DRAFT COMPENSATION PLAN FOR TEMPORARY DAMAGES (REVISED)

for

INTER-REGIONAL SYSTEM STRENGTHENING SCHEME IN WR-NR (PART-B)

Submitted by Power Grid Corporation of India Limited

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AP	Affected Person
AHH	Agricultural Households
ASI	Archaeological Survey of India
CP	Compensation Plan
DC	District Collector
EA	Executing Authority
ESPP	Environmental & Social Policy and Procedure
ESMD	Environment and Social Management department
FGD	Focus Group Discussion
GIS	Geographical Information System
GOI	Government of India
GRC	Grievance Redress Committee
Ha	Hectare
IP	Indigenous People
IR	Involuntary Resettlement
ISA	Initial Social Assessment
LA	Land Acquisition
Km	Kilometer
kV	Kilo volt
M&E	Monitoring and Evaluation
O&M	Operation and Maintenance
PGCIL	POWERGRID Corporation of India Limited
PTCC	Power and Telegraph Coordination committee
RFCTLARR	The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act
RHQ	Regional head Quarter
RO	Resettlement Officer
ROW	Right of Way
RP	Resettlement Plan
R&R	Resettlement and Rehabilitation
SCs	Scheduled Castes
SPS	Safeguard Policy Statement of ADB, 2009

STs	Scheduled Tribes

GLOSSARY

Block	An administrative sub-division within a district.
Panchayat	Elected Village Council/ the third tier of decentralized governance
Sarpanch	Elected head of the Gram Panchayat
Tehsil	A revenue sub-division, within a district
Zila/District	It is the first administrative division at the state level.

EXECUTIVE SUMMARY

i. The Compensation Plan for Temporary Damages (CPTD) has been prepared for the Project, "Inter-Regional System Strengthening Scheme in WR-NR (Part-B)" which is proposed to be 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 ADB's Safeguard Policy Statement, 2009 (SPS). The executing agency is the Power Grid Corporation of India Limited (PGCIL) who will also be responsible for implementing the Project. The Compensation Plan for Temporary Damages (CPTD) is guided by The Electricity Act 2003, The Indian Telegraph Act, 1885, POWERGRID's *Environmental and Social Policy & Procedures*, 2009 (ESPP) and Asian Development Bank's Safeguard policy Statement, 2009 (SPS).

ii. The CPTD has been prepared based on the preliminary route survey/ investigation. The impacts are temporary in nature in terms of loss of crops and trees. No land acquisition is involved. 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 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.

iii. The Project components under the ADB financing will include the following transmission lines which will pass through the state of Uttar Pradesh:

- 320 kilometers of Orai – Aligarh 765 kV D/c line (having 67 meters as Right of Way and estimated 800 numbers of tower footings)
- 38 kilometers of Orai – Orai (UPPTCL) 400 kV D/c (Quad) line (having 46 meters as Right of Way and estimated 95 numbers of tower footings)
- 4.102 kilometers of LILO of Agra-Meerut 765 kV S/c line at Aligarh S/s (having 67 meters as Right of Way and estimated 11 numbers of tower footings)
- 10.63 kilometers of LILO of Kanpur – Jhatikara 765 kV S/c at Aligarh S/s (having 67 meters as Right of Way and estimated 27 numbers of tower footings)

iv. The project does not require any private land acquisition under the proposed ADB financing components. Therefore, no physical displacement is foreseen in the project. Impacts are temporary in nature in terms of loss of crops and trees. Preliminary investigation/survey has been carried out for transmission lines of Inter-Regional System Strengthening Scheme in WR-NR (Part-B) 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. For the temporary loss of crops, only agricultural land and private plantation land are considered for estimation. Though ROW is 67 Meter for 765 kV lines and 46 Meter for 400kV lines, but average affected width/corridor would be limited to 40 Meter (Maximum). The household survey is not required to be done as land acquisition is not involved as per norms. 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 works to be 1540.784 hectares. including 186.6 ha of land adjoining the tower foundation is estimated for crop compensation due to placing of 933 tower footings. Therefore, the total land requirements for temporary loss in terms of loss of crops is estimated to be 1540.784 hectares. Total number of trees to be affected are 4755 out of which 4500 are non-forest trees and 255 are forest trees. Non-forest trees will be compensated in cash as per the entitlement matrix. Approximately 7 number of small structures (huts to keep agricultural produce) are existing. The total number of affected persons is estimated to be 1198.

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 lines. During the construction, every individual, on whose land tower is erected and people affected by ROW, are consulted. There were altogether 14 public consultations and informal group meetings held from Jan'14 to March'14 during preliminary survey/investigations of the entire routes of transmission lines in Uttar Pradesh. 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. 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 for review and comments on the policy in general and adequacy of the mitigation measures in particular. 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 in hindi will be placed at construction offices/ sites. The summary of CP will be disclosed on the ADB website.

vi. Grievance redressal is in built in the process of compensation because after the notice the revenue officials assess the damages based on actual site condition and the version of land owner. After the preliminary assessment owner is given a chance to substantiate the claim if he is not satisfied with the assessment. 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. The proposed mechanism does not impede access to the country's judicial or administrative remedies.

vii. The CPTD is based on 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 and POWERGRID's Environment and Social Policy and Procedures, 2009 (ESPP). The compensation principles adopted for the project shall comply with applicable laws and regulations of the Governments of India, as well as ADB's Safeguard Policy Statement (2009).

APs will be entitled for compensation for temporary damages to crops/trees/structures etc as per the Entitlement Matrix given in **table E.1. In the instant case, no land acquisition is involved, only 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. POWERGRID also gives skill development training/ distribution of equipments to physically handicapped people and also undertakes other developmental works in nearby project area under

CSR. POWERGRID gives priority to the areas in the neighbourhood of its project areas for undertaking CSR activities. Vulnerable individuals are in general get benefitted from the CSR activities of POWERGRID. One time lumpsum assistance to vulnerable households on recommendation of State Authority. POWERGRID will provide compensation to all APs including non-title holders as already mentioned in the Entitlement Matrix of CPTD.

The entitlement matrix is given below in table E-1.

Table E-1: Entitlement Matrix

SN	TYPE OF ISSUE/IMPACT	BENEFICIARY	ENTITLEMENT OPTIONS
1.	Loss of crops and trees	Owner	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.	Tenant loss of access by share croppers/ leaseholders to crops and /or trees	Tenant/ sharecropper/ leaseholder	Only the cultivator 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	Replacement cost as assessed by the concerned authority.
4.	Loss of structure		
	a) House		
(i)	with valid title, or customary or usufruct rights	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)	with valid title, or customary or usufruct rights	Individual	Cash compensation plus Rs. 10000/- 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[1]	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 .

[1] Vulnerable APs include scheduled tribes/ scheduled caste/ households headed by women/ physically handicapped/ disabled families etc. .

viii. 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 per entitlement matrix of CPTD shall be provided. In the present project, approx. 07 nos of structures (huts to keep agricultural produce) will be affected, which will not require displacement of any AP. The compensation for shifting the huts will be paid to the APs as assessed by the State Govt. 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 huts/cattle sheds, 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 195.73 million equivalent to USD 3.26 million.

ix. POWERGRID will be the Executing Agency (EA) for the Project. The implementation and monitoring are critical activities shall be followed as per Implementation Chart/Schedule. 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 and 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 at Corporate Center and Environment and Social Management Cell at RHQ to monitor environment and social issues. At site level, ESMT will be constituted for implementation and monitoring of CPTD.

x 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 submit semi-annual monitoring reports on their implementation performance. POWERGRID will engage the services of an independent agency/External monitoring, if required.

I. INTRODUCTION AND PROJECT DESCRIPTION

A. Overview

1. Power demand in Northern Region is growing exponentially. The maximum peak demand of NR has touched 45,900 MW. The demand of the region is expected to continue to grow. As per the 18th EPS of CEA, the power demand of Northern Region would be 61,000 MW and 86,500 MW by 2016-17 and 2021-22 respectively. From the present generation scenario, it is observed that more and more generation is coming up in Western region and imports from Western region to Northern region are increasing. With the growth in power demand, it is expected that power transfer requirement from Western region would increase. Further, during the two grid disturbances in July 2012, it was observed that there is a need to provide strengthening between Northern and Western regions. Accordingly, the present scheme has been proposed for Strengthening of Inter-regional System between Northern and Western Regions.

2. The system was discussed and agreed during the 31st Standing Committee Meeting of Northern Region held on 02.01.2013. The system was also discussed and approved during the 35th Meeting of Standing Committee of Western Region held on 03.01.2013. The scheme has also been agreed by the constituents in the 22nd Western Regional Power Committee meeting held on 26.02.2013 and 28th Northern regional Power Committee meeting held on 26.04.2013.The proposed project shall facilitate enhanced and reliable power transfer between Northern and Western region. Additionally, the project is likely to generate direct and indirect employment opportunities, promote industrial growth and stimulate overall development of the area.

3. Keeping the above in view and considering the other system developments already in progress, following transmission system has been agreed as System Strengthening Scheme:

- Jabalpur Pooling station - Orai 765 kV D/c line
- Orai – Aligarh 765 kV D/c line
- Orai – Orai(UPPTCL) 400 kV D/c (Quad) line
- LILO of one circuit of Satna-Gwalior 765 kV D/c line at Orai S/s
- 2x1000MVA, 765/400 kV substation at Orai S/s
- LILO of Agra-Meerut 765 kV S/c line at Aligarh S/s
- 765 kV Switching Station at Aligarh (GIS)
- LILO of Kanpur – Jhatikara 765 kV S/c at Aligarh S/s

Jabalpur is an important pooling station in Western region. At Jabalpur, in addition to power from IPPs in Orissa and Chhattisgarh, power from generating stations of MB power (2x600MW), Jhabua (2x600MW) and SJK Power Gen (2x660MW) are being pooled. Satna is another important substation and is connected to Vindhayachal / Sasan generating station through 756kV network. To transfer power from Western region to Northern region, Jabalpur Pooling station - Orai 765 KV D/c line and LILO of one circuit of Satna - Gwalior 765 kV line at Orai S/s is proposed. For transfer of power beyond Orai, Orai – Aligarh 765 kV D/c line has been envisaged, in addition to 400kV lines. With LILO of Agra-Meerut 765 kV S/c and Kanpur – Jhatikara 765 kV S/c at Aligarh substation, 765kV network would be available for transfer of power to NCR area and beyond.

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

4. The Compensation Plan for Temporary Damages (CPTD) is guided by The Electricity Act 2003, The Indian Telegraph Act, 1885, POWERGRID's *Environmental and Social Policy &* Procedures, 2009 (ESPP) and Asian Development Bank's Safeguard policy Statement, 2009

(SPS).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 meetings with various project-affected persons in the project areas. 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) compensation for structure (ix) budget (x) institutional arrangements (xi) implementation schedule (xii) monitoring and reporting.

C. Project Components

5. The project components under the proposed ADB financing include construction of 372.732 kilometers (Kms) (38 *Kms of 400 kV lines and 334.732 Kms of 765 k*V lines) transmission lines which will traverse through the state of Uttar Pradesh and will cover 7 districts such as Aligarh, Mahamaya Nagar, Firozabad, Mainpuri, Etawah, Jalaun and Etah. Salient Features of the Project is described in **Table 1.1** and details on each lines are described in **Table 1.2**

Table 1.1: Project Highlights

a)	Project	:	Inter-Regional System Strengthening Scheme In WR-NR (Part-B)
b)	Location of the Project	:	Northern & Western Region
c)	Beneficiary States	:	Northern & Western Region Constituents
d)	Project Cost	:	**Rs. 56063.8 Million** at August 2013 Price Level (including IDC of Rs. 3188.4 Million)

Table 1.2: Details on Each Transmission Lines

S. No	Name of the Lines	Length (in Kms)	Right of Ways (Meters)	Number of Towers
1.	Orai – Aligarh 765 kV D/c line	320	67	800
2.	Orai – Orai (UPPTCL) 400 kV D/c (Quad) line	38	46	95
3.	LILO of Agra-Meerut 765 kV S/c line at Aligarh S/s	4.102	67	11
4.	LILO of Kanpur – Jhatikara 765 kV S/c at Aligarh S/s	10.63	67	27

D. Scope and Limitation of the CPTD

6. The CPTD has been prepared based on the preliminary route investigation/ survey. The project is categorized as 'B'3 for Involuntary Resettlement (IR) and 'C' for indigenous people (IP) as per ADB's Safeguard Policy Statement, 2009 (SPS). The impacts are temporary in nature in terms of loss of crops and trees. No land acquisition is involved. 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 provides compensation for actual damages, which are temporary in nature. Exact

[3] 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.

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 POWERGIRD.

E. Measures to Minimize Impact

7. In keeping with the ADB's SPS, 2009 and POWERGRID's ESPP, the routes of these transmission lines have been finalized to avoid or to minimize impacts towards temporary damages on crops/ trees/ structures if any coming in the Right of Way (ROW) during construction. Further field visits and public consultations helped in developing the measures towards minimizing negative social impacts, if any.

1. Civil Works Scheduling

8. For transmission line (only) coming under any subprojects there is no land acquisition involved as per law of the land i.e. in exercise of the powers under 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

9. 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

10. 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

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

12. **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.

2. Route Selection and Study of Alternatives

13. At the system planning stage itself one of the factors that govern the evolution of system is the possible infringement with the forest. Wherever such infringements are substantial, different alternative options are considered. The route/ site selection criteria followed by POWERGRID is detailed below:

14. While identifying the transmission system for a generation project or as a part of National Power Grid, preliminary route selection is done by POWERGRID based on the Topo sheets of Survey of India and Forest Atlas (Govt. of India's Publication). During route alignment all possible efforts are made to avoid the forest area involvement completely or to keep it to the barest minimum, whenever it becomes unavoidable due to the geography of terrain or heavy cost involved in avoiding it. Evaluation of alternative route alignments of each line is provided in **Annexure-1**.

3. POWERGRID approach towards Route selection

15. 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 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.

16. In order to achieve this, POWERGRID undertakes route selection for individual transmission lines in close consultation with representatives from the Ministry of Environment and Forests and the Department of Revenue. Although under National law POWERGRID has right of eminent domain to put a tower in Pvt. land (Section 63 of the Electricity Act,2003) 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.

17. In addition, care is also taken to avoid National parks and sanctuaries and any other forest area rich in wild life. Keeping above in mind the routes of proposed lines of the entire system *Inter-Regional System Strengthening Scheme in WR-NR (Part-B)* has been so aligned so 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.

II. PROJECT IMPACTS

A. General

The project does not require any private land acquisition under the proposed ADB financing components. Therefore, no physical displacement is foreseen in the project. Impacts are temporary in nature in terms of loss of crops and trees. Preliminary investigation/survey has been carried out for transmission lines of Inter-Regional System Strengthening Scheme in WR-NR (Part-B) 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 Compensation Plan Temporary Damages (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 have been gathered to have an idea about the temporary damages might occur during construction of the transmission line. The corridor of width (ROW-Right of Way) required for 765 KV D/C and 400 KV D/C Transmission Line is 67 meter and 46 meter respectively. The temporary impacts on loss of crops and trees are caused due to transmission lines and placing of transmission tower.
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

Agriculture areas: 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 an average 765 kV D/C & 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.

Crops: Construction of line in crop season is avoided as far as possible. In case when installation of towers impacts on agricultural activity, detailed 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.

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 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. In orchards dwarf trees are allowed to grow.

Other Damages: Like bunds, water bodies, fish ponds, approach paths, drainage and irrigation canals etc are at best avoided. However, if damaged compensation as per practice, the 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.

B. Temporary Impacts Caused due to Transmission Lines (Right of Way)

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

18. The line corridors will pass through mixed land uses which are generally agricultural land, private plantation, forest, 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 each line and its respective right of way[4]. The total line length is 372.732 kilometers which will impact an estimated of 2417.53 hectares (ha) of land. This includes 333.346 kms of line passing through agricultural land (2162.24 ha of agricultural land), 5.2 kms of private plantation (30.64 ha of private plantation land), 1.626 kms of forest land (10.7 ha of forest land), 4.8 kms of reverine feature (30.06 ha of reverine feature land) and 27.76 kms of barren/unused land (183.89 ha of barren/unused land). A brief description about the type and use of land in the corridor is given in **Table 2.1**. However, the total land as calculated does not necessarily be considered for crop compensation. The actual land for crop compensation is described in following paragraphs.

Table 2.1Type and Use of Land within Corridor of ROW (in Kms/Hectares)

Sl No	Name of the Lines	RoW Width (in meter)	Agricultural land	Private Plantation	Forest	Reverine feature	Barren/ unused land	Total
1	Orai – Aligarh 765 kV D/c line	67	285.4 kms/ (1912.18 ha)	3.2 kms/ (21.44 ha)	1.34 kms/ (9 ha)	3.8 kms/ (25.46 ha)	26.26 kms/ (175.94 ha)	320 kms/ (2144.02 ha)
2	Orai – Orai (UPPTCL) 400 kV D/c (Quad) line	46	33.892 kms/ (155.9 ha)	2 kms/ (9.2 ha)	0.108 kms/ (0.5 ha)	1 km/ (4.6 ha)	1 km/ (4.6 ha)	38 kms/ (174.8 ha)
3	LILO of Agra-Meerut 765 kV S/c line at Aligarh S/s	67	4.043 kms/ (27.09 ha)	0 km/ (0ha)	0.059 km/ (0.4 ha)	0 km/ (0 ha)	0 km/ (0 ha)	4.102 kms/ (27.49 ha)
4	LILO of Kanpur – Jhatikara 765 kV S/c at Aligarh S/s	67	10.011 kms/ (67.07 ha)	0 km/ (0 ha)	0.119 km/ (0.8 ha)	0 km/ (0 ha)	0.5 km/ (3.35 ha)	10.63 kms/ (71.22 ha)
	TOTAL		**333.346 kms/ (2162.24 ha)**	**5.2 kms/ (30.64 ha)**	**1.626 kms/ (10.7 ha)**	**4.8 kms/ (30.06 ha)**	**27.76 kms/ (183.89 ha)**	**372.732 kms/ (2417.53 ha)**

Source: Preliminary Survey, Apr'2014

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

19. For the temporary loss of crops, only agricultural land and private plantation land are considered for estimation. Though ROW is 67 Meter for 765 kV lines and 46 Meter for 400kV lines, but average affected width/corridor would be limited to 40 Meter (Maximum). The household survey is not required to be done as land acquisition is not involved as per norms. As per POWERGRID's strategy and practices all out efforts are made to reduce the damages to crops and to minimize the

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

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 lines though on higher side. 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 works to be 1540.784 Ha. [(338.546 Km x 40 meter = 1354.184 Ha) + 186.6 Ha (for tower foundation)]. Brief description about the type of land in 40 meter corridor (width) of above Transmission Line is given in **table 2.2:**

Table 2.2: Estimation on Loss of Land for Crop Damage due to overhead Lines

Sl No	Name of the Lines	Width Considered for Estimation of Loss of Crops and other (impacts)	Total Agricultural Land (kms)	Total Private Plantation (kms)	Total Line Length Considered for Crop Compensation (kms)	Total Land Area considered for Crop Compensation with 40 meter width (Hectare)
1	Orai – Aligarh 765 kV D/c line	40	285.4	3.2	288.6	1154.4
2	Orai – Orai (UPPTCL) 400 kV D/c (Quad) line	40	33.892	2	35.892	143.568
3	LILO of Agra-Meerut 765 kV S/c line at Aligarh S/s	40	4.043	0	4.043	16.172
4	LILO of Kanpur – Jhatikara 765 kV S/c at Aligarh S/s	40	10.011	0	10.011	40.044
	TOTAL		**333.346**	**5.2**	**338.546**	**1354.184**

Source: Preliminary Survey, Apr'2014

3. Loss of Crops Caused due to Transmission Towers.

20. During tower foundation, additional area adjoining the actual foundation area will be affected. For estimation purpose, additional area of 2000 sq.m. [(60mX60m)-(40mX40m)] per tower has been considered. Additionally, 186.6 ha of land is estimated for crop compensation due to placing of 933 tower footings. Details are given in **Table 2.3**:

Table 2.3: Loss of Crop Area estimated for Tower Footings

Sl No	Name of the Lines	No of Towers	Area Affected (Ha)
1	Orai – Aligarh 765 kV D/c line	800	160
2	Orai – Orai (UPPTCL) 400 kV D/c (Quad) line	95	19
3	LILO of Agra-Meerut 765 kV S/c line at Aligarh S/s	11	2.2
4	LILO of Kanpur – Jhatikara 765 kV S/c at Aligarh S/s	27	5.4
	TOTAL	933	186.6

Source: Preliminary Survey, Apr'2014

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

21. Based on the above estimation, the total land considered for crop compensation for transmission line corridor and tower foundation is 1540.784 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 effected APs. Since there is no significant AHH involved or APs will not be physically displaced or APs will not lose more than 10% of their productive assets short RP is not called for. During construction, only temporary damages will occur for which the compensation shall be paid as per relevant rules. For total towers (933 nos), temporary damages during tower foundation shall be 335.88 ha. After construction, the total land loss estimated to be about 0.0933 ha which is 0.027% 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 damage shall be required which is a part of CPTD.

C. Loss of Trees

22. Total number of trees to be affected are 4755 out of which 4500 are non-forest trees and 255 are forest trees. Non-forest trees will be compensated in cash as per the entitlement matrix. Details on number of trees for each line are given in **Table 2.4:**

Table 2.4: Loss of Trees

S.No.	Name of Line	Trees in Non-forest Area (Numbers)	Trees in forest Area (Numbers)	Total Trees (Numbers)
1.	Orai – Aligarh 765 kV D/c line	3824	134	3958
2.	Orai – Orai (UPPTCL) 400 kV D/c (Quad) line	500	100	600
3.	LILO of Agra-Meerut 765 kV S/c line at Aligarh S/s	49	8	57
4.	LILO of Kanpur – Jhatikara 765 kV S/c at Aligarh S/s	127	13	140
	Total	4500	255	4755

Source: Preliminary Survey, Apr'2014

D. Loss of Other Assets (Small huts and Cattle shed in Agriculture Fields)

23. It is found during the preliminary survey that approximately 7 number of small structures (huts to keep agricultural produce) are existing . People do not use these small structures for residential purpose. These will be compensated in cash. Details on impacts on small structures are given in **Table 2.5**.

Table 2.5: Loss of Other Assets

S.No.	Name of Line	Total Number of Cattle sheds/huts
1.	Orai – Aligarh 765 kV D/c line	05
2.	Orai – Orai (UPPTCL) 400 kV D/c (Quad) line	0
3.	LILO of Agra-Meerut 765 kV S/c line at Aligarh S/s	01
4.	LILO of Kanpur – Jhatikara 765 kV S/c at Aligarh S/s	01
	Total	07

Source: Preliminary Survey, Apr'2014

E. Details on Affected Persons

24. It is estimated that as per preliminary survey/ investigation, total number of affected persons which may be impacted temporarily will be approximately 1198. This is a preliminary assessment. Details are given in **Table 2.6.** 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 AHH.

Table 2.6: Number of Affected Persons

S.No.	Name of Line	Length in Kms	Total APs
1.	Orai – Aligarh 765 kV D/c line	320	1000
2.	Orai – Orai (UPPTCL) 400 kV D/c (Quad) line	38	150
3.	LILO of Agra-Meerut 765 kV S/c line at Aligarh S/s	4.102	14
4.	LILO of Kanpur – Jhatikara 765 kV S/c at Aligarh S/s	10.63	34
		372.732	1198

Source: Preliminary Survey, Apr'2014

F. Impact on Gender

25. 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 EA. 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.

G. Impact on Indigenous Peoples

26. 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.

27. 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 lines are located in Uttar Pradesh, which has no schedule area as such. Hence, no indigenous population is envisaged in the project area.

28. 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 PESA Act, 1996, extends the vision of self governance (as enshrined in 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. **However, as already mentioned above, there are no notified scheduled areas in Uttar Pradesh.** As the proposed project is totally confined in the state of Uttar Pradesh, so it won't have any impact on indigenous people. No laws / policies applicable for indigenous people shall be applicable in project area.

H. Details of land to be traversed throughout the Right of Way (ROW): 67 Meter for 765 KV D/C Transmission Line and 46 Meter for 400 KV D/C Transmission Line

Line-1: Orai – Aligarh 765 kV D/c line

Land Use	Type	Total Distance	
		Km	%
Cultivation	Agriculture	285.4	89.19
Private Plantation		3.2	1
Forest	Sparse	-	-
	Moderate	-	-
	Moderately dense	-	-
	Dense	-	-
	Road Side Plantation	1.34	0.42
Shrubs		-	-
Barren Land		26.26	8.2
Riverine features		3.8	1.19
Total		320	100

Line-2: Orai – Orai (UPPTCL) 400 kV D/c (Quad) line

Land Use	Type	Total Distance	
		Km	%
Cultivation	Agriculture	33.892	89.18
Private Plantation		2	5.26
Forest	Sparse	-	-
	Moderate	-	-
	Moderately dense	-	-
	Dense	-	-
	Road Side Plantation	0.108	0.28
Shrubs		-	-
Barren Land		1	2.63

Riverine features	1	2.63
Total	38	100

Line-3: LILO of Agra-Meerut 765 kV S/c line at Aligarh S/s

Land Use	Type	Total Distance	
		Km	%
Cultivation	Agriculture	4.043	98.56
Private Plantation		-	-
Forest	Sparse	-	-
	Moderate	-	-
	Moderately dense	-	-
	Dense	-	-
	Road Side Plantation	0.059	1.43
Shrubs		-	-
Barren Land		-	-
Riverine features		-	-
Total		4.102	100

Line-4: LILO of Kanpur – Jhatikara 765 kV S/c at Aligarh S/s

Land Use	Type	Total Distance	
		Km	%
Cultivation	Agriculture	10.011	94.17
Private Plantation		-	-
Forest	Sparse	-	-
	Moderate	-	-
	Moderately dense	-	-
	Dense	-	-
	Road Side Plantation	0.119	1.11
Shrubs		-	-
Barren Land		0.5	4.7
Riverine features		-	-
Total		10.63	100

From the above it may be observed that out of about total **372.732 Km** line passing through non-forestland (Agricultural) **333.346 km** is cultivated land which is close to 89%, rest are barren land and of riverine in nature. Tree/crops Compensation will has 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.

I. Summary Impacts

29. 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:

- Orai – Aligarh 765 kV D/c line involves agricultural land about 1912.18 Ha. of land with about 3824 trees, about 05 nos. structures. Temporary Affected Persons (APs) are about 1000 nos.

- Orai – Orai (UPPTCL) 400 kV D/c (Quad) line involves agricultural land about 155.9 Ha. of land with about 500 trees, Temporary Affected Persons(APs) are about 150 nos.

- LILO of Agra-Meerut 765 kV S/c line at Aligarh S/s involves agricultural land about 27.09 Ha. of land with about 49 trees. Temporary Affected persons (APs) are about 14.

- LILO of Kanpur – Jhatikara 765 kV S/c at Aligarh S/s involves agricultural land about 67.07 Ha. of land with about 127 trees, Temporary Affected Persons (APs) are about 34.

30. Based on the preliminary assessment, summary impacts on loss of crops, trees, other structures and number of APs are given in **Table 2.7**.

Table 2.7: Summary Impacts

Particulars	Details
Length in Kms	372.732
Number of Towers	933
Area under RoW (ha)	2417.53
Total APs	1198
Affected Structures (Hut etc for agricultural purpose)	07
Area of Temporary Damages (Ha) for crop compensation	1540.784
Trees in Non-forest Area (Nos.)	4500
Trees in forest Area (Nos.)	255
Total Trees	4755

Source: Preliminary Survey, Apr'2014

III. SOCIOECONOMIC INFORMATION AND PROFILE

A. General

31. 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. Since there is no significant AHH involved or the APs will not be physically displaced or APs will not lose more than 10% of their productive assets short RP is not called for. Thus productive loss to households due to construction is negligible. This chapter provides broad socio-economic profile in terms of demography, literacy, employment and other infrastructure etc in the state of Uttar Pradesh and the districts through which the lines will traverse. Following section briefly discuss socio-economic profile.

B. Socio -economic Profile of Uttar Pradesh

1. Overview

32. Uttar Pradesh (UP) is rich in human and natural resources. Most of State's farm land is well watered and naturally fertile U.P is the largest producer of food grains and oilseeds in the country. It leads all the states in India in the production of wheat, maize, barley, gram, sugarcane and potatoes. Wheat, rice, sugar cane, pulses, oil seeds and potatoes are its main products. Sugar cane is an important cash crop almost throughout the state and sugar mills and other cane crushers who produce Gur and Khandsari are common throughout the state. Uttar Pradesh is an important state as far as horticulture is concerned.

33. There are different types of minerals and several industries have come up based on the minerals. There are cement plants in the Mirzapur area in the Vindhya region, a bauxite based aluminium plant in the Banda area, Coal deposits are found in the Singrauli area. The industries include a large printing establishment units engaged in manufacturing of scales, locks, letter boxes, furniture, badges and belts, leather goods, scissors etc. Handloom, carpet, glass, electrical goods, electro-plating, building material industries are also found in this State.

34. UP leads all the states in India in the production of wheat, maize, barley, gram, sugarcane and potatoes. The state (India's sugar bowl) produces about one half of the total sugarcane output in the country. The western region of the state is more advanced in terms of agriculture. Majority of the population depends upon farming as its main occupation. Wheat, rice, sugar cane, pulses, oil seeds and potatoes are its main products. Sugar cane is an important cash crop almost throughout the state.

Land use Pattern of the State is given below:

Land use	Area in ' 000 ha	Percentage
Total Geographical area	24,093	
Reporting Area for land utilization	24,170	100.00
Forests	1,658	6.86

Not available for land cultivation	3,268	13.52
Permanent Pasture & other Grazing land	65	0.27
Land under misc. tree crops & groves	374	1.55
Culturable waste land	440	1.82
Fallow land other than current fallows	540	2.23
Current fallows	1,408	5.83
Net area Sown	16,417	67.92

Source: Land use statistics, Ministry of Agriculture, GOI, 2008-09

2. Climate

35. The climate in Uttar Pradesh varies substantially. The Gangetic plain, which covers three-quarters of the state, is dry and dusty in summer. But, during the monsoons between June and September, it is transformed into carpets of lush green fields. The monsoons also spell disaster for some regions, when the Ganga and its tributaries overflow their banks and flood large tracts of land. Winter is severe, the Gangetic plains are fairly cold with temperatures coming down as low as 3°C though average temperatures remain around a pleasant 18°C. Summers are extremely hot in the plains with maximum temperature reaching as high as 45°C. The intensity of the summer months is magnified by the hot winds called 'loo' that blows across the plains in May and June, the hottest months of the year.

3. Water resources

36. The main rivers of the state from west to east are the Yamuna, Ganga, Ramganga, Gomati and Ghaghara. All the rivers, except the Gomati, emerge from the Himalayas. The Yamuna and the Ganga flow from north-east to south-west in their upper mountainous courses, from north to the south in western parts of the state and thereafter from north-west to south-east joining at Allahabad.

4. Power Scenario

37. Power is one of the most important infrastructure ingredients for the development of an economy 88.9% rural households in the state are electrified. At present, about 10856 villages in the state remain to be electrified. The per capita energy consumption in the state is also extremely low at about 348.37 kWh as against the national average of about 779 kWh. Even in the electrified villages, the quality of supply and the supply hours need to improve significantly to help the consumer, existing and potential, to benefit from the multipliers that electricity access affords. This necessitates specific and sustained actions for expanding access to electricity.

C. Project Districts

1. Jalaun

38. In the later 19th century, the district suffered much from the invasive kans grass (Saccharum spontaneum), owing to the spread of which many villages were abandoned and their land thrown out of cultivation. The population of the district was 399,726 in 1901, and the two largest towns are Kunch

and Kalpi (pop. 10,139 in 1901). The district was traversed by the line of the Indian Midland railway from Jhansi to Kanpur. A small part of it is watered by the Bethwa Canal. Grain, oil-seeds, cotton and ghee were exported.

2. Etawah

39. The district of Etawah lies in the southwestern portion of Uttar Pradesh 26° 47" north latitude and 72° 20" east longitude and forms a part of the Kanpur Division. In shape it is a parallelogram with a length from north to south 70 km. and east to west 66 km. on one side and 24 km. on the other side. It is bounded on the north by the districts of Farrukhabad and Mainpuri, while the small extent of western border adjoins tehsil Bah of the Agra district. The eastern frontier marches with the district of Auraiya, and along the south lie Jalaun and the district of Gwalior.Etawah lies entirely in the Gangetic plain, but its physical features vary considerably and are determined by the rivers which cross it. It contains Highlands, fertile sandy loams, cultivated land & deep revines etc. Ayurvedic medicines, bones and skins and cotton-yarn and imports are consumer goods, medicines and drugs, cotton, diesel and mobil oil, spirit, petrol, mineral oils, machinery and motor vehicles. The district has a good agricultural base and a reasonably good infrastructure of various facilities, but the industrial base is weak, resulting in a low income to the district. The lack of enterprise and technical knowledge in the local people and the paucity of skilled labour are the major constraints for the industrial growth in the district. There is only one large-scale unit and it produces cotton yarn. It is known as the U.P. Co-operative spinning Mills Ltd. Forest land, groves, land prepared for sugar-cane furrows, waste-lands like pastures and grazing land often classified as unculturable due to excess of sand or reh or on account of ravine-scouring or overgrowth of dhak constitutes cultivable land in the district. The area of cultivable land in the district in 1996-97 was 151 thousand hectares (Auraiya district included).

3. Mainpuri

40. Total area covered in the district is 2154 hectare .A considerable area of the barren land is covered with dhak jungle, the remains of the ten kos belt of jungle which formerly ran through Etawah, Mainpuri, Etah, Aligarh, and Bulandshahr. At Uresar and Eka in the north of Mustafabad , there are patches, 150 and 200 acres in extent , covered with dhak jungle , and at Akbarpur Auncha there is a long strip of some thousands of acres , interspersed with cultivation.

4. Etah

41. Etah is located at 27.63° N 78.67°E. It has an average elevation of 170 metres (557 feet). Etah's nearest district and surrounded by Aligarh, Farrukhabad, Mainpuri, Firozabad, Mahamaya Nagar, Kasganj. Etah district is a central part of Indo-Gangetic plain lies in Ganga Yamuna doab of the state covering an area of 4446 sq.km. The drainage system of the district is controlled by the river Ganga and its tributaries namely Kali, Is an, Burhi Ganga Arind and Bargash. The Kali nadi is perennial. Etah district fall under the category of agricultural dominated district occupying mainly area between Ganga and Kali. Agriculture is the main stay in the district and various kinds of crops are grown in the district.

5. Firozabad

42. Firozabad is located in north central India, in western Uttar Pradesh state, 40 km away from Agra and around 240 km away from Delhi. The boundaries of Firozabad district touch Etah district in north and Mainpuri and Etawah districts in the east. The Yamuna river makes its southern boundary. The area of the district is about 0.8% of total area of Uttar Pradesh, and the population is 1.1% of the state's total population. Approximately 73.6% of the population lives in rural area. More than half of

the workforce is engaged in manufacturing activities. The city is also an important market center. It has severe winter and summer seasons. The district is mostly flat and its slope is from North West to south.

6. Aligarh

43. The city is an agricultural trade centre. Agricultural product processing and manufacturing are important. Aligarh is an important business centre of Uttar Pradesh and is most famous for its lock industry. Aligarh locks are exported across the world. In 1870, Johnson & Co. was the first English lock firm in Aligarh. Aligarh is also famous for brass hardware and sculpture. Today, the city holds thousands of manufacturers, exporters and suppliers involved in the brass, bronze, iron and aluminum industries.

7. Mahamaya Nagar

44. Mahamaya Nagar was an industrial hub during the British Raj. Cotton milling, knives, asafoetida (hing) and Desi Ghee products were the main industries. The last two continue to thrive. Cotton Mill was there in Purana Mill Compound from which Major Export of Cotton took place to different parts of the World. The chief articles of commerce are sugar and grain. Hathras is now notable for Holi Colour & Gulal and also known for Readymade Garments, Chemicals, Carpet, Artificial Moonga-Moti, Hing, Brass, Artware and Hardware, Edible Oil, Beverage, Pulse etc.

D. Other Features

1. Households Details

45. Households details of Uttar Pradesh and project districts are given in **Table 3.1** which shows that most of the households are in rural areas compared to the urban areas.

Table3.1: Details on Households

Name/Particulars	Total Households	Total (Rural)	Total(Urban)	Percentage(Rural)	Percentage (Urban)
Uttar Pradesh	33448035	25685942	7762093	76.79	23.21
Aligarh	611371	407034	204337	66.58	33.42
Mahamaya Nagar	260860	204827	56033	78.52	21.48
Firozabad	414266	274897	139369	66.36	33.64
Mainpuri	313690	263503	50187	84.00	16.00
Etawah	277527	213548	63979	76.95	23.05
Jalaun	288338	216570	71768	75.11	24.89
Etah	290683	245688	44995	84.52	15.48

Source: Census Survey, 2011

2. Demography

46. Details on population of Uttar Pradesh and project districts are given in **Table 3.2**. About 77.33% of Uttar Pradesh's population is rural and 22.27% population is urban.

Table 3.2: Details on Total Population

Name/Particulars	Total Population	Total Rural	Total Urban	Percentage (Rural)	Percentage (Urban)
Uttar Pradesh	199812341	155317278	44495063	77.73	22.27
Aligarh	3673889	2456698	1217191	66.87	33.13
Mahamaya Nagar	1564708	1232015	332693	78.74	21.26
Firozabad	2498156	1664987	833169	66.65	33.35
Mainpuri	1868529	1580087	288442	84.56	15.44
Etawah	1581810	1215511	366299	76.84	23.16
Jalaun	1689974	1271074	418900	75.21	24.79
Etah	1774480	1506338	268142	84.89	15.11

Source: Census Survey, 2011

3. Male and Female Population

47. In Uttar Pradesh, 52.29% of the total population is male and 47.71 population is female. The sex ration in Uttar Pradesh is 912 (Females per thousand males). Details are given in **Table 3.3**

Table 3.3: Details on Male/ Female Population

Name/Particulars	Total Population	Total Male	Total Female	Percentage (Male)	Percentage (Female)	Sex Ratio
Uttar Pradesh	199812341	104480510	95331831	52.29	47.71	912.44
Aligarh	3673889	1951996	1721893	53.13	46.87	882.12
Mahamaya Nagar	1564708	836127	728581	53.44	46.56	871.38
Firozabad	2498156	1332046	1166110	53.32	46.68	875.43
Mainpuri	1868529	993377	875152	53.16	46.84	880.99
Etawah	1581810	845856	735954	53.47	46.53	870.07
Jalaun	1689974	906092	783882	53.62	46.38	865.12
Etah	1774480	947339	827141	53.39	46.61	873.12

Source: Census Survey, 2011

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

48. Out of the total population of Uttar Pradesh, 20.70% of population belongs to scheduled caste and 0.57% of the population belongs to scheduled tribe. Scheduled Tribe population is very less in the project districts also. Details are given in **Table 3.4.**

Table 3.4: Details on SC and ST Population

Name/Particulars	Total Population	Total SC Population	Percentage of SC Population	Total ST Population	Percentage of ST Population
Uttar Pradesh	199812341	41357608	20.70	1134273	0.57
Aligarh	3673889	755254	20.56	629	0.02
Mahamaya Nagar	1564708	387554	24.77	268	0.02
Firozabad	2498156	473890	18.97	2565	0.10
Mainpuri	1868529	368206	19.71	478	0.03
Etawah	1581810	388283	24.55	169	0.01

Jalaun	1689974	468178	27.70	832	0.05
Etah	1774480	281011	15.84	140	0.01

Source: Census Survey, 2011

5. Male and Female Population among the Scheduled Caste

49. Details on male and female percentage of scheduled caste population are given in **Table 3.5.** Male population among the SC are more compared to the female population among the SC.

Table 3.5: Male and Female Population among SC

Name/Particulars	Total Population (SC)	Total Male (SC)	Total Female (SC)	Percentage SC (Male)	Percentage SC (Female)
Uttar Pradesh	41357608	21676975	19680633	52.41	47.59
Aligarh	755254	402483	352771	53.29	46.71
Mahamaya Nagar	387554	207170	180384	53.46	46.54
Firozabad	473890	253288	220602	53.45	46.55
Mainpuri	368206	196507	171699	53.37	46.63
Etawah	388283	208731	179552	53.76	46.24
Jalaun	468178	252588	215590	53.95	46.05
Etah	281011	150631	130380	53.60	46.40

Source: Census Survey, 2011

6. Male and Female Population among the Scheduled Tribe

50. Details on male and female percentage of scheduled tribe population are given in **Table 3.6**. Male population among the ST are more compared to the female population among the ST. Among the total ST population in Uttar Pradesh, 51.23% are male and 48.77% are female.

Table 3.6: Male and Female Population among ST

Name/Particulars	Total Population (ST)	Total Male (ST)	Total Female (ST)	Percentage ST (Male)	Percentage ST (Female)
Uttar Pradesh	1134273	581083	553190	51.23	48.77
Aligarh	629	340	289	54.05	45.95
Mahamaya Nagar	268	137	131	51.12	48.88
Firozabad	2565	1346	1219	52.48	47.52
Mainpuri	478	258	220	53.97	46.03
Etawah	169	89	80	52.66	47.34
Jalaun	832	428	404	51.44	48.56
Etah	140	87	53	62.14	37.86

Source: Census Survey, 2011

7. Literacy

51. The total literate population in Uttar Pradesh is 57.25% compared to the total population and 42.75% of the total population is illiterate. The magnitude of illiteracy in Uttar Pradesh and the project districts are high. Details are given in **Table 3.7**

Table 3.7: Literate and Illiterate Population

Name/Particulars	Total Population	Total Literate	Percentage of Literate	Total illiterate	Percentage of illiterate
Uttar Pradesh	199812341	114397555	57.25	85414786	42.75
Aligarh	3673889	2092567	56.96	1581322	43.04
Mahamaya Nagar	1564708	942572	60.24	622136	39.76
Firozabad	2498156	1521806	60.92	976350	39.08
Mainpuri	1868529	1203885	64.43	664644	35.57
Etawah	1581810	1062003	67.14	519807	32.86
Jalaun	1689974	1075196	63.62	614778	36.38
Etah	1774480	1055202	59.47	719278	40.53

Source: Census Survey, 2011

8. Literacy among Male and Female

52. Among the literate population, male literacy is higher compared to female literacy in Uttar Pradesh (59.65% male and 40.35% female) and also in the project districts. Details are given in **Table 3.8.**

Table 3.8: Male and Female Literacy

Name/Particulars	Total Population (Literate)	Total Male(Literate)	Total Female(Literate)	Percentage (Male)	Percentage (Female)
Uttar Pradesh	114397555	68234964	46162591	59.65	40.35
Aligarh	2092567	1283380	809187	61.33	38.67
Mahamaya Nagar	942572	579157	363415	61.44	38.56
Firozabad	1521806	912314	609492	59.95	40.05
Mainpuri	1203885	712110	491775	59.15	40.85
Etawah	1062003	623583	438420	58.72	41.28
Jalaun	1075196	653430	421766	60.77	39.23
Etah	1055202	647042	408160	61.32	38.68

Source: Census Survey, 2011

9. Illiteracy among Male and Female

53. As discussed above, among the illiterate population, females constitute higher percentage compared to male illiterate. Details are given in **Table 3.9**

Table 3.9: Male and Female Illiteracy

Name/Particulars	Total Population (Illiterate)	Total Male(Illiterate)	Total Female (Illiterate)	Percentage (Male)	Percentage (Female)
Uttar Pradesh	85414786	36245546	49169240	42.43	57.57
Aligarh	1581322	668616	912706	42.28	57.72
Mahamaya Nagar	622136	256970	365166	41.30	58.70
Firozabad	976350	419732	556618	42.99	57.01
Mainpuri	664644	281267	383377	42.32	57.68
Etawah	519807	222273	297534	42.76	57.24
Jalaun	614778	252662	362116	41.10	58.90

Etah	719278	300297	418981	41.75	58.25

Source: Census Survey, 2011

10. Total Workers (Male and Female)

54. Out of the total workers in Uttar Pradesh, 75.74% of population are male workers and 24.26% are female workers. Detailed break ups on various workers in Uttar Pradesh and project districts are given in **Table 3.10.**

Table 3.10: Details on Workers

Name/Particulars	Total Population (Work)	Total Male (Work)	Total Female (Work)	Percentage (Male)	Percentage (Female)
Uttar Pradesh	65814715	49846762	15967953	75.74	24.26
Aligarh	1174361	929337	245024	79.14	20.86
Mahamaya Nagar	484115	398126	85989	82.24	17.76
Firozabad	761521	621840	139681	81.66	18.34
Mainpuri	560840	466067	94773	83.10	16.90
Etawah	506072	413713	92359	81.75	18.25
Jalaun	620764	470969	149795	75.87	24.13
Etah	545984	440244	105740	80.63	19.37

Source: Census Survey, 2011

11. Total Non-Workers (Male and Female)

55. Out of the total non-workers in Uttar Pradesh, 40.77% of population are male non-workers and 59.23 % are female non-workers. Detailed break ups on various workers in Uttar Pradesh and project districts are given in **Table 3.11.**

Table 3.11: Details on Non Workers

Name/Particulars	Total Population (Non-Work)	Total Male (Non-Work)	Total Female (Non-Work)	Percentage (Male)	Percentage (Female)
Uttar Pradesh	133997626	54633748	79363878	40.77	59.23
Aligarh	2499528	1022659	1476869	40.91	59.09
Maha maya Nagar	1080593	438001	642592	40.53	59.47
Firozabad	1736635	710206	1026429	40.90	59.10
Mainpuri	1307689	527310	780379	40.32	59.68
Etawah	1075738	432143	643595	40.17	59.83
Jalaun	1069210	435123	634087	40.70	59.30
Etah	1228496	507095	721401	41.28	58.72

Source: Census Survey, 2011

12. Per capita Income:

56. Per capita Income in Uttar Pradesh is given in **Table 3.12**.

Table 3.12: Per Capita Income

Sl. No.	State	Per Capita Income (12-13) in Rs.
1.	Uttar Pradesh	33269/-

Source: pib.nic.in

IV. INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION

A. Consultations

57. Public participation and community consultations have been taken up as an integral part of the project's social and environmental assessment process. Consultation was used as a tool to inform the people about the project. Public consultations were carried out in various locations in the project areas with the objectives of making people aware of the project. Public consultation/information is an integral part of the project implementation. Public is informed about the project at every stage of execution. During survey also POWERGRID's site officials meet people and inform them about the routing of transmission lines. During the construction, every individual, on whose land tower is erected and people affected by ROW, are consulted. A notice is also issued to APs after the detailed/ check survey and finalization of tower location during the construction. Public consultation using different technique like Public Meeting, Small Group Meeting, informal Meeting as per Environmental Social Policy & Procedures of POWERGRID (ESPP) shall be carried out during different activities of project cycle. During such consultation the public is informed about the project in general and in particular about the following:

- Complete project plan (i.e. its route and terminating point and substations, if any, in between);
- POWERGRID 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's approach to minimizing and solving them;
- Temporary land acquisition details, proposed compensation packages in line with POWERGRID's policy;
- Trees and crop compensation and its process.
- Any other compensation for any damages.

58. During walkover and preliminary survey following consultation (table 4.1) with the villagers and public has already taken place:

Table 4.1: Details on Consultations

Sl. No.	Name of Transmission Line	Date of meeting	No. of villagers attended	Name of Village	Remarks
1.	Orai – Aligarh 765 kV D/c line	24.01.14	08	Chawanpura	Village Panchayat representatives, farmers, teachers and others attended the meeting. Compensation for Crops/trees, were main concerns which were clarified during meeting.
2.		25.01.14	10	Gaura Surawali	
3.		25.01.14	08	Gautampura	
4.		14.03.14	14	Andani	
5.		14.03.14	14	Takrau	
6.		15.03.14	16	Navada	
7.		15.03.14	12	Kalhar Pancha	
8.		15.03.14	14	Padham	
9.		21.03.14	13	Patpar Nagla	

10.	Orai – Orai (UPPTCL) 400 kV D/c line	24.01.14	08	Chawanpura	Village Panchayat representatives, farmers, teachers and others attended the meeting. Compensation for Crops/trees, were main concerns which were clarified during meeting.
11.	LILO of Agra-Meerut 765 kV S/c line at Aligarh S/s & LILO of Kanpur – Jhatikara 765 kV S/c line at Aligarh S/s	01.02.14	11	Bamani	Village Panchayat representatives, farmers, teachers and others attended the meeting. Compensation for Crops/trees, were main concerns which were clarified during meeting.
12.		01.02.14	6	Bhanera	
13.		01.02.14	5	Bajidpur	
14.		01.02.14	10	Khera Satu	

B. Summary of Public Consultation held

59. There were altogether 14 public consultations and informal group meetings held from Jan'14 to March'14 during preliminary survey/investigations of the entire the routes of transmission lines in Uttar Pradesh. 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.

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

- Would they be benefited through this particular line?
- Whether huts or any damage if coming under corridor would be compensated or not?
- Whether local people will be engaged during construction?
- Whether land compensation due to tower location shall be paid?
- In case tower is constructed on Gram Panchayat Land?
- What is height of tower and electrical clearance?

61. POWERGRID field staffs explained above questions as follows:

- POWERGRID will transmit the electricity to State Electricity Boards (SEB) and villagers will be provided electricity by SEBs which will lead to development of the area.
- Any type of damages occur during construction, compensation towards the extent of damages etc. are to be assessed by Revenue dept. at the request and initiative of

POWERGRID and will be borne/ compensated by POWERGRID.

- All the unskilled work will be done through engagement of local labourers and construction materials like coarse aggregate, sand would be supplied by local traders apart from engagement of local material transport/vehicles. There will be direct and indirect economic benefit to the local people during construction.
- Land acquisition is not required for the purpose of transmission line. Legal status of land would remain with the individuals even after construction of transmission line. Hence, land compensation is not payable. However, villagers can continue agricultural activity. However, crop compensation for damage shall be paid as per rules.
- In case of Panchayat Land, compensation for damage will be paid as per rules.
- POWERGRID towers are normally more than 42 meter height and they maintain sufficient electrical clearance (above 8.84 m) and as such no harm is anticipated.

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

62. 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 (20-50 Km) en-route final route alignment of line	Public meeting during 2014 (Q3) to 2016 (Q4).
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.

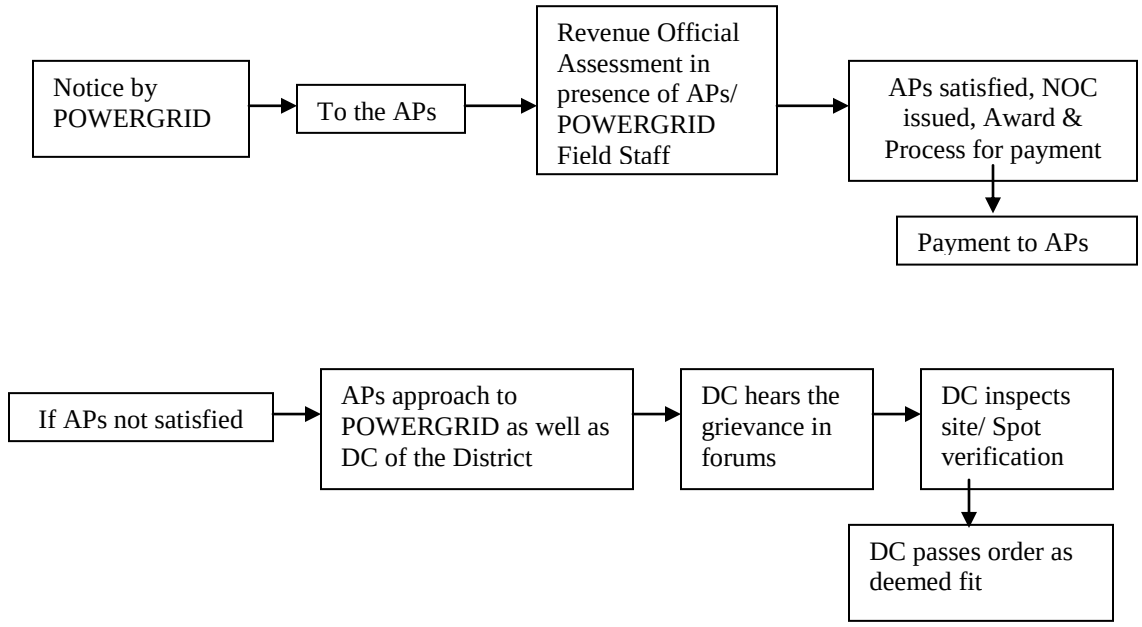
D. Information Disclosure

63. The draft/summary CPTD will be disclosed by the POWERGRID to the affected households and other stakeholders by placing it on website for review and comments on the policy in general and adequacy of the mitigation measures in particular. 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 in hindi will be placed at construction offices/ sites. The summary of CP will be disclosed on the ADB website. The collection of comments will take place after one month of the disclosure of the CPTD, followed by the compilation of the comments and responses received. Subsequently, the 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.

V. GRIEVANCE REDRESS MECHANISMS

64. Grievance redressal is in built in the process of compensation because after the notice the revenue officials assess the damages based on actual site condition and the version of land owner. After the preliminary assessment owner is given a chance to substantiate the claim if he is not satisfied with the assessment. If the owner is not satisfied he/she is allowed to access the higher authority for any grievance towards compensation that is generally addressed in open forum and in the presence of many witnesses. Process of spot verification and random checking by the district collector (DC)/ 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. The proposed mechanism does not impede access to the country's judicial or administrative remedies. Details are depicted in Figure-1:

Figure-1: Grievance Redress Mechanism



VI. LEGAL FRAMEWORK

A. Overview

65. Land acquisition and physical displacement are not involved in the project. However, the Project may cause temporary impacts on loss of crops and trees are also foreseen. 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 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 (hereafter RFCT in LARR, 2013), effective from 1 January 2014, and ADB's Safeguard Policy Statement (SPS), 2009. 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 and POWERGRID's Environment and Social Policy and Procedures, 2009 (ESPP).The compensation principles adopted for the project shall comply with applicable laws and regulations of the Government of India/ State Govt, as well as ADB's Safeguard Policy Statement (2009).

B. ADB'S Safeguard Policy Statement (SPS), 2009

66. ADB has adopted Safeguard Policy Statement (SPS) in 2009 including 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.

67. 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. Followings are the basic policy principle of ADB's SPS, 2009:

(i) Identification of past, present, and future involuntary resettlement impacts and risks and determination of the scope of resettlement planning.
(ii) Carry out meaningful consultations with affected persons, host communities, and concerned non-government organizations.
(iii) Improvement or at least restoration of the livelihoods of all displaced persons,
(iv) Ensure physically and economically displaced persons with needed assistance.
(v) Improvement of the standards of living of the displaced poor and other vulnerable groups.
(vi) Development of procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement,
(vii) 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.

(viii) Preparation of a resettlement plan elaborating on displaced persons' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget, and time-bound implementation schedule.
(ix) Disclosure of resettlement plan, including documentation of the consultation process in a timely manner to affected persons and other stakeholders.
(x) Execution of involuntary resettlement as part of a development project or program.
(xi) Provide payment of compensation and other resettlement entitlements before physical or economic displacement.
(xii) Monitoring and assessment of resettlement outcomes, their impacts on the standards of living of displaced persons

Compensation

Transmission line route involves forest area and non forest area. Forest area is avoided while routing of transmission line. As per prevailing law, land below transmission line or for tower foundation is not acquired. POWERGRID pay compensation for damages as per act. Impacts on agriculture land are restricted mainly to the construction phase.

Statutory Requirements

As per the statutory requirements (IS-5613, Part 3, 1989) all the trees and bushes, including saplings coming in the ROW limit i.e. clearance belt of transmission lines must be cut and removed. The provisions of the Electricity Act, 2003 and Indian Telegraph Act, 1885 regarding paying compensation for laying of transmission line are as follows:

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

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 there under, 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 the 36 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.

POWERGRID is covered under section 164 of electricity act vide MOP's gazette notification dated

24.12.03 thereby empowered to use powers of the Indian Telegraph Act, 1885 for placing of towers /lines. The provisions of the Telegraph Act for compensation are as follows:

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

10. Power for telegraph authority to place and maintain telegraph lines and posts – *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.

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).

In exercise of the powers vested with Power Grid Corporation of India Limited (POWERGRID) under 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 authority to place and maintain transmission lines under over along or across and posts in or upon, any immoveable property. As per the provisions of Indian Telegraph Act1885 Part III Section 10 (b) which prohibits acquisition of any rights other than that of use only, land for tower and right of way is not acquired and agricultural activities are allowed to continue. 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. Accordingly, POWERGRID pays compensation to land owners towards damages.

E. POWERGRID's ESPP, 2009

68. To address the environmental and social issues related to its power transmission projects, POWERGRID has developed its corporate environmental and social policy and procedures (ESPP) in 1998 based on the principles of avoidance, minimization, and mitigation. The ESPP had been updated and revised in 2009 consistent with the World Bank policy of Use of Country System policy, and applicable laws, legislation and guidelines of GoI. This is now referred to by

POWERGRID as the ESPP 2009.

69. 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.

70. POWERGRID's social entitlements within its Resettlement and Rehabilitation (R&R) framework are varied and include different types of compensation packages. Since, the instant project does not require any permanent land acquisition, only 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.**

71. A comparison between ADB'S SPS, 2009 with ESPP AND RFCTLARR Act, 2013 is provided in **Annexure-2.**

F. Basic Principles for the Project

72. 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) Disclose all information related to, and ensure AP participation in, resettlement planning and implementation.
(iv) Provide compensation for acquired assets at replacement/market value in accordance with the RP.
(v) Provide resettlement assistance and income restoration to APs.
(vi) Provide for APs not present during enumeration. However, anyone moving into the project area after will not be entitled to assistance.
(vii) Provide compensation and resettlement assistance prior to taking possession of the acquired lands and properties.
(viii) Establish grievance redress mechanisms to ensure speedy resolution of disputes.
(ix) Ensure adequate budgetary support to cover implementation costs for CPTD.
(x) Conduct internal and external monitoring (if required) of the implementation of CPTD.

73. 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 payable by cheque will be provided during construction works. The EA will provide cash compensation (by cheque) to the APs for the temporary loss of crop and loss of trees if occurred, during the time of maintenance and repair.

G. Cut-off- Date

74. As mentioned above, there will be no land acquisition and no physical displacement in the Project. The impacts are temporary in nature in terms of loss of crops 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 likely 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.

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VII. ENTITLEMENTS, ASSISTANCE AND BENEFITS

A. Entitlements

75. 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 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 case of land acquisition, RF stipulates the payment of compensation based on assessed replacement cost of land and structures and at current market rates for crops and trees**. In the instant case, no land acquisition is involved, only temporary damage will occur during construction of transmission lines for which compensation is paid as per relevant norms.**
76. 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. POWERGRID also gives skill development training/ distribution of equipments to physically handicapped people and also undertakes other developmental works in nearby project area under CSR. POWERGRID gives priority to the areas in the neighbourhood of its project areas for undertaking CSR activities. Vulnerable individuals are in general get benefitted from the CSR activities of POWERGRID. One time lumpsum assistance to vulnerable households on recommendation of State Authority POWERGRID will provide compensation to all APs including non-title holders as already mentioned in the Entitlement Matrix of CPTD.

B. Entitlement Matrix

77. An Entitlement Matrix for the subprojects is given in Table 7.1.

Table 7.1: Entitlement Matrix

S.No.	TYPE OF ISSUE/IMPACT	BENEFICIARY	ENTITLEMENT OPTIONS
1.	Loss of crops and trees	Owner	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.	Tenant loss of access by share croppers/ leaseholders to crops and /or trees	Tenant/ sharecropper/ leaseholder	Only the cultivator 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	Replacement cost as assessed by the concerned authority.
4.	Loss of structure		
	a) House		
(i)	with valid title, or customary or usufruct rights	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)	with valid title, or customary or usufruct rights	Individual	Cash compensation plus Rs. 10000/- 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[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 CSR activities .

C. Procedure of Tree/crop compensation

78. In exercise of the powers conferred by section 164 of the Electricity Act, 2003, Ministry of Power vide Gazette notification dated Dec 24, 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

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

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:

79. 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 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.

80. 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.

81. 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.

82. The Chitahs (Revenue record) 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 Chitahs 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 Power Grid Corporation to enable removal / damage to the standing tree/crop identified in the line corridor.

83. 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.

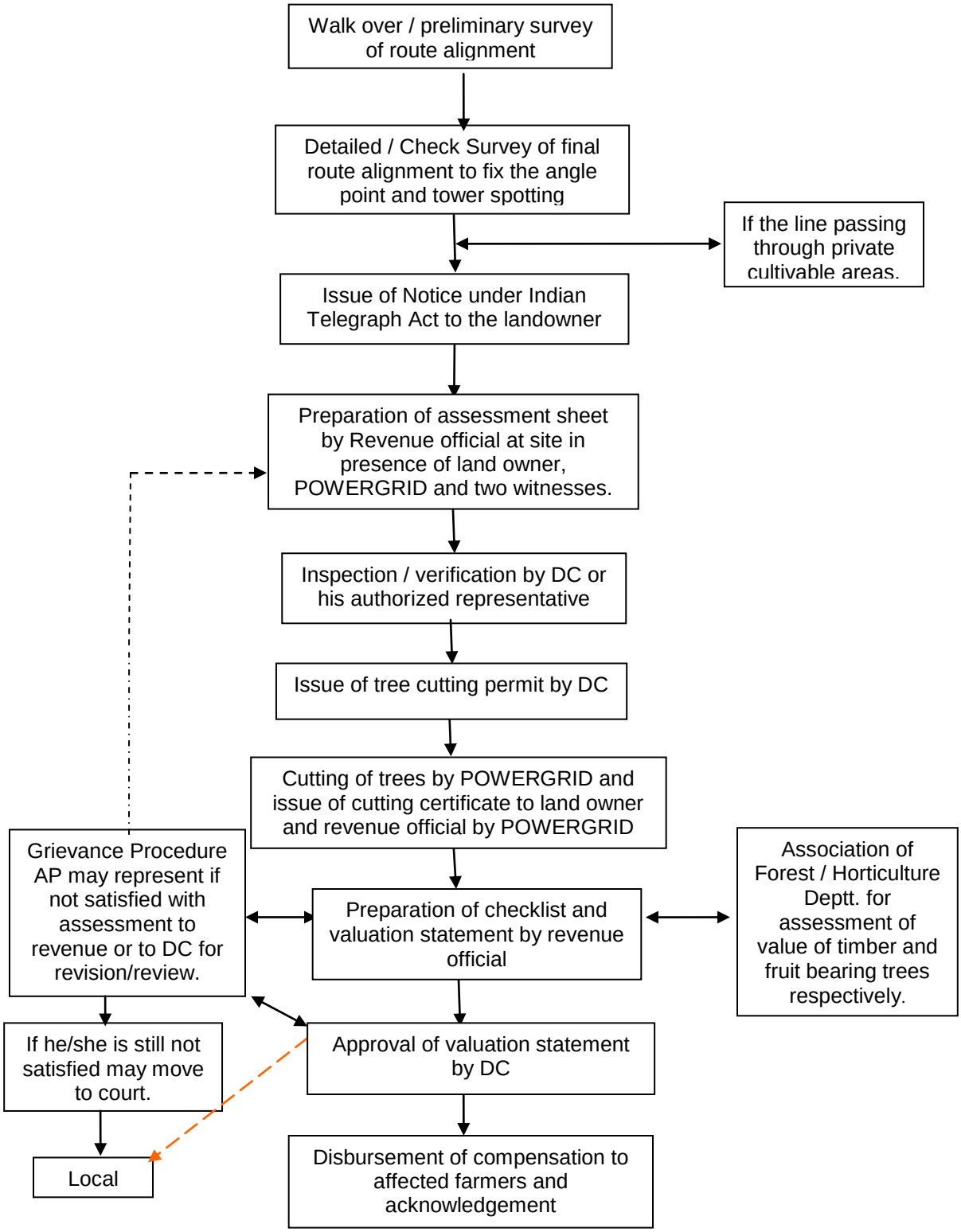
84. On approval of compensation, the revenue officer shall further intimate the amount payable to

the different land owners and POWERGRID arranges the payment by way of Demand Draft/cheques 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.

85. 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.

86. Process of tree/crop compensation is depicted in **Figure-2**.

Figure-2: Tree / Crop Compensation Process



VIII. COMPENSATION FOR STRUCTURE

87. 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 per entitlement matrix of CPTD shall be provided. In the present project, approx. 07 nos of structures (huts to keep agricultural produce) will be affected, which will not require displacement of any AP. The compensation for shifting the huts will be paid to the APs as assessed by the State Govt. 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.

IX. BUDGET

88. The resettlement cost estimate for the project includes eligible compensation for loss of crops, trees and huts/cattle sheds, 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 unit cost for the loss of crop has been derived from the 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, may any structure be 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). The total indicative cost is estimated to be INR 195.73 million equivalent to USD 3.26 million. Details are given in **Table 9.1**.

Table 9.1: Budget

Item	Unit	Unit Cost (INR)	Quantity	Amount (INR)	Amount in (Million INR)
A. Compensation					
A-1: Loss of Crops[6]	Hectare	76,162	1,540.784	117,349,191	117.35
A-2: Loss of Trees	Numbers	4,500	15,000	67,500,000	67.50
A-3: Loss of Huts/cattle Sheds	Numbers	100,000	7	700,000	0.70
Sub Total-A				**185,549,191**	185.55
B: Implementation Support Cost					
B-1: Man-power involved for SMP implementation & Monitoring	kilometers	10,000	372.732	3,727,320	3.73
B-2: External Monitoring if required	Lump sum			750,000	0.75
Sub Total- B				**4,477,320**	**4.48**
Total (A+B)				**190,026,511**	**190.03**
Contingency (3%)				5,700,795	5.70
Grand Total				**195,727,306**	**195.73**
Grand Total (USD)				**3,262,122**	**3.26**

Note:
1. Budget estimate is only indicative
2. **POWERGRID shall also implement need based Community Development Work under Corporate Social Responsibility (CSR) during/ after implementation of the project.**

[6] Area Likely to be affected and considered for compensation within 40 meter width/corridor is as follows
- Affected area for Crops (333.346 Km x 40 m = 1333.384 Ha.
- Addl. area affected for Tower Foundation = 186.6 Ha
- Affected area for Trees (Pvt. Plantation- 5.2 Km x 40 m) = 20.8 Ha.
- Total Area= 1540.784

X. INSTITUTIONAL ARRANGEMENTS

A. General

89. POWERGRID will be the Executing Agency (EA) for the Project. The implementation and monitoring are critical activities shall be followed as per Implementation Chart/Schedule. 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 and 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:

B. Various Levels

1. Corporate Level

90. 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 for expediting forest clearances and follow-ups with the Ministry of Power.
- Imparts training to POWERGRID's RHQs & Site Officials on environment and social issues and their management plan.

2. Regional Level

91. 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.

3. Site Office

92. At the Construction Area office (CAO) level, POWERGRID has made the head of the site responsible for implementing the Environmental and Social aspect of project and are termed as Environmental and Social Management Team (ESMT). Key functions of the ESMT are:

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

At site level, ESMT will be constituted for implementation and monitoring of CPTD.

93. 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 in **Table 10.1.**

Table 10.1: 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

Activity	Agency Responsible
Payment of replacement cost compensation	POWERGRID
Takeover temporary possession of land/houses	POWERGRID and Revenue Department
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	POWERGRID & Revenue officials

C. Staff Training on Environment and Social Issues

94. Environment and social Management Department (ESMD) in association with HRD organizes training program on Environment and Social Management (E & S M) including, Corporate Social Responsibility, ISO-14001 requirement. During FY 2013-14, POWERGRID have been imparted training more than 1100 Mandays on E & S aspects. 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 ABD'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.

XI. IMPLEMENTATION SCHEDULE

95. Assuming Award letter for execution of work to be placed in Dec'14 the following work Schedule is drawn for implementation of CPTD. Tentative implementation schedule for project including various sub tasks presented in **Table 11.1.**

Tentative Implementation Schedule

Table 11.1

Sl. No.	**Activity**	**2014**				**2015**				**2016**				**2017**			
		Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
1.	Initial CPTD Matrix disclosure																
2.	Detailed Survey																
3.	Public Consultation																
4.	**Compensation Plan**																
i)	Issue of Notice to APs																
ii)	Preparation of APs list																
iv)	List Finalisation																
v)	Assessment by Revenue Official																
vi)	Assessment disclosure																
vii	Compensation																

)	Payment																
5.	**Civil Works**																
6.	**Review/ Activity Monitoring**																
i)	Monthly																
ii)	Quarterly																
iii)	Half yearly																
iv)	Annual																
7	**Grievances**																
i)	Grievance redressel, if any																
8.	CPTD Documentation																
9.	Ext. Auditing, if required																

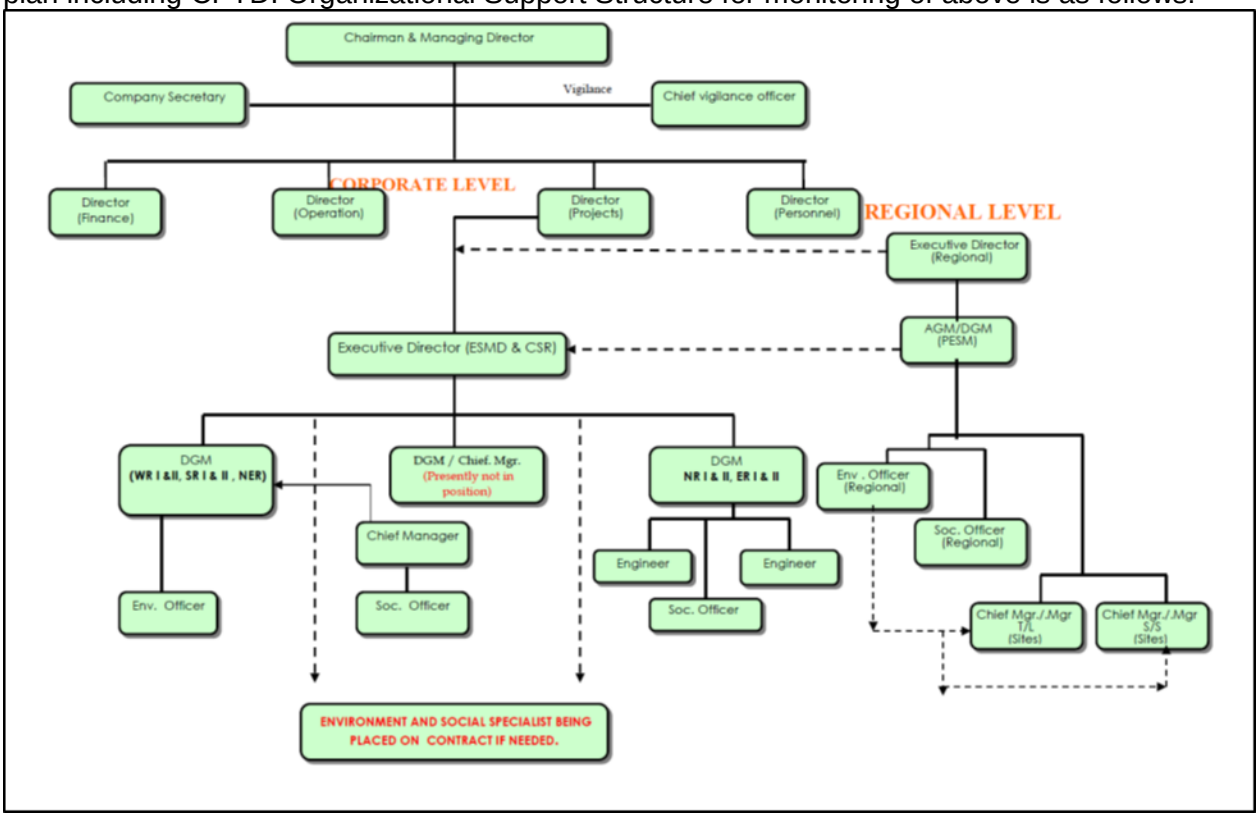
XII. MONITORING AND REPORTING

Monitoring will be the responsibility of POWERGRID. POWERGRID will submit semi-annual monitoring reports on their implementation performance.

96. Internal monitoring will be the responsibility of POWERGRID and its internal monitoring will include: (i) administrative monitoring: daily planning, implementation, feedback and trouble shooting, individual AP file 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 of the APs. Monitoring and reports documenting progress on compensation implementation of CPTD completion reports will be provided by POWERGRID to ADB for review semi annually.

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, if required.

POWERGRID is well equipped to implement and monitor its environment and social management plan including CPTD. Organizational Support Structure for monitoring of above is as follows:



ANNEXURE-1: EVALUATION OF ALTERNATE ROUTE ALIGNMENT

1. Evaluation of Alternative Route Alignment of Orai – Aligarh 765 kV D/C 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 these alternatives for the above line are given in the following **Table 1.3**:

Table 1.3: Alternative Route Alignment of Orai – Aligarh 765 kV D/C Line

S.No.	Description	Alternative-I	Alternative-II	Alternative-III
1.	**Route Particulars**			
i)	Length(Km)	320	352	360
ii)	Terrain	85 % Plain 15 % Undulations	80 % Plain 20 % Undulations	82 % Plain 18 % Undulations
2	**Environment & Social Details**			
i)	Name of District/District Detail (through which line passes)	Jalaun, Auraiya/ Etawah, Mainpuri, Etah, Firozabad, Hathras, Aligarh	Jalaun, Auraiya/ Etawah, Mainpuri, Etah, Firozabad, Hathras, Aligarh	Jalaun, Auraiya/ Etawah, Mainpuri, Etah, Firozabad, Hathras, Aligarh
ii)	Town in alignment (nearby)	Orai, Jalaun, Auraiya, Bharthana, Etawah, Karhal, Mainpuri, Giror, Jasrana, Poram, Awagarh, Nidholi, Kalan, Etah, Maho, Sasri, Iglas, Hathras, Khair, Aligarh	Orai, Jalaun, Auraiya, Bharthana, Fafood, Achalda, Karhal, Mainpuri, Sakit, Etah, Sikandra Rao, Akrabad, Khair, Aligarh	Orai, Jalaun, Auraiya, Bharthana, Fafood, Achalda, Karhal, Mainpuri, Sakit, Etah, Sikandra Rao, Akrabad, Khair, Aligarh
iii)	Forest Involvement in Ha/kms	9 Ha/ 1.34 kms	11 Ha/ 1.64 kms	12 Ha/ 1.79 kms
iv)	Type of forest	PF(Strip plantation along road & canal crossings)	PF(Strip plantation along road & canal crossings)	PF(Strip plantation along road & canal crossings)
v)	Density of forest	<0.5	<0.5	<0.5
vi)	No. of Towers	800	880	900
vii)	Affected Area for Temporary Damages (Ha)	1314.4	1445.84	1478.7
viii)	No of Structures	05	07	09
3.	**Compensation Cost (in Rs lakhs)**			
i)	Crop (Non-Forest)	1593.28	1751.79	1791.04
ii)	Forest (CA+NPV)	119.07	145.53	158.76
4.	**No. of Crossing (Nos.)**			
i)	Railway line	7	7	7
ii)	Power Line	38	42	44
iii)	River Crossing etc.	5	5	5
iv)	Highway Crossing (NH/SH)	15	15	16
5.	**Construction Problem**	Easy approach. Less forest Involvement, Minimum area for temporary damages.	Moderate Approach. More forest involvement. Moderate ROW problems, Comparatively more area for temporary	Maximum forest Involvement. Moderate ROW problem, Maximum area for temporary damages.

			damages.	
6.	**O&M Problem**	O & M shall be relatively easier due to better approaches.	O & M shall be difficult due to more undulations.	O & M shall be difficult due to more undulations.
7.	**Overall Remarks**	Easy accessibility less ROW problems & minimum forest involvement, Minimum area for temporary damages.	More forest involvement & moderate ROW problems, Comparatively more area for temporary damages.	Comparatively more forest involvement & moderate ROW problems, Maximum area for temporary damages.

Reasons for Selection of Final Route

From the above comparison of three different Alternatives, it is evident that the **Alternative-I** is the most suitable route as it involves minimum forest area, minimum temporary damages area, has relatively less ROW problem and also easily approachable. Hence **Alternative-I** has been found most suitable and selected for detailed survey.

2. Evaluation of Alternative Route Alignment of Orai – Orai (UPPTCL) 400 kV D/C 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 detail of these alternatives for the above line is given in the following **Table 1.4**:

Table 1.4: Alternative Route Alignment of Orai – Orai (UPPTCL) 400 kV D/C Line

S.No.	Description	Alternative-I	Alternative-II	Alternative-III
1.	**Route Particulars**			
i)	Length(Km)	38	39.5	40.5
ii)	Terrain	Plain	Plain & Hilly	Plain
2	**Environment & Social Details**			
i)	Name of District/District Detail (through which line passes)	Jalaun	Jalaun	Jalaun
ii)	Town in alignment (nearby)	Orai, Jalaun	Orai, Jalaun	Orai, Jalaun
iii)	Forest Involvement in Ha/kms	0.5 Ha/ 0.108 kms	0.5 Ha/ 0.108 kms	0.5 Ha/ 0.108 kms
iv)	Type of forest	PF(Strip plantation along road & canal crossings)	PF(Strip plantation along road & canal crossings)	PF(Strip plantation along road & canal crossings)
v)	Density of forest	<0.5	<0.5	<0.5
vi)	No. of Towers	95	99	102
vii)	Affected Area for Temporary Damages (Ha)	162.568	169	173.6
viii)	No of Structures	Nil	01	02
3.	**Compensation Cost (in Rs lakhs)**			
i)	Crop (Non-Forest)	189.46	196.96	201.96
ii)	Forest (CA+NPV)	6.61	6.61	6.61
4.	**No. of Crossing (Nos.)**			
i)	Railway line	1	1	1
ii)	Power Line	5	7	7
iii)	River Crossing etc.	Nil	Nil	Nil

iv)	Highway Crossing (NH/SH)	3	3	3
5.	**Construction Problem**	Easy approach. Less forest Involvement, Minimum area for temporary damages.	Moderate Approach. Moderate ROW problems, Comparatively more area for temporary damages.	Moderate Approach. Moderate ROW problem, Maximum area for temporary damages.
6.	**O&M Problem**	O & M shall be relatively easier due to better approaches.	O & M shall be difficult due to more undulations.	O & M shall be relatively easier due to better approaches.
7.	**Overall Remarks**	Less forest involvement, Minimum area for temporary damages.	Moderate ROW problems, Comparatively more area for temporary damages.	Moderate ROW problems, Maximum area for temporary damages.

Reasons for Selection of Final Route

From the above comparison of three different Alternatives, it is evident that the **Alternative-I** is the most suitable route as it involves less forest area, minimum temporary damages area, has relatively less ROW problem, minimum crossings. Hence **Alternative-I** has been found most suitable and selected for detailed survey.

3. Evaluation of Alternative Route Alignment of LILO of Agra-Meerut 765 kV S/C Line at Aligarh S/S

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 these alternatives for the above line are given in the following Table 1.5:

Table 1.5: Alternative Route Alignment of LILO of Agra-Meerut 765 kV S/C Line at Aligarh S/S

S.No.	Description	Alternative-I	Alternative-II	Alternative-III
1.	**Route Particulars**			
i)	Length(Km)	4.102	4.1055	4.395
ii)	Terrain	Plain	Plain	Plain
2	**Environment & Social Details**			
i)	Name of District/District Detail (through which line passes)	Aligarh	Aligarh	Aligarh
ii)	Town in alignment (nearby)	Khair	Khair	Khair
iii)	Forest Involvement in Ha/kms	0.4 Ha/ 0.059 kms	0.5 Ha/ 0.074 kms	0.6 Ha/ 0.089 kms
iv)	Type of forest	PF(Strip plantation along road & canal crossings)	PF(Strip plantation along road & canal crossings)	PF(Strip plantation along road & canal crossings)
v)	Density of forest	<0.5	<0.5	<0.5
vi)	No. of Towers	11	11	11
vii)	Affected Area for Temporary Damages (Ha)	18.372	18.326	19.424
viii)	No of Structures	01	02	02

3.	**Compensation Cost (in Rs lakhs)**			
i)	Crop (Non-Forest)	20.21	20.15	21.53
ii)	Forest (CA+NPV)	5.29	6.61	7.93
4.	**No. of Crossing (Nos.)**			
i)	Railway line	Nil	Nil	Nil
ii)	Power Line	4	4	4
iii)	River Crossing etc.	Nil	Nil	Nil
iv)	Highway Crossing (NH/SH)	1	1	1
5.	**Construction Problem**	Less forest Involvement, Easily approachable.	More forest Involvement, Easily approachable, Involvement of more structures.	Maximum forest Involvement, Difficult approach, Maximum area for temporary damages.
6.	**O&M Problem**	O & M shall be easy.	O & M shall be easy.	O & M shall be easy.
7.	**Overall Remarks**	Less forest involvement	More forest Involvement. Involvement of more structures.	Maximum forest Involvement, Maximum area for temporary damages.

Reasons for Selection of Final Route

From the above comparison of three different Alternatives, it is evident that the **Alternative-I** is the most suitable route as it involves minimum forest area and is easily approachable, less affected area for temporary damages. Resettlement is not involved, alternative route have been selected avoiding populated area. Hence **Alternative-I** has been found most suitable and selected for detailed survey.

4. Evaluation of Alternative Route Alignment of LILO of Kanpur – Jhatikara 765 kV S/C Line at Aligarh S/S

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 these alternatives for the above line are given in the following Table 1.6:

Table 1.6: Alternative Route Alignment of LILO of Kanpur – Jhatikara 765 kV S/C Line at Aligarh S/S

S.No.	Description	Alternative-I	Alternative-II	Alternative-III
1.	**Route Particulars**			
i)	Length(Km)	10.631	10.893	10.802
ii)	Terrain	Plain	Plain	Plain
2	**Environment & Social Details**			
i)	Name of District/District Detail (through which line passes)	Aligarh	Aligarh	Aligarh
ii)	Town in alignment (nearby)	Khair	Khair	Khair
iii)	Forest Involvement in Ha/kms	0.8 Ha/ 0.119 kms	0.9 Ha/ 0.134 kms	1.0 Ha/ 0.149 kms
iv)	Type of forest	PF(Strip plantation along road & canal crossings)	PF(Strip plantation along road & canal crossings)	PF(Strip plantation along road & canal crossings)
v)	Density of forest	<0.5	<0.5	<0.5
vi)	No. of Towers	27	28	28
vii)	Affected Area for	45.444	48.636	48.212

	Temporary Damages (Ha)			
viii)	No of Structures	01	02	02
3.	**Compensation Cost (in Rs lakhs)**			
i)	Crop (Non-Forest)	52.56	53.79	53.26
ii)	Forest (CA+NPV)	10.58	11.907	13.23
4.	**No. of Crossing (Nos.)**			
i)	Railway line	Nil	Nil	Nil
ii)	Power Line	5	5	5
iii)	River Crossing etc.	Nil	Nil	Nil
iv)	Highway Crossing (NH/SH)	1	1	1
5.	**Construction Problem**	Less forest Involvement, Minimum area for temporary damages.	More forest Involvement, Maximum area for temporary damages.	Maximum forest Involvement, Comparatively more area for temporary damages.
6.	**O&M Problem**	O & M shall be easy.	O & M shall be easy.	O & M shall be easy.
7.	**Overall Remarks**	Less forest involvement, Minimum area for temporary damages.	More forest Involvement, Maximum area for temporary damages.	Maximum forest Involvement, Comparatively more area for temporary damages.

Reasons for Selection of Final Route

From the above comparison of three different Alternatives, it is evident that the **Alternative-I** is the most suitable route as it involves minimum forest area, minimum temporary damages area, and is easily approachable. Resettlement is not involved, alternative route have been selected avoiding populated area. Hence Alternative**-I** has been found most suitable and selected for detailed survey.

ANNEXURE 2: COMPARISON OF ADB'S SPS, 2009 WITH ESPP AND RFCTLARR ACT, 2013

Sl. No.	Principle	ADB's SPS 2009	ESPP	RFCTLARR Act, 2013	Remarks with reference to new RFCTLARR Act, 2013
1	Involuntary resettlement should be avoided wherever possible	✓	✓	✓	Preamble of the act itself envisages least disturbance to affected families, thus upholding principle of avoiding all avoidable involuntary resettlement.
2	Minimize involuntary resettlement by exploring project and design alternatives	✓	✓	✓	Act has introduced a new domain of pre-notification phase, wherein SIA has to be carried on by Independent SIA team and appraised by Expert Committee and concerned government (Sec. 7 & 8). Two criteria on which report is to be appraised are: a) Absolute bare minimum land to be taken; b) Least displacing option within all the alternatives has been chosen.
3	Conducting census of displaced persons and resettlement planning	✓	✓	✓	Sec. 16(1) of Act provides for Administrator of R&R to undertake a census and prepare R&R Scheme.
4	Carry out meaningful consultation with displaced persons and ensure their participation in planning, implementation and monitoring of resettlement program	✓	✓	✓	Act orchestrates a multilayered mechanism of public consultation for ensuring public participation from planning stage. **Relevant sections for Public Consultation**: Sec. 4(1), 5 ,16(5) **Relevant Sections for Public hearing** 45 (2) 48(1) & 50(1)
5	Establish grievance redress mechanism	✓	✓	✓	**Grievance Redressal during Planning** Introduction of provisions like consent of owners & Public hearing at SIA & R&R Stage stipulates in- built grievance redressed mechanism. **Post Planning Grievance Redressal** Sec. 51(1)- Establishment of LARR authority Sec. 45 (I) – R&R Committee for projects above 100 acre for monitoring of R&R provisions.
6	Support the social and cultural institutions of displaced persons and their host population.	✓	✓	✓	Sec. 4 (5) – Assessment of social and cultural institutions Sec.4 (6) - Social Impact Management Plan to be prepared to address adverse impacts.

Sl. No.	Principle	ADB's SPS 2009	ESPP	RFCTLARR Act, 2013	Remarks with reference to new RFCTLARR Act, 2013
					Sec. 16 – Preparation of draft R&R scheme Schedule-3- Provision of infrastructure amenities
7	Improve or at least restore the livelihoods of all displaced persons	✓	✓	✓	Preamble of the said Act envisages restoration of livelihood as one of the guiding principle. Mechanism evolved for calculation of enhanced compensation coupled with provisions of jobs, annuity, land for land option are meant to attain these objectives.
8	Land based resettlement strategy	✓	✓	✓	Land for land mechanism is an integral part of act which makes it mandatory for irrigation project and STs
9	All compensation should be based on the principle of replacement cost	✓	✓	✓	Replacement cost has not been defined anywhere and given the volatility of free market it is difficult to pinpoint the exact replacement cost. However, the Act has devised a mechanism of calculating compensation (up to 4 times in rural area and 2 times in urban areas) coupled with R&R Provisions shall fill the gap if any between market price and replacement cost.
10	Provide relocation assistance to displaced persons	✓	✓	✓	Each affected family is to be given one time Resettlement Allowance of Rs. 50,000/-
11	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.	✓	✓	✓	▪ Agricultural labour, tenants, share croppers, artisans or other people losing primary source of livelihood have also be considered affected family ▪ Squatters have also been recognized and benefited by the act
12	Disclose the resettlement plan, including documentation of the consultation in an accessible place and a form and language(s) understandable to affected persons and other stakeholders.	✓	✓	✓	Sec. 19 (4) – Discloser of R&R Scheme along with records of public hearing to be put in public domain by uploading on specified website as well as placement in Panchayat/ Municipality in **vernacular language**.
13	Conceive and execute involuntary resettlement as part of a development project or program. Include the full costs of resettlement in the presentation of project's costs and benefits.	✓	✓	N. A. (Being a act)	Current provision of ESPP mandatorily provides for cost of R&R to be part of project cost. Cost of LA & R&R are envisaged at feasibility stage itself and budgeted accordingly.
14	Pay compensation and	✓	✓	✓	Sec. 38 (1) – Act restrains any

Sl. No.	Principle	ADB's SPS 2009	ESPP	RFCTLARR Act, 2013	Remarks with reference to new RFCTLARR Act, 2013
	provide other resettlement entitlements before physical or economic displacement.				possession of land till the compensation and monetary part of R&R award has been deposited in beneficiary's bank account.
15	Monitor and assess resettlement outcomes, their impacts on the standards of living of displaced persons.	✓	✓	✓	Sec. 44 (3) – Provision of post implementation social audit by R&R Commissioner Sec. 45 – Rehabilitation & Resettlement Committee to carry out post implementation social audit in consultation with Gram Sabha / municipality. However, ESPP mandates for carrying out Impact Assessment of implementation of RAP after 2-3 years of its implementation to ascertain whether intended objectives have been achieved.