Compensation Plan for Temporary Damages

June 2017

IND: Green Energy Corridor and Grid Strengthening Project
(320 kV VSC-HVDC power transmission lines between Pugalur, Tamil Nadu and North Trichur, Kerala)

Prepared by Power Grid Corporation of India Limited for the Asian Development Bank.

DRAFT COMPENSATION PLAN FOR TEMPORARY DAMAGES (CPTD)

for

± 320KV HVDC BIPOLE LINK BETWEEN PUGALUR – NORTH TRISSUR (SCHEME# 3: HVDC BIOPLE LINK RAIGARH-PUGALUR- NORTH THRISSUR)

under

(Green Energy Corridor & Grid Strengthening* Project - *Loan 3365- IND)

ENVIRONMENT AND SOCIAL MANAGEMENT

POWER GRID CORPORATION OF INDIA LTD.

(A GOVERNMENT OF INDIA ENTERPRISE)

March, 2017

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LIST OF ABBREVIATIONS

AP	Affected Person
ADB	Asian Development Bank
CEA	Central Electricity Authority
CTU	Central Transmission Utility
Ckt-Km	Circuit-kilometer
CPTD	Compensation Plan for Temporary Damages
CAO	Construction Area Office
CSR	Corporate Social Responsibility
DC	District Collector
D/c	Double Circuit
ESMD	Environment and Social Management Department
E&S	Environmental & Social
ESMC	Environmental & Social Management Cell
ESMT	Environmental & Social Management Team
ESPP	Environmental and Social Policy & Procedures
EHVAC	Extra High Voltage Alternating Current
GOI	Government of India
GRC	Grievance Redress Committee
ha.	Hectare
HVDC	High Voltage Direct Current
INRs	Indian National Rupees
IP	Indigenous People
ISTS	Inter State Transmission Scheme
IR	Involuntary Resettlement
kV	Kilo volt
Km	Kilometer
LA	Land Acquisition
LAA	Land Acquisition Act
MVA	Mega Volt Ampere
MW	Mega Watt
MM	Mille Meters
MoEF&CC	Ministry of Environment, Forests and Climate Change
MoP	Ministry of Power
M&E	Monitoring and Evaluation
O&M	Operation and Maintenance
PESA	Panchayats (Extension to Scheduled Areas) Act, 1996
POWERGRID	Power Grid Corporation of India Limited
Pvt.	Private
RHQ	Regional Head Quarter
R&R	Resettlement and Rehabilitation
RoW	Right of Way
SPS	Safeguard Policy Statement of ADB, 2009
SQ.M.	Square Meters
SCM	Standing Committee Meeting
SR	Southern Region
RFCTLARRA	The Right to Fair Compensation and Transparency in Land, Acquisition, Rehabilitation and Resettlement Act, 2013
USD	United States Dollar
VSC	Voltage Source Converters

GLOSSARY

Involuntary Resettlement covers physical displacement (relocation, loss of residential land or loss of shelter) and economic displacement (loss of land or access to land loss of assets or access to assets, income sources or means of livelihood) as a result of: (a) involuntary acquisition of land; or (b) involuntary restrictions on land use or on access to legally designated parks and protected areas. It covers such displacement whether such losses and involuntary restrictions are full or partial, permanent or temporary.

Land Acquisition refers to all methods of obtaining land for Project purposes, which may include outright purchase, expropriation of property and acquisition of access rights, such as easements or rights of way, and changes in land use rights. Land acquisition may also include: (a) acquisition of unoccupied or unutilized land whether or not the landholder relies upon such land for income or livelihood purposes; and (b) repossession of public land that is used or occupied by individuals or households. “Land” includes anything growing on or permanently affixed to land, such as crops, buildings and other improvements.

Affected Household means project affected household consisting of such persons, his or her spouse, minor sons, unmarried daughters, minor brothers or unmarried sister, father, mother and other members residing with him/her and dependent on him/her for their livelihood.

Displaced Person (DP) In the context of involuntary resettlement, displaced persons are those who are physically displaced (relocation, loss of residential land, or loss of shelter) and/or economically displaced (loss of land, assets, access to assets, income sources, or means of livelihoods) as a result of (i) involuntary acquisition of land, or (ii) involuntary restrictions on land use or on access to legally designated parks and protected areas.

Compensation means payment in cash or in kind of the replacement value of the acquired property.

Rehabilitation means the measures provided under the resettlement plan other than payment of the compensation of acquired property.

Replacement Cost means the method of valuing assets to replace the loss at market value before the project or dispossession, or its nearest equivalent, plus any transaction costs such as administrative charges, taxes, registration, and titling costs. Replacement cost is based on market value before the project or dispossession, whichever is higher.

Resettlement means all the measures taken to mitigate all or any adverse impacts of the project on the DPs property and/or livelihoods including compensation, relocation (where relevant), and rehabilitation;

Block is an administrative sub-division within a district.

Panchayat is an elected Village Council /the third tier of decentralized governance

Sarpanch is an elected head of the Gram Panchayat

Tehsil a revenue sub-division, within a district

Zila/District is the first administrative division at the state level.

EXECUTIVE SUMMARY

i. The Compensation Plan for Temporary Damages (CPTD) has been prepared for Pugalur- Thrissur 2000 MW VSC based HVDC System (the project) covered under Scheme# 3 of HVDC Bipole link Raigarh-Pugalur-North Thrissur which is proposed to be partly financed by the Asian Development Bank (ADB). The Project is categorized as 'B' for Involuntary Resettlement (IR) and "C" for Indigenous Peoples impact, as per the ADB safeguard category. CPTD is based on POWERGRID's Environmental and Social Policy & Procedures, 2009 (ESPP) and ADB's Safeguard Policy Statement, 2009 (SPS). The Executing Agency (EA) is Power Grid Corporation of India Limited (POWERGRID) who will also be responsible for implementing the project. CPTD is guided by The Electricity Act, 2003, The Indian Telegraph Act, 1885, ESPP and the SPS.

ii. The CPTD has been prepared based on the preliminary route survey/ investigation. The impacts are temporary in nature in terms of temporary impacts of land and loss of crops. Additionally, loss of tress is also foreseen along with small structures associated with agricultural use. No physical displacement is foreseen. Temporary impacts are mostly foreseen during the project implementation/construction. Therefore, the CPTD remains as a draft, as final survey is not done yet and actual temporary impacts shall be known only during implementation which will be based on the detailed design and final survey once the construction contractor is mobilized for implementation. Exact location of tower is known only after detail survey/check survey. 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. POWERGRID provides compensation for actual damages, which are temporary in nature. 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 conductor stringing. The payment of compensation may also be paid in three instances, if there are different damages during above three activities. Assessment of damages at each stage and payment of compensation is a simultaneous and continuous activity. CPTD updation will be a continuous process during construction of line for which updated semi-annual CPTD monitoring report shall be submitted to ADB by POWERGRID. The monitoring report will be disclosed on POWERGRID website.

iii. The proposed project is an interstate one and is located in Thrissur, Palakkad and Coimbatore, Tirupur districts of Kerala & Tamil Nadu State respectively. The project components under the above scheme include following transmission lines:

- ±320kV VSC based 2000 MW HVDC link between Pugalur (Tamil Nadu) and North Thrissur (Kerala) including underground portion -153.5 km (26.5 km underground portion + 127 km overhead portion);
- LILO of North Thrissur – Cochin 400 kV (Quad) D/C line at North Thrissur HVDC Station -0.4 km.

iv. No acquisition/transfer of land is involved in transmission line and no physical displacement is foreseen in the project[1]. Preliminary investigation/survey has been carried out for transmission lines to estimate/arrive at for selection of one best feasible alignment

[1] 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.

route out of at least 3 alternative alignments studied, for detailed survey to be undertaken during execution of main contracts. For the temporary loss of crops, only agricultural land and private plantation land are considered for estimation. Though Right of Way (RoW) is 44 meter for 320 kV lines and 46 meter for 400 kV lines but average affected width/corridor would be limited to 40 meter (maximum). All the estimations in the CPTD have been done on the basis of preliminary survey. Actual Impacted area for crops and others damage would be restricted to 40 meter maximum width in the corridor of agricultural land and private plantations which work to be 472.00 hectares and additional 65.40 ha of land adjoining the tower foundation is estimated for crop compensation due to placing of 327 tower footings. Therefore, the total land required for temporary loss in terms of loss of crops is estimated to be 537.40 hectares. Total number of trees to be affected is 44,300 out of which 42,700 are private trees and 1,600 are government trees. Private trees will be compensated in cash as per the entitlement matrix. The total number of affected persons is estimated to be 3450.

v. 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 POWERGRID's site officials meet people and inform them about the routing of transmission line. During the construction, every individual, on whose land tower is erected and people affected by RoW, are consulted. Two public consultation meeting were conducted in Dec.'15 during preliminary survey/investigations of the entire routes of transmission lines. The process of such consultation is to be continued during project implementation and even during O&M stage. The draft/summary CPTD will be disclosed by the POWERGRID to the affected households and other stakeholders by placing it on website. POWERGRID site officials visit construction sites frequently during construction and meet with Affected Persons (APs) and discuss about norms and practices of damages and compensation to be paid for them. The executive summary of the CPTD and Entitlement Matrix will be made available to public through POWERGRID's construction offices in Tamil, Malayalam & English.

vi. GRM is an integral part of project implementation, operation and maintenance stage of the project. For handling grievance, Grievance Redress Committee (GRC) will be established at two places, one at the project level and another at corporate level. The GRCs shall include members from POWERGRID, Local Administration, Panchayat Members, Affected Persons representative and reputed persons from the society on nomination basis under the chairmanship of project head. The composition of GRC shall be disclosed in Panchayat offices and concerned district headquarter for wider coverage. In case of any complaint, GRC meeting shall be convened within 15 days. If project level GRC not able to take decision it may refer the complaint to corporate GRC for solution. GRC endeavor will be 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 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.

vii. The CPTD is based ADB's SPS, 2009 as well as on the Borrower's domestic policy instruments and laws. 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 Governments of India, ESPP and SPS, 2009.

viii. APs will be entitled for compensation for temporary damages to crops/trees/structures etc. as per the provisions of Entitlement Matrix given in **Table- E.1**. Temporary damage will occur during construction of transmission lines for which compensation is paid as per relevant norms. All APs are paid compensation for actual damages irrespective of their religion, caste and their economic status. As an additional assistance, construction contractors are encouraged to hire local labour that has the necessary skills. One time lump sum assistance will be provided to vulnerable households on recommendation of State Authority. POWERGRID will provide compensation to all APs including non-title holders as mentioned in the Entitlement Matrix.

Table E-1: Entitlement Matrix

SN	TYPE OF ISSUE/ IMPACT	BENEFICIARY	ENTITLEMENT OPTIONS
1.	Loss of crops and trees	Title Holder	Compensation at market rate for crops and 8 years income for fruit bearing trees. APs will be given advance notice to harvest their crops. Timber will be retained by the owner.
2.	Loss of crops and trees	Tenant/ sharecropper/ leaseholder[2]	Only the cultivator[3] will get compensation at market rate for crops and 8 years income for fruit bearing trees. APs will be given advance notice to harvest their crops.
3.	Other damages (if applicable)	All APs[4]	Replacement cost as assessed by the concerned authority.
4.	Loss of structure		
	a) House		
(i)	Loss /Removal of House	Titleholders/ Non-titleholders	Cash compensation at replacement cost (without deduction for salvaged material) plus Rs. 25,000/- assistance (based on prevailing GOI norms for weaker section housing) for construction of house plus transition benefits as per category-5 below
	b) Shop/ Institutions		
(i)	Loss /Removal of House	Titleholders/ Non-titleholders	Cash compensation plus Rs. 10,000/- for construction of working shed/shop plus rehabilitation assistance equivalent to 1 year income plus transition benefits as per category-

[2] This may include non-titled APs

[3] Powergrid will explain to AP tenant/sharecropper/leaseholder that the compensation will be provided to the cultivator and the sharing arrangements will have to be determined among themselves

[4] Titled and Non-titled

S N	TYPE OF ISSUE/ IMPACT	BENEFICIARY	ENTITLEMENT OPTIONS
			5 below
5.	Losses during transition of displaced persons/ establishments/ Shifting / Transport	Family/unit	Provision of transport or equivalent cash for shifting of material/ cattle from existing place to alternate place
6	Impacts on vulnerable APs	Vulnerable APs[5]	One time lumpsum assistance to vulnerable households on recommendation of State Authority. This will be paid over and above other assistance. Vulnerable APs to get priority under Corporate Social Responsibility (CSR) activities.
7	Land area below tower base	Owner	85% of land cost as decided by District Magistrate **(#)**
8	Land coming in corridor of width of Right of Way	Owner	15% of land cost as decided by District Magistrate **(#)**

(#): As per MoP guidelines dated 15.10.15 regarding payment of compensation for damages in respect to RoW for transmission line.

ix. No physical displacement is envisaged in the proposed project. Major damages in transmission line are not envisaged due to flexibility of routing of transmission line. Transmission line construction is done mainly in the lean period to reduce damages to crops. Displacement of structures is normally not envisaged in the transmission line projects. However, whenever it is necessary, compensation for structures as decided 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 POWERGRID and APs is to be done and verified by revenue official for actual damages. Hence, compensation is paid parallely with the construction activity of transmission line. The resettlement 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. This is a tentative budget which may change during the original course of implementation. The total indicative cost is estimated to be INR 4952.05 Lakhs equivalent to USD 7.61 million.

x. The implementation and monitoring are critical activities and shall be as per Implementation Chart/Schedule provided in **Chapter-X**. Monitoring is a continuous process for POWERGRID projects at all the stages, be it the site selection, construction or maintenance. The success of POWERGRID lies in its strong monitoring systems. Apart from the site managers reviewing the progress on daily basis regular project review meetings are held at least on monthly basis which is chaired by Executive Director of the

[5] Vulnerable APs include scheduled tribes/ scheduled caste/ households headed by women/ physically handicapped/ disabled families, etc. as certified by local authority.

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region wherein apart from construction issues the environmental and social aspects of the projects are discussed and remedial measures taken wherever required. The exceptions of these meetings are submitted to the Directors and Chairman & Managing Director of the Corporation. The progress of various on-going projects is also informed to the Board of Directors. POWERGRID have a separate Environment and Social Management Department (ESMD) at Corporate Centre and Environment and Social Management Cell (ESMC) at RHQ to monitor environment and social issues. At site level, ESMT shall be responsible for implementation and monitoring of CPTD.

xi. Public consultation and internal monitoring will be continued in an intermittent basis for the entire duration of project. Monitoring will be the responsibility of POWERGRID. POWERGRID will disclose semi-annual monitoring reports on their safeguards implementation performance on its website and submit the reports to ADB for disclosing the same on the ADB website. POWERGRID will engage the services of an independent agency/external monitoring, if required.

I. INTRODUCTION AND PROJECT DESCRIPTION

1.1. Background

1. Power Grid Corporation of India Limited (POWERGRID), the Central Transmission Utility (CTU) of India is engaged in power transmission with the mandate for planning, coordination, supervision and control over complete Inter-State Transmission System. As on 31st December 2016, POWERGRID has established about 1,34,018 circuit-kilometers (ckt-kms) of transmission lines at 800/765 kV, 400 kV, 220 kV and 132 kV Extra High Voltage Alternating Current (EHVAC), and 500 kV High Voltage Direct Current (HVDC) levels and 214 substations (Substation) with transformation capacity of about 2,78,862 MVA. This transmission network, spread over length and breadth of India, is consistently maintained at an availability of over 99% through deployment of state-of-the-art Operation and Maintenance techniques at par with global standards. About 50 % of total power generated in India is wheeled through transmission network.

2. POWERGRID has been contributing significantly towards the development of India power sector by undertaking coordinated development of power transmission network along with effective and transparent operation of regional grids and through continuous innovations in technical and managerial fields.

1.2. The Project

3. To supplement overcoming the power deficit and to enhance capacity of electricity supply in South Indian region, POWERGRID has taken up the proposed implementation of HVDC link with a capacity of 6000 MW. Considering conservation of RoW problem in Kerala and dispersal of power beyond Pugalur, establishment of VSC (Voltage Source Converter) based 2000 MW HVDC link between Pugalur and North Thrissur (Kerala) has also been proposed. The proposed project shall be built as three separate schemes as following:

Scheme - 1: Raigarh - Pugalur 6000 MW HVDC System;
Scheme - 2: AC System strengthening at Pugalur end; and
Scheme - 3: Pugalur - Thrissur 2000 MW VSC Based HVDC System.

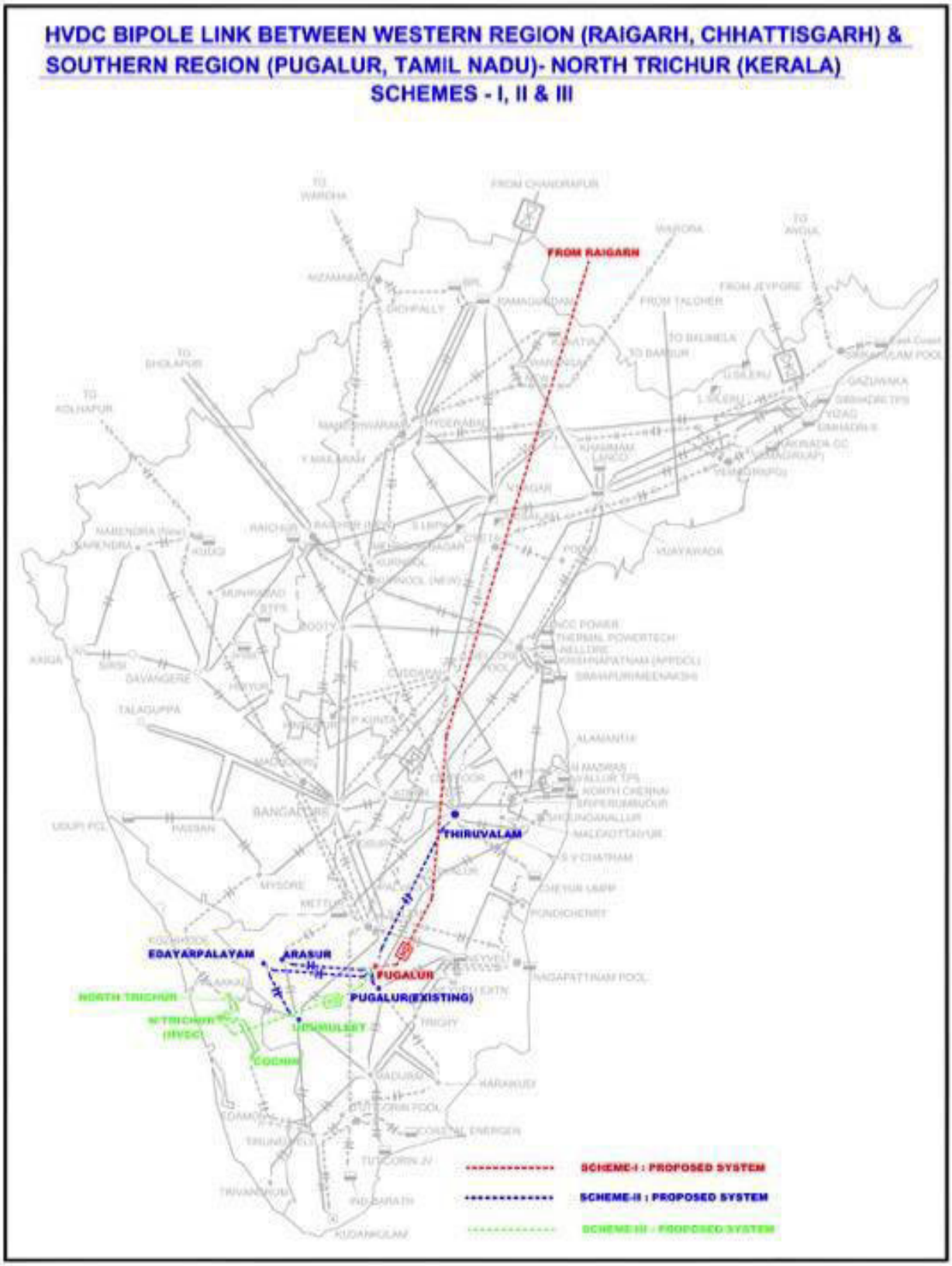
4. The scheme- 2 is proposed to be co-financed by ADB along with AIIB. The Scheme-1 covering HVDC terminals and underground portion of Scheme-3 are also being funded by ADB. The details of schemes including the proposed subprojects are presented in the **Figure-1**.

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

5. The Compensation Plan for Temporary Damages (CPTD) is guided by The Electricity Act, 2003, The Indian Telegraph Act, 1885, Ministry of Power's guidelines for payment of compensation towards damages in regards to right of way for transmission line, POWERGRID's ESPP and ADB's SPS, 2009.[6] The primary objective of the CPTD is to identify impacts 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, preliminary assessments and consultations with various stakeholders.

[6] Equivalent to the safeguard document required for ADB's environment category B projects. This CPTD has also fully met the requirements of ADB's Safeguard Policy Statement, 2009.

Figure-1: Power Map along with proposed project



6. The CPTD presents (i) introduction and project description (ii) project impacts (iii) socio-economic information and profile (iv) information disclosure, consultation and participation,(v) grievance redress mechanisms,(vi) legal framework (vii) entitlement, assistance and benefit (viii) budget (ix) institutional arrangements (x) implementation schedule (xi) monitoring and reporting.

1.4. Project Components

7. The proposed project investment components under Scheme-3 are as follows:

1.4.1. Pugalur - Thrissur 2000 MW VSC Based HVDC System

8. The proposed scheme has been discussed and agreed in the 37th & 38th meeting of Standing Committee on Power System Planning in Southern Region held on 31st July, 2014 & 7th March, 2015 and in the 26th meeting of Southern Region Power Committee (SRPC) held on 20th December, 2014. Further, the scheme has been discussed and agreed in the Joint meeting of the Standing Committee on Power System Planning of Southern Region meeting and Western Region (WR) held on 20th April, 2015.

9. Ministry of Power (MoP) vide letter dated 10/12/2014 has approved the implementation of the scheme by POWERGRID under compressed time schedule through regulated tariff mechanism. The scheme has also been discussed and agreed in the 34th Empowered Committee Meeting on Transmission held on 13th April, 2015 for implementation of the scheme under regulated Tariff mechanism.

10. The project components under the above scheme include following transmission lines:
- ±320kV VSC based 2000 MW HVDC link between Pugalur (Tamil Nadu) and North Thrissur (Kerala) including underground portion-153.5 km approx. (26.5 km underground portion + 127 km overhead portion);
- LILO of North Thrissur – Cochin 400 kV (Quad) D/C line at North Thrissur HVDC Station- approx. 0.4 km;

11. The project components proposed under the scope ADB financing include 26.5 km underground cable portion of ±320kV VSC based 2000 MW HVDC link between Pugalur and North Thrissur and terminal station at Vadakancheri in the state of Kerala.

1.5. Scope and Limitation of the CPTD

12. The CPTD has been prepared based on the preliminary route investigation/ survey. The project is categorized as 'B'[7] for Involuntary Resettlement (IR) and 'C' for indigenous people (IP), as per ADB's safeguard category. The impacts are temporary in nature in terms of loss of crops in the Right of Way. Additionally, loss of trees is foreseen. Temporary impacts are foreseen during the implementation and construction. Therefore, the CPTD remains as a draft, as final survey is not done yet and actual temporary impacts shall be known only during implementation which will be based on the detailed design and final survey once the construction contractor is mobilized for implementation. POWERGRID

[7] A proposed project is classified as category B if it includes involuntary resettlement impacts that are not deemed significant which means less than 200 persons will experience major impacts, which are defined as (i) being physically displaced from housing, or (ii) losing 10% or more of their productive assets (income generating). The level of detail and comprehensiveness of the resettlement plan are commensurate with the significance of the potential impacts and risks.

provides compensation for actual damages, which are temporary in nature. Exact location of tower is known only after detail survey/check survey. 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 conductor stringing. The payment of compensation may also be paid in three instances, if there are different damages during above three activities. CPTD updation will be a continuous process during construction of line for which updated semi-annual CPTD monitoring report shall be submitted by POWERGRID.

1.6. Measures to Minimize Impact

13. For transmission components, POWERGRID has selected and finalised the routes with due consideration of the avoidance or minimization of impacts towards temporary damages on crops/ trees/ structures if any coming in the Right of Way (RoW). During the selection of routes, POWERGRID also carried out public consultations to seek feedback from people in developing the measures towards minimizing negative social impacts, if any. Avoidance and minimization of adverse impacts are very much in line with POWERGRID's ESSP and ADB's SPS.

1.7. Civil Works Scheduling

14. For construction of transmission line, there is no permanent land acquisition involved as per applicable legal framework. POWERGRID follows the law of the land i.e. in exercise of the powers under the Indian Telegraph Act 1885, part 3, section 10 to 19 conferred under section 164 of the Electricity Act, 2003 through Gazette by India, extra ordinary dated 24th Dec. 2003, has the domain to place and maintain transmission lines under over along or across and posts in or upon, any immoveable property. However, as per 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, POWERGRID has 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.

a) Towers foundations and footings

15. All towers foundations and towers 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.

b) Towers erection

16. Because the concrete needs time to dry and settle, all towers are erected normally three weeks later, after the end of the following crop season and before the following one.

c) Stringing

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

18. For this reason no household is expected to be significantly affected. 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.

1.8. Route Selection and Study of Alternatives

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

a) The route of the proposed transmission lines does not involve any human displacement/rehabilitation;
b) Any monument of cultural or historical importance is not affected by the route of the transmission line;
c) The proposed route of transmission line does not create any threat to the survival of any community with special reference to Tribal Community;
d) The proposed route of transmission line does not affect any public utility services like playgrounds, schools, other establishments etc.;
e) The line route does not pass through any sanctuaries, National Park etc.;
f) The line route does not infringe with area of natural resources.

20. In order to achieve this, POWERGRID undertakes route selection for individual transmission lines in close consultation with representatives from the State Forest Department and the Department of Revenue. Although under National law POWERGRID has right of eminent domain for placing towers on Private land (Section 164 of the Electricity Act read with section-10 of the Indian Telegraph Act 1885) yet alternative alignments are considered keeping in mind the above-mentioned factors during site selection, with minor alterations often added to avoid environmentally sensitive areas and settlements at execution stage.

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

21. 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 line has 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.

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

II. PROJECT IMPACTS

2.1. General

23. The project does not require any private land acquisition for construction of transmission lines. Therefore, no physical displacement is foreseen in the project. Impacts are temporary in nature in terms of loss of crops in the Right of Way. Additionally, loss of trees is also foreseen. Preliminary investigation/survey has been carried out for transmission line to estimate/arrive at for 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. Therefore, preparation of CPTD for entire transmission system has been done after the preliminary investigation/survey. All the assessments in the draft CPTD are based on preliminary survey and estimations. During Preliminary survey/ investigation carried out in entire route, the details of land use have been gathered to have an idea about the temporary damages might occur during construction of the transmission line. The corridor of width (Right of Way) required for ±320 kV HVDC & 400 kV D/c transmission lines are 44 meter & 46 meter respectively. The temporary impacts on loss of crops and trees are caused due to transmission line and placing of transmission towers.

24. 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, proper drainage is done. Besides extensive leg /chimney extension shall be used to avoid benching or cutting of slopes to minimize the impact on slope stability.

25. The land requirement for erection of tower legs is very small i.e. for each leg of tower actual construction area ranges from 300 mm to 450 mm, a small square area of about 0.09 sq.m. to 0.20 sq.m depending on the type 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 320kV HVDC/400kV D/C transmission tower is approximately 1 sq.m. of land. This impact on agriculture land is negligible. However, after construction is over agriculture activity can continue.

26. Crops: Construction of line in crop season is avoided as far as possible. In case when installation of towers 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. Format for crop compensation is similar to that of tree compensation. 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.

27. Trees: Construction of line in fruit bearing season is avoided as far as possible. 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 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.

28. Other Damages: As far as possible damages to bunds, water bodies, fish ponds, approach paths, drainage and irrigation canals etc are avoided. However, if damaged, compensation as per practice is paid after assessment of cost of damage by the State Govt. Revenue Department. The total estimate is submitted for approval to the competent authority. POWERGRID pays 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.

2.2. Impact due to Transition Station

The Project components also include construction of Transition Station for termination of underground cable at Vadakancheri for which land area measuring 0.52 acre has been identified for purchase through willing buyer- willing seller basis on negotiated rate. Due diligence of the said land has been undertaken which confirm that land is a non-cultivated & vacant private land without any disputes. Since the land is secured through private purchase on negotiated rate, R & R will not be an issue in the instant project. The location map is enclosed as **Annexure-2**. Details of transition station given in **Table 2.1**:

Table 2.1: Details on Transition station

Project Component	Permanent Impact (Land Acquisition)	Temporary Impact on loss of crops	Impact on Loss of Trees	Remarks
Transition Station at Vadakancheri	Nil	Nil	Nil	Pvt. land being secured through willing buyer- willing seller basis on negotiated rate

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

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

29. The line corridor will pass through mixed land uses which are generally agricultural land, private plantation, reverine feature and barren unused land etc. The calculations are based on preliminary investigation/ survey carried out along the route of transmission lines and is based on the total line length of the line and its right of way[8]. The total line length is 153.90 kilometre (km) which will impact an estimated of 565.94 hectares (ha.) of land. This includes 47.00 km of line passing through agricultural land (206.80 ha. of agricultural land), 71.00 km of private plantation (312.40 ha. of private plantation land), 0.50 km of river crossing (2.20 ha. of riverine land) and 35.4 km of barren/unused land (44.54 ha. of barren/unused land). A brief description about the type and use of land in the corridor is given in **Table 2.2**.

Table 2.2 Type and Use of Land within Corridor of RoW (in Km/Hectare)

Name of the Lines	RoW Width (in meter)	Agricultural land	Private Plantation	Forest	Reverine feature	Barren/ unused	Total
±320kV VSC Pugalur- North Thrissur	44	47.00 km/ (206.8 ha)	71.0 km/ (312.4 ha.)	0 km	0.5 km (2.2 ha.)	8.5 km/ (37.40ha)	127 km/ (558.8 ha)
	2	0 km	0 km	0 km	0 km	26.5 km/	26.5 km/

[8] Total Line Length (kilometers) X Right of Way (meters)X1000/ 10,000= Area in Hectare

						(5.3 ha.)	(5.3 ha.)
LILO of North Thrissur – Cochin 400 kV (Quad) D/C line at North Thrissur	46	0 km	0 km	0 km	0 km	0.4 km (1.84 ha.)	0.4 km (1.84 ha.)
Total		**47.00 km/ (206.8 ha)**	**71.0 km/ (312.4 ha.)**	**0 km**	**0.5 km (2.2 ha.)**	**35.4 km (44.54 ha.)**	**153.90 km/ (565.94 ha.)**

Source: Preliminary Survey

30. The total land as calculated does not necessarily be considered for crop compensation. The actual land for crop compensation is described in following paragraphs.

2.3.2. Affected Land area or Actual impact on Crop and others

31. For the temporary loss of crops, only agricultural land and private plantation land are considered for estimation. Though RoW is 44 Meter/46 meter for ±320 kV/400 kV lines, but average affected width/corridor would be limited to 40 meter (maximum). Further, only 2m corridor of unused land along existing road will be utilized for laying underground cable portion hence loss of crop/tree is not anticipated. As per POWERGRID's strategy and practices all out efforts are made to reduce the damages to crops and to minimize the impact whatsoever. One of the reasons is POWERGRID schedules its construction activities in lean season or post harvest periods. Previous projects executions show only 45% crop damages on an average even within the area of width 40 meter. For the purpose of calculation of loss of crops and others (impact), average 40 meter width has been considered for the overhead lines though on higher side. The damages is not done in complete RoW (46 m/44 m for 400 kV/ 320 kV), it is mostly restricted to tip to tip of the conductor (approximately 20 meter). Calculation is done on higher side i.e. 40 m considering other damages. It revealed that the most of the affected land may be used within 40 meter wide is agricultural land where crops/ trees exist. Actual impacted area for crops and others damage would be restricted to 40 meter maximum width in the corridor of agricultural land and private plantations which work to be 472.00 ha. (118.00 km x 40 meter = 472.00 ha.). Brief description about the type of land in 40 meter corridor (width) of above transmission lines is given in **Table 2.3:**

Table 2.3: Estimation on Loss of Land for Crop Damage due to Overhead Lines

Name of the Line	Width for Estimation of Loss of Crops and 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 with 40 meter width (ha.)
±320kV HVDC Pugalur- North Thrissur	40	47.00	71.00	118.00	472.00
LILO of North Thrissur – Cochin 400 kV D/C line at North Thrissur	40	0	0	0	Nil
Total		**47.00**	**71.00**	**118.00**	**472.00**

Source: Preliminary Survey

2.3.3. Loss of Crops Caused due to Transmission Towers.

32. During tower foundation, additional area adjoining the actual foundation area will be affected. For estimation purpose, additional area of 2,000 sq.m. [(60mX60m)-(40mX40m)] per tower has been considered. Additionally, 65.40 ha. of land are estimated for crop compensation due to placing of 327 tower footings. Details are given in **Table 2.4**:

Table 2.4: Loss of Crop Area estimated for Tower Footings

Name of the Line	No of Towers	Area Affected(Ha)
±320kV HVDC Pugalur- North Thrissur	325	65.00
LILO of North Thrissur – Cochin 400 kV (Quad) D/C line at North Thrissur	2	0.40
Total	**327**	**65.40**

Source: Preliminary Survey

2.3.4. Total loss of Crop Area (Corridor RoW and Towers)

33. Based on the above estimation, the total land considered for crop compensation for transmission line corridor and tower foundation is [118.00 km x 40 meter =472.00 Ha + 65.40 Ha. for tower foundation] = 537.40 hectares. 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 affected APs. During construction, only temporary damages will occur for which the compensation shall be paid as per relevant rules. For total towers (327 nos.), temporary damages during tower foundation shall be 65.40 ha. After construction, the total land loss estimated to be about 0.0327 ha. which is 0.032% of the temporary damage area and the land owners have balance land in other areas also. Thus productive loss due to construction is negligible. However, Compensation plan for APs towards temporary damages shall be required which is a part of CPTD.

2.3.5. Loss of Trees

34. Total numbers of trees likely to be affected are 44,300 out of which 42,700 are private trees and 1,600 are Govt. trees. Private trees will be compensated as per the entitlement matrix. Details on number of trees for each line are given in **Table 2.5:**

Table 2.5: Loss of Trees

Name of Line	Trees in Private Area (Numbers)	Trees in Govt. Area (Nos.)	Total Trees (Nos.)
±320kV HVDC Pugalur- North Thrissur	42700	1600	44300
LILO of North Thrissur – Cochin 400 kV (Quad) D/C line at North Thrissur	0	0	0
Total	**42700**	**1600**	**44300**

Source: Preliminary Survey

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

35. It is found during the preliminary survey that approximately 35 numbers of small structures exist along the right of way. These are small sheds/small storage/ which are

associated with the agricultural fields. People do not use these small structures/sheds for residential purpose and they use it as storage of agricultural purpose. These will be compensated in cash. Details on impacts on small structures are given in **Table 2.6**

Table 2.6: Loss of Other Assets

Name of Line	Total Number of sheds/huts
±320kV HVDC Pugalur- North Thrissur	35
LILO of North Thrissur – Cochin 400 kV (Quad) D/C line at North Thrissur	0
Total	**35**

Source: Preliminary Survey

2.4. Details on Affected Persons

36. It is estimated that as per preliminary survey/ investigation, total number of affected persons which may be impacted temporarily will be approximately 3450. This is a preliminary assessment. Details are given in **Table 2.7.** The number of APs in the table refers to the most conservative option. 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 2.7: Number of Affected Persons

Name of Line	Length in Kms	Total APs
±320kV HVDC Pugalur- North Thrissur	153.5	3450
LILO of North Thrissur – Cochin 400 kV (Quad) D/C line at North Thrissur	0.4	0
Total	**153.9**	**3450**

Source: Preliminary Survey

2.5. Impact on Gender

37. The predominant activity of women is household work, where they spend most of their time. Additionally, women are also involved in agriculture activity. Women will not be affected negatively due to the project. Provision for equal wages and health and safety facilities during the construction will be ensured by the executing agency. As the damages are temporary in nature, which are compensated at market rate and no loss of any asset is involved, hence no negative impact on APs is foreseen. Moreover, it is envisaged that any parity in payment for equal amount of damages at same locations will lead to tension in social fabric of the locality.

2.6. Impact on Indigenous Peoples

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

(i) tribes' primitive traits;
(ii) distinctive culture;
(iii) shyness with the public at large;

(iv) geographical isolation; and
(v) social and economic backwardness before notifying them as a Scheduled Tribe.

39. 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 proposed transmission line is located in Gujarat which has no schedule tribe as such. Hence, no indigenous population is envisaged in the project area.

40. Government of India has notified scheduled area to safeguard the interests of indigenous people. Constitution bestows special power to governor, for validating laws, to be implemented in scheduled V areas. Similarly, autonomous councils have been constituted to safeguard interests of indigenous people in Scheduled VI areas. Laws such as Panchayats (Extension to Scheduled Areas) (PESA) Act, 1996, extends the vision of self-governance (as enshrined in Directive Principles of State Policy (DPSP) given in constitution), to the schedule V areas. Several other safeguards are in place to counter the vulnerability imposed upon indigenous people because of their origin and socio economic background. There is no notified scheduled area in Tamil Nadu and Kerala State. As the proposed project is totally confined in the state of Tamil Nadu & Kerala, it won't have any impact on indigenous people. No laws / policies applicable for indigenous people shall be applicable in project area.

2.7. Details of land to be traversed in RoW for ±320kV HVDC Pugalur- North Thrissur line & LILO of North Thrissur – Cochin 400 kV (Quad) D/C line at North Thrissur

Line-1: ± 320kV HVDC Pugalur- North Thrissur line

Land Use	Type	Total Distance	
		Km	%
Cultivation	Agriculture	47.0	30.62
Private Plantation		71.0	46.26
Forest	Sparse	-	-
	Moderate	-	-
	Moderately dense	-	-
	Dense	-	-
	Road Side Plantation	-	-
Shrubs		-	-
Barren Land		35.0	22.80
Riverine features		0.5	0.32
Total		**153.5**	**100**

Source: Preliminary Survey

Line-1: LILO of North Thrissur – Cochin 400 kV (Quad) D/C line at North Thrissur

Land Use	Type	Total Distance	
		Km	%
Cultivation	Agriculture	0	0

Private Plantation		0	0
Forest	Sparse	-	-
	Moderate	-	-
	Moderately dense	-	-
	Dense	-	-
	Road Side Plantation	-	-
Shrubs		-	-
Barren Land		0.4	0
Riverine features		0	0
Total		**0.4**	**100**

41. From the above it may be observed that out of total 153.9 km line, major land type are private plantation land (71 km) followed by cultivated land which is close to 46.26% & 30.62% respectively and remaining are barren & reverine in nature. Tree/crops compensation will have a major role to play for the implementation of the subprojects. This has to be dealt with methodically, sincerely & meticulously in consultation with temporary APs (preferably public consultation at least in every 20-50 Km of the stretch along with Govt./Revenue officials and with proper documentation.

2.8. Summary Impacts

42. Preliminary investigation/survey carried out while arriving at nearly final alignment out of at least 3 alternative alignments for taking up detailed survey reveals the following summary impacts:

- Construction of ±320kV HVDC Pugalur- North Thrissur & LILO of North Thrissur – Cochin 400 kV (Quad) D/C line at North Thrissur would involves 537.40 ha. of land for crop loss along with loss of about 44,300 trees. Temporary Affected Persons (APs) are about 3450 nos.

43. Based on the preliminary assessment, summary impacts on loss of crops, trees, other structures and number of APs are given in **Table 2.8**.

Table 2.8: Summary Impacts

Particulars	Details
Length in Km	153.9
Number of Towers	327
Area under RoW (ha)	537.40
Total APs	3450
Affected Structures (Small Sheds for agricultural purpose)	35
Area of Temporary Damages (Ha) for crop compensation	537.40
Trees in Private Area (Nos.)	42,700
Trees in Govt Area (Nos.)	1,600
Total Trees	44,300

Source: Preliminary Survey

III. SOCIO-ECONOMIC INFORMATION AND PROFILE

3.1. General

44. The socio-economic profile of the project areas 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 Thrissur, Palakkad and Coimbatore, Tirupur districts of Kerala & Tamil Nadu State respectively through which the lines will traverse. Following section briefly discuss socio-economic profile.

3.2. Socio-Economic Profile of Kerala

3.2.1. Land Use Pattern

45. Kerala has a geographic area of 3.89 million ha. It lies on the west coast between latitude 8°17' and 12°47'N and longitude 74°52' and 77°24'E.

46. Physiographically, the state can be divided into the coastal, the midland and the highland zones. The Western Ghats, bordering the eastern boundary of the State, form an almost continuous mountain wall, except near Palakkad where there is a natural mountain pass known as the Palakkad Gap. The average elevation of the Ghats is about 1500 meters above sea level, occasionally soaring to peaks of 2000 to 2500 m. From the Ghats, the land slopes to west on to the plains, into an unbroken coastline. The general land use pattern of the State is given in **Table 3.1**.

Table-3.1: Land Use Pattern

Land use	Area in '000 ha	Percentage
Total geographical area	3,886	
Reporting area for land utilization	3,886	100.00
Forests	1,082	27.84
Not available for cultivation	531	13.66
Permanent pasture & other grazing lands	0	0.00
Land under misc. tree crops & groves	3	0.08
Cultruable wasteland	95	2.44
Fallow land other than current fallows	58	1.49
Current fallows	77	1.98
Net area sown	2,040	52.50

Source: Land use statistics, Directorate of Economics and Statistics, 2012-2013

47. Thrissur district is located in the Central part of Kerala and lies between latitude 10°10' and 10°46' and longitude 76°0' and 76°55'. The district is bounded by Malappuram and Palakkad districts in the North, Ernakulam and Idukki districts in the South, Arabian Sea in the West and Coimbatore district of Tamilnadu and Palakkad district of Kerala in the East. The district has an area of 3032 sq km, which constitute 7.8% of the total area of the State.

48. Palakkad district is located in the central part of Kerala and lies between 10°21' N and 11°14' N latitude 76°02'E and 76°54'E longitude. The district is surrounded by Malappuram district in the North, by Coimbatore district of Tamilnadu in the East, by Thrissur district in the south and by Thrissur and Malappuram districts in the west. Total geographic area of the district is 4480 sq km, constituting about 11.53% of the State's geographical area.

3.2.2. Demography

49. Total population of Kerala as per 2011 census is 33,406,061 of which male and female are 1,60,27,412 and 1,73,78,649 respectively. The rural and urban composition of population is 1,74,71,135 and 1,59,34,926 person (52.30% and 47.70 % of total state population) respectively. The sex ratio is found to be 1084 which is above the national average of 940. The literacy rate is 94.09 %. Details are given in **Table 3.2.**

Table 3.2: Demographic Feature of Kerala

Indicators	Census 2011
Total Population	33,406,061
Density	860
Male	1,60,27,412
Female	1,73,78,649
Sex Ratio	1084
Literacy	94%
Population of SC	4,84,839
Population of ST	30,39,573

Source: Census of India, 2011

50. The demography details of project districts are given below in **Table 3.3**.

Table 3.3: Demographic Profile of the Project Districts

District	Area (Sq.km)	Population	Sex Ratio	Literacy (%)	Density
Thrissur	3032	3,121,200	1108	95.08	**1,031**
Palakkad	4480	2,809,934	1067	89.31	**627**

Source: Census of India, 2011

3.2.3. Human and Economic Development

51. While in terms of area, Kerala forms only 1.275% of India, its population of 3.34 Crores as per 2011 census, accounts for 2.76% of India's population, resulting in a comparatively higher population density of 860 pesons per sq km. Around 52.30% population of Kerala resides in rural area. Kerala has sex ratio of 1084 females per 1000 males, which is highest in the country. Similarly, the literacy rate of Kerala is highest in the country standing at 94%, whereas, same for the country is 74.04%. The population is spread across the State and as such there are no big urban agglomerations. The biggest city of Kerala, Kochi has a population of only about 0.27 million. Kerala has three predominant religions. As per 2011 Census, Christians and Muslims accounted for 19 per

cent and 24.7 per cent of the population respectively with the Hindus mostly contributing the rest.

52. The economy of Kerala is hugely dependent on agriculture. The importance of the agricultural sector of the economy can be noted from the fact that 96% of India's entire yield of pepper and 91% of natural rubber is produced in Kerala. Other important crops in the region are coconut, tea, coffee, cashew, and spices such as cardamom, vanilla, cinnamon, and nutmeg. Rice is the staple food of the local population and is grown in abundance in the state. The agro-climatic conditions in Kerala suit the cultivation of both cash crops and food crops. Agriculture forms the raw material base for a number of agro-processing industries, such as coir, cashew, wood and edible oil. These industries continue to occupy an important place, especially in terms of employment. Coffee, tea, cardamom, ginger, pepper coconut kernels form the bulk of the exports from the state

53. A small segment of large modern industries based on minerals, chemicals and engineering have also come up, along with an increasing segment of small and medium industries, some based on modern technology and management, such as, textile and Electronic industries. Kerala has about 1.8 lakh small scale industries and about 511 medium sized and large scale industries. In recent years, Services sector led by IT, Banking & Finance and Tourism has emerged as leading source of revenue and employment generation.

54. As per 2011 census, the population of Thrissur district is 31,21,200. The population density of the district is 1031 per square kilometer. The district has one of the best sex ratio in the country standing at 1108 females for 1000 males. With a Literacy rate of 95.08 %, the district is one of the most literate district in the country.

55. The economy of Thrissur is largely dependent on industries, retailing and financing. With the presence of textile, timber, coir, fishery and agriculture based industries, Thrissur is considered as one of the most important Industrial centres of the state. Thrissur city is considered as one of the hub of Jewellery business in South India and also one of the main centre of banking and financial institutions. The most important crop of the district is paddy followed by tapioca. These two are the chief food crop. The coconut palm dominates the garden crops of the district. Among the condiments and spices grown in the district, the areca nut is the most important. A large variety of fruit trees are also grown in the district.

56. As per 2011 census, the population of Palakkad district is 28,09,934, with a population density of 627 persons per square kilometre, against state’s population density of 860 persons per square kilometre. The sex ratio of the district stands at 1067 females per 1000 males, which is better than corresponding National figures, however, lower than state’s figure of 1084 females per 1000 males. The literacy rate of the district is 89.31%, which again is lower than corresponding figures for the state.

57. Agriculture is the main occupation and chief source of sustenance of the people of Palakkad district. Paddy, Coconut, Rubber, Palm trees, Pulses, Areca Nut, Tapoica, Ginger, Groundnut, Sugarcane, Cotton, Banana etc are the main crops of the district.

58. The district has a conducive environment for development of industries due to several favourable factors such as availability of land, industrial labour, power, infrastructure facilities, water etc. The total number of registered industrial units in the district is 21,679, out of which 63 belong to Medium and Large Scale. The Directorate of

Industries and Commerce (DIC) has developed four such Industrial Development Areas viz. (1) Industrial Development Area (IDA), Kanjikode (2) New Industrial Development Area (NIDA), Kanjikode (3) Canalpirvu and (4) Umminikulam.

3.3. Socio-Economic Profile of Tamil Nadu

3.3.1. Land Use Pattern

59. Tamil Nadu is situated on the south eastern side of the Indian peninsula. It is bounded on the east by Bay of Bengal, in the south by the Indian Ocean, in the west by the states of Kerala and Karnataka and in the north by the Karnataka and Andhra Pradesh. Tamil Nadu has a geographic area of 130,058 sq. km, which constitutes 3.96% of the land area of the country. It lies between 08°04' N and 13°34' N latitude and 76°14'E and 80°21'E longitude.

60. Physiographically the state can be divided into two natural divisions: the eastern coastal plain and the hilly region along the north and the west. Along the whole length of the western part, at a distance from the sea varying from 80 to 160 km runs the range of the Western Ghats, a steep and rugged mass averaging 1220 meters above the sea level and rising to 2440 metres at the highest point. The slopes of the Western Ghats are covered with heavy evergreen forests. The Nilgiris and the Anamalai are the hill groups with the maximum height. The general land use pattern of the State is given in **Table 3.4**.

Table 3.4: Land use Pattern

Land use	Area in '000 ha	Percentage
Total Geographical area	13,006	
Reporting Area for land utilization	13,033	100.00
Forests	2,125	16.30
Not available for cultivation	2,669	20.48
Permanent Pasture & Grazing land	110	0.84
Land under misc. tree crops & groves	252	1.93
Culturable waste land	329	2.52
Fallow land & other than current fallows	1,594	12.24
Current fallows	967	7.42
Net area Sown	4,986	38.26

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

61. Coimbatore district lies between 10°10" and 11°30" N latitude and between 76° 40" and 77°30" E longitude. It has an area of 7469 sq km and is bounded by the Nilgiris on the north, Erode district on the east, Dindigal district on the south and the State of Kerala on the west.

62. Tiruppur district has been carved out of Coimbatore and Erode districts in the year 2008. The district has total geographical area of 5186.34 sq km and lies between 11°06′27″N-11°10′75″N latitude and 77°20′23″E-77°33′98″E longitude. Tiruppur district is bounded by Coimbatore district in the west side, Erode district to the North and northeast side and Karur district in the east side and Dindigul district in the south east side. To the south side, it is surrounded by Idukki district of Kerala.

3.3.2. Demography

63. Total population of Tamil Nadu as per 2011 census is 72,147,030 of which male and female are 36,137,975 and 36,009,055 respectively. The rural and urban composition of population is 37,229,590 and 34,917,440 person (51.6 and 48.4 % of total state population) respectively. The sex ratio is found to be 996 which is above the national average of 940. The literacy rate is 80.09 %. Details are given in **Table 3.5.**

Table 3.5: Demographic Feature of Tamil Nadu

Indicators	Census 2011
Total Population	72,147,030
Density	555
Male	36,137,975
Female	36,009,055
Sex Ratio	996
Literacy	80.09 %
Population of SC	14438445
Population of ST	794697

Source: Census of India, 2011

64. The demography details of project districts are given below in **Table 3.6**.

Table 3.6: Demographic Profile of the Project Districts

District	Area (Sq.km)	Population	Sex Ratio (Male/000 female)	Literacy (%)	Density (Person/sq.km)
Coimbatore	4,732	3,458,045	1000	83.98	731
Tirupur	5,187	2,479,052	989	78.68	478

Source: Census of India, 2011

3.3.3. Human and Economic Development

65. Tamil Nadu has achieved reasonable economic growth in past few years. With a population of around 7, 21,47,030 as per 2011 census, it is one of the populous states of India. The population density is 555 per square km, which is higher than the National Average. The sex ratio of the state is healthy 996 females per 1000 males, which is better than the corresponding National figure. People belonging to Schedule Castes constitute around 20% of total population, whereas, share of people belonging to Schedule Tribes is a miniscule 1.1%. The state enjoys a reasonably good literacy rate of 80.09% which is better than National Average of 74.04%. The Human Development Index of the state is 0.570, which also compares favorably with National Average of 0.467.

66. Agriculture is the main source of livelihood of the State with around 5139832 ha of area under cultivation. Paddy is the main crop. Other major food crops are jowar, ragi, bajra, maize and pulses. Cotton, sugarcane, coconut, tea and coffee as well as a number of horticultural products like bananas and mangoes are cash crops while ground nuts, sesame, sun flower are important oil seeds crops.

67. Major Industries in Tamil Nadu are cotton, heavy commercial vehicles, auto components, railway coaches, power pumps, leather tanning industries, cement, sugar, paper, automobiles and safety matches. Global auto majors Hyundai Motors, Ford, Hindustan Motors and Mitsubishi have commenced production plants. Ashok Leyland and TAFE have set up expansion plants in Chennai. The state is an important exporter of tanned skin and leather goods, yarn, tea, coffee, spices, engineering goods, tobacco, handicrafts and black granite. Tamil Nadu contributes to 60 per cent of the tannery industry in India.

68. In recent times knowledge based industries like I.T. and Biotechnology have become the thrust area in the industrial scene in Tamil Nadu. The software exports from the State during the year 2012-13 is expected to be around Rs. 50,000 crores with an impressive growth rate of more than 10%. Top I.T. and Telecom companies such as Nokia, Motorola, Foxcon, Flextronic and Dell have commenced production. Handloom is another important cottage industry. Silk sarees of Kancheepuram are famous all over India. Cottage units produce cotton sarees, dhoties, towels and lungies.

69. As per 2011 census, the total population of Coimbatore district is 34,58,045, which forms 4.79% of the state's population. The district has a population Density of 460 persons per square km. The Sex ratio of the district stands at 1000 females for every 1000 males, which is better than the corresponding National figure. The Literacy rate of the district is 83.98%, higher than National Literacy Average. Around 15.5% population belongs to Schedule Castes and just 0.82% population belongs to Schedule Tribes.

70. Though, the economy of Coimbatore district is mainly driven by industries, Agriculture is still one of the main sources of livelihood in the district with more than 3,00,000 people are engaged in it, either as cultivators or as labourers. Sorghum, Groundnut, Rice, maize are the main crops of the district. Tomato, Tapoica, Onion, Brinjal and Bhendi are the major vegetables grown in the district.

71. Coimbatore is one of the most industrialized districts of Tamil Nadu. There are more than 25,000 small, medium and large sale industries. Coimbatore houses a large number of small and medium textile mills. Coimbatore is also called as the Pump City. The Major Pump industries present in the district such as Suguna pumps, Sharp Industries, CRI Pumps, Texmo Industries, Deccan Pumps & KSB Pumps are renowned worldwide. Coimbatore is also emerging as an IT and BPO city with the presence of companies like Tata Consultancy Services, Cognizant Technology, CSS Corp etc. The city also houses numerous jewelers engaged in jewellery exports and a few Wind Energy Companies.

72. As per 2011 census, the total population of Tirupur district is 24,79,052 which forms 3.44% of the state's population. About 38.64% of district's population lives in rural areas. The district has a population Density of 478 persons per square km. The Sex ratio of the district stands at 989 females for every 1000 males, which is better than the corresponding National figure. The Literacy rate of the district is 78.68%, higher than National Literacy Average. Around 15.97% population belongs to Schedule Castes and just 0.22% population belongs to Schedule Tribes. Though, Tirupur is largely an industrial district, Agriculture still plays an important role in its economy. In Tirupur, majority of farmers belong to small and marginal category and they play a critical role in ensuring agricultural productivity of the district. The total area of cultivation is around 2,28,556 ha., mainly for food and commercial crops.

73. The economy of the district is largely driven by industries specially those belonging to textile sector. There are 7068 registered industrial units in the district, out of which 69 belong to Medium and Large scale. There are 7 Industrial Areas in the district. Textile has been the back bone of the economy of the district. It is due its textile sector, Tirupur became world famous and popularly known as T shirt town of India. There are 6250 textile based industries in the district, out of which 1500 are knitting units. Huge numbers of direct and indirect employment is generated due to textile industries in the district.

IV. INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION

4.1. Consultations

74. Public consultation/information is an integral part of the POWERGRID project cycle. POWERGRID follows a well defined procedure for conducting public consultation involving different techniques as laid down in its ESPP, which is also approved by The World Bank under the Use of Country System (UCS). There are 10 different techniques which are used either independently or in combination appropriately at different milestones of the project depending on field conditions..

75. The location for public meeting is usually selected at every 50-100 km involving major villages/habitated area en-route of line. However, in other villages/parts, informal group meetings or other techniques are applied for consultation. The consultation and feedback process is a continuous one and implemented regularly at different milestone of project cycle.

76. The process of consultation and information dissemination begins even before the start of work as POWERGRID informs the general public by publishing in 2 (Two) local newspapers in vernacular language on implementation of project indicating the route of final alignment with name of the town /villages its passing. During survey also POWERGRID site officials meet people and inform them about the routing of transmission lines. During construction, every individual, on whose land line is constructed 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 POWERGRID approach to minimizing and solving them;
- Trees and crop compensation process.

77. In the instant project also, many group meetings were organized (informally and formally) in all villages where the interventions are likely to happen. Such consultation culminated in public meeting organized at different locations as provided in **Table- 4.1**. These meetings were attended by Gram Panchayat leaders/members, Village heads, interested villagers/general public and representatives from POWERGRID. Village women folk also actively participated in consultation. 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, photographs and public queries & answers are enclosed as **Annexure -3**.

Table 4.1 Details of Public Consultations en-route of Transmission line

Sl. No.	Date & time of Consultation	Venue	Person Attended
1.	15th Dec.' 15, 2.00 PM	At- Panchayat Auditorium, Village- Nalleppilly, District- Palakkad State- Kerala	Total 38 persons including Panchayat President & Secretary, interested villagers/ general public and representatives from POWERGRID
2.	16th Dec.' 15, 3.00 PM	At- Grampanchayat Community Hall, Village- Arasampalayam District- Coimbatore, State- Tamil Nadu	Total 25 persons including Village heads, interested villagers/ general public and representatives from POWERGRID

4.2. Summary of Public Consultations held

78. Two (2) public consultations meetings held were organised in Dec.'15 during preliminary survey/investigations of the entire the route of transmission lines. During consultations/interaction processes with people of the localized areas, POWERGRID field staffs explained benefit of the project, impacts of transmission line, payment of compensation for damaged of crops, trees, huts etc as per Indian Electricity Act, 2003 and Telegraph Act, 1885 and measures to avoid public utilities such as schools, hospital etc. People more or less welcomed the construction of the proposed project. Likely affected people (APs) requested for timely payment of compensation towards crops etc if damaged during construction activities at the market rate. Their queries were replied to satisfaction and it was assured that compensation would be paid in time after Revenue department fixed/award the amount as per the norms.

79. Besides above, the following queries were also raised/asked by the people of the villages during Public consultation and informal group meetings;

- What is the exact route of this Transmission line project?
- How this tower line will affect agriculturist?
- Compensation package for drawing the line? Is the land compensation in addition to crop compensation?
- Will POWERGRID acquire land for this project?
- Time schedule of the project?

80. POWERGRID field staffs explained above questions as follows:

- The transmission line is proposed through underground cabling along NH-47 from Trichur to Vadakancheri in Kerala, subsequently its overhead line till Pugalur in Tamilnadu. Detailed survey is in progress for underground portion for route finalization.
- Tree / crop compensation would be paid as per the rates fixed by the district authorities of revenue / forest / horticulture department for the damage to tree and crops, if any. Agricultural activities can be continued below the ROW of the Over Head line. No effect on agriculture as the Underground line in along the NH47 till

Vadakancheri in Kerala.

- Tree/crop compensation would be paid as per the rates fixed by the district authorities of revenue/forest/horticulture department. Yes it is paid as per the guidelines of Ministry of Power and the State Government.
- No acquisition is envisaged in construction of transmission line; only for substation land is purchased or acquired.
- It is being implemented in a compressed time schedule of 36 months.

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

81. The process of such consultation is to be continued during project implementation and even during O&M stage. The progress and proposed plan for Public consultation is described in **Table 4.2;**

Table 4.2: Plan for Future Consultations

S. No	Activity	Technique	Schedule
1.	**Detailed/ Check survey**	Public Meeting at different places (50-100 km) en-route final route alignment of line	Public meeting during 2017 (Q2) to 2018 (Q1).
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.

4.4. Information Disclosure

The draft/summary CPTD will be disclosed by the POWERGRID to the affected households and other stakeholders by placing it on website POWERGRID 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. A notice is also issued to APs after the detailed/ check survey and finalization of tower location during the construction. Affected persons also visit site/construction offices of POWERGRID to know about the compensation norms and policies and to discuss their grievances. The executive summary of the CPTD and Entitlement Matrix will also be made available to public through POWERGRID's construction offices. POWERGRID will organize further public consultation meetings with the stakeholders to share the views of public on the Plan for all possible clarifications. The feedback from the consultation will be reviewed and incorporated in the revised and final CPTD. The consultation process will continue throughout the project implementation period. POWERGRID will disclose revisions of the CPTD and updates if any, on its website and provide relevant information of monitoring reports to affected people and other stakeholders. This is to be done in a timely manner and in Tamil, Malayalam & English.

V. GRIEVANCE REDRESS MECHANISM

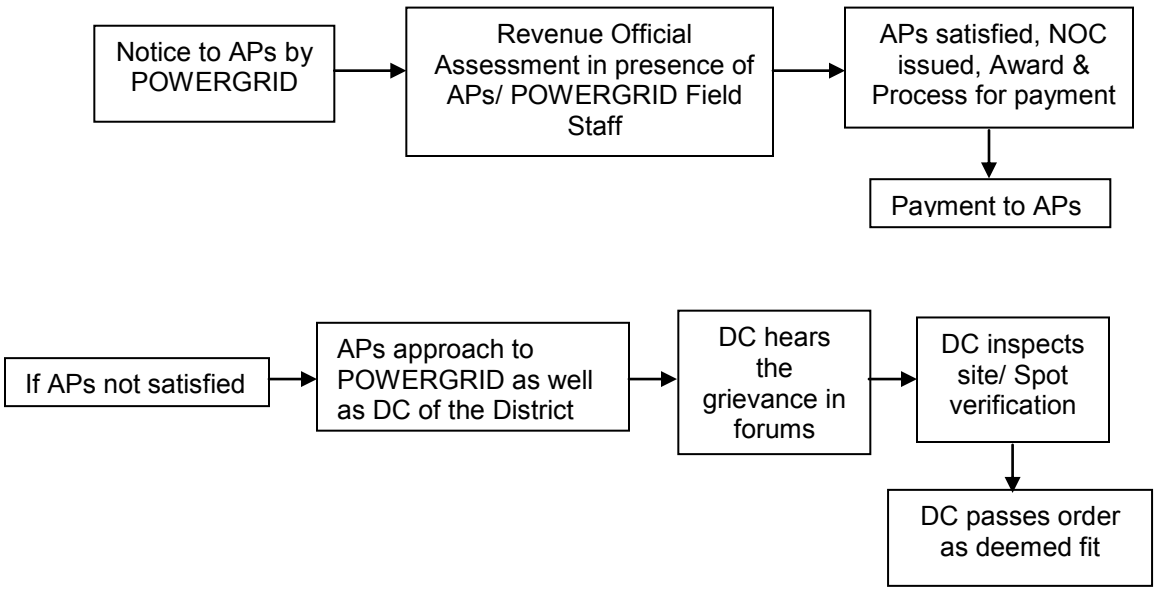
82. Grievance Redress Mechanism (GRM) is an integral and important mechanism for addressing/resolving the concern and grievances in a transparent and swift manner. Many minor concerns of peoples are addressed during public consultation process initiated at the beginning of the project. For handling grievance, Grievance Redress Committee (GRC) will be established at two places, one at the project/scheme level and another at Corporate/HQ level. The GRCs shall include members from POWERGRID, Local Administration, Panchayat Members, Affected Persons representative and reputed persons from the society on nomination basis under the chairmanship of project head. The composition of GRC shall be disclosed in Panchayat/Village council offices and concerned district headquarter for wider coverage.

83. 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 not able to take decision it may refer the complaint to corporate GRC for solution. GRC endevour will be 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.

84. The corporate level GRC shall function under the chairmanship of Director (Project) who will nominate other members of GRC including one representative from Environment and Social Management Department (ESMD) 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 level GRC or complainant directly and pronounce its decision within next 15 days.

85. Additionally, 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. Apart from this, POWERGRID officials also address to the complaints of affected farmers and the same are forwarded to revenue official for doing the needful. All efforts shall be made to redress/decision on the complaints within 30 to 45 days maximum. POWERGRID will develop, improve, and maintain recording and tracking systems for GRM as per the Action Plan for Safeguards. The proposed mechanism does not impede access to the country's judicial or administrative remedies. Details are depicted below in **Figure-2**:

Figure-2: Grievance Redress Mechanism



VI. LEGAL FRAMEWORK

6.1. Overview

86. The CPTD is based on ADB's SPS, 2009 as well as on the Borrower's domestic policy instruments and laws. In India, compensation for Land Acquisition (LA) and Resettlement Assistance (RA) for project affected persons/families is directed by the National law, "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013" (RFCTLARRA, 2013), effective from 1st January 2014. Being a transmission project, the relevant national laws applicable for this project are (i) The Electricity Act, 2003 (ii) The Indian Telegraph Act, 1885 and POWERGRID's Environmental and Social Policy & Procedures, 2009 (ESPP). The compensation principles adopted for the project shall comply with applicable laws and regulations of the Government of India/ State Govt, ESPP as well as ADB's SPS, 2009.

6.2 ADB'S Safeguard Policy Statement (SPS), 2009

87. ADB's Safeguard Policy Statement (SPS), 2009 set out specific safeguard requirements for environment, involuntary resettlement and indigenous people. The objectives of the Involuntary Resettlement Safeguard policy is to avoid involuntary resettlement wherever possible; to minimize involuntary resettlement by exploring project and design alternatives; to enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels; and to improve the standards of living of the displaced poor and other vulnerable groups.

The involuntary resettlement safeguards cover physical displacement (relocation, loss of residential land, or loss of shelter) and economic displacement (loss of land, assets, access to assets, income sources, or means of livelihoods) as a result of (i) involuntary acquisition of land, or (ii) involuntary restrictions on land use or on access to legally designated parks and protected areas. It covers them whether such losses and involuntary restrictions are full or partial, permanent or temporary. The three important elements of ADB's SPS (2009) are: (i) compensation at replacement cost for lost assets, livelihood, and income prior to displacement; (ii) assistance for relocation, including provision of relocation sites with appropriate facilities and services; and (iii) assistance for rehabilitation to achieve at least the same level of well-being with the project as without it. The SPS gives special attention to poor and vulnerable households to ensure their improved well-being as a result of project interventions.

6.3. Statutory Requirements

88. Transmission lines are constructed under the ambit of 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 POWERGRID has been vested with the powers of Telegraph Authority vide MoP's Gazette Notification dated 24.12.03 under sec 164 of the Electricity Act. As per the provision of Indian Telegraph Act, 1885 Section 10 b), POWERGRID is not authorized to acquire any land hence land under tower is not acquired. However, compensation for all damages are paid to the individual land owner as per the provision of Section-10 d) of Indian Telegraph Act, 1885.

89. The provisions in the Electricity Act, 2003, Indian Telegraph Act, 1885 and MoP

Guideline, 2015 regarding compensation for laying of transmission lines are as follows :

6.3.1. The Electricity Act, 2003, Part-VIII, Section 67 & 68

Quote:

Section 67 (3-5):

(3) A licensee shall, in exercise of any of the powers conferred by or under this section and the rules made thereunder, cause as little damage, detriment and inconvenience as may be, and shall make full compensation for any damage, detriment or inconvenience caused by him or by any one employed by him.
(4) Where any difference or dispute [including amount of compensation under sub-section (3)] arises under this section, the matter shall be determined by the Appropriate Commission.
(5) The Appropriate Commission, while determining any difference or dispute arising under this section in addition to any compensation under sub-section (3), may impose a penalty not exceeding the amount of compensation payable under that sub-section.

Section 68 (5 & 6):

(5) Where any ***tree standing or lying near an overhead line or where any structure or other object which has been placed or has fallen near an overhead line*** *subsequent to the placing of such line, interrupts or interferes with, or is likely to interrupt or interfere with, the conveyance or transmission of electricity or to interrupt or interfere with, the conveyance or transmission of electricity or the accessibility of any works, an Executive Magistrate or authority specified by the Appropriate Government may, on the application of the licensee, cause the tree, structure or object to be removed or otherwise dealt with as he or it thinks fit.*
(6) When disposing of an application under sub-section (5), an Executive Magistrate or authority specified under that sub-section shall, in the case of any tree in existence before the placing of the overhead line, ***award to the person interested in the tree such compensation as he thinks reasonable, and such person may recover the same from the licensee.***
Explanation. - For purposes of this section, the expression "tree" shall be deemed to include any shrub, hedge, jungle growth or other plant.

Unquote.

6.3.2. The Indian Telegraph Act, 1885, Part-III, Section 10 :

Quote:

Section 10 – *The telegraph authority may, from time to time, place and maintain a telegraph line under, over, along, or across, and posts in or upon any immovable property, Provided that*

a) the telegraph authority shall not exercise the powers conferred by this section except for the purposes of a telegraph established or maintained by the [Central Government], or to be so established or maintained;

b) ***the [Central Government] shall not acquire any right other than that of user only*** *in the property under, over, along, across in or upon which the telegraph authority places any telegraph line or post; and*

c) *except as hereinafter provided, the telegraph authority shall not exercise those powers in respect of any property vested in or under the control or management of any local authority, without the permission of that authority; and*

d) *in the exercise of the powers conferred by this section, the telegraph* ***authority shall do as little damage as possible, and, when it has exercised those powers in respect of any property other than that referred to in clause (c), shall pay full compensation to all persons interested for any damage sustained by them*** *by reason of the exercise of those powers.*

Unquote.

90. **Section 16 of the Indian Telegraph Act, 1885 which stipulates as under:**

16. Exercise of powers conferred by section 10, and disputes as to compensation, in case of property other than that of a local authority:

(1) If the exercise of the powers mentioned in Section 10 in respect of property referred to in clause (d) of that section is resisted or obstructed, the District Magistrate may, in his discretion, order that the telegraph authority shall be permitted to exercise them.

(2) If, after the making of an order under sub section (1), any person resists the exercise of those powers, or, having control over the property, does not give all facilities for this being exercised, he shall be deemed to have committed an offence under section 188 of the Indian Penal Code (45 of 1860).

6.3.3. MoP Guidelines on RoW Compensation:

91. Ministry of Power (MoP) vide its order No. 3/7/2015-Trans dated 15th April'15 constituted a Committee comprising of representatives of various State Govt., MoP, Central Electricity Authority (CEA) & POWERGRID under the chairmanship of Special Secretary, MoP to analyze the issues relating to Right of Way for laying of transmission lines in the country and to suggest a uniform methodology for payment of compensation on this account. Based on recommendation of the Committee, Ministry of Power, Govt. of India vide its notification dated 15th Oct'15 has issued guidelines for payment of compensation for damages in regard to RoW (**Annexure-4**). POWERGRID shall pay compensation towards diminution land value to all affected farmers/land owners once it is adopted by respective states. However, State Govt. of Tamil Nadu has not yet adopted the said guidelines for implementation. As per the guidelines following compensation shall be paid in addition to normal tree and crop damage compensation:

i) **Tower base:** Compensation @ 85% of land value as determined by District Magistrate (DM) or any other authority based on Circle rate/ Guideline value/ Stamp Act for tower base area (between four legs).

ii) **Line corridor:** Diminution of land value in the RoW would be decided by States as per categorization/type of land in different places of State subject to maximum of 15% of land value as determined based on Circle rate/ Guideline value/ Stamp Act.

6.4. POWERGRID's ESPP, 2009

92. To address the environmental and social issues related to its power transmission projects, POWERGRID has developed its corporate Environmental and Social Policy & Procedures (ESPP) in 1998 based on the principles of avoidance, minimization, and mitigation. The ESPP had been updated twice in 2005 & 2009 in line with the requirement of new enactment by Govt. of India, changed rules and guidelines including that of multilateral funding agency like World Bank, ADB, JBIC etc. and suggestion/best practices and feedback received from different sites and through wide consultation process with various stakeholders. POWERGRID's ESPP'2009 is the first comprehensively analysed by World Bank's under its 'Use of Country Systems (UCS)' policy and is certified to be compliant with Bank's environmental and social safeguards requirement

93. ESPP 2009 outlines POWERGRID'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. Specifically on social, the following criteria and approach are considered in the ESPP:

(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 ROWs, land acquisition or loss of livelihood.
(v) Encourage consultation with communities in identifying environmental and social implications of projects.
(vi) Guarantee entitlements and compensation to affected people as per its R&R policy.
(vii) Share information with local communities about environmental and social implications.
(viii) Always maintain highest standards of health and safety and adequately compensate affected persons in case of any eventuality.

94. POWERGRID's social entitlements within its Resettlement and Rehabilitation (R&R) framework are varied and include different types of compensation packages. Temporary damages will occur during construction of transmission lines. The R&R framework is applicable in case of permanent land acquisition and not for temporary damages.

6.5. Basic Principles for the Project

95. The basic principles adopted for the Project are:

(i) Avoid negative impacts of land acquisition and involuntary resettlement on persons affected by the Project to the extent possible.
(ii) Where negative impacts cannot be avoided, assist affected persons (AP), in improving or at least regaining their standard of living and income.
(iii) Carry out meaningful consultations with affected persons and inform all displaced persons of their entitlements and resettlement options. Ensure their participation in planning, implementation and monitoring of the Project

(iv) Disclose all information related to, and ensure AP participation in, resettlement planning and implementation.
(v) Provide compensation for acquired assets at replacement/market value in accordance with the RP/CPTD.
(vi) Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets.
(vii) Provide resettlement assistance and income restoration to APs.
(viii) Provide for APs not present during enumeration. However, anyone moving into the project area after will not be entitled to assistance.
(ix) Develop procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement to ensure that those people who enter into negotiated settlements will maintain the same or better income and livelihood status.
(x) Provide compensation and resettlement assistance prior to taking possession of the acquired lands and properties.
(xi) Establish grievance redress mechanisms to ensure speedy resolution of disputes.
(xii) Ensure adequate budgetary support to cover implementation costs for CPTD.
(xiii) Monitoring (if required) of the implementation of CPTD.

96. Additionally, the issues related to the Right of Way (RoW) for the transmission lines will be dealt with proper care especially for the temporary loss. For the loss of crops and trees due to construction of overhead lines, cash compensation will be provided through online transfer during construction works. Further, cash compensation will be paid to the APs for the temporary loss of crop and loss of trees if occurred, during the time of maintenance and repair.

6.6. Cut-off- Date

97. The impacts are temporary in nature in terms of loss of crops/trees etc., which will occur during the construction. The compensation will be paid parallely with construction activities of transmission lines as per assessment of actual damage. A prior notice is served after the detailed/check survey and finalization of tower location during the construction to the land owners informing that the proposed transmission line is being routed through the property of the individual. The notice shall contain the particulars of the land, ownership details and the details of the trees/crops inevitability to be damaged during the course of the construction of the proposed transmission line and acknowledgement received from land owner. This serves as a record for identifying the actual APs and the date of issuance of this notice can be treated as cut-off-date for identification and assessment of damages.

VII. ENTITLEMENTS, ASSISTANCE AND BENEFITS

7.1. Entitlements

98. APs will be entitled for compensation for temporary damages to crops/trees/structures etc. as per the Entitlement Matrix given in **Table 7.1**. The Land Acquisition Act (LAA) will be applicable for the compulsory acquisition of land. They will also receive 'rehabilitation assistance' if their land is permanently acquired, their income source is adversely affected, their homes are fully or partially affected, or other properties such as commercial structures or agricultural structures, crops, trees, and other facilities or access to properties are damaged or reduced because of the Project. Lack of legal documents of their customary rights of occupancy or land titles shall not affect their eligibility for compensation. In the instant case, there is no involuntary land acquisition is involved, only temporary damage will occur during construction of transmission line for which compensation is paid as per relevant norms. Compensation towards temporary damages to all eligible APs including non-title holders is paid as per the assessment and Entitlement Matrix.

99. All APs are paid compensation for actual damages irrespective of their religion, caste and their economic status. As an additional assistance, construction contractors are encouraged to hire local labour that has the necessary skills. One time lump sum assistance to vulnerable households on recommendation of State Authority.

7.2. Entitlement Matrix

100. An Entitlement Matrix for the project is given in **Table 7.1**.

Table 7.1: Entitlement Matrix

S.N	TYPE OF ISSUE/ IMPACT	BENEFICIARY	ENTITLEMENT OPTIONS
1.	Loss of crops and trees	Title Holder	Compensation at market rate for crops and 8 years income for fruit bearing trees. APs will be given advance notice to harvest their crops. Timber will be retained by the owner.
2.	Loss of crops and trees	Tenant/ sharecropper/ leaseholder[9]	Only the cultivator[10] will get compensation at market rate for crops and 8 years income for fruit bearing trees. APs will be given advance notice to harvest their crops.
3.	Other damages (if applicable)	All APs[11]	Replacement cost as assessed by the concerned authority.
4.	Loss of structure		
	a) House		
(i)	Loss /Removal of House	Titleholders/ Non-	Cash compensation at replacement cost (without deduction for salvaged material)

[9] This may include non titled APs
[10] Powergrid will explain to AP tenant/sharecropper/leaseholder that the compensation will be provided to the cultivator and the sharing arrangements will have to be determined among themselves
[11] Titled and Non-titled

S.N	TYPE OF ISSUE/ IMPACT	BENEFICIARY	ENTITLEMENT OPTIONS
		titleholders	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
	b) Shop/ Institutions		
(i)	Loss /Removal of House	Titleholders/ Non-titleholders	Cash compensation plus Rs. 10,000/- for construction of working shed/shop plus rehabilitation assistance equivalent to 1 year income plus transition benefits as per category-5 below
5.	Losses during transition of displaced persons/ establishments/ Shifting / Transport	Family/unit	Provision of transport or equivalent cash for shifting of material/ cattle from existing place to alternate place
6	Impacts on vulnerable APs	Vulnerable APs[12]	One time lumpsum assistance to vulnerable households on recommendation of State Authority. This will be paid over and above other assistance. Vulnerable APs to get priority under CSR activities.
7	Land area below tower base	Owner	85% of land cost as decided by District Magistrate***(#)***
8	Land coming in corridor of width of Right of Way	Owner	15% of land cost as decided by District Magistrate ***(#)***

(#): As per MoP guidelines dated 15.10.15 regarding payment of compensation for damages in respect to RoW for transmission line.

7.3. Procedure of Tree/crop compensation

101. In exercise of the powers conferred under section-164 of The Electricity Act, 2003, Ministry of Power vide Gazette notification dated 24 December, 2003 has authorized POWEGRID 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 immoveable property. 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, POWERGRID pays compensation to land owners towards damages if any to tree, crop etc. during implementation of transmission project as well as during operation and maintenance phase. The procedure followed for such compensation is as follows:

102. POWERGRID follows the principle of Avoidance, Minimization and Mitigation in the construction of line in agricultural field having crop due to inherent flexibility in phasing the construction activity and tries to defer construction in cropped area to facilitate crop

[12] Vulnerable APs include scheduled tribes/ scheduled caste/ households headed by women/ physically handicapped/ disabled families, etc. as certified by local authority.

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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. As regards 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 center 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 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.

103. A prior notice is served to the land owners informing that the proposed transmission line is being routed through the property of the individual. The notice shall contain the particulars of the land, ownership details and the details of the trees/crops inevitability likely to be damaged during the course of the construction of the proposed transmission line and acknowledgement received from land owner. A copy of said notice is further issued to the Revenue Officer, who has been authorized by the State Govt. for the purpose of assessment/valuation and disbursement of compensation to the affected parties.

104. 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 Mahazar is prepared for the identified trees and crops 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.

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

106. Once the tree/crop is removed / damaged, POWERGRID 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 prepared for this purpose. The detailed Valuation statement is verified at various levels and approval of payment of compensation is accorded by the concerned District Collectors. The land requirement for erection of tower legs is very small i.e. for each leg of tower actual construction area ranges from 0.45 to 0.7 m. a small square area of about 0.2 sq.m. to 0.49 sq.m. depending on the type 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 transmission tower is approximately 1 sq.m. of land. This impact on agriculture land is negligible. However, while assessing the compensation for damages, POWERGRID

considers larger area during calculation of damages (approximately 60X60 m= 3600 sq.m.) compared to an actual area of about (40X40 m=1600 sq.m.) which allows for a buffer. Thus payment for buffer portion adequately compensates the permanent inability to crop the small areas of land occupied by the tower footings, which is also explained to affected persons during consultation/measurement survey. A sample proforma for compensation is enclosed as **Annexure-5**.

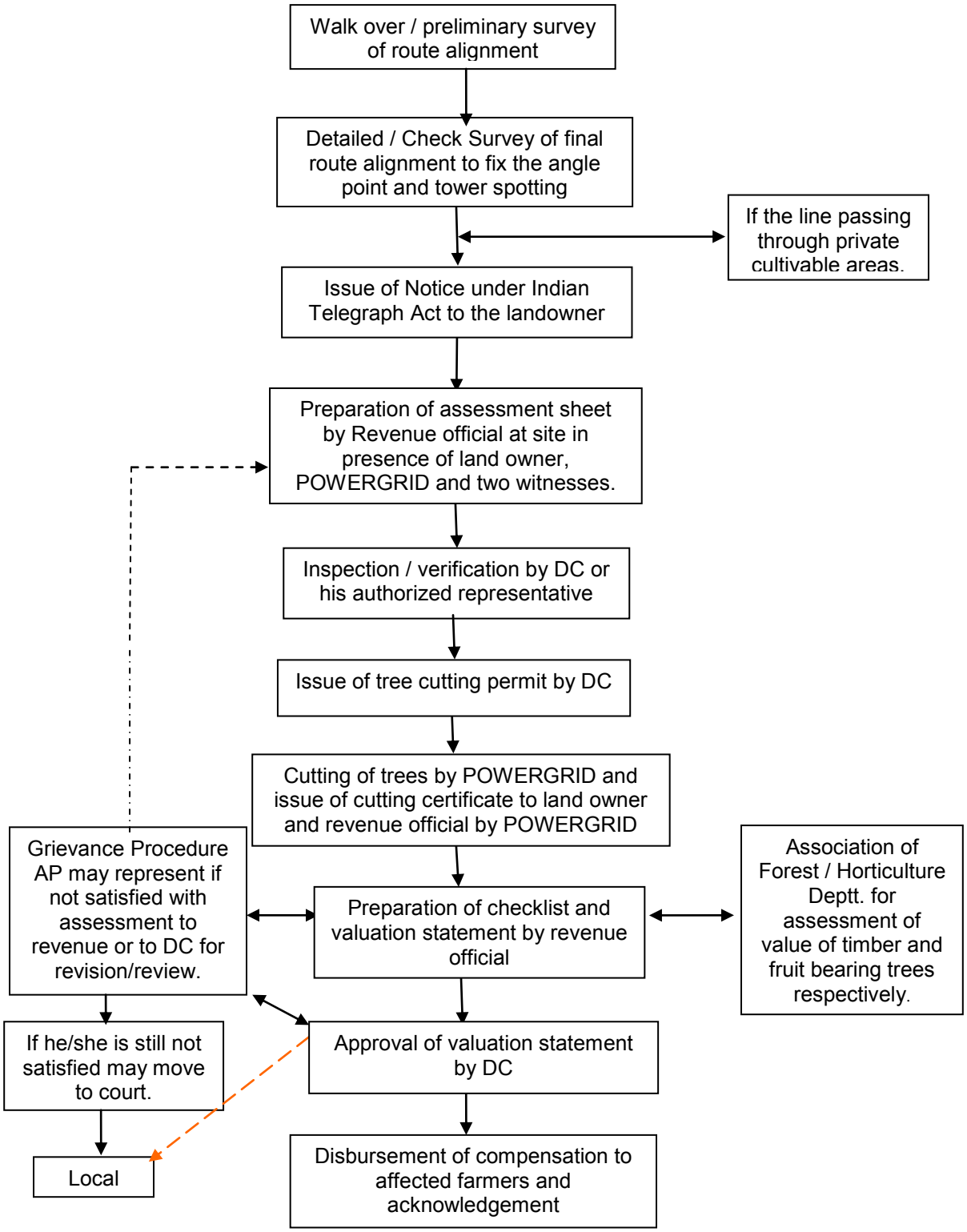
107. On approval of compensation, the revenue officer shall further intimate the amount payable to the different land owners and POWERGRID arranges the payment by way of cheque/online transfer to the affected parties. The payment is further disbursed at the local village office after due verification of the documents in presence of other witnesses.

108. For other damages, State Govt. Revenue Department assess the cost of damage. 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 pays the compensation. Hindrances to power, telecom carrier & communication lines etc. shall be paid as per Govt. norms. Process of tree/crop compensation is depicted in **Figure-3**.

7.4 Compensation for Structure

109. 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 7.1)**. In the instant case, 35 numbers of small structures likely to be encountered in the right of way of proposed transmission line. These are 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 POWERGRID and APs is to be done and verified by revenue official for actual damages. The compensation for huts will be paid to the APs as decided by committee based on government norms. Hence, compensation is paid parallely with the construction activity of transmission line.

Figure-3: Tree / Crop Compensation Process



VIII. BUDGET

110. 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. In the instant project, a budget provision has been made for compensation for Tower Base (85% of the land cost) and RoW Corridor (15% of the land cost) as per MoP guidelines (though the Govt. of Tamil Nadu yet to adopt the said guidelines for implementation). Accordingly the cost has been estimated 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 POWERGRID's old 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 crops losses, other damages etc., As per POWERGRID's previous projects and strategy for minimization of impacts an average of 45% of the affected land is expected for compensation for crops and other damages. 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. In any case no residential structure shall be affected. Therefore, provisions of budget expenditure for implementation of CPTD for the subprojects considering corridor of 40 meter maximum (though affected part of corridor for compensation of crops/other damages would be about 45% as per POWERGRID's projects previous practices).

8.1 Compensation for Land for Tower Base and RoW Corridor

111. The land area for tower base is estimated as 0.17 acre per km. Similarly, for RoW corridor the area is estimated 11.19 acre per km. The cost of land is estimated @ Rs. 15 lakh/acre considering the land use type as agriculture land in rural setting. Accordingly the cost of land compensation towards tower base & RoW corridor for overhead line is thus estimated as Rs. 4118.87 Lakhs. Besides, a compensation of Rs. 26 lakhs (Rs. 1 lakh/km) will be paid as bank guarantee to National Highway Authority of India (NHAI) for utilizing 2 m corridor of NH-47 for laying of underground cable. A detail of line wise cost is given below in **Table 8.1**.

Table 8.1: Cost of Land Compensation for Tower Base & RoW Corridor

Name of Line	Line Length (Km)	Land Area for Tower Base (acre)	Land Area for RoW Corridor* (acre)	Avg. Cost of Land (Lakhs / acre)	Total in Lakhs (Tower base @ 85% & Corridor@15%)
±320kV HVDC Pugalur- North Thrissur(overhead line)	127.00	21.59	1421.13	15.00	4105.58
LILO of North Thrissur – Cochin 400 kV D/C line at North Thrissur	0.4	0.068	4.476	15.00	13.87
±320kV HVDC Pugalur- North Thrissur (underground cable)	26				26.00

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

8.2. Compensation for Crops and Trees

112. Construction of lines in crop and fruit bearing season is avoided as far as possible. In case of crops a detailed survey is conducted looking at existing crops, general crop patterns, seasonal particulars, nature and extent of yield. The compensation is calculated in consultation with revenue authorities in terms of yield/hectare and rate/quantity for prevailing crops in the area. Similarly, in case of trees 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 after detailed survey / during implementation. Details of line wise cost is given in **Table 8.2** below

Table 8.2: Cost of Compensation for Crops and Trees

Sl No.	Transmission Lines	Total Length (Km)	Compensation /Km (Lakh)	Total compensation cost for Crops and trees (Lakh)
1.	±320kV HVDC Pugalur- North Thrissur(overhead line)	127	5	635.00
2.	LILO of North Thrissur – Cochin 400 kV D/C line at North Thrissur	0.4	5	2.00
Total				**637.00**

8.3. Summary of Budget

113. The total indicative cost is estimated to be INR 4952.05 Lakhs equivalent to USD 7.61 million. Details are given in **Table 8.3**. The following estimated budget is part of complete project cost as on date including the counterpart financing to be met by POWERGRID sources. However, actual updation of the estimated cost shall be updated during execution.

Table 8.3: Summary of Budget

Item	Amount in Lakh (INR)	Amount in (Million USD)
A. Compensation		
A-1: Loss of Crops and Trees	637.00	0.98
A-2: Land Compensation for Tower Base and RoW Corridor	4145.45	6.37
Sub Total-A	**4782.45**	**7.35**
B: Implementation Support Cost		
B-1: Man-power involved for CPTD Implem. & Monitoring	15.39	0.0236
B-2: External Monitoring, if required	10.00	0.0154
Sub Total- B	**25.39**	**0.039**
Total (A+B)	**4807.84**	**7.39**
Contingency (3%)	**144.21**	**0.22**

Grand Total	**4952.05**	**7.61**

X. INSTITUTIONAL ARRANGEMENTS

9.1. General

114. POWERGRID will be the Implementing Agency (IA) for the Project. The implementation and monitoring are critical activities shall be followed as per Implementation Chart/Schedule provided in **Chapter- X**. Monitoring is a continuous process for POWERGRID projects at all the stages are it the site selection, construction or maintenance. The success of POWERGRID lies in its strong monitoring systems. Apart from the site managers reviewing the progress on daily basis regular project review meetings are held at least on monthly basis which is chaired by Executive Director of the region wherein apart from construction issues the environmental aspects of the projects are discussed and remedial measures taken wherever required. The exceptions of these meetings are submitted to the Directors and Chairman & Managing Director of the Corporation. The progress of various on-going projects is also informed to the Board of Directors. Following is the organization support system for proper implementation and monitoring of Environmental & Social Management Plan:

9.2. Various Levels

9.2.1. Corporate Level

115. An Environmental Management Cell at corporate level was created within POWERGRID in 1992 and subsequently upgraded to an Environment Management Department (EMD) in 1993 and in 1997 it has been further upgraded to Environment & Social Management Deptt. (ESMD) by incorporating social aspect of project. Briefly, the ESMD's responsibilities are as follows:

- Advising and coordinating RHQs and Site to carry out environmental and social surveys for new projects;
- Assisting RHQs and site to finalize routes of entire power transmission line considering environmental and social factors that could arise en-route;
- Help RHQs and Site to follow-up with the state forest offices and other state departments in expediting forest clearances and the land acquisition process of various ongoing and new projects;
- Act as a focal point for interaction with the MoEF&CC for expediting forest clearances and follow-ups with the Ministry of Power;
- Imparts training to POWERGRID's Regional Head Quarters (RHQs) & Site Officials on environment and social issues and their management plan.

9.2.2. Regional Level

116. At its Regional Office, POWERGRID has an Environmental and Social Management cell (ESMC) to manage Environmental and Social issues and to coordinate between ESMD at the Corporate level and the Construction Area Office (CAO) of site. The key functions envisaged for ESMC are:

- Advising and coordinating field offices to carry out environmental and social surveys for new projects envisaged in the Corporate Investment Plan;

- Assisting the ESMD and CAOs to finalize routes of entire power transmission lines considering the environmental and social factors that could arise en-route;
- To follow-up forest clearances and land acquisition processes with state forest offices and other state departments for various ongoing and new projects;
- Acting as a focal point for interaction with the ESMD and CAOs on various environmental and social aspects.

9.2.3. Site Office

117. At the Construction Area Office (CAO) level, POWERGRID has made the head of the site responsible for implementing the environmental and social aspects of project and is also head of Environmental and Social Management Team (ESMT) at site. Key functions of the ESMT are:

- Conduct surveys on environmental and social aspects to finalize the route for the power transmission projects
- Conduct surveys & Interact with Revenue Authorities for land acquisition.
- Interact with the Forest Departments to make the forest proposal and follow it up for MoEF&CC clearance.
- Implementation of Environment Management Plan (EMP)/CPTD
- Monitoring of EMP/CPTD & producing periodic reports on the same.

118. For the instant subprojects, POWERGRID will implement the CPTD and will do the overall coordination, planning, implementation, financing and maintaining all databases, work closely with APs and other stakeholders. The database will be managed by POWERGRID through its Regional ESMC staffs by collecting input from the field staffs which may be monitored/audit by the external monitoring agency, if required. POWERGRID will ensure that local governments are involved in the plans implementation to facilitate all settlement of compensation related activities before commencing civil works. Based on regularly updated social assessment & compensation data, a central database will also be maintained by POWERGRID. Roles and responsibilities of various agencies are presented in **Table 9.1.**

Table 9.1: Agencies Responsible for CPTD Implementation

Activity	Agency Responsible
Implementing CPTD	Field staffs, POWERGRID
Updating the CPTD	ESMC (RHQ), POWERGRID
Review and Approval of CPTD	POWERGRID
Verification survey for identification of APs	POWERGRID field staffs & Revenue officials
Survey for identification of plots for Crop/Tree/ other damages Compensation	POWERGRID & Revenue officials
Consultation and disclosure of CPTD to APs	POWERGRID & Revenue officials
Compensation award and payment of compensation	Revenue Dept / Competent Authority
Fixing of replace cost and assistance	Revenue Dept / Competent Authority
Payment of replacement cost compensation	POWERGRID
Takeover temporary possession of	POWERGRID and Revenue Department

Activity	Agency Responsible
land/houses	
Hand over temporary possession land to contractors for construction	POWERGRID
Notify construction starting date to APs	POWERGRID field staffs
Restoration of temporarily acquired land to its original state including restoration of private or common property resources	Contractors subject to monitoring by POWERGRID
Development, maintenance and updating of Compensation database	POWERGRID
Development, maintenance and updating of central database	POWERGRID
Internal monitoring	POWERGRID
External monitoring, if required	External Monitoring Agency

9.3. Staff Training on Environment and Social Issues

119. Environment and social Management Department (ESMD) in association with HRD organizes training program on Environment and Social Management (E & S M) including Sustainability, Corporate Social Responsibility, ISO-14001 requirements. During FY 2014-15 and FY 2015-16, more than 494 & 512 training man days respectively was imparted training on E & S aspects. During FY 2016-17, various training on E&S is under progress. Selected officials have also been attended The World Bank sponsored training program on R&R at different places like Hyderabad, Bangalore and Udaipur. Four officials have also been deputed to Japan for AOTS training program on Environment Management. Officials are also attended training organized by ADB. POWERGRID organized a two days training programme on ADB's safeguard requirements on 6th & 7th Aug' 2013 at Lucknow in which ADB environment & social expert also presented and informed the participants about ADB's safeguard requirements. Executives at ground levels have shown remarkable improvement in appreciating/ dealing with these issues. Apart from these, dedicated program in all other technical training program one slot is invariably provided particularly for Environmental & Social issues and it's Management.

X. IMPLEMENTATION SCHEDULE

120. Assuming Award letter for execution of work to be placed in mid-2017 the following work Schedule is drawn for implementation of CPTD. Tentative implementation schedule for project including various sub tasks presented in **Table 10.1**.

Table 10.1 Tentative Implementation Schedule

Sl. No.	Activity	2017				2018				2019			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
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

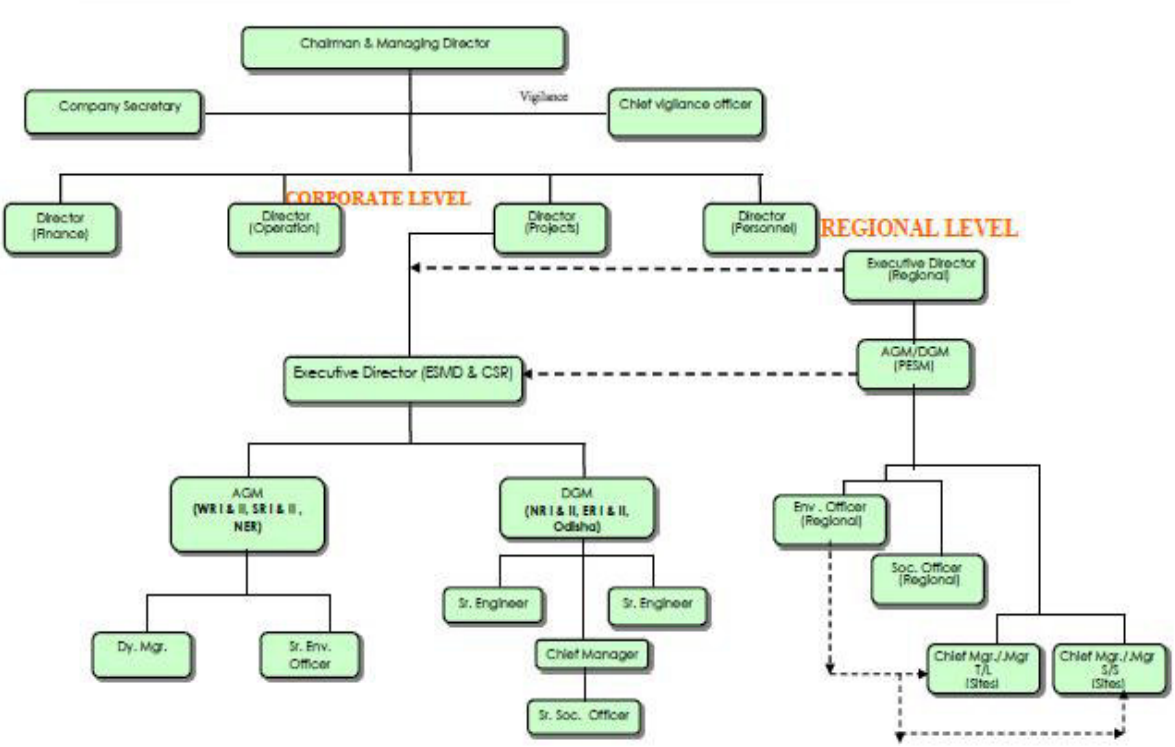
121. Monitoring will be the responsibility of POWERGRID. POWERGRID will disclose semi-annual monitoring reports on their safeguards implementation performance on its website and submit the reports to ADB for information and disclosure.

122. Internal monitoring of POWERGRID will include: (i) administrative monitoring: daily planning, implementation, feedback and trouble shooting, maintenance, and progress reports; (ii) socio-economic monitoring: compensation of crops/trees or any other damages, demolition if any, salvaging materials, dates for consultations, and number of appeals placed; and (iii) post-implementation monitoring. Semi-annual monitoring reports documenting progress on implementation of CPTD and grievance redressal will be provided by POWERGRID to ADB.

123. POWERGRID will engage the services of an independent agency/external monitoring, if required. Provisions have been made in the compensation budget component for engaging an external monitor.

124. POWERGRID is well equipped to implement and monitor its environment and social management plan including CPTD. Organizational Support Structure for monitoring of above is given in **Figure-4**. Monitoring report will be submitted to ADB semi-annually and the same will be disclosed on POWERGRID's and ADB's website.

Figure -4 Organization Support Structure for EMP & CPTD Monitoring



ANNEXURE – 1

EVALUATION OF ALTERNATIVES ROUTE ALIGNMENT OF PROPOSED TRANSMISSION LINES

A. EVALUATION OF ALTERNATIVES ROUTE ALIGNMENT FOR HVDC BIPOLE LINK BETWEEN NORTH THRISSUR AND PUGALUR LINE

Three different alignments were studied with the help of published data/maps and walkover survey to arrive at most optimum route for detailed survey. The comparative details of three alternatives in respect of the proposed line are as follows:

S.N	Description	Alternative-I	Alternative-II	Alternative-III
1(a)	**Route particulars - Underground(UG) Portion**			
i.	*Out of total line length of 153.5 km, approx 26.5 km of cable is proposed to be laid underground in Kerala portion to conserve the RoW and minimize the disturbance to local community. This underground cable shall be laid along the NH-47 starting from Thrissur HVDC terminal up to Vadakancheri village. As per preliminary assessment, approx. 5km (2.0 ha.) is passing through forest land in the existing RoW of NH-47 for which necessary Forest clearance under FCA, 1980 was already obtained by NHAI. However, necessary permission/rediversion, as applicable, shall be obtained from concerned authority before actual execution in the forest portion.*			
1(b)	**Route particulars- Overhead(OH) Portion**			
i.	Route Length (km)	130	127	131
ii.	Terrain			
	Hilly	Nil	Nil	Nil
	Plain	100%	100%	100%
2.	**Environmental impact (UG & OH)**			
i.	Name of District(s) through which the line passes	Thrissur, Palakkad, Coimbatore & Tirupur	Thrissur, Palakkad, Coimbatore & Tirupur	Thrissur, Palakkad, Coimbatore & Tirupur
ii.	Town in alignment	Nearby towns are Thrissur, Jellipatti, Vadakancheri, Valayar, Palakkad, Arasampalayam, Allattur, Dharapuram	Nearby towns are Thrissur, Palakkad, Chittur, Nallepalli, Chenjeri, Dharapuram etc.	Nearby towns are Thrissur, Vadakancheri, Uttukuli, Nemmad, Pllochi, Animapatti, Dharapuram etc.
iii.	House within RoW	Shall be ascertained after detailed survey	Shall be ascertained after detailed survey	Shall be ascertained after detailed survey
iv.	Forest involvement (km/ha.)	UG – 5 km/2.0 ha.) (refer 1a(i))		
		OH- Nil	OH- Nil	OH- Nil
v.	Type of Forest (RF/PF)& whether part of Wildlife Area/Elephant corridor/ Biodiversity Hotspots/ Biosphere Reserve/ Wetlands or any other environmentally sensitive area, if any	Reserve Forest	Reserve Forest	Reserve Forest
vi.	Density of Forest	Very Low	Very Low	Very Low

S.N	Description	Alternative-I	Alternative-II	Alternative-III
vii.	Type of flora	Coconut (*Cocos nucifera*), Neem (*Azadirachta indica*), Rubber(*Ficus elastic*), Cashew (*Anacardium occidentale*), Paddy (*Oryza sativa)*, Banana (*Musa acuminate*) & Areca Nut (*Areca catechu*), Cotton (*Gossypium arboretum*) & various bamboo species etc.	Coconut (*Cocos nucifera*), Neem (*Azadirachta indica*), Rubber(*Ficus elastic*), Cashew (*Anacardium occidentale*), Paddy (*Oryza sativa)*, Banana (*Musa acuminate*) & Areca Nut (*Areca catechu*), Cotton (*Gossypium arboretum*)) & various bamboo species etc.	Coconut (*Cocos nucifera*), Neem (*Azadirachta indica*), Rubber(*Ficus elastic*), Cashew (*Anacardium occidentale*), Paddy (*Oryza sativa)*, Banana (*Musa acuminate*) & Areca Nut (*Areca catechu*), Cotton (*Gossypium arboretum*) & various bamboo species etc.
viii.	Type of fauna	Fox(*Vulpes benghalensis,* Wild boar (*Sus scrofa*) and domestic species like Goat *(Capra hircus)*, Sheep *(Ovis aries),* Cow (*Bos primigenius indicus*), Buffalo *(Bubalus bubalis)*	Fox (*Vulpes benghalensis,* Wild boar (*Sus scrofa*) and domestic species like Goat *(Capra hircus)*, Sheep *(Ovis aries),* Cow (*Bos primigenius indicus*), Buffalo *(Bubalus bubalis)*	Fox (*Vulpes benghalensis,* Wild boar (*Sus scrofa*) and domestic species like Goat *(Capra hircus)*, Sheep *(Ovis aries),* Cow (*Bos primigenius indicus*), Buffalo *(Bubalus bubalis)*
ix.	Endangered species any	Nil	Nil	Nil
x.	Historical/cultural Monuments, if any	Nil	Nil	Nil
3.	**Compensation Cost:**			
i.	Crop (Non Forest) (OH Portion)	650 lakhs (@ 5 lakhs/km)	635 lakhs (@ 5 lakhs/km)	655 lakhs (@ 5 lakhs/km)
ii.	Land for Tower Base & RoW Corridor (OH & UG Portion)	4310.12 lakhs (@15 lakhs/acre)	4227.95 lakhs (@15 lakhs/acre)	4337.49 (@15 lakhs/acre)
iii.	Forest (CA+NPV) (UG Portion)	20.00 lakhs (@ 10 lakhs/ha.)		
4.	**Major Crossings:**			
i.	Highway (NH/SH)	2	1	2
ii.	Power Line (Nos.)	10	6	8
iii.	Railway Line (Nos.)	2	2	2
iv.	River Crossing (Nos.	Nil	Nil	2 (Amaravati River & Chuliar Reservoir)
5.	**Overall remarks**	Line length is longest and also involve moderate RoW issues as the line route is passing through plantation area and close to habitation	Shortest in line length and involve minimum RoW problems due to avoidance of plantation and habitation area	Relatively more line length and also involve river crossing and having moderate RoW problems due to proximity of habitation area

From the above comparison of three (3) different alternatives, it is evident that although none of the studied route for overhead portion involves any forest area. Alternative- II is found to be shortest route having minimum RoW issues. Further, lesser degree of

environmental impacts like minimum tree felling as well as construction and O&M problems are anticipated as the line route of Alternative- II doesn't involve any plantation and habitation area like in other two alternatives. Hence, Alternative - II is considered as the most optimized route and recommended for detailed survey.

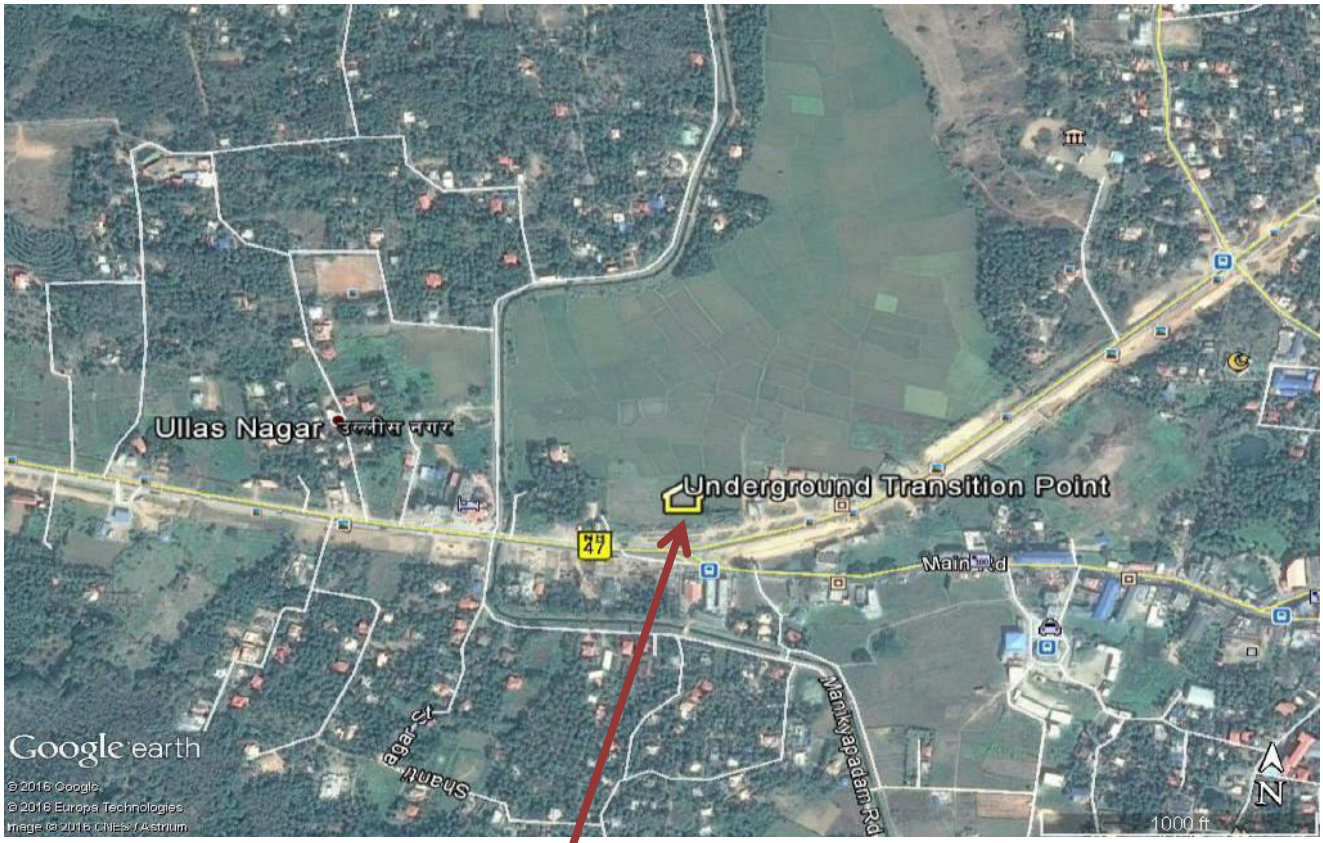
B. EVALUATION OF ALTERNATIVES ROUTE ALIGNMENT FOR LILO OF NORTH THRISSUR - COCHIN 400 KV D/C LINE AT NORTH THRISSUR HVDC STATION

Since the proposed line connects two substations in close vicinity and having line length of only 0.4 km, no alternative has been studied for this line as there is no environmental or social issues including forest area that require such studies.

ANNEXURE – 2

LOCATION OF TRANSITION STATION

Transition Station at Vadakancheri



ANNEXURE – 3

DETAILS OF PUBLIC CONSULTATION

Report on Public Consultation meeting held from 15th & 16th Dec.'15 on construction of HVDC transmission lines from Pugalur & North Thrissur

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1. Nalleppilly, Palakkad District, Kerala

A notice was served to the gram panchayat informing them about the meeting, copy of the meeting notice enclosed at Annexure 1.The meeting was attended by panchayat president, panchayat secretary, ward members along with the general public of the village. This meeting was conducted in the panchayat auditorium. The list of participants & photographs are enclosed as Annexure2 & 2a respectively.

POWERGRID officials were introduced to the villagers by Sri. Sarangadharan, who welcomed to the meeting and expressed his happiness that such a prestigious project is coming near their village and requested POWERGRID to help in getting employment for the villagers in this project construction. Smt. Joyce Varghese, Secretary addressed the gathering.

Sri. Ravindran, DGM, Palakkad welcomed the panchayat president and the public on behalf of POWERGRID to the public consultation meeting and described about the proposed HVDC line construction project and its requirement in the power scenario of Kerala state and described about the role of POWERGRID in the field of interstate transmission of power from far away states to Kerala.

Sri. Sanju Kishan, Sr. Environment Officer, RHQ, Bangalore briefed the Environment and Social Policy and Procedures (ESPP) of POWERGRID. It was informed that the public consultation was being held as per this policy to address the apprehensions / questions of the public.

The entire session was interactive with active participation of the public in local language; Malayalam. People clarified their queries about the project with POWERGRID officials, details enclosed as Annexure 3.

The meeting concluded with vote of thanks and with a request to the public for their support in completion of the project by Sri. Rajeev, AE, POWERGRID, Pallakad SS.

List of participants for the public consultation at Nalleppilly village, Palakkad District on 15.12.2015

POWERGRID:

1. Sri. Ravindran — DGM
2. Sri. Sanju Kishan — Sr. Environment Officer/ RHQ Bangalore
3. Sri. Rajeev — AE/ Palakkad

Nalleppilly, Palakkad District, Kerala

4. Sri. Sarangadharan — Panchayat President
5. Smt. Joyce Mathew — Secretary
6. Other villagers

Total 35 no's of people attended the meeting (list attached)

Annexure 1: Meeting Notice – Nallepilly, Palakkad District, Kerala

पावरग्रिड

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उद्यम)

പവർ ഗ്രിഡ് കോർപ്പറേഷൻ ഓഫ് ഇന്ത്യ ലിമിറ്റഡ്

(ഒരു ഭാരത സർക്കാർ സ്ഥാപനം)

400/220 കെ.വി. സബ് സ്റ്റേഷൻ, മണ്ണുക്കാട് / ചുട്ടിപ്പാറ
വെങ്ങോടി പി.ഒ., എലപ്പുള്ളി - പാറ, പാലക്കാട് ജില്ല
കേരളം - 678 622. Ph: 0491 2004615, 2004625 e-mail: palakkadss@yahoo.com

പൊതുജന സമ്പർക്ക സമ്മേളന നോട്ടീസ്

Notice for Public Consultation Meeting

പുഗലൂർ (സിരുകിണർ) - തൃശ്ശൂർ (മണ്ണുത്തി) ± 320 KV എച്ച്.വി.ഡി.സി. ലൈൻ നിർമ്മാണ പദ്ധതി സംബന്ധിച്ച് നല്ലേപ്പിള്ളി പഞ്ചായത്ത് ഓഡിറ്റോറിയത്തിൽ പവർഗ്രിഡ് കോർപ്പറേഷൻ ഒരു പൊതുജന സമ്പർക്ക പരിപാടി നടത്താൻ തീരുമാനിച്ചിരിക്കുന്നു. ഈപരിപാടിയിലേക്ക് ഏവരെയും സാദരം ക്ഷണിച്ചുകൊള്ളുന്നു.

Power grid Corporations Propose to conduct a public Consultation meeting in Nalleppilly Panchayath Auditorium for construction of ±320 KV Pugalur (Sirukinar) - Thrissur (Mannuthy) HVDC Overhead line.

സംരംഭം/ Project	:	± 320 കെ.വി. പുഗലൂർ (സിരുകിണർ) – തൃശ്ശൂർ (മണ്ണുത്തി) എച്ച്. വി. ഡി. സി. പ്രസരണ വൈദ്യുതി ലൈൻ ± 320 KV, Pugalur (Sirukinar)-Thrissur (Mannuthy) HVDC Overhead Transmission line
സ്ഥലം/ Venue.	:	നല്ലേപ്പിള്ളി, പഞ്ചായത്ത് ഓഡിറ്റോറിയം Nalleppilly Panchayath Auditorium
തിയ്യതി / Date	:	15-12-2015
സമയം / Time	:	2.00 P.M

ഒപ്പ്
ഡെപ്യൂട്ടി ജനറൽ മാനേജർ
പവർഗ്രിഡ് കോർപ്പറേഷൻ
Dy.General Manager
Powergrid Corporation

Dist. Co-op. Press, Pkd - 2544306, 2544266

Annexure 2: Attendance Lists – Nallepilly, Palakkad District, Kerala

Public Consultation Meeting- Attendance

Village: Nalleppilly Gramapanchayat

Date: 15.12.2015, 2.00 PM.

Construction of Pugalur (Sirukinar) Thrissur (Mannuthy) +/- 320 kV HVDC Transmission Line

Sl.No.	Name	Village	Signature
1	R. RAVINDRAN, DGM	Powergrid	[signature]
2	Sanju Kishan. P	Powergrid	[signature]
3	Sarangadharan - P	President Nalleppilly PT	[signature]
4	JOICY VARGHESE	Secretary Nalleppilly PT.	[signature]
5	SELVAKUMARY	Nalleppilly WARD - 16	[signature]
6	K. SAKTHIVEL	THAKKADASAM	[signature]
7	V. Binu	Nallepilly	[signature]
8	HARIDAS	"	[signature]
9	Murugadas	Nallepilly	[signature]
10	K Periaswamy	Nallepilly	[signature]
11	MURALIDHARAN	"	[signature]
12	R. Mahalingam		[signature]
13	P Lekha		[signature]
14	ANANDAKUMAR K	[illegible]	[signature]
15	S. Muraidharan	Nallepilly.	[signature]
16	Vijayalatha K	Manchira	[signature]
17	Usha. K	Nallepilly	[signature]

Power grid Corporation of India Limited

Public Consultation Meeting- Attendance

Village: Nalleppilly Gramapanchayat

Date: 15.12.2015, 2.00 PM.

Construction of Pugalur (Sirukinar) Thrissur (Mannuthy) +/- 320 kV HVDC Transmission Line

Sl.No.	Name	Village	Signature
18	Lalitha R	nalleppilly	Lalitha
19	Premavalli	,,	
20	[illegible]	,,	Sugeelam
21	[illegible]	,,	[illegible]
22	[illegible]	,,	[illegible]
23	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	Geetha.K
25	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]
27	[illegible]		
28	[illegible]		
29	[illegible]		
30	[illegible]		
31	[illegible]	[illegible]	[illegible]
32	[illegible]	[illegible]	
33	[illegible]	[illegible]	[illegible]
34	[illegible]	[illegible]	[illegible]

Power grid Corporation of India Limited

Public Consultation Meeting- Attendance

Village: Nalleppilly Gramapanchayat

Date: 15.12.2015, 2.00 PM.

Construction of Pugalur (Sirukinar) Thrissur (Mannuthy) +/- 320 kV HVDC Transmission Line

Sl.No.	Name	Village	Signature
35	Abdulnazeer. K	Elappully	
36	RAZAK. S	Elapully.	RAZAK. S
37	C. Vijayan		
38	RAJESH. C	ELAPPULLY	
39			
40			
41			
42			
43			
44			
45			
46			
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51			

Power grid Corporation of India Limited

Annexure 2 (a): Photographs

POWERGRID official introducing the proposed project

Panchayat President addressing the gathering

Gathering at the meeting

Ward member seeking some clarifications

Ward member seeking clarification

Ward member seeking clarification

Annexure 3: Gist of clarifications raised by the Villagers

1. **Sri. Sakthivel (ward member)**

   a. Question: How this tower line will affect agriculturist?

   Answer: *Tree / crop compensation would be paid as per the rates fixed by the district authorities of revenue / forest / horticulture department for the damage to tree and crops, if any. Agricultural activities can be continued below the ROW of the Over Head line. No effect on agriculture as the Underground line in along the NH47 till Vadakancheri in Kerala.*

2. **Sri. Periyasamy (Villager)**

   a. Question: According to survey map it shows that the line is passing through about half portion of Nalleppilly, what are the steps taken by POWERGRID to minimize the disturbances?

   Answer: *POWERGRID is committed towards sustainable growth and conservation of nature and natural resources, hence all due care to minimize the disturbance to the surrounding environment and public in particular will be taken up. Technology driven construction techniques are being used with due precautions to minimize disturbance to human habitation. Underground cable is proposed in Kerala from Trichur to Vadakancheri along NH47 and subsequently overhead line is proposed till Pugalur in Tamilnadu.*

3. **Sri. Murugadas (Villager)**

   Question: Describe at present whether it is conducting preliminary survey or detailed survey for this project?

   Answer: *Detailed survey is in progress along the NH47 from Trichur to Vadakancheri in Kerala for laying Underground cable subsequently overhead line is proposed till Pugalur in Tamilnadu.*

4. **Sri. Binu (Villager)**

   Question: Requested to POWERGRID officials that further to this after completion of detailed study to conduct a public meeting about this project for affected persons.

   Answer: *This meeting is conducted as a part of the Initial Environment Assessment Report (IEAR) as the detailed survey is under progress for underground cable in Kerala till Vadakancheri, hence this public meeting. However, the request was noted.*

5. **Sri. Periyasamy (Villager)**

   Question: Please describe about the compensation package for drawing the line? Is the land compensation in addition to crop compensation?

   Answer: *Tree/crop compensation would be paid as per the rates fixed by the district authorities of revenue/forest/horticulture department. Yes it is paid as per the guidelines of Ministry of Power and the State Government.*

6. Sri. Thankavelu (Villager)

Question: Describe about procedures after completion of detailed survey?

Answer: *Normally after detailed survey the final route alignment of the transmission line is finalized, survey numbers of the towers footing area and the corridor are fixed. The necessary compensation for tree/crop/land etc as per the rates fixed by state government officials are be paid by POWERGRID and line will be constructed. POWERGRID being a CTU is guided by the Indian Telegraph Act and Electricity Rules 2003 in its construction and operations.*

2. Arasampalayam, Coimbatore District, Tamil Nadu

A notice was served to the gram panchayat informing them about the meeting, copy of the meeting notice enclosed at Annexure 1.The meeting was attended by the general public of the village as the panchayat president and vice president could not make it due to the MLA visit in that area. This meeting was conducted in a community hall near panchayat. The list of participants and photographs are enclosed as Annexure2 & 2a.

Sri. Ravindran, DGM, Palakkad welcomed the public on behalf of POWERGRID to the public consultation meeting and described about the proposed HVDC line construction project and its requirement in the power scenario of Kerala state and described about the role of POWERGRID in the field of interstate transmission of power from far away states to Kerala.

Sri. V. Saravanan, Chief Manager, introduced the project scheme to the public and briefed them about the importance of the project and the benefits to the state of Tamil Nadu in particular and nation in general.

Sri. Sanju Kishan, Sr. Environment Officer, RHQ, Bangalore briefed the Environment and Social Policy and Procedures (ESPP) of POWERGRID. It was informed that the public consultation was being held as per this policy to address the apprehensions / questions of the public.

The entire session was interactive with active participation of the public in local language; Tamil. People clarified their queries about the project with POWERGRID officials, details enclosed as Annexure 3.

The meeting concluded with vote of thanks by Sri. Rajeev, AE, POWERGRID, Pallakad.

List of participants for the public consultation at Arasampalayam, Coimbatore District, Tamil Nadu on 16.12.2015

POWERGRID:

1. Sri. Ravindran — DGM / Palakkad
2. Sri. Saravanan — Chief Manager / Ariyalur
3. Sri. Sanju Kishan — Sr. Environment Officer/ RHQ Bangalore
4. Sri. Sugumar — Sr. Engineer, Udumalpet
5. Sri. Rajeev — AE/ Palakkad

Arasampalayam Coimbatore District, Tamil Nadu

6. Villagers

Total 25 no's of people attended the meeting (list attached)

Annexure 1: Meeting Notice Arasampalayam Coimbatore District

பவர் கிரிட் கார்பரேசன் ஆப் இந்தியா லிமிடெட்
(ஓர் இந்தியா அரசு நிறுவனம்)

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उद्यम)

पावरग्रिड

400/220 கி.வோ. துணை மின்நிலையம்
மண்ணுகாடு/சுட்டிபாற, வேங்கோடி P.O. எலப்புள்ளிபாறா
பாலக்காடு மாவட்டம், கேரளா - 678 622, Ph : 0491-2004625
e-mail : palakkadss@yahoo.com

பொதுமக்கள் ஆலோசனை கூட்டம் அறிவிப்பு

Notice for Public Consultation Meeting

புகலூர் (சிறுகிணர்) திருச்சூர் (மண்ணுத்தி) ±320 கி.வோ, உயர் மின்னழுத்த டி.சி. பாதை அமைப்பது தொடர்பாக அரசம் பாளையம் பஞ்சாயத்தில் ஒரு பொதுமக்கள் ஆலோசனை கூட்டம் நடத்த பவர்கிரிட் கார்பரேசன் தீர்மானித்துள்ளது, இந்த ஆலோசனை. கூட்டத்தில் பொதுமக்கள் அனைவரும் பங்குபெறுமாறு கேட்டுகொள்ள படுகிறார்கள்.

Power Grid Corporation of India Propose to conduct a public Consultation meeting at Arasampalayam Panchayath Auditorium for construction of **±320 KV** Pugalur (Sirukinar) - Thrissur (Mannuthy) HVDC Overhead line.

திட்டம் / Project	:	± 320 கி.வோ. புகலூர் (சிறுகிணர்) திருச்சூர் (மண்ணுத்தி) உயர்மின்னழுத்த டி.சி. பாதை ± 320 KV, Pugalur (Sirukinar) - Thrissur (Mannuthy) HVDC Overhead Transmission line
இடம் / Venue	:	அரசம்பாளையம் கிராம பஞ்சாயத்து திடல் Arasampalayam Panchayath Auditorium
தேதி / Date	:	16-12-2015
நேரம் / Time	:	மதியம் 2.00 மணி / 2.00 p.m.

இப்படிக்கு
பொது மேலாளர்/Dy. General manager
பவர்கிரிட் கார்பரேசன்
Powergrid Corporation of India Ltd.

Dist. Co-op. Press, Pkd - 2544306, 2544266

Annexure 2: Attendance Lists – Arasampalayam, Coimbatore District

Public Consultation Meeting- Attendance

Village: Arasampalayam Gramapanchayat

Date: 16.12.2015, 3.00 PM.

Construction of Pugalur (Sirukinar) Thrissur (Mannuthy) +/- 320 kV HVDC Transmission Line

Sl.No.	Name	Village	Signature
1	K. RAVINDRAN	POWERGRID	
2			
3	Sanjukishan	Powergrid	
4	M. Sugumar	Powergrid	
5	AR Narayanaswamy	Arasampalayam	
6			
7			
8		"	
9	A.P. Somasundaram	"	
10			
11		"	
12	Ranjan	Arasampalayam	
13	Mayilsamy	Arasampalayam	
14		"	
15		"	
16		"	
17	Asikani	Arasampalayam	

Power grid Corporation of India Limited

Public Consultation Meeting- Attendance

Village: Arasampalayam Gramapanchayat

Date: 16.12.2015, 3.00 PM.

Construction of Pugalur (Sirukinar) Thrissur (Mannuthy) +/- 320 kV HVDC Transmission Line

Sl.No.	Name	Village	Signature
18			
19			
20			
21			
22			
23			
24	Rayappan	Arasampalayam	
25	Murugesan	"	
26	Saraswamma	"	
27		"	
28		"	
29	P. K. Rajan	Powergrid	
30			
31			
32			
33			
34			

Power grid Corporation of India Limited

Annexure 2 (a): Photographs

POWERGRID officials introducing the proposed project

Addressing the clarification

Villagers at the meeting

Officials addressing the gathering

Gist of clarifications raised by the villagers:

1. **Sri. A.P. Somasundaram (Villager)**

   Question: What is the exact route of this Transmission line project?

   Answer: *The transmission line is proposed through underground cabling along NH-47 from Trichur to Vadakancheri in Kerala, subsequently its overhead line till Pugalur in Tamilnadu. Detailed survey is in progress for underground portion for route finalization.*

2. **Sri. A.R Narayana Swamy (Villager)**

   Question: Will POWERGRID acquire land for this project? If we will raise objection on this project what will be the next step? Land value at current market price is good, but after drawing transmission line value will be diminished, what will be compensation for this diminished value?

   Answer*: No acquisition is envisaged in construction of transmission line; only for substation land is purchased or acquired. Tree/crop compensation would be paid as per the rates fixed by the authorities of revenue/forest/horticulture department of the state.* ROW compensation will be as per the Ministry of Power (MOP) and state guidelines. POWERGRID is a CTU guided by the Indian Telegraph Act and Electricity Rules 2003 in its construction and operation activities.

3. **Sri. K. Muthusamy (Villager)**

   Question: Is there any power tapping point in between Pugalur and Trichur?

   Answer*: No tapping is possible in this high voltage line, only a transition station will be there between underground and overhead portion at Vadakancheri, Kerala.*

4. **Sri. Senthil Kumar (Villager)**

   Question: Time schedule of the project?

   Answer*: It is being implemented in a compressed time schedule of 36 months.*

ANNEXURE – 4

MOP GUIDELINES DATED 15TH OCT. 2015 ON RoW OF COMPENSATION

No.3/7/2015-Trans
Government of India
Ministry of Power
Shram Shakti Bhawan
Rafi Marg, New Delhi – 110001

Dated, 15th October, 2015

To

1. Chief Secretaries/Administrators of all the States/UTs
   (As per list attached)
2. Chairperson, CEA, New Delhi with the request to disseminate the above guidelines to all the stakeholders.
3. CMD, PGCIL, Gurgaon.
4. CEO, POSOCO, New Delhi.
5. Secretary, CERC, New Delhi.
6. CMD of State Power Utilities/SEBs

Subject: Guidelines for payment of compensation towards damages in regard to Right of Way for transmission lines.

During the Power Ministers Conference held on April 9-10, 2015 at Guwahati with States/UTs, it has, *inter alia*, been decided to constitute a Committee under the chairmanship of Special Secretary, Ministry of Power to analyse the issues related to Right of Way for laying of transmission lines in the country and to suggest a uniform methodology for payment of compensation on this count. Subsequently, this Ministry had constituted a Committee with representatives from various State Governments and others. The Committee held several meetings to obtain the views of State Governments on the issue and submitted its Report along with the recommendations (copy of the Report is at **Annex-1**).

2. The Recommendations made by the Committee are hereby formulated in the form of following guidelines for determining the compensation towards "damages" as stipulated in section 67 and 68 of the Electricity Act, 2003 read with Section 10 and 16 of Indian Telegraph Act, 1885 which will be in addition to the compensation towards normal crop and tree damages. This amount will be payable only for transmission lines supported by a tower base of 66 KV and above, and not for sub-transmission and distribution lines below 66 KV:-

(i) Compensation @ 85% of land value as determined by District Magistrate or any other authority based on Circle rate/ Guideline value/ Stamp Act rates for tower base area (between four legs) impacted severely due to installation of tower/pylon structure;

(ii) Compensation towards diminution of land value in the width of Right of Way (RoW) Corridor due to laying of transmission line and imposing certain restriction would be decided by the States as per categorization/type of land in different places of States, subject to a maximum of 15% of land value as determined based on Circle rate/ Guideline value/ Stamp Act rates;

(iii) In areas where land owner/owners have been offered/ accepted alternate mode of compensation by concerned corporation/ Municipality under Transfer Development Rights (TDR) policy of State, the licensee /Utility shall deposit compensation amount as per (i) & (ii) above with the concerned Corporation/ Municipality/ Local Body or the State Government.

(iv) For this purpose, the width of RoW corridor shall not be more than that prescribed in the table at **Annex-2**and shall not be less than the width directly below the conductors.

3. Necessary action may kindly be taken accordingly. These guidelines may not only facilitate an early resolution of RoW issues and also facilitate completion of the vital transmission lines through active support of State/ UT administration.

4. All the States/UTs etc. are requested to take suitable decision regarding adoption of the guidelinesconsidering that acquisition of land is a State subject.

Yours faithfully,

Jyoti Arora.

(Jyoti Arora)
Joint Secretary (Trans.)
Tele: 011-2371 0389

Copy, along with enclosure, forwarded to the following:

1. Secretaries of Government of India (Infrastructure Ministries/Deptt including MoEF - As per attached list)
2. Prime Minister's Office (Kind Attn: Shri Nripendra Mishra, Principal Secretary to PM).
3. Technical Director, NIC, Ministry of Power with the request to host on the website of Ministry of Power.

Copy to PS to Hon'ble MoSP (IC) / Secretary (Power) / AS (BNS) / AS (BPP) / All Joint Secretaries/EA/ All Directors/DSs, Ministry of Power.

ANNEXURE – 5

SAMPLE CASE S OF PAYMENT OF COMPENSATION

POWER GRID CORPORATION OF INDIA LIMITED

(A Government of India Enterprise)

Southern Region Transmission System - II

Tumkur CAO : Manju Sree, 10th Cross, 80feet Road, Mahalakshmi Nagar, Batawadi, TUMKUR - 572 105.

पावरग्रिड

NOTICE UNDER INDIAN TELEGRAPH ACT, 1885

Ref. No. Comp /

To, R.S. Basavaraju
S/o Shantaveerappa
Yelerampur Village.
Karatagere TQ. Tumkur Dist.

No. : B- 1005

Date : 04/10/2012

Dear Sir / Madam

Power Grid Corporation of India Ltd., has been entrusted with the Construction of 400KV Double circuit (Quad) Madhugiri (Tumkur)-Yelahanka Transmission Line by Government of India vide its letter No 11/4/2007-PG dated 3rd December 2009

In exercise for the powers under the Indian Telegraph Act 1885, Part-III sections 10 to 19 conferred under section 164 of the Indian Electricity Act 2003, through the Gazette of India, Extraordinary dated 24th December 2003, notice is hereby given that 400KV Double circuit (Quad) Madhugiri (Tumkur)-Yelahanka Transmission Line will pass through your property, as described below which may cause damage to the standing crops and the trees within the Right-of-Way (ROW) are required to be cut. The crops damaged / trees cut may be taken over by you OR your authorised representative. Reasonable compensation for the crops damaged / trees cut will be paid as per the assessment of the Revenue / Horticultural / Forest Departments Government of Karnataka.

1. Name of the Owner : R.S. Basavaraju
2. Father's / Husband Name : S/o Shataveerappa
3. Survey No. : 57/6
4. Name of the Village : Yelaram Pur
5. Name of the Mandal / Tahsil : Karatagere
6. Name of the District : TUMKUR.
7. List of Trees to be cut : —

Sl. No.	Location / Section	Tree No.	Name of Tree / Crop	Approx. Age	Girth & Height of the Tree / Area of the Crop	Tree cut / Crop damaged during (FDN/EREC/ STRGG)
(1)	13/4 DA+0		Maize	—	53mx50mt. Foundation. 2650 Sqmt.	

Received the notice :
Signature

R.S. ಬಸವರಾಜು

Farmer / Authorised Representative
Date : 04/10/2012

For Power Grid Corporation of India Ltd.,

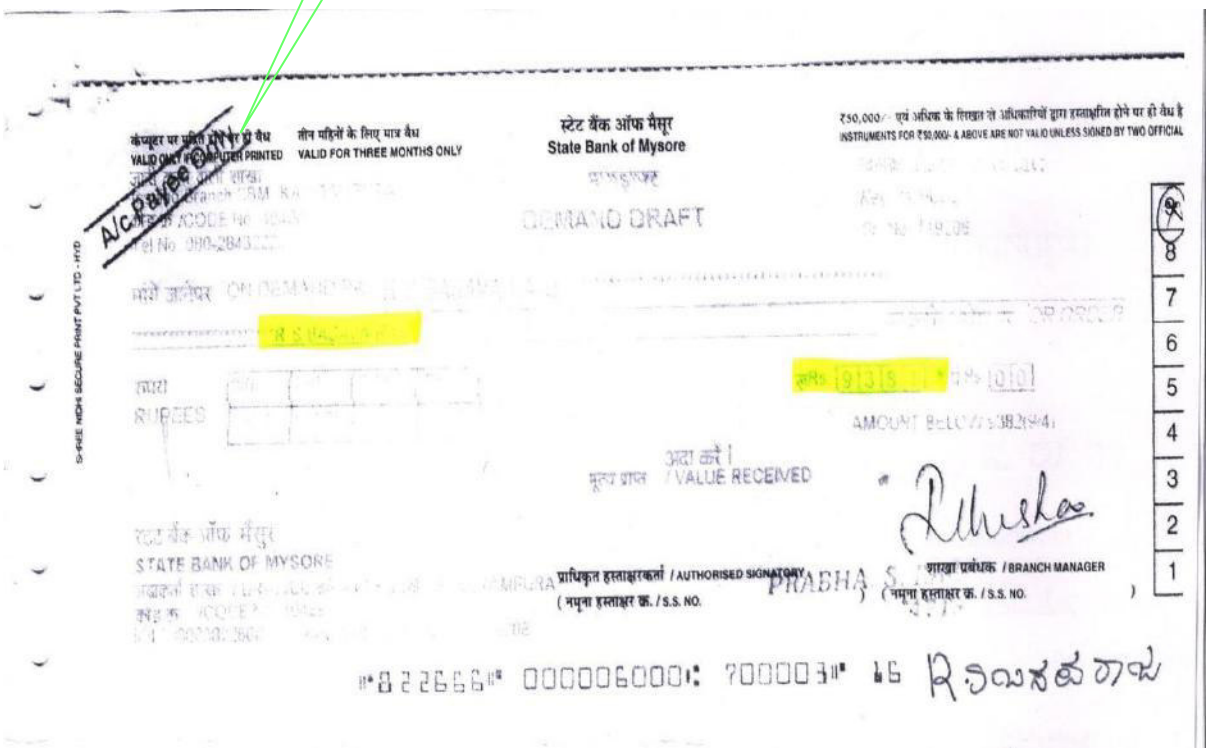
Signature

400 KV QUAD D/C MADHUGIRI - YELAHANKA TRANSMISSION LINE

CROP COMPENSATION STATEMENT - PROPOSAL No. - I

Annexure-IV

Sl. NO.	Tower No.	Name and Address of the Land Owner	Name of the work during damage occurred	Notice No.	Survey No.	Name of the crop damaged	Area of damage in Sqm.	Compensation Amount per Sqm. In Rs.	Amount in Rs.	Total compensation to be paid in Rs.
1	AP 13/6	Smt Honnamma W/o Putta Veerappa Yelarampura - Village, Koretagiri - Taluk, Tumkur - Dist	Foundation	1001	37/1B	Maize	1500	3.54	5310.00	**5310.00**
2	AP 13/6	Smt Umadevi W/o Sivanna, Yelarampura - Village, Koretagiri - Taluk, Tumkur - Dist	Foundation (Approach)	1002	41/3	Ragi	950	2.13	2023.50	**2024.00**
3	AP 13/4	R.S.Basava Raju S/o Shanthaveerappa, Yelarampura - Village, Koretagiri - Taluk, Tumkur - Dist	Foundation	1005	57/6	Maize	2650	3.54	9381.00	**9381.00**
									Total	**16715.00**


A/c Payee
VALID ONLY IF COMPUTER PRINTED
तीन महिनों के लिए मात्र वैध
VALID FOR THREE MONTHS ONLY
स्टेट बैंक ऑफ मैसूर
State Bank of Mysore
₹50,000/- एवं अधिक के लिखत दो अधिकारियों द्वारा हस्ताक्षरित होने पर ही वैध है
INSTRUMENTS FOR ₹50,000/- & ABOVE ARE NOT VALID UNLESS SIGNED BY TWO OFFICIAL
DEMAND DRAFT
AMOUNT BELOW
अदा करें
मूल्य प्राप्त / VALUE RECEIVED
STATE BANK OF MYSORE
प्राधिकृत हस्ताक्षरकर्ता / AUTHORISED SIGNATORY
(नमूना हस्ताक्षर क्र. / S.S. NO.
PRABHA S.
शाखा प्रबंधक / BRANCH MANAGER
(नमूना हस्ताक्षर क्र. / S.S. NO.)
S-FREE NDH SECURE PRINT PVT LTD - HYD

RECEIPT

I hereby acknowledge the receipt of the crop compensation amount towards damage of my crop, while executing construction works of 400kV Madhugiri – Yelahanka D/C (QUAD) Transmission Line, as per the details mentioned below:

1. Location Number: 314
2. Village Name: Yelerampur
3. Notice Number: B-1 - 1005
4. Name of Landowner: R.S. Basavaraju
5. Amount: Rs. 9381/-
6. DD No: 822666
7. DD Drawn Date: 17/11/2012
8. Construction activity: FOUNDATION / ~~TOWER ERECTION / STRINGING~~
9. Date of Receipt of DD: 24/11/2012

(Signature of Witness)

Name: S. NARAYANA

Address: S/o Late R.V. Shivarudraiah
Yelerampura.

(Signature of Landowner)

Name: R.S. Basavaraj

Address: S/o Shantveerappa
Yelerampur
Kasabe Hobli
Tumkur.

(Signature of POWERGRID Representative)

Name: Ajit N. Kerur

Emp No: 30461

Designation: Jr. Engr.

मो 9761141383

POWERGRID CORPORATION OF INDIA LIMITED

MRT 145

(A Government of India Enterprise)
800/400/220 KV Substation, Delhi Roorkee Road
Gram Mataur, Post Daurala, Meerut-250221 (UP)
(FAX: 01237- 231673, Phone: 230700)

Loc. No. 1071/
Work. TC
Date: 23/02/15

Ref. No.: NR-I/MRT/TU...../

To,

Sh. प्रवीण कुमार S/o Sh. ओमवीर सिंह

Gram: पसवाड़ Post: दौराला

Tehsil: सरधना District: मेरठ

Sub:-Notice regarding Construction of ±800 KV HVDC Champa – Kurukshetra Transmission line - compensation for damages.

Power Grid Corporation of India Ltd. is mandated to construct the subject line, under section 164 of Indian Electricity Act-2003, read with section-10 of Indian Telegraph Act-1885 and the order of Ministry of Power dated 24.12.2003 (Gazette Notification dated – 24.12.2003). This line passes through the Village पसवाड़ Tehsil सरधना District मेरठ.

It has been observed that Tree as detailed here under are falling within the Right of Way of the aforesaid transmission line, and are likely to be damaged unless salvaged immediately.

Depending upon actual damages, we shall pay compensation for the losses on account of Tree, on the basis of guidelines received from the local bodies/ revenue authorities.

Details of Trees: Khasara No. : 17

Sl. No.	Name/ type of Tree	No. of Trees	Girth at a height of 1 mtr. (Cm.)	Remarks
	यूकेलिप्टस	(12)	0-30 cm. (8) Nos	
			30-40 cm. (4) Nos	
	पोपलर	(50)	40-60 cm. (10) Nos	
			70-90 cm. (40) Nos	

It is confirmed that Trees as detailed above have been to be damaged.

Name of Land owner..... प्रवीण कुमार

Signature/ L.T.I : प्रवीन कुमार

(Signature with seal)
Tehsildar

For Power Grid Corporation of India Ltd.

4(7915)

POWER GRID CORPORTION OF INDIA LIMITED, MEERUT

LINE: ±800 KV CHAMPA-KURUKSHETRA TRANS. LINE

Tehsil-Mawana

Village- Paswada

Tree Compensation

UTTER PRADESH

Sr. No.	Name & Father Name	Village	Distt.	Loc./ Section Name	Khasra/ Khatauni No.	Species	Age of Trees in Years	Girth	Nos. of Trees
1	BEER SINGH S/O SATPALM SINGH	PASWADA	MEERUT	107/0-107/1	127	Jamun	15	90-120	10
						Sheesham		70-90	10
						Sheesham		110-120	7
						Sheesham		130-150	3
									20
2	MUKESH KUMAR S/O SHAUDAN SINGH	PASWADA	MEERUT	107/0-107/1	129, 131	Popular		40-60	15
						Popular		70-90	24
									39
3	TASWEER KAUR W/O RAM KISHAN	DABTHLA	MEERUT	107/0-107/1	127	Popular		60-90	38
						Ukelyptus		40-60	20
									58
4	UDAY RAJ S/O BALDEVA	PASWADA	MEERUT	107/0-107/1	7	Popular		40-60	30
						Popular		70-80	20
									50
5	PRAVEEN KUMAR S/O OMVEER SINGH	PASWADA	MEERUT	107/1	11	Ukelyptus		0-30	8
						Ukelyptus		60-90	4
						Popular		40-60	10
						Popular		70-90	40
									62
6	SAVITA W/O DUSHYANT KUMAR	PASWADA	MEERUT	107/1-107/2	100	Popular		0-30	50
						Popular		40-60	30
						Popular		70-90	130
						Sheesham		120	1
						Sheesham		40	1
									212
7	DEEPCHAND S/O SINGHAR SINGH	PASWADA	MEERUT	107/2	49	Popular		0-30	160
						Popular		40-60	85
						Popular		70-90	45
									290
8	NETRAPAL S/O JAIPAL SINGH	PASWADA	MEERUT	107/2	50	Mango	8	90	4
9	NARVEER S/O BRAHM SINGH	PASWADA	MEERUT	107/3-107/4	331	Popular		60-90	20
						Ukelyptus		160	1
									21
10	SUKARAM PAL S/O TEEKAM SINGH	PASWADA	MEERUT	107/4	320	Popular		60-90	4
						Sheesham		130	1
									5
11	ANAND SWAROOP S/O KHEMCHAND	PASWADA	MEERUT	107/4-107/5	309	Sheesham		70-90	3
						Sheesham		100-120	3
									6

महोदय, क्रमांक 1 से 11 तक ग्राम परवाड़ा की खतौनी अनुसार स्वामी है।

LEKHPAL 1/11/16

REVENUE INSPECTOR

विजय प्रताप सिंह
प्रभारी राजस्व निरीक्षक
रा० नि० क्षेत्र–माछरा (मेरठ)

POWERGRID REPRESENTATIVE

02.02.2016

TEHSILDAR

तहसीलदार
मवाना (मेरठ)

आर. आर. सिंह / R. R. SINGH
प्रबन्धक (परेषण) / MANAGER (TL)

Tree Compensation Bill No.-13

POWER GRID CORPORTION OF INDIA LIMITED, MEERUT

LINE: ±800 KV CHchampa-KURUKSHETRA TRANS. LINE

Tree Compensation UTTER PRADESH

Sr. No.	Name & Father Name	Village	Distt.	Loc./ Section Name	Khasra/ Khatauni No.	Species	Age of Trees in Years	Girth	Nos. of Trees	Rate	Amount	Total Amount	Cheque Nos & Date
1	BEER SINGH S/O SATPALM SINGH	PASWADA	MEERUT	107/0-107/1	127	Jamun	15	90-120	10	11873	118730		22/3/16
						Sheesham		70-90	10	2085	20850		
						Sheesham		110-120	7	6135	42945		
						Sheesham		130-150	3	12285	36855		
									20		219380	219380	035840
2	MUKESH KUMAR S/O SHAUDAN SINGH	PASWADA	MEERUT	107/0-107/1	129, 131	Popular		40-60	15	84	1260		
						Popular		70-90	24	552	13248		
									39		14508	14508	035884
3	TASWEER KAUR W/O RAM KISHAN	DABTHLA	MEERUT	107/0-107/1	127	Popular		60-90	38	552	20976		
						Ukelyptus		40-60	20	225	4500		
									58		25476	25476	035615
4	UDAY RAJ S/O BALDEVA	PASWADA	MEERUT	107/0-107/1	7	Popular		40-60	30	84	2520		
						Popular		70-80	20	552	11040		
									50		13560	13560	035623
5	PRAVEEN KUMAR S/O OMVEER SINGH	PASWADA	MEERUT	107/1	11	Ukelyptus		0-30	8	23	184		
						Ukelyptus		60-90	4	825	3300		
						Popular		40-60	10	84	840		
						Popular		70-90	40	552	22080		
									62		26404	26404	035584
6	SAVITA W/O DUSHYANT KUMAR	PASWADA	MEERUT	107/1-107/2	100	Popular		0-30	50	36	1800		
						Popular		40-60	30	84	2520		
						Popular		70-90	130	552	71760		
						Sheesham		120	1	6135	6135		
						Sheesham		40	1	198	198		
									212		82413	82413	035603

11/3/16

HDFC BANK

Cash Management Services - Payments

MAIL TO

PRAVEEN KUMAR S/O OMVEER SINGH

MEERUT

BY ORDER OF

POWERGRID CORPORATION OF INDIA LTD

KATWARIA SARAI,
NEW DELHI

Dear Sir/ Madam,
We enclose herewith our Cheque towards the settlement of your payment as per the following details.

Cheque Number	:	035584
Cheque Date	:	22/03/2016
Cheque Amount	:	******26,404.00
Favouring	:	PRAVEEN KUMAR S/O OMVEER SINGH
Reference No.	:	110124002679102015
Payment Details	:	
Customer Reference	:	FTC0322824109

भुगतान प्राप्ति की रसीद

बिल संख्या 13 क्रम संख्या 5 कार्य TC

टावर संख्या 107/1

± 800 के. वी. चम्पा- कुरुक्षेत्र एच. वी. डी. सी. लाइन के निर्माण कार्य के समय हुई पेड़ों की क्षति के भुगतान का चेक संख्या 035584 दिनांक 22.03.2016 एच.डी.एफ.सी. बैंक, मेरठ रूपये 26404/- Rupees Twenty Six Thousand Four Hundred Four Only पावरग्रिड कार्पोरेशनऑफ इण्डिया लिमिटेड,मेरठ से सधन्यवाद प्राप्त किया।

हस्ताक्षर/अंगूठा निशान

भूस्वामी का नाम- PRAVEEN KUMAR S/O OMVEER SINGH

ग्राम का नाम- PASWADA

जिला- MEERUT