0	0	0	-	-	-	-	08°48'19"RT	337	29678	589.7	0.20		533	266.5	147.35	-73.22	74.13	119.88	-190.71	-70.83			Phuldungsei	92°25'35.91"	23°26'28.56"			
												196				18.5																
95	94/0	DD+3	3	3	6	4.5	-	-	-	-	29°21'10"LT	196	29874	605.5	0.50		644	322	269.22	-32.83	236.39	386.71	-202.09	184.63	used DD Tower instead of DC due to Single Span Limit crossed.		Phuldungsei	92°25'34.83"	23°26'22.35"			
												448				63.4																
96	96/0	DD+3	3	4.5	6	3	-	-	-	-	43°26'59"RT	448	30322	669.5	1.00		627	313.5	480.83	463.95	944.78	650.09	704.38	1354.47			Phuldungsei	92°25'40.29"	23°26'8.53"			
												179				-37																
97	97/0	DD+0	-1.5	0	1.5	0	-	-	-	-	35°01'52"LT	179	30501	635.4	0.90		506	253	-284.95	77.79	-207.15	-525.38	39.83	-485.55			Phuldungsei	92°25'37.94"	23°26'3.33"			
												327				15.5										4 Times SH						
98	98/0	DC+3	4.5	3	3	3	-	-	-	-	23°50'05"RT	327	30828	647	0.00		727	363.5	249.21	189.03	438.23	287.17	179.11	466.28			Phuldungsei	92°25'40.34"	23°25'52.89"			
												400				2.42										2 Times SH, 2 Nos 11KV						
99	99/0	DD+3	6	3	3	4.5	-	-	-	-	33°07'12"LT	400	31228	649.6	0.20		610	305	210.97	107.59	318.57	220.89	83.84	304.72			Phuldungsei	92°25'37.51"	23°25'40.13"			
												210				-0.3										2 Nos SH, 11KV						
100	100/0	DB+9	9	9	9	9	-	-	-	-	11°04'02"LT	210	31438	644.2	1.10		358	179	102.41	426.13	528.54	126.16	725.19	851.35	X-Arm Str Suggested		Phuldungsei	92°25'40.22"	23°25'33.72"			
												148				-29										33KV, SH						
101	101/0	DD+6	6	6	9	9	-	-	1.5	-	43°34'43"RT	148	31586	616.5	-0.80		462	231	-278.13	163.18	-114.95	-577.19	152.00	-425.19			Phuldungsei	92°25'43.20"	23°25'29.61"			
												314				-1.1																
102	102/0	DB+6	4.5	6	7.5	4.5	-	-	-	-	07°29'17"LT	314	31900	616.3	0.00		812	406	150.82	320.79	471.61	162.00	368.64	530.64			Phuldungsei	92°25'41.20"	23°25'19.70"			
												498				-20																
103	103/0	DD+3	3	3	6	6	-	-	-	1.5	26°35'08"LT	498	32398	599.4	-0.20		651	325.5	177.21	-105.61	71.60	129.36	-180.27	-50.90	used DD Tower instead of DC due to Single Span Limit crossed.		Phuldungsei	92°25'40.40"	23°25'03.58"			
												153				15.4																
104	104/0	DD+3	3	3	6	6	-	-	1.5	2.0	30°18'28"LT	153	32551	613.7	-1.25		392	196	258.61	20.53	279.14	333.27	-122.72	210.54			Phuldungsei	92°25'42.64"	23°24'58.99"			
												239				13																
105	104A/0	DB+6	6	6	9	7.5	-	-	3	-	12°19'01"RT	239	32790	627	2.00		381	190.5	218.47	136.28	354.75	361.72	269.42	631.14			Phuldungsei	92°25'49.40"	23°24'54.5"			
												142				-5.1																
106	105/0	DB+6	6	6	7.5	7.5	-	-	-	-	06°23'15"LT	142	32932	619.7	-0.20		461	230.5	5.72	91.38	97.10	-127.42	38.95	-88.47			Phuldungsei	92°25'52.73"	23°24'51.02"			
												319				12																
107	106/0	DD+3	3	3	6	6	-	-	-	-	44°21'56"RT	319	33251	635.1	0.30		792	396	227.62	495.75	723.37	280.05	661.17	941.22			Phuldungsei	92°26'00.96"	23°24'44.32"			
												473				-68										Vill Road						
108	107/0	DC+0	0	0	0	1.5	-	-	-	-	12°08'34"RT	473	33724	570.4	0.20		660	330	-22.75	-321.77	-344.52	-188.17	-568.91	-757.08	used DC Tower instead of DB due to Single Span Limit crossed.		W.Phulpui	92°26'02.40"	23°24'28.8"			

Submitted by M/s Sterling & Wilson Pvt.Ltd



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Checked by M/s Powergrid

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POWER GRID CORPORATION OF INDIA LIMITED
NERPSIP, AIZAWL, MIZORAM
Construction of 132kV S/C (on D/C tower) West Phaileng-Marpara Transmission Line

Executing agency: M/s Sterling & Wilson Pvt.Ltd

15.11.2019

Consolidated Tower Schedule

Sl. No.	AP No.	Type of Tower	Un Equal Leg Extn				Raised Chimney				Angle of Deviation	Span Length (m)	Section Length (m)	Cumulative change (m)	Reduced Level (m)	C.P.D	Level Diff	Sum of Adjacent Span (m)	Wind Span (m)	Weight Span Hot (m)			Weight Span Cold (m)			Remarks	Major Crossing details	Village Name	GPS CO-ORDINATE								
			A	B	C	D	A	B	C	D										Left	Right	Total	Left	Right	Total				WGS-84								
											187					42.8																					
109	107A/0	DB+3	3	3	6	4.5	-	-	2.0	-	10°18'46"LT	187	33911	609.7	-0.30		273	136.5	508.77	198.88	707.65	755.91	208.01	963.92	X-Arm Str approved		W.Phulpui	92°26'01.58"	23°24'22.88"								
											86					-7.4																					
110	108/0	DC+0	0	-1.5	0	1.5	-	-	-	-	12°54'20"RT	86	33997	606.7	1.00		569	284.5	-112.88	308.73	195.85	-122.01	363.57	241.55	used DC Tower instead of DB due to Single Span Limit crossed.		W.Phulpui	92°26'1.73"	23°24'20.17"								
											483					-18																					
111	110/0	DD+6	4.5	4.5	7.5	7.5	-	-	2.0	2.5	23°30'03"LT	483	34480	581.8	0.00		959	479.5	174.27	304.00	478.28	119.43	333.35	452.79	used DD Tower instead of DC due to Sum of Adj. Span Limit crossed.		W.Phulpui	92°25'58.54"	23°24'04.67"								
											476					-17																					
112	111/0	DC+0	-1.5	0	0	-1.5	-	-	-	-	20°58'58"RT	476	34956	571.4	1.00		735	367.5	172.00	347.88	519.87	142.65	495.32	637.96			W.Phulpui	92°26'02.25"	23°23'49.53"								
											259					-31																					
113	112/0	DD+0	0	-1.5	0	1.5	-	-	-	-	29°51'10"RT	259	35215	539.9	0.60		756	378	-88.88	-463.48	-552.35	-236.32	-936.99	-1173.31	used DD Tower instead of DC due to Sum of Adj. Span Limit crossed. (X-Arm Str Suggested)		W.Phulpui	92°26'00.98"	23°23'41.12"								
											497					195											SH,11KV,33KV										
114	113/0	DD+6	6	6	9	6	-	-	-	-	29°44'02"LT	497	35712	730.8	2.50		964	482	960.48	218.89	1179.37	1433.99	257.23	1691.22	used DD Tower instead of DC due to Sum of Adj. Span Limit crossed. (X-Arm Str Suggested)		W.Phulpui	92°25'50.24"	23°23'28.42"								
											467					3.76											2 Times SH										
115	114/0	DC+6	9	6	9	9	-	-	2.5	3.0	19°09'30"RT	467	36179	730.8	-1.25		621	310.5	248.11	-956.38	-708.27	209.77	-1620.39	-1410.62	X-Arm Str approved		W.Phulpui	92°25'48.01"	23°23'13.43"								
											154					87.7																					
116	115/0	DC+6	6	6	9	9	-	-	1.0	4.5	17°20'06"LT	154	36333	818.8	-1.00		221	110.5	1110.38	-652.83	457.54	1774.39	-1264.34	510.06	X-Arm Str approved & (D-pit depth only 2mtr after giving 4.5mtr RC		W.Phulpui	92°25'45.56"	23°23'09.11"								
											67					25.4																					
117	116/0	DB+3	3	3	6	6	-	-	-	-	06°54'05"RT	67	36400	849.2	1.00		166	83	719.83	-536.47	183.36	1331.34	-802.80	528.54	X-Arm Str approved		W.Phulpui	92°25'45.14"	23°23'06.72"								
											99					32																					
118	117/0	DB+3	3	3	6	6	-	-	1.0	3.0	03°37'11"RT	99	36499	879.4	-0.75		448	224	635.47	218.52	853.99	901.80	267.63	1169.42	X-Arm Str approved		W.Phulpui	92°25'44.04"	23°23'03.78"								
											349					-8.5																					
119	119/0	DC+6	6	6	9	9	-	-	2.5	3.0	15°31'18"LT	349	36848	866.7	-2.00		625	312.5	130.48	63.93	194.41	81.37	-4.45	76.93			W.Phulpui	92°25'40.03"	23°22'52.99"								
											276					11.3																					
120	120/0	DD+3	3	3	6	6	-	-	2.0	3.0	31°43'33"LT	276	37124	881.9	-1.00		533	266.5	212.07	86.29	298.36	280.45	-67.25	213.20			W.Phulpui	92°25'39.40"	23°22'44.07"								
											257					5.98																					
121	122/0	DD+0	0	0	0	0	-	-	-	-	43°37'33"RT	257	37381	896.4	4.50		502	251	170.71	423.55	594.25	324.25	710.93	1035.17			Phulpui	92°25'43.6"	23°22'36.67"								
											245					-41																					
122	123/0	DB+6	4.5	4.5	7.5	7.5	-	-	-	2.0	00°49'59"LT	245	37626	845.8	0.50		476	238	-178.55	60.85	-117.70	-465.93	41.63	-424.30			Phulpui	92°25'41.3"	23°22'28.95"								
											231					6.96																					
123	124/0	DB+6	4.5	4.5	7.5	7.5	-	-	1.0	1.5	01°12'11"RT	231	37857	852.1	-0.10		416	208	170.15	502.46	672.61	189.37	781.29	970.66	X-Arm Str approved		Phulpui	92°25'39.38"	23°22'21.63"								
											185					-42																					
124	125/0	DB+3	3	3	6	6	-	-	-	-	09°52'52"LT	185	38042	812.7	-0.70		445	222.5	-317.46	319.91	2.45	-596.29	412.82	-183.46			Phulpui	92°25'37.57"	23°22'15.92"								
											260					-27																					
125	126/0	DB+0	0	-1.5	1.5	1.5	-	-	-	2.0	04°49'36"LT	260	38302	789.7	0.50		467	233.5	-59.91	-153.96	-213.87	-152.82	-317.00	-469.82			Phulpui	92°25'36.63"	23°22'07.47"								
											207					29.4																					
126	127/0	DB+6	6	6	9	7.5	-	-	-	-	02°30'48"RT	207	38509	813.1	0.50		416	208	360.96	-73.25	287.71	524.00	-163.13	360.87			Phulpui	92°25'36.5"	23°22'00.83"								
											209					20.5																					
127	128/0	DC+3	3	3	6	4.5	-	-	-	-	16°51'32"LT	209	38718	835.8	-0.30		380	190	282.25	-295.43	-13.18	372.13	-547.06	-174.93			Phulpui	92°25'36.24"	23°21'53.99"								
											171					35.9																					
128	129/0	DB+6	6	6	9	9	-	-	-	-	00°28'58"LT	171	38889	869	0.00		486	243	466.43	135.67	602.11	718.06	127.50	845.56	X-Arm Str approved		Phulpui	92°25'37.65"	23°21'48.56"								
											315					3.79																					
129	130/0	DC+6	4.5	6	7.5	7.5	-	-	2.5	-	17°35'50"RT	315	39204	872.5	-0.30		565	282.5	179.33	331.21	510.54	187.50	449.95	637.45			Phulpui	92°25'40.29"	23°21'38.66"								
											250					-28																					
130	131/0	DB+6	6	6	9	7.5	-	-	-	-	07°46'46"RT	250	39454	844.5	0.20		516	258	-81.21	302.33	221.11	-199.95	409.55	209.61			Phulpui	92°25'39.64"	23°21'30.61"								
											266					-25																					
131	132/0	DB+0	-1.5	-1.5	1.5	0	-	-	-	-	13°25'03"LT	266	39720	825.7	0.20		572	286	-36.33	226.45	190.12	-143.55	263.28	119.72			Pukzing	92°25'37.67"	23°21'22.02"								

Submitted by 
M/s Sterling & Wilson Pvt. Ltd

POWER GRID CORPORATION OF INDIA LIMITED

NERPSIP, AIZAWL, MIZORAM

Construction of 132kV S/C (on D/C tower) West Phaileng-Marpara Transmission Line

Executing agency: M/s Sterling & Wilson Pvt.Ltd

15.11.2019

Consolidated Tower Schedule

Sl. No.	AP No.	Type of Tower	Un Equal Leg Extn				Raised Chimney				Angle of Deviation	Span Length (m)	Section Length (m)	Cumulative change (m)	Reduced Level (m)	C.P.D	Level Diff	Sum of Adjacent Span (m)	Wind Span (m)	Weight Span Hot (m)			Weight Span Cold (m)			Remarks	Major Crossing details	Village Name	GPS CO-ORDINATE	
			A	B	C	D	A	B	C	D										Left	Right	Total	Left	Right	Total				WGS-84	
132	132A/0	DC+3	3	3	4.5	3	-	-	-	-	16°06'17"LT	306	40026	810.8	0.70	-12	482	241	79.55	-78.35	1.20	42.72	-180.33	-137.60	2 Times 33KV, 2 Times 11KV, Vill Road					
133	133/0	DB+3	3	3	6	3	-	-	-	-	00°40'07"RT	176	40202	826.9	0.60	16.1	350	175	254.35	85.02	339.37	356.33	87.17	443.50	2 Times SH	Pukzing	92°25'37.93"	23°21'12.17"		
134	134/0	DB+9	6	6	9	9	-	-	2.0	-	00°09'37"LT	174	40376	820.9	0.50	0.19	293	146.5	88.98	466.65	555.63	86.83	764.32	851.15	X-Arm Str approved	Pukzing	92°25'39.73"	23°21'06.76"		
135	135/0	DB+6	6	6	9	6	-	-	1.5	1.0	07°43'14"RT	119	40495	796.4	-0.30	-27	523	261.5	-347.65	410.07	62.41	-645.32	541.83	-103.49	X-Arm Str Suggested	Pukzing	92°25'41.57"	23°21'1.35"		
136	136/0	DB+6	6	6	9	9	-	-	3.0	-	12°23'42"RT	404	40899	750.1	-0.30	-46	672	336	-6.07	273.36	267.30	-137.83	358.30	220.47	SH, 11KV	Pukzing	92°25'42.88"	23°20'57.59"		
137	137/0	DB+6	6	6	9	7.5	-	-	-	-	01°28'18"LT	268	41167	729.7	-0.15	-21	488	244	-5.36	83.20	77.84	-90.30	89.13	-1.18	11KV	Pukzing	92°25'45.21"	23°20'44.66"		
138	138/0	DB+6	6	7.5	9	7.5	-	-	2.0	-	07°25'56"LT	220	41387	732.1	-1.00	3.25	584	292	136.80	403.26	540.06	130.87	530.36	661.23	SH	Pukzing	92°25'44.82"	23°20'35.89"		
139	139/0	DD+0	0	1.5	1.5	0	-	-	-	-	36°50'37"LT	364	41751	694.5	-0.20	-44	659	329.5	-39.26	-49.39	-88.66	-166.36	-190.15	-356.51	2 Nos SH, 11KV	Pukzing	92°25'46.51"	23°20'17.14"		
140	140/0	DD+3	6	6	3	3	-	-	-	-	47°39'03"RT	295	42046	724.3	0.60	32	509	254.5	344.39	360.70	705.09	485.15	518.59	1003.74	SH, 3 Times Vill Road	Pukzing	92°25'53.62"	23°20'10.25"		
141	141/0	DC+0	0	0	0	0	-	-	-	-	15°14'55"LT	214	42260	697.4	0.70	-30	322	161	-146.70	306.28	159.57	-304.59	548.33	243.74	Vill Road	Pukzing	92°25'53.26"	23°20'3.23"		
142	142/0	DD+3	3	4.5	6	4.5	-	-	2.0	-	32°26'06"LT	108	42368	677.9	-0.80	-15	489	244.5	-198.28	597.48	399.20	-440.33	853.64	413.31	Vill Road	Pukzing	92°25'54.11"	23°19'59.84"		
143	143/0	DC+3	3	4.5	6	6	-	-	2.0	-	18°39'40"LT	381	42749	592.5	-0.70	-85	784	392	-216.48	762.84	546.36	-472.64	1093.32	620.68	X-Arm Str approved	Pukzing	92°26'3.5"	23°19'51.15"		
144	144/0	DD+0	1.5	1.5	0	0	-	-	-	-	31°20'16"LT	403	43152	472.5	1.00	-125	706	353	-359.84	-105.27	-465.11	-690.32	-263.96	-954.28		Pukzing	92°26'16.1"	23°19'45.13"		
145	145/0	DB+0	0	0	1.5	0	-	-	-	-	11°57'47"RT	303	43455	515.2	0.80	42.9	604	302	408.27	-235.38	172.89	566.96	-454.14	112.82	Nala	Pukzing	92°26'26.7"	23°19'45.88"		
146	146/0	DB+6	6	7.5	9	6	-	-	-	-	13°18'09"RT	301	43756	572	-0.50	64	627	313.5	536.38	499.75	1036.13	755.14	674.84	1429.98	X-Arm Str approved	Pukzing	92°26'37.29"	23°19'44.7"		
147	147/0	DD+0	-1.5	0	1.5	-1.5	-	-	-	-	52°6'18"RT	326	44082	519.5	1.60	-61	421	210.5	-173.75	477.51	303.75	-348.84	812.19	463.35		Pukzing	92°26'48.02"	23°19'40.89"		
148	147A/0	DB+0	-1.5	1.5	1.5	-1.5	-	-	-	-	03°11'11"LT	95	44177	496	0.60	-23	256	128	-382.51	538.27	155.77	-717.19	839.21	122.02	X-Arm Str approved	Pukzing	92°26'48.92"	23°19'37.96"		
149	148/0	DC+6	4.5	7.5	7.5	6	-	-	2.0	-	04°23'49"RT	161	44338	449.1	0.30	-41	732	366	-377.27	506.77	129.49	-678.21	646.89	-31.32	used DC Tower instead of DB due to Single Span Limit crossed. (X-Arm Str Suggested)	Pukzingventh	92°26'50.97"	23°19'32.93"		
150	149/0	DC+6	6	6	9	9	-	-	-	-	01°59'22"RT	571	44909	379.4	0.30	-70	875	437.5	64.23	290.67	354.91	-75.89	360.95	285.06	used DC Tower instead of DB due to Sum of Adj. Span Limit crossed.	Pukzingventh	92°26'56.63"	23°19'15.27"		
151	150/0	DD+6	6	6	9	9	-	-	-	-	41°8'1"RT	304	45213	357.1	1.20	-23	545	272.5	13.33	-109.37	-96.04	-56.95	-218.06	-275.01	excavation under progress	Pukzingventh	92°26'59.16"	23°19'05.65"		
152	151/0	DB+3	3	3	6	6	-	-	-	-	5°49'29"RT	241	45454	389.1	-0.30	30.5	569	284.5	350.37	267.97	618.34	459.06	328.39	787.45	excavation under progress	Pukzingventh	92°26'55.33"	23°18'58.63"		
153	152/0	DC+0	0	0	1.5	0	-	-	-	-	27°59'47"LT	328	45782	373.6	0.00	-19	610	305	60.03	359.51	419.54	-0.39	485.70	485.31	Foundation completed	Pukzingventh	92°26'49.09"	23°18'49.70"		
154	153/0	DB+6	4.5	4.5	7.5	7.5	-	-	-	-	6°52'27"RT	282	46064	334.2	0.58	-34	535	267.5	-77.51	95.88	18.37	-203.70	120.53	-83.17	Foundation under progress	Pukzingventh	92°26'47.97"	23°18'40.66"		

Submitted by M/s Sterling & Wilson Pvt.Ltd

Dubey

Checked by M/s Powergrid

Approved by M/s Powergrid

Approved by M/s Powergrid

ANNEXURE – 3

DETAILS OF PUBLIC CONSULTATION

GOVERNMENT OF MIZORAM
OFFICE OF THE ENGINEER-IN-CHIEF : POWER & ELECTRICITY DEPARTMENT
MIZORAM : AIZAWL

MEETING NOTICE

Dated Aizawl, the 4th Sept.,2014

No.WB-3/2014-EC(PC)/SPIU/33 : In the interest of public service there will be Public Consultation meeting for new Transmission Lines proposed under Tranche-I of the NER Power System Improvement Project pertaining to Mizoram as below:

SI No.	Date	Location of Meeting	EE to conduct the Meeting.
1	9.9.2014	S.Bungtlang	EE, Saiha.
2	10.9.2014	Chawngte	EE, Maintenance Division-II, Lunglei
3	11.9.2014	Lungsen	EE, Maintenance Division-II, Lunglei
4	13.9.2014	W.Phaileng	EE, Mamit.

Concerned Executive Engineer will make public announcement and make all preparations for the meeting. The co-ordinator from POWERGRID is Mr. H.Sailo, Manager, Phone No-9436352280. All the management and activities will be carried out by POWERGRID. However, convening of the public along with site selection will be done by the Departemnt.

All the expenditure involved shall be borne by the PGCIL.

sd/-
(LIANGHINGLOVA PACHUAU)
Engineer-in-Chief
Power & Electricity Department
Dated Aizawl, the 4th Sept.,2014

Memo No.WB-3/2014-EC(PC)/SPIU/33

Copy to :

- ✓ 1) General Maneger, NERPSIP, Power Grid Corporation of India Ltd. Monal Tower, 6th Floor, (Opposite to Assam Secretariat), G.S. Road, P.O-Dispur, Guwahati-781006.
- 2) The Chief Engineer, System Operation/Distribution for favour of information. He is requested to detail Engineers to represent the Departemnt for each meeting.
- 3) The Superintending Engineer, Lunglei Power Circle/Project Circle-I for information.
- 4) All concerned Executive Engineer for information and necessary action.
- 5) Mr. H.Sailo, Manager, NERPSIP, POWERGRID, Aizawl for information and necessary action.

Mau
Engineer-in-Chief
Power & Electricity Department

OFFICE OF THE ENGINEER-IN-CHIEF
POWER & ELECTRICITY DEPARTMENT : GOVT. OF MIZORAM
Mizoram :: Aizawl : 796 007

PROJECT SUMMARY

North Eastern States a kan power ruangam (scenario) tihchangtlun nan India Sawrkar (Government of India) chuan World Bank tanpuinain North Eastern Region Power System Improvement Project (NERPSIP) a din a. Hetah hian Mizoram pawh a tel ve a. NERPSIP hmathlir chu Power Sub-station thar siam, Transmission line thar leh Distribution line thar din te mai bakah Sub-station leh Transmission line hlui deuh tawhte thawm that leh tihchangtlun a ni. Mizoram state tana NERPSIP-in a tih tum te chu :-

- Load sang zawk la thei tura Mizoram state transmission leh distribution network-te tihchangtlun leh Transmission & Distribution (T&D) loss tih hniam.
- Power mamawh dan chiang taka hre tur leh power supply tha pe thei tura hmalak.

Mizoram chhungah chuan Power & Electricity Department, Govt. of Mizoram hi a neitu an nia. A hnatak thawk tur chuan Govt. of India atangin Power Grid Corporation of India Ltd.(PGCIL) he project hi kengkawhtur a ruat an ni a. NERPSIP hnuaiah hian, W.Phaileng - Marpara 132 kV line siam hi telh a ni a. He line siam avang hian a ngheta ram lak sak a tul hran lova. A siam laia ram emaw thlai tih chhiat palh te chu a hu tawk zel a rulh (compensate) an ni thung ang. Chumi ti thei tur chuan he project ruahman laiin ruahmanna siam fel vek a ni.

Mizoram state-a North Eastern Power System Improvement Project (NERPSIP) kan hman hian ram leh hnam ngelnghehna leh intodelh kawnga hmasawna a thlen ngei kan beisei a ni.

Er. Liannghinglova Pachuau
Engineer-in-Chief, P & E Deptt.
Mizoram, Aizawl

OFFICE OF THE ENGINEER -IN-CHIEF
POWER AND ELECTRICITY DEPARTMENT: GOVT. OF MIZORAM
MIZORAM : AIZAWL : 796007

**Minutes / proceedings of Public consultation held on 15th September,
2014 at West Phaileng, Mammit District, Mizoram under North
Eastern Region Power System Improvement Project (NERPSIP) in
Mizoram**

Subject - Construction of 132 kV S/C WEST PHAILENG – MARPARA Transmission Line and associated 33 KV distribution line (100 M overhead cable connection from existing West Phaileng 33 KV S/s to proposed 132 KV S/s at West Phaileng) under the scope of NERPSIP in Mammit District, Mizoram.

Annexure – Signatures of members of the Village Council / general public and officials of Power and Electricity Department, Govt. of Mizoram and Power Grid Corporation of India Limited (PGCIL) who attended the meeting (*Photographs of the public meeting is also enclosed*)

Venue of the Meeting: - Village Community Hall, West Phaileng

The SDO (Electrical.) West Phaileng, welcomed all the public and officials who had spare their valuable time to attend the hearing. The SDO (Elect.) gave a brief description about the project and he also informed that the project will be funded by the World Bank and the Central Government of India. He urged the public to co-operate and inform that the officials of PGCIL will brief them about the project.

Accordingly, Shri H. Sailo, Manager, POWERGRID had given a brief account about the North Eastern Region Power System Improvement Project (NERPSIP) and explained the detail scope to be covered under the Project in Mizoram. He informed that a 132 KV S/C (on D/C Tower) Transmission line connecting WEST PHAILENG to MARPARA is proposed to be constructed under the scheme for strengthening the existing transmission network. He also informed that from 132 KV WEST PHAILENG Sub-station (proposed), a 33 kV distribution line (i.e. 100 M overhead cable connection) will also be constructed connecting to 33 KV existing WEST PHAILENG S/s for strengthening of the distribution network and end user connectivity in the West Phaileng area. He informed that the common public will be directly benefited by the Project. He also informed 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 as per State Government Assessment for which

adequate provision has been kept in the project cost. He sought the co-operation of all the public to make this project successful.

Since most of the public attending the meeting belong to Mizo Community, therefore Shri H. Sailo has explained the details of the above speech in Mizo language.

The public enquired various issues regarding compensation to be paid, final route of the line vis-à-vis affected persons, need for further consultation with the villagers etc.

In this regard, the SDO (Electrical) West Phaileng and POWERGRID representative explained that at present only a tentative route is identified for the line. However, a detail survey/check survey will be carried out before construction and accordingly each and every affected landowner/person will be identified for assessment of compensation. The compensation will be paid at par with Govt. rate after joint survey of the damages. It was also explained that every care will be taken to avoid any human habitation during final survey of the line and in case if it cannot be avoided the damages caused to the public will be adequately compensated.

In conclusion, the public has unanimously agreed that the construction of the transmission line and sub-stations and associated distribution lines is for the sole benefit of the State and the public, provided 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 SDO (Electrical) West Phaileng and also assured that all stake holder will be taken into confident during the construction.

Sd/-
SDO (Elect) West Phaileng

OFFICE OF THE ENGINEER –IN-CHIEF
POWER AND ELECTRICITY DEPARTMENT: GOVT. OF MIZORAM
MIZORAM : AIZAWL : 796007

Minutes / proceedings of Public consultation held on 15th September, 2014 at West Phaileng, Mamit District, Mizoram under North Eastern Region Power System Improvement Project (NERPSIP) in Mizoram

Subject - Construction of 132 kV S/C WEST PHAILENG – MARPARA Transmission Line and associated 33 KV distribution line (100 M overhead cable connection from existing West Phaileng 33 KV S/s to proposed 132 KV S/s at West Phaileng) under the scope of NERPSIP in Mammit District, Mizoram.

Annexure – Signatures of members of the Village Council / general public and officials of Power and Electricity Department, Govt. of Mizoram and Power Grid Corporation of India Limited (PGCIL) who attended the meeting (*Photographs of the public meeting is also enclosed*)

Venue of the Meeting: - Village Community Hall, West Phaileng

Pu Zothansanga, SDO, Power & Electricity Department, West Phaileng chuan mipui leh hotu liante, an hun hlu tak senga an rawn kal thei chu lawmawm a tih thu sawiin lo kalkhawm zawng zawngte alo lawm a. SDO chuan he project chungchang tawifel taka sawiin, a senso tur zawng zawngte chu World Bank leh India Sawrkar laipui tum tur anih thu te a sawi lang a. Mipui lo kalkhawm te chu sawrkar hmalakna thawhpuaia sawmin PGCIL hotuten he project chungchang hi kimchang zawka an rawn sawi tur thu mipuite a han hrilh a.

Pu H. Sailo, Manager, POWERGRID chuan North Eastern Region Power System Improvement Project (NERPSIP) chungchang te sawifiahin, Mizoram chhunga he project kalphung leh nihdan te sawizauna a han nei a. He 132kV S/C(on D/C Tower) West Phaileng –Marpara Transmission line hi electric line lo awm tawh sate tihchangtlun nana ruahman anih thu te a han sawi chho zel a. Tin, 132 kV Sub-Station, West Phaileng siam thar tur atangin meter 100 vel a thui 33kV line hmangin Sub-Station lo awmsa chu thlunzawm ani anga, power semdarhna tihchangtlun nan leh West Phaileng leh a chhehvela mi te tan chhenfakawm tak anih tur thu pawh a han sawi lang nghal a. He line siam nan hian mihring chenna te tichhe lo thei ang bera kalpui anih tur thu leh, lohtheihloha ram lak leh tihchhiat te a awm anih erawh chuan, zawngnadawmna felfai tak, dan hnuaiia tihfel turin he project ah hian ruahmanna siam

ani tih te mipui a han hrilh hria a, mipuite chu he project hlawhtlinna tura theihtawp chhuahpui tur leh tawiawm turin a han sawm nghal bawk ani.

Mipui lo kalkhawmte hi Mizo vek an nih avangin Pu H.Sailo hian Mizo tawngin hrilhfiahna leh thusawina hun hi a hmang ani.

Mipui lo kalkhawmte chuan zangnadawmna leh line kawng kal dan tur te an zawt chik hle a, in rawnkhawmna te neih leh zel nise an ti a.

Wet Phaileng SDO chuan he elctric kawng tur hi ruahman chhin phawt anih thu leh nakinah survey kimchang neih anih leh hnu ah he line ina mimal ram a hrut dan tur leh zangnadawmna te tihfel ala ni dawn ani tih mipuite a han hrilh ve leh a. A theih chin chin ah mimal ram te tichhe lo zawnga kalpui anih tur thu leh, lohtheihloh ah erawh chuan sawrkar dan hnuai ah fel taka zangnadawmna pek an nih tur thu te a hrilh bawk a.

Ngun taka sawiho anih hnu ah mipui lo kalkhawmte chuan he line leh sub-station siam tur te hi mipuite leh sawrkar hamthatna tur leh hmasawmna tur ani tih lungrual takin an pawma. Amaherawhchu, thlai, thing leh mau leh bungrua te tichhe lo thei ber tura kalpui nise an dub ani.

Tichuan, West Phaileng SDO in lawmthusawina neiin, mipuite chu a tul ang zel a rawn an ni ang tih sawiin, he inrawnkhawmna hun hi a titawp ta ani.

Sd/-

SDO,P&E Depptt., West Phaileng

Photographs of Public Consultation held on 15th Sept'2014 at West Phaileng







PUBLIC CONSULATION MEETING

1/5

Venue: W. Phaikep, MAMIT DISTRICT, MIZORAM.

Date: 15/09/14

ATTENDANCE

Sl. No.	Name	Signature
1.	J. LALMAWZUALH	
2.	LALROSANGA	
3.	LALRINPMI	
4.	BWATSANA	
5.	LALSAMLIANA	
6.	LALLIANA	
7.	ROAMINGLIANA	
8.	ROCHUNG NUNGA	
9.	LAMHLEIM	
10.	VANLALVENA	
11.	C. ZAI THANGA	
12.	REMECHAMA	
13.	LALHMINGTHANGA	
14.	REMRUATKIMA	
15.	LALZOLIANA	
16.	MAURETHIANA	
17.	H. LALVUMAWIA	
18.	P.C. LALLIANZUALA	
19.	B. Zadingliang	
20.	LALBRAHMAN	

PUBLIC CONSULATION MEETING

Venue: W. Phaiter

Date: 15/09/14

2/5

ATTENDANCE

Sl. No.	Name	Signature
21	Lalrouasang,	Lalrouasang
22	Lalramchhuan,	Lalramchhuan
23	Rini	Rini
24	Uaulalehels,	Uaulalehels
25	Lalromang,	Lalromang
26	Rachhung,	Rachhung
27	C. Lalchhuanmawis	C. Lalchhuanmawis
28	Zothangpasi,	Zothangpasi
29	Lalchhuanpasi	Lalchhuanpasi
30	Lalthanmawis	Lalthanmawis
31	Lalchhuanmawis	Lalchhuanmawis
32	Uaulahrials	Uaulahrials
33	Lalchhuanpasi	Lalchhuanpasi
34	K.C. Lalthanpasi	K.C. Lalthanpasi
35	Zovanthang	Zovanthang
36	C. Lalthanpasi	C. Lalthanpasi
37	C. Zovanthang	C. Zovanthang
38	B. Lalthanpasi	B. Lalthanpasi
39	Lalchhuanpasi	Lalchhuanpasi
40	J. Mawis	J. Mawis

PUBLIC CONSULTATION MEETING

(3/5)

Venue: W. Phasiley

Date: 15/09/14

ATTENDANCE

Sl. No.	Name	Signature
41	LALAWANPUIA	Ampun
42	NGUR TITANBA	Ngur Tit
43	LALNUNMADIA	L. Nuni
44	KAKIACALOVA	Zakalova
45	LALROKHAUNA	L. Rokhauna
46	THARENGI	Tharengi
47	B. RAZUARA	B. Rza
48	LALRAANHEKUA	L. Rhauna
49	NGUR ENKAZAUA	Ngurza
50	Rami	Rami
51	ZORHAKAAMNIA	Zorhakamnia
52	LALNUNMADIA	L. Nuni
53	ZIRA	Zina
54	ZORANNGHABA	Zoranngaba
55	JOSEPH RENDALRUARA	Rendalruara
56	ROTHANAPUIA	Rthania
57	LALHAINGITHANA SAULO	L. Haingithana
58	LALRANRUANA	L. Rhanruana
59	LALRAATIAANA	L. Rhanruana
60	AUWMPUII	Ampun

GOVERNMENT OF MIZORAM
OFFICE OF THE SUB-DIVISIONAL OFFICER
POWER AND ELECTRICITY DEPARTMENT,
WEST PHAILENG.

To,

Dated: 14.05.2017.

The Village Council President (VCP)
Phuldungsei,
Mamit District, Mizoram

Sub: Notice for public consultation meeting with regard to construction of 132 KV West Phaileng-Marpara T/L under North Eastern Region Power System Improvement Project (NERPSIP) in Mizoram

Dear Sir,

This is for your kind information that, Deptt of Power & Electricity, Govt. of Mizoram has undertaken a transmission project under NERPSIP (A project funded by World Bank and the Govt. of India) namely **132 KV West Phaileng to Marpara T/L** in Mamit district of Mizoram for improvement of power scenario in the state. **Power Grid Corporation of India Limited** is the executing agency of the project on behalf of P & E Dept. Mizoram.

In this regard, it is intended to arrange a public consultation meeting at Phuldungsei to discuss the various environmental/social/compensation related issues of the project and to apprise the public about the project details and to ensure maximum public participation for success of the project.

The meeting is proposed to be arranged as below:

Venue: Community Hall, Phuldungsei
Date: 18/05/2017

SDO, West Phaileng/POWERGRID representatives will deliberate the key issues in the meeting. You are, hereby, requested to kindly ensure the participation of villagers of Phuldungsei village in the said meeting.

Yours faithfully,


(B Lalrinthanga)
Sub-Divisional Officer, P & E
W. Phaileng Power Sub-Division
W. Phaileng

NO.F-11014/1/14-WPSD/20
GOVERNMENT OF MIZORAM
OFFICE OF THE SUB DIVISIONAL OFFICER : POWER SUB DIVISION
W.PHAILENG

Dated W.Phaileng, the 14th.May. 2017

To,

The Village Council President(VCP)
Phuldungsei
Mamit District, Mizoram

Subj: North Eastern Power system Improvement Project hnuiaia
W. Phaileng – Marpara 132kV line chungchanga inhmuh
khawmna.

Ka Pu,

Power & Electricity Department hmalaknain NERPSIP project
In World Bank sum hmanga 132kV line Mamit District chungga W. Phaileng
atanga Marpara line siam that dan tur chungchanga in hmukkhawmna tur Power
Grid Corporation in a koh hi ngaih pawimawh ngei nise.

Hemi in a kaihnawih theih tur thil chi hrang hrang
Khawthlang thil leh zangnadawmna chungchangte leh he project in a thawhtur te
leh a kaihnawih thil sawihona neih turah hian mipui te a tam thei ang bera kal
tura lo in hriattir theih nise.

Hetiang hian inhmuh khawmna hun leh hmun siam a ni.

A hmun : Community Hall, Phuldungsei

A hun : Dt 18.5.2017

I rintlak


(B LALRINTHANGA)
Sub-Divisional Officer, P & E
W. Phaileng Power Sub-Division
W. Phaileng

GOVT. OF MIZORAM
OFFICE OF THE SUB-DIVISIONAL OFFICER
W. PHAILENG POWER SUB-DIVISION
W. PHAILENG, MIZORAM.

Minutes/proceedings of Public consultation held on 18th May 2017 at Phuldungsei, Mamit District, Mizoram under North Eastern Region Power System Improvement Project (NERPSIP) in Mizoram.

Sub: Construction of 132 kV S/C West Phaileng – Marpara Transmission line under the scope of NERPSIP in Mamit District, Mizoram.


Venue of Meeting: Village Community Hall, Phuldungsei.

Shri B. Lalrinthanga, SDO, (Electrical), W. Phaileng, welcomed all the public and officials who had spare their valuable time to attend the meeting. The SDO (Elect.) gave a brief description about the project and he also informed that the project will be funded by World Bank and The Government of India. He requested and encouraged the public to co-operate and inform that the officials of PGCIL will brief the about the project.

Accordingly, Shri P. B. Sharma, Manager (NERPSIP), POWERGRID, Mizoram had given a brief account about the North Eastern Region Power System Improvement Project (NERPSIP) and explained the detail scope to be covered under the project in Mizoram. Being a non-mizo he can't speak in local language and hence one interpreter was arranged and translated to the public during his speech. He informed that a 132kV S/C (on D/C Tower) Transmission line will be constructed under the scheme connecting W. Phaileng to Marpara for strengthening the existing transmission network. He also informed that care will be taken to avoid human habitat while plotting line route by carrying out a final survey with the agency/company to be executed the construction. However, any unavoidable cases arise during the course, sufficient compensation will be paid as per the assessment of the Government of Mizoram for which provision has been kept in the project cost. He also convinced the public that after completion of the project all the structures such as S/S, T/L, etc. will be handed over to the Govt. of Mizoram. So, whatever in the scope of the project will be the property of Mizoram. Finally, he sought the co-operation and hearty helping hand of all the public to make the project successful.

The public enquired various issues. One individual raised a question 'why a 132kV S/S can't be constructed at Phuldungsei'. In response he was told that the entire scope of the project was based on the DPR of Govt. of Mizoram and PGCIL could not do anything about the scope. Further, he asked that during the course of construction can the local NGOs such as Village Council, YMA do the manual labour to earn something for their fund. In response, it was told that now-a-days most of the excavation work is carried out mechanically; however let us see the matter in course of time. All the public seems convinced and satisfied.

The hearing concluded with the vote of thanks from the SDO (Electrical) W. Phaileng and also assured that all the stake holder will be taken into confident during the construction.


(B. LALRINTHANGA)
Sub-Divisional Officer
Power Sub-Division
W. Phaileng.

GOVERNMENT OF MIZOAM
OFFICE OF THE SUB-DIVISIONAL OFFICER
W. PHAILENG POWER SUB-DIVISION
W. PHAILENG.

Minutes/Proceedings of Public consultation held on 18th. May.2017 at Phuldungsei, Mamit District, Mizoram under North Eastern Region Power System Improvement Project (NERPSIP) in Mizoram.

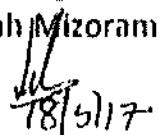
Subject: Construction of 132kV S/C WEST PHAILENG – MARPARA Transmission line under the scope of NERPSIP in Mamit District, Mizoram.

Venue of the Meeting:- Village Community Hall, Phuldungsei.

Pu B. Lalrinthanga, SDO P&E Department, W. Phaileng chuan he inhmuh khawmna hi a kalhruaia, khawtlang hruaitute leh mipui te, an hun hlu tak seng a an rawn kal thei chu lawmawm a tih thu sawlin, local khawm zawng zawng te a lo lawm a. Project chungchang leh kalhmangte tawlfel takin a hrilhfiahin, a senso pawh Central India leh World Bank sum a siam a nih tur thute a sawi lang a. Mipui local khawm te chu sorkar hmalakna lo tawlawm a thawhpui thiam turin a sawm a. Tichuan, he project chungchang kim chang zawka sawi turin Pu P.B. Sharma, Manager, PGCIL a sawm zui nghal a ni. Pu P.B Sharmahian sap tawngin a sawi a, tawnglettu hmangln mizotawnga lehlin a ni.


Pu P.B. Sharma, Manager, PGCIL chuan North Eastern Power System Improvement Project (NERPSIP) chungchang te sawifiahin, Mizoram chhunga he Project kalpul dan te a sawi bawk a. He 132kV S/C W. Phaileng to Marpara Transmission line hi helal tlangdunga power system tih changtlun nana ruahman a nih dan te a sawi zau chho zel a. Tin, he project hi Central Sorkar leh World Bank sum atanga ruahman a nih dante a sawi bawk a. He line siam nan hian mlhring chenna In leh huan leh ram thlaite ti chhelo thei ang bera kalpui leh ruahman a nih tur thu leh, loh theih loh a ram lak leh tihchhiatte a awm a nih chuan zangnadawmna felfai tak dan hnuai tihfel a nih tur thu he project hian a ruahman tel dan te kalkhawmte a hrilhfiah a. Kal khawmte chu he Project hlawhtlinna atana theihtawpa thawhpui tur leh tawlawm turin a sawm a ni.

Hemi zawhah hian zawhna leh chhanna line kal dan leh zangnadawmna chungchang atan hun hman a nlin he line kal dan tur leh thawh dan tur atana zawhna awm an gang te In hrilhfiah a ni. Engvangin nge 132kV S/S hi Phuldungsei ah a awm ve loh th zawhna a awm a, DPR ah Mizoram sorkarin a


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Sub-Divisional Officer
W Phaileng Power Sub-Division
W Phaileng

telh loh avangin PGCIL chuan a telh theih loh thua chhan a ni a. Tin, ahmun laih leh thil dang hi a bulhnai ami NGO te - VC, YMA leh adangte hian thawh theih a nih leh nih loh zawhna a awm bawk a. Tunlain khawl hman thin ni a, engpawh nise, athawh hunah contractor te nenla sawi ho a ni ang tia chhan a ni.

Tichuan, SDO(P&E), W. Phaileng in lawmthu sawiin, mipui te chu a tul ang zela hmalak pui tura sawmin he inhmukkhawmna hun hi a titawp ta a ni.


(B LALRINTHANGA)
Sub Divisional Officer
Power Sub Division
W. Phaileng

PUBLIC CONSULTATION MEETING

Venue: Phuldungsei, Mamit District, Mizoram.

Date: 18-05-2017.

Sl. No.	Name	Signature
1	J LALRIMAWII	[Signature]
2	Latrothuanpi	[Signature]
3	Lananghanga	[Signature]
4	R. Lalawla	[Signature]
5	J. Lallianomies	[Signature]
6	Lalohua	[Signature]
7	[Signature]	[Signature]
8	Lalmunthais	[Signature]
9	[Signature]	[Signature]
10	S. Lalmunthais	[Signature]
11	Lalmunthais	[Signature]
12	Van Lalawla	[Signature]
13	C. Lalmunthais	[Signature]
14	Van Lalawla	[Signature]
15	V. Lalawla	[Signature]
16	Zailanthais	[Signature]
17	Lalawla Saib	[Signature]
18	R. Lalawla	[Signature]
19	Zoramhais	[Signature]
20	Sapawla	[Signature]
21	Sapawla	[Signature]
22	J. Lalawla	[Signature]
23	Van Lalawla	[Signature]
24	Lalmunthais	[Signature]
25	Van Lalawla	[Signature]
26	Lalmunthais	[Signature]
27	Lalmunthais	[Signature]
28	Van Lalawla	[Signature]
29	Lalmunthais	[Signature]
30	H. Lalawla	[Signature]

[Signature]
18/05/17

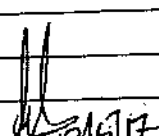
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18/05/17
Sub-Divisional Officer
W. Phaileng Power Sub-Division
W. Phaileng

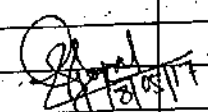
PUBLIC CONSULTATION MEETING

Venue: Phuldungsei, Mamit District, Mizoram.

Date: 18-05-2017.

Sl. No.	Name	Signature
1	H. Lalthianghlim	Lalthianghlim
2	Laldawida	Dawida
3	Lalthanpui	Thantpui
4	Lalreihkimi	Reihkimi
5	Laldikpui	Dikpui
6	Vanhnuais	Vanhnuais
7	Lalanpui	Lalanpui
8	Vanalnuati	Vanalnuati
9	C. Lalhmaingite	Lalhmaingite
10	Vanalnuati	Vanalnuati
11	Laldanpui	Danpui
12	Lalzinmawii Falte	Zinmawii
13	Zoramliani	Zoramliani
14	Vanalpeko	Peke
15	H. Lothangana	Lothangana
16	Lalnuathapi	Nuathapi
17	Sawthang	Sawthang
18	K. VANLAL HMDIHARA	K. Lec
19	Lalsumonma Cherkual	Cherkual
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 Sub-Divisional Officer
 W. Phaileng Power Sub-Division
 W. Phaileng


 18/05/17

Photographs of Public Consultation held at Village Community Hall Phuldungsei on 18th May 2017





Public consultation meeting on 05.03.2020 at Lallen village of 132kV West Phaileng-Marpara line



Public consultation meeting on 05.03.2020 at Lallen village of 132kV West Phaileng-Marpara line



List of participants :

PUBLIC CONSULTATION MEETING		
VENUE: Lullen Village, VC House.		
DATE: 05/03/2020		
SL. NO	NAME	SIGNATURE
1	Lalhmuala	Lalhmuala
2	Lalbiakoanga	Brupu.
3	H. Rohmingthanga	Rothango
4	Lalnunmanial	Inaiz
5	Thainga	Thaung
6	C. Thangkuma	C. Thangkumee
7	Chahmingthanga	Chahming
8	Lahanzela	Le
9	R. Roizthanga	Rozthang
10	H. Ranzhankimi	H. Rami
11	Lalhnunthanga	Lalhnun
12	Sangzuala	Sangzuala
13	R. Thangzia	Thangzeng
14	Lalthlamuana	Lalthlam
15	Pa Lalhratpua	Pa Lalhrat
16	Chhuanawma	Chhuanawma
17	Lalianbuanga	Lalian
18	Lalhuliana	Lalhulian
19	R. Rohanthuanga	R. Rohanthu
20	J. A. Lalbiahthang	J. A. Lalbiah
21	Vannara	Vannara
22	C. Santhuma	C. Santhum
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