

SFG2380

Environment and Social Management Framework for Power Transmission and Distribution

Andhra Pradesh

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Acronyms and Abbreviations

ADE	Assistant Divisional Engineer
AE	Assistant Engineer
AP	Andhra Pradesh
APEPDCL	Andhra Pradesh Eastern Power Distribution Company Limited
APERC	Andhra Pradesh Electricity Regulatory Commission
APLMA	Andhra Pradesh Land Management Authority
APPPCB	Andhra Pradesh Pollution Control Board
APSDCL	Andhra Pradesh Southern Power Distribution Company Limited
APTRANSCO	Transmission Corporation of Andhra Pradesh Limited
BSNL	Bhartiya Sanchar Nigam Ltd
CBO	Community Based Organisation
CE	Chief Engineer
CEA	Central Electricity Authority
CGRF	Consumer Grievance Redressal Forum
CMVR	Central Motor Vehicle Rules
CMVR	Central Motor Vehicle Rules
CPCB	Central Pollution Control Board
CPRI	Central Power Research Institute
CPTD	Compensation Plan for Temporary Damages
CRZ	Coastal Regulation Zone
DC	District Collector
DE	Divisional Engineer
EE	Executive Engineer
EEE	Electrical and electronic equipment
EMF	Environment Management Framework
EPA	Environment Protection Agency
ESMF	Environment Social Management Framework
GAP	Gender Action Plan
GHG	Green House Gas
GIZ	German Development Corporation
GoAP	Government of Andhra Pradesh
GoI	Government of India
HVDS	High Voltage Distribution System
LVDS	Low Voltage Differential Signalling

MOEF	Ministry of Environment and Forests
MoP	Ministry of Power
MoU	Memorandum of Understanding
MRO	Mandal Revenue Officer
MVA	The Motor Vehicles Act
NGO	Non-Government Organisation
NOC	No Objection Certificate
PCB	Polychlorinated Biphenyls
PCCF	Principal Chief Conservator of Forests
PESO	Petroleum and Explosives Safety Organisation
PF	Provident Fund
PIUs	Project Implementation Unit
PTCC	Power & Telecommunication Coordination Committee
R&R	Rehabilitation and Resettlement
RFCTLARRA	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act
ROW	Right of Way
RPF	Resettlement Policy Framework
RWAs	Resident Welfare Association
SAPIO	State Asst. Public Information Officers
SC	Scheduled Caste
SE	Superintendent Engineer
SF6	Sulfur Hexafluoride
SIA	Social Impact Assessment
SPCB	State Pollution Control Board
SPIO	State Public Information Officer
ST	Scheduled Tribe
T&D	Transmission and distribution
TPP	Tribal People Plan
TPPF	Tribal Peoples Planning Framework
ULBs	Urban Local Bodies

1. Executive Summary

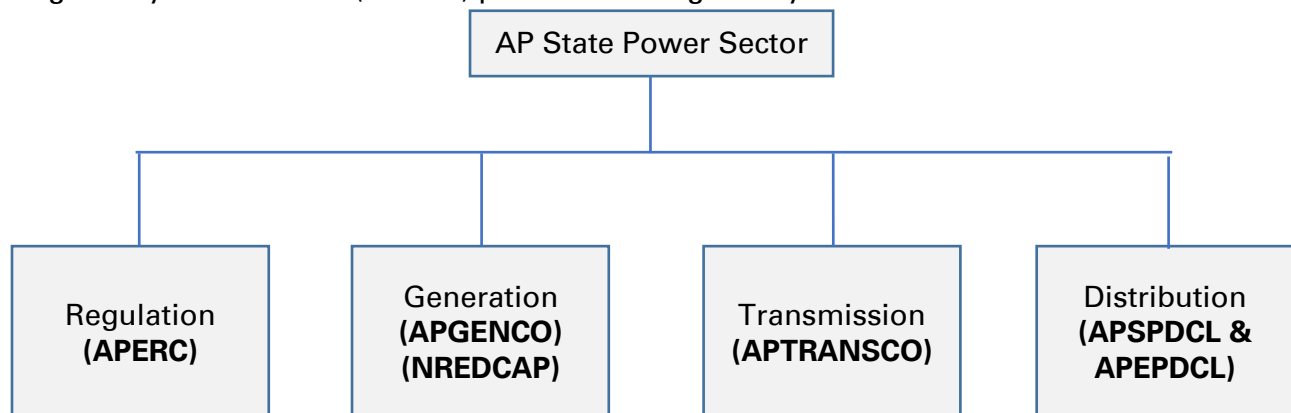
Project Context

Andhra Pradesh is one of the states in the country where the 24X7 Power for All programme is being implemented. This program was created to ensure 24x7 quality, reliable and affordable power to all domestic, commercial and industrial consumers within a fixed time frame. Further, the program also aims to ensure all unconnected households be provided access to electricity in a phased manner by March 2017.

The Government of Andhra Pradesh (GoAP), through the Government of India (GoI), has approached the World Bank for financial and technical support.

Power Sector in Andhra Pradesh and Implementation Arrangements

The power sector in Andhra Pradesh comprises four key state owned enterprises to focus on the core operation power generation – Andhra Pradesh Power Generation Corporation Ltd. (APGENCO), power transmission, The Transmission Corporation of Andhra Pradesh (APTRANSCO) and distribution (Southern Power Distribution Company of Andhra Pradesh Ltd. (APSPDCL) and Eastern Power Distribution Company of Andhra Pradesh Ltd. (APEPDCL). These are corporatized entities with their own boards. The state also has New and Renewable Energy Development Corporation of Andhra Pradesh Ltd. (NREDCAP) to promote renewable energy deployment in the state. Lastly, Andhra Pradesh Electricity Regulatory Commission (APERC) provides the regulatory overview to the sector.



The proposed investments under the World Bank funded project will be implemented by APTRANSCO, APSPDCL and APEPDCL. These are corporatized entities with their own board. The details of the investments are provided below:

A) Proposed Investments for APTRANSCO

A tentative list of twelve schemes have been identified for proposed World Bank funding. A total investments to the tune of INR 682.09 crore was identified for the following:

- Construction of Substations and erection of 132 KV or 220 KV radial line
- Augmentation of power transformers;
- Testing instruments (13 sets);
- Purchase of tower spotting software;
- Purchase of design licenced software and earthing software;
- Trainings

The tentative long list of transmission schemes that have been identified for World Bank funding are provided below:

Sl. No.	Name of the Sub-station	Connected lines	Line Length	District	Site Status
Package-I					
1.	132/33kV SS Mummidivaram	Erection of LILO of 132kV Ramachandrapuram - Amalapuram to proposed Mummidivaram	8kM	East Godavari	Site available in existing 33kV SS,
2.	132kV SS Gollapalem	Erection of 132kV DC line for making LILO of 2nd circuit of 132kV Kakinada – Yanam line to the proposed 132/33 kV Gollapalem SS	6 kM	East Godavari	Site available in existing 33kV SS,
		Stringing of 2nd circuit on existing 132kV Kakinada – Yanam DC/SC Line	42kM		
3.	220/33kV SS Korukonda	Making LILO of 2nd ckt of 220kV Bommur – Rampachodavaram line to proposed 220/33kV SS Korukonda	1 kM	East Godavari	Site available
		Stringing of 2nd ckt on existing 220kV Bommur – Rampachodavaram line	67kM		
4.	132/33kV SS at Jaggampet	Erection of 132kV DC radial line from 220/132kV SS Samarlakota to the proposed 132/33kV Jaggampet SS	20kM	East Godavari	Identification of Government land for the substation is under process
Package-II					
5.	132kV SS Kothapalli (Gudipala)	132kV DC radial line from 132kV Noonegundlapalli Switching station to the proposed 132/33 kV Kothapalli SS	25kM	Chittoor	Site available in existing 33kV SS,

Sl. No.	Name of the Sub-station	Connected lines	Line Length	District	Site Status
6.	132kV SS Penumur	Erection of 132kV DC radial line from proposed 132/33kV Pachikapallam to the proposed 132/33 kV Penumur SS	20kM	Chittoor	Identified Govt. Land
		2nd circuit stringing on 132kV DC/SC Line from 220/132kV SS Nagari to 132kV SS Pachikapallam	40kM		
7.	132kV SS T.Sundupalli	Erection of 132kV DC radial line from 132/33kV SS Rayachoti to the proposed 132/33kV SS T. Sundupalli	20kM	YSR	Identification of Government land for the substation is under process
8.	132kV SS Satellite City	Erection of 132kV DC radial line from 220/132kV SS Chinakampalli to the proposed 132/33kV SS Satellite city	30kM	YSR	Request letter submitted to Zonal Manager, APIIC, Kadapa for 15 Acres of land near Vogivemana University
Package-III					
9.	132kV SS Kadivedu	Erection of 132kV DC radial line from 400/220/132kV SS Manubolu to the proposed 132/33 kV Kadivedu substation	25kM	Nellore	Site available, 5.00 Acres, Sy.No.85/2, Kadivedu(V), Chillakuru(M)
10.	132/33kV SS Mylavaram	Erection of 132kV DC radial line from 220/132kV SS Kondapalli to the proposed 132 kV Mylavaram SS	25kM	Krishna	Site available in existing 33kV SS,
11.	132kV SS Chinarikatla	Erection of 132kV DC radial line from 220/132kV SS Podili to the proposed 132/33kV ChinarikatlaSS	26kM	Prakasam	Identified Govt. Land
12.	132kV SS East Gangavaram	Erection of 132kV DC radial line from 220/132kV SS Podili to the proposed 132/33kV East Gangavaram SS	21kM	Prakasam	Identified Govt. Land

B) Proposed Investments for APSPDCL and APEPDCL

The tentative distribution schemes identified for World Bank are provided in the following table. The total investments are estimated to be INR 2490 Cr for APSPDCL and INR 1032 Cr for APEPDCL.

S.No.	Component	Component Description
1.	High Voltage Distribution System (HVDS)	<ul style="list-style-type: none"> HVDS aims at reduction of losses in distribution through replacement of the low voltage distribution network (LVDS) with HVDS and the installation of a large number of smaller capacity distribution transformers – 25 KVA or 16 KVA in place of higher capacity distribution transformers – 100 KVA or 63 KVA for supply to agricultural consumers. This system is best suited to meet the scattered low density loads observed in rural areas
2.	Energy Efficient Pump Sets	<ul style="list-style-type: none"> Replacement of existing pump sets with 5 star BEE rated energy efficient pump sets would result in energy conservation and increased pumping efficiency Energy efficient pump sets to be installed on pilot basis
3.	Remote ON/OFF starters:	<ul style="list-style-type: none"> Remote starters/Electric Smart Control Panel would provide facility ON/OFF operation remotely by using SMS/phone call. This would also provide protection to the devices due to under voltage, over voltage, dry run, single phasing etc. It is proposed to install remote starters for pump sets
4.	Smart Metering	<ul style="list-style-type: none"> A smart meter records consumption of electric energy in hourly intervals or blocks and communicates information back to the utility for monitoring and billing. Smart meters enable two-way communication between the meter and the central system Smart meters for urban consumers
5.	SCADA	<ul style="list-style-type: none"> The SCADA/DMS System will provide real time monitoring and control, loss minimization/loss balancing and considerable improvement in voltage/VAR profiles. It would also facilitate proper handling of loads while load shedding & restoration, efficient planning of network for future growth by using proven power system planning tools Scheme consists of installation of Remote Terminal Units (RTU) at each 33/11 KV substation and integration of these RTUs with centralized control center to manage the Distribution system of the town SCADA to be implemented in balance sub-stations of Vishakhapatnam and Vijayawada which have not been covered under R-APDRP/IPDS
6.	UG Cabling and Covered Conductors	<ul style="list-style-type: none"> AP is exposed to cyclones, storm surges, floods and droughts and every two or three years, AP experiences a moderate to severe intensity cyclone or landfall. According to an estimate by the Dept. Of Disaster Management, GoAP, about 44% of the state is vulnerable to tropical storms and related hazards. Placing power lines underground eliminates their susceptibility to lightning and wind damage UG cabling would be provided in important pilgrim and tourist towns

7	Distribution Substations	<ul style="list-style-type: none"> • New 33/11 KV indoor substations, GIS substations and new 33/11 KV outdoor substations are proposed
8.	Technical Assistance (TA)/Capacity Building	<ul style="list-style-type: none"> • TA will be essential for effective implementation of proposed investments. TA support is required for overall institutional development, capacity building and governance improvement as well as some specific areas like strengthening and improving Project Planning and implementation, business processes and accountability systems, corporate governance and financial management practices and human resource development

Environment and Social Management Framework (ESMF)

While the projects and sub-projects proposed for World Bank funding have been identified, the final project sites and the alignment of the transmission and distribution lines will be concluded after detailed design is prepared. In this context, this Environment and Social Management Framework has been developed to manage and mitigate any potential negative impacts that may arise as a result of the proposed projects. The ESMF provides the utilities with a procedure for determining the appropriate level of environmental and social assessment required for the sub-projects. Further, it guides the utilities in preparing the necessary environmental and social mitigation measures for the sub-projects during the pre-construction, construction, operations and maintenance phases.

The objectives of ESMF are as follows:

- Identify potential social and environmental impacts of the proposed project activities
- Ensure compliance with applicable national and local guidelines
- Ensure compliance with World Bank safeguard policies
- Minimize the potential adverse impacts and maximize the potential positive impacts of the proposed investments
- Lay down the procedure for preparing investment specific environment and social management plan

Methodology

The ESMF has been prepared on the basis of environmental and social assessments which involved gathering of data through both primary and secondary sources. This included consultations with key stakeholders as well as desk research. The steps followed in developing the ESMF are provided below:

- Establishment of the social and environment baseline through desk research
- Defining the legal / regulatory framework that will influence implementation of the proposed projects and sub-projects
- Identification of the area of influence of the proposed projects
- Identification the social and environmental impacts
- Defining the mitigation methods to manage the social and environmental impacts
- Establishing the grievance redressal mechanism

- Defining the monitoring plan to oversee the implementation of social and environment management and mitigation methods
- Preparing the gender action plan (GAP), tribal people planning framework (TPPF) and the resettlement policy framework (RPF)
- Identifying the training requirements at the utility level, for undertaking the social and environment assessments and implementing the mitigation measures
- Providing an estimated budget to undertake the provisions of the ESMF
- Describing a process to integrate project affected people's opinion and concerns in the environment and social management plans through consultations

Andhra Pradesh Baseline information

The present-day state of Andhra Pradesh, lies between 12°41' and 22°N latitude and 77° and 84°40'E longitude and covers an area of 1,62,760 Sq. Km. making it the 8th largest state in the country.

Of the total land area, 38.31% of the State's geographical area is under net area sown (62.35 lakh hectares), 22.51% under forest (36.63 lakh hectares), 8.61% under current fallow lands (14.01 lakh hectares), 12.30% under land put to non-agricultural uses (20.02 lakh hectares), 8.30% under barren and uncultivable land (13.51 lakh hectares) and remaining 9.97% is under other fallow land, cultivable waste lands like permanent pastures and other grazing lands and land under miscellaneous tree crops and groves are not included in the net area sown.

Andhra Pradesh is popularly referred to as a "River State". Nearly 75% of the State territory is covered by the basins of three major rivers - Godavari, Krishna and Pennar and their tributaries. In addition, there are 17 other rivers like Sarada, Nagavali, Musi and other streams.

Andhra Pradesh has a population of 4.94 Crore (4.08% of India's population) and a population density of 304 persons per Sq. Km. There are 126.65 Lakh households in the State and the average size of the household is 3.95. Andhra Pradesh is still largely rural with 70.42% of the total population living in rural areas and only 29.58% living in urban areas.

Of the total population Scheduled Cates (SC) constitute 17.10% and Scheduled Tribes (ST) 5.33%. Prakasam is the district with the highest SC population (7.88 lakh) while Vizianagaram has the lowest (2.47 Lakh). Visakhapatnam is the district with the largest concentration of STs with 14.42% of the total ST population, while Kurnool with 2.04 percent has the lowest concentration.

Stakeholder Analysis

The purpose of a stakeholder analysis is to identify the various stakeholder groups that can affect or can directly/indirectly be affected by project activities. Key stakeholder groups include: a) Government and regulatory agencies; b) Multilateral agencies such as the World

Bank and Asian Development Bank; c) Power sector utilities in Andhra Pradesh; d) Different government departments like Revenue Department at state and district level; e) Panchayats and municipal corporations at the village/city level; f) Public and Private sector companies like BSNL and Reliance; g) Non-government organisations (NGOs), community based organisations (CBOs) like resident welfare associations and informal groups like women's group, farmer's group; h) Commercial and residential complexes and communities which constitute end-beneficiaries; and i) vulnerable groups like women, small farmers, scheduled tribes and scheduled castes.

The analysis further maps the relationship between the stakeholder groups; defines their roles, responsibilities and interest in the project; and highlights the key expectations / concerns these stakeholders have with respect to the planned investments. The key expectations and issues and concerns that emerged from the stakeholder analysis have been summarized below:

Environmental Aspects

- Ensuring environmentally sensitive and fragile lands are not allotted to the project and protection of forest land and wildlife habitats
- In situations where the use of forest land is unavoidable, ensuring that all relevant clearances are taken and compensation is paid as per National or State laws.
- Ensuring that irrigation canals, tanks, and / or water bodies are not damaged or polluted in any way by construction activities
- Ensuring that water ways are not blocked
- Minimization of disturbances during construction including noise and air pollution
Ensuring there is no danger to wildlife and adequate protection in form of fencing of substations and electrical towers / lines to prevent accidents
- Ensuring health and safety of workers during construction and maintenance

Social Aspects

- Ensuring reliable power supply to end users and minimizing transmission and distribution losses
- Ensuring land and right of way is secured in a transparent and fair manner and that the minimum required land is used for projects
- Ensuring that rehabilitation and resettlement is avoided wherever possible and if unavoidable is handled as per relevant National / State Policies
- Ensuring that the community is consulted
- Ensuring that rights of tribal people and other vulnerable groups are protected and that they participate in the benefits of the project
- Ensuring that compensation is paid for temporary damage to land, crops, trees or structures during construction

- Ensuring adequate compensation for land and tower footing is paid as per regulations
- Ensuring there is minimal disturbance to public during construction due to blocking of access roads, damage to roads / highways etc.
- Ensuring safety of community during construction phase
- Ensuring the projects do not cause any disruption to the exiting communication networks of telecommunication companies, railways and defence

Social and Environment Impacts

The positive and negative environment and social impacts of the proposed projects on the stakeholder groups identified above are mapped. The major impacts are listed below:

Positive Social Impacts

- Improved and reliable power supply
- Increased social inclusion
- Improved quality of life
- Increased economic activity
- Employment Creation

Negative Social Impacts

- Loss of land
- Restricted use of land and concerns regarding right of way (RoW)
- Change in land use
- Reduction in value of land
- Impact on community health and safety due to exposure to electromagnetic fields, exposure to hazardous material and threat of electric shocks
- Impact on workers' health and safety due to contact with live power lines, working at height, and exposure to electromagnetic fields and chemicals
- Impact on vulnerable population like women, SCs, STs and minorities due to loss of livelihood, farm land and security issues during the pre-construction and construction phase
- Threat of damage to buildings and artefacts of cultural and historical importance during the construction phase
- Interference with communication channels (including railway signalling, defence communication and telecommunication services) due to mutual induction with electric current in live wires

Positive Environment Impacts

- Availability of power could lessen the demand for natural resources like firewood, charcoal etc. resulting in conservation/protection of forest/vegetation.

Negative Environment Impacts

- Clearing of trees within Right of Way (ROW)
- Negative impact on aesthetic appeal of an area
- Soil and water contamination due to unscientific disposal of used transformer oil
- Used lead acid battery is a pollutant and therefore its improper handling & disposal may lead to contamination of soil and water.
- The electrical and electronic equipment (EEE) have hazardous/toxics substances in their components, which may cause harm/pose risk to health and environment during handling after its expiry & full usage.
- Mishandling and leakage of SF6 gas can lead to its escape into the atmosphere contributing to global warming.

Policy, Legal and Regulatory Framework

The management and mitigation of the social impacts identified above will be carried out in accordance with relevant national laws, rules and policies. In addition, the requirements of multilateral funding agencies are also considered in the management procedures for addressing environmental and social issues.

The World Bank Operational Policy 4.01 classifies projects into one of three assessment categories A, B and C, depending on the type, location, sensitivity and scale of the project and the nature and the magnitude of its potential environmental and social impact:

- (i) Category "A" projects potentially cause significant and irremediable impacts
- (ii) Category "B" projects typically result in lesser impacts, which are often remediable or can be mitigated
- (iii) Category "C" projects have little or no adverse impact

The proposed investments include the construction of transmission and distribution substations which involves securing of land for construction. If this results in involuntary acquisition and resettlement and rehabilitation of people, then there could be significant negative impacts. However, of the 12 transmission substations proposed to be erected, existing government land has been identified for 9 substations and for the remaining 3, APTRANSCO is in the process of identifying government land. For the proposed distribution substations, the land requirement is only 0.5 acres and the utilities will endeavour to secure existing government land for their construction. Where government land is not available, land will be purchased on willing buyer willing seller basis and no physical or economic displacement of people is envisaged. As neither the proposed transmission nor proposed distribution projects seem to create any other significant negative social or environmental impact, the investment can be classified as "Category B".

The World Bank Operational Polices that need to be considered are OP- 4.01 covering Environmental Assessment; OP- 4.04 on Natural Habitats; OP- 4.10 for Indigenous Peoples; OP-4.11 on Physical Cultural Resources (PCR); OP-4.12 dealing with Involuntary Resettlement; and OP-4.36 related to Forests. Additionally, World Bank Source Book on Involuntary Resettlement states that for RoW in power transmission projects, local laws and regulations would determine the constraint on use of land.

The constitutional provisions ensuring social and environmental safeguards are as follows:

Acts/Rule/Policy	Objective	Applicability to this project
5 th Schedule of Constitution (Article 244)	Provides for the administration and control of Scheduled Areas and Scheduled Tribes. Article 244(1) and Article 244 (2) of the constitution of India enables the government to enact separate laws for governance and administration of the tribal areas. In pursuance of these articles, President of India had asked each of the state to identify tribal dominated areas. Areas thus identified by the states were declared as Fifth schedule areas	For approvals and securing land for sub-projects (transmission lines and towers) passing through Scheduled Areas [As of now, none of the proposed projects are located in Scheduled Areas]
73 rd Amendment of Constitution, 1992	Enables participation of Panchayat level institutions in decision-making and supporting preparation and implementation of development schemes.	For any sub-project located in panchayat area
74 th Amendment of Constitution, 1992	Enables participation of Urban local bodies like municipalities and municipal corporation in decision-making and supporting preparation and implementation of development schemes.	For any sub-project located in urban area
Panchayats (Extension to Scheduled Areas) Act, 1996	The provisions of PESA Act extends the provisions of Part IX of constitution relating to Panchayats to the Scheduled Areas. As per the provisions, every village in Schedule V areas will have a Gram Sabha which would approve the plans, programmes and projects for social and economic development before any such plans, programmes and projects are taken up for implementation at village level.	For approval of any sub-project located in Scheduled Areas

Social Policies:

The social polices applicable to the proposed projects are provided below:

	Act / Rules / Policies	Applicability
1	The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act (RFCTLARRA), 2013**	<p>If any involuntary land acquisitions are undertaken to secure land for projects they will fall under the purview of The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act (RFCTLARRA), 2013. The act puts the onus on the State Government to ensure that there is a legitimate and bona fide public purpose which necessitates the acquisition and that the potential benefits of the project outweigh the social costs to the affected populations. The responsibility of the utilities is restricted to selecting the site for substations and requesting for land to be secured. The RFCTLARRA, 2013 makes it mandatory for the State Government to carry out a Social Impact Assessment (SIA) and publicise the findings through public hearings. Further, the Act outlines the criteria for determining compensation to be given for the land acquired and requires that Rehabilitation and Resettlement (R&R) Awards are provided for each affected family. The awards are also to be made public ensuring transparency in the process.</p> <p>Details of compensation and R&R entitlements are provided in the table below and figure 1 provides an overview of the process to be followed.</p>
2	Andhra Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Rules, (A.P. RFCTLARRR) 2014	<p>These rules have been notified by the Government of Andhra Pradesh in exercise of the powers conferred by Section 109 of the RFCTLARRA, 2013. The rules specify:</p> <ul style="list-style-type: none"> (i) Process for carrying out the Social Impact Assessments (SIAs) (ii) Institutional Support for SIAs (iii) Other guidelines for carrying out the SIAs (iv) Process for conducting public hearings (v) Declaration of Awards and Compensation <p>As per Chapter V Sections 25, 26 and 27 of the A.P. RFCTLARRR 2014, awards and compensations are in line with the provisions of the RFCTLARRA, 2013. Section 28, further specifies the following that were to be notified by the State Government:</p> <ul style="list-style-type: none"> (a) The multiplication factor mentioned in RFCTLARRA, 2013 is set at 1.25 for rural areas other than scheduled areas and 1.50 for scheduled (tribal) areas (b) The one-time grant to artisan, small traders and certain others is set at INR 25,000 (c) The payment of compensation shall be made expeditiously through account payee cheques / electronic mail transfer
3	The Electricity Act, 2003 (With Amendments in 2003 & 2007) And The Indian Telegraph Act, 1885	<p>At the national level, the Indian Telegraph Act, 1885 and the Electricity Act, 2003 give the transmission and distribution utilities the authority to place towers, poles and lines on any land as required. However, Section 10 (b) of the Indian Telegraph Act, 1885, clearly states that land for the lines and poles (towers) will not be acquired. Further, Section 67 (3) and 68 (5) of the Electricity Act, 2003 require the utilities to minimise damage to property in</p>

	Act / Rules / Policies	Applicability
		<p>carrying out their works, and to pay full compensation to all persons interested for any damage sustained by them due to the works carried out.</p> <p>The details of compensation paid by the power utilities, in accordance with these laws, is provided in Annexure 6 – Compensation Plan for Temporary Damages.</p>
4	<p>Ministry of Power, Guidelines for Payment of Compensation Towards Damages in Regard to Right of Way for Transmission Lines, 2015</p>	<p>These guidelines have been formulated for “determining the compensation towards “damages” as stipulated in Section 67 and 68 of the Electricity Act, 2003 read with Section 10 and 16 of the Indian Telegraph Act, 1885 which will be in addition to the compensation towards normal crop and tree damages”</p> <p>According to Section 2 of the Guidelines, compensation will be payable only for transmission lines supported by a tower base of 66 kV and above, and not for sub-transmission and distribution lines below 66 kV.</p> <p><i>However, the Government of Andhra Pradesh has not adopted these guidelines and has its own rules with regards to compensation for Right of Way. As land a State Subject, this is within the powers of the State.</i></p>
5	<p>Indian Treasure Trove Act, 1878 as amended in 1949</p>	<p>The Act provides for procedures to be followed in case of finding of any treasure, archaeological artefacts etc. during excavation. Possibilities of such discoveries are quite remote due to limited and shallow excavations. However, in case of such findings the concerned Utility will follow the laid down procedure in the Section-4 of Act.</p>

Details of compensation and R&R entitlements as per RFCTLARRA, 2013, are provided in the table below and figure 1 provides an overview of the process to be followed:

a. Comprehensive Compensation Package	
Eligibility for Entitlement	Provisions
<p><u>Affected family.</u></p> <p>Affected family is defined as</p> <ul style="list-style-type: none"> • A family whose land or other immovable property has been acquired; or • A family which does not own any land but a member or members of such family may be agricultural labourers, tenants including any form of tenancy or holding of usufruct right, share-croppers or artisans or who may be working in the affected area for three years prior to the acquisition of the land, whose primary source of livelihood stand affected by the acquisition of land; or • The Scheduled Tribes and other traditional forest dwellers who have lost any of their forest rights 	<p><u>Determination of Compensation:</u></p> <ol style="list-style-type: none"> 1. Determine market value of land: Whichever of the following is higher: <ul style="list-style-type: none"> • Market value, if any, specified in the Indian Stamp Act, 1889 or • The average sale price for similar type of land situated in the nearest vicinity; or • Consented amount of compensation as agreed in case of acquisition of lands for private companies or for public private partnership project 2. Multiplier** (Factor by which market value is multiplied) <ul style="list-style-type: none"> • In case of rural areas (other than Scheduled Areas) a multiplication factor of 1.25 will be applied

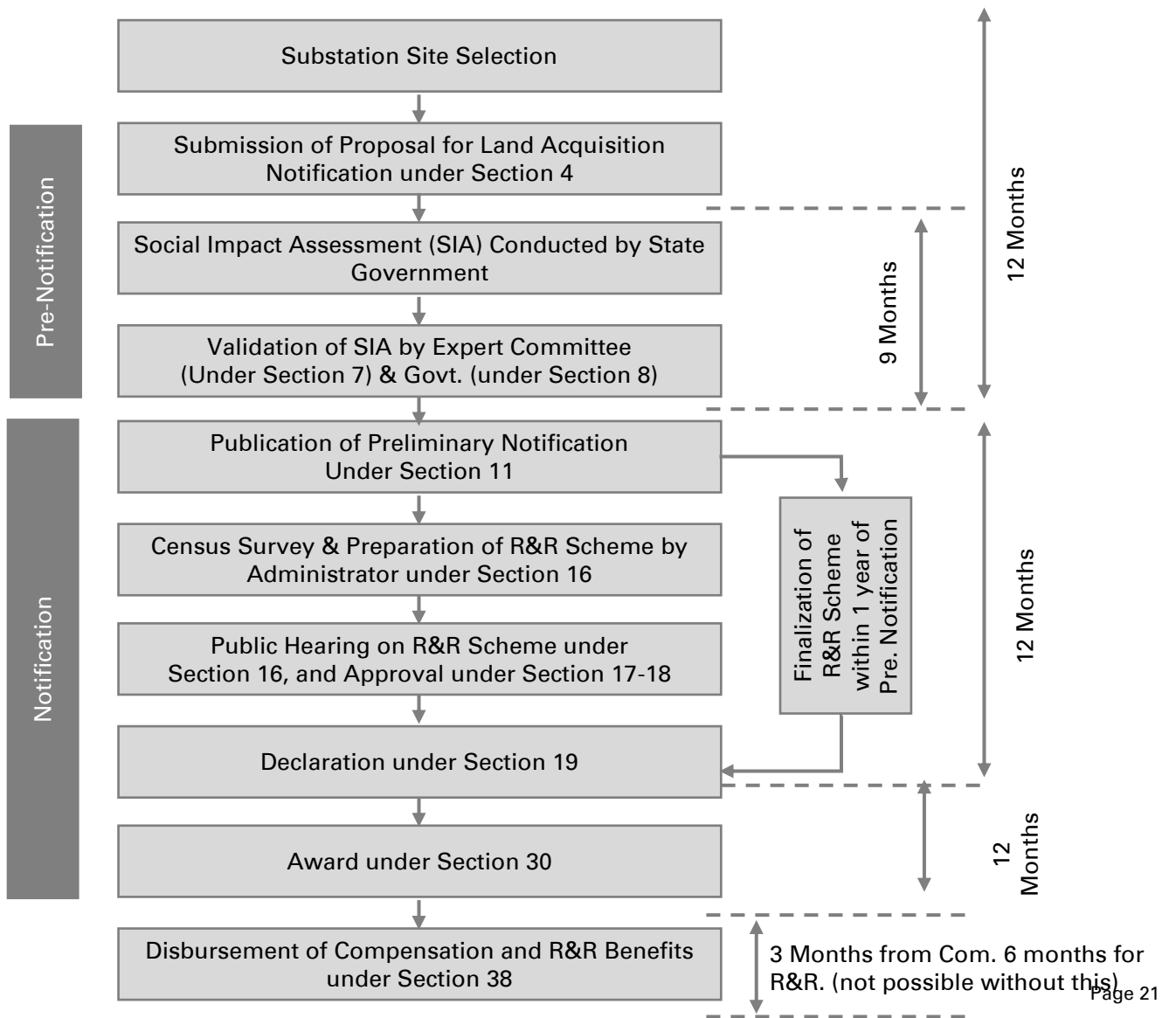
<p>recognized under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 due to acquisition of land or</p> <ul style="list-style-type: none"> • Family whose primary source of livelihood for three years prior to the acquisition of the land is dependent on forests or water bodies and includes gatherers of forest produce, hunters, fisher folk and boatmen and such livelihood is affected due to acquisition of land; or • A member of the family who has been assigned land by the State Government or the Central Government under any of its schemes and such land is under acquisition; or • A family residing on any land in urban areas for preceding three years or more prior to the acquisition of the land or whose primary source of livelihood for three years prior to the acquisition of the land is affected by the acquisition of such land 	<ul style="list-style-type: none"> • <i>In case of Scheduled (Tribal) Areas, a multiplication factor of 1.50 will be applied</i> • In case of urban areas, a multiplication factor of 1.00 will be applied <p>3. Value of asset attached to land: Building/Trees/Wells/Crop etc. as valued by relevant govt. authority</p> <p>4. Solatium: 100% of total compensation</p> <p>Total Compensation = Market value of land mentioned against (1) X relevant multiplier (2) + Value of assets (3) + Solatium (4)</p> <p>(**)As determined by Government of Andhra Pradesh</p>
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b. R&R Package		
S.No	Elements of R&R Entitlements	Provisions
1.	Provision of housing units in case of displacement	<ul style="list-style-type: none"> • If a house is lost in rural areas, a constructed house shall be provided as per Indira Awas Yojana specifications; or if the family opts not to take the house, the equivalent cost of the house may be offered instead • If a house is lost in urban areas, a constructed house shall be provided, which will be no less than 50 sq mts in plinth area; or if the family opts not to take the house offered, it shall get a one-time financial assistance for house construction which shall not be less than INR 1,50,000 / - • These benefits shall also be extended to any affected family which is without homestead land and which has been residing in the area continuously for not less than three years preceding the date of notification of the affected area • No family shall be given more than one house
2.	Choice of Annuity or Employment	The Appropriate Government shall provide the following options:

		<ul style="list-style-type: none"> Where jobs are created through the project, after providing suitable training and skill development, the Appropriate Government shall make provision for employment to at least one member per affected family in the project or arrange a job in such other project as maybe required. The wages for the job shall not be less than the minimum wages provided for in any law for the time being in force Or Onetime payment of INR 5,00,000 / - per affected family Or Annuity policies that shall pay not less than INR 2,000 per month per family for twenty years, with appropriate indexation to the Consumer Price Index for Agricultural Labourers
3.	Subsistence grant for displaced families for a period of one year	Each affected family which is displaced from the land acquired shall be given a monthly subsistence allowance equivalent to INR 3,000 per month for a period of year from the date of award
4.	Transportation cost for displaced families	Each affected family which is displaced shall get a onetime financial assistance of INR 50,000 /- as transportation cost for shifting of the family, building materials, belongings and cattle
5.	Cattle shed / petty shops cost	Each affected family having cattle or having a petty shop shall get onetime financial assistance of such amount as the Appropriate Government may specify subject to a minimum of INR 25,000 /- for the construction of cattle shed or petty shop
6.	Onetime grant to artisan, small traders and certain others	Each affected family of an artisan, small trader or self-employed person or an affected family which owned non-agricultural land or commercial, industrial or institutional structure in the affected area, shall get a one-time financial assistance of INR 25,000 /-
7.	Onetime resettlement allowance	Each affected family shall be give a onetime Resettlement Allowance of INR 50,000 /-
8.	Stamp duty and registration fee	<ul style="list-style-type: none"> The stamp duty and any other fees payable for registration of the land or house allotted to the affected families shall be borne by the requiring body The land for house allotted to the affected family shall be free from all encumbrances

		<ul style="list-style-type: none"> The land or house allotted may be in the joint names of wife and husband of the affected family
<p>Special provisions for Scheduled Castes and Scheduled Tribes</p> <p>In addition to the R&R package, SC/ST families <i>will be entitled to the following additional benefits:</i></p> <ul style="list-style-type: none"> One time financial assistance of INR 50,000 /- per family Families settled outside the district shall be entitled to an additional 25% R&R benefits Payment of one third of the compensation amount at very outset Preference in relocation and resettlement in area in same compact block Free land for community and social gatherings In case of displacement, a <i>Development Plan is to be prepared</i> Continuation of reservation and other Schedule V area benefits from displaced area to resettlement area 		

Figure 1: Activity Chart for RFCTLARRA, 2013



However, it should be noted that as stated earlier, for the proposed transmission and distribution projects no involuntary acquisition is required for securing land and the projects will not result in any physical or economic displacement of people.

Environmental Policies:

Mandatory environmental requirements for transmission and distribution at state level include: sanction of GoAP under section 67 & 68 of the Electricity Act, 2003; Forest clearance under the Forest (Conservation) Act, 1980; Coastal Regulation Zone (CRZ) Notification, 2011 (As amended), Wildlife Protection Act, 1972, during the currency of operations, Regulations on Batteries (Management and handling) Rules, 2001 regarding disposal of used batteries, Hazardous Wastes (Management, Handling and Trans-boundary Movement) Rules, 2008 regarding disposal of used transformer oil, Ozone Depleting Substances (Regulation and Control) Rules, 2000 putting restrictions on use of ozone depleting substances come into force and required voluntary enforcement and provisions under Biological Diversity Act, 2002, E-waste (Management and Handling) Rules, 2011 regarding maintaining records & handling of electronic wastes, and the Scheduled Tribes & Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

The Forest (Conservation) Act, 1980 is the main legislation through which the environmental impacts of transmission projects are managed since the current regulation does not require an Environmental Impact Assessment for transmission lines. The legislation requires compensatory afforestation for any forest land diverted for non-forest use in twice the area diverted with afforestation undertaken by the respective state Forest Department. A national fund CAMPA has been created for this purpose. In case projects pass through or are located in designated protected areas, clearances from the Wildlife Board are also required.

It appears that the constitution of India and several acts ensure protection of project affected people which are consistent with World Bank policies; hence there is no need to bridge the gap between protection measures guaranteed under Indian Laws and World Bank safeguard requirements.

Organisational Arrangements

APTRANSCO has established a corporate cell to implement the Environment and Social Management Plans (ESMPs). The **Environment and Social Management System (ESMS) cell** has the following members:

1. SE/PM/400 KV/ APTRANSCO/VS/Hyderabad
2. SE/PM/Construction/APTRANSCO/VS/Hyderabad

3. EE/Civil/APTRANSCO/VS/Hyderabad
4. Concerned EE/Civil in field (covering the jurisdiction of the Transmission Project)
5. Concerned DE/Construction in Vidyutsoudha looking after the Transmission Project

The cell will also deal with redressal of grievances and requests for Public Information. Details are provided in **Table** under Section 9.

APSPDCL / APEPDCL

SPDCL and EPDCL has identified an Environment and Social Management member to manage the potential social and environmental impacts from the proposed projects.

SPDCL: SE/Civil

EPDCL: EE/Civil

Impact Management and Mitigation Methods

The impact management and mitigation framework has been designed in compliance with applicable National and State laws and is also in alignment with international standards for environment and social impact management. The framework is built on the principle of avoidance, minimization and mitigation wherein preference is given to avoiding any negative social impact wherever possible. If it is not possible to avoid negative impacts, utilities will strive to minimize these impact and take mitigation measures.

The impact management and mitigation framework is provided below:

Potential Social Impact	Mitigation Methods
Loss of land	<p>Land is required for construction of transmission and distribution substations and erecting transmission towers and distribution poles. Land secured for construction of substations is no longer accessible to the existing owner and hence in such cases ownership is transferred from the existing owner to the respective utility. However, ownership of land used for erecting towers and poles remains with the existing land owner and the utility only receives rights to use the land. Therefore when we talk of loss of land, it refers to land secured for substation construction. There are four ways in which land can be secured; these are:</p> <ol style="list-style-type: none"> (i) Transfer of Government land to utility (ii) Voluntary donation (iii) Purchase of land on willing buyer and willing seller basis on negotiated price (iv) Involuntary acquisition of land <p>In order to avoid the loss of private / communal lands or agriculture and forest lands, the transmission and distribution</p>

Potential Social Impact	Mitigation Methods						
	<p>utilities will endeavour, wherever possible, to secure Government land for their projects and avoid private or communal lands, even if this requires realignment of the proposed route. Only in rare cases that Government land is not available will other methods of securing land be pursued. Further, only the minimal amount of land required for substations will be allotted (the land required for a 132kV / 33kV substation is approx. 5 acres¹). The following steps are to be followed depending on the method of land acquisition:</p> <ul style="list-style-type: none"> i. Transfer of Government land: The Andhra Pradesh Land Allotment Policy (G.O. Ms. No. 571 issued 14.09.2012) prescribes that only waste lands will be allotted and environmentally sensitive / fragile areas such as tank beds, river, beds, hillocks with afforestation shall not be allotted. ii. Voluntary donation: In the case of voluntary donation of land, there should not be any undue pressure on the land owner / user(s) to transfer ownership of their land and the donor should be fully aware of the value of the donated land. iii. Purchase of land on willing buyer and willing seller: This is done on the basis of negotiated price. These negotiations should be carried out in a transparent manner iv. Involuntary acquisition of land: Involuntary acquisition of land will be the last resort and be undertaken only in the case of non-availability of Government lands in the area. In the case of involuntary acquisition, the provisions of RFCTLARRA, 2013 and the A.P. RFCTLARRR, 2014 shall be applicable. <p>Note: The land for the proposed investments in APTRANSCO has been secured either from the discoms where they have provided extra land in their existing substations to APTRANSCO or government land has been identified. The status of sites for the proposed 12 substations as on 5th May 2016 is provided below:</p> <table border="1"> <thead> <tr> <th>Method of securing land</th> <th>No. of substations</th> </tr> </thead> <tbody> <tr> <td>Extra land available in existing substations</td> <td>4</td> </tr> <tr> <td>Secured after transfer of payment to government</td> <td>1</td> </tr> </tbody> </table>	Method of securing land	No. of substations	Extra land available in existing substations	4	Secured after transfer of payment to government	1
Method of securing land	No. of substations						
Extra land available in existing substations	4						
Secured after transfer of payment to government	1						

¹ Reference manuals on construction and operational practices of EHV substations & lines and commercial and load dispatch operations. Available at: <http://www.aptransco.gov.in/transco/images/APTRANSCO-Technical-reference-book-2011-vol-ii.pdf>

Potential Social Impact	Mitigation Methods																
	<table border="1"> <tr> <td><i>Identified government land – approved</i></td> <td>3</td> </tr> <tr> <td><i>Government land Identified – approval in-process</i></td> <td>1</td> </tr> <tr> <td><i>Yet to be identified (proposed through transfer of government land)</i></td> <td>3</td> </tr> </table> <p><i>The land requirement for distribution substation is around 0.5 acre which will be secured through transfer of government land or purchase of land.</i></p>	<i>Identified government land – approved</i>	3	<i>Government land Identified – approval in-process</i>	1	<i>Yet to be identified (proposed through transfer of government land)</i>	3										
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<i>Yet to be identified (proposed through transfer of government land)</i>	3																
<p>Restricted use of land and concerns regarding right of way (RoW)</p>	<p>Unlike in case of substations, for the construction of transmission towers / distribution poles and the transmission / distributions lines, ownership of the land remains with the existing owner and is not transferred to the requesting body. The Electricity Act 2003, provides utilities with powers under the Telegraph Act 1885 which in turn states that <i>land for the lines and poles (towers) will not be acquired</i>. The utility will have the right of user only in the property under, over, along, across in or upon which the lines and poles / towers are placed. The MoEF guidelines mandate utilities to maintain right of way corridors:</p> <table border="1"> <thead> <tr> <th>Voltage</th> <th>Width of RoW* (in meters)</th> </tr> </thead> <tbody> <tr> <td>132 KV</td> <td>27</td> </tr> <tr> <td>33 KV</td> <td>15</td> </tr> <tr> <td>11 KV</td> <td>7</td> </tr> </tbody> </table> <p>*Width of Right of Way is as per MoEF guidelines dated May 2014</p> <p>In the width of the RoW trees are cut or pruned to the extent required for preventing electrical hazards by maintaining the following:</p> <table border="1"> <thead> <tr> <th>Voltage</th> <th>Minimum clearance between conductor and trees (in meters)</th> </tr> </thead> <tbody> <tr> <td>132 KV</td> <td>4.0</td> </tr> <tr> <td>33 KV</td> <td>2.8</td> </tr> <tr> <td>11 KV</td> <td>2.6</td> </tr> </tbody> </table> <p>Further, affected families will receive compensation for temporary damage caused as well as for the land under the tower footing. Thus the compensations are made for following:</p> <ul style="list-style-type: none"> <li>• Land under the tower footing <li>• Damage to trees 	Voltage	Width of RoW* (in meters)	132 KV	27	33 KV	15	11 KV	7	Voltage	Minimum clearance between conductor and trees (in meters)	132 KV	4.0	33 KV	2.8	11 KV	2.6
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Potential Social Impact	Mitigation Methods
	<ul style="list-style-type: none"> • Damage to crops • Damage to constructed structure <p>Details of Compensation Plan for Temporary Damage are provided in Annexure 6</p>
Change in land use	Due to inherent flexibility in locating substation and very small size of land, utilities avoids habituated area completely hence no relocation of population on account of setting up of substation is envisaged.
Community Health and Safety	The guidelines for ensuring community health and safety are provided by CEA regulations 2010 and CEA regulations 2011. Utilities will comply with all the mandates of the two CEA regulations.
Workers' Health and Safety	During construction the health and safety aspects of workers and nearby community shall be implemented through contractors with due diligence and compliance of required regulation/guideline through a safety plan and appointment of Safety Officer.
Impact on Tribals	<ul style="list-style-type: none"> • STs constitute 5.33% of the total population of Andhra Pradesh. In compliance with the World Bank's Operational policy OP 4.10 (Indigenous People) and special provisions of RFCTLARRA, 2013, a Tribal People Planning Framework (TPPF) has been prepared. TPPF is provided as Annexure 7 to this document • As far as possible, no land will be secured for project in Scheduled Areas; and where this is done, it will be only as a demonstrable last resort. Further the prior consent of the concerned Gram Sabha or the Panchayats at the appropriate level in the Scheduled Areas under the Fifth Schedule to the Constitution shall be obtained before issue of a notification. This prior consent will be taken in all cases, even in the case of urgency
Impact on Women	<ul style="list-style-type: none"> • Women's involvement will be planned through formal and informal group consultations so that their participation is ensured during preparation and implementation of the project. It will be further ensured that <ul style="list-style-type: none"> - Women employed by project are fully informed about labor rights - Men and women receive equal pay for equal work - Construction sites are properly lit and minimize blockage of access roads to mitigate the concern for security of women

Potential Social Impact	Mitigation Methods
	<ul style="list-style-type: none"> - Women are fully integrated into any income restoration activities • In India, as women usually do not have property rights, ensure that women are informed/consulted before securing land for project activities • Ensure that women receive compensation for land, RoW and damage to crops and trees in cases where property rights are with women
Impact on Farmers	<ul style="list-style-type: none"> • In case of transfer of government land <ul style="list-style-type: none"> - <i>Only waste lands will be allotted</i> and environmentally sensitive / fragile areas such as tank beds, river, beds, and hillocks with afforestation shall not be allotted. - <i>Lands assigned to poor people for agriculture purposes will not be resumed</i> for other purposes, and if it is unavoidable then the assignees will be provided with alternate land in addition to rehabilitation • In case of purchase of land, the price will be determined through negotiations • In case of involuntarily acquisition of land, farmers will be provided compensation for their land as per the provision of RFCTLARRA, 2013 and A.P. RFCTLARRR, 2014 • Damage to crop and trees will be paid on the basis of ex-gratia amount fixed by the Revenue Department • Temporary damage to trees and crops will be compensated in line with the Compensation plan for Temporary Damages provided as Annexure 6 to this document.
Impact on SCs	<ul style="list-style-type: none"> • Scheduled Castes (SC) constitute 17.10% of the total population of Andhra Pradesh. The impacts of the proposed investments on SCs are of a similar nature to those identified for the rest of population in this document. However, the extent of the impacts may vary owing to the vulnerable socio-economic position of these communities. Therefore, Section 41 of RFCTLARRA, 2013 has special provisions for people belonging to SCs and STs • As per Section 41 of RFCTLARRA, 2013: <ul style="list-style-type: none"> - In cases of involuntary displacement of the Scheduled Castes families, a Development Plan shall be prepared in the format prescribed in RFCTLARR. The Development Plan shall lay down the details of the procedure for settling land rights due, but not settled and restoring

Potential Social Impact	Mitigation Methods
	<p>titles of the Scheduled Castes on the alienated land by undertaking a special drive together with land acquisition.</p> <ul style="list-style-type: none"> - The resettlement areas predominantly inhabited by the Scheduled Castes shall get land, to such extent as may be prescribed by the Appropriate Government free of cost for community and social gatherings. - Any alienation of lands belonging to members of the Scheduled Castes in disregard of the laws and regulations for the time being in force shall be treated as null and void.
Damage to cultural and historical monuments and artefacts	Possibilities of such phenomenon in transmission and distribution project are quite remote due to limited and shallow excavations. However, in case of such findings, utilities will follow the laid down procedure in the Section-4 of Indian Treasure Trove Act, 1878 as amended in 1949.
Interference with communication channels	The utility takes clearance from the relevant telecommunication, railway and defence authorities post award of project but before start of construction to ensure there is no interference with communication channels.

The environmental issues associated with transmission and distribution (T&D) projects are manageable since (a) They are mostly localised to Right of Way (ROW); (b) the 'footprint' associated with towers is small and (c) there is flexibility in siting facilities within relatively large host area. The transmission line project may have some adverse effects on natural resources however, they can be minimized by careful route selection and siting of substations. The potential environment impacts and the respective management measures are provided below:

Potential Environment Impact	Mitigation Methods
Impacts due to Transmission and Distribution Lines	
Clearing of trees with in Right of Way (ROW)	<p>Care must be taken to avoid thick vegetation; towers to be located where vegetation is thin. This will greatly minimize tree loss and compensation to be paid to tree owners. Clearance for trees to be cut will be taken from concerned authorities and if required compensatory afforestation (CA) has to be done in association with the concerned authorities. Trimming of trees should be done in consultation with the concerned authorities.</p> <p>The forest types in the mentioned sections are mostly governed by Open Forests and Non-forest types thereby minimizing presence of rare and endangered species.</p>

Potential Environment Impact	Mitigation Methods
Aesthetic appeal	The route is to be planned to avoid any dense habitation or forested area. The clearing of trees must be kept to minimum and wherever possible, trimming of trees must be adopted vis-à-vis felling of trees.
Soil and water contamination due to unscientific disposal of used transformer oil, lead battery and electrical and electronic equipment	Follow laid down procedures for safe disposal of used transformer oil, lead battery and electrical and electronic equipment
Global warming due to Mishandling and leakage of SF6 gas	Proper maintenance of equipment to minimize leakage
Substations related Impacts	
Used Transformer Oil	As a part of routine maintenance, transformer oil is changed every 10- 15 years. The used transformer oil is categorized as hazardous wastes as per Hazardous waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and its unscientific disposal in environment may lead to soil and water contamination.
Used Battery	Used lead acid battery is a pollutant and therefore its improper handing & disposal may lead to contamination of soil and water.
e-Waste	The electrical and electronic equipment (EEE) have hazardous/ toxics substances in their components, which may cause harm/pose risk to health and environment during handling after its expiry & full usage.
SF6 Gas	It is a highly potential Green House Gas (GHG) being used in Circuit Breaker. Mishandling and leakage etc. can lead to its escape into the atmosphere causing global warming.
Drainage Congestion	Appropriate drainage and sewage network to be provided at the substations to avoid flooding, land and water pollution. Regular inspection, cleaning and maintenance of the drainage systems in and around the site needs to be ensured, especially if construction works are carried out during the wet season.

Grievance Redressal Mechanism

The grievance redressal mechanism provides the procedure to address/resolve the concerns and grievances of people affected by the projects. The mechanism for grievance redressal for APTRANSCO is provided below:

- People with grievances can approach local Divisional Engineer (DE). He is the main officer to handle any complaints at the local offices.

- At the corporate office, ED Planning and HRD is the nodal officer for Grievance Redressal in APTRANSCO. He is supported by Additional Secretary, APTRANSCO. In case any grievance is not satisfactorily handled at the DE level, it gets escalated to the corporate office.

For the World Bank Projects, the ESMS cell will support the DE in resolving any project related grievances before escalation to ED Planning and HRD.

The mechanism for DISCOMS is provided below:

The minor concerns of the people are usually handled through the public consultations undertaken during the construction phase. The formal framework includes:

- *Substation Advisory Committee:* A Substation Advisory Committee has been constituted at each sub-station of the discoms. The committee is headed by the local MLA (Member of Legislative Assembly) and meets once every month. During the committee meetings the farmers and consumers can raise their grievances to the MLA.
- *District Electrical Coordination Committee:* District Electrical Coordination Committee are constituted for all Central Government aided projects and is chaired by the District Collector (DC). The committee is a forum for consumers to raise their concerns regarding the central Government aided-projects.
- *Meet the CMD – Spandana:* Consumer meetings are held at the corporate office of SPDCL (in Tirupati) and EPDCL (in Vishakhapatnam) every Monday from 9:30 AM onwards. Consumers/public with grievances can personally meet the CMD and other senior officials of SPDCL and EPDCL.
Apart from consumers, contractors can also participate in ‘Spandana’
- *Online registration of complaints:* Consumers can register the complaints on the website of SPDCL and EPDCL
- *Registering complaints at a Toll-Free number:* The consumers can call a toll-free number to register the complaint. A centralised call centre has been established (Number #191) to receive supply related complaints. Also, a toll free number has been established where consumers can directly raise their concerns to CMD of the utilities on every Monday 9 AM onwards.
- *Grievance Redressal in Scheduled Areas:* A coordination committee consisting of the Project Officer from Integrated Tribal Development Authority (ITDA) and the DE of the distribution utility is constituted to redress grievances in Scheduled Areas.
- *Grievance Redressal Forum:* In case people have any grievances, they can register a complaint with the utility. An acknowledgement receipt is issued for every complaint registered and in cases where the consumer receives inadequate/no response for the complaint filed, s/he can approach the Consumer Grievance Redressal Forum (CGRF) referring to the acknowledgement receipt number. CGRF provides a complaint copy to the utility for comments within five days. Utility has to provide comments on the CGRF

intimation within ten days. If case of no reply from utility, the forum proceeds on the basis of the material available on record.

- *Judicial intervention:* In case the grievances are not resolved at the utility level. The people can approach the judicial authority and file a court case against the utilities.

Monitoring Mechanism

This section details out the plan to monitor the implementation of social impact management and mitigation measures and grievance redressal.

The ESMS cell of the APTRASNCO and the environment and social member of the project team for discoms has overall responsibility for achieving the environmental and social performance. They will be responsible for monitoring the ESMF, including monitoring the implementation of the ESMF and subsequent preparation, implementation and monitoring of environmental and social safeguards for the sub-projects.

The environmental and social monitoring plan for each project will be integrated with the construction, operation and maintenance activities and shall be monitored by the ESMS cell/designated environment and social member on a monthly basis.

The Environment and Social Member (Discoms) and the concerned EE/Civil in field - covering the jurisdiction of the Transmission Project, concerned DE/Construction in Vidyut Soudha, looking after the Transmission Project of ESMS cell (APTRANSCO) will also perform supervision site visits during the construction and operations phases of the sub-projects to confirm that environmental and social safeguards are being effectively implemented, and status of the same will be reported periodically in the Site Visit Reports.

The quarterly and annual reports on the key steps, outputs and results of the environmental and social management actions taken to support the implementation of the ESMF and the sub-projects will be prepared. The Environment and Social Member (corporate members of ESMS cell (SE / PM / 400 KV / APTRASNCO / VS / Hyderabad, SE / PM / Construction / APTRANSCO / VS / Hyderabad, EE / Civil / APTRANSCO /VS / Hyderabad) will track the overall status and any shortcomings in the implementation of the ESMF and of any circumstances or occurrences that could adversely impact the environmental and social performance of the project beyond the already anticipated impacts.

Training and Capacity Building Requirements

Training and development of employees is an integral part for implementation of Environment and Social Management Framework (ESMF). Training needs identification has been carried out at corporate and field level, based on which focused training modules have been developed for:

- Strengthening in house corporate level capacity to implement the provision of ESMF.
- Creating Awareness, providing the tools for implementation of Environmental and Social Policy, and accompanying set of management procedures to all departments
- Developing competence within key employees to provide training in their respective departments.

Cost and Budgets

The costs incurred to implement the various requirements of the ESMF are budgeted and adequate financial provisions are required to meet the management measures to be undertaken to mitigate the impacts as underlined in this ESMF document. The tentative cost estimates for environmental and social management are provided below:

Environment Management: APTRANSCO and APSPDCL/APEPDCL

	Item	Cost (in INR) per sample (on estimation)
Construction phase		
1.	Ambient air quality monitoring as per the NAAQ standards (Particulate Matter – PM ₁₀)	5,000
2.	Ambient noise levels testing	1,000
3.	Water Quality testing as per the IS 10500 standards ((pH, TSS, BOD5, COD, oil & grease))	5,000
Operation phase		
4.	Water quality testing as per the IS 10500 standards. ((pH, TSS, BOD5, COD, oil & grease))	5,000
Total:		16,000*

**Note: Our conservative estimate will be max 10 samples per scheme i.e a longitudinal Transmission line laying project including receiving station.*

Social Management Framework: APTRANSCO

	Item	Cost (in INR)	Assumptions
1.	Management of Social Impact	24,00,00,000	RoW compensation for tower footing, Compensation for crop and tree damage (As per project budget)
2.	Monitoring	0	Monitoring will be undertaken by employees and hence no additional cost

3.	Training and Capacity Building	1,16,000	<ul style="list-style-type: none"> • 2-day training covering all aspects • 4 resource persons (one each for ESMF, GAP, TPP, Monitoring). 8000 per resource person for 2-3 hr session • Trainings will be held at offices of respective utility so no venue cost • Assuming INR 60,000 for logistics including travel and food for participants • Assuming INR 24000 for travel cost for resource person
4.	GRM (including spend on publicity)		Part of overall project management spend
Total:		24,01,16,000	

Social Management Framework: APEPDCL/APSPDCL

	Item	Cost (in INR)	Assumptions
1.	Management of Social Impact	10,00,000	For crop damages during HVDS work and Damage to any structure, road, any other public utility like water pipes etc. during UG cabling
2.	Monitoring		Monitoring will be undertaken by employees and hence no additional cost
3.	Training and Capacity Building	76,000	<ul style="list-style-type: none"> • 2-day training covering all aspects • 4 resource persons (one each for ESMF, GAP, TPP, Monitoring). 8000 per resource person for 2-3 hr session • Trainings will be held at offices of respective utility so no venue cost

			<ul style="list-style-type: none"> • Assuming INR 20,000 for logistics including travel and food • Assuming INR 24000 for travel cost for resource person
4.	GRM (including spend on publicity)		Mechanism in place. INR 1 Crore are allocated for publicity by EPDCL every year
Total:		10,76,000	

Consultation and Disclosure

This ESMF has been drafted in consultation with the three utilities – APTRANSCO, APEPDCL and APSPDCL. Input and feedback was sought from key personnel in these utilities at regular intervals during the drafting of the framework to capture all major environmental and social risks at different stages of the project; i.e. pre-construction, construction, and operation and maintenance. Through these consultations, the relevant policies and laws were identified that safeguard against social and environmental risks and on the basis of these mitigation measures were created. Further, the mechanisms for implementing the framework, monitoring the progress and addressing grievances were also defined.

The draft ESMF that was created through these consultations was then shared with the World Bank whose inputs further strengthened the framework.

Consultations were undertaken with the community and vulnerable groups including farmers, SC and women.

2. Introduction

2.1 Project Context

The Government of Andhra Pradesh (GoAP) has signed a Memorandum of Understanding (MoU) with the Government of India (GoI) to launch the 'Power for All' initiative. The purpose of the initiative is to ensure 24x7 power supply in the State of Andhra Pradesh (AP). The key interventions planned under the initiative are:

- Adequate power generation for providing 24x7 power supply
- Adequate power transmission and distribution systems
- Interventions for improving operational efficiency and customer satisfaction
- The Government of Andhra Pradesh, through the GoI, has approached the World Bank for financial and technical support. Specifically, the proposed World Bank investments will be to implement the following initiatives:
 - Establish new sub-stations
 - Upgrade existing sub-stations
 - Lay transmission/distribution lines
 - Deploy smart grid technologies

The investments will be implemented through the Andhra Pradesh state power utilities – Transmission Corporation of Andhra Pradesh Limited (APTRANSCO), Andhra Pradesh Southern Power Distribution Company Limited (APSPDCL) and Andhra Pradesh Eastern Power Distribution Company Limited (APEPDCL).

The proposed investments are provided below:

A. Proposed Investments for APTRANSCO

A tentative list of twelve schemes were identified for proposed World Bank funding. The total investments were estimated to be INR 522.11 crores. The identified investments are for raising of new 132 kV substations and for erection of 132 kV DC radial line between the substations. Apart from the above a total investments of INR 166 Cr. were identified for the following:

- Constructing Substations and erection of 132 KV radial line
- Augmentation of power transformers;
- Testing instruments (13 sets);
- Tower spotting software;
- Design licenced software;

The tentative long list of transmission schemes that have been identified for World Bank funding are provided below:

Sl. No.	Name of the Sub-station	Connected lines	Line Length	District	Site Status
Package-I					
1.	132/33kV SS Mummidivaram	Erection of LILO of 132kV Ramachandrapuram - Amalapuram to proposed Mummidivaram	8kM	East Godavari	Site available in existing 33kV SS,
2.	132kV SS Gollapalem	Erection of 132kV DC line for making LILO of 2nd circuit of 132kV Kakinada – Yanam line to the proposed 132/33 kV Gollapalem SS	6 kM	East Godavari	Site available in existing 33kV SS,
		Stringing of 2nd circuit on existing 132kV Kakinada – Yanam DC/SC Line	42kM		
3.	220/33kV SS Korukonda	Making LILO of 2nd ckt of 220kV Bommur – Rampachodavaram line to proposed 220/33kV SS Korukonda	1 kM	East Godavari	Site available
		Stringing of 2nd ckt on existing 220kV Bommur – Rampachodavaram line	67kM		
4.	132/33kV SS at Jaggampet	Erection of 132kV DC radial line from 220/132kV SS Samarlakota to the proposed 132/33kV Jaggampet SS	20kM	East Godavari	Identification of Government land for the substation is under process
Package-II					
5.	132kV SS Kothapalli (Gudipala)	132kV DC radial line from 132kV Noonegundlapalli Switching station to the proposed 132/33 kV Kothapalli SS	25kM	Chittoor	Site available in existing 33kV SS,
6.	132kV SS Penumur	Erection of 132kV DC radial line from proposed 132/33kV Pachikapallam to the proposed 132/33 kV Penumur SS	20kM	Chittoor	Identified Govt. Land
		2nd circuit stringing on 132kV DC/SC Line from 220/132kV SS Nagari to 132kV SS Pachikapallam	40kM		
7.	132kV SS T.Sundupalli	Erection of 132kV DC radial line from 132/33kV SS Rayachoti to the proposed 132/33kV SS T. Sundupalli	20kM	YSR	Identification of Government land for the substation is under process

Sl. No.	Name of the Sub-station	Connected lines	Line Length	District	Site Status
8.	132kV SS Satellite City	Erection of 132kV DC radial line from 220/132kV SS Chinakampalli to the proposed 132/33kV SS Satellite city	30kM	YSR	Request letter submitted to Zonal Manager, APIIC, Kadapa for 15 Acres of land near Vogivemana University
Package-III					
9.	132kV SS Kadivedu	Erection of 132kV DC radial line from 400/220/132kV SS Manubolu to the proposed 132/33 kV Kadivedu substation	25kM	Nellore	Site available, 5.00 Acres, Sy.No.85/2, Kadivedu(V), Chillakuru(M)
10.	132/33kV SS Mylavaram	Erection of 132kV DC radial line from 220/132kV SS Kondapalli to the proposed 132 kV Mylavaram SS	25kM	Krishna	Site available in existing 33kV SS,
11.	132kV SS Chinarikatla	Erection of 132kV DC radial line from 220/132kV SS Podili to the proposed 132/33kV ChinarikatlaSS	26kM	Prakasam	Identified Govt. Land
12.	132kV SS East Gangavaram	Erection of 132kV DC radial line from 220/132kV SS Podili to the proposed 132/33kV East Gangavaram SS	21kM	Prakasam	Identified Govt. Land

B. Proposed Investments for APSPDCL and APEPDCL

The total investments are estimated to be INR 2490 Cr for APSPDCL and INR 1032 Cr for APEPDCL. The sub-project components covered under the investments are:

S.No.	Component	Component Description
1.	High Voltage Distribution System (HVDS)	<ul style="list-style-type: none"> HVDS aims at reduction of losses through replacement of the low voltage distribution network (LVDS) with HVDS and installation of large number of smaller capacity distribution transformers – 25 KVA or 16 KVA in place of higher capacity distribution transformers – 100 KVA or 63 KVA for supply to agricultural consumers. This system is best suited to meet the scattered low density loads observed in rural areas
2.	Energy Efficient Pump Sets	<ul style="list-style-type: none"> Replacement of existing pump sets with 5 star BEE rated energy efficient pump sets would result in energy conservation and increased pumping efficiency Energy efficient pump sets to be installed on pilot basis

3.	Remote ON/OFF starters:	<ul style="list-style-type: none"> Remote starters/Electric Smart Control Panel would provide facility ON/OFF operation remotely by using SMS/phone call. This would also provide protection to the devices due to under voltage, over voltage, dry run, single phasing etc. It is proposed to install remote starters for pump sets
4.	Smart Metering	<ul style="list-style-type: none"> A smart meter would record consumption of electric energy in intervals of an hour or block and communicates information back to the utility for monitoring and billing. Smart meters enable two-way communication between the meter and the central system Smart meters for urban consumers
5.	SCADA	<ul style="list-style-type: none"> The SCADA/DMS System will provide real time monitoring and control, loss minimization/loss balancing and considerable improvement in voltage/VAR profiles. It would also facilitate proper handling of loads while load shedding & restoration, efficient planning of network for future growth by using proven power system planning tools Scheme consists of installation of Remote Terminal Units (RTU) at each 33/11 KV substation and integration of these RTUs with centralized control center to manage the Distribution system of the town SCADA to be implemented in balance sub-stations of Vishakhapatnam and Vijayawada which have not been covered under R-APDRP/IPDS
6.	UG Cabling and Covered Conductors	<ul style="list-style-type: none"> AP is exposed to cyclones, storm surges, floods and droughts. Every two or three years, AP experiences a moderate to severe intensity cyclone or landfall. According to an estimate by the Dept. Of Disaster Management, GoAP, about 44% of the state is vulnerable to tropical storms and related hazards. Placing power lines underground eliminates their susceptibility to lightning and wind damage It is proposed to provide UG cabling in important pilgrim and tourist towns
7	Distribution Substations	<ul style="list-style-type: none"> New 33/11 KV indoor substations, GIS substations and new 33/11 KV outdoor substations are proposed
8.	Technical Assistance (TA)/Capacity Building	<ul style="list-style-type: none"> TA would be needed for effective implementation of proposed investments. TA support is required for overall institutional development, capacity building and governance improvement as well as some specific areas like strengthening and improving Project Planning and implementation, business processes and accountability systems, corporate governance and financial management practices and human resource development

2.2 Purpose of ESMF

Currently, the projects and sub-projects under the proposed World Bank investments have been identified but the final project sites and the alignment of the transmission and distribution lines will be concluded after detailed design is prepared. Therefore, an Environment and Social Framework is being developed to manage and mitigate the potential positive and negative impacts of the proposed projects. The ESMF provides a procedure for environment and social assessment of projects. It will guide the utilities in determining the appropriate level of environmental and social assessment required for the sub-projects and in preparing the necessary environmental and social mitigation measures for the sub-projects during the pre-construction, construction, operations and maintenance phases. The objective of ESMF are as follows:

- Identify potential social and environmental impacts of the proposed project activities
- Compliance with applicable national and local guidelines
- Compliance with World Bank safeguard policies
- Minimize the potential adverse impacts and maximize the potential positive impacts
- Lay down the procedure for preparing project/investment specific environment and social management plan

3. Socio-Economic Profile of State

History

In 1953, the Andhra State Act was passed creating the State of Andhra which constituted territories of the Madras State that were predominantly Telugu-speaking. In 1956 the Telugu-speaking people in the region of the former state of Hyderabad were merged with the Andhra state to form the combined state of Andhra Pradesh. This was the first Indian state formed on the basis of linguistic identification. The combined state had 23 districts with its capital in Hyderabad. Following a prolonged movement for a separate State, Andhra Pradesh was further bifurcated on 2nd of June 2014, to form the state of Telangana by passing of the AP State Reorganization Bill. After bifurcation, 10 districts (including the capital city of Hyderabad) with a combined area of 1,14,840 Sq. Km. and a population of 3.53 Crore people became a part of the new State of Telangana. Andhra Pradesh presently constitutes 13 districts and has a new capital city of Amravati.

Geographic Profile

The present-day state of Andhra Pradesh, lies between 12°41' and 22°N latitude and 77° and 84°40'E longitude and covers an area of 1,62,760 Sq. Km. making it the 8th largest state in the country. It includes the eastern part of the Deccan Plateau and a sizeable part of the Eastern Ghats and is bordered by Maharashtra, Chhattisgarh, Telangana and Orissa in the North, the Bay of Bengal in the East, Tamil Nadu to the South and Karnataka to the West. The State has the second longest coastline in the country with a length of 974 Km. and two major rivers, the Godavari and the Krishna.

Of the total land area, 38.31% of the state's geographical area is under net area sown (62.35 lakh hectares), 22.51 % under forest (36.63 lakh hectares), 8.61 % under current fallow lands (14.01 lakh hectares), 12.30% under land put to non-agricultural uses (20.02 lakh hectares), 8.30 % under barren and uncultivable land (13.51 lakh hectares) and remaining 9.97% is under other fallow land, cultivable waste lands like permanent pastures and other grazing lands and land under miscellaneous tree crops and groves not included in net area sown.

Demographic Profile

A.P. is the 10th largest state in India with a population of 4.94 Crore (4.08% of India's population) and a population density of 304 persons per Sq. Km. There are 126.65 Lakh households in the State and the average size of the household is 3.95. A.P. is largely rural with 70.42% of the population living in rural areas and 29.58% living in urban areas.

Of the total population Scheduled Cates (SC) constitute 17.10% and Scheduled Tribes (ST) 5.33%. Prakasam is the district with the highest SC population (7.88 lakh) while

Vizianagaram has the lowest (2.47 Lakh). Visakhapatnam is the district with the largest concentration of STs with 14.42% of the total ST population, while Kurnool with 2.04% has the lowest concentration.

The growth rate of population has slowed from 11.89% in 2001 to 9.21% in 2011 while the sex ratio rose from 983 in 2001 to 997 in 2011 (as per census data). In absolute terms, 2.47 crore (50.1%) of the total population is male and 2.46 Crore (49.9%) female. The districts of Visakhapatnam, East Godavari, West Godavari and Guntur, have registered a progressive sex ratio moving from less than 1000 category to more than 1000 from 2001 to 2011. The SCs and STs have registered a sex ratio of 1007 and 1009 respectively. However, despite the overall improvement in sex ratio, there was a troubling decline in child sex ratio from 964 in 2001 to 944 in 2011 (census data).

Literacy Rate in the state has increased and was 67.35% as per the 2011 population census as against 62.07% in the 2001 census; however this is still lower than India's overall literacy rate, which was 72.98% in 2011. The literacy rate is much higher for urban areas (79.2%) than rural areas (62.4%). Also, while male literacy is 74.8%, female literacy is only 59.96%. Among the districts West Godavari has the highest literacy (74.63% in 2011), while Vizianagaram has the lowest (58.89% in 2011).

District-wise Demographic Data

According to the Socio Economic and Caste Census 2011, there are 13 districts in the State of Andhra Pradesh, 670 tehsils, 14,514 gram panchayats/police stations. The total number of villages in Andhra Pradesh are 17,521 and additionally there are 94 towns. The number of rural households is 93.44 lakh (76.15%) and urban households is 29.26 lakh (23.85%). The district with the highest density of population is Krishna district (518), while Kadapa district has the lowest density (118). District wise demographic data is provided below:

District	Area (Sq. Km.)	Population	Male Population	Female Population	Sex Ratio	Literacy (%)	Density / Sq. Km.
Srikakulam	5,837	27,03,114	13,41,738	13,61,376	1015	61.74	463
East Godavari	10,807	51,54,296	25,69,688	25,84,608	1006	70.99	477
Guntur	11,391	48,87,813	24,40,521	24,47,292	1003	67.4	429
Krishna	8,727	45,17,398	22,67,375	22,50,023	992	73.74	518
Visakhapatnam	11,161	42,90,589	21,38,910	21,51,679	1006	66.91	384
Chittoor	15,152	41,74,064	20,90,204	20,83,860	997	71.53	275
Anantapur	19,130	40,81,148	20,64,495	20,16,653	977	63.57	213
Kurnool	17,658	40,53,463	20,39,227	20,14,236	988	59.97	230
West Godavari	7,742	39,36,966	19,64,918	19,72,048	1004	74.63	509
Nellore	13,076	29,63,557	14,92,974	14,70,583	985	68.9	227
YSR (Kadapa)	15,359	28,82,469	14,51,777	14,30,692	985	67.3	188
Prakasam	17,626	33,97,448	17,14,764	16,82,684	981	63.08	193
Vizianagaram	6,539	2,344,474	1,161,477	1,182,997	1019	58.89	359

Data taken from Census 2011

Economic Profile

Andhra Pradesh's Gross State Domestic Product (GSDP) at constant (2011-12) Prices grew by 10.99% from INR 4,44,752 Crores in 2014-15 to INR 4,93,641 Crores in 2015-16; this was higher than India's overall GDP growth which was 7.6% over the same time period. In terms of sectoral contribution to the economy, the services sector contributed the most to overall Gross Value Added (GVA) in 2015-16 (47%) followed by agriculture (29%) and industry (24%). The services sector in fact has been the major driver of economic growth in the State and continued to be so in 2015-16, registering a growth rate of 11.39% over the previous year. Real estate and trade, hotels and restaurants were the major contributors to the service sector growth. The industry sector saw the second fastest growth, growing by 11.13% over the previous year led by growth in manufacturing and construction.

While the agriculture and allied activities sector did not grow by double digits, it still grew by an impressive 8.4% over the previous year. The main crops in the state are Rice, Maize and Pulses. The area under food grains in Andhra Pradesh grew by 4.21% to 41.30 lakh hectares in 2015-16 from 39.63 lakh hectares in 2014-15. The total production of foodgrains however decreased by 14.4% in 2015-16 to 137.56 lakh tonnes from 160.03 lakh tonnes in 2014-15. This decline was due to unfavourable seasonal conditions in some parts of the State. This resulted in a negative growth in agriculture sub-sector of the agriculture and allied sector. The overall positive growth was instead fuelled by the livestock, fisheries and horticulture sub-sectors.

Under the livestock sub-sector, increase in the production of Milk, Meat & Egg resulted in posting an encouraging growth rate of 11.2%; while the increase in the production of Marine fish and brackish water prawns helped to register a significant growth rate of 32.8% in Fishing Sector. Horticulture too grew impressively by 9.96% and contributed 5.6% to the overall GSDP of Andhra Pradesh. There is 14.74 Lakh Ha. area under Horticulture in Andhra Pradesh with production of 188.22 lakhs MTs.

The per capita income (at current prices) of Andhra Pradesh also rose by 12.38% in this time period from INR 95,689 in 2014-15 to INR 1,07,532 in 2015-16. However, as per the National Sample Survey Office (NSSO) of 68th Round (2011-12) the unemployment rate for Andhra Pradesh State for Rural and Urban sectors stood at 12% and 43% respectively. While the rural unemployment rate is lower than the corresponding figure for India (which is 17%), the urban unemployment is significantly higher than the national average which was 34%.

4. Environment Profile of State

Overview

Table: Summary of Geographical Profile	
State	Andhra Pradesh
Coordinates	Latitude: 12°41' and 19.07°N Longitude: 77° and 84°40'E
Regions	Coastal Andhra & Rayalaseema
Physiography	The State has three physiographic zones, the hilly region (having Nallamalai, Erramalai hills and the Eastern Ghats having an altitude of 500 to 1400 m); the plateau (having an altitude of 100 m to 1000 m) and the deltas of rivers (between the Eastern Ghats and the Sea Coast).
Districts	State has 13 districts viz., Anantapur; Chittoor; Kadapa; East Godavari; Guntur; Krishna; Kurnool; Sri Potti Sreeramulu; Nellore; Prakasam; Srikakulam; Visakhapatnam; Vizianagaram and West Godavari. Anantpur is the largest district of the state (7th largest district in India with an area of 19130 km ²).
Major cities	Visakhapatnam is the largest city in the state followed by Vijayawada. Other important cities and towns are Kakinada, Guntur, Rajahmundry, Tirupati, Nellore, Ongole, Kurnool and Eluru.
Coastline length	974 Km
Major Rivers	Krishna, Godavari, Tungabhadra
Climate	Maximum Temperature: 44.8°C during summers. Minimum Temperature: 11.3° C during winters
Geology	Andhra Pradesh is geologically unique and consists of Igneous, Volcanic, Metamorphic and Sedimentary formations range in age from most ancient (Archean) to recent(teriaries), and contain Peninsular gneissic complex, Dharwars, Eastern ghats, Cuddapah, Pakhal, Penganga, Bheema Kurnool (Palnadu,) Gondwana, Deccan traps,

General

Geographical area of Andhra Pradesh is 1, 62,440.1 km² which is 5.13 % of the landmass of the country. The state is one of the six states/ union territories of India adjoining the Bay of Bengal with a coastline of 974 km and continental shelf area of 33,227 sq. km. The average width of the productive continental shelf area is 32 km with rich pelagic and demersal fisheries. The continental shelf area narrows from north to south.

Drainage

Andhra Pradesh is popularly referred to as a "River State". Nearly 75% of the State territory is covered by the basins of three major rivers - Godavari, Krishna and Pennar and their tributaries. In addition, there are 17 other rivers like Sarada, Nagavali, Musi and other streams. The Godavari with its 1,464 km length, of which about 772 km lies within the State, is the longest and the broadest river in South India. Godavari, Krishna and Pennar are the 3 principal rivers of the State which drain into the Bay of Bengal. The River Godavari with its tributaries Pranahita, Manjeera, Maneru, Indravati, Kinnerasani, Pamuleru and Sileru, drains through the northern parts of the State into Bay of Bengal. The River Krishna with its tributaries Tungabhadra, Vedhavati, Hundri, Musi, Paleru and Munneru flows through the central parts of the State. The River Pennar, the third biggest river, with its tributaries Chitravati, Papaghni, Cheyyeru and Pincha drains through Rayalaseema region and Nellore district.

Geology and Mineral Resources

Andhra Pradesh is well known globally for variety of rocks & minerals and called as 'Ratna Garbha', a state endowed with variety of minerals. Many of the ancient travellers and historians have mentioned the ancient mining of Gold, diamond, base metals, precious stones etc. The tertiary and quaternary formations with different litho units / rocks contain host of industrial, non-industrial, metallic minerals. The geological formations of the project districts are: (1) The unclassified Archaean crystalline rocks are mainly granite but in the Eastern Ghats they comprise of granulite suites (khondalites and kodurites), (2) The Middle- Upper Proterozoic the Cuddapahs and its equivalents; (3) The Mesozoic coal bearing Gondwana strata, (4) Eocene lava flows (the Deccan traps) and (5) The semi-consolidated or unconsolidated tertiary and recent rocks.

Table: Estimated reserve for some key minerals		
Items	Units	Quantity
Coal	Million tonnes (MT)	17,146
Limestone	MT	35,179
Bauxite	MT	615
Barytes	MT	70
Beach Sands	MT	241
Gold (ore)	MT	12.10
Beach Sand	MT	241
Diamond	lakh carats	18.23
Granite	m ³	2,406
Coal	MT	17,146
Limestone	MT	35,179

Source:-Mines and Geology Department

The state of Andhra Pradesh is rich in minerals such as limestone (34%), coal (10%), mica(86%), Dolomites (11%), bauxite (40%), barytes (96%), clays (30%), heavy mineral beach sand (40%), manganese (10%), feldspar (11%), quartz, silica sand soapstone (16%), gold, diamonds (16%), uranium, oil and natural gas, iron ore, semi-precious stones, granite (40%), slates, limestone slabs, marbles, dimensional and building stones (40%).

- The State is first in Barytes, Limestone and Beach sand heavy Mineral deposits in the country.
- The State is well known for Gold, Diamond, Precious and Semi-precious stones occurrences over vast areas.
- There are huge deposits of Bauxite in East Godavari and Visakhapatnam districts.
- Krishna-Godavari on shore and off shore basin contain huge reserves of oil and natural gas.
- The State also contains huge uranium deposits in Kadapa and Nalgonda districts.
- Andhra Pradesh is only State in the entire Southern India which contains large deposits of Coal.
- The State also has number of scattered low grade iron ore deposits in Prakasam, Krishna, Khammam, Karimnagar, Kurnool and Kadapa districts.
- The State is well known for exclusive granite varieties viz., Chimakurthy Black Galaxy Granite, Srikakulam Blue, Khammam and Warangal Black granite Karimnagar Tan Brown etc.

Climate

The State experiences tropical climate with slight variations depending on the elevation and maritime influence which varies according to the three regions. Rainfall is received from both the South-West and North-East monsoons, predominantly the former, but precipitation varies across the State. The climate of Andhra Pradesh is generally hot and humid. The summer season in this state generally extends from March to June. During these months the moisture level is quite high. The coastal areas have higher temperatures than the other parts of the state. In summer, the temperature generally ranges between 20 °C and 40 °C.

The summer is followed by the monsoon season, which starts during July and continues till September. This is the season for heavy tropical rains in Andhra Pradesh. The major role in determining the climate of the state is played by South-West Monsoons. About one third of the total rainfall in Andhra Pradesh is brought by the North-East Monsoons around the month of October in the state. The winters in Andhra Pradesh are pleasant. This is the time when the state attracts most of its tourists. October to February are the winter months in Andhra Pradesh. Since the state has quite a long coastline the winters are comparatively mild. The range of winter temperatures is generally from 13 °C to 30 °C.

Forest Resources of the State

Table: District wise Forest cover (in Square Km) for the State of Andhra Pradesh.								
<i>(Source: AP Forest Department)</i>								
District	Geographic Area	Very Dense Forest	Mode. Dense Forest	Open Forest	Total	% of G.A.	Change	Scrub
Anantapur	19,130	0	73	353	426	2.23	-2	956
Chittoor	15,151	7	929	1,463	2,399	15.83	-3	1,566
East-Godawari(T)	10,807	72	2,519	970	3,561	32.95	-1	168
Guntur	11,391	0	219	644	863	7.58	-1	392
Cuddapah	15,359	9	1,898	1,502	3,409	22.2	-1	1,304
Krishna	8,727	0	83	230	313	3.59	0	2.14
Kurnool	17,658	59	1,331	741	2,131	12.07	-7	403
Nellore	13,076	5	261	671	937	7.17	-3	680
Prakasam	17,626	172	1,342	1,590	3,104	17.61	13	859
Srikakulam(T)	5,837	0	108	508	616	10.55	0	471
Vijainagaram(T)	6,539	0	145	604	749	11.45	0	352
Vishakapatnam(T)	11,161	0	2,054	1,391	3,445	30.87	0	1,071
West Godawari (T)	7,742	12	621	276	909	11.74	-1	28
Total	1,60,204	336	11,583	10,943	22,862	14.271	-6	8,252

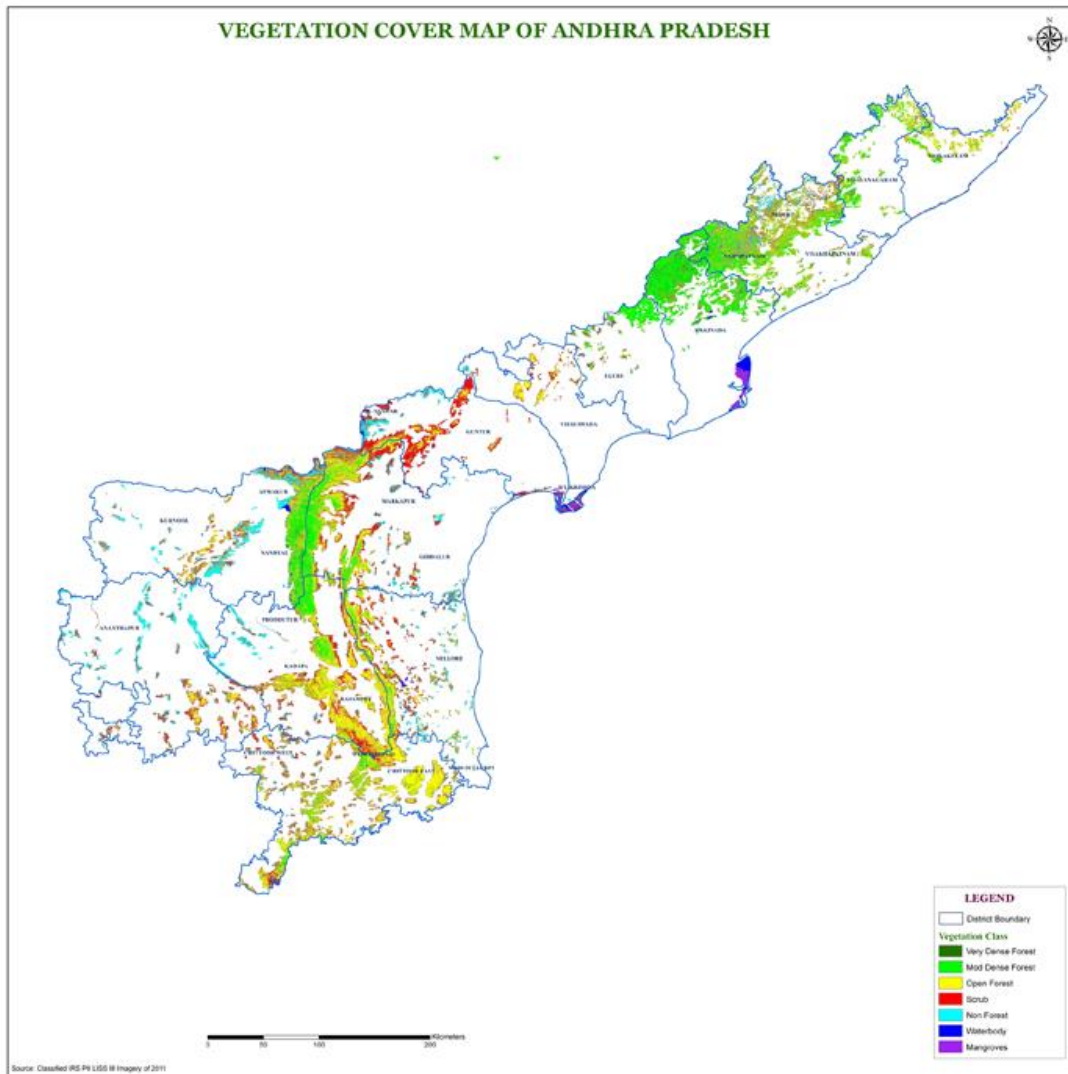


Figure: Vegetation map cover for the state of Andhra Pradesh. The figure identifies seven different categories indicated in the map in various colour patterns viz., very dense forest; moderately dense forest; open forest; scrub; non-forested area; water bodies and mangroves.

Protected Areas

Wildlife Sanctuaries and Zoological parks

Table: List of Wildlife Sanctuaries and Zoological Parks in the State of Andhra Pradesh		
Name	Location	Description
Indira Gandhi Zoological Park	Vishakhapatnam	The Indira Gandhi Zoological Park in Visakhapatnam is located on the national highway and covers an area of 250 hectares. This is the second largest zoological park in the state, after Hyderabad Zoo. It boasts of a rich collection of flora and fauna, including some exotic species of animals from Australia. The Park has more than 400 varieties of fauna. The main attraction of Indira Gandhi Zoological Park is undoubtedly the big cats, in particular the white tiger.
Kambalakonda Wildlife Sanctuary	On NH5 (surrounded by the Eastern Ghats on three sides and the Bay of Bengal on the fourth)	It houses Indira Gandhi Zoological Park. The park has almost eighty species with primates, carnivores, mammals, ungulates, reptiles and birds. These includes rhesus monkeys, baboons, panthers, tigers, wolves, hyenas, pythons, tortoises, monitor lizards, elephant, bison, sambar deer, peacocks, ducks and macaws.
Papikonda Wildlife Sanctuary	East and West Godavari Area	Located across an approximate area of 591 km ² in the East and West Godavari area. Fauna found in this sanctuary are tigers, panthers, gaur, cheetal, chowsingha, sambar, blackbuck, mouse deer, barking deer, sloth bears, wild hogs, hyenas, jackals, wild boar, marsh crocodiles and a variety of birds.
Coringa Wildlife Sanctuary	East Godavari District	Located across an approximate area of 236 km ² in the East Godavari area. It has the rare, endangered smooth Indian otter, fishing cat and estuarine crocodile. Other fauna are jackals, marine turtles, seagulls, storks, ducks and flamingos.
Krishna Wildlife Sanctuary	Krishna District	It is a wildlife sanctuary and estuary located in Krishna district of Andhra Pradesh. The sanctuary is home for reptiles like the garden lizard, the wall lizard, tortoises and snakes.
Rollapadu Wildlife Sanctuary	Kurnool District	It is a wildlife sanctuary located in Kurnool district of Andhra Pradesh in an area 6.14 km ² . It is the only habitat in the state for the rare and highly endangered great Indian bustard. The blackbuck, wolf, jackal, bonnet macaque, Russell's viper and cobra are also found.

Table: List of Wildlife Sanctuaries and Zoological Parks in the State of Andhra Pradesh

Sri Penusila Narasimha Wildlife Sanctuary	Nellore District	It covers an area of 1030.85 km ² is managed by the Andhra Pradesh Forest Department
Gundla Brahmeswara Wildlife Sanctuary	Kurnool and Prakasam District	It is located in Kurnool and Prakasam Districts of Andhra Pradesh. It covers an area of 1194 km ² is managed by the Andhra Pradesh Forest Department. The last surviving pristine forests of Nallamalai tract, it is rich in plants of ethno-botanical value.
Sri Lankamalleswara Wildlife Sanctuary	Kadapa District	It is located in Kadapa District of Andhra Pradesh. It covers an area of 464.42 km ² is managed by the Andhra Pradesh Forest Department

Table: List of Bird Sanctuaries in the State of Andhra Pradesh

Name	Location	Description
Atapaka Bird Sanctuary (Kolleru Wildlife Sanctuary)	West Godavari District	It is a largest freshwater lake located in West Godavari district of Andhra Pradesh. The sanctuary falls under Kaikalur Forest Range. It is one of the Ramsar convention wetland sites, spread over an area of 308.55 km ² .
Telineelapuram and Telukunchi Bird Sanctuaries	Srikakulam District	It is located in Srikakulam district of Andhra Pradesh. Every year, over 3,000 pelicans and painted storks visit from Siberia to these villages during September and stay until March.
Pulicat Lake Bird Sanctuary	Nellore District	It is a 481 km ² Protected area in Nellore District of Andhra Pradesh state. Pulicat Lake is the second largest brackish-water ecosystem in India managed by the Andhra Pradesh Forest Department and Tamil Nadu Forest Department. 108 km ² of this sanctuary is national park area.

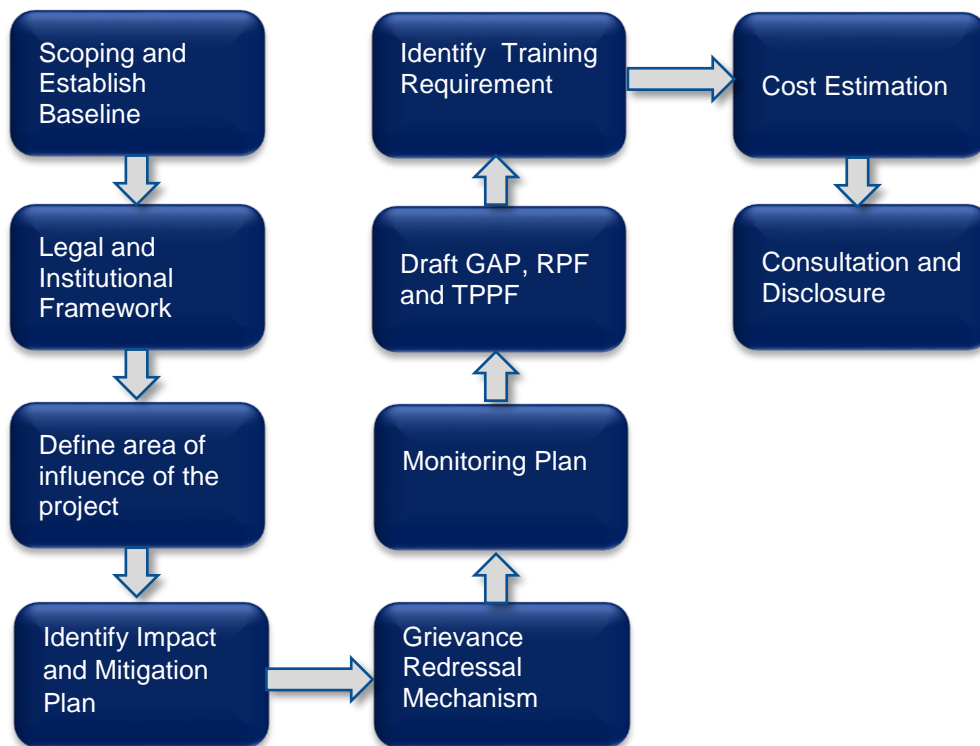
Historical and Cultural Sites

Table: List of Cultural Sites in the State of Andhra Pradesh		
Name	Location	Description
Undavalli Caves	Guntur	The Undavalli Caves , a monolithic example of Indian rock-cut architecture and one of the finest testimonials to ancient <i>viswakarma sthapathis</i> , are located in Undavalli of Guntur district in the Indian state of Andhra Pradesh. The caves are located 6 km south west from Vijayawada, 22 km north east of Guntur City of Andhra Pradesh.
Tirupati	Chittoor	Tirupati is a city in Chittoor district of the Indian state of Andhra Pradesh. It is a municipal corporation and the headquarters of Tirupati (urban) mandal, and of the Tirupati revenue division. As of 2011 census, it had a population of 374,260, making it the ninth most populous city in Andhra Pradesh. It is the seventh most urban agglomerated city in the state. Tirupati is considered one of the holiest Hindu pilgrimage sites because of Tirumala Venkateswara Temple, besides other historical temples, and is referred to as the "Spiritual Capital of Andhra Pradesh".

5. Approach and Methodology

The methodology to design the Environment and Social Management Framework is provided below:

Figure 2: Methodology



1) **Scoping and establishing baseline:** Detailed project specific activities planned by each utility for project implementation were identified and listed. This information was primarily collected from initial discussions with the identified project implementation team and from secondary data sources such as detailed project reports for each site, site survey and assessment sheets, identified investment planning and related project schedule plans provided by the utilities. At this stage, a generic socio-economic and environmental baseline was also established. The parameters for the social baseline were:

- Demography [age, ethnicity, gender, economic status, level of education, income level and employment]
- Land Use
- Access to basic infrastructure
- Household Asset/infrastructure

The parameters for environmental baseline were:

- Topography and Drainage
- Bio-diversity (flora and fauna)
- Soil Quality
- Atmospheric Emissions and Dust
- Surface Water
- Waste
- Noise
- Traffic and Transport
- Visual impact

2) ***Understand the laws and policies applicable to Environment and Social Assessments:***

India has a wide range of policies and regulations that are applicable to environmental and social issues. A desk review of applicable national and state level laws and regulations was undertaken to understand the applicability of these laws to the proposed projects. Additionally, the relevant guidelines by the state power utilities, for planning, construction and operations of the sub-stations and the transmission and distribution lines and the World Bank Safeguard Policies and the World Bank Environmental and Social Framework were also reviewed.

3) ***Define area of influence for each investment:*** The area of influence for each of the investment was identified.

4) ***Identify potential risks/impacts and develop mitigation plan for the construction phase and operations phase of the project:*** The socio-economic and environmental assessments were undertaken to identify the potential social and environmental impacts and define the mitigation plan. The proposed projects are likely to create impact on the environment in two distinct phases -during the construction phase, which may be regarded as temporary or short term; and during the operation phase that may be long-term effects.

5) ***Define the grievance redressal mechanism:*** The grievance redressal mechanism was described to provide channels to address any adverse impact not pre-empted by the ESMF and highlighted by the public.

6) ***Define monitoring plan and institutional arrangements for risk mitigation and grievance redressal:*** The monitoring plan was defined to ensure that risk mitigation measures defined in the previous step are implemented effectively.

- 7) **Define GAP, RPF and TPPF:** Gender Action Plan (GAP) was defined to ensure the gender specific needs (for both men and women) are considered while assessing and managing the impacts of the proposed investments.

The Resettlement Policy Framework (RPF): An RPF was designed to provide guidelines for resettlement and rehabilitation in cases where the land for projects is acquired from the community and may involve displacement of the population. The aim is to ensure that impacts due to displacement and relocation are effectively managed, proper compensation is provided to the dislocated population and the livelihood of the displaced population is restored.

Tribal Peoples Planning Framework (TPPF) was defined for the areas which may have some concentration of tribal population, to ensure proper management of any potential adverse impacts on the tribal population.

- 8) **Training and Capacity Building:** Training needs for the staff of implementing agencies were identified to ensure that the screening form is completed correctly, monitoring of the environment and social assessments is undertaken properly and the mitigation methods are implemented and monitored appropriately.
- 9) **Cost Estimates:** The costs incurred to implement the various requirements of the ESMF were budgeted. The broad cost estimates were provided for capacity building, training and implementation of the ESMF and mitigation measures.
- 10) **Consultation and Disclosure:** The affected communities and stakeholders will be consulted on the draft of the ESMF. It will ensure that sufficient time is provided to the stakeholder groups to participate in the consultations. Once the guidelines for environment and social management are finalized, the guidelines will be disclosed to the public.

6. Stakeholder Analysis

The purpose of stakeholder analysis is to identify the stakeholder groups which can affect or are directly/indirectly affected by the project activities. The analysis further maps the relationship between the stakeholder groups; defines their roles, responsibilities and interest in the project; and highlights the key expectations / concerns these stakeholders have with respect to the planned investments. The key stakeholder groups include:

- Government and regulatory agencies at national and state level which define the legal and regulatory framework within which the project will operate.
- Multilateral agencies such as the World Bank and Asian Development Bank that fund power projects.
- Power sector utilities in Andhra Pradesh which are implementing the project.
- Different government departments at state and district level whose permission and support is required to undertake various project activities like cutting trees and digging roads to lay the overhead and underground lines respectively, securing land for construction of substations and transmission and distribution towers, distributing compensation for RoW and damage to trees and crops.
- Panchayats and municipal corporations at the village/city level whose permission and support is required to undertake various activities. The panchayats and municipal corporations also provide a platform for the people to raise their grievances.
- Public and Private sector companies like BSNL and Reliance who have their own underground cabling network
- Non-government organisations (NGOs), community based organisations (CBOs) like resident welfare associations and informal groups like women's group, farmer's group which provide platform to raise the concerns of the community and vulnerable groups like women, SC and ST. This stakeholder group also act as channel to undertake public consultations on the project design, planning and implementation and provides a platform for grievance redressal.
- Commercial and residential complexes, and communities which are the end-beneficiaries of the project and are also receptors of various intended and unintended externalities of the project like noise and water pollution, damage of crop/trees etc.
- Vulnerable groups like women, SCs and STs

The detailed mapping of stakeholders is provided in Table 1.

Table 1: Stakeholder Mapping

Stakeholder	Role/Responsibility/interest	Expectations / Issues / Concerns
National Level		
Ministry of Power (MoP)	The Ministry is primarily responsible for development of electrical energy in India. MoP lays down the legal and regulatory framework for the electrical energy sector. Note: Electricity is a concurrent subject.	<ul style="list-style-type: none"> Proposed projects support the MoP aim to ensure 24X7 power supply in the country Andhra Pradesh is one the first 3 states where 24X7 power for all (PFA) project is being rolled out. The learnings and best practices from implementation in Andhra Pradesh will guide the roll out of 24x7 PFA in other states.
Multilateral Agencies	Agencies like the World Bank, ADB and GIZ fund power projects in the State. In addition they provide technical advisory services to the projects and prescribe environment and social safeguard policies.	<ul style="list-style-type: none"> Social impacts on vulnerable groups including indigenous people are avoided, minimised, or mitigated Environmental impacts are minimal Projects are cleared and completed on time
Ministry of Tribal Affairs	The Ministry is the nodal agency for overall policy, planning and coordination of the programmes for development of Scheduled Tribes (ST). The ministry notifies the tribal areas and also enacts laws like Forest Rights Act 2006 to protect the rights of the ST.	<ul style="list-style-type: none"> Protection of rights of tribal / indigenous persons Access to reliable electricity for tribals
National Highway Authority of India (NHAI)	NHAI was constituted by an act of Parliament and is responsible for development, maintenance and management of National Highways entrusted to it. It provides permission to dig highway or construct along the highways (within the margin as approved during highway design).	<ul style="list-style-type: none"> Road surface is not damaged due to construction work Compensation for repairing road surface when underground cabling crosses highways Minimal disruption of traffic movement
Ministry of Railway	The ministry is responsible for development, maintenance and management of the country's rail network. It provides permission to dig (for UG cabling) or construct (for substations and overhead cabling) on	<ul style="list-style-type: none"> Transmission towers / lines are at least 8 km distance from the railway signal lines to prevent disruption in signalling Minimal disruption of rail services

Stakeholder	Role/Responsibility/interest	Expectations / Issues / Concerns
	or along the railway property including rail tracks and stations.	<ul style="list-style-type: none"> • Compensation for loss of income due to stoppage of rail services
State Level		
Andhra Pradesh Electricity Regulatory Commission (APERC)	APERC was constituted under the A.P. Electricity Reform Act, 1998 and is primarily tasked to improve the functionality of the power sector in the state. The commission formulates and enact regulations on important aspects of electric supply to consumers. The commission also issues licenses to the Transmission Corporation of Andhra Pradesh Limited (APTRANSCO), distribution companies and rural electric cooperatives in the state	<ul style="list-style-type: none"> • The distribution utilities provide services (supply of electricity, fulfilling of demand, tariff, accident compensation etc.) at least at the minimum applicable standard of performance • The utilities complete project activities within the timelines and consented tariffs.
APTRANSCO	APTRANSCO is responsible for power transmission from power plants and power grids to distribution companies.	<ul style="list-style-type: none"> • Ensuring 24X7 power supply in the State & minimization of transmission losses • Ensuring requisite clearances / permissions are obtained and projects are completed on time
APSPDCL, APEPDCL	APSPDCL and APEPDCL are the distribution companies responsible for distributing power to end-consumers like households, industry and agricultural farms	<ul style="list-style-type: none"> • One of the key performance indicators for SPDCL and EPDCL this year is reduction of AT&C losses to single digit from the current 14%. Planned activities like HVDS under the proposed projects will help in reducing AT&C losses • The APREC standards of performance are met in the proposed projects
Andhra Pradesh Forest Department (APFD)	APFD is one of the nodal departments dealing with forest conservation and environmental management of the State. Their permission is required for any construction or cutting of trees in the forest area.	<ul style="list-style-type: none"> • Ensuring the protection of forest land and wildlife habitats • Where it is not possible to avoid forest land, ensuring that:

Stakeholder	Role/Responsibility/interest	Expectations / Issues / Concerns
		<ul style="list-style-type: none"> - Compensation is received as per relevant National or State law. In Andhra Pradesh 2 times the land used for a project has to be given to the forest department - The towers / lines do not harm wildlife. If required, utilities are asked to fence off towers / substations
Department of Revenue	Department of Revenue manages functions related to the matters of Government land, excise, commercial tax, land and property registrations, surveys and settlements, endowments and so on. The department will help in securing land for projects and will also help in deciding the compensations for land and RoW where applicable.	<ul style="list-style-type: none"> • Ensuring that the land requested for transmission / distribution projects is for public purpose • Ensuring that there is no dispute over ownership of land allotted for projects • Setting compensation as per relevant National/State laws • Ensuring that allotted land is used for stated purposes
Andhra Pradesh Land Management Authority (APLMA)	APLMA was constituted by Government of Andhra Pradesh through a Government Order (G.O. Ms. No. 571 dated 14 September 2012) issued by the Revenue Department. The role of the ALMA is to manage allotment of Government lands for public purposes.	<ul style="list-style-type: none"> • Government land allotted for transmission / distribution projects has received an NOC from the Urban Local Body or Urban Development Authority or Directorate of Town and Country Planning • Only that extent of land is allotted for the project that is stipulated by the C.E.A for power projects • Environmentally sensitive and fragile lands are not allotted • Allotted Government land is utilized for stated purposes and prime land is put to the optimum use. For this land may be re-allotted if needed
Department of Agriculture,	Department of Agriculture is responsible for State policies and programmes aimed at achieving	<ul style="list-style-type: none"> • Compensation for crop damage is paid as per the relevant National or State law

Stakeholder	Role/Responsibility/interest	Expectations / Issues / Concerns
Government of Andhra Pradesh	agricultural growth. The department helps in deciding crop compensation in case project activities result in any crop damage.	
Department of Horticulture	Department of Horticulture is responsible for state policies and programmes aimed at achieving horticulture growth. Permission is required from the department to cut/prune any Tree.	<ul style="list-style-type: none"> • Compensation for tree damage is paid as per relevant law
Water Resources Department (Department of Irrigation)	The department caters to the irrigation needs of the state. The permission from the department is required in case the project activities can potentially damage or obstruct any water way	<ul style="list-style-type: none"> • Ensuring that irrigation canals / tanks / water bodies are not damaged, polluted, or in any way affected by the construction of towers or substations • The water ways are not blocked
Andhra Pradesh Capital Region Development Authority	The authority was established by Act No. 11 of 2014 in Andhra Pradesh. The authority has been established for the purpose of planning, coordination, execution, supervision, financing, funding and for promoting and securing the planned development of the Capital Region Development Area, undertaking the construction of the new capital for the state of Andhra Pradesh and for managing and supervising urban services in the new capital area.	<ul style="list-style-type: none"> • Sufficient and reliable electricity supply in the new capital
Roads and Buildings Department	The Roads & Buildings department is responsible for the construction and maintenance of the State Principal Road Network including National highways (on behalf of Govt. of India), State Highways and Major District Roads and assigned buildings of various Departments under the control of State Government. It provides permission to dig highways/roads or construct along the highways/roads (within the margin as approved during highway design).	<ul style="list-style-type: none"> • Minimum damage to the roads and highways during the construction of substations, erection of towers and laying of cables. • Utilities pay appropriate compensation for any unavoidable damage.

Stakeholder	Role/Responsibility/interest	Expectations / Issues / Concerns
Power & Telecommunication Coordination Committee (PTCC)	Central standing committee for coordination of Power and Telecommunication system. The committee was formed by Government of India in the year 1949. The role of the committee is to deal with route approval for all new power lines. The clearance of this committee is required before energization of new power lines of 11KV and above, which is given after clearances from Railway/Telecom having lines in the area.	<ul style="list-style-type: none"> Proposed projects do not cause any induction / noise / disruption in existing communication and signal networks of telecommunication companies, defence and railways That utilities have considered worst fault conditions in the proposed route and included appropriate mitigation measures in their plan
Implementation Level (District / City / Village)		
District Collector / District Magistrate District administration – District Collectors /District Magistrate / tahsildars at block level	The district officials of the revenue department help in securing land for projects and in deciding the compensations for land and RoW where applicable. They also support regular co-ordination / consultation between implementation agency and projected affected persons for early resolution of grievances & conflict management.	<ul style="list-style-type: none"> Effective utilization of land – minimum land required should be used and minimum number of people should be affected
Regional and local office of APTRANSCO	<ul style="list-style-type: none"> Undertake activities like construction, operations and maintenance of substations, towers and lines Undertake pre-construction activities like site selection and route alignment 	<ul style="list-style-type: none"> Securing land and negotiating Right of Way Ensuring transmission lines do not pass through forest areas as receiving clearances take over a year Ensuring timely completion of projects by contractors
Local offices APSPDCL / APEPDCL	<ul style="list-style-type: none"> Undertake activities like construction, operations and maintenance of substations, poles and lines Undertake pre-construction activities like site selection and route alignment First level to receive grievances from end-consumers 	<ul style="list-style-type: none"> Ensuring reduction in AT&C losses as per targets set by the Corporate Office Increase in accidents due to shift to High Voltage Distribution System Handling objections from shop owners when distribution transformers are placed in front of their shops

Stakeholder	Role/Responsibility/interest	Expectations / Issues / Concerns
		<ul style="list-style-type: none"> • Handling objections from house owners if distribution lines are close to their property • Ensuring timely completion of projects by contractors
Contractors and suppliers	Responsible for constructing substations, towers and lines in line with contract signed with utilities and supplying various equipment and other material required for construction and maintenance	<ul style="list-style-type: none"> • Timely payment of fees • Required approvals clearances from different departments are in place • Right of Way has been secured • Land for substations has been secured • There are no disturbances from communities during construction
Panchayats / Gram Sabha	These are the local governance bodies at village level. Their permission is required to undertake any activity in the village including securing land. They also provide a channel to the project affected persons to raise their grievances.	<ul style="list-style-type: none"> • Reliable electricity supply to village • Appropriate permissions / clearances have been taken • Land owners have been consulted & appropriate compensation paid
Police Department	The police department is responsible for maintaining law and order in their jurisdiction. Police supports the project activities by regulating the traffic flow (especially in congested areas) during the construction and maintenance phases.	<ul style="list-style-type: none"> • Contractors / utilities have requisite approvals / permissions / clearances for the proposed work • Prior notification is given before work where road traffic will be disrupted so that arrangements can be made • There are no protests / disputes related to land where the work is being undertaken
Municipal Corporations/Urban Development Authorities	These are the local governance bodies at city/town level. Their permission is required to undertake any activity in the village including securing land. They also provide a channel to the project affected persons to raise their grievances.	<ul style="list-style-type: none"> • Utility has required permissions / clearances for use of land

Stakeholder	Role/Responsibility/interest	Expectations / Issues / Concerns
NGO's and citizen's collectives like RWAs	They provide a platform to raise concerns of the community and vulnerable groups like women, SC and ST. This stakeholder group also act as channel to undertake public consultations on the project design, planning and implementation and provides a platform for grievance redressal.	<ul style="list-style-type: none"> • Rights of vulnerable groups are protected and they can participate in the benefits from the project • Environmental impacts of projects are taken into consideration • Grievances of affected people are heard and appropriately handled by the utilities
Informal groups	Local community leaders, elders, community groups, women groups provide platform to inform the general public about the project activities, undertake public consultations and grievance redressal.	<ul style="list-style-type: none"> • The people are informed in advance about any proposed project • Environmental and social impacts of projects are taken into consideration • Grievances of affected people are heard and appropriately handled by the utilities
Commercial and Residential complexes/societies	Commercial and Residential complexes/societies are end-beneficiaries of the project and are also receptors of various intended and unintended externalities of the project like noise and water pollution, damage of crop/trees etc.	<ul style="list-style-type: none"> • Access to 24 X 7 power supply at sufficient voltage levels • Project does not cause disruptions to business and block access to commercial / residential properties • Minimization of disturbances during construction including noise and air pollution as well as access to roads, movement of traffic etc.
Communities and families	Communities and families are the end-beneficiaries of the project and are also receptors of various intended and unintended externalities of the project like noise and water pollution, damage of crop/trees etc.	<ul style="list-style-type: none"> • Access to 24 X 7 power supply at sufficient voltage levels • Minimization of losses / theft • Minimization of disturbances during construction including noise and air pollution as well as access to roads, movement of traffic etc.
Vulnerable groups: Minorities / Scheduled Castes	The adverse effects of the project activities, if any, are more pronounced on the vulnerable groups in the society. Therefore, it is essential to understand	<ul style="list-style-type: none"> • Access to reliable 24 X 7 power supply • Ensuring adequate compensation is paid in case

Stakeholder	Role/Responsibility/interest	Expectations / Issues / Concerns
	<p>how the project activities specifically impact these groups.</p>	<p>their land is used for construction of towers / substation</p> <ul style="list-style-type: none"> • The forums for public consultations and grievance redressal should ensure that vulnerable groups are heard and their views/problems are adequately addressed.
Women	<ul style="list-style-type: none"> • May be affected during the construction phase of the proposed projects • End-consumer of electricity 	<ul style="list-style-type: none"> • Access to reliable electricity supply in houses • Public and open spaces are properly lit during night time • Ensuring that compensation is paid to women when the land is in their name • Blockage of access roads during construction phase • Ensuring safety of women during the construction phase
Scheduled Tribes	<ul style="list-style-type: none"> • May be affected if transmission towers / lines and / or substations pass through their lands • End-consumer of electricity 	<ul style="list-style-type: none"> • Access to electricity • Restriction on use of lands due to erection of transmission towers / substation • Protection of community lands / forests
Farmers	<ul style="list-style-type: none"> • May be affected if their land is in line of transmission towers / substations • End-consumer of electricity 	<ul style="list-style-type: none"> • Restriction on use of land due to erection of transmission towers / substation on their property. • Adequate compensation for damage to land / crops during construction • Adequate compensation for land under tower footing area • Decrease in sale value of land due to erection or transmission tower on their property • Impact on their income and livelihood

In addition to stakeholders identified above, the utilities require permissions and licenses from following administrative authorities:

S.No	Enforcement Agencies	Overview
1.	Ministry of Environment and Forests (MoEF)	<p>MoEF is the nodal agency in the administrative structure of the central government responsible for planning and overseeing the implementation of environmental and forestry programs and policies.</p> <p>The specific functions of the MoEF are Environmental policy planning; effective implementation of legislation; monitoring and control of pollution; environmental clearances for industrial and development projects covered under EIA notification; Promotion of environmental education, training and awareness; forest conservation, development and wildlife protection.</p> <p>The MoEF is responsible for the implementation and enforcement of the Environmental Protection Act, 1986 (EPA), and Rules issued under the Act, including the EIA notification. Under Section 3 and Section 5 of the EPA, MoEF has powers to issue directions in the interest of environmental protection.</p> <p>The project activities will require permissions from MoEF in case the transmission line corridor passes through any protected areas or coastal zone coming under CRZ.</p>
2	Central Pollution Control Board (CPCB)	<p>The CPCB is a statutory organization under the Ministry of Environment and Forests. It is the apex organization in country in the field of pollution control, as a technical wing of MoEF. It has been created for the control of water, air and noise pollution, land degradation, hazardous substances and waste management.</p>
3	Andhra Pradesh Pollution Control Board (APPCB)	<p>APPCB is a statutory authority constituted in the year 1976 and entrusted to control pollution from any activities in the state as well as to implement environmental laws and rules within the jurisdiction of the state of Andhra Pradesh. APPCB also provides advisory support to the department of environment in the states on environmental policy matters. It implements and enforces the policies of the department of environment in addition to those formulated by the Ministry of Environment and Forests (MoEF). The project activities will be monitored by APPCB with respect to any environmental emissions/discharges.</p>

S.No	Enforcement Agencies	Overview
4	Andhra Pradesh Forest Department (APFD)	APFD is one of the nodal departments dealing with forest conservation and environmental management of the State level and is headed by the Principal Chief Conservator of Forests (PCCF). The PCCF is supported by divisional forest offices for all matters related to diversion of forest land and management of forest in the divisions within the state.
5	Petroleum and Explosives Safety Organisation (PESO)	<p>PESO is under the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India. The Chief controller of Explosives is responsible to deal with the provisions of :</p> <ul style="list-style-type: none"> - The Explosives Act 1884 and Rules 1883; - The Petroleum Act 1934 and Rules 2002; - The Static and Mobile Pressure Vessel (unfired) Rules 1981 and amendment 2000 and 2004; - Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 and amendments thereafter 2000. <p>For setting up transmission tower foundations in rocky areas, explosives might be used for excavation which requires prior approval from PESO.</p>
6	Transport Department, Government of Andhra Pradesh	Transport department is established for the enforcement of provisions of the Central Motor Vehicles Act, 1988 and Rules 1989. The transport department is responsible for management of traffic on roads and compliance of requirement for freight of hazardous goods including flammable hazardous petroleum products as per safety codes and safety requirements laid down in Central Motor Vehicle Rules (CMVR).

The next section maps the positive and negative social impacts of the proposed projects on the stakeholder groups identified above.

7. Social Impact & Mitigation Methods

7.1 Social Impacts

This section identifies the potential intended and unintended impacts of the proposed projects on the communities around the project sites. The section further disaggregates the impacts on vulnerable population including farmers, women, Scheduled Castes (SC), Scheduled Tribes (ST) and minorities. The impact can result from activities throughout the project life-cycle from project design, construction, operations and maintenance to decommissioning stages. The major social impacts of the project are identified below.

Positive impacts

- **Improved and reliable power supply:** Andhra Pradesh is one of the few states in India to provide 100% rural electrification². However, about 18.4%³ of rural households do not have electricity connections in Andhra Pradesh. The proposed project aims to ensure 24x7 power for all. Furthermore, the focus of the activities planned under the project is also to provide power at consistent voltage (at least 220V for household consumption), thereby reducing dependence on other sources of energy.

Replacing LVDS systems by HVDS, as planned under the proposed projects, will ensure that even the last farmer/power pump connected on the power line receives reliable voltage.

- **Energy Conservation:** One of the proposed investments is to replace the existing irrigation pump sets in Andhra Pradesh with energy efficient pump sets which will help conserve electricity.
- **Increased social inclusion:** As per the rural electrification plan of the state of Andhra Pradesh dated July 2011, there are about 11 lakh rural households without an electricity connection in the State of which BPL households constitute 46%⁴. The proposed projects will support the GoAP's effort to reach these un-electrified rural households and bridge urban-rural divide in access to electricity. As per Piyush Goyal, Union Minister of Power, "Electricity consumption is one of the most important indices that decide the development level of a nation. The per capita consumption of electricity in FY 2012-13 was 917 units, which is around 20% of that in China or 5% of the level in USA. The Government of India is committed to improving the quality of life of its citizens through

² http://www.cea.nic.in/reports/monthly/dpd_div_rep/village_electrification.pdf

³ www.ap.gov.in/wp-content/uploads/2016/01/12-AP-Households.pdf

⁴ Rural Electrification Plan of the State of Andhra Pradesh (2011). Energy Department, Gazette Notification

higher electricity consumption. This joint initiative of Government of India and Government of Andhra Pradesh aims to enhance the satisfaction levels of the consumers and improve the quality of life of people through 24x7 power supply. This would lead to rapid economic development of the state in primary, secondary & tertiary sectors resulting in inclusive development of the State”⁵.

- **Improved quality of life:** One of the planned activities is to install mobile controlled switch on/Switch off mechanism on irrigation pump sets. Currently, the rural feeders receive electricity for around 7 hours every night. Using mobile phones to remotely switching-on/off the pump sets will ensure that farmers do not have to travel to their farms during the night to irrigate the fields, thereby improving their quality of life.

Additionally, access to electricity would reduce the time spent by women on household activities which will entail availability of more time for other activities including caring for their own health.

- **Positive impact for women and girls:** As per the working paper on Energy, Gender and Development of the World Bank 2011, the literature on gender and energy suggests that providing electricity to communities and homes and motive power for tasks considered women’s work can promote gender equality, women’s empowerment, and women’s and girls’ access to education, health care, and employment. Most gender benefits of providing electricity and motive power occur because women tend to spend more time at home, are responsible for household chores that can be carried out more productively with electricity, and because certain tasks that are culturally defined as women’s work can benefit from motive power.⁶
- **Increased economic activity:** As per Mr. Chandrababu Naidu, Chief Minister of Andhra Pradesh, “power sector is a critical infrastructure element required for the smooth functioning of the economy. An efficient, resilient and financially healthy power sector is essential for growth and poverty reduction. The availability of reliable, quality and affordable power helps in the rapid agricultural, industrial and overall economic development of the state”⁷.

⁵ Power for All, A joint initiative of Government of India and Government of Andhra Pradesh. Available at: http://powermin.nic.in/upload/pdf/joint_initiative_of_govt_of_india_and_andhrapradesh.pdf

⁶ Kohlin, G., Pattanayak, S., Sills, E., Wilfong, C. (2011), *Energy, Gender and Development: What are the linkages? Where is the Evidence?*, Social Development Papers, A background paper for the World Development Report 2012 on Gender Equality and Development, Paper no. 125.

⁷ Power for All, A joint initiative of Government of India and Government of Andhra Pradesh. Available at: http://powermin.nic.in/upload/pdf/joint_initiative_of_govt_of_india_and_andhrapradesh.pdf

The energy deficit in Andhra Pradesh was 17.6% during 2012-13 as against the all India average of 8.7%⁸. To meet the deficit, the power transmission and distribution networks need to be strengthened, in addition to increased generation capacity. The proposed projects aim to strengthen the power system and augment its capacity to meet the future requirement of electricity by the domestic users, commercial and industrial users and for irrigation purposes.

- **Employment creation:** Due to the power deficit, industries in Andhra Pradesh have suffered load shedding of up to 40% of their demand (3 days a week power holiday) in recent years⁹. Due to this, some of the existing industries have shifted their operations from the state¹⁰ resulting in loss of employment. Reliable supply of electricity will attract industry and create industrial jobs.

Additionally, as per, rural electrification plan of the state of Andhra Pradesh dated July 2011, one acre of assured irrigation results in 100 man-days of potential employment¹¹. The proposed HVDS work will ensure reliable electricity supply for agricultural purposes, thereby ensuring assured irrigation and creating employment.

Negative impacts

- **Securing land:** Land is required to undertake various project activities like construction of sub-stations, erection of transmission towers and laying of underground and overhead transmission and distribution lines. Land for the project can be secured in four different ways:
 - (i) Transfer of Government land to utility
 - (ii) Voluntary donation
 - (iii) Purchase of land on willing buyer and willing seller basis on negotiated price
 - (iv) Involuntary acquisition of land

In all the four cases, there might be changes in the land use pattern in case the site identified for the project is currently being used for some other purposes. Specific examples of impact include:

- *Loss of land:* There is loss of land during setting up substations. The land requirement for setting-up substation:

⁸ White paper on power sector in Andhra Pradesh. Available at: http://ap.meeseva.gov.in/DeptPortal/Download-lat/White%20Paper%20on%20AP%20Power%20Sector_V10.pdf

⁹ Power for All, A joint initiative of Government of India and Government of Andhra Pradesh. Available at: http://powermin.nic.in/upload/pdf/joint_initiative_of_govt_of_india_and_andhrapradesh.pdf

¹⁰ White paper on power sector in Andhra Pradesh. Available at: http://ap.meeseva.gov.in/DeptPortal/Download-lat/White%20Paper%20on%20AP%20Power%20Sector_V10.pdf

¹¹ Rural Electrification Plan of the State of Andhra Pradesh (2011). Energy Department, Gazette Notification

Voltage	Land required Sub-station ¹²
132/33 KV and 220/33 KV	5 acres
33/11KV	0.5 acres

*As per information received from Utilities

Note: The land for the proposed investments in APTRANSCO has been secured either from the discoms where they have provided extra land in their existing substations to APTRANSCO or government land has been identified. The status of sites for the proposed 12 substations as on 5th May 2016 is provided below:

Method of securing land	No. of substations
Extra land available in existing substations	4
Secured after transfer of payment to government	1
Identified government land – approved	3
Government land Identified – approval in-process	1
Yet to be identified (proposed through transfer of government land)	3

- **It should be noted that as stated earlier, for the proposed transmission and distribution projects no involuntary acquisition is required for securing land and the projects will not result in any physical or economic displacement of people.**
- **Restricted use of land and RoW:** The MoEF guidelines mandate utilities to maintain right of way corridors:

Voltage	Width of RoW* (in meters)
220 KV	35
132 KV	27
33 KV	15
11 KV	7

*Width of Right of Way is as per MoEF guidelines dated May 2014

In the width of the RoW trees are cut or pruned to the extent required for preventing electrical hazards by maintaining the following:

Voltage	Minimum clearance between conductor and trees (in meters)
220 KV	4.6
132 KV	4.0
33 KV	2.8
11 KV	2.6

¹² Reference manuals on construction and operational practices of EHV substations & lines and commercial and load dispatch operations. Available at: <http://www.aptransco.gov.in/transco/images/APTRANSCO-Technical-reference-book-2011-vol-ii.pdf>

- *Change in land use:* Sometimes government land is also leased out for some other activity. That land has to be reclaimed for construction of sub-stations and towers. In cases where private land is secured, the land will no longer be available for activities like agriculture and horticulture.

Additionally, in some instances land may be in-use for housing, schools and hospitals.

- *Reduction in value of farm land:* There is a decrease in value of land around the substations. As an instance, the value of land around the substation in Nellore decreased from INR 10-12 lakhs per acre to INR 4-5 lakhs per acre.

- **Impact on community health and safety:** The communities close to transmission and distribution lines face health and safety concerns. The safety concerns for Electric Power Transmission and Distribution are highlighted below:

- *Exposure to electric and magnetic fields (EMF):* Electric and magnetic fields are produced by voltage and current respectively. Although there is public and scientific concern over the potential health effects associated with EMF, there is no empirical data demonstrating adverse health effects from exposure to typical EMF levels from power transmission lines and equipment.¹³
- *Exposure to hazardous material:* Communities and people in close vicinity of the transmission and distribution equipment like transformers are at risk of exposure to insulating oils and gases like Polychlorinated Biphenyls [PCB] and Sulfur Hexafluoride [SF6] in addition to the pesticides used for clearing vegetation in the right of way corridor.
- *Noise:* Transformers and high voltage power lines create buzzing or humming sound, which can be a nuisance. However, the noise produced by power lines or transformers do not cause any known health risk.¹⁴
- *Electric shocks and electrocution:* The electric voltage higher than 11kV pose serious threat of electrocution to humans, transmission lines carry very high voltages to the tune of 220kV (and 132kV) and can be fatal. Furthermore, electric charge can travel through induction and hence poses threat to high rise structures, even when they are not in direct contact with live wire.
- *Electromagnetic Interference:* The overhead transmission and distribution lines might create interference with radio and cell phone signals through mutual induction.

¹³ IFC's Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution. Available at: <http://www.ifc.org/wps/wcm/connect/554e8d80488658e4b76af76a6515bb18/Final+-+General+EHS+Guidelines.pdf?MOD=AJPERES>

¹⁴ IFC's Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution. Available at: <http://www.ifc.org/wps/wcm/connect/554e8d80488658e4b76af76a6515bb18/Final+-+General+EHS+Guidelines.pdf?MOD=AJPERES>

- **Impact on Workers / employees health and safety:** The workers and employees face health and safety concerns as highlighted below:
 - *Live power lines:* Field staff such as linemen are exposed to the threat of electric shock and electrocution from contact with live wires during the construction, operation and maintenance activities.
 - *Working at height:* Workers and field staff are at risk of falling from heights while working at elevation during the construction, operation and maintenance activities.
 - *Electric and magnetic fields:* Electric utility workers typically have a higher exposure to EMF than the general public due to working in proximity to electric power lines.¹⁵ Some studies have suggested a possible association between occupational exposure to EMF and cancer indicating there is evidence to warrant limited concern
 - *Exposure to chemicals:* Workers are at risk of exposure to chemicals during handling of pesticides used for right-of-way maintenance and polychlorinated biphenyls (PCB) in transformer oil and other electrical components.

- **Impact on vulnerable populations**
 - *Women:* The proposed investments could increase the security risk for women specifically during the construction phase when there will be an increased movement of strangers in the area and also due to the blockage of access roads. The Gender Action Plan annexed with this document provides a detailed mapping of potential positive and negative impacts on women and girls.
 - *Tribal population:* The impacts of the proposed investments on tribal population are of a similar nature to those identified for the rest of population in this document. However the extent of the impacts may vary owing to the socio-economic position of tribal persons in villages. The tribal population living in protected and reserved forest areas is at a heightened risk because of dependence of their livelihoods on forest resources like trees, which may be cut or pruned to undertake project activities.
 - *Scheduled Castes and Minorities:* The impacts of the proposed investments on minorities and SCs are of a similar nature to those identified for the rest of population in this document. However, the extent of the impacts may vary owing to the vulnerable socio-economic position of these communities.
 - *Farmers:* Crops and trees are may be damaged during the construction phase and also for the maintenance of the RoW. Also, the value of agricultural land may decrease if it is in the immediate proximity of sub-stations or has transmission towers on it. This

¹⁵ IFC's Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution. Available at: <http://www.ifc.org/wps/wcm/connect/554e8d80488658e4b76af76a6515bb18/Final+-+General+EHS+Guidelines.pdf?MOD=AJPERES>

poses a serious economic cost and livelihood loss for small and marginal farmers (land holding less than 5 acres).

- **Cultural Heritage:** One of the activities in the proposed investments is to convert overhead lines to under-ground lines near sites of cultural, heritage and religious importance. Damage could potentially be caused to the sites during the construction, operations and maintenance phases while digging up for laying and maintaining underground cables.
- **Interference with communication channels:** The electrical interference with railway, defence and telecommunication lines and signals due to mutual induction poses the risk of disruption to noise-free communication for these critical establishments.

7.2 Policy and Legal Framework-Social

The management and mitigation of the social impacts identified above will be carried out in accordance with relevant national laws, rules and policies as well international standards and guidelines. The table below provides an overview of those legal and regulatory provisions that are potentially applicable to this project. Based on this framework, the impact management and mitigation framework has been developed in the subsequent section.

	Act / Rules / Policies	Applicability
<i>Laws of the Land</i>		
1	The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act (RFCTLARRA), 2013	<p>RFCTLARRA, 2013 has been introduced to ensure a “humane, participative, informed and transparent process for land acquisition...with the least disturbance to the owners of the land and other affected families and to provide just and fair compensation to the affected families whose land has been acquired...”</p> <p>In line with this, Chapter II Section 4 (1) requires the Appropriate Government who intends to acquire the land to consult the concerned village / ward level body and carry out a Social Impact Assessment study in consultation with them. Further Chapter II Section 8 (1) of the Act, states that the Appropriate Government shall ensure that-</p> <ul style="list-style-type: none"> (a) There is a legitimate & bona fide public purpose which necessitates the acquisition (b) The potential benefits & the public purpose shall outweigh the social costs & adverse social impact as determined by the Social Impact Assessment (c) Only the minimum area of land required for projects is proposed to be acquired (d) There is not unutilized land which has been previously acquired in the area (e) Any land acquired earlier and remaining unutilized is used for the public purpose

	Act / Rules / Policies	Applicability
		<p>Chapter IV Section 28 specifies the compensation for land acquired under the Act once it has fulfilled the above conditions. To determine the compensation the Collector shall take into account:</p> <ul style="list-style-type: none"> (i) The market value of the land (determined as per provisions of Section 26 in accordance with the First and Second Schedule of the Act) (ii) The damage sustained by the person interested due to the taking of any standing crops and trees on the land at the time of possession by the Collector (iii) The damage (if any) sustained due to the severing of the land from other land (iv) The damage sustained (if any) by reason of the acquisition injuriously affecting the other property or earnings of the interested party (v) Reasonable expenses incidental to the interested party having to change residence or place of business (vi) The damage (if any) bona fide resulting from diminution of the profits of the land between the time of notification and the time of possession (vii) Any other ground that may be in the interest of equity, justice and beneficial to the affected families <p>Further, as per Chapter IV Section 30, a Solatium equivalent to 100% of the compensation amount shall be awarded over and above the compensation payable</p> <p>In addition to the compensation for acquisition of land, Chapter V provides for Rehabilitation and Resettlement Awards for each affected family in line with the terms of entitlement specified in the Second Schedule of the Act.</p> <p>The Act also provides for institutional arrangements for ensuring proper implementation and monitoring of the Act including the appointment of an Administrator, a Commissioner for Rehabilitation and Resettlement; and project level Rehabilitation and Resettlement Committees (Chapter VI); a National Monitoring Committee for Rehabilitation and Resettlement (Chapter VII); and establishment of a Land Acquisition, Rehabilitation and Resettlement Authority (Chapter VIII)</p>
2	<p>Andhra Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and</p>	<p>These rules have been notified by the Government of Andhra Pradesh in exercise of the powers conferred by Section 109 of the RFCTLARRA, 2013. The rules specify:</p> <ul style="list-style-type: none"> (ii) Process for carrying out the Social Impact Assessments (SIAs) (iii) Institutional Support for SIAs

	Act / Rules / Policies	Applicability
	Resettlement Rules, (A.P. RFCTLARRR) 2014	<ul style="list-style-type: none"> (iv) Other guidelines for carrying out the SIAs (v) Process for conducting public hearings (vi) Declaration of Awards and Compensation <p>As per Chapter V Sections 25, 26 and 27 of the A.P. RFCTLARRR 2014, awards and compensations are in line with the provisions of the RFCTLARRA, 2013. Section 28, further specifies the following that were to be notified by the State Government:</p> <ul style="list-style-type: none"> (a) The multiplication factor mentioned in RFCTLARRA, 2013 is set at 1.25 for rural areas other than scheduled areas and 1.50 for scheduled (tribal) areas (b) The one-time grant to artisan, small traders and certain others is set at INR 25,000 (c) The payment of compensation shall be made expeditiously through account payee cheques / electronic mail transfer
3	The Electricity Act, 2003 (With Amendments in 2003 & 2007)	<p>According to Section 14 of the Electricity Act, licenses can be awarded by the 'Appropriate Commission' to any person for transmission of electricity, distribution of electricity or trading of electricity. These persons will be known as licensees</p> <p>Under Section 67 (1) of the Act, a licensee has the power "to open and break up the soil and pavement of any street, railway or tramway; to open and break up any sewer, drain or tunnel in or under any street, railway or tramway; to alter the position of any line or works or pipes, other than a main sewer pipe; to lay down and place electric lines, electrical plant and other works; to repair, alter or remove the same; and to do all other acts necessary for the transmission or supply of electricity</p> <p>However, Section 67 (3) states that "A licensee shall, in exercise of any of the powers conferred by or under this section and the rules made thereunder, cause as little damage, detriment and inconvenience as may be, and shall make full compensation for any damage, detriment or inconvenience caused by him or by anyone employed by him."</p> <p>Section 67 (4) states that if there is any dispute regarding the compensation in subsection (3), it shall be determined by the Appropriate Commission, and, as per Section 67 (5) the 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."</p>

	Act / Rules / Policies	Applicability
		<p>Section 68 (1) of the Act, provides for the installation and maintenance of overhead lines subject to the provisions in Section 68 (2-4).</p> <p>Further, Section 68 (5) allows a licensee, with the permission of an Executive Magistrate (or authority specified by the Appropriate Government), to remove (or otherwise deal with) any tree, structure, or object that is interrupting / interfering with overhead lines; or is likely to interfere / interrupt them.</p> <p>However, Section 68 (6) states that if any tree, is in existence before placing the overhead line, <i>the person interested in the tree shall be awarded compensation</i> as seen fit by the Executive Magistrate / Specified Authority.</p>
4	<p>The Indian Telegraph Act, 1885</p>	<p>Under Section 164 of the Electricity Act, 2003, for the placing of electric lines or electrical plant for the transmission of electricity, the 'Appropriate Government can confer upon a licensee any of the powers which the telegraph authority possesses under the Indian Telegraph Act, 1885 with respect to the placing of telegraph lines and posts for the purposes of a telegraph established or maintained, by the Government or to be so established or maintained.</p> <p>Therefore, Part III - Section 10-19 of the Indian Telegraph Act, 1885 is applicable as well.</p> <p>Under Section 10, The telegraph authority may, from time to time, place and maintain a telegraph line under, over, along, or across, and posts in or upon any immovable property. This implies, that a licensee as mentioned in Section 164 of the Electricity Act, 2003, has the authority to place and maintain transmission lines under over along or across and posts in or upon, any immovable property.</p> <p>Under Section 11, a licensee may, at any time, for the purpose of examining, repairing, altering or removing any telegraph line or post, enter on the property under, over, along, across, in or upon which the line or post / tower has been placed.</p> <p>Section 16 (1), states that 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. And according to Section 16 (2), If, any person resists the decision of the Magistrate under Section 16 (1), he shall be</p>

	Act / Rules / Policies	Applicability
		<p>deemed to have committed an offence under section 188 of the Indian Penal Code (45 of 1860).</p> <p>However, Section 10 (b) of the Indian Telegraph Act, 1885, clearly states that land for the lines and poles (towers) will not be acquired. The licensee will have the right of user only in the property under, over, along, across in or upon which the lines and poles / towers are placed. Further, Section 10 (C) states that if the property is under the control / management of a local authority, the permission of that authority will be required before a licensee can exercise its powers.</p> <p>Section 10 (d) requires that the licensee do as little damage as possible, and, when it has exercised its 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. According to Sections 16 (3) and (4) any disputes regarding compensation are to be decided by the District Judge whose decision in the matter will be final as per Section 16 (5)</p>
5	<p>Ministry of Power, Guidelines for Payment of Compensation Towards Damages in Regard to Right of Way for Transmission Lines, 2015</p>	<p>These guidelines have been formulated for “determining the compensation towards “damages” as stipulated in Section 67 and 68 of the Electricity Act, 2003 read with Section 10 and 16 of the Indian Telegraph Act, 1885 which will be in addition to the compensation towards normal crop and tree damages”</p> <p>According to Section 2 of the Guidelines, compensation will be payable only for transmission lines supported by a tower base of 66 kV and above, and not for sub-transmission and distribution lines below 66 kV.</p> <p>Details of compensation are as follows:</p> <p>For Towers: As per Section 2 (i), compensation will be given @ 85% of land value as determined by District Magistrate or any other authority, for the tower base area (between four legs) impacted severely due to installation of tower / pylon structure</p> <p>For Right of Way (RoW) Corridor: As per Section 2 (ii), compensation subject to a maximum of 15% of land value, will be given towards diminution of land value in the width of the RoW corridor due to laying of transmission lines. The width of the RoW corridor has been prescribed in Annex of the Guidelines and is based on the Right of Way as defined by the MoEF guidelines dated 5.5.2014. For the</p>

	Act / Rules / Policies	Applicability
		<p>purpose of this project, it will be applicable to 132 kV transmission lines laid by APTRANSCO. The width of the RoW corridor for these lines is 27 meters.</p> <p>However, the Government of Andhra Pradesh has not adopted these guidelines and has its own rules with regards to compensation for Right of Way. As land a State Subject, this is within the powers of the State. The rules followed by Andhra Pradesh Government are as follows:</p> <ul style="list-style-type: none"> - Compensation towards temporary crop and tree damage will be paid as stipulated in the Electricity Act 2003 and Telegraph Act 1885. The value of compensation for fruit bearing trees is determined by the horticulture department and this is revised from time to time. The value of compensation for crop damage is determined by the agriculture officer and is determined on a case by case basis - Over and above the normal crop and tree damage, the land owner is compensated for the land taken up by the tower base. The value of compensation is determined by the District Collector and is set on the basis of voltage. The compensation is determined separately for each zone. - In the Kadapa Zone (comprising of Ananthapur, Kadapa, Kurnool, Chittoor) compensation for 132 kV towers is INR 55,000 per tower and for 220 kV towers compensation is INR 99,500 per tower. - In the Vishakhapatnam Zone: <ul style="list-style-type: none"> o Vizanagaram, Visakhapatnam- compensation for 132 kV towers is INR 55,000 and for 220 kV towers compensation is INR 99,500 per tower o Sirakulam, East Godavari, West Godavari- compensation for 132 kV towers is INR 43,900 and for 220 kV compensation is INR 79,600 per tower - In the Vijayawada Zone (comprising of Krishna, Guntur, Prakasham, Nellore) compensation for 132 kV towers is INR 55,000 and for 220 kV towers compensation is INR 99,500 per tower - As of now, RoW compensation is not paid for corridor. Govt. of AP and APTRANSCO are yet to decide on payment of RoW compensation for corridor.

	Act / Rules / Policies	Applicability
6.	Andhra Pradesh Government Land Allotment Policy G.O. Ms. No. 571 – 14.09.2012	<p>The Government Land Allotment Policy was formulated to create a set of uniform guidelines for the extent and rate of allocation of Government land for various purposes to Government departments and private organizations. According to the policy:</p> <ul style="list-style-type: none"> • Government land shall be allotted only for public purposes • For each category of institution, project or industry, there should be a norm on the extent of land required as stipulated by the respective administrative departments. These norms are to be scrupulously followed • Only waste lands are to be allotted; environmentally sensitive and fragile areas such as, tank beds, river beds, hillocks with afforestation etc., shall not be alienated or allotted • Government lands should not be auctioned for resource mobilization • Lands assigned to poor people for agriculture purpose should not be resumed and in case of inevitable resumption, alternate land should be given to the said assignees apart from rehabilitation. • If the assignee uses for purpose other than for which, the land was assigned or he transfers the land in favor of some other persons unauthorizedly, then the government shall have power to resume the land in their favor • For fixing cost of land, provisions of BSO-24 shall apply to all the land allotments along with the conditions stipulated by the alienating agencies/departments • The allotment / alienation shall be on market value as recommended by the Collector and the A.P.L.M.A. • Government lands may be given free of cost to State Government Departments for welfare and development purposes • A.P. Land Management Authority (APLMA) to be constituted for processing and recommending land allotment, with the task of monitoring the utilization of land for the intended purpose and resumption of land in case of violation of conditions • NOC from Urban Local Body (ULB) or Urban Development Authority (UDA) (in case of areas falling outside Urban Local Body limits) and Directorate of Town and Country Planning (DT&CP) for the areas falling outside ULBs and UDA areas may be insisted before taking a decision on the allotment of land by APLMA. • The administrative department and the APLMA shall therefore invariably ensure that the statutory environmental and zonal regulations are strictly complied with in this regard

	Act / Rules / Policies	Applicability
		<ul style="list-style-type: none"> • Government lands owned by various departments and which are not being utilized to the full extent by the respective departments shall be proposed for allotment for public purpose • All the Departments should prepare comprehensive plans for Rehabilitation and Resettlement (R&R) where displacement of people is involved • Wherever applicable, the allottee shall also provide green buffer along the nalas, tanks and water bodies, as specified in the building rules
7	The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006	<p>The Act recognises and vests the forest rights and occupation in forest land in forest dwelling Scheduled Tribes and other traditional forest dwellers who have been residing in such forests for generations but whose rights could not be recorded. The Act provides a framework for recording forest rights so vested and the nature of evidence required for such recognition and vesting in respect of forest land.</p> <p>During laying of transmission / distribution lines or erecting towers, all possible efforts should be made to avoid forest areas. In case, passing through forest areas is unavoidable, prior permission of the forest department should be sought.</p>
8	The Andhra Pradesh Forest Act, 1967 and Rules (thereunder)	<p>The Act consolidates and amends the laws relating to protection and management of forests in the state of Andhra Pradesh. It lays down guidelines to constitute any land as reserved forest and protected forest, and guidelines for preservation of private forests. The act also provides rules for:</p> <ol style="list-style-type: none"> a) Timber and other forest produce in transit or possession b) Possession of Sandalwood c) Collection of drift and stranded timber <p>During laying of transmission / distribution lines or erecting towers, all possible efforts should be made to avoid forest areas (reserved forest, protected forest and private forest). In case, passing through forest areas is unavoidable, prior permission of the forest department should be sought.</p>
9	The Right to Information Act, 2005	<p>The Act provides for setting out the practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, the constitution of a Central Information Commission and State Information Commissions and for matters connected therewith or incidental thereto. The implementation of RTI by the utilities is provided in Annexure 10.</p>

	Act / Rules / Policies	Applicability
10	Ancient Monuments & Archaeological Sites and Remains Act, 1958	The Act has been enacted to prevent damage to archaeological sites identified by Archaeological Survey of India. During route alignment, all possible efforts are made to avoid these areas. Wherever it becomes unavoidable the concerned Utility will take necessary permission under this act.
11	Indian Treasure Trove Act, 1878 as amended in 1949	The Act provides for procedures to be followed in case of finding of any treasure, archaeological artefacts etc. during excavation. Possibilities of such discoveries are quite remote due to limited and shallow excavations. However, in case of such findings the concerned Utility will follow the laid down procedure in the Section-4 of Act.
12	APERC Standards of Performance (Regulation no. 7 of 2004 and regulation no. 9 of 2013)	The regulation contains the guaranteed standards of performance, these are the minimum standards of service that a distribution licensee shall achieve to individual consumers, and Overall Service Standards which the licensee shall seek to achieve in the discharge of his obligation as a licensee. In the said Regulation, vide Schedule-II, the Commission also has prescribed the compensation payable and manner of payment of compensation to consumers for non-compliance of the Standards in terms of the provisions of section 57 of the Electricity Act, 2003.
13	Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010	<p>The regulations lay down measures related to safety. Key measures include:</p> <ul style="list-style-type: none"> • Para 5 of the regulations mandate the appointment of Electrical Safety Officer in all suppliers of electricity including generating companies, transmission companies and distribution companies. The officer will ensure the observation of safety measures specified under these regulation in their organization for construction, operation and maintenance of power stations, sub-stations, and transmission and distribution lines. • Para 7 of the regulations lays down safety measures for operation and maintenance of transmission and distribution systems. The para states the educational qualification for engineers, supervisors and technicians, and also specifies the trainings to be conducted by transmission and distribution companies. • Regulations specify general safety precautions pertaining to construction, installation, protection, operation and maintenance of electric supply lines and apparatus including service lines and apparatus on consumer's premises, switchgear on consumer's premises, identification of earthed and earthed neutral conductors and position of switches and switch gears thereon, earthed terminal on consumer's premises, accessibility of bare conductors and placement of danger notices

	Act / Rules / Policies	Applicability
		<ul style="list-style-type: none"> • Para 27 of the regulations specify provisions applicable to protective equipment including sand bucket, fire extinguishers, first aid boxes and gas masks. • Para 28 specifies guidelines for display of instructions for resuscitation of persons suffering from electric shock and para 29 specifies precautions to be adopted by consumers, owners, occupiers, electrical contractors, electric workmen and suppliers • Chapter IV specifies general conditions relating to supply and use of electricity • Chapter V specifies safety precautions for electrical installations and apparatus of voltage not exceeding 650V and Chapter VI specifies safety precautions for electrical installations and apparatus of voltage exceeding 650V • Chapter VII provides safety requirements for overhead lines and underground cables
14	Central Electricity Authority (Safety Requirements for Construction, Operation and Maintenance of Electrical Plants and Electric lines) Regulations, 2011	<ul style="list-style-type: none"> • The provisions of these regulations are in addition to and not in derogation of the provisions of any other law in force for the time being. • Para 4 of the regulations provide safety provisions relating to Owner (utilities) and specifies that owner shall make safety provisions an integral part of work processes to ensure safety of employees including employees of contractor, sub-contractor as well as visitors. • The regulations further provide provisions for setting up of safety management system, safety manual, safety officer and safety committee, reporting of accidents, emergency management plan, mock drills and medical facilities • Para 7 of the regulations specify safety provisions relating to contractor
Constitutional Provisions		
15	The Constitution (73rd Amendment) Act, 1992	<p>The Constitution (73rd Amendment) Act, 1992 vests power in the State Government to endow Panchayats with such powers and authority as may be necessary to enable them to function as institutions of self-government such as: Preparation of plans and their execution for economic development and social justice in relation to 29 subjects listed in the XI schedule of the Constitution. Authority to Panchayat to levy, collect and appropriate taxes, duties, tolls and fees. Transfer of taxes, duties, tolls and fees collected by the States to Panchayats.</p> <p>The Act mandates provisions for:</p> <ul style="list-style-type: none"> • Establishment of a three-tier structure (Village Panchayat, Panchayat Samiti or intermediate level Panchayat and Zilla Parishad or district level Panchayat).

	Act / Rules / Policies	Applicability
		<ul style="list-style-type: none"> • Establishment of Gram Sabhas at the village level. Regular elections to Panchayats every five years. • Proportionate seat reservation for SCs/STs. • Reservation of not less than 1/3 seats for women. • Constitution of State Finance Commissions to recommended measures to improve the finances of Panchayats.
16	The Constitution (74th Amendment) Act, 1992	<p>The Constitution (74th Amendment) Act, 1992 provisions, provides a basis for the State Legislatures to guide the State Governments in the assignment of various responsibilities to municipalities and to strengthen municipal governance. The 74th amendment requires the state governments to amend their municipal laws in order to empower ULBs “with such powers and authority as may be necessary to enable them to function as institutions of self-governance”.</p> <p>Accordingly, several state governments have amended their Municipal Laws by bringing them in conformity with the Constitutional provisions. A new Twelfth Schedule to the Constitution provides recommended list of local functions to be performed by municipalities.</p>
17	5th Schedule of Constitution (Article 244 (1))	<p>The schedule has been added to the constitution to protect the cultural identity and economic rights of the tribal people.</p> <p>The schedule provides for the administration and control of Scheduled Areas and Scheduled Tribes. In pursuance of this schedule, President of India had asked each of the state to identify tribal dominated areas. Areas thus identified by the states were declared as Fifth schedule areas.</p> <p>Accordingly, some mandals in Visakhapatnam, East Godavari, West Godavari, Adilabad, Srikakulam, Vizianagaram, Mahboobnagar, Prakasam districts of Andhra Pradesh were identified as Fifth Schedule Areas. The details are provided in Annexure 3.</p> <p>The schedule enables the government to enact separate laws for governance and administration of the tribal areas. The Para 5 of the schedule divulges the power to the Governor of the State to define the Laws Applicable to the Scheduled Areas. Specifically, Governor of the state can make regulations that may –</p> <ol style="list-style-type: none"> a) prohibit or restrict the transfer of land by or among members of the Scheduled Tribes in such area; b) regulate the allotment of land to members of the Scheduled Tribes in such area

	Act / Rules / Policies	Applicability
		At this stage, none of the proposed projects are located in the Schedule V areas. In case any of the future projects are located within the reserved areas, the provisions of Tribal Peoples Planning Framework (TPPF) provided in Annexure 7 will be triggered.
18	Panchayats (Extension to Scheduled Areas) Act, 1996	<p>The act provides for extension of provisions of Part IX of constitution relating to Panchayats to the Scheduled Areas. As per the provisions, every village in Schedule V areas will have Gram Sabha which would approve of the plans, programmes and projects for social and economic development before such plans, programmes and projects are taken up for implementation at village level.</p> <p>At this stage, none of the proposed projects are located in the Schedule V areas. In case any of the future projects are within the schedule areas, the approval of gram sabha will be required to implement such project.</p>
Applicable Labour Laws		
19	Workmen Compensation Act 1923	The Act provides for compensation in case of injury by accident arising out of and during the course of employment.
20	Payment of Gratuity Act 1972	Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years of service or more or on death the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees
21	Employees P. F. and Miscellaneous Provision Act 1952	<p>The Act for monthly contributions by the employer plus workers @10% or 8.33%. the benefits payable under the Act are:</p> <ul style="list-style-type: none"> • Pension or family pension on retirement or death, as the case may be • Deposit linked insurance on the death in harness of the worker. • Payment of P. F. accumulation on retirement /death etc.
22	Maternity Benefits Act 1951	The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.
23	Contract labour (Regulation & Abolition) Act 1970	The Act provides for certain welfare measures to be provided by the contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the principal Employer by Law. The Principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labour.

	Act / Rules / Policies	Applicability
24	Minimum Wages Act 1948	The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provision of the Act if the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employment's
25	Payment of Wages Act 1936	It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.
26	Equal Remuneration Act 1979	The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.
27	Payment of Bonus Act 1965	The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs.3500/- per month or less. The bonus to be paid to employees getting Rs.2500/- per month or above up to Rs.3500/- per month shall be worked out by taking wages as Rs.2500/- per month only. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.
28	Industrial Disputes Act 1947	The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations or lock-out becomes illegal and what are the requirements of laying off or retrenching the employees or closing down the establishments.
29	Industrial Employment (Standing Orders) Act 1946	It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central government to 50). The Act provides for laying down rules governing the conditions of employment by the Employment on matters provided in the Act and get the same certified by the designated Authority.
30	Trade Union Act 1926	The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities
31	Child Labour (prohibition & Regulation) Act 1986	The Act prohibits employment of children below 14 years of age in certain occupations and process and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in Building and Construction Industry.
32	Inter-State Migrant Workmen's (Regulation of	The Act is applicable to an establishment which employ 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment

	Act / Rules / Policies	Applicability
	Employment & Conditions of Service Act 1979	situated in another state). The Inter State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home up to the establishment and back, etc.
33	The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996	All the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the building or construction work and other welfare measures, such as Canteens, First- Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.
34	Factories Act 1948	The Act lays down the procedure for approval at plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process.
World Bank Operational Policies		
35	Involuntary Resettlement (OP 4.12)	This policy covers direct economic and social impacts that both result from Bank-assisted investment projects, and are caused by the involuntary taking of land. To avoid or minimize involuntary resettlement and, where this is not feasible, assist displaced persons in improving or at least restoring their livelihoods and standards of living in real terms relative to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. The RFCTLARRA, 2013 and A.P. RFCTLARRR, 2014 are consistent with OP 4.12 and will be followed in the current project.
36	Physical Cultural Resources (OP 4.11)	This policy assists countries to avoid or mitigate adverse impacts on physical cultural resources from the Bank financed development projects. The policy defines physical cultural resources as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above or below ground, or under water. Their cultural interest may be at the local, provincial or national level, or within the international community.

	Act / Rules / Policies	Applicability
		Ancient Monuments & Archaeological Sites and Remains Act, 1958 and Indian Treasure Trove Act, 1878 as amended in 1949 are consistent with OP 4.11.
37	Indigenous Peoples (OP 4.10)	<p>This policy contributes to the Bank's mission of poverty reduction and sustainable development by ensuring that the development process fully respects the dignity, human rights, economies, and cultures of Indigenous Peoples. The Bank provides project financing only where free, prior, and informed consultation results in broad community support to the project by the affected Indigenous Peoples. Such Bank financed projects include measures to (a) avoid potentially adverse effects on the Indigenous Peoples' communities; or (b) when avoidance is not feasible, minimize, mitigate, or compensate for such effects Bank financed projects are also designed to ensure that the Indigenous Peoples receive social and economic benefits that are culturally appropriate and gender and inter generationally inclusive. The project shall ascertain broad community support for the project based on social assessment and free prior and informed consultation with the affected Tribal community, if any.</p> <p>Constitution of India and several acts (5th Schedule of Constitution (Article 244), 73rd Amendment of Constitution, 1992, PESA Act, 1996, RFCTLARRA, 2013 and A.P. RFCTLARRR, 2014) ensure protection of Scheduled Tribes or Indigenous People, which is consistent with World Bank policy; hence there is no need to bridge the gap between protection measures guaranteed under Indian laws and requirements of OP 4.10.</p>
38	World Bank Policy on RoW for transmission lines Source: World Bank Source Book on Involuntary Resettlement	<p>The source book provides guidelines for ROW for transmission lines. It states that depending on technical specifications, transmission lines require a corridor of impact 12–25 meters wide, or even more in the case of high-voltage electric lines (500 kilovolts or more). Although the impact of a tower is likely to be slight, especially in rural areas, transmission lines extending hundreds of kilometres may produce a significant aggregate displacement, especially if the lines cannot avoid more heavily populated areas.</p> <p>However, transmission lines themselves do not require land acquisition, except for the towers. Instead, an ROW is established, imposing restrictions on land use. Local laws and regulations determine these constraints; for example, height restrictions might be imposed on crops grown under transmission lines.</p> <p>In India, width of Right of Way is maintained as mandated by MoEF guidelines dated May 2014.</p>

Synergies between World Bank Policy on Land Acquisition and National Policies / Laws

World Bank OP Requirements	Coverage in National Policies / Laws	Specific Provision in National Policies / Laws
World Bank OP 4.12 Involuntary Resettlement		
<p>Involuntary resettlement should be avoided where feasible, or minimized, exploring all alternative project designs</p>	<p>✓</p>	<p>Chapter II Section 8 (1) of the RFCTLARRA 2013, states that the Appropriate Government shall ensure that-</p> <ul style="list-style-type: none"> (a) There is a legitimate & bona fide public purpose which necessitates the acquisition (b) The potential benefits & the public purpose shall outweigh the social costs & adverse social impact as determined by the Social Impact Assessment (c) Only the minimum area of land required for projects is proposed to be acquired (d) There is not unutilized land which has been previously acquired in the area (e) Any land acquired earlier and remaining unutilized is used for the public purpose <p>Chapter II Section 4 (1) of the RFCTLARRA, 2013 also requires that a Social Impact Assessment Study (SIA) be conducted in consultation with the concerned Panchayat, Municipality or Municipal Corporation. The SIA shall also include reports of public hearings conducted in the affected area.</p> <p>Chapter II Section 7 (4) of the RFCTLARRA 2013 states that if an Expert Group upon review the SIA finds that the project does not serve a public purpose, or that the costs outweigh the benefits, then the project will be abandoned and no further steps will be taken to acquire the land.</p> <p>Further Section 7 (5) states that if the project does serve a public purpose and its benefits outweigh the costs, then the Expert Group shall make specific</p>

		<p>recommendations on whether the extent of land proposed for acquisition is the absolute bare minimum needed and that there are no less displacing options available.</p>
<p>Where resettlement cannot be avoided, resettlement activities should be conceived and executed as a development programme by providing sufficient resources to enable Affected Persons (APs) to share in the project. Displaced persons should be consulted and have opportunities to participate in the resettlement process</p>	<p>✓</p>	<p>The Preamble to RFCTLARAL 2013 calls for a consultative, humane, participative informed and transparent process for land acquisition.</p> <p>Chapter II Section 4 (1) of the Act requires the SIA to include public hearings. Further, ample notification for the public hearings needs to be given.</p> <p>Throughout the Act, at every stage, the Appropriate Government is required to publish the recommendations of the SIA, and notifications for any public hearings, decision on land acquisition, hearings of objections etc.</p>
<p>Displaced persons should be assisted in their efforts to improve their livelihoods, or at least restore them, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher</p>	<p>✓</p>	<p>Chapter IV Section 16 (1b) of RFCTLARRA 2013 requires that in his survey and census of the affected families, the Administrator for Rehabilitation and Resettlement shall include an assessment of the livelihoods lost in respect of land losers and landless whose livelihoods are primarily dependent on lands being acquired</p> <p>Chapter V Section 31 (2h) of the Act states that the Rehabilitation and Resettlement Award shall include details of mandatory employment to be provided to members of the affected families</p> <p>Further, Serial number 4 of the Second Schedule to the Act states that:</p> <p>a) where jobs are created through the project, provisions will be made for at least one member per family affected to be employed after receiving relevant training. The remuneration shall not be less than minimum wage; or</p>

		<p>b) a onetime payment of INR 5,00,000 shall be made per family; or</p> <p>c) annuity policies will be given that pay no less than INR 2,000 per month per family for 20 years, with appropriate indexation to the Consumer Price Index for agricultural labourers;</p> <p>Serial number 7 provides for a minimum compensation of INR 25,000 to any family that has lost a cattle shed or petty shop;</p> <p>Serial number 8 provides for a onetime grant to artisans and small traders; and</p>
Provision of prompt and effective compensation at full replacement cost for losses of assets attributable directly to the project	✓	<p>Chapter IV Sections 26-30 of the RFCTLARRA 2013 along with the First Schedule to the Act outlines the compensation to be paid. Compensation includes full market value of the land and assets multiplied by a factor that depends on distance from urban areas. Further a solatium of 100% is given over and above this amount. The award must be paid within 12 months and an amount calculated at the rate of 12% per annum on the market value shall be given to the affected families from the date of notification of the SIA study till the date of the award or the date of taking possession of the land, whichever is later</p>
Assistance (such as moving allowances) during relocation; residential housing or housing sites as required and other advantages equivalent to the advantages of the old site; and support after displacement for a transition period	✓	<p>This is provided for in the Second Schedule to the RFCTLARRA 2013</p>
Eligibility of benefits is to: a) those who have formal legal right to the land including customary and traditional rights b) those who do not have formal rights at the time of census but have claim to such	✓	<p>All three are covered in the Definitions (Section 3) of the RFCTLARRA 2013</p>

land or assets that are recognized by the laws of the country c) those who have no recognizable rights		
Resettlement planning implementation and monitoring	✓	Chapter II Section 16 (1) of the RFCTLARRA 2013 requires that a Resettlement Schedule be prepared; while Chapter V provides details of the Resettlement Award while Chapter VI provides the procedure for the Award; Chapter VII provides for the monitoring of the Resettlement Scheme; and Chapter VIII calls for establishment of a Land Acquisition, Resettlement and Rehabilitation Authority

The policy, legal and administrative acts, laws, regulations and guidelines provide a framework for managing the impacts identified in the previous section. The next section describes the applicability of the policy, legal and administrative framework to manage the negative impacts of the proposed projects. The next section also identifies the arrangements within the utilities and amongst other institutions and stakeholder groups like panchayats, forest department, revenue department etc. to manage the impacts.

7.3 Management & Mitigation Methods: Social

This section provides a framework for utilities to manage the potential social impacts of proposed transmission and distribution projects. The extent to which the potential impacts will arise depends on the nature of the proposed interventions and hence the framework clearly specifies which type of project (transmission and / or distribution) the specified management / mitigation methods apply to.

The following framework has been designed in compliance with applicable National and State laws and is in alignment with international standards for social impact management. The framework is built on the principle of avoidance, minimization and mitigation wherein preference is given to avoiding negative social impacts wherever possible. If it is not possible to avoid negative impacts, utilities will strive to minimize these impacts and take appropriate mitigation measures. The impact areas covered in the section include: loss of land; change in, or restrictions on, land use; negative health and safety outcomes for both employees and the broader community; potential gender differentiated impacts; negative outcomes for tribal / indigenous peoples; and loss of / damage to cultural heritage.

A. Loss of Land, Resettlement and Rehabilitation

Applicability: Transmission Projects which involve construction of substations

Land is required for construction of transmission and distribution substations and erecting transmission towers and distribution poles. Land secured for construction of substations is no longer accessible to the existing owner and hence in such cases ownership is transferred from the existing owner to the respective utility. However, ownership of land used for erecting towers and poles remains with the existing land owner and the utility only receives rights to use the land. Therefore when we talk of loss of land, it refers to land secured for substation construction. As mentioned earlier in the document, there are four ways in which land can be secured; these are:

- (ii) Transfer of Government land to utility
- (iii) Voluntary donation
- (iv) Purchase of land on willing buyer and willing seller basis on negotiated price
- (v) Involuntary acquisition of land

In order to **avoid** the loss of private / communal lands or agriculture and forest lands, the transmission and distribution utilities will endeavour, wherever possible, to secure Government land for their projects and avoid private or communal lands, even if this requires realignment of the proposed route. Only in rare cases that Government land is not available will other methods of securing land be pursued. Further, only the minimal amount of land required for substations will be allotted (the land required for a 132kV / 33kV

substation is approx. 5 acres¹⁶). The following steps are to be followed depending on the method of land acquisition:

- (i) **Transfer of Government land:** The Andhra Pradesh Land Allotment Policy (G.O. Ms. No. 571 issued 14.09.2012) prescribes that ***only waste lands will be allotted*** and environmentally sensitive / fragile areas such as tank beds, river, beds, hillocks with afforestation shall not be allotted. Similarly, ***lands assigned to poor people for agriculture purpose should not be resumed*** for other purposes, and if it is unavoidable then the assignees should be provided with alternate land in addition to rehabilitation. In all cases, a ***NOC from the Urban Local Body, Urban Development Authority, or Department for Town and Country Planning (DT&CP) is required*** before any allotment is made. The allotted land may be given free of cost or on payment basis. When land is allotted on payment basis, the ***cost of the land will be determined as per market value recommended by the Collector*** and the A.P. Land Management Authority (APLMA). APLMA will also ensure that only the minimum amount of land needed is allotted and the allotted land is used only for the stated purpose.
- (ii) **Voluntary donation:** In the case of voluntary donation of land, there should not be any undue pressure on the land owner / user(s) to transfer ownership of their land. Apart from this following shall also be ensured:
 - a. The donation will not cause significant impacts on the livelihood of the donor
 - b. The donor fully understands the value of their donated land
 - c. The donation will not cause any economical or physical displacement of the current land users
 - d. The land donations does not come from coercion or asymmetrical power relation between the land owner and the government
 - e. The land in question must be free of squatters, encroachers, or other claims or encumbrances.
 - f. Verification of the voluntary nature of land donations must be obtained from each of the persons donating land.
 - g. In case of any loss of income or physical displacement is envisaged, verification of voluntary acceptance of mitigation measures must be obtained from those expected to be adversely affected.
 - h. Subsequently title of land shall be transferred in the name of the utility.
- (iii) **Purchase of land on willing buyer and willing seller basis on negotiated price:** When land is purchased from a willing seller, the utility shall ensure:
 - a. Consultation with the affected person has to be carried out and documented.
 - b. All negotiations have to be carried out in a transparent manner

¹⁶ Reference manuals on construction and operational practices of EHV substations & lines and commercial and load dispatch operations. Available at: <http://www.aptransco.gov.in/transco/images/APTRANSCO-Technical-reference-book-2011-vol-ii.pdf>

- c. That land owners are aware of the basis on which compensation is calculated
- d. The land in question must be free of squatters, encroachers, or other claims or encumbrances.
- e. Subsequently title of land shall be transferred in the name of the utility.

(iv) Involuntary acquisition of land: Involuntary acquisition of land will be the last resort and be undertaken only in the case of non-availability of Government lands in the area. In the case of involuntary acquisition, the provisions of RFCTLARRA, 2013 and the A.P. RFCTLARRR, 2014 shall be applicable.

As per RFCTLARRA, 2013 the Appropriate Government shall ensure that a Social Impact Assessment study is carried out in consultation with the concerned Panchayat, Municipality or Municipal Corporation in the affected area and also hold public hearings in the process. Further, the Appropriate Government will ensure minimum displacement of people, minimum disturbance to the infrastructure, ecology and minimum adverse impact on the individuals affected. For this, the Appropriate Government shall ensure:

- There is a legitimate and bona fide public purpose which necessitates the acquisition
- The potential benefits and the public purpose shall outweigh the social costs and adverse social impact as determined by the SIA
- Only the minimum area of land required for projects is to be acquired
- There is no unutilized land which has been previously acquired in the area
- Any land acquired earlier and remaining unutilized is used for the purpose

Also, as far as possible, no acquisition of land shall be made in Scheduled Areas. Where this is done, it shall be only as a demonstrable last resort and with the prior consent of the concerned Gram Sabha or the Panchayats.

The A.P. RFCTLARRR, 2014 further detail the process to be followed for land acquisition as follows:

- a. **Request for Land:** Any requiring body, or its representative duly authorized by it, for whom land is to be acquired shall file the Requisition to the concerned District Collector and to the Commissioner, Rehabilitation & Resettlement in the formats prescribed in the annexures of the RFCTLARRA Act. In case of acquisition for Government, the requisition shall be filed by concerned Secretary of the Department or a person authorized by him.

The District Collector upon receiving requisition shall constitute a team of revenue and agriculture officers to make field visit along with the representative of the requiring body to make a preliminary enquiry about the correctness of the particulars furnished in the requisition including the enquiry whether the

requisition is consistent with the provisions of the Act, and submit a report to the District Collector

If the District Collector, based on the report of the team, other information available with him and instructions issued by the State Government in this regard, is satisfied that the requisition is consistent with the provisions of the RFCTLARRA; he shall make a preliminary estimate of the cost of the acquisition as defined under Section 3 (i) of the Act. The administrative cost under item (A) of Section 3 (i) (vi) of the Act, shall be at the rate of 10% of the cost of compensation as provided in item (i) of Section 3 (i) of the Act. The District Collector will inform the Requiring Body to deposit the estimated cost of acquisition in his office within a period as may be specified by him and the Requiring Body

- b. **Social Impact Assessment:** A Social Impact Assessment (SIA) will be carried out for all land acquisition proposals except for when land is proposed to be acquired invoking urgency provisions under section 40 of RFCTLARRA. In such cases, the District Collector, where he is not the Appropriate Government, shall submit a report to the State Government to issue appropriate directions. In other cases, the District Collector shall take the decision

The District Collector shall, within a period of fifteen days from the date of deposit of the processing fee for carrying the SIA study by the Requiring Body, issue a notification for carrying out SIA in the format prescribed in RFCTLARRA. The notification shall be made available in Telugu language to the Gram Panchayat, Mandal Parishad, Municipality or Municipal Corporation, as the case may be, and in the offices of the District Collector, the Sub-Divisional Magistrate and the Tahsildar at Mandal level.

The notification shall be published in the form of posters and pamphlets circulated in the affected area and by affixing the posters at some conspicuous places in the affected areas and shall be uploaded on the website of the State Government and the revenue district concerned. Provided that such notification shall be issued within thirty days after the deposit of the processing fee for carrying Social Impact Assessment by the Requiring Body.

The Commissioner, Rehabilitation & Resettlement shall be the state Social Impact Assessment Unit to arrange to carry out Social Impact Assessment Study (SIA). The Commissioner, Rehabilitation & Resettlement shall select the SIA team for each project from the individuals and institutions registered or empanelled in the State Database of Qualified SIA Resource Partners and Practitioners. The size and selection criteria for the SIA team shall be as per the project-specific ToR developed by the State SIA Unit. The SIA team may be constituted by appointing individuals or an organization with experience in conducting SIAs or related field-based assessments and the team may include-

- A combination of independent practitioners, qualified social activists, academics, technical experts, who are not directly connected with the requiring body; and
- At least one woman member

The Requiring Body shall not be involved in any way in the appointment of the SIA team and while selecting the team it shall be ensured that there is no conflict of interest involving the team members appointed to assess the concerned project. If any team member is found to have a conflict of interest, the said member shall be disqualified.

The SIA shall be conducted in consultation with concerned Gram Panchayat, Mandal Parishad, Municipality or Municipal Corporation, as the case may be, at village level or ward level in the affected areas. This will be followed by a public hearing at the affected areas to ascertain the views of the affected families; these views shall be recorded in writing. Adequate publicity about the date and time and venue for the public hearing shall be given.

The SIA report shall be submitted in the prescribed format to the Commissioner, Rehabilitation & Resettlement within a period of Six months from the date of commencement and shall include the views of the affected families recorded in writing. The SIA Report including summaries shall be prepared and divided into three parts;

- The Project Feasibility Report;
- The Project Impact Report, and
- The Social Impact Management Plan.

Details of how the SIA is to be carried out are given in Annexure 2.

A Social Impact Management Plan listing the ameliorative measures required to be undertaken for addressing the impact of the project shall be submitted in prescribed format along with the SIA report to the Commissioner, Rehabilitation & Resettlement.

The SIA team must provide a conclusive assessment of the balance and distribution of the adverse social impacts and social costs and benefits of the proposed project and land acquisition, including the mitigation measures, and provide an assessment as to whether the benefits from the proposed project exceed the social costs and adverse social impacts that are likely to be experienced by the affected families or even after the proposed mitigation measures, the affected families remained at risk of being economically or socially worse, as a result of the said land acquisition and resettlement

The SIA Report and the Social Impact Management Plan shall be made available in the Telugu language to the concerned Gram Panchayat, Mandal Parishad, Municipality or Municipal Corporation, at village level or ward level in the affected

areas and in the Offices of the District Collector, the Sub-Divisional Officer and Tahsildar. It shall also be published by way of a public notice by affixing at some conspicuous places in the affected areas and shall be uploaded on the website of the State Government and the revenue district concerned.

- c. **Validation of SIA by Expert Group:** The Appropriate Government shall ensure that the SIA report is validated by an independent multi-disciplinary Expert Group, as may be constituted by it. The Expert Group shall have:
- Two non-official social scientists;
 - Two representatives of Panchayat, Gram Sabha, Municipality or Municipal Corporation;
 - Two experts on rehabilitation, and a technical expert in the subject relating to the project.

If the Expert Group determines that the project does not serve any public purpose, or the social costs and adverse social impacts of the project outweigh the potential benefits, it shall make a recommendation within two months from the date of its constitution and the project shall be abandoned forthwith and no further steps to acquire land will be initiated in respect of the same.

If the Expert Group believes that there is a public purpose and that the benefits outweigh social costs, it shall make recommendations within two months of its constitution as to whether the extent of land proposed to be acquired is the absolute bare-minimum extent needed for the project and whether there are no other less displacing options available

All recommendations of the Expert Group shall be recorded in writing along with details and reasons for their decisions. The recommendations shall be made available in the Telugu language to the Panchayat, Municipality, or Municipal Corporation; and the offices of the District Collector, the Sub-Divisional Magistrate and the Tehsil; and shall be published in the affected areas and also uploaded on the website of the Appropriate Government

- d. **Decision by Appropriate Government:** The Appropriate Government shall examine the Social Impact Assessment report, the recommendations of the Expert Group, if any, and decide such area for acquisition which would ensure minimum displacement of people, minimum disturbance to the infrastructure, ecology and minimum adverse impact on the individuals affected. Before taking a decision the appropriate Government shall ensure that consent is obtained the cases where such consent is required

The decision of the Appropriate Government shall be made available in the local language to the Panchayat, Municipality, or Municipal Corporation; and the offices of the District Collector, the Sub-Divisional Magistrate and the Tehsil; and shall be

published in the affected areas and also uploaded on the website of the Appropriate Government

Each acquisition case will be uploaded, on a public website that is to be created by The Commissioner, Rehabilitation & Resettlement shall. All details regarding the case beginning with the notification of the SIA and tracking each step of decision making, implementation and audit will be made available on the website

- e. **Publication of Preliminary Notification:** After conclusion of the SIA and consent of the affected persons or Gram Sabha, as the case may be, when it appears to the appropriate Government that land is required or likely to be required in any area for any public purpose, a preliminary notification shall be issued in in the prescribed format.

The notification shall be published in the following manner:

- In the Andhra Pradesh Gazette;
- In two daily newspapers circulating in the locality of such area of which one shall be in the Telugu language
- In the Telugu language in the Panchayat, Municipality or Municipal Corporation, as the case may be and in the offices of the District Collector, the Sub-divisional Magistrate and the Tehsil;
- Uploaded on the website of the Appropriate Government;
- In conspicuous places in the affected areas and shall also be informed to the public by beat of Tom-tom.

After issuing the preliminary notification, the Collector shall updated land records within a period of two months

- f. **Preliminary survey of land proposed for acquisition:** The officer authorized by the District Collector to conduct preliminary survey shall have all the powers as provided under section 12 of the RFCTLARRA 2013
- g. **Disposal of objections:** Any person interested in any land which has been notified as being required or likely to be required for a public purpose, may within sixty days from the date of the publication of the preliminary notification object to:
- The area and suitability of land proposed to be acquired;
 - Justification offered for public purpose;
 - The findings of the SIA report

Every objection shall be made to the Collector in writing and the Collector shall give the objector an opportunity of being heard in person or by any person authorized by him in this behalf or by an Advocate and shall, after hearing all such objections and making such further inquiry, if any, as he thinks necessary, shall submit a report along with his recommendations on the objections to the District Collector for decision. The decision of the District Collector shall be final.

- h. **Preparation of Rehabilitation and Resettlement Scheme and Public Hearing:** On publication of the preliminary notification by the Appropriate Government, the Administrator for Rehabilitation and Resettlement shall conduct a survey and undertake a census of the affected families within a period of two months from the date of publication of such preliminary notification.

For the survey and the census of the affected families the Administrator shall collect data based on the SIA report as well as data from secondary sources such as Panchayat and Government records and verify that data by door visit of the affected families and by site visits in case of infrastructure in the affected area.

The draft Rehabilitation and Resettlement Scheme prepared by the Administrator shall include particulars of the rehabilitation and resettlement entitlements of each land owner and landless whose livelihoods are primarily dependent on the lands being acquired: Where resettlement of affected families is involved the scheme shall contain the following:

- List of Government buildings to be provided in Resettlement Area
- Details of public amenities and infrastructural facilities which are to be provided in Resettlement Area
- List of likely to be displaced families;
- List of infrastructure in the affected area;
- List of land holdings in the affected area;
- List of trades/business in the affected area;
- List of landless people in the affected area;
- List of persons belonging to disadvantageous groups like persons belonging to Scheduled Castes or Scheduled Tribes, handicapped persons in the affected area;
- List of landless agricultural labourers in the affected area;
- List of unemployed youth in the affected area.

The Administrator shall prepare comprehensive and detailed draft Rehabilitation and Resettlement Scheme and give wide publicity in the affected area. The Administrator or an officer authorized by him shall conduct a public hearing in the affected areas on such date, time and venue as decided by giving advance notice of fifteen days.

The Commissioner of Rehabilitation and Resettlement shall publish the approved Rehabilitation and Resettlement Scheme in the affected area by affixing in conspicuous places in addition to making it public by other means as described above in the case of the preliminary notification

- i. **Development Plan for Scheduled Castes or Scheduled Tribes Families:** As far as possible, no acquisition of land shall be made in Scheduled Areas; and where this is done, it shall be only as a demonstrable last resort. Further the prior consent of

the concerned Gram Sabha or the Panchayats at the appropriate level in the Scheduled Areas under the Fifth Schedule to the Constitution shall be obtained before issue of a notification. This prior consent shall be taken in all cases, even in the case of urgency.

In cases of a project involving land acquisition on behalf of a requiring body which involves involuntary displacement of the Scheduled Castes or Scheduled Tribes families, a Development Plan shall be prepared in the prescribed format. The Development Plan shall lay down the details of the procedure for settling land rights due, but not settled and restoring titles of the Scheduled Tribes as well as the Scheduled Castes on the alienated land by undertaking a special drive together with land acquisition.

The Development Plan shall also contain a programme for development of alternate fuel, fodder and non-timber forest produce resources on non-forest lands within a period of five years, sufficient to meet the requirements of tribal communities as well as the Scheduled Castes.

The affected families of the Scheduled Tribes shall be resettled preferably in the same Scheduled Area in a compact block so that they can retain their ethnic, linguistic and cultural identity. Further, the resettlement areas predominantly inhabited by the Scheduled Castes and the Scheduled Tribes shall get land, to such extent as may be prescribed by the Appropriate Government free of cost for community and social gatherings.

The affected Scheduled Tribes, other traditional forest dwellers and the Scheduled Castes having fishing rights in a river or pond or dam in the affected area shall be given fishing rights in the reservoir area of the irrigation or hydel projects.

All the benefits, including the reservation benefits available to the Scheduled Tribes and Scheduled Castes in the affected areas shall continue in the resettlement area.

Any alienation of tribal lands or lands belonging to members of the Scheduled Castes in disregard of the laws and regulations for the time being in force shall be treated as null and void.

- j. **Publication of declaration for acquisition:** A declaration for acquisition of the land along with the summary of the Rehabilitation and Resettlement Scheme shall be made by the appropriate Government in the prescribed format. However, no such declaration shall be made unless the requiring body has deposited an amount in full towards the cost of acquisition of the land. Every declaration shall be published in the same manner as described above in the case of the preliminary notification.
- k. **Land acquisition award:** The Collector shall make an award within a period of twelve months from the date of publication of the declaration for acquisition. If no

award is made within this period, the entire proceedings for the acquisition of the land shall lapse.

I. **Compensation for land acquisition:** The compensation shall be calculated by the Collector on the basis of the provisions laid down under section 26 to section 30 and \ the First Schedule of the RFCTLARRA 2013. The compensation shall be paid to all parties whose land or other immovable property or assets attached to the land or building have been acquired. As per the Act, land owners are defined as any person:

- Whose name is recorded as the owner of the land or building or part thereof, in the records of the authority concerned; or
- Who is granted forest rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 or under any other law for the time being in force; or
- Who is entitled to be granted Patta rights on the land under any law of the State including assigned lands; or
- Who has been declared as such by an order of the court or Authority

The Collector shall determine the market value of the land to be acquired on the basis of whichever of the following is higher:

- Market value, if any, specified in the Indian Stamp Act, 1889 for the registration of sale deeds or agreements to sell in the area where the land is situated; or
- The average sale price for similar type of land situated in the nearest village or nearest vicinity area; or
- Consented amount of compensation as agreed in case of acquisition of lands for private companies or for public private partnership project

The Collector having determined the market value of the land to be acquired shall calculate the total amount of compensation to be paid to the land owner by including all assets attached to the land. This will be done as follows:

	Component of Compensation	Manner of Determination of Value
1.	Market value of land	Whichever of the following is higher: <ul style="list-style-type: none"> • Market value, if any, specified in the Indian Stamp Act, 1889 for the registration of sale deeds or agreements to sell in the area where the land is situated; or • The average sale price for similar type of land situated in the nearest village or nearest vicinity area; or • Consented amount of compensation as agreed in case of acquisition of lands for private companies or for public private partnership project
2.	Factor by which the market value is to be multiplied	<ul style="list-style-type: none"> • In case of rural areas (other than Scheduled Areas) a multiplication factor of 1.25 will be applied • In case of Scheduled (Tribal) Areas, a multiplication factor of 1.50 will be applied • In case of urban areas, a multiplication factor of 1.00 will be applied
3.	Value of assets attached to land or building	
a.	Market value of the building and other immovable property or assets attached to the land or building that is to be acquired	<ul style="list-style-type: none"> • The Collector shall use the services of a competent engineer, or any other specialist in the relevant field, as may be considered necessary
b.	Damage sustained to standing trees and plants	<ul style="list-style-type: none"> • For fruit bearing trees, the value of compensation per tree will be determined from time to time by the Horticulture Department based on the species of tree • For non-fruit bearing trees, the value of compensation will be determined by the Forest Department
c.	Damage sustained to standing crops	<ul style="list-style-type: none"> • For standing crops, the compensation will be determined by the Agricultural Officer on a case by case basis
4.	Solatium	<ul style="list-style-type: none"> • The solatium shall be equivalent to one hundred percent of the market value of the land mentioned against serial number 1 multiplied by

		the relevant factor mentioned against serial number 2 plus the value of assets attached to land or building mentioned against serial number 4a, 4b and 4c.
5.	Total Compensation	<ul style="list-style-type: none"> The total compensation = Market value of land mentioned against serial number 1 X relevant factor mentioned against serial number 2 + Value of assets as mentioned against serial number 3 + Soaltium mentioned against serial number 4

In addition to the market value of the land provided, the Collector shall, in every case, award an amount calculated at the rate of twelve per cent per annum on the market value for the period commencing on and from the date of the publication of the notification of the SIA till the date of the award of the Collector or the date of taking possession of the land, whichever is earlier.

m. **Compensation for Rehabilitation and Resettlement:** In addition to the compensation detailed above, the Collector shall pass Rehabilitation and Resettlement Awards for each affected family. According to the RFCTLARRA 2013, affected family is defined as:

- A family whose land or other immovable property has been acquired;
- A family which does not own any land but a member or members of such family may be agricultural labourers, tenants including any form of tenancy or holding of usufruct right, share-croppers or artisans or who may be working in the affected area for three years prior to the acquisition of the land, whose primary source of livelihood stand affected by the acquisition of land;
- The Scheduled Tribes and other traditional forest dwellers who have lost any of their forest rights recognized under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 due to acquisition of land
- Family whose primary source of livelihood for three years prior to the acquisition of the land is dependent on forests or water bodies and includes gatherers of forest produce, hunters, fisher folk and boatmen and such livelihood is affected due to acquisition of land;
- A member of the family who has been assigned land by the State Government or the Central Government under any of its schemes and such land is under acquisition;
- A family residing on any land in urban areas for preceding three years or more prior to the acquisition of the land or whose primary source of livelihood for three years prior to the acquisition of the land is affected by the acquisition of such land

The elements of the rehabilitation and resettlement entitlements are as follows:

	Elements of R&R Entitlements	Entitlement / Provision
1.	Provision of housing units in case of displacement	<ul style="list-style-type: none"> • If a house is lost in rural areas, a constructed house shall be provided as per Indira Awas Yojana specifications; or if the family opts not to take the house, the equivalent cost of the house may be offered instead • If a house is lost in urban areas, a constructed house shall be provided, which will be no less than 50 sq mts in plinth area; or if the family opts not to take the house offered, it shall get a one-time financial assistance for house construction which shall not be less than INR 1,50,000 / - • These benefits shall also be extended to any affected family which is without homestead land and which has been residing in the area continuously for not less than three years preceding the date of notification of the affected area • No family shall be given more than one house
2.	Choice of Annuity or Employment	<p>The Appropriate Government shall provide the following options:</p> <ul style="list-style-type: none"> • Where jobs are created through the project, after providing suitable training and skill development, the Appropriate Government shall make provision for employment to at least one member per affected family in the project or arrange a job in such other project as maybe required. The wages for the job shall not be less than the minimum wages provided for in any law for the time being in force <p style="text-align: center;">Or</p> <ul style="list-style-type: none"> • Onetime payment of INR 5,00,000 / - per affected family <p style="text-align: center;">Or</p> <ul style="list-style-type: none"> • Annuity policies that shall pay not less than INR 2,000 per month per family for twenty years, with appropriate indexation to the Consumer Price Index for Agricultural Labourers
3.	Subsistence grant for displaced families for a period of one year	<ul style="list-style-type: none"> • Each affected family which is displaced from the land acquired shall be given a monthly subsistence allowance equivalent to INR 3,000 per month for a period of year from the date of award
4.	Transportation cost for displaced families	<ul style="list-style-type: none"> • Each affected family which is displaced shall get a onetime financial assistance of INR 50,000 /- as

		transportation cost for shifting of the family, building materials, belongings and cattle
5.	Cattle shed / petty shops cost	<ul style="list-style-type: none"> Each affected family having cattle or having a petty shop shall get onetime financial assistance of such amount as the Appropriate Government may specify subject to a minimum of INR 25,000 /- for the construction of cattle shed or petty shop
6.	Onetime grant to artisan, small traders and certain others	<ul style="list-style-type: none"> Each affected family of an artisan, small trader or self-employed person or an affected family which owned non-agricultural land or commercial, industrial or institutional structure in the affected area, shall get a one-time financial assistance of INR 25,000 /-
7.	Onetime resettlement allowance	<ul style="list-style-type: none"> Each affected family shall be give a onetime Resettlement Allowance of INR 50,000 /-
8.	Stamp duty and registration fee	<ul style="list-style-type: none"> The stamp duty and any other fees payable for registration of the land or house allotted to the affected families shall be borne by the requiring body The land for house allotted to the affected family shall be free from all encumbrances The land or house allotted may be in the joint names of wife and husband of the affected family
9.	Special provisions for Scheduled Castes and Scheduled Tribes	<ul style="list-style-type: none"> Scheduled Castes and Scheduled Tribes displaced from Scheduled Areas shall receive an amount equivalent to INR 50,000 /- per family Families settled outside the district shall be entitled to an additional 25% R&R benefits; Payment of one third of the compensation amount at very outset; Free land for community and social gatherings;

- n. **Mode of payment of compensation:** The payment of compensation shall be made expeditiously through account payee cheques / electronic mail transfer.

B. Change in Land Use or Restrictions to Land Use

Applicability: Transmission & Distribution Projects which involve laying of power lines and erection of towers

Unlike in the case of substations, for construction of transmission towers / distribution poles and laying of power lines, ownership of the land remains with the existing owner and is not transferred to the requesting body. The Electricity Act 2003, provides the utilities with powers under the Telegraph Act 1885 which in turn states that states that ***land for the lines and poles (towers) will not be acquired***. The utility will have the right of user only in the property under, over, along, across in or upon which the lines and poles / towers are placed.

However, the Act allows, the utilities to, from time to time, place and maintain transmission / distribution lines under, over, along, or across, and towers / poles in or upon any immovable property. Further, the utility may, at any time, for the purpose of examining, repairing, altering or removing any transmission / distribution line or tower, enter on the property under, over, along, across, in or upon which the line or tower / pole has been placed.

In addition, the MoEF provides guidelines for maintaining a Right of Way (RoW) corridor which shall be kept clear of any obstruction. The width of the RoW corridor depends on the voltage of the lines as depicted in the table below:

Voltage	Width of RoW* (in meters)
220 KV	35
132 KV	27
33 KV	15
11 KV	7

*Width of Right of Way is as per MoEF guidelines dated May 2014

In the width of the RoW trees are cut or pruned to the extent required for preventing electrical hazards by maintaining the following:

Voltage	Minimum clearance between conductor and trees (in meters)
220 KV	4.6
132 KV	4.0
33 KV	2.8
11 KV	2.6

Therefore, while the ownership of land used for towers and lines remains with the existing owners, the construction of towers and laying of lines could lead to damage of crops or trees on the land. Further, the construction of the tower may restrict the use of land under the tower footing. Similarly, use of the land in the RoW corridor may also be restricted.

Keeping this in mind, the concerned utility shall endeavour to cause as little damage, detriment and inconvenience as possible. Further, the utility shall make full compensation

for any damage, detriment or inconvenience caused. In addition to the compensation for damage, the utility shall also pay compensation for restriction of land use due to construction of towers. The compensation for damage is calculated as follows:

1.	Elements of Compensation	Entitlement / Provision
	Temporary damage to crops and trees during construction of towers and laying of lines	<ul style="list-style-type: none"> • Full compensation shall be paid for the damage to crops and trees in the corridor. • The compensation for crops will be determined by the Agriculture officer on a case by case basis • The compensation for fruit trees will be determined by the horticulture department from time to time • In the case of non-fruit trees the compensation shall be determined by the forest department. However, the utility shall endeavor to avoid forest land wherever possible
	Restriction of use of land area below the tower footing	<ul style="list-style-type: none"> - The land owner is given a onetime compensation for the area under the tower footing at a rate determined by the District Collector. The rate is depended on voltage. At present the following guidelines are in place: <ul style="list-style-type: none"> - In the Kadapa Zone compensation for 132 kV towers is INR 55,000 per tower and for 220 kV towers compensation is INR 99,500 per tower. - In the Vishakhapatnam Zone <ul style="list-style-type: none"> o <i>Vizanagaram, Visakhapatnam- compensation for 132 kV towers is INR 55,000 and for 220 kV towers compensation is INR 99,500 per tower</i> o <i>Sirakulam, East Godavari, West Godavari- compensation for 132 kV towers is INR 43,900 and for 220 kV compensation is INR 79,600 per tower</i> - In the Vijayawada Zone compensation for 132 kV towers is INR 55,000 and for 220 kV towers compensation is INR 99,500 per tower.
	Other damages	<ul style="list-style-type: none"> • Actual costs as assessed by the concerned authority

C. Community Health and Safety

Applicability: Transmission & Distribution Projects

As discussed in the section policy, legal and administrative framework, the guidelines for ensuring community health and safety are provided by CEA regulations 2010 and CEA regulations 2011.. The methods to avoid, limit and mitigate the impacts on community health and safety are provided below:

- As per CEA guidelines, each utility has appointed a Safety Officer to ensure community health and safety

- Regular maintenance of the equipment at consumer premises as mandated in CEA Regulation 2010
- *Exposure to electric and magnetic fields:* Although there is public and scientific concern over the potential health effects associated with EMF, there is no empirical data demonstrating adverse health effects from exposure to typical EMF levels from power transmission lines and equipment.¹⁷
- *Exposure to hazardous material:* SF6 is used as a gas insulator for electrical switching equipment, transformers and cables. Ensure that the equipment with low leakage rate is used.
- *Noise:* The noise produced by power lines or transformers do not cause any known health risk
- *Electric Shocks and electrocution:* Electric shocks and electrocution present a major threat. The methods employed to avoid and mitigate the threat are provided below:
 - Display danger signs at appropriate locations
 - Display boards with precautions to be adopted by consumers, owners, occupiers, electrical contractors, electric workmen and suppliers
 - Display of instructions for resuscitation of persons suffering from electric shock.
 - The compensation is paid to non-departmental persons in the case of fatal accidents due to electrocution. The ex-gratia amount payable in case of fatal accidents as recommended by APERC is as follows:

S.No.	Fatal Accident	Ex-gratia amount payable (for each case)
1.	Non Departmental Person	
a.	Adult	INR 2,00,000
b.	Child	INR 2,00,000
2.	Animal	
a.	Cattle	INR 20,000
b.	Other animal (goat & sheep)	INR 4,000

The compensation is sanctioned by Chief Engineer/In-charge of zones.

¹⁷ IFC's Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution. Available at: <http://www.ifc.org/wps/wcm/connect/554e8d80488658e4b76af76a6515bb18/Final+-+General+EHS+Guidelines.pdf?MOD=AJPERES>

D. Impact on workers/employees health and safety

Applicability: Transmission & Distribution Projects

Appointment of Electrical Safety Officer:

In line with CEA Regulation 2010, the utilities will appoint an Electrical Safety Officer. The Electrical Safety Officer shall be an Electrical Engineering degree holder with at least 10 years of experience in operations and maintenance.

Construction Phase: Following measures shall be adopted:

- The developer/contractor need to have a defined safety management protocol.
- Site safety manager must be deployed for enforcement of safety measures during construction.
- For management of debris disposal, necessary measures must be integrated in the construction contract.
- The health and safety policy of and conditions of contract, the contractor shall be responsible for (i) establishing construction camps with adequate sanitation facilities; (ii) periodic health check-up for its employees and (iii) maintaining strict safety guidelines with a provision of penalty for offences.
- Further the safety policy ensures safety awareness among the workers organized on daily basis by the safety personnel of the contractor. The safety policy also frames out some specific safety requirement of workers pertaining to: (i) Welding, cutting and stone breaking; (ii) hoisting of equipments; (iii) Electrical works; (iv) working at heights; (v) erection of structural steels etc. Additionally the general safety guidelines include: (i) restricting vehicle speed plying with the construction site area; (ii) wearing of safety helmets as per color coding;(iii) following various codes like HSE codes/provisions as per factories acts/Environmental Protection Act etc.
- The workers are provided with Safety shoes, helmets, reflectors, earplugs and double lanyard safety belts (being worn by the gang workers working at heights) as personnel protective equipments.

Operations and Maintenance Phase

As part of the health and safety policy, utilities will ensure that the workers involved working in heights are provided with necessary personal protective equipments like safety shoes tested for 11/33kV, Handgloves tested for 11/33kV (IS 4770), safety belts, ladders/monkey ladders (as per IS: 3696), fall arrestor etc. There have been some concerns about the possibility of an increased risk from exposure to electromagnetic radiations from overhead transmission lines. However the exposure limit shall be kept at minimum level and regular medical checkup of the employees shall be conducted to minimize such impacts.

Potential mitigation actions include the following:

- Careful design
- Safety awareness
- Emergency planning
- Sanitation and medical facilities

E. Impact on vulnerable population

Applicability: Transmission & Distribution Projects

The mitigation methods to manage the impact on women and tribal population are provided in Gender Action Plan and Tribal Peoples Policy framework annexed with this document.

The measures to manage the impact of loss of land and RoW are provided under point 1. Loss of land, resettlement and Rehabilitation, and point 2. Change in Land Use or Restrictions to Land use. Specific provisions for vulnerable population include:

- Incase of transfer of government land
 - *Only waste lands will be allotted* and environmentally sensitive / fragile areas such as tank beds, river, beds, and hillocks with afforestation shall not be allotted.
 - *Lands assigned to poor people for agriculture purposes will not be resumed* for other purposes, and if it is unavoidable then the assignees will be provided with alternate land in addition to rehabilitation.
- *Compensation for Scheduled Castes or Scheduled Tribes Families in case of involuntary acquisition of land:* As far as possible, no acquisition of land shall be made in Scheduled Areas; and where this is done, it shall be only as a demonstrable last resort. Further the prior consent of the concerned Gram Sabha or the Panchayats at the appropriate level in the Scheduled Areas under the Fifth Schedule to the Constitution shall be obtained before issue of a notification. This prior consent shall be taken in all cases, even in the case of urgency.
 - In cases of a project involving land acquisition on behalf of a requiring body which involves involuntary displacement of the Scheduled Castes or Scheduled Tribes families, a Development Plan shall be prepared in the format prescribed in RFCTLARR. The Development Plan shall lay down the details of the procedure for settling land rights due, but not settled and restoring titles of the Scheduled Tribes as well as the Scheduled Castes on the alienated land by undertaking a special drive together with land acquisition.
 - The Development Plan shall also contain a programme for development of alternate fuel, fodder and non-timber forest produce resources on non-forest

lands within a period of five years, sufficient to meet the requirements of tribal communities as well as the Scheduled Castes.

- The affected families of the Scheduled Tribes shall be resettled preferably in the same Scheduled Area in a compact block so that they can retain their ethnic, linguistic and cultural identity. Further, the resettlement areas predominantly inhabited by the Scheduled Castes and the Scheduled Tribes shall get land, to such extent as may be prescribed by the Appropriate Government free of cost for community and social gatherings.
- The affected Scheduled Tribes, other traditional forest dwellers and the Scheduled Castes having fishing rights in a river or pond or dam in the affected area shall be given fishing rights in the reservoir area of the irrigation or hydel projects.
- All the benefits, including the reservation benefits available to the Scheduled Tribes and Scheduled Castes in the affected areas shall continue in the resettlement area.
- Any alienation of tribal lands or lands belonging to members of the Scheduled Castes in disregard of the laws and regulations for the time being in force shall be treated as null and void.

For details on compensation to Scheduled Tribes in case of involuntary land acquisition, refer to the TPPF annexed with this document

- *Managing impact on women:* Some of impact management measures listed in GAP are provided below. For details, refer to the GAP annexed with this document
 - Women employed by project are fully informed about labor rights
 - Men and women receive equal pay for equal work
 - Construction sites are properly lit and minimize blockage of access roads
 - Women are fully integrated into any income restoration activities
 - In India, as women usually do not have property rights, ensure that women are informed/consulted before securing land for project activities
 - Ensure that women receive compensation for land, RoW and damage to crops and trees in cases where property rights are with women

F. Cultural Heritage

Applicability: Transmission & Distribution Projects where line work is in vicinity of historically or culturally important sites

Avoid routing the lines through any of the identified archeologically, historically or culturally important sites. If any cultural property is found during construction, the work will be stopped immediately and contractor will intimate utilities about availability of cultural property. Utilities will intimate to Department of Archaeology & Museums, Andhra Pradesh and approval will be taken to erect the tower for transmission line.

G. Interference with communication channels

Applicability: Transmission Projects

The proposed projects require approval from Power & Telecommunication Coordination Committee (PTCC) before commission. The committee considers the worst fault conditions (measure of interference) and coordinates with the relevant telecommunication, railway and defence authorities before providing approval for the project. The process to receive PTCC approval is provided below:

- During the project design phase, EE (Electrical engineer) prepares a topography map which identifies the railway, defence and telecommunication infrastructure/crossings on the route of transmission lines.
- The head quarter calculates the fault levels, if any, for 132 kV lines. Fault levels for 220 KV line are calculated at PTCC and submits the same for approval by PTCC
- PTCC coordinates with designated authorities in BSNL, private operators like Reliance, Railways and Defence establishments to understand their concerns
- Each department adds their lines on the topographic map and provides approval

8. Environmental Impacts & Mitigation

Methods

8.1 Environmental Screening and Analysis of Alternatives

The following general procedure shall apply for all the projects and sub-projects proposed by APTRANSCO and the Distribution Companies. The details of this procedure may vary depending on the specific nature of the proposed project activity.

For every project activity the respective project implementation team of the Utility will undertake an initial environmental screening. At the screening stage one of the key factors to be evaluated is the possible infringement of the project activities with any environmentally sensitive areas such as protected ecosystems, wildlife sanctuaries, national parks, reserved forest area, protected monuments etc., for which whether any World Bank safeguard polic(y)ies is/are triggered. The project implementation team will study each activity in detail for potential impacts to identify the triggered safeguard policies. Also, wherever such infringements are substantial, different alternative locations/alignment options need to be considered. The project implementation team shall prepare a short Screening Report based on the above.

During the selection of alignment for the transmission lines and identifying the site for substations, preliminary site selection survey needs to be carried out for avoiding the environmentally and socially sensitive areas to the extent possible. The alignment of the proposed new transmission and sub-transmission lines needs to be finalised after conducting desktop as well as physical survey of the land through which the lines passes.

For selecting the optimum route, the following points may be considered for both the transmission and distribution line projects;

Analysis of alternatives for Transmission Lines				
Sl	Description	Alignment-I	Alignment-II	Alignment-III
1.	Route particulars			
i)	Length			
ii)	Terrain			
2.	Environmental Details			
i)	Town in) Alignment (Near By)			
ii)	House within ROW			
iii)	Forest In Km / Ha			

a)	Type of forest			
b)	Density of forest			
c)	Type of Fauna & Flora			
d)	Endangered species if any			
e)	Historical/Cultural monument			
f)	Any other relevant information			
6.	O & M Problem			
7.	Overall Remarks			
8.	Reasons for selection of final route:			

Analysis of alternatives for Substation					
Sl.	Study Point	Alignment-I	Alignment-II	Alignment-III	Remarks
1	Location				
2	Village Name				
3	Size of Land				
4	Type of Land(Govt./Pvt./others)				
5	General Geography of Area				
6	Agricultural/Cropping Pattern				
7	Loss of Structure House/Shop along with the status of occupants (Owner/Tenant/ Lease holder/squatter)				
8	Others a) Common property resources like School, Ponds Grazing Ground, Religious Places b) Drainage facility				
9	Tree/Plantation/Orchards (Approx.)				
10	Cost of Land				
11	Reasons for selection/rejection				

Subsequent to the screening process and assessment of the alternate sites/routes, a detailed environmental impact assessment study will be taken up for the identified transmission line route and sub-station location.

8.2 Environmental Impacts and mitigation measures

The potential environmental issues associated with transmission and distribution (T&D) projects are manageable since (a) They are mostly localised to Right of Way (ROW); (b) the 'footprint' associated with towers is small and (c) there is flexibility in siting facilities within relatively large host area. The transmission line project may have some adverse effects on

natural resources however, they can be minimized by careful route selection and siting of substations.

The environmental issues as associated with two main activities viz., (a) Transmission and distribution lines and (b) Construction of sub-stations are discussed as below:

Table 1: Potential environmental impacts and mitigation measures: Transmission Line Projects

Pre-Construction			
Activity	Anticipated Impact	Mitigation Measures	Responsible parties
Alignment selection	<ul style="list-style-type: none"> - Chances of potential impacts on terrestrial habitat including (i) Forest Fire; (ii) Avifauna and bat collision and electrocutions. - Impact on eco-sensitive areas (like national parks, wildlife sanctuaries etc.) - Impact on historical and cultural resources 	<p>Selection of an optimum route primarily avoiding: (i) Human settlements and grazing land; (ii) Environmental sensitive locations such as school, colleges, hospitals, religious structures, monuments, etc.; (iii) Notified Eco-sensitive locations and dense plantation; and, (iv) Socially, Culturally, Archaeologically sensitive area.</p>	Contractor (monitored by APTRANSCO)
Tower Location	<ul style="list-style-type: none"> - Exposure to safety related risks - Impact on water bodies, railway lines and roads 	<p>Overhead line route designed in accordance with permitted level of power frequency and the technical specification for ground clearance of towers.</p> <p>Avoid locating towers near to water bodies, railway lines and roads at maximum extent possible.</p> <p>When such crossing is unavoidable, take adequate care to make the crossing of the power line at least at the perpendicular direction to such crossings.</p>	Contractor (monitored by APTRANSCO)
Equipment's submerged under flood	<ul style="list-style-type: none"> - Contamination of receptors (soil, water etc.) 	Avoid location of towers above high flood level	Contractor (monitored by APTRANSCO)
Tree cutting and impact on forest land	<ul style="list-style-type: none"> - Impact on biodiversity, chances of forest fire and electrocutions and sometime impact on livelihood. 	Minimize the impact by maintenance of ROW. Obtain forest clearance and provide assistance towards compensatory	

		afforestation to restore the forest land wherever applicable).	
Air craft hazards from Towers	- Nearest Airport and distance	The site should be at appropriate distance from the nearest airport. Civil aviation clearance may be required for certain sections of the project and must be taken accordingly.	Contractor (monitored by APTRANSCO)
Designing drainage pattern*	- Impact on ground water and nearby agricultural field	Adequate drainage system to be adopted to avoid accidental hazards in drainage systems.	Contractor (monitored by APTRANSCO)
Construction phase			
Aspect	Summary of Anticipated Impacts	Mitigation Measures	Responsible parties
Land Use /Soil Quality	<p>Digging of foundation pits for the towers and cutting of vegetation (for foundation purposes) are the main two activities likely to affect soil quality and structure. Some loss of vegetation and crops is also anticipated due to movement of construction material and manpower through cultivated areas.</p> <p>The most significant potential impact anticipated for the soil will be change in soil structure and soil quality as a result of compaction and excavation. Removal of vegetation and trees during construction of foundation will make soil vulnerable to erosion. Movement of workers during the construction phase may</p>	<p>Construction work would involve (i) Construction of foundation and erection of towers/stringing of lines; (ii) Road construction for site accessibility. The land used for the project activities will be both cultivable and non-cultivable land.</p> <p>As per the consultations with the utilities, most of the land used for the project purpose is estimated to be government land however, for the cultivable land due to the tower construction activity, crop production in the area occupied by the tower will be stopped for short run and after the erection of towers the crop production work can start again.</p>	Contractor (monitored by APTRANSCO)

	also damage the vegetation or crops if passing thorough cultivable area.		
Waste Disposal	The main type of waste likely to be generated from construction activities is construction debris resulting from casting for foundations and some steel scrap from tower construction. Other waste expected to be generated include waste food/packaging material littered by workers.	Construction debris generated at the site must be removed from the site immediately after the completion of construction activities and the site must be levelled. Workers must be strictly instructed about random disposal of any waste generated from the construction activity. Arrangements to be made to collect and prevent littering by workers on site.	Contractor (monitored by APTRANSCO)
Traffic and Transport	There will be movement of material and manpower during construction. The traffic movement during construction phase is expected to be occasional and very low resulting in negligible impacts from the traffic.	Vehicles used for construction activities will move along the existing roads as far as possible. Any increase in traffic during the construction phase will be shortlived and will return to normal once construction activity is complete. Any new track created in any forest areas (if any) will be done only with prior approval of the forest department.	Contractor (monitored by APTRANSCO)
Ambient Air Quality	Construction activities will involve excavation for erection of tower and movement of vehicles carrying the construction material, etc. This will result in limited fugitive emission at site. As the construction activity will involve limited ground work, the potential for dust generation is low and shortlived. The increase in	Notwithstanding the potential for atmospheric emissions from construction and related activities is low, the following mitigation measures will further reduce the impact of	Contractor (monitored by APTRANSCO) by

	<p>traffic during the construction of the transmission line is expected to be occasional and negligible. Hence, it is considered that the contributions to the pollutant concentrations arising from the construction activities and traffic is small and insufficient to cause any increase in the stipulated air standards or existing concentrations.</p>	<p>emissions leading to insignificant impacts;</p> <ul style="list-style-type: none"> ○ Sprinkling of water on dust generating areas ○ Restricting the speed limit of vehicles during movement on unpaved roads and; ○ Covering of vehicles carrying loose soil and construction materials. 	
<p>Ambient Noise Levels</p>	<p>The sources of noise during construction activity include: construction traffic and construction activities such as excavation, concreting, tower erection, backfilling, use of pumps (for pumping excess water) and compressors etc. There is a potential for disturbance to habitations, schools, temples in proximity to the towers due to construction related activities . During erection of towers there can be disturbance from noise of workers. Also during stringing there is a potential for disturbance from continuous operation of equipments like tractors.</p>	<p>Construction activities will be concentrated and done sequentially so that no area is prone to extensive duration of noise impacts. For Example there will be minimum lag period between laying of foundations and erection of towers. Most of the work will be done manually instead of cranes and other heavy equipment, which will reduce potential for noise impacts.</p> <p>Construction activity will be undertaken during the daytime. Some noise generation is anticipated from movement of machinery and other equipments like tractors and trailers transporting the materials and the equipments but the traffic volumes are expected to be occasional and insignificant.</p> <p>The process of stringing of cable will only produce human voices, which might be audible to the residents in very close proximity of the operations. However, these impacts are expected to be localized and short-lived.</p>	<p>Contractor (monitored by APTRANSCO)</p>

Water Quality	The project area will not be criss-crossed by any stream or river however in some areas the presence of some small surface water body is anticipated. The use of ground water is also not anticipated for the project activities.	Optimal use of water will be planned and followed at the construction site. In case any construction activity is in proximity to any water body prevention of any runoff to the same must be ensured.	Contractor (monitored by APTRANSCO)
Soil	The excavation work involved in the project is limited to construction of tower foundation. The loss of top soil as envisaged during such construction activities can largely be reduced by storing the top soil and spreading it back for filling up the excavated area of the tower foundation.	The excavation work involved in the project is limited to construction of tower foundation. The loss of top soil as envisaged during such construction activities can largely be reduced by storing the top soil and spreading it back for filling up the excavated area of the tower foundation.	Contractor (monitored by APTRANSCO)
Flora and Fauna/	<p>For setting up of the power transmission line, there will be requirement of localised clearance of vegetation, which may affect disturb flora and fauna within the corridor. The land requirement for substations varies from 0.3 acres to 10 acres depending upon voltage level and no. of bays.</p> <p>The potential impacts that are likely from the construction of transmission line are disturbance or damage to any flora or fauna species in the impact area due to movement of vehicles, dust, noise etc. and due to clearance of trees for lying of the transmission line.</p>	<p>Care must be taken to avoid thick vegetation; towers to be located where vegetation is thin. This will greatly minimize tree loss and compensation to be paid to tree owners. Clearance for trees to be cut will be taken from concerned authorities and if required compensatory afforestation (CA) has to be done in association with the concerned authorities. Trimming of trees should be done in consultation with the concerned authorities.</p> <p>The existing land use for the transmission line is rarely used for grazing by domestic animals like cow, buffalo, goats etc.; hence minimal disturbance to local animals is anticipated during construction. The forest types in the mentioned sections are mostly governed by Open Forests and Non-forest types thereby</p>	Contractor (monitored by APTRANSCO)

		minimizing presence of rare and endangered species.	
Aesthetics and Visual Impact	The visual amenity will be disturbed mainly during casting of foundation and leaving the site with stubs of tower. The erection of towers and conductors across the terrain will be an extrinsic element to the existing ambience. The visual impact and change of landscape will be for a short period however, the route of the towers and transmission line is expected to cross other transmission line or roads which may lead to change of landscape character due to introduction of manmade character.	The route is to be planned to avoid any dense habitation or forested area. The clearing of trees must be kept to minimum and wherever possible, trimming of trees must be adopted vis-à-vis felling of trees.	Contractor (monitored by APTRANSCO)
Health and Safety	There is a possibility of an increased risk due to exposure to electromagnetic radiations from overhead transmission lines. Further, construction workers might get injured or meet accidents during construction activities. Injuries, bruises etc. might occur in case of inadequate protective measures and lack of awareness.	The developer need to have a defined safety management protocol. Site safety manager must be deployed for enforcement of safety measures during construction. In respect of management of debris disposal, necessary measures must be integrated in the construction contract. The health and safety policy of and conditions of contract, the contractor shall be responsible for (i) establishing construction camps with adequate sanitation facilities; (ii) periodic health check-up for its employees and (iii) maintaining strict safety guidelines with a provision of penalty for offences. Further the safety policy ensures safety awareness among the workers organized on daily basis by the safety personnel of the contractor. The safety policy also frames out some specific safety requirement of workers pertaining to: (i) Welding, cutting and stone breaking; (ii) hoisting of	Contractor (monitored by APTRANSCO)

		<p>equipments; (iii) Electrical works; (iv) working at heights; (v) erection of structural steels etc. Additionally the general safety guidelines include: (i) restricting vehicle speed plying with the construction site area; (ii) wearing of safety helmets as per color coding;(iii) following various codes like HSE codes/provisions as per factories acts/Environmental Protection Act etc.</p> <p>The workers are provided with Safety shoes, helmets, reflectors, earplugs and double lanyard safety belts (being worn by the gang workers working at heights) as personnel protective equipments.</p>	
Cultural Sites	<p>No archaeological, historical or culturally important sites are anticipated near the proposed transmission line corridors. If any cultural property is found during construction, the work will be stopped immediately and contractor will intimate utilities about availability of cultural property. Utilities will intimate to Department of Archeology & Museums, Andhrapadesh and approval will be taken to erect the tower for transmission line.</p>	<p>Avoid routing the lines through any of the identified archeologically, historically or culturally important sites. If any cultural property is found during construction, the work will be stopped immediately and contractor will intimate utilities about availability of cultural property. Utilities will intimate to Department of Archeology & Museums, Andhrapadesh and approval will be taken to erect the tower for transmission line.</p>	<p>Contractor (monitored by APTRANSCO)</p>

Operation phase			
Aspect	Summary	Mitigation Measures	Responsible parties
Waste Disposal	The main type of waste likely to be generated will be used transformer oil which is a category of hazardous waste egenerated at the site.	Hazardous waste will be managed as per the provisions under the hazardous waste management rules. The hazardous waste will only be sent to authorised vendor for disposal.	Contractor (monitored by APTRANSCO)
Soil	The project document ensures designing of different types of foundations according to the soil types within the project alignments. The engineering design must be made considering the soil quality and erosion potential of the region.	Moreover, project line section must not block the drainage within the alignment and also should not increase the run-off in the local catchmen area.	Contractor (monitored by APTRANSCO)
Flora and Fauna	Trees near transmission lines may increase the chances of fire hazards due to electric sparks requiring trimming of trees to minimize the risk of accidents and proper maintenance. As part of maintaining the ROW such trimming of trees may need to be undertaken which may require approval from Forest Department. The ROW maintenance team of utilities shall coordinate with the forest department in order to obtain necessary NOC for tree cutting.	Since avian fauna might be at small risks by hitting the transmission lines, hence a minor impact is predicted during the operational phases. Addition of deflectors is proposed to minimize the risk.	Contractor (monitored by APTRANSCO)
Land Use	Minor changes in land use pattern is envisaged during the operation phase. The land use for the project is primarily non-agrivultural land. This land will be aquired and developed in the construction phase itself.	No mitigation measures required at this stage.	Contractor (monitored by APTRANSCO)

Air and Noise Quality	The operation of transmission line does not involve any emission of gases and generation of dust particles and hence the impact on ambient air quality is anticipated to be very less during erection of transmission lines. Similarly impact on noise quality is envisaged to be very low.	Impacts are expected to be minimal at operation stage. No specific mitigation measures will be required.	Contractor (monitored by APTRANSCO)
Water Quality	The operation of transmission line do not involve generation of any effluent and discarding of any hazardous chemical which could have chances of impact on nearby water bodies. Thus no impacts on ground water or surface water quality are anticipated during the operational stage.	Impacts are expected to be minimal at operation stage. No specific mitigation measures will be required.	Contractor (monitored by APTRANSCO)
Workers health and Safety	Injury and sickness/health hazards	<p>As part of the health and safety policy, utilities will ensure that the workers involved working in heights are provided with necessary personal protective equipments like safety shoes tested for 11/33kV, Handgloves tested for 11/33kV (IS 4770), safety belts, ladders/monkey ladders (as per IS: 3696), fall arrestor etc. There have been some concerns about the possibility of an increased risk from exposure to electromagnetic radiations from overhead transmission lines. However the exposure limit shall be kept at minimum level and regular medical checkup of the employees shall be conducted to minimize such impacts.</p> <p>Potential mitigation actions include the following:</p> <ul style="list-style-type: none"> - Careful design - Safety awareness - Emergency planning 	Contractor (monitored by APTRANSCO)

		- Sanitation and medical facilities	
Electrical Shock Hazards	Injury/Mortality	Potential mitigation actions include the following: <ul style="list-style-type: none"> - Careful design - Safety awareness - Emergency planning - Barriers to prevent climbing - Warning signals 	Contractor (monitored by APTRANSCO)
Transmission Lines	Exposure to electromagnetic interference	Transmission line design to comply with the limits of electromagnetic interference from overhead power lines	Contractor (monitored by APTRANSCO)

Table 2: Potential environmental impacts and mitigation measures: DISCOMS

Pre-Construction			
Activity	Anticipated Impact	Mitigation Measures	Responsible parties
Alignment selection	- Impact on historical and cultural resources	Distribution lines to be underground near any places of historical or cultural importance.	Contractor (monitored by DISCOMS)
Tower Location	- Exposure to safety related risks - Impact on water bodies	Overhead line route designed in accordance with permitted level of power frequency and the technical specification for ground clearance of towers.	Contractor (monitored by DISCOMS)
Equipment's submerged under flood	- Contamination of receptors (soil, water etc.)	Avoid location of towers above high flood level	Contractor (monitored by DISCOMS)
Tree cutting and impact on forest land	- This is not a significant impact in case of distribution lines. Avoid distribution line routes - Impact on biodiversity, chances of forest fire and electrocutions and sometime impact on livelihood.	No deforestation activities to be undertaken. Only pruning of trees to be done. Alignment route to avoid the areas having more trees	Contractor (monitored by DISCOMS)

Designing drainage pattern*	- Impact on ground water and nearby agricultural field	Adequate drainage system to be adopted to avoid accidental hazards in drainage systems.	Contractor (monitored by DISCOMS)
Construction phase			
Aspect	Summary of Anticipated Impacts	Mitigation Measures	Responsible parties
Land Use /Soil Quality	<p>Digging of foundation pits for the towers and cutting of vegetation (for foundation purposes) are the main two activities likely to affect soil quality and structure. Some loss of vegetaion and crops is also anticipated due to movement of construction material and manpower through cultivated areas.</p> <p>The most significant potential impact anticipated for the soil will be change in soil structure and soil quality as a result of compaction and excavation. Removal of vegetation and trees during construction of foundation will make soil vulnerable to erosion. Movement of workers during the construction phase may also damage the vegetation or crops if passing thorough cultivable area.</p>	<p>Construction work would involve (i) Construction of foundation and erection of towers/stringing of lines; (ii) Road construction for site accessibility. The land used for the project activities will be both cultivable and non-cultivable land.</p> <p>As per the consultations with the utilities, most of the land used for the project purpose is estimated to be government land however, for the cultivable land due to the tower construction activity, crop production in the area occupied by the tower will be stopped for short run and after the erection of towers the crop production work can start again.</p>	Contractor (monitored by DISCOMS)
Waste Disposal	The main type of waste likely to be generated from construction activities is construction debris resulting from casting for foundations and some steel scrap from tower construction. Other waste	Construction debris generated at the site must be removed from the site immediately after the compeltion of construction activities and the site must be levelled. Workers must be strictly instructed about	Contractor (monitored by DISCOMS)

	<p>expected to be generated include waste food/packaging material littered by workers.</p>	<p>random disposal of any waste generated from the construction activity.</p> <p>Arrangements to be made to collect and prevent littering by workers on site.</p>	
Traffic and Transport	<p>There will be movement of material and manpower during construction. The traffic movement during construction phase is expected to be occasional and very low resulting in negligible impacts from the traffic.</p>	<p>Vehicles used for construction activities will move along the existing roads as far as possible. Any increase in traffic during the construction phase will be shortlived and will return to normal once construction activity is complete.</p>	<p>Contractor (monitored by DISCOMS)</p>
Ambient Air Quality	<p>Construction activities will involve excavation for erection of tower and movement of vehicles carrying the construction material, etc. This will result in limited fugitive emission at site.</p> <p>As the construction activity will involve limited ground work, the potential for dust generation is low and shortlived. The increase in traffic during the construction of the transmission line is expected to be occasional and negligible. Hence, it is considered that the contributions to the pollutant concentrations arising from the construction activities and traffic is small and insufficient to cause any increase in the stipulated air standards or existing concentrations.</p>	<p>Notwithstanding the potential for atmospheric emissions from construction and related activities is low, the following mitigation measures will further reduce the impact of emissions leading to insignificant impacts:</p> <ul style="list-style-type: none"> ○ Sprinkling of water on dust generating areas ○ Restricting the speed limit of vehicles during movement on unpaved roads and; ○ Covering of vehicles carrying loose soil and construction materials. 	<p>Contractor (monitored by DISCOMS)</p>

<p>Ambient Noise Levels</p>	<p>The sources of noise during construction activity include: construction traffic and construction activities such as excavation, concreting, tower erection, backfilling, use of pumps (for pumping excess water) and compressors <i>etc.</i> There is a potential for disturbance to habitations, schools, temples in proximity to the towers due to construction related activities . During erection of towers there can be disturbance from noise of workers. Also during stringing there is a potential for disturbance from continuous operation of equipments like tractors.</p>	<p>Construction activities will be concentrated and done sequentially so that no area is prone to extensive duration of noise impacts. For Example there will be minimum lag period between laying of foundations and erection of towers. Most of the work will be done manually instead of cranes and other heavy equipment, which will reduce potential for noise impacts.</p> <p>The process of stringing of cable will only produce human voices, which might be audible to the residents in very close proximity of the operations. However, these impacts are expected to be localized and short-lived.</p>	<p>Contractor (monitored by DISCOMS)</p>
<p>Water Quality</p>	<p>The project area will not be criss-crossed by any stream or river however in some areas the presence of some small surface water body is anticipated. The use of ground water is also not anticipated for the project activities.</p>	<p>Optimal use of water will be planned and followed at the construction site. In case any construction activity is in proximity to any water body prevention of any runoff to the same must be ensured.</p>	<p>Contractor (monitored by DISCOMS)</p>
<p>Soil</p>	<p>The excavation work involved in the project is limited to construction of tower foundation. The loss of top soil as envisaged during such construction activities can largely be reduced by storing the top soil and spreading it back for filling up the excavated area of the tower foundation.</p>	<p>The excavation work involved in the project is limited to construction of tower foundation. The loss of top soil as envisaged during such construction activities can largely be reduced by storing the top soil and spreading it back for filling up the excavated area of the tower foundation.</p>	<p>Contractor (monitored by DISCOMS)</p>

Aesthetics and Visual Impact	The visual amenity will be disturbed mainly during casting of foundation and leaving the site with stubs of tower. The erection of towers and conductors across the terrain will be an extrinsic element to the existing ambience. The visual impact and change of landscape will be for a short period however, the route of the towers and transmission line is expected to cross other transmission line or roads which may lead to change of landscape character due to introduction of manmade character.	The route is to be planned to avoid any dense habitation or forested area. The clearing of trees must be kept to minimum and clearing of trees must be kept to minimum and wherever possible, trimming of trees must be adopted vis-à-vis felling of trees.	Contractor (monitored by DISCOMS)
Health and Safety	There is a possibility of an increased risk due to exposure to electromagnetic radiations from overhead transmission lines. Further, construction workers might get injured or meet accidents during construction activities. Injuries, bruises etc. might occur in case of inadequate protective measures and lack of awareness.	The developer need to have a defined safety management protocol. Site safety manager must be deployed for enforcement of safety measures during construction. In respect of management of debris disposal, necessary measures must be integrated in the construction contract. The health and safety policy of and conditions of contract, the contractor shall be responsible for (i) establishing construction camps with adequate sanitation facilities; (ii) periodic health check-up for its employees and (iii) maintaining strict safety guidelines with a provision of penalty for offences. Further the safety policy ensures safety awareness among the workers organized on daily basis by the safety personnel of the contractor. The safety policy also frames out some specific safety requirement of workers	Contractor (monitored by DISCOMS)

		<p>pertaining to: (i) Welding, cutting and stone breaking; (ii) hoisting of equipments; (iii) Electrical works; (iv) working at heights; (v) erection of structural steels etc.</p> <p>Additionally the general safety guidelines include: (i) restricting vehicle speed plying with the construction site area; (ii) wearing of safety helmets as per color coding;(iii) following various codes like HSE codes/provisions as per factories acts/Environmental Protection Act etc.</p> <p>The workers are provided with Safety shoes, helmets, reflectors, earplugs and double lanyard safety belts (being worn by the gang workers working at heights) as personnel protective equipments.</p>	
Cultural Sites	<p>No archaeological, historical or culturally important sites are anticipated near the proposed transmission line corridors. If any cultural property is found during construction, the work will be stopped immediately and contractor will intimate utilities about availability of cultural property. Utilities will intimate to Department of Archeology & Museums, Andhrapradesh and approval will be taken to erect the tower for transmission line.</p>	<p>Avoid routing the lines through any of the identified archeologically, historically or culturally important sites. If any cultural property is found during construction, the work will be stopped immediately and contractor will intimate utilities about availability of cultural property. Utilities will intimate to Department of Archeology & Museums, Andhrapradesh and approval will be taken to erect the tower for transmission line.</p>	<p>Contractor (monitored by DISCOMS)</p>

Operation phase			
Aspect	Summary	Mitigation Measures	Responsible parties
Waste Disposal	The main type of waste likely to be generated will be used transformer oil which is a category of hazardous waste egenerated at the site.	Hazardous waste will be managed as per the provisions under the hazardous waste management rules. The hazardous waste will only be sent to authorised vendor for disposal.	Contractor (monitored by DISCOMS)
Soil	The project document ensures designing of different types of foundations according to the soil types within the project alignments. The engineering design must be made considering the soil quality and erosion potential of the region.	Moreover, project line section must not block the drainage within the alignment and also should not increase the run-off in the local catchmen area.	Contractor (monitored by DISCOMS)
Flora and Fauna	Trees near transmission lines may increase the chances of fire hazards due to electric sparks requiring trimming of trees to minimize the risk of accidents and proper maintenance. As part of maintaining the ROW such trimming of trees may need to be undertaken which may require approval from Forest Department. The ROW maintenance team of utilities shall coordinate with the forest department in order to obtain necessary NOC for tree cutting.	Since avian fauna might be at small risks by hitting the transmission lines, hence a minor impact is predicted during the operational phases. Addition of deflectors is proposed to minimize the risk.	Contractor (monitored by DISCOMS)
Land Use	Minor changes in land use pattern is envisaged during the operation phase. The land use for the project is primarily non-agrivultural land. This land will be aquired	No mitigation measures required at this stage.	Contractor (monitored by DISCOMS)

	and developed in the construction phase itself.		
Air and Noise Quality	The operation of transmission line does not involve any emission of gases and generation of dust particles and hence the impact on ambient air quality is anticipated to be very less during erection of transmission lines. Similarly impact on noise quality is envisaged to be very low.	Impacts are expected to be minimal at operation stage. No specific mitigation measures will be required.	Contractor (monitored by DISCOMS)
Water Quality	The operation of transmission line do not involve generation of any effluent and discarding of any hazardous chemical which could have chances of impact on nearby water bodies. Thus no impacts on ground water or surface water quality are anticipated during the operational stage.	Impacts are expected to be minimal at operation stage. No specific mitigation measures will be required.	Contractor (monitored by DISCOMS)
Workers health and Safety	Injury and sickness/health hazards	As part of the health and safety policy, utilities will ensure that the workers involved working in heights are provided with necessary personal protective equipments like safety shoes tested for 11/33kV, Handgloves tested for 11/33kV (IS 4770), safety belts, ladders/monkey ladders (as per IS: 3696), fall arrestor etc. There have been some concerns about the possibility of an increased risk from exposure to electromagnetic radiations from overhead transmission lines. However the exposure limit shall be kept at minimum level and regular medical checkup of the employees	Contractor (monitored by DISCOMS)

		<p>shall be conducted to minimize such impacts.</p> <p>Potential mitigation actions include the following:</p> <ul style="list-style-type: none"> - Careful design - Safety awareness - Emergency planning - Sanitation and medical facilities 	
Electrical Shock Hazards	Injury/Mortality	<p>Potential mitigation actions include the following:</p> <ul style="list-style-type: none"> - Careful design - Safety awareness - Emergency planning - Barriers to prevent climbing - Warning signals 	Contractor (monitored by DISCOMS)
Transmission Lines	Exposure to electromagnetic interference	Transmission line design to comply with the limits of electromagnetic interference from overhead power lines	Contractor (monitored by DISCOMS)

Table 3: Potential environmental impacts specific to project activities undertaken by APTRANSCO and DISCOMS (viz., APSPDCL and APEPDCL)

Potential environmental impacts associated with transmission line construction																										
S.No	Issue	Summary																								
1.	Clearing of Trees with in Right of Way (ROW)	<p>Right of Way (ROW) width for the transmission/distribution line depends on the line voltage. The maximum permissible width of ROW on forestland and minimum clearance between Trees and conductors as specified in IS: 5613 and by MoEF guidelines are given in Table.</p> <p>At present, a width clearance of 3 m is allowed below each conductor for the movement of tension stringing equipment. Trees on such strips are felled/lopped to facilitate stringing and maintenance of ROW. After completion of stringing, natural regeneration or dwarf tree/medicinal tree plantation is allowed to a certain height.</p> <p>Trimming or pruning is done with the permission from the local forest officer to maintain required electric clearance as necessary during operation and maintenance. In hilly areas where adequate clearance is already available, tree will not be cut/felled in 3 meter strip beneath for ROW except working clearance as stringing is done manually only. As compared to transmission line, distribution line requires only small right of way and therefore felling of trees is much less than that requires for lying of transmission lines. Generally stringing of distribution line is carried out manually and therefore trimming/pruning of tree branches are only required instead of cutting of trees in large numbers.</p> <table border="1"> <thead> <tr> <th>Transmission Voltage (in KV)</th> <th>Max. ROW (in meters)</th> <th>Minimum Clearance (in meters) between conductors and trees</th> </tr> </thead> <tbody> <tr> <td>11</td> <td>7</td> <td>2.6</td> </tr> <tr> <td>33</td> <td>15</td> <td>2.8</td> </tr> <tr> <td>66</td> <td>18</td> <td>3.4</td> </tr> <tr> <td>110</td> <td>22</td> <td>3.7</td> </tr> <tr> <td>132</td> <td>27</td> <td>4.0</td> </tr> <tr> <td>220</td> <td>35</td> <td>4.6</td> </tr> <tr> <td>400 D/C & S/C</td> <td>46</td> <td>5.5</td> </tr> </tbody> </table> <p><i>* As per IS: 5613 and MoEF guidelines finalized in consultation with CEA</i></p>	Transmission Voltage (in KV)	Max. ROW (in meters)	Minimum Clearance (in meters) between conductors and trees	11	7	2.6	33	15	2.8	66	18	3.4	110	22	3.7	132	27	4.0	220	35	4.6	400 D/C & S/C	46	5.5
Transmission Voltage (in KV)	Max. ROW (in meters)	Minimum Clearance (in meters) between conductors and trees																								
11	7	2.6																								
33	15	2.8																								
66	18	3.4																								
110	22	3.7																								
132	27	4.0																								
220	35	4.6																								
400 D/C & S/C	46	5.5																								
2.	Aesthetic Appeal of an Area	<p>Erection of transmission/distribution towers and lines affects the aesthetics of the area for some time. However, measures like planting trees along roads running parallel to transmission/distribution lines in consultation with Forest Department, if feasible can be undertaken to buffer visual effect.</p>																								

Potential environmental impacts associated with installation of sub-stations		
S.No	Issue	Summary
1.	Used Transformer Oil	As a part of routine maintenance, transformer oil is changed every 10- 15 years. The used transformer oil is categorized as hazardous wastes as per Hazardous waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and its unscientific disposal in environment may lead to soil and water contamination.
2.	Used Battery	Used lead acid battery is a pollutant and therefore its improper handling & disposal may lead to contamination of soil and water.
3.	e-Waste	The electrical and electronic equipment (EEE) have hazardous/ toxics substances in their components, which may cause harm/pose risk to health and environment during handling after its expiry & full usage.
4.	SF6 Gas	It is a highly potential Green House Gas (GHG) being used in Circuit Breaker. Mishandling and leakage <i>etc.</i> can lead to its escape into the atmosphere causing global warming.
5	Drainage congestion and flooding	Appropriate drainage and sewage network to be provided at the substations to avoid flooding, land and water pollution. Regular inspection, cleaning and maintenance of the drainage systems in and around the site needs to be ensured, especially if construction works are carried out during the wet season.

8.3 Policy and Legal Framework

Table 2: Policy and Legal Framework applicable to the project activities

Constitutional Provisions		
A	Article 48 A	The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.
B	Article 51 A (g)	It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.
C	Environmental Policy, 2006	The policy seeks to stimulate partnerships of different stakeholders, i.e. public agencies, local communities, academic and scientific institutions, the investment community, and international development partners, in harnessing their respective resources and strengths for environmental management. The dominant theme of this policy is that while conservation of environmental resources is necessary to secure livelihoods and well-being of all, the most secure basis for conservation is to ensure that people dependent on particular resources obtain better livelihoods from the fact of conservation, than from degradation of the resource."

Provisions/Law of Land/Rules	Applicability
Electricity Act, 2003 (EA, 2003)	<p>Transmission line projects are constructed under the ambit of Electricity Act, 2003 following the provisions of Section 67 & 68 of Act.</p> <p>Under the provisions of Section 68(1):-Prior approval of the Govt. of Andhra Pradesh (GoAP) is a mandatory requirement to undertake any new transmission project 66kV upward and for distribution project of 33kV system in the State which authorizes APTRANSCO, APSPDCL, APEPDCL (herein and after referred to as utilities) to plan and coordinate activities to commission a new transmission/distribution project.</p> <p>The Electricity Act under Section 164 has a provision to grant license the power of Telegraph Authority as provided in the Indian Telegraph Act, 1885 GoAP on request of utilities may by order in writing/through notification authorize them for using powers of telegraph authority after fulfilling the requirement as laid down in the rules thereof.</p>
Forest (Conservation) Act, 1980	<p>This Act provides for the conservation of forests and regulates the diversion of forest land to non-forestry purpose. When any transmission/distribution line traverses forest land, prior clearance is mandatorily required from Ministry of Environment and Forests (MoEF), Gol under the Forest (Conservation) Act, 1980.</p>
Environment (Protection) Act, 1986	<p>It is an umbrella Act for the protection and improvement of environment. This Act as such is not applicable to transmission/ distribution projects of utilities. Project categories are specified under the schedule of the EIA notification. EPA is an umbrella Act under which several pollution prevention and control Acts and Rules such as Water (Prevention and Control of Water Pollution) Act, 1974 (as amended in 1988); The Air (Prevention and Control of Pollution) Act, 1981, amended in 1987; The Noise Pollution (Regulation & Control) Rules, 2000 (as amended in 2002); Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008; Coastal Regulation Zone (CRZ) Notification, 2011 (as amended) are prescribed under the Act. At all stages of the project, the compliance against the applicable conditions of these key Acts and Rules must be adhered to by the utilities.</p>
The Water (Prevention and Control of Water Pollution) Act, 1974 (as amended in 1988)	<p>The purpose of this Act is to provide for the prevention and control of water pollution and maintaining or restoring of wholesomeness of water. The Act asked for establishment of pollution control boards at central and state level and assigned functions and powers to these boards for the prevention and control of water pollution and for matters connected therewith.</p> <p>For the current project, labour will mainly be resorted from the local sources and no significant of camp site is envisaged hence, no significant sewage generation is anticipated.</p>

Provisions/Law of Land/Rules	Applicability
<p>The Air (Prevention and Control of Pollution) Act, 1981, amended in 1987</p>	<p>The Air (Prevention and Control of Pollution) Act, 1981 an Act of the Parliament of India to control and prevent air pollution. It was amended in 1987. The project implementing utility will need to ensure that any construction contractor setting up a labour camp takes consent to establish/NOC prior to its set-up in case an air pollution source above certain rated capacity is proposed to be installed at the camp site.</p> <p>For the current project, labour will mainly be resorted from the local sources and no significant of camp site is envisaged. Some of the activities of the project that will generate fugitive emissions like dust will include movement of vehicles, excavation of pits for tower erection, operation of diesel generator sets at campsites or other construction activities among others. Appropriate measure must be taken to contain these emissions.</p>
<p>The Noise Pollution (Regulation & Control) Rules, 2000 (as amended in 2002)</p>	<p>Noise Control Rules, 2000 (as amended) were notified to prescribe the ambient noise quality standards are have to be complied with in different areas/zones viz., residential, commercial etc. These rules also restrict the use of loud speakers and public addressal systems within certain time period. State Pollution Control Boards (SPCB) are provided with responsibility to monitor the implementation of the Rules.</p> <p>There will be generation of noise during the erection of transmission line during the construction activities during the project phases. Based on the land use classification, areas where the project phase is being executed may be falling under various categories such as Residential, Commercial etc. The day and night time noise limits as per the prescribed standards must be complied with by the executing agencies. Noise pollution generated from the project activities must stay within the prescribed limits (viz., standards specified by CPCB for different categories). Andhra Pradesh Pollution Control Board (APPCB) and district administration will enforcement agency for the current project location.</p>
<p>The Motor Vehicles Act, 1988 (as amended) and Central Motor Vehicle Rules, 1989 (as amended)</p>	<p>The Motor Vehicles Act (MVA), 1988 regulates all aspects of road transport vehicles. The Act provides in detail the legislative provisions regarding licensing of drivers/conductors, registration of motor vehicles, control of motor vehicles through permits, special provisions relating to state transport undertakings, traffic regulation, insurance, liability, offences and penalties, etc. For exercising the legislative provisions of the Act, the Government of India made the Central Motor Vehicles Rules (CMVR), 1989. Ministry of Road Transport and Highways /State Transport is the nodal authority for the implementation and monitoring the provisions of the Act and the Rules.</p> <p>Vehicles will be required for movement of material and manpower at the project sites. As per Rule 115(1) of CMVR, 1989: "Every motor vehicle shall be maintained in such condition and shall be so driven so as to comply with the standards prescribed in these rules...." The pollution standards for in use vehicles have been prescribed under Rule 115(2) of Central Motor Vehicles Rules, 1989 (CMVR, 1989). All vehicles used for the project activities must have a valid Pollution under control (PUC) certificate. This certificate is mandatory for every vehicle. The owner needs to carry a valid pollution under control certificate and maintain vehicle in such a condition that it complies with the prescribed emission norms.</p>

Provisions/Law of Land/Rules	Applicability
Ozone Depleting Substances (Regulation and Control) Rules, 2000	As per the notification, certain control and regulation has been imposed on manufacturing, import, export, and use of these compounds. SF6 is used as an alternative to any ODS substance for providing insulation in transformers.
Batteries (Management and Handling) Rules, 2001	As per notification, Being a bulk consumer utilities (APTRANSCO/DISCOMS) to ensure that the used batteries are disposed to registered recyclers only. A half-yearly return is to be filed as per Form-8 of these Rules must be submitted to the Andhra Pradesh Pollution Control Board (APPCB).
Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008	<p>As per notification, used oil is categorized as hazardous waste and require proper handling, storage and disposed only to authorize disposal facility (registered recyclers/ re-processors) Being a bulk user, utilities shall comply with provision of said rules and obtain authorization for disposing off their used transformer oil to authorised recycler.</p> <p>As a bulk user of transformer oil which is categorized as Hazardous Waste, utilities shall comply with the provisions of the said rules if the practice of storing of used oil is maintained. In case it is decided to outsource the process of recycle of used oil to registered recycler as per the provisions of notification then utilities (APTRANSCO / APSPDCL / APEPDCL) shall submit the desired return in prescribed form to APPCB at the time of disposal of used oil.</p>
E-waste (Management and Handling) Rules, 2011	As per notification, bulk consumers like APTRANSCO/DISCOMS (viz., APSPDCL, APEPDCL) is to dispose e-waste generated by them in environmentally sound manner by channelizing to authorized collection centres/ registered dismantler/ recyclers/return to producers. APTRANSCO/DISCOMS, being a bulk consumer of electrical and electronics equipment's shall obtain authorization under the Rules and maintain record as per Form-2 of these Rules for scrutiny by APPCB.
Coastal Regulation Zone (CRZ) Notification, 2011 (As amended)	<p>Notification imposes restrictions on setting up and expansion of industries, operations or processes and the like in the CRZ: (i) the land area from high tide line (HTL) to 500 meters on the landward side along the sea front. (ii) CRZ shall apply to the land area between HTL to 100 meters or width of the creek whichever is less on the landward side along the tidal influenced water bodies that are connected to the sea.</p> <p>Some of the key sub-project activities are proposed to be undertaken by the utilities (APTRANSCO/DISCOMS) in coastal areas. Hence, the notification will apply to the project and all provisions specified under the notification must be complied with throughout the stages of the project.</p>
Biological Diversity Act, 2002	This Act is not directly applicable to transmission projects because it deals with the conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge and for matters connected therewith. Utilities (APTRANSCO/DISCOMS) must abide by the provision of the Act in case any component of transmission line passes through any of these wildlife protected area (national park/sanctuary), all necessary precautions will be required for sheltering scheduled wildlife under the Act.

Provisions/Law of Land/Rules	Applicability
Wildlife Protection Act, 1972	<p>The Act inter-alia deals with prohibition of hunting of wild animals except in certain cases; protection of specified plants; declaration and protection of sanctuaries; restrictions on entry in sanctuary; prohibition on destruction in sanctuary except under a permit; declaration of national parks; power of central government to declare as sanctuaries. The state of Andhra Pradesh has several protected areas including 13 wildlife sanctuaries, 3 national parks and one tiger reserve including Nagarjuna Sagar–Srisailem Tiger Reserve (NSTR) which is the biggest tiger reserve of India.</p> <p>In case any component of transmission line passes through any of these wildlife protected area (national park/sanctuary), all necessary precautions will be required for sheltering scheduled wildlife under the Act.</p>
Rights of Way (RoW) and Compensation	In case of agricultural or private land the provisions of Section- 67 and or Section-68 (5 & 6) of the Electricity Act, 2003 and Section-10 of the Indian Telegraph Act, 1885 are followed for assessment and payment of compensation towards such damages.
The Electricity Act, 2003 and Indian Electricity Rules, 1956 and 2005	These Rules specify general safety requirements for construction, installation, protection, operation and maintenance of electricity supply lines and apparatus.
International Conventions	
Ramsar Convention, 1971	India has ratified Ramsar Convention, 1971 for protection of wetlands. Kolleru Lake in Andhra Pradesh is identified Ramsar wetland and is added to the list of protected wetlands in the year 2002. As understood during the discussions with utilities, the proposed transmission and distribution corridor is not expected to pass through the protected area and hence the adverse impacts are not anticipated.
Convention on the conservation of migratory species of wild animals (Bonn Convention, 1979)	<p>India is contacting party to the convention on conservation of migratory species of wild animals. India is a signatory to the convention since 1983.</p> <p>The coastline of Andhra Pradesh is one of the sporadic nesting habitats of Olive Ridley turtles (<i>Lepidochelys olivacea</i>), which is popularly known as “Samudram Tabelu” in Telugu. The species is known to nest on the northern Andhra Pradesh coast which encompasses three districts namely Srikakulam, Vizianagaram and Visakhapatnam.</p>
Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal	<p>Basel Convention was signed by India in March 1990 and ratified in June 1992. The import and export norms of the hazardous waste have been provided in conformance with Basel Convention.</p> <p>No Trans-boundary movement of hazardous waste is proposed during any stage of the project hence, it is not applicable.</p>

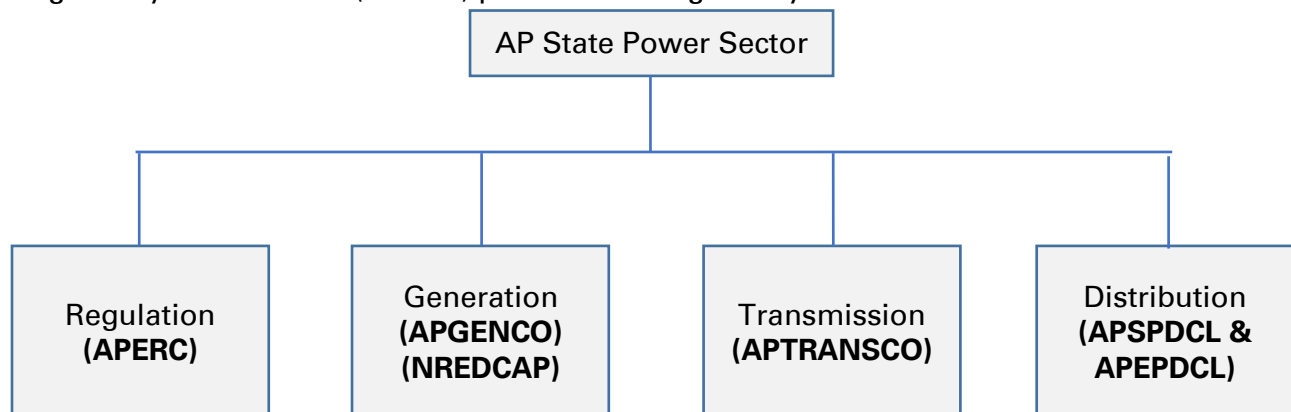
Table 3: World Bank Safeguard policies triggered and explanation

Safeguard Policy Triggered	Triggered (Y/N)	Explanation
<p>Environmental Assessment: OP/BP 4.01</p>	<p>Yes</p>	<p>The project will invest substantially in grid roll-out through the purchase of equipment including for MV-substations (expansion of existing substations and new), MV/LV transformers, MV and LV lines, household connections, meters, and off-grid systems.</p> <p>Environmental impacts for grid extensions are related to works at substations and the installation of power lines, which for instance may require safe disposal of construction, old equipment and other waste. These substations are small and impacts are expected to be limited. In view of this, the project has been given a Category B classification under OP4.01. This ESMF provides for screening investments into the above described limited scope and avoiding significant impacts.</p> <p>The Project will focus on building the capacity of staff, with strong mechanisms and procedures in place to screen, assess, plan and monitor the implementation of subprojects. This capacity will also be required to support applicants with the efficient preparation of proposals for subprojects. The implementation stage of the Project will also include the design of subprojects based on approved application for subprojects. Given this need to establish institutional arrangements and build implementation capacity first, all subprojects and equipment purchases will be determined during project implementation, this framework provides for the modalities of selection and implementation of equipment purchases and implementation of subprojects.</p> <p>This ESMF also includes guidance in the form of an Environmental Code of Practice, and health and safety standards to be followed during project implementation based on the World Bank Group's Environmental, Health and Safety (EHS) Guidelines for Power Transmission and Distribution and including provisions for beneficiaries and worker health and safety. The ESMF provides guidelines for screening of all subprojects including procurement of goods that would result in investments, determination of requirements for assessment and preparation of further documentation in accordance with the World Bank safeguard policies including site-specific environmental and social management plans (ESMPs), Environmental and Social Impact Assessments (ESIA) and the implementation and monitoring of these.</p>
<p>Natural Habitats OP/BP 4.04</p>	<p>Yes</p>	<p>Significant impacts on natural habitats are not expected since it is a linear project and also the footprint is limited to small area only. However as specific subprojects and their locations are yet to be determined further information may be needed during implementation to ascertain specific impacts. This ESMF provides specific screening provisions to determine if natural habitats are an issue, and what environmental instrument is needed if the level of significance of the impacts is unknown. If the impacts were to be considered significant, the Project will not finance the particular subproject.</p>

Safeguard Policy Triggered	Triggered (Y/N)	Explanation
Forests OP/BP 4.36	Yes	This policy is triggered as the Project is expected to pass through some of the forest areas and have some impacts on the health and quality of forests, or affect the rights and welfare of people and their level of dependence upon or interaction with forests, nor aims to bring about changes in the management, protection or utilization of natural forests or plantations. This ESMF provides for screening investments to avoid impacting the health and quality of forests.
Pest Management OP 4.09	No	This policy is not triggered. It is not practice in India to include pesticides in maintaining the right of way under transmission lines.
Physical Cultural Resources OP/BP 4.11	Yes	Since specific project investments are not known, it is not possible to rule out the presence of physical cultural resources. However, based on the initial discussions with the utilities, the project is expected to pass through some tourist and places of religious importance so the policy will be triggered.
Safety of Dams OP/BP 4.37	No	The project interventions are not expected to require the construction of dams or impoundment structures, nor is it expected that they could cause impacts to existing structures as governed by this policy.
Projects on International Waterways OP/BP 7.50	No	The project interventions are small in nature and in scale not expected to cause any drainage or discharges to surface waters, nor entail any significant usage of surface water for cooling or other purposes, that would affect international waterways.

Institutional Arrangements

The power sector in Andhra Pradesh comprises four key state owned enterprises to focus on the core operation power generation – Andhra Pradesh Power Generation Corporation Ltd. (APGENCO), power transmission, The Transmission Corporation of Andhra Pradesh (APTRANSCO) and distribution (Southern Power Distribution Company of Andhra Pradesh Ltd. (APSPDCL) and Eastern Power Distribution Company of Andhra Pradesh Ltd. (APEPDCL). These are corporatized entities with their own boards. The state also has New and Renewable Energy Development Corporation of Andhra Pradesh Ltd. (NREDCAP) to promote renewable energy deployment in the state. Lastly, Andhra Pradesh Electricity Regulatory Commission (APERC) provides the regulatory overview to the sector.



Additionally, the utilities coordinate with other administrative institutions, private players and civil society organisations to manage the impacts. These institutional arrangements for each utility are also provided below. These arrangements has been documented based on consultations with the respective utilities:

9.1 APTRANSCO

A typical transmission project is commissioned after a Long Term Systems Study identifies the need and a Feasibility Report is prepared by the Chief Engineer (CE) power systems. Subsequently, a Field Feasibility report is prepared by the field staff (Executive Engineer (EE), Assistant Divisional Engineer (ADE) and Divisional Engineer (DE)) which identifies the load demand in their area of operation and a resource plan is prepared, which lists the resources required to undertake the project. Based on these reports, the CE construction prepares a scheme (project). The scheme is submitted for administration approval to a full board (all directors and chairman). Once the scheme is approved, other relevant internal approvals - the approval on BEE line, location for the substations, raw material required etc. from CE (Civil), CE (Construction), CE (Telecom) and financial approval from Finance

Advisor & Chief Controller of accounts (FACCA) - are taken, following which tender is released for hiring a contractor to undertake the work. The EE oversees the work of the contractor.

Once the contractor is selected and a purchase order is released, the approvals and coordination is required with other external stakeholders like revenue department and PTCC. The institutional arrangement to take these approvals is provided below:

- After the purchase order is issued, the contractor conducts a check survey of every point. The Revenue Officer is informed by the EE and Superintendent Engineer (SE) regarding the land requirements and the route is published in the gazette, an English daily and a Telugu daily. The public can raise grievances at this point.
- *Process to secure land:*
 - Once the probable sites have been identified, the field engineers (CE, SE and DE), request the Revenue Department (*tahsildar*/ mandal revenue officer (MRO)) for land.
 - As a first preference, government land is identified.
 - If the *tahsildar* certifies that no government land is available, then private land is identified
- *Right of Way (RoW):* The contractor and the AE approach the farmers and negotiate the RoW. Currently, the RoW compensation is provided for base of the tower and not for the corridor.
 - ***In the Kadapa Zone*** (comprising of Ananthapur, Kadapa, Kurnool, Chittoor) compensation for 132 kV towers is INR 55,000 per tower and for 220 kV towers compensation is INR 99,500 per tower.
 - ***In the Vishakhapatnam Zone:***
 - *Vizanagaram, Visakhapatnam-* compensation for 132 kV towers is INR 55,000 and for 220 kV towers compensation is INR 99,500 per tower
 - *Sirakulam, East Godavari, West Godavari-* compensation for 132 kV towers is INR 43,900 and for 220 kV compensation is INR 79,600 per tower
 - ***In the Vijayawada Zone*** (comprising of Krishna, Guntur, Prakasham, Nellore) compensation for 132 kV towers is INR 55,000 and for 220 kV towers compensation is INR 99,500 per tower
- *Compensation for land:*
 - Government land allotted for the project might be assigned to some other people, in which case appropriate compensation, as decided by the MRO, is given.
 - In case, private land is purchased for the project, a negotiating committee consisting of Govt. representative, State Board Officer, Local DE and a valuator from a private party is constituted to negotiate price for securing private property

- It is made sure that no residential area is used for the project.
 - Compensation for damage to crops is decided by the Agriculture Officer under the Revenue Department
 - The compensations are paid through the Revenue Department
- Public consultations are undertaken in case of resistance from the community regarding securing of land or the amount of compensation offered. The panchayats and local public leaders may help in convincing the land owners.
 - In case of grievances, the affected people can raise their concerns through the Consumer Grievance Redressal Forum (CGRF). If people are still not convinced by the solution provided through the CGRF, they can approach the courts for a judicial settlement.
 - During construction, police help is sought in case of any anticipated disruption to work from the community.
 - *Approvals from Railways, Defence and telecommunication organisations:*
 - At the next step, a topographical map is prepared by the EE and the contractor. In addition to providing the topography of the area, the map identifies the railway, telecom and defence crossings.
 - At the APTRANSCO headquarters the fault levels, if any, are calculated for 132 kV lines and submitted for approval to the PTCC. Fault levels for 220kV line are calculated at the PTCC.
 - The PTCC coordinates with designated authorities in BSNL, private operators like Reliance, Railways and Defence establishments to understand their concerns
 - Each department adds their lines on the topographical map and provides their approval for the proposed scheme
 - In case, of any issue or compensation payable, the PTCC contacts the APTRANSCO headquarters
 - The process of approval from PTCC and these departments takes a minimum of 2-3 months
 - *Approvals from forest department:*
 - Forest (Conservation) Act, 1980 restricts the use of forest land for any non-forestry activities. The approval of the Chief Conservator of Forest, Forest Department, is required to undertake any non-forestry activity.
 - In case forest area has to be entered, the CE construction specifies the area that has to be crossed to the Chief Conservator of Forest.
 - As a compensation, 2 times the forest land secured for the project activity, has to be handed over to the forest department.
 - The District Collector (DC) identifies the appropriate land to be handed over to forest department.

- Approval process takes a minimum of 6 months.
- In cases the scheme is along or near any water channel like river, canal etc., approval from Irrigation Department is required to certify the proposed scheme does not obstruct any water ways.

APTRANSCO has established a corporate cell to implement the Environment and Social Management Plans (ESMPs). The **Environment and Social Management System (ESMS) cell** has following members:

1. SE/PM/400 KV/ APTRANSCO/VS/Hyderabad
2. SE/PM/Construction/APTRANSCO/VS/Hyderabad
3. EE/Civil/APTRANSCO/VS/Hyderabad
4. Concerned EE/Civil in field (covering the jurisdiction of the Transmission Project)
5. Concerned DE/Construction in Vidyutsoudha looking after the Transmission Project

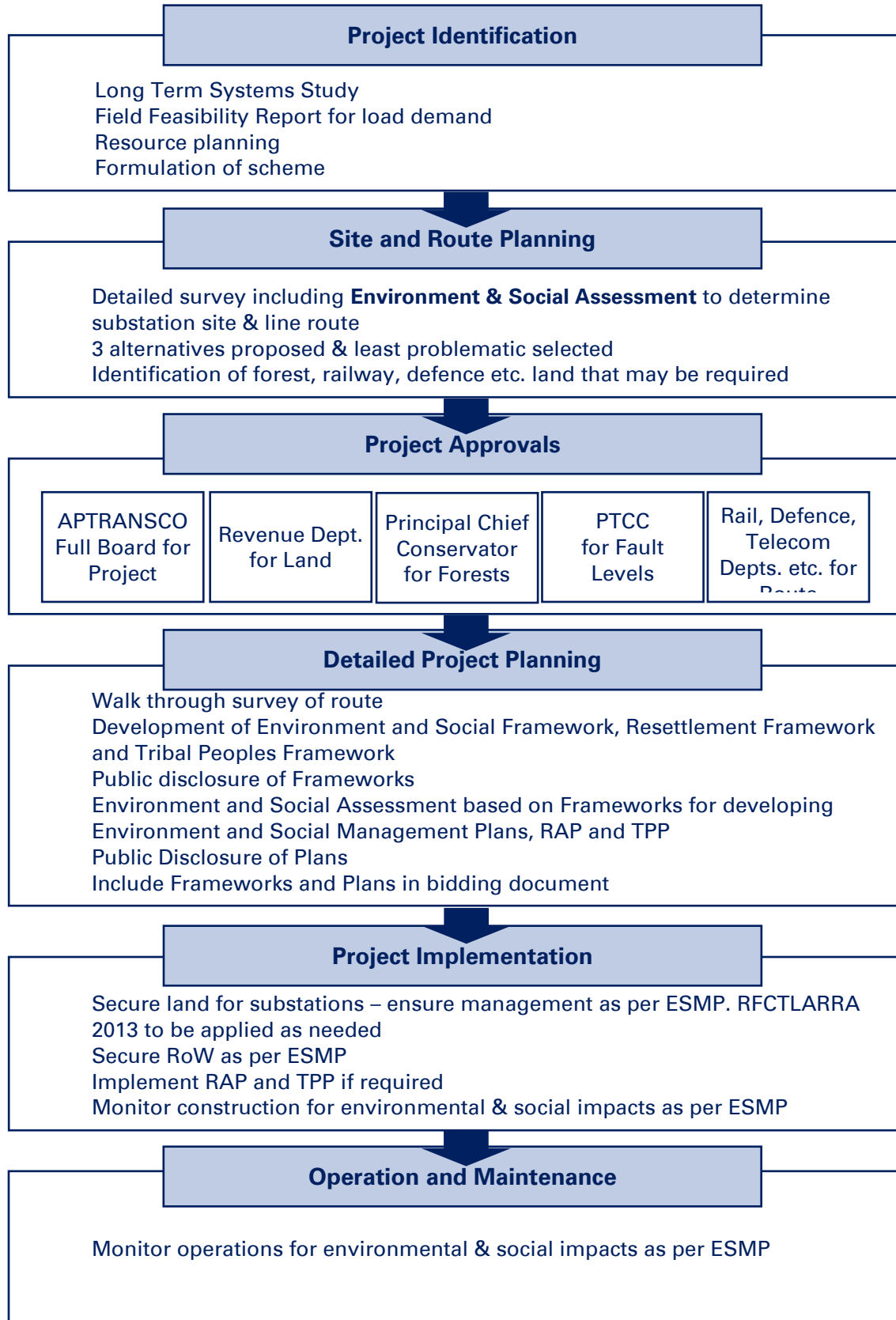
The cell will also deal with redressal of grievances and requests for Public Information. The implementation arrangements are summarised in the table below:

Milestone	Process	Responsibility	
		Preparation	Approval
Pre-Construction Phase			
Formulation of Scheme	<ul style="list-style-type: none"> Feasibility Report prepared in line with State Level Long Term Systems Study 	CE Power Systems	Technical Committee of APTRANSCO
	<ul style="list-style-type: none"> Field Feasibility Report prepared to identify load demand in their area of operation 	Field Staff (EE, AE, ADE)	CE Power Systems
	<ul style="list-style-type: none"> Resource plan prepared by Field Staff listing the resources required to undertake the project 	Field Staff (EE, AE, ADE)	CE Construction
	<ul style="list-style-type: none"> Preparation of Scheme including details of land and other resources required 	CE Construction	Full Board – All Directors and Chairman
Identify Sites for Substations and line Route	<ul style="list-style-type: none"> Detailed Survey carried out to determine route of the transmission line. As part of the survey social and environment assessment undertaken to determine whether there are any residential areas, schools / hospitals, historical sites, scheduled areas, forest areas, water bodies railway crossings, identification of vulnerable population including SCs, STs, marginal farmers and women Three alternatives are determined and the least problematic line is chosen 	Field Staff (EE, AE, ADE)	Environment and Social Management Cell CE/Zone and SE OMC
Securing Sites for the Project	<ul style="list-style-type: none"> Approach the Revenue Department for Land for substations 	CE, SE and DE	Revenue Department
	<ul style="list-style-type: none"> Identify Private Land in case Thasildar certifies no government land is available 	CE, SE and DE	Full Board of APTRANSCO
	<ul style="list-style-type: none"> In case of involuntary acquisition of private land is unavoidable, the provisions of the RFCTLARRA, 2013 will be triggered: 	Refer to Annexure 8 for details	
Identify Sites for Substations and line Route	<ul style="list-style-type: none"> Detailed Survey carried out to determine route of the transmission line. As part of the survey social and environment assessment undertaken to determine whether there are any residential areas, schools / hospitals, 	Field Staff (EE, AE, ADE)	Environment and Social Management Cell CE/Zone and SE OMC

	<p>historical sites, scheduled areas, forest areas, water bodies railway crossings etc.</p> <ul style="list-style-type: none"> • Three alternatives are determined and the least problematic line is chosen 		
Contracting	<ul style="list-style-type: none"> • Prepare cost estimates for the Schemes 	EE	APTRANSCP HQ <ul style="list-style-type: none"> - CE Civil for civil works - CE Telecom for telecommunication - ESMS cell (for environment and social safeguards)
	<ul style="list-style-type: none"> • Consolidate estimates 	CE Construction	Finance Advisor and Chief Controller (FACCA)
	<ul style="list-style-type: none"> • Prepare tender documents with the technical and financial specifications 	EE	CE Construction
Construction Phase			
Transfer of Land	<ul style="list-style-type: none"> • Contractor conducts a check survey to finalize the sites 	Contractor	EE
	<ul style="list-style-type: none"> • Revenue officer informed about land requirements 	EE	SE
	<ul style="list-style-type: none"> • Route details are disclosed through publication in the AP Gazette, an English Daily and a Telugu Daily 	EE	SE
	<ul style="list-style-type: none"> • The public can raise grievances in case of issues with land securing 	AE / ADE	DE ESMS Cell
Securing RoW	<ul style="list-style-type: none"> • Approach farmers for RoW 	AE & Contractor	SE OMC and EE Construction
	<ul style="list-style-type: none"> • Give RoW compensation for tower footing as per District Collector's directions 	Revenue Department	
Compensation for Land	<ul style="list-style-type: none"> • Compensation for government land is determined 	MRO	District Collector
	<ul style="list-style-type: none"> • Compensation for private land is determined 	Negotiating Committee (Govt. Representative, State Board Officer,	CE Construction

		Local DE, Evaluator from Private Party)	
	<ul style="list-style-type: none"> • Compensation for crop damage determined 	Agriculture Officer under Revenue Department	
Grievance Redressal	<ul style="list-style-type: none"> • Public consultations are undertaken in case of resistance 	AE & Contractor	SE OMC and EE Construction
	<ul style="list-style-type: none"> • Negotiations regarding compensation 	AE & Contractor	SE OMC and EE Construction
	<ul style="list-style-type: none"> • In case affected persons have grievances even after the public consultations, they can raise their concerns through CGRF 	CGRF ESMS Cell	CMD
Approvals from other Departments	<ul style="list-style-type: none"> • Help from police department is sought in case of anticipated disruptions to traffic 	AE/ADE	SE OMC and EE Construction
	<ul style="list-style-type: none"> • Topographical map of the project area is prepared. The map also identifies the railway, telecom and defence crossings. 	EE	SE OMC and EE Construction
	<ul style="list-style-type: none"> • Determine the fault levels for 132 KV 	APTRANSCO Head Quarter	PTCC
	<ul style="list-style-type: none"> • Determine fault levels for 220KV lines 	PTCC	PTCC
	<ul style="list-style-type: none"> • Approvals from appropriate departments (BSNL, Railway and Defence) 	PTCC	Appropriate Department (BSNL, Railway and Defence)
	<ul style="list-style-type: none"> • Chief conservator of forest is informed if any forest area is required 	CE Construction	Principal Chief Conservator of Forest
	<ul style="list-style-type: none"> • Secure 2 times the forest land as a compensation 	District Collector	Full board of APTRANSCO

The process to implement the ESMF is provided below:



9.2 APSPDCL/APEPDCL

The impacts of a distribution project are similar in nature to those of transmission projects. However, as transmission substations and towers require more area than distribution substations and poles; and as transmission lines carry very high voltage, the impacts created by transmission projects are more critical than those created by the distribution projects. The institutional arrangements to manage the impacts created by distribution projects are as follows:

- *Securing Land:*
 - In urban areas, the land is provided by Municipal Corporation
 - The land allotted should not change the land use pattern in the city. For instance, courts do not allow land allotted for parks to be used for setting-up substations.
 - The District Collector can permit construction anywhere other than on forest land and reserved areas
 - Community consultations are undertaken in case transformers and lines are situated close to houses / shops.
 - Residential complexes usually have space for transformer installation in their floor plan
 - For setting-up transformers in commercial area, alternative sites are identified in consultation with the people
 - A negotiating committee consisting of a Govt. Representative, State Board Officer, Local DE and a valuator from a private party is constituted to negotiate price for securing private property
- *Accidents:*
 - Transformers are fenced or insulated to prevent the accidents. Caution boards are put up at appropriate location to avoid accidents
 - CRGF is the deciding authority on compensation regarding accidents. Compensations are very high in case it is proven that accident occurred because of the negligence of electricity department
- The ADE Construction and the DE construction coordinate with the municipal corporation while digging for under-ground cabling to ensure that underground drainage systems are not damaged
- The ADE Construction and the DE construction coordinate with the police department to regulate traffic during construction
- The Senior Divisional Engineer submits the design to the local railway authority for approval in case Railway crossings are in or around the route of the distribution line

SPDCL and EPDCL has identified an Environment and Social Management member to manage the potential social and environmental impacts from the proposed projects.

SPDCL: SE/Civil

EPDCL: EE/Civil

9. Grievance Redressal Mechanism

The grievance redressal mechanism provides the mechanism to address/resolve the concerns and grievances of people affected by the projects. The minor concerns of the people are usually handled through the public consultations undertaken during the construction phase. The GRM at each utility is elaborated below:

APTRANSCO

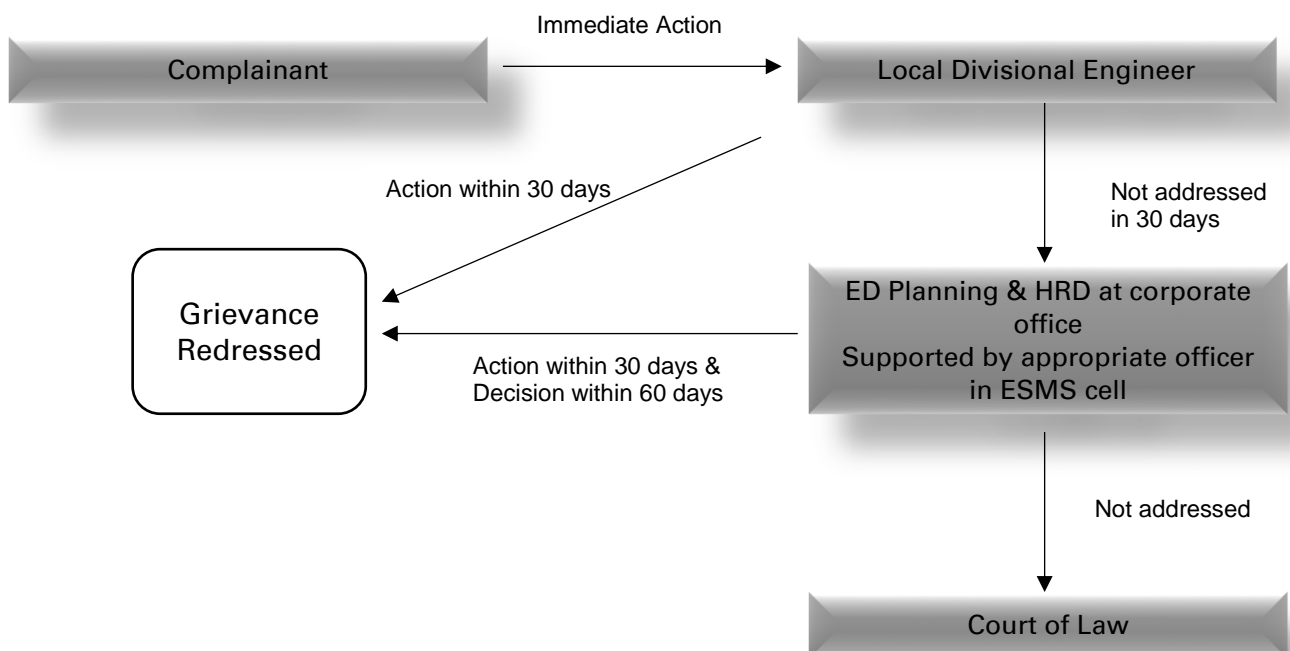
The mechanism for grievance redressal is provided below:

- People with grievances can approach local Divisional Engineer (DE). He is the main officer to handle any complaints at the local offices.
- At the corporate office, ED Planning and HRD is the nodal officer for Grievance Redressal in APTRANSCO. He is supported by Additional Secretary, APTRANSCO. In case any grievance is not satisfactorily handled at the DE level, it gets escalated to the corporate office.

For the World Bank Projects, the ESMS cell will support the DE in resolving any project related grievances before escalation to ED Planning and HRD.

Judicial Intervention

In case the grievances are not resolved at the utility level. The people can approach the judicial authority and file a court case against the utilities.



APSPDCL/APEPDCL

Informal mechanisms to resolve grievances are described below:

- Any person with grievance can visit the local office of the utility for redressal. The DE is the main officer to handle any complaints.
- Awareness camps are held in villages to inform about the new initiatives of the utilities like the proposed project to replace existing irrigation pump sets with the energy-efficient pump sets. People can raise their complaints during these camps.

SPDCL and EPDCL also have a formal framework in place to address the grievances. The key mechanisms available are described below:

- Substation Advisory Committee
- District Electrical Coordination Committee
- Meet the CMD
- Online registration of complaints
- Registering complaints at a Toll-Free number
- Grievance Redressal in Scheduled Areas
- Grievance Redressal Forum
- Judicial intervention

Substation Advisory Committee

A Substation Advisory Committee has been constituted at each sub-station of the discomms. The committee is headed by the local MLA (Member of Legislative Assembly) and meets once every month. During the committee meetings the farmers and consumers can raise their grievances to the MLA.

District Electrical Coordination Committee

District Electrical Coordination Committee are constituted for all Central Government aided projects and is chaired by the District Collector (DC). The committee is a forum for consumers to raise their concerns regarding the central Government aided-projects.

Meet the CMD - Spandana

Consumer meetings are held at the corporate office of SPDCL (in Tirupati) and EPDCL (in Vishakhapatnam) every Monday from 9:30 AM onwards. Consumers/public with grievances can personally meet the CMD and other senior officials of SPDCL and EPDCL. Apart from consumers, contractors can also participate in 'Spandana'

Online registration of complaints

Consumers can register the complaints on the website of SPDCL and EPDCL

Registering complaints at a Toll-Free number

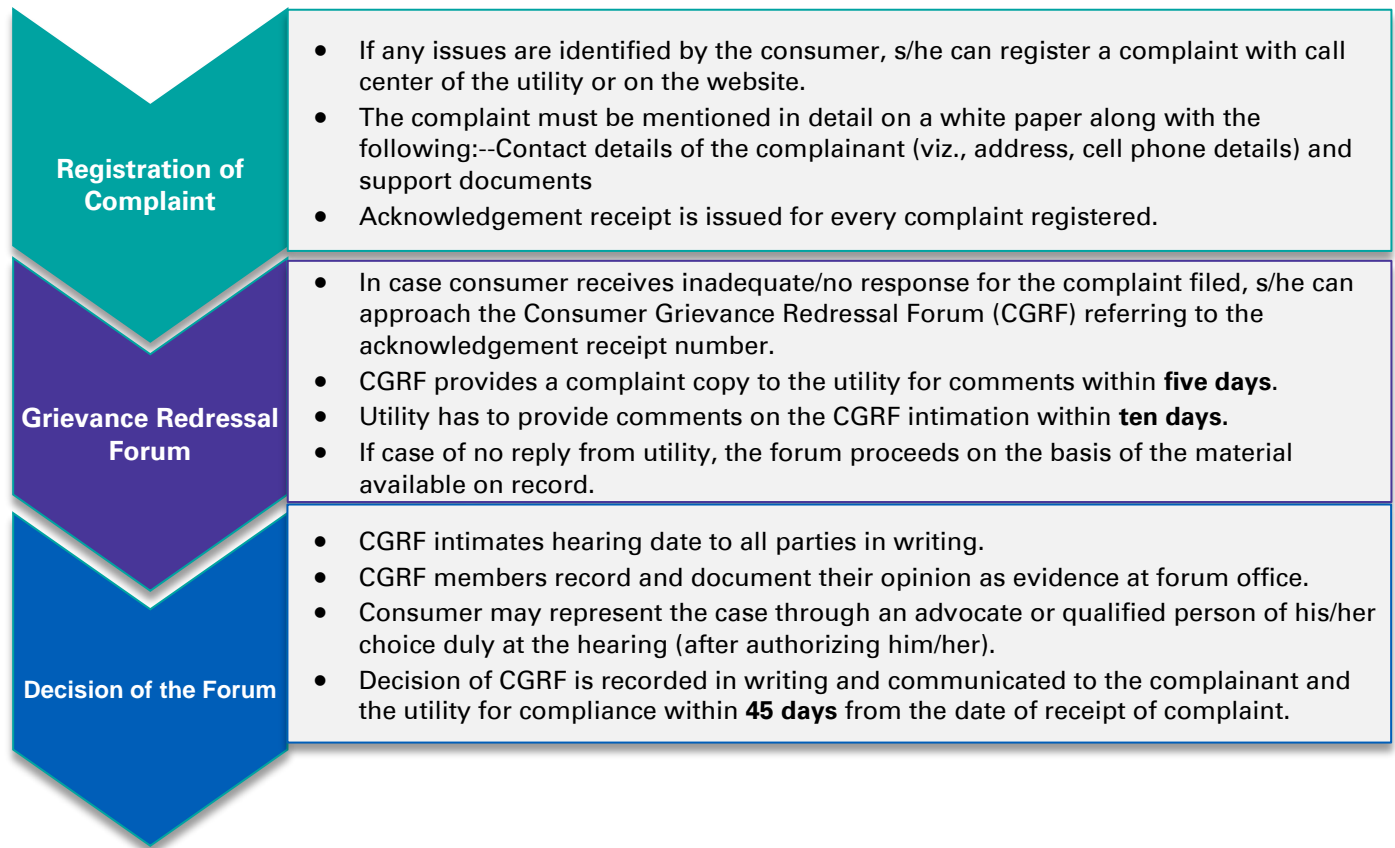
The consumers can call a toll-free number to register the complaint. A centralised call centre has been established (Number #191) to receive supply related complaints. Also, a

toll free number has been established where consumers can directly raise their concerns to CMD of the utilities on every Monday 9 AM onwards.

Grievance Redressal in Scheduled Areas

A coordination committee consisting of the Project Officer from Integrated Tribal Development Authority (ITDA) and the DE of the distribution utility is constituted to redress grievances in Scheduled Areas.

Grievance Redressal Forum



Judicial Intervention

In case the grievances are not resolved at the utility level. The people can approach the judicial authority and file a court case against the utilities.

Outreach and publicity

Consultations with the consumers revealed that consumers in rural areas are not aware of most of the grievance redressal mechanisms. They approach local lineman (for APTRASNCO and DISCOMS) in case of any complaint and the lineman either resolves it or escalates the issue to appropriate level. There is a need to publicize various mechanisms for GRM like the toll free number and SPANDANA.

10. Monitoring Plan

This section details out the plan to monitor the implementation of social impact management and mitigation measures and grievance redressal mechanism.

The ESMS cell of the APTRANSCO and the environment and social member of the project team for discoms has overall responsibility for achieving the environmental and social performance. They will be responsible for monitoring the ESMF, including monitoring the implementation of the ESMF and subsequent preparation, implementation and monitoring of environmental and social safeguards for the sub-projects.

Utilities in coordination with forest/revenue officials will monitor timely implementation of various activities such as compensatory afforestation, ROW maintenance, prevention of fire hazards, natural regeneration of vegetation etc.

The environmental and social monitoring plan for each project will be integrated with construction, operation and maintenance and shall be monitored by the ESMS cell/designated environment and social member on a monthly basis.

The Environment and Social Member (Discoms) and the field staff (Concerned EE/Civil in field - covering the jurisdiction of the Transmission Project, Concerned DE/Construction in Vidyut Soudha, looking after the Transmission Project) of ESMS cell (APTRANSCO) will also perform supervision site visits during the construction and operations phases of the sub-projects to confirm that environmental and social safeguards are being effectively implemented, and status of the same will be reported periodically in the Site Visit Reports.

Participation of PAPs in the monitoring will also be ensured through regular consultation and their active participation. Major monitoring indicator identified for regular monitoring of activities will be carried out by different department at field and will be reviewed by the designated officer (ESMS cell or designated environment and social member) on monthly basis.

The quarterly and annual reports on the key steps, outputs and results of the environmental and social management actions taken to support the implementation of the ESMF and the sub-projects will be prepared. The Environment and Social Member (corporate members of ESMS cell (SE / PM / 400 KV / APTRANSCO / VS / Hyderabad, SE / PM / Construction / APTRANSCO / VS / Hyderabad, EE / Civil / APTRANSCO /VS / Hyderabad) will track the overall status and any shortcomings in the implementation of the ESMF and of any

circumstances or occurrences that could adversely impact the environmental and social performance of the project beyond the already anticipated impacts.

Monitoring plan for a subproject

The primary objective of monitoring is to verify the absence of or record environmental and social impacts resulting from the subproject activities and to ensure compliance with the "mitigation measures" identified earlier under the ESIA/ESMP/RAP/TPPF/GAP in order to prevent or reduce adverse impacts and enhance positive impacts from project activities.

Monitoring during pre-construction:

Before construction work on a sub-project begins, the Environment and Social Member will be responsible for monitoring and ensuring effective implementation of the environment and social mitigation/management measures related to conducting of SIA, land securing and payment of compensation as required for their respective subprojects. The following table provides the general parameters to be monitored during the pre-construction phase.

Guidelines for social monitoring during pre-construction phase					
Activity / Issues	Parameter to be monitored	Measurement & frequency	Monitoring Responsibility	Applicability	
				T*	D*
Securing land for substations	▪ SIA process carried out	▪ Monthly until completed	▪ ESMS Cell	√	
	▪ Distribution of compensation / entitlements for land	▪ Monthly until completed	▪ ESMS Cell		
	▪ Implementation of R&R Scheme	▪ Quarterly until completed	▪ State Monitoring Committee		
	▪ Consultation with local authorities/ autonomous councils and land owners	▪ Once	▪ ESMS Cell		

Location of overhead line towers/poles/ laying of underground distribution line & alignment and design	<ul style="list-style-type: none"> ▪ Consultation with local authorities/ autonomous councils and land owners on location of overhead line towers/poles/ laying of underground distribution line & alignment and design 	<ul style="list-style-type: none"> ▪ Once 	<ul style="list-style-type: none"> ▪ CE Zone or SE OMC (APTRANSCO) ▪ DE Construction (Discoms) 	√	√
	<ul style="list-style-type: none"> ▪ Consultation with local authorities/ autonomous councils and land owners on location of overhead line towers/poles/ laying of underground distribution line & alignment and design 	<ul style="list-style-type: none"> ▪ Once 	<ul style="list-style-type: none"> ▪ CE Zone or SE OMC (APTRANSCO) ▪ DE Construction (Discoms) 	√	√
	<ul style="list-style-type: none"> ▪ Payment of damages / compensation 	<ul style="list-style-type: none"> ▪ Quarterly till process is completed 	<ul style="list-style-type: none"> ▪ Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) ▪ DE Construction (Discoms) 	√	
	<ul style="list-style-type: none"> ▪ PTCC Approval 	<ul style="list-style-type: none"> ▪ Once 	<ul style="list-style-type: none"> ▪ PTCC 	√	

Guidelines for environmental monitoring during pre-construction phase		
Parameter	Frequency	Responsibility
Completion of Environment assessment	One Time at start of sub-project	<ul style="list-style-type: none"> Environment and Social Member for EPDCL and SPDCL ESMS cell for APTRANSCO

Monitoring during construction:

During implementation of all subprojects, the Environment and Social Member will be responsible for monitoring and ensuring effective implementation of the environmental and social mitigation/enhancement measures (including health and safety measures) outlined in the ESIA/ESMP//RAP/TPPF/GAP for their respective subprojects.

Following table provides the general environmental parameters to be monitored during the construction phase of the sub-projects.

Guidelines for social monitoring during construction phase					
Activity / Issues	Parameter to be monitored	Measurement & frequency	Monitoring Responsibility	Applicability	
				T*	D*
Laying of underground cables or lines near heritage / tourist sites	<ul style="list-style-type: none"> Discovery of cultural property Approval from Department of Archaeology and Museums, Andhra Pradesh 	<ul style="list-style-type: none"> Quarterly 	<ul style="list-style-type: none"> Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) DE Construction (Discoms) under supervision of Environment and Social member 	√	√
Construction of substation and laying of lines	<ul style="list-style-type: none"> Presence of documented health & safety protocols Safety manger present at site during construction Use of safety equipment by workers 	<ul style="list-style-type: none"> Daily for safety equipment Weekly for other measures 	<ul style="list-style-type: none"> Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) DE Construction (Discoms) 	√	√

	<ul style="list-style-type: none"> ▪ Presence of signboards at appropriate locations ▪ Adequate sanitation / safety standards at camps 				
	<ul style="list-style-type: none"> ▪ Signboards / instructions are displayed at appropriate places ▪ Use of insulated wires in congested areas ▪ Compensation is paid 	<ul style="list-style-type: none"> ▪ Weekly for signboards ▪ Monthly for compensation 	<ul style="list-style-type: none"> ▪ Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) ▪ DE Construction (Discoms) 	√	√
	<ul style="list-style-type: none"> ▪ Site is adequately lit at night ▪ Access roads are usable 	<ul style="list-style-type: none"> ▪ Weekly 	<ul style="list-style-type: none"> ▪ Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) ▪ DE Construction (Discoms) 	√	√
	<ul style="list-style-type: none"> ▪ Labour laws are being followed ▪ Welfare facilities are available 	<ul style="list-style-type: none"> ▪ Monthly 	<ul style="list-style-type: none"> ▪ Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) ▪ DE Construction (Discoms) 	√	√

Guidelines for environmental monitoring during construction phase		
Parameter	Frequency	Responsibility
Ambient air (dust levels with respect to Respirable Particulate Matter – PM10)	Once every week, particularly during excavation and operation of heavy equipment	Construction contractor, under guidance of the respective Social and Environment Member
Ambient noise levels	Continuous for 24 hrs once in a week as per The Noise Pollution (Regulation and Control) Rules, 2000, particularly during operation of heavy equipment	Construction contractor, under guidance of the respective Social and Environment Member
Surface Water Quality (pH, TSS, BOD ₅ , COD, oil & grease)	Once before initiating the construction activities and once during the construction period (at a location downstream of the work area)	Construction contractor, under guidance of the respective Social and Environment Member
Storage and disposal of used oil	Provision of a covered shed with impervious floor for storage of waste oil containers Monitoring once a week during the construction period, as and when needed	Construction contractor, under guidance of the respective Social and Environment Member
Visual monitoring of drainage congestion within around subproject location	Weekly Monthly	Contractor Respective Social and Environment Member
Visual monitoring of traffic within around sub project location	Daily basis as and when needed	Construction contractor, under guidance of the respective Social and Environment Member
Monitoring and surveillance for prevention of fire hazard	Once a week	Construction contractor under the guidance of respective Social and Environment Member

In addition to the above, routine monitoring will be carried-out to ensure that:

- All personnel at the project sites are provided with personal protective equipment like helmets, goggles, safety shoes, ear plugs, hand gloves etc.
- Dust suppression measures like sprinkling of water are ensured at all operations areas.
- Suitable first aid facilities for handling emergency situation like fire, explosion, electrocution, etc. are provided at the work and camp sites.

- The storage areas of hazardous materials are provided with necessary facilities to prevent spillage, percolation into the ground.
- Necessary permits for storage of inflammable / hazardous materials are obtained.
- The construction workers, supervisors and engineers are properly trained and qualified.
- The construction sites are access controlled.
- Measures outlined in the RAP and/or TPPF, if any, are being implemented as described in the plans (RAPs and TPPF will include specific monitoring arrangements).
- Apart from general monitoring of mitigation/enhancement measures and health and safety protocols (as outlined in the ESMF and Tender Document), important environmental parameters to be monitored during the construction phase of the subprojects include noise level, water quality, drainage congestion, and traffic problems. However, the requirement and frequency of monitoring would depend on the type of subproject, the anticipated impacts and the field situation, and will have to be determined during preparation of the ESMP.

Monitoring during operation

The following table presents guideline for monitoring of environmental parameters during operation phase.

Guidelines for social monitoring during operation phase					
Activity / Issues	Parameter to be monitored	Measurement & frequency	Monitoring Responsibility	Applicability	
				T*	D*
Operation and maintenance of substations and maintenance of lines	<ul style="list-style-type: none"> ▪ Use of safety equipment by workers ▪ Presence of signboards at appropriate locations ▪ Adequate sanitation / safety standards 	<ul style="list-style-type: none"> ▪ Weekly 	<ul style="list-style-type: none"> ▪ Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) ▪ DE Operations (Discoms) 	√	√

	<ul style="list-style-type: none"> ▪ Signboards / instructions are displayed at appropriate places ▪ Compensation is paid 	<ul style="list-style-type: none"> ▪ Weekly for signboards ▪ Monthly for compensation 	<ul style="list-style-type: none"> ▪ Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) ▪ DE Operations (Discoms) 	√	√
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Guidelines for environmental monitoring during operation phase			
Parameter	Monitoring Frequency	Resource Required and responsibility	Comment
Unsafe Trees	Once every month, and as directed by Field Engineer	Vehicle with Ladder and cutting accessories; maintenance team's responsibility	Results to be reported to the Utility
Dielectric strength of Transformers	Once in 6 months, and as directed by the Field Engineer	Testing equipment, Monitoring team	Results to be reported to the Utility
Tan – δ test	Once in 10 years, and as directed by the Field Engineer	Testing equipment, Monitoring team	Results to be reported to Utility
Water Pollution	Once in 6 months, and as directed by the Field Engineer	Testing equipment, Monitoring team	Results to be reported to Utility

11. Training and Capacity Building

Training and development of employees is an integral part for implementation of ESMF and ESMP. Training needs identification has been carried out at corporate and field level, based on which focused training modules are suggested for:

- Strengthening in-house corporate level capacity and the capacities of the field offices to implement the provision of ESMP.
- Creating Awareness, providing the tools for implementation of Environmental and Social Policy, and accompanying set of management procedures

ESMS cell (for APTRANSCO), environment and social member (for EPDCL and SPDCL) and Field office are key stakeholders identified for implementation of ESMPs. The training programs, identified in the table below, are to be conducted with the help of local or national training institutions and experts in various aspects of environmental and social management.

Suggested Sessions	Target Audience
EA & SA process including screening of Tribal population	Field Staff, ESMS cell (APTRANSCO), Environment and Social Member (EPDCL and SPDCL)
Formulate and Implement ESMP, GAP & TPP	Field Staff, ESMS cell (APTRANSCO), Environment and Social Member (EPDCL and SPDCL)
ESMF & project cycle	ESMS cell (APTRANSCO), Environment and Social Member (EPDCL and SPDCL)
Awareness of Central/State laws, policies on environment and social aspects	Field Staff, ESMS cell (APTRANSCO), Environment and Social Member (EPDCL and SPDCL)
Monitoring the implementation of ESMP, TPP, GAP and RAP	ESMS cell (APTRANSCO), Environment and Social Member (EPDCL and SPDCL)
Redressing Grievances of Scheduled Tribes	Field Staff, DE, ESMS cell (APTRANSCO), Environment and Social Member (EPDCL and SPDCL)

12. Cost and Budget

The costs incurred to implement the various requirements of the ESMF are budgeted and adequate financial provisions are required to meet the management measures to be undertaken to mitigate the impacts as underlined in this ESMF document. The tentative cost estimates for environmental and social management are provided below:

Environment Management: APTRANSCO and APSPDCL/APEPDCL

	Item	Cost (in INR) per sample (on estimation)
Construction phase		
1.	Ambient air quality monitoring as per the NAAQ standards (Particulate Matter – PM ₁₀)	5,000
2.	Ambient noise levels testing	1,000
3.	Water Quality testing as per the IS 10500 standards ((pH, TSS, BOD5, COD, oil & grease))	5,000
Operation phase		
4.	Water quality testing as per the IS 10500 standards. ((pH, TSS, BOD5, COD, oil & grease))	5,000
Total:		16,000*

**Note: Our conservative estimate will be max 10 samples per scheme i.e a longitudinal Transmission line laying project including receiving station.*

Social Management Framework: APTRANSCO

	Item	Cost (in INR)	Assumptions
1.	Management of Social Impact	24,00,00,000	RoW compensation for tower footing, Compensation for crop and tree damage (As per project budget)
2.	Monitoring	0	Monitoring will be undertaken by employees and hence no additional cost
3.	Training and Capacity Building	1,16,000	<ul style="list-style-type: none"> • 2-day training covering all aspects • 4 resource persons (one each for ESMF, GAP, TPP, Monitoring). 8000 per resource person for 2-3 hr session • Trainings will be held at offices of respective utility so no venue cost • Assuming INR 60,000 for logistics including travel and food for participants • Assuming INR 24000 for travel cost for resource person
4.	GRM (including spend on publicity)		Part of overall project management spend
Total:		24,01,16,000	

Social Management Framework: APEPDCL/APSPDCL

	Item	Cost (in INR)	Assumptions
1.	Management of Social Impact	10,00,000	For crop damages during HVDS work and Damage to any structure, road, any other public utility like water pipes etc. during UG cabling
2.	Monitoring		Monitoring will be undertaken by employees and hence no additional cost
3.	Training and Capacity Building	76,000	<ul style="list-style-type: none"> • 2-day training covering all aspects • 4 resource persons (one each for ESMF, GAP, TPP, Monitoring). 8000 per resource person for 2-3 hr session • Trainings will be held at offices of respective utility so no venue cost • Assuming INR 20,000 for logistics including travel and food • Assuming INR 24000 for travel cost for resource person
4.	GRM (including spend on publicity)		Mechanism in place. INR 1 Crore are allocated for publicity by EPDCL every year
Total:		10,76,000	

13. Consultations and Disclosure

Consultations

This ESMF has been drafted in consultation with the three utilities – APTRANSCO, APEPDCL and APSPDCL. Input and feedback was sought from key personnel in these utilities at regular intervals during the drafting of the framework to capture all major environmental and social risks at different stages of the project; i.e. pre-construction, construction, and operation and maintenance. Through these consultations, the relevant policies and laws were identified that safeguard against social and environmental risks and on the basis of these mitigation measures were created. Further, the mechanisms for implementing the framework, monitoring the progress and addressing grievances were also defined.



The draft ESMF that was created through these consultations was then shared with the World Bank whose inputs further strengthened the framework. Details of consultations are provided below:

S. No.	Date	Venue of Consultation	Participants	No. of person attended
1	15 th March	Distribution Transformers in the urban areas of Tirupati	Local staff of SPDCL, Environment and Social Member	6
2	March and April	Multiple consultation at Corporate office and field office of utilities	Representative from SPDCL, EPDCL and APTRANSCO	30
3	6 th May	Transmission Substation at Vayalpad	Farmers	9 (including 3 women farmers)
4	7 th July to 13 th July	Multiple locations in East Godavari, West Godavari, Vishakhapatnam, Vijaynagram and Srikakulam district	Farmers	226
5.	25 th July to 29 th July	Telephonic or office of respective stakeholder	Deputy Project Officer, ITDA Rampachoda; Monitoring officer, CEA; Joint Director, APERC; EE Kadapa and EE Kurnool, Irrigation Department; Sub-collector, Vijaywada; Section Officer Chennai, MoEF; Deputy Conservator of Forest, Hyderabad; APPCB Hyderabad	
6	1 st Aug to 5 th Aug*	Multiple locations in Kurnool	Farmers	15
7	4 th Aug*	East Godavari	Tribals	10
*Planned				

Broadly the following points emerged from the consultations:

- The respondents stated that the process followed for erecting towers is as follows: APTRANSCO surveyed the location a year before and marked the tower locations; the respondents upon discovering that their land was to be used for the project approached the AE / ADE present in the field about their concerns; the AE / ADE held discussions with the respondents to address their concerns.
- The respondents stated that they received compensation for crop and tree damage though some claimed that they did not receive compensation for cutting of Neem trees. APTRANSCO had clarified to these respondents that compensation was only given for fruit-bearing trees as per decision of the Agriculture Department.
- Some respondents stated that they did not receive RoW compensation for the tower footing. APTRANSCO clarified that as the project was undertaken before the issuance of guidelines by the A.P. Government RoW compensation for tower footing was not given. In projects initiated after the issuance of the guidelines, APTRANSCO has been paying RoW compensation for the tower footing as well. This was confirmed by a farmer affected by an ongoing project of APTRANSCO, who stated he had received INR 55,000 as RoW compensation for the tower footing and INR 39,000 for crop damage.
- Respondents felt that the value of their land diminishes due to overhead high-tension wires passing over their land, as it is difficult to change the land use and sell the land for real estate purposes.



- One of the groundnut farmers stated that initially after construction of the tower, she did not sow below the tower because of the fear of electric shock. But now she uses that land and her yield has gone up to the level prior to construction of tower.
- Women land right owners confirmed that the amount of compensation was transferred to their bank account.
- Respondents are not aware of the GRM mechanism. They usually approach the lineman in case of any problem.



From the consultations, it was concluded that there is a need to strengthen the outreach activities and ensure that the affected population are aware of the applicable government policies/rules regarding compensation and the GRM. Further, their concerns regarding health and safety should be addressed to avoid misconceptions like threat of electric shock from tower footing.

Disclosure

The final ESIA, RAP, TPPF and GAP should be disclosed to the general public. Following mechanisms are suggested for disclosure:

- Upload the final documents on the website of each utility
- A copy of the documents is made available at panchayat and municipal corporation office
- A copy of the documents is made available at the local offices of the utilities

Annexure 1 – Definitions

The definitions provided below are as per Chapter 1 Section 3 of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (RFCTLARRA 2013).

Administrator	An officer appointed for the purpose of rehabilitation and resettlement of affected families under sub-section 1 of section 43 of the RFCTLARRA 2013
Affected Area	Such area as may be notified by the Appropriate Government for the purposes of land acquisition
Affected Family	<p>Includes:</p> <ul style="list-style-type: none"> (i) A family whose land or other immovable property has been acquired; (ii) A family which does not own any land but a member or members of such family may be agricultural labourers, tenants including any form of tenancy or holding of usufruct right, share-croppers or artisans who may be working in the affected area for three years prior to the acquisition of the land, whose primary source of livelihood stand affected by the acquisition of land' (iii) The Scheduled Tribes and other traditional forest dwellers who have lost any of their forest rights recognized under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 due to acquisition of land; (iv) Family whose primary source of livelihood for three years prior to the acquisition of the land is dependent on forests or water bodies and includes gatherers of forest produce, hunters, fisher folk and boatmen and such livelihood is affected due to acquisition of land; (v) A member of the family who has been assigned land by the State Government or the Central Government under any of its schemes and such land is under acquisition; (vi) A family residing on any land in the urban areas for preceding three years or more prior to the acquisition of the land or whose primary source of livelihood for three years prior to the acquisition of the land is affected by the acquisition of such land
Appropriate Government	<p>Means:</p> <ul style="list-style-type: none"> (i) In relation to acquisition of land situated within the territory of a State, the State Government; (ii) In relation to acquisition of land for public purpose in more than one State, the Central Government, in consultation with the concerned State Governments or Union territories; <p>Provided that in respect of a public purpose in a District for an area not exceeding such as may be notified by the Appropriate Government, the Collector of such District shall be deemed to be the Appropriate Government</p>

Collector	Means the Collector of a revenue district, and includes District Commissioner and any officer specially designated by the Appropriate Government to perform the function of a Collector under the RFCTLARRA 2013
Commissioner	Means the Commissioner for Rehabilitation and Resettlement appointed under sub-section (1) of section 44 of the RFCTLARRA 2013
Cost of Acquisition	Includes: <ul style="list-style-type: none"> (i) Amount of compensation which includes solatium, any enhanced compensation ordered by the Land Acquisition and Rehabilitation and Resettlement Authority or the Court and interest payable thereon and any other amount determined as payable to the affected families by such Authority or Court; (ii) Demurrage to be paid for damages caused to the land and standing crops in the process of acquisition (iii) Cost of acquisition of land and building for settlement of displaced or adversely affected families; (iv) Cost of development of infrastructure and amenities at the resettlement areas; (v) Cost of rehabilitation and resettlement as determined in accordance with the provisions of the RFCTLARRA 2013 (vi) Administrative cost for (a) acquisition of land, including both in the project site and out of the project area lands, not exceeding such percentage of the cost of compensation as may be specified by the Appropriate Government; and (b) rehabilitation and resettlement of owners of the land and other affected families whose land has been acquired or proposed to be acquired or other families affected by such acquisition; (vii) Cost of undertaking Social Impact Assessment Study
Displaced Family	Means any family, who on account of acquisition of land has to be relocated and resettled from an affected area to the resettlement area
Family	Includes a person, his or her spouse, minor children, minor brothers and minor sisters depended on him: provided that widows, divorces and women deserted by families shall be considered separate families
Holding of Land	Means the total land held by a person as an owner, occupant or tenant or otherwise
Land	Includes benefits to arise out of land, and things attached to the ear or permanently fastened to anything attached to the earth
Landless	Means such persons or class of persons who may be: <ul style="list-style-type: none"> (i) Considered or specified as such under any State law for the time being in force; or (ii) In a case of landless not being specified as above, as may be specified by the Appropriate Government

Land Owner	Includes any person: <ul style="list-style-type: none"> (i) Whose name is recorded as the owner of the land or building or part thereof, in the records of the authority concerned; or (ii) Any person who is granted forest rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 or under any other law for the time being in force; or (iii) Who is entitled to be granted Patta rights on the land under any law of the State including assigned lands; or (iv) Any person who has been declared as such by an order of the court or Authority
Local Authority	Includes a town planning authority (by whatever name called) set up under any law for the time being in force, a Panchayat as defined in article 243 and a Municipality as defined in article 243P of the Constitution
Market Value	Means the value of land determined in accordance with section 26 of the RFCTLARRA 2013
Person Interested	Means: <ul style="list-style-type: none"> (i) All persons claiming an interest in compensation to be made on account of the acquisition of land under the RFCTLARRA 2013 (ii) The Scheduled Tribe and other traditional forest dwellers, who have lost any forest rights recognized under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006; (iii) A person interested in an easement affecting the land; (iv) Persons having tenancy rights under the relevant State laws including share-croppers by whatever name they may be called; and (v) Any person whose primary source of livelihood is likely to be adversely affected;
Requiring Body	Means a company, a body corporate, an institution, or any other organisation or person from whom land is to be acquired by the Appropriate Government, and includes the Appropriate Government, if the acquisition of land is for such Government either for its own use or for subsequent transfer of such land is for public purpose to a company, body corporate, an institution, or any other organisation, as the case may be, under lease, licence or through any other mode of transfer of land
Resettlement Area	Means an area where the affected families who have been displaced as a result of land acquisition are resettled by the Appropriate Government
Scheduled Areas	Means the Scheduled Areas as defined in section 2 of the Provision of the Panchayats (Extension to the Scheduled Areas) Act, 1996.

Annexure 2 – SIA Process

The process of carrying out the SIA is provided for in **Section 10 of the A.P. RFCTLARRR 2014**. The process is as follows:

(1) The SIA team shall collect and analyse a range of quantitative and qualitative data, undertake detailed site visits, use participatory methods such as focused group discussions, participatory rural appraisal techniques and informant interviews in preparing the Social Impact Assessment report.

(2) All relevant project reports and feasibility studies shall be made available to the SIA team throughout the SIA process, as required. Any request for information from SIA team shall be met at the earliest but not exceeding seven days. The District Collector shall be responsible for providing the information requisitioned by the SIA team.

(3) A detailed assessment based on a thorough analysis of all relevant land records and data, field verification, review and comparison with similar projects shall be conducted by the SIA team. The assessment shall determine the following, namely:-

- (a) Area of impact under the proposed project, including both land to be acquired and areas that will be affected by environmental, social or other impacts of the project;
- (b) Area and location of land proposed to be acquired for the project;
- (c) The land proposed for acquisition is the bare minimum required;
- (d) Possible alternative sites for the project and their feasibility;
- (e) Whether the land proposed for acquisition is irrigated multi-cropped land and if so, whether the acquisition is a demonstrable last resort;
- (f) Land, if any, already purchased, alienated, leased or acquired, and the intended use for each plot of land required for the project;
- (g) The possibility of use of any public, unutilised land for the project and whether any of such land is under occupation;
- (h) Nature of the land, present use and classification of land and if it is an agricultural land, the irrigation coverage for the said land and the cropping pattern;
- (i) The special provisions with respect to food security have been adhered to in the proposed land acquisition;
- (j) Size of holdings, ownership patterns, land distribution, number of residential houses, and public and private infrastructure and assets; and
- (k) Land prices and recent changes in ownership, transfer and use of lands over the last three years.

(4) Based on the land assessment, land records and field verification, the SIA team shall provide an accurate estimate of the number of affected families and the number of displaced families among them and ensure that, as far as possible, all affected families are enumerated:

Provided that where enumeration is not possible, a representative sample shall be done.

(5) A socio-economic and cultural profile of the affected area must be prepared, based on available data and statistics, field visits and consultations as per FORM-III:

Provided that in projects where resettlement is required, the identified resettlement sites shall be visited and a brief socio-economic profile of the land and its current resident population shall be indicated.

(6) Based on the data collected in processes listed above and in consultation with the affected communities and key stakeholders, the SIA team shall identify and assess the nature, extent and intensity of the positive and negative social impacts associated with the proposed project and land acquisition as per FORM-III.

(7) The SIA process includes the preparation of a Social Impact Management Plan (SIMP), which will present the ameliorative measures to be undertaken to address the social impacts identified in the course of the assessment. The SIA team must assess the viability of impact mitigation and management strategies with clear indication of costs, timelines and capacities. The Social Impact Management Plan(SIMP) shall include the following measures-

- (a) That have been specified in the terms of Rehabilitation and Resettlement and compensation for all the categories of affected families as outlined in the Act;
- (b) That the Requiring Body has stated that it will undertake in the project proposal and other relevant project documents; and
- (c) That additional measures being undertaken by the Requiring Body, which have been undertaken by it in response to the findings of the SIA process and public hearings.

(8) The SIA team must provide a conclusive assessment of the balance and distribution of the adverse social impacts and social costs and benefits of the proposed project and land acquisition, including the mitigation measures, and provide an assessment as to whether the benefits from the proposed project exceed the social costs and adverse social impacts that are likely to be experienced by the affected families or even after the proposed mitigation measures, the affected families remained at risk of being economically or socially worse, as a result of the said land acquisition and resettlement.

Annexure 3 - Structure of SIA

The structure provided below is as per Form III in the Annexure to the Andhra Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation & Resettlement Rules 2014.

I. Part-A: List of socio-economic and cultural parameters to be covered by the SIA

1. Demographic details of the population in the project area

- Age, sex, caste, religion
- Literacy, health and nutritional status

2. Poverty levels

- Vulnerable groups - Women, children, the elderly, women-headed households, the differently abled
- Kinship patterns and women's role in the family
- Social and cultural organisation
- Administrative organisation
- Political organisation
- Civil society organisations and social movements

3. Land use and livelihood

- Agricultural and non-agricultural use
- Quality of land - soil, water, trees, etc.
- Livestock
- Formal and informal work and employment
- Household division of labour and women's work
- Migration
- Household income levels
- Livelihood preferences
- Food security

4. Local economic activities

- Formal and informal, local industries
- Access to credit
- Wage rates
- Specific livelihood activities women are involved in

5. Factors that contribute to local livelihoods

- Access to natural resources
- Common property resources
- Private assets
- Roads, transportation
- Irrigation facilities

- Access to markets
- Tourist sites
- Livelihood promotion programmes
- Co-operatives and other livelihood-related associations

6. Quality of the living environment

- Perceptions, aesthetic qualities, attachments and aspirations
- Settlement patterns
- Houses
- Community and civic spaces
- Sites of religious and cultural meaning
- Physical infrastructure (including water supply, sewage systems etc.)
- Public service infrastructure (schools, health facilities, anganwadi centres, public distribution system)
- Safety, crime, violence
- Social gathering points for women

II. Part-B: Key impact areas Impacts on land, livelihoods and income

- Level and type of employment Intra-household employment patterns Income levels
- Food security
- Standard of living
- Access and control over productive resources
- Economic dependency or vulnerability
- Disruption of local economy
- Impoverishment risks
- Women's access to livelihood alternatives

1. Impacts on physical resources

- Impacts on natural resources, soil, air, water, forests
- Pressures on land and common property natural resources for livelihoods

2. Impacts on private assets, public services and utilities

- Capacity of existing health and education facilities
- Capacity of housing facilities
- Pressure on supply of local services
- Adequacy of electrical and water supply, roads, sanitation and waste management system
- Impact on private assets such as bore wells, temporary sheds etc.

3. Health impacts

- Health impacts due to in-migration
- Health impacts due to project activities with a special emphasis on
- Impact on women's health
- Impact on the elderly

4. Impacts on culture and social cohesion

- Transformation of local political structures
- Demographic changes
- Shifts in the economy-ecology balance
- Impacts on the norms, beliefs, values and cultural life
- Crime and illicit activities
- Stress of dislocation
- Impact of separation of family cohesion
- Violence against women

5. Impacts at different stages of the project cycle

The type, timing, duration, and intensity of social impacts will depend on and relate closely to the stages of the project cycle. Below is an indicative list of impacts:

Pre-construction phase

- Interruption in the delivery of services
- Drop in productive investment
- Land speculation
- Stress of uncertainty

Construction phase

- Displacement and relocation
- Influx of migrant construction workforce
- Health impacts on those who continue to live close to the construction site

6. Operation phase

- Reduction in employment opportunities compared to the construction phase
- Economic benefits of the project
- Benefits on new infrastructure
- New patterns of social organisation

7. De-commissioning phase

- Loss of economic opportunities
- Environmental degradation and its impact on livelihoods

8. Direct and indirect impacts

- "Direct impacts" will include all impacts that are likely to be experienced by the affected families
- "Indirect impacts" will include all impacts that may be experienced by those not directly affected by the acquisition of land (i.e. Direct land and livelihood losers), but those living in the project area

9. Differential impacts

- Impact on women, children, the elderly and the different abled
- Impacts identified through tools such as Gender Impact Assessment
- Checklists, and Vulnerability and Resilience Mapping

10. Cumulative impacts

- Measureable and potential impacts of other projects in the area along with the identified impacts for the project in question.
- Impact on those not directly in the project area but based locally or even regionally.

III. PART-C. Table of Contents for SIA Report and Social Impact Management Plan

Chapter	Contents
1. Executive Summary	<ul style="list-style-type: none"> - Project and public purpose Location - Size and attributes of land acquisition - Alternatives considered - Social Impacts - Mitigation measures - Assessment of social costs and benefits
2. Detailed Project Description	<ul style="list-style-type: none"> - Background of the project, including developers background and governance/ management structure, - Rationale for project including how the project fits the public purpose criteria listed in the Act - Examination of alternatives - Phases of project construction - Core design features and size and type of facilities - Need for ancillary infrastructural facilities - Work force requirements (temporary and permanent) - Details of SIA/EIA if already conducted and any technical feasibility reports - Applicable legislations and policies
3. Team Composition, Approach, Methodology and Schedule of SIA	<ul style="list-style-type: none"> - List of all team members with qualifications. Gender experts to be included in team - Description and rationale for the methodology and tools used to collect information for the SIA - Sampling methodology used - Overview of information/data sources used. Detailed reference must be included separately in the forms - Schedule of consultations with key stakeholders and brief description of public hearings conducted. Details of the public hearings and the specific feedback incorporated into the Report must be included in the forms
4. Land Assessment	<ul style="list-style-type: none"> - Describe with the help of the maps, information from land inventories and primary sources - Entire area of impact under the influence of the project (not limited to land area for acquisition) - Total land requirement for the project - Present use of any public, unutilised land in the vicinity of the project area - Land (if any) already purchased, alienated, leased or acquired, and the intended use for each plot of land required for the project - Quantity and location of land proposed to be acquired for the project

Chapter	Contents
	<ul style="list-style-type: none"> - Nature, present use and classification of land and if agricultural land, irrigation coverage and cropping patterns - Size of holdings, ownership patterns, land distribution, and number of residential houses - Land prices and recent changes in ownership, transfer and use of lands over the last 3 years
<p>5. Estimation and Enumeration</p>	<ul style="list-style-type: none"> - Estimation of the following types of families that are (where required) of affected (a) Directly affected (own land that is proposed to be Families and assets acquired): - Are tenants/occupy the land proposed to be acquired - The Scheduled Tribes and other traditional forest dwellers who have lost any of their forest rights - Depend on common property resources which will be affected due to acquisition of land for their livelihood - Have been assigned land by the State Government or the Central Government under any of its schemes and such land is under acquisition; - Have been residing on any land in the urban areas for preceding three years or more prior to the acquisition of the land - Have depended on the land being acquired as a primary source of livelihood for three years prior to the acquisition (b) Indirectly impacted by the project (not affected directly by the acquisition of own lands) (c) Inventory of productive assets and significant lands
<p>6. Socio-economic and Profile (affected area and resettlement area)</p>	<ul style="list-style-type: none"> - Demographic details of the population in the project area - Income and poverty levels - Vulnerable groups - Land use and livelihood - Local economic activities - Factors that contribute to local livelihoods - Kinship patterns and social and cultural organisation - Administrative organization - Political organisation - Community-based and civil society-organisations - Regional dynamics and historical change processes - Quality of the living environment
<p>7. Social Impacts</p>	<ul style="list-style-type: none"> - Framework and approach to identifying impacts - Description of impacts at various stages of the project cycle such as impacts on health and livelihoods and culture. For each type of impact, separate indication of whether it is a direct / indirect impact, differential impacts on different categories of affected families and where applicable cumulative impacts - Indicative list of impacts areas include: impacts on land, livelihoods and income, physical resources, private assets, public services and utilities, health, culture and social cohesion and gender based impacts

Chapter	Contents
8. Analysis of Costs and Recommendation on Acquisition	<ul style="list-style-type: none"> - Final conclusions on: assessment of public benefits purpose, less-displacing alternatives minimum on requirements of land, the nature and intensity of social impacts, the viability of the mitigation measures and the extent to which mitigation measures described in the SIMP will address the full range of social impacts and adverse social costs. - The above analysis will use the equity principle as a criteria of analysis for presenting a final recommendation on whether the acquisition should go through or not
9. References and Forms	- For reference and further information

Structure of Social Impact Management Plan

The structure provided below is as per Form IV in the Annexure to the Andhra Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation & Resettlement Rules 2014.

- a) Approach to mitigation
- b) Measures to avoid, mitigate and compensate impact
- c) Measures that are included in the terms of R&R and compensation as outlined in the Act
- d) Measures that the Requiring Body has stated it will introduce in the Project Proposal
- e) Additional measures that the Requiring Body has stated it will undertake in response to the findings of the SIA process and public hearings
- f) The SIMP must include a description of institutional structures and key person responsible for each mitigation measure and timelines and costs for each activity

Annexure 4 – EIA Process

Power transmission and distribution projects do not require an EIA/ Environmental Clearance as per the EIA notification, 2009 by Ministry of Environment and Forests (MoEF), Govt. of India (GoI). However, these sub-projects requires Environmental Assessment as per World Bank's OP 4.01: Environment Assessment. The consolidated Environmental Impact assessment Report is prepared with a basic objective to collate and analyze the addressal of environmental impacts and environmental management measures. The report also covers the project compliance with environmental regulations of Government of India (GoI) and the environmental safeguards requirements of the World Bank.

The EIA team reviews the available documents and assesses the compliance of the subproject with the respect (i) regulatory clearances (like environmental clearance, forest clearance, CRZ clearance etc.); (ii) applicable operational policies of WB (iii) analysis of alternatives;(iv) identifying environmental impacts and integration of environmental management measures; (v) public consultations and information disclosure etc. The EIA process involves a number of steps, which are listed below;

- a) **Assessment of the environmental baseline:** This includes the establishment of both the present and future state of the environment, in the absence of the project, taking into account the changes resulting from natural events and from other human activities.
- b) **Identification of key impacts:** This brings together the previous steps with a view to ensuring that all potentially significant environmental impacts (adverse and beneficial) are identified and taken into account in the process. The following impacts of the project shall be assessed by EIA team;
 - i. **Air:** The changes in ambient levels and ground level concentrations due to total emissions from point, line and area sources, effects on soils, materials, vegetation and human health are to be assessed.
 - ii. **Noise:** The changes in ambient levels, due to noise generated from equipment and movement of vehicles, and their impact on fauna and human health are to be assessed.
 - iii. **Water:** The availability to competing users, changes in quality, sediment transport and ingress of saline water are to be assessed.
 - iv. **Land:** The changes in land use and drainage pattern, land quality including effects of waste disposal, shoreline/riverbank and their stability are to be assessed.
 - v. **Biological:** The level of deforestation/tree-cutting and shrinkage of animal habitat, the impact on fauna and flora (including aquatic

species, if any) due to contaminants/pollutants and the impact on rare and endangered species, endemic species, and migratory path/route of animals are to be assessed.

- c) **The prediction of impacts:** This step aims to identify the likely magnitude of the change (i.e., impact) in the environment when the project is implemented in comparison with the situation when the project is not carried out.
- d) **Mitigation:** This involves the introduction of measures to avoid, reduce, remedy or compensate for any significant adverse impacts.
- e) A mitigation plan supplemented with an environmental management plan (EMP) shall be drawn up for the selected option to guide the proponent towards environmental improvements.

Annexure 5 - Sample SMP

An illustrative Social Management Plan is presented below:

Typical "general impacts" during "pre-construction phase" and corresponding mitigation measures for transmission and distribution projects.								
Activity / Issues	Potential Impacts	Applicability		Proposed Mitigation and Enhancement Measures	Parameter to be monitored	Measurement & frequency	Monitoring Responsibility	Implementation Schedule
		T*	D*					
Securing land for substations	<ul style="list-style-type: none"> ▪ Loss of land, assets and income; ▪ Change in social status ▪ Social Inequities 	√		<ul style="list-style-type: none"> ▪ In case of land acquisition: <ul style="list-style-type: none"> - The land should be obtained as per the provisions of the RFCTLARRA, 2013 and the APRFCTLARRR, 2014. - An SIA should be conducted and an Expert Group established to evaluate the same. - A Rehabilitation & Resettlement Scheme has to be drafted in accordance with the Resettlement Policy Framework. - Compensation and entitlements should be paid as per the provisions of the RFCTLARRA, 2013 - Careful route selection to avoid existing settlements and sensitive locations ▪ Careful selection of site to avoid existing settlements and sensitive locations 	<ul style="list-style-type: none"> ▪ SIA process carried out 	<ul style="list-style-type: none"> ▪ Monthly until completed 	<ul style="list-style-type: none"> ▪ ESMS Cell 	<ul style="list-style-type: none"> ▪ On filing of land requisition by utility
				<ul style="list-style-type: none"> ▪ Distribution of compensation / entitlements for land 	<ul style="list-style-type: none"> ▪ Monthly until completed 	<ul style="list-style-type: none"> ▪ ESMS Cell 	<ul style="list-style-type: none"> ▪ Prior to start of substation construction 	
				<ul style="list-style-type: none"> ▪ Implementation of R&R Scheme 	<ul style="list-style-type: none"> ▪ Quarterly until completed 	<ul style="list-style-type: none"> ▪ State Monitoring Committee 	<ul style="list-style-type: none"> ▪ Prior to start of substation construction 	
				<ul style="list-style-type: none"> ▪ Consultation with local authorities/ autonomous councils and land owners 	<ul style="list-style-type: none"> ▪ Once 	<ul style="list-style-type: none"> ▪ ESMS Cell 	<ul style="list-style-type: none"> ▪ Prior to start of substation construction 	

				<ul style="list-style-type: none"> Careful selection of site to avoid encroachment of socially, culturally and archaeological sensitive areas (e.g. sacred groves, graveyards, religious worship place, monuments etc.) Ensure women receive compensation for land in cases where land rights are with women 				
Location of overhead line towers/poles/ laying of underground distribution line & alignment and design	<ul style="list-style-type: none"> Social inequities 	√	√	<ul style="list-style-type: none"> Careful route selection to avoid existing settlements and sensitive locations Ensure women receive compensation for RoW, and damage to crops, trees etc. in cases where land rights are with women 	<ul style="list-style-type: none"> Consultation with local authorities/ autonomous councils and land owners on location of overhead line towers/poles/ laying of underground distribution line & alignment and design 	Once	<ul style="list-style-type: none"> CE Zone or SE OMC (APTRANSCO) DE Construction (Discoms) 	At time of detailed survey for route alignment
	<ul style="list-style-type: none"> Damage to socially / culturally sensitive and historical sites 	√	√	<ul style="list-style-type: none"> Careful selection of site and route alignment to avoid encroachment of socially, culturally and archaeological sensitive areas (e.g. sacred groves, graveyards, religious worship place, monuments etc.) 	<ul style="list-style-type: none"> Consultation with local authorities/ autonomous councils and land owners on location of overhead line towers/poles/ laying of underground 	Once	<ul style="list-style-type: none"> CE Zone or SE OMC (APTRANSCO) DE Construction (Discoms) 	At time of detailed survey for route alignment

					distribution line & alignment and design			
	<ul style="list-style-type: none"> Loss of agricultural production/ change in cropping pattern 	√		<ul style="list-style-type: none"> Use existing tower or footings wherever possible. Avoid sitting new towers on farmland wherever possible Payment for damages during construction and compensation for tower footing 	<ul style="list-style-type: none"> Payment of damages / compensation 	<ul style="list-style-type: none"> Quarterly till process is completed 	<ul style="list-style-type: none"> Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) 	<ul style="list-style-type: none"> Prior to the start of construction
	<ul style="list-style-type: none"> Interference with communication channel 	√		<ul style="list-style-type: none"> Proposed projects which involve lines over 132kV to get approval from Power & Telecommunication Coordination Committee (PTCC) before commission 	<ul style="list-style-type: none"> PTCC Approval 	<ul style="list-style-type: none"> Once 	<ul style="list-style-type: none"> PTCC 	<ul style="list-style-type: none"> At time of detailed survey for route alignment
Typical “general impacts” during “construction phase” and corresponding mitigation measures for transmission and distribution projects.								
Laying of underground cables or lines near heritage / tourist sites	<ul style="list-style-type: none"> Damage to socially / culturally sensitive and historical sites 	√	√	<ul style="list-style-type: none"> If any cultural property is found during construction, the work will be stopped immediately and contractor will intimate utilities about availability of cultural property Implementing Agency will intimate to Department of Archaeology & Museums, Andhra Pradesh for approval on how to proceed 	<ul style="list-style-type: none"> Discovery of cultural property Approval from Department of Archaeology and Museums, Andhra Pradesh 	<ul style="list-style-type: none"> Quarterly 	<ul style="list-style-type: none"> Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) 	<ul style="list-style-type: none"> During construction

							<ul style="list-style-type: none"> DE Construction (Discoms) under supervision of Environment and Social member 	
Construction of substation and laying of lines	<ul style="list-style-type: none"> Impact on worker health and safety – possibility of electrification, falling from height, and exposure to magnetic fields 	√	√	<ul style="list-style-type: none"> Contractor should follow defined protocols for health & safety Electric Safety Officer to be appointed Safety manger to be deployed during construction Construction camps should have adequate sanitation / safety facilities Safety equipment should be provided to workers Signboarding of hazardous areas / materials should be done 	<ul style="list-style-type: none"> Presence of documented health & safety protocols Safety manger present at site during construction Use of safety equipment by workers Presence of signboards at appropriate locations Adequate sanitation / safety standards at camps 	<ul style="list-style-type: none"> Daily for safety equipment Weekly for other measures 	<ul style="list-style-type: none"> Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) DE Construction (Discoms) 	<ul style="list-style-type: none"> During construction
	<ul style="list-style-type: none"> Impact on community health and safety due to exposure to 	√	√	<ul style="list-style-type: none"> Display danger signs at appropriate locations Display boards with precautions to be adopted by consumers, owners, 	<ul style="list-style-type: none"> Signboards / instructions are displayed at appropriate places 	<ul style="list-style-type: none"> Weekly for signboards Monthly for compensati on 	<ul style="list-style-type: none"> Concerned EE Civil in the field (covering jurisdiction 	<ul style="list-style-type: none"> During Construction

	electric currents, hazardous materials, electromagnetic fields etc.			<p>occupiers, electrical contractors, electric workmen and suppliers</p> <ul style="list-style-type: none"> ▪ Display of instructions for resuscitation of persons suffering from electric shock. ▪ Use of insulated wires in highly congested residential areas ▪ Compensation is paid to non-departmental persons in the case of fatal accidents due to electrocution. 	<ul style="list-style-type: none"> ▪ Use of insulated wires in congested areas ▪ Compensation is paid 		<p>of APTRANSCO project) (also a member of ESMS cell)</p> <ul style="list-style-type: none"> ▪ DE Construction (Discoms) 	
	<ul style="list-style-type: none"> ▪ Safety and security concerns of women and other population around the construction site 	√	√	<ul style="list-style-type: none"> ▪ Construction sites are properly lit ▪ Minimize blockage of access roads 	<ul style="list-style-type: none"> ▪ Site is adequately lit at night ▪ Access roads are usable 	Weekly	<ul style="list-style-type: none"> ▪ Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) ▪ DE Construction (Discoms) 	<ul style="list-style-type: none"> ▪ During construction
	<ul style="list-style-type: none"> ▪ Violation of labour standards 	√	√	<ul style="list-style-type: none"> ▪ Contractor should follow labour standards as per applicable laws such as minimum wages, equal pay for equal work, no child labour etc. ▪ Provision of welfare measures such as canteens, first aid facilities, housing 	<ul style="list-style-type: none"> ▪ Labour laws are being followed ▪ Welfare facilities are available 	Monthly	<ul style="list-style-type: none"> ▪ Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) 	<ul style="list-style-type: none"> ▪ During Construction

				accommodation for workers near the work place etc.			▪ DE Construction (Discoms)	
Typical “general impacts” during “operation and maintenance phase” and corresponding mitigation measures for transmission and distribution projects.								
Operation and maintenance of substations and maintenance of lines	▪ Impact on worker health and safety – possibility of electrocution, falling from height, and exposure to magnetic fields	√	√	<ul style="list-style-type: none"> ▪ Safety equipment should be provided to workers ▪ Sign boarding of hazardous areas / materials should be done ▪ Careful design ▪ Safety awareness ▪ Emergency planning ▪ Sanitation and medical facilities 	<ul style="list-style-type: none"> ▪ Use of safety equipment by workers ▪ Presence of signboards at appropriate locations ▪ Adequate sanitation / safety standards 	Weekly	<ul style="list-style-type: none"> ▪ Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) ▪ DE Operations (Discoms) 	▪ During running of the substation
	▪ Impact on community health and safety due to exposure to electric current	√	√	<ul style="list-style-type: none"> ▪ Display danger signs at appropriate locations ▪ Display boards with precautions to be adopted by consumers, owners, occupiers, electrical contractors, electric workmen and suppliers ▪ Display of instructions for resuscitation of persons suffering from electric shock. ▪ Compensation is paid to non-departmental persons in the case of fatal accidents due to electrocution. 	<ul style="list-style-type: none"> ▪ Signboards / instructions are displayed at appropriate places ▪ Compensation is paid 	<ul style="list-style-type: none"> ▪ Weekly for signboards ▪ Monthly for compensation 	<ul style="list-style-type: none"> ▪ Concerned EE Civil in the field (covering jurisdiction of APTRANSCO project) (also a member of ESMS cell) ▪ DE Operations (Discoms) 	▪ During running of the substation

Annexure 6 - Compensation plan for Temporary Damages (CPTD)

Unlike in case of substations, for the construction of transmission towers / distribution poles and the transmission / distributions lines, ownership of the land remains with the existing owner and is not transferred to the requesting body. The Electricity Act 2003, provides utilities with powers under the Telegraph Act 1885 which in turn states that **land for the lines and poles (towers) will not be acquired**. The utility will have the right of user only in the property under, over, along, across in or upon which the lines and poles / towers are placed.

Further affected families will receive compensation for temporary damage as well as for the land under the tower footing. Thus the compensations are made for following:

- Land under the tower footing
- Damage to trees
- Damage to crops
- Damage to constructed structure

Process to assess temporary damages:

APTRANSCO

Milestone	Process	Responsibility	
		Preparation	Approval
Pre-Construction Phase			
Identify Sites for Substations and line Route	<ul style="list-style-type: none"> • Detailed Survey carried out to determine route of the transmission line. As part of the survey social and environment assessment undertaken to determine whether there are any residential areas, schools / hospitals, historical sites, scheduled areas, forest areas, water bodies railway crossings, identification of vulnerable population including SCs, STs, marginal farmers and women, extent of 	Field Staff (EE, AE, ADE)	Environment and Social Management Cell CE/Zone and SE OMC

	temporary damage to crops, trees, structures etc. • Three alternatives are determined and the least problematic line is chosen		
Contracting	• Prepare cost estimates for the Schemes	EE	APTRANSCP HQ - CE Civil for civil works - CE Telecom for telecommunication - ESMS cell (for environment and social safeguards)
	• Consolidate estimates	CE Construction	Finance Advisor and Chief Controller (FACCA)
	• Prepare tender documents with the technical and financial specifications	EE	CE Construction
Construction Phase			
Securing RoW	• Approach farmers for RoW	AE & Contractor	SE OMC and EE Construction
	• Give RoW compensation for tower footing as per District Collector's directions	Revenue Department	
	• RoW compensation for damage to constructed Structure	Revenue Department	
Grievance Redressal	• Public consultations are undertaken in case of resistance	AE & Contractor	SE OMC and EE Construction
	• Negotiations regarding compensation	AE & Contractor	SE OMC and EE Construction
	• In case affected persons have grievances even after the public consultations, they can raise their concerns through CGRF	CGRF ESMS Cell	CMD

The process to calculate compensation to be paid for transmission projects is provided below:

- Compensation towards temporary crop and tree damage will be paid as stipulated in the Electricity Act 2003 and Telegraph Act 1885. The value of compensation for fruit bearing trees is determined by the horticulture department and this is revised from time to time. The value of compensation for crop damage is determined by the agriculture officer and is determined on a case by case basis
- Over and above the normal crop and tree damage, the land owner is compensated for the land taken up by the tower base. The value of compensation is determined by the

District Collector and is set on the basis of voltage. The compensation is determined separately for each zone.

- **In the Kadapa Zone** (comprising of Ananthapur, Kadapa, Kurnool, Chittoor) compensation for 132 kV towers is INR 55,000 per tower and for 220 kV towers compensation is INR 99,500 per tower.
- **In the Vishakhapatnam Zone**
 - o Vizanagaram, Visakhapatnam- compensation for 132 kV towers is INR 55,000 and for 220 kV towers compensation is INR 99,500 per tower
 - o Sirakulam, East Godavari, West Godavari- compensation for 132 kV towers is INR 43,900 and for 220 kV compensation is INR 79,600 per tower
- **In the Vijayawada Zone** (comprising of Krishna, Guntur, Prakasham, Nellore) compensation for 132 kV towers is INR 55,000 and for 220 kV towers compensation is INR 99,500 per tower
- As of now, RoW compensation is not paid for corridor. Govt. of AP and APTRANSCO are yet to decide on payment of RoW compensation for corridor.

APEPDCL/APSPDCL

The assessment of temporary damages are undertaken during pre-construction stage when probable location of poles and route of the distribution line are being decided. As the location of poles is flexible, efforts are made to avoid the damages to public and private property. In cases, where damages are unavoidable following mechanism is used:

- Community consultations are undertaken in case transformers and lines are situated close to houses / shops to assess the damages. The consultations are undertaken by ADE Construction and the DE construction
- The ADE Construction and the DE construction coordinate with respective authority – Municipal Corporation or revenue department for calculating compensation and payment of damages.
- The assessment of damage and calculation and payment of compensation is supervised by the environment and social member of the project implementation unit.

Preparation of CPTD

The outline of CPTD is provided below:

- *Project Description:* Description of project context and background, benefits of the project and objective of compensation plan
- *Project Impacts:* Highlight the anticipates positive and negative impacts of the project including the expected temporary damages due to the project activities
- *Compensation Framework:* Description of compensation plan and procedure for tree/crop compensation

- *Stakeholder Participation and Consultations:* Public consultations undertaken during preconstruction activities and details of planned consultations during construction phase
- *Institutional Arrangements for Implementation and Monitoring:* Describe the implementation schedule, monitoring mechanism, grievance redressal mechanism and budgetary allocations.

Annexure 7 – Tribal People Planning

Framework (TPPF)

As a part of the project preparation a number of analytical studies on environment and social aspects are conducted, including with a focus on any potential impacts on the tribal population as has also been detailed out in OP 4.10, of the World Bank. These studies include (some of them are on-going):

- a screening survey to identify whether tribal people are present in or have collective attachment to the tentative list of sub-project areas already identified
- an environment and social impact assessment for a sub-set of schemes identified and resultant Environment and Social Management Plans
- Preparation of Environment and Social Management Framework
- Preparation of a Tribal Peoples Planning Framework

In particular, the Social Assessment included the following:

- a. A review, on a scale appropriate to the project, of the legal and institutional framework applicable to tribal people.
- b. Gathering of baseline information on the demographic, social, cultural, and political characteristics of the affected tribal communities, the land and territories that they have traditionally owned or customarily used or occupied, and the natural resources on which they depend.
- c. Taking the review and baseline information into account, the identification of key project stakeholders and the elaboration of a culturally appropriate process for consulting with the tribal people at each stage of project preparation and implementation.
- d. An assessment, based on free, prior, and informed consultation, with the affected tribal communities, of the potential adverse and positive effects of the project. Critical to the determination of potential adverse impacts is an analysis of the relative vulnerability of, and risks to, the affected tribal communities given their distinct circumstances and close ties to land and natural resources, as well as their lack of access to opportunities relative to other social groups in the communities or regions in which they live.
- e. The identification and evaluation, based on free, prior, and informed consultation with the affected tribal communities, of measures necessary to avoid adverse effects, or if such measures are not feasible, the identification of measures to minimize, mitigate, or compensate for such effects, and to ensure that the tribal receive culturally appropriate benefits under the project.

During the course of social screening and social assessment, if any tribal people are identified, the impacts (both positive and negative) of the subproject component on the affected communities/groups will be addressed as per this framework. This framework sets out:

- The types of programs and subprojects likely to be proposed for financing under the project
- A plan for carrying out the screening and social assessment for such projects
- Socio-economic profile and baseline
- The potential positive and adverse effects of such programs or subprojects on tribal people
- A framework for ensuring free, prior, and informed consultation with the affected tribal communities at each stage of project preparation and implementation
- Institutional arrangements (including capacity building where necessary) for screening project supported activities, evaluating their effects on tribals, preparing Tribal People Plan (TPP), and addressing any grievances.
- Monitoring and reporting arrangements, including mechanisms and benchmarks appropriate to the project
- Disclosure arrangements for TPPs to be prepared under the TPPF

Identification of Tribal People

The term "Indigenous Peoples" or "Tribal People" is used in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees:

- a. Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
- b. Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- c. Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
- d. An indigenous language, often different from the official language of the country or region.

The term 'Scheduled Tribe' is defined in Article 366 (25) of Indian constitution as, "such tribes or tribal communities or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this Constitution".

Article 342 prescribes the procedure to be followed in the matter of specification of Scheduled Tribes. The criterion followed for specification of a community as a Scheduled Tribe, as per Ministry of Tribal Affairs, Government of India, are:

- Indications of primitive traits
- Distinctive Culture
- Geographical isolation
- Shyness of contact with the community at large, and
- Backwardness

Scheduled Areas

The Scheduled Areas are established in the country under the Article 244 and 5th Schedule of the Indian Constitution. Certain special provisions for the administration of these areas have been provided with the key objective to provide protection to the tribals living in the Scheduled Areas from alienation of their lands and natural resources to non-tribals.

Need for TPPF

Initial screening has indicated that some of the sub-project will be undertaken in districts in Andhra Pradesh that have scheduled tribes. However, the exact sub-projects, their exact location and hence, the exact nature of impacts thereof, is yet to be determined. Thus, at this stage of project preparation, a Tribal People Planning Framework (TPPF) is being prepared which shall form the basis of preparation of Tribal People Plan (TPP), once the sub-projects are identified and if the presence of tribal people impacted by the project is ascertained in the sub-project areas. The content sheet for TPP is provided below:

- Description of the sub-projects and implications for the scheduled tribes
- Social, cultural and economic profile of the affected tribal households including land tenure information¹⁸
- A summary of the social assessment
- A summary of the results of free, prior and informed consultations with the affected Scheduled Tribes
- Documentation of positive and negative impacts on the Scheduled Tribes based on consultations with them
- Relevant national, state and world bank policies and laws
- Impact management and mitigation methods
- Modalities to ensure regular and ongoing consultation with community on implementation of mitigation methods
- Institutional arrangements and linkage with other national and state level programmes/departments
- Grievance Redressal Mechanism to address the grievances of the tribal people arising from project implementation
- Mechanisms and benchmarks for monitoring, evaluating and reporting on the implementation of TPP
- Implementation schedule and cost estimate

Socio-Economic Profile

Andhra Pradesh (AP) is the 10th largest state in India with a population of 4.94 Crore (4.08% of India's population) and a population density of 304 persons per Sq. Km. There are 126.65 Lakh households in the State and the average size of the household is 3.95. AP is largely rural with 70.42% of the population living in rural areas and 29.58% living in urban areas.

¹⁸ Land holding among scheduled tribes is very less compared to other caste and ethnic groups. Scheduled tribes use public land and forest land. Therefore, details on the land tenure and usage pattern has to be collected in order to measure the dependency of Scheduled Tribes on the land.

Of the total population Scheduled Cates (SC) constitute 17.10% and Scheduled Tribes (ST) 5.33%. Prakasam is the district with the highest SC population (7.88 lakh) while Vizianagaram has the lowest (2.47 Lakh). Visakhapatnam is the district with the largest concentration of STs with 14.42% of the total ST population, while Kurnool with 2.04% has the lowest concentration.

The growth rate of population has slowed from 11.89% in 2001 to 9.21% in 2011 while the sex ratio rose from 983 in 2001 to 997 in 2011 (as per census data). In absolute terms, 2.47 crore (50.1%) of the total population is male and 2.46 Crore (49.9%) female. The districts of Visakhapatnam, East Godavari, West Godavari and Guntur, have registered a progressive sex ratio moving from less than 1000 category to more than 1000 from 2001 to 2011. The SCs and STs have registered a sex ratio of 1007 and 1009 respectively. However, despite the overall improvement in sex ratio, there was a troubling decline in child sex ratio from 964 in 2001 to 944 in 2011 (census data).

Literacy Rate in the state has increased and was 67.35% as per the 2011 population census as against 62.07% in the 2001 census; however this is still lower than India's overall literacy rate, which was 72.98% in 2011. The literacy rate is much higher for urban areas (79.2%) than rural areas (62.4%). Also, while male literacy is 74.8%, female literacy is only 59.96%. Among the districts West Godavari has the highest literacy (74.63% in 2011), while Vizianagaram has the lowest (58.89% in 2011).

District-wise Demographic Data

According to the Socio Economic and Caste Census 2011, there are 13 districts in the State of Andhra Pradesh, 670 tehsils, 14,514 gram panchayats/police stations. The total number of villages in Andhra Pradesh are 17,521 and additionally there are 94 towns. The number of rural households is 93.44 lakh (76.15%) and urban households is 29.26 lakh (23.85%). The district with the highest density of population is Krishna district (518), while Kadapa district has the lowest density (118). District wise demographic data is provided below:

Table 4: District wise Demographic Data

District	Area (Sq. Km.)	Population	Male Population	Female Population	Sex Ratio	Literacy (%)	Density / Sq. Km.
Srikakulam	5,837	27,03,114	13,41,738	13,61,376	1015	61.74	463
East Godavari	10,807	51,54,296	25,69,688	25,84,608	1006	70.99	477
Guntur	11,391	48,87,813	24,40,521	24,47,292	1003	67.4	429
Krishna	8,727	45,17,398	22,67,375	22,50,023	992	73.74	518
Visakhapatnam	11,161	42,90,589	21,38,910	21,51,679	1006	66.91	384
Chittoor	15,152	41,74,064	20,90,204	20,83,860	997	71.53	275
Anantapur	19,130	40,81,148	20,64,495	20,16,653	977	63.57	213
Kurnool	17,658	40,53,463	20,39,227	20,14,236	988	59.97	230
West Godavari	7,742	39,36,966	19,64,918	19,72,048	1004	74.63	509
Nellore	13,076	29,63,557	14,92,974	14,70,583	985	68.9	227

YSR (Kadapa)	15,359	28,82,469	14,51,777	14,30,692	985	67.3	188
Prakasam	17,626	33,97,448	17,14,764	16,82,684	981	63.08	193
Vizianagram	6,539	2,344,474	1,161,477	1,182,997	1019	58.89	359

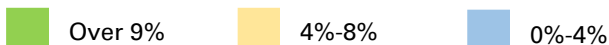
Source: Census 2011

Scheduled Tribes in Andhra Pradesh

Scheduled tribes form 5.53 % (Census 2011) of Andhra Pradesh's total population. Out of the total scheduled tribes in Andhra Pradesh, approximately 50% reside in four districts Vishakhapatnam (23%), East Godavari (11%), Nellore (10%) and Vizianagaram (9%). The district-wise distribution of scheduled tribes is provided below:

Table 5: Scheduled Tribe Population in Andhra Pradesh per district

State/ District	ST Population			Total Population			ST population as %age of total		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
Andhra Pradesh	2631145	2293102	338043	49386799	34776389	14610410	5.33	6.59	2.31
Srikakulam	166118	160438	5680	2703114	2266411	436703	6.1	7.1	1.3
Vizianagar am	235556	226130	9426	2344474	1853563	490911	10.0	12.2	1.9
Visakhapat nam	618500	579968	38532	4290589	2254667	2035922	14.4	25.7	1.9
East Godavari	213195	198698	14497	5154296	3840324	1313972	4.1	5.2	1.1
West Godavari	109072	99659	9413	3936966	3128189	808777	2.8	3.2	1.2
Krishna	132464	93915	38549	4517398	2673738	1843660	2.9	3.5	2.1
Guntur	247089	190905	56184	4887813	3235075	1652738	5.1	5.9	3.4
Prakasam	151145	124386	26759	3397448	2732866	664582	4.4	4.6	4.0
Sri Potti Sriramulu Nellore	285997	240972	45025	2963557	2105927	857630	9.7	11.4	5.2
Y.S.R	75886	58181	17705	2882469	1903337	979132	2.6	3.1	1.8
Kurnool	82831	64735	18096	4053463	2904177	1149286	2.0	2.2	1.6
Anantapur	154127	126362	27765	4081148	2935437	1145711	3.8	4.3	2.4
Chittoor	159165	128753	30412	4174064	2942678	1231386	3.8	4.4	2.5



Source: Census 2011

The list of notified Scheduled Tribes in Andhra Pradesh under the Scheduled Castes and Scheduled Tribes Orders (Amendment) Act are provided below:

Table 6: Scheduled Tribes of Andhra Pradesh

S. No.	Scheduled Tribe	S.No.	Scheduled Tribe
1	Andh, Sadhu Andh	18	Koya, Doli Koya, Gutta Koya, Kammara Koya, Musara Koya, Oddi Koya, Pattidi Koya, Rajah, Rasha Koya, Lingadhari Koya (ordinary), Kottu Koya, Bhine Koya, Raj Koya
2	Bagata	19	Kulia

3	Bhil	20	Malis
4	Chenchu	21	Manna Dhora
5	Gadabas, Bodo Gadaba, Gutob Gadaba, Kallayi Gadaba, Parangu Gadaba, Kathera Gadaba, Kapu Gadaba	22	Mukha Dhora, Nooka Dhora
6	Gond, Naikpod, Rajgond, Koitur	23	Nayaks
7	Goudu	24	Pardhan
8	Hill Reddis	25	Proja, Parangiperja
9	Jatapus	26	Reddidora
10	Kammara	27	Rona, Rena
11	Kattunayakan	28	Savaras, Kapu Savaras, Maliya Savaras, Khutto Savaras
12	Kolam	29	Sugalis. Lambadis, Banjara
13	Konda Dhoras, Kubi	30	Valmiki
14	Konda Kapus	31	Yenadis, Chella Yenadi, Kappala Yenadi, Manchi Yenadi, Reddi Yenadi
15	Kondareddis	32	Yerukulas, Koracha, Dabba Yeukula, Kunchapuri Yeukula, Uppu Yeukula
16	Kondhs, Kodi, Kodhu, Desaya Kondhs, Dongria Kondhs, Kuttiya Kondhs, Tikiria Kondhs, Yenity Kondhs, Kuvinga	33	Nakkala, Kurvukaran
17	Kotia, Benthoriya, Bartika, Dulia, Holva, Sanrona, Sidhopaiko	34	Dhulia

Source: Census 2011

Further, tribal dominated areas in Andhra Pradesh have been declared as "Scheduled Areas" as specified by the fifth schedule of the constitution. The list of Scheduled Areas in Andhra Pradesh is provided below¹⁹:

- Visakhapatnam Agency area (excluding the areas comprised in the villages of Agency Lakshmiapuram, Chidikada, Konkasingi, Kumarapuram, Krishnadevipeta, Pichigantikothagudem, Golugondapeta, Gunupudi, Gummudukonda, Sarabhupalapatnam, Vadurupalli, Pedajaggampeta)
- Sarabhupathi Agraharam, Ramachandrarajupeta Agraharam, and Kondavatipudi Agraharam in Visakhapatnam district.
- East Godwari Agency area (excluding the area comprised in the village of Ramachandrapuram including its hamlet Purushothapatnam in the East Godavari district)
- West Godawari Agency area in West Godavari district.
- Data includes the Submergence of Sch. Villages of 7 mandals from Khamman district to AP State (as per Reorganization Act, 2014):
- Nellipapaka, Kunavaram, Chintoor and V.R.Puram in East Godavari district and Burgampad, Kukunoor and Valaipadu in West Godavari district.

¹⁹ <http://aptribes.gov.in/pdfs/table9.pdf>

Scheduled Tribes are amongst the most marginalized and vulnerable segments of the society. Literacy rate among the males and females among Scheduled Tribes at the state level is respectively 47.66% and 26.11%. The aggregate percentage of literacy rate for schedule tribes is around 37% which is significantly lower than literacy rate of 67.35% at the state level. The STs have registered a sex ratio of 1009 which is higher than the state average (997). Therefore, this document has been developed to manage and mitigate the possible project impacts to the Scheduled Tribes. The next section provides the objectives of this document.

As discussed earlier, this TPPF would be applicable only for the project interventions that may be undertaken in the scheduled areas and may impact the tribal populations.

Objectives of TPPF

The objectives of the TPPF are to ensure that if indigenous peoples²⁰ (referred to as tribal in India) are affected by a project/scheme, they:

- i. are adequately and fully consulted;
- ii. receive benefits and compensation equal to that of the mainstream population;
- iii. are provided with special assistance as per laws and policies because of their vulnerabilities vis-à-vis the mainstream population; and
- iv. receive adequate protection against project adverse impacts on their culture identities.

There are several policies which provide a legal framework for ensuring dedicate attention to the tribals. The relevant policies are provided in the section below.

Policy and Legal Framework

Government of India has framed many polices and laws to safeguard the interest of the Scheduled tribes. The applicable legal and policy framework is provided below:

Table 7: Policy and Legal Framework

Acts/Rule/Policy	Objective	Applicability to this project
5 th Schedule of Constitution (Article 244)	Provides for the administration and control of Scheduled Areas and Scheduled Tribes. Article 244(1) and Article 244 (2) of the constitution of India enables the government to enact separate laws for governance and administration of the tribal areas. In pursuance of these articles, President of India had asked each of the state to identify tribal dominated	For sub-projects (transmission lines and towers) passing through Scheduled Areas

²⁰ **Indigenous People (IP)** referred as tribal in India are the distinct groups identified based on their social, cultural, economic, and political traditions and institutions, which are distinct from the mainstream or dominant society and culture. Tribal with similar cultural characteristics are known as ‘Adivasi’ in Hindi and are recognized as Schedule Tribes (STs) as per the Indian Constitution.

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

	areas. Areas thus identified by the states were declared as Fifth schedule areas	
73 rd Amendment of Constitution, 1992	Enables participation of Panchayat level institutions in decision-making and supporting preparation and implementation of development schemes.	For any sub-project located in panchayat area
Panchayats (Extension to Scheduled Areas) Act, 1996	The provisions of PESA Act extends the provisions of Part IX of constitution relating to Panchayats to the Scheduled Areas. As per the provisions, every village in Schedule V areas will have Gram Sabha which would approve of the plans, programmes and projects for social and economic development before such plans, programmes and projects are taken up for implementation at village level.	For approval of any sub-project located in Scheduled Areas
The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006	The act recognizes and vests the forest rights and occupation in forest land in forest dwelling Scheduled Tribes and other traditional forest dwellers who has been residing in such forests for generations but whose rights could not be recorded. The act provides a framework for recording forest rights so vested and the nature of evidence required for such recognition and vesting in respect of forest land.	For sub-projects (transmission lines and towers) passing through forest land
The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act (RFCTLARRA), 2013	Fair compensation for acquisition of movable assets; Resettlement and economic rehabilitation of displaced population due to involuntary land acquisition.	In cases of involuntary acquisition of land
Andhra Pradesh Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Rules, 2014	These rules have been notified by the Government of Andhra Pradesh in exercise of the powers conferred by Section 109 of the RFCTLARRA, 2013. As per Chapter V Sections 25, 26 and 27 of the Andhra Pradesh Rules, awards and compensations are in line with the provisions of the RFCTLARRA, 2013. Section 28, further specifies the following that were to be notified by the State Government:	In cases of involuntary acquisition of land

	<ul style="list-style-type: none"> • The multiplication factor mentioned in RFCTLARRA, 2013 is set at 1.25 for rural areas other than scheduled areas and 1.50 for scheduled (tribal) areas • The one-time grant to artisan, small traders and certain others is set at INR 25,000 • The payment of compensation shall be made expeditiously through account payee cheques / electronic mail transfer 	
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In addition, to the National and state laws, bank financed projects should also comply with World Bank Operational Policies. The World Bank Policy on indigenous people (IP) is provided below:

Table 8: Applicable World Bank Operational Policies

OP 4.10: Indigenous People	<p>The policy aims to protect the dignity, right and cultural uniqueness of indigenous people, to ensure that they do not suffer due to development and that they receive social and economic benefits.</p> <p>This policy contributes to the Bank's mission of poverty reduction and sustainable development by ensuring that the development process fully respects the dignity, human rights, economies, and cultures of Indigenous Peoples. The Bank provides project financing only where free, prior, and informed consultation results in broad community support to the project by the affected Indigenous Peoples.</p>
Applicability	The policy is triggered if there are indigenous /tribal people in the project area, potential adverse impacts on indigenous people are anticipated and if indigenous people are among the intended beneficiaries.
OP 4.12: Involuntary Resettlement	This policy covers direct economic and social impacts that both result from Bank-assisted investment projects, and are caused by the involuntary taking of land. To avoid or minimize involuntary resettlement and, where this is not feasible, assist displaced persons in improving or at least restoring their livelihoods and standards of living in real terms relative to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.
Applicability	The policy is triggered if there is involuntary acquisition of land for project activities

Thus adequate provisions exists in the country to address the issues related to tribals.

Potential Impacts

The most important component of the TPPF is to lay down a mechanism to assess the type and magnitude of impacts, both positive and negative on the tribal communities. The assessment of impacts on tribal population in the projects shall focus on the probable consequences of the project according to specific criteria / indicators. The indicators are provided below:

- Changes in access to natural resources (such as forest, grazing land, weekly markets, etc.)
- Loss of land due to project activities
- Increase or decrease in the number of job opportunities through wage labour within or outside agriculture
- Change in employment and income generating opportunities in agriculture, trades, services and business
- Threat to tribal community rights, institutions, values and way of life
- Increased or decreased access to social infrastructure and public services such as sources of water, health facilities, schools, etc.
- Reduction in political power and increased marginalization
- Change in farming methods, cropping pattern, crop yield, income, expenditure pattern, etc.

The potential impacts of the proposed projects are highlighted below:

Positive Impacts:

- **Improved and reliable power supply:** Andhra Pradesh is one of the few states in India to provide 100% rural electrification²¹. However, about 18.4%²² of rural households do not have electricity connections in Andhra Pradesh. The proposed project aims to ensure 24x7 power for all. Furthermore, the focus of the activities planned under the project is also to provide power at consistent voltage (at least 220V for household consumption), thereby reducing dependence on other sources of energy.

Negative Impacts:

- **Loss of land:** There is loss of land during setting up substations. The land requirement for setting-up substation:

Voltage	Land required Sub-station ²³
132/33 KV and 220/33 KV	5 acre
33/11 KV	0.5 acre

*As per information received from Utilities

Note: The land for the proposed investments in APTRANSCO (132/33 KV and 220/33 KV substations) has been secured either from the discoms where they have provided extra land in their existing substations to APTRANSCO or government land has been identified. The status of sites for the proposed 12 substations as on 5th May 2016 is provided below:

Method of securing land	No. of substations
Extra land available in existing substations	4

²¹ http://www.cea.nic.in/reports/monthly/dpd_div_rep/village_electrification.pdf

²² www.ap.gov.in/wp-content/uploads/2016/01/12-AP-Households.pdf

²³ Reference manuals on construction and operational practices of EHV substations & lines and commercial and load dispatch operations. Available at: <http://www.aptransco.gov.in/transco/images/APTRANSCO-Technical-reference-book-2011-vol-ii.pdf>

Secured after transfer of payment to government	1
Identified government land – approved	3
Government land Identified – approval in-process	1
Yet to be identified (proposed through transfer of government land)	3

No involuntary acquisition is expected for securing land and the projects are not expected to result in any physical or economic displacement of people.

The land required for distribution substation is comparatively small and will be secured either through transfer of government land or purchase of land on willing-buyer willing-seller basis

- **Restricted use of land and RoW:** The ownership of land is not transferred to the utilities for construction of transmission towers / distribution poles and laying of power lines. The utility will have the right of user only in the property under, over, along, across in or upon which the lines and poles / towers are placed. Further, the construction of the tower may restrict the use of land under the tower footing for transmission towers. For distribution projects a pole is erected and there is no restriction on land use.

In addition, the MoEF provides guidelines for maintaining a Right of Way (RoW) corridor which shall be kept clear of any obstruction. The width of the RoW corridor depends on the voltage of the lines as depicted in the table below:

Voltage	Width of RoW* (in meters)
132 KV	27
33 KV	15
11 KV	7

*Width of Right of Way is as per MoEF guidelines dated May 2014

However, the impact on environment is minimal as trees are cut or pruned to the extent required for preventing electrical hazards by maintaining the following limited clearances:

Voltage	Minimum clearance between conductor and trees (in meters)
132 KV	4.0
33 KV	2.8
11 KV	2.6

Note: RoW requirements are very low for 33 KV and 11 KV lines. Generally, there is no need to cut trees for electrical clearances. Furthermore, in urban areas, the lines will be laid along the roads or the streets to minimize RoW issues.

- **Change in land use:** The land use pattern will change due to project activities, for instance, the proposed site for the substation or tower footing might be used for farming or might have trees.

Impact Mitigation

Securing land

Land is required for construction of transmission and distribution substations and erecting transmission towers and distribution poles. Land secured for construction of substations is no longer accessible to the existing owner and hence in such cases ownership is transferred from the existing owner to the respective utility. There are four ways in which land can be secured; these are:

- (vi) Transfer of Government land to utility
- (vii) Voluntary donation
- (viii) Purchase of land on willing buyer and willing seller basis on negotiated price
- (ix) Involuntary acquisition of land

In order to **avoid** the loss of private / communal lands or agriculture and forest lands, the transmission and distribution utilities will endeavor, wherever possible, to secure Government land for their projects and avoid private or communal lands, even if this requires realignment of the proposed route. Only in rare cases that Government land is not available will other methods of securing land be pursued. Further, only the minimal amount of land required for substations will be allotted. The following steps are to be followed depending on the method of securing land:

- (v) **Transfer of Government land:** The Andhra Pradesh Land Allotment Policy (G.O. Ms. No. 571 issued 14.09.2012) prescribes that **only waste lands will be allotted** and environmentally sensitive / fragile areas such as tank beds, river, beds, hillocks with afforestation shall not be allotted. Similarly, **lands assigned to poor people for agriculture purpose should not be resumed** for other purposes, and if it is unavoidable then the assignees should be provided with alternate land in addition to rehabilitation. In all cases, a **NOC from the Urban Local Body, Urban Development Authority, or Department for Town and Country Planning (DT&CP) is required** before any allotment is made. The allotted land may be given free of cost or on payment basis. When land is allotted on payment basis, the **cost of the land will be determined as per market value recommended by the Collector** and the A.P. Land Management Authority (APLMA). APLMA will also ensure that only the minimum amount of land needed is allotted and the allotted land is used only for the stated purpose.
- (vi) **Voluntary donation:** In the case of voluntary donation of land, there should not be any undue pressure on the land owner / user(s) to transfer ownership of their land. Apart from this following shall also be ensured:
 - a. The donation will not cause significant impacts on the livelihood of the donor
 - b. The donor fully understands the value of their donated land

- c. The donation will not cause any economical or physical displacement of the current land users
- d. The land donations does not come from coercion or asymmetrical power relation between the land owner and the government
- e. The land in question must be free of squatters, encroachers, or other claims or encumbrances.
- f. Verification of the voluntary nature of land donations must be obtained from each of the persons donating land.
- g. In case of any loss of income or physical displacement is envisaged, verification of voluntary acceptance of mitigation measures must be obtained from those expected to be adversely affected.
- h. Subsequently title of land shall be transferred in the name of the utility.

(vii) **Purchase of land on willing buyer and willing seller basis on negotiated price:**

When land is purchased from a willing seller, the utility shall ensure:

- a. Consultation with the affected person has to be carried out and documented.
- b. All negotiations have to be carried out in a transparent manner
- c. That land owners are aware of the basis on which compensation is calculated
- d. The land in question must be free of squatters, encroachers, or other claims or encumbrances.
- e. Subsequently title of land shall be transferred in the name of the utility.

(viii) **Involuntary acquisition of land:** Involuntary acquisition of land will be the last resort and be undertaken only in the case of non-availability of Government lands in the area. In the case of involuntary acquisition, the provisions of RFCTLARRA, 2013 and the A.P. RFCTLARRR, 2014 shall be applicable. The land acquisition and resettlement policy is provided in the section below.

Land Acquisition and Resettlement Policy

Whenever after initial screening it is found that some land belonging to tribal community/ communities is to be involuntary acquired for setting up of a substation, it is required to demonstrate/substantiate that such acquisition is done only as a last resort by completing the technical investigation including assessment of alternatives and detailed surveys. The detailed report along with land requirement is submitted to the Government of Andhra Pradesh (GoAP) for further processing as per provisions of RFCTLARRA, 2013. GoAP then initiates a SIA through an Independent Agency with a project specific terms of reference. The SIA agency shall first consult the concerned Panchayat, Municipality, District/Village Council at village level or ward level in the affected area to carry out SIA study. SIA shall assess the purpose of acquisition and estimate the affected families, gender, social group carry out analysis regarding impact on community properties, assets and infrastructure particularly roads, public transport, drainage, sanitation, sources of drinking water, sources of water for cattle, community ponds grazing land, plantations, public utilities electricity supply and health care facilities. The SIA agency shall also prepare a Social Impact Management Plan (SIMP) listing ameliorative measures required for addressing the likely

impact vis-à-vis intended benefit of the project. The SIA report and SIMP shall be subject to public hearing in the affected area after giving adequate publicity for the venue, time etc to ascertain the views of affected families/communities which shall be included in the SIA. The final SIA report shall be published including its translation in local language and shall also be made available to Panchyats, District/Village Councils & Deputy Collector/District Magistrate office for wider circulation. Detailing of the same is provided below:

- i. the prior consent of the concerned Gram Sabha or the Panchayats at the appropriate level in Scheduled Areas under the Fifth Schedule to the Constitution, shall be obtained in all cases of land acquisition in such areas, before issue of a notification under this Act, or any other Central Act or a State Act for the time being in force.
- ii. Provided that the consent of the Panchayats shall be obtained in cases where the Gram Sabha does not exist or has not been constituted.
- iii. In the case of a project involving land acquisition on behalf of a Requiring Body which involves involuntary displacement of the Scheduled Tribes, a Tribal People Development Plan (TPDP) shall be prepared in such a form as may be prescribed. Laying down the details of procedure for settling land rights due, but not settled and restoring titles of the Scheduled Tribes on the alienated land by undertaking a special drive together with land acquisition.
- iv. TPDP also contain a program for development of alternate fuel, fodder and non-timber forest produce resources on non-forest lands within a period of five years sufficient to meet the requirements of tribal communities.
- v. In the case of land being acquired from the members of the Scheduled Tribes, at least one-third of the compensation amount due shall be paid to the affected families initially as first instalment and the rest shall be paid after taking over of the possession of the land.
- vi. The affected families of' the Scheduled Tribes shall be resettled preferably in the same Scheduled Area in a compact block so that they can retain their ethnic, linguistic and cultural identity.
- vii. The resettlement areas predominantly inhabited by the Scheduled Tribes shall get land, to such extent as may be decided by the appropriate Government free of cost for community and social gatherings.
- viii. Any alienation of tribal lands or lands belonging to members of the Scheduled Tribes in disregard of the laws and regulations for the time being in force shall be treated as Null and void. In the case of acquisition of such lands, the rehabilitation and resettlement benefits shall be made available to the original tribal land owners
- ix. The affected Scheduled Tribes having fishing rights in a river or pond or dam in the affected area shall be given fishing rights in the reservoir area of the irrigation or hydel projects.
- x. Where the affected families belonging to the Scheduled Tribes are relocated outside of the district, then they shall be paid an additional 25% rehabilitation and resettlement benefits to which they are entitled in monetary terms along with a onetime entitlement of Rs. 50,000/-.
- xi. All benefits, including the reservation benefits available to the Scheduled Tribes in the affected areas shall continue in the resettlement area.
- xii. Whenever the affected families belonging to the Scheduled Tribes who are residing in the Scheduled Areas referred to in the Fifth Schedule to the Constitution are relocated outside those areas, than, all the statutory safeguards. entitlements and

benefits being enjoyed by them under this Act shall be extended to the area to which they are resettled regardless of whether the resettlement area is a scheduled Area referred to in the said Fifth Schedule or not.

- xiii. Where the community rights have been settled under the provisions of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. The same shall be quantified in monetary amount and be paid to the individual concerned who has been displaced.

Special provisions of the RFCTLARRA, 2013 as applicable to the land acquisition in Tribal/Scheduled Areas are provided below:

Table 9: Process to acquire Tribal Land as per RFCTLARRA, 2013

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

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

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

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

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

			of Forest Rights) Act, 2006, the same shall be quantified in monetary amount and be paid to the individual concerned who has been displaced due to the acquisition of land in proportion with his share in such community rights.
		Provision of infrastructural amenities in resettlement area	All benefits, including the reservation benefits available to the Scheduled Tribes and the Scheduled Castes in the affected areas shall continue in the resettlement area b) Whenever the affected families belonging to the Scheduled Tribes who are residing in the Scheduled Areas referred to in the Sixth Schedule to the Constitution are relocated outside those areas, than, all the statutory safeguards. Entitlements and benefits being enjoyed by them under this Act shall be extended to the area to which they are resettled regardless of whether the resettlement area is a tribal area referred to in the said Sixth Schedule or not.

Adapted from Environment and Social Policy and Procedures Framework (ESPPF) prepared for Assam Electricity Grid Corporation Limited (AEGCL) and Assam Power Distribution Company Limited (APDCL). Document no. AEGCL/APDCL/Final-ESPPF/2015

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

a. Comprehensive Compensation Package	
Eligibility for Entitlement	Provisions
<p><u>Affected family.</u></p> <p>Affected family is defined as</p> <ul style="list-style-type: none"> • A family whose land or other immovable property has been acquired; or • A family which does not own any land but a member or members of such family may be agricultural labourers, tenants including any form of tenancy or holding of usufruct right, share-croppers or artisans or who may be working in the affected area for three years prior to the acquisition of the land, whose primary source of livelihood stand affected by the acquisition of land; or • The Scheduled Tribes and other traditional forest dwellers who have lost any of their forest rights recognized under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 due to acquisition of land or • Family whose primary source of livelihood for three years prior to the acquisition of the land is dependent on forests or water bodies and includes gatherers of forest produce, hunters, fisher folk and boatmen and such livelihood is affected due to acquisition of land; or • A member of the family who has been assigned land by the State Government or the Central Government under any of its schemes and such land is under acquisition; or • A family residing on any land in urban areas for preceding three years or more prior to the acquisition of the land or whose primary source of livelihood for three years prior to the acquisition of the land is affected by the acquisition of such land 	<p><u>Determination of Compensation:</u></p> <p>5. Determine market value of land: Whichever of the following is higher:</p> <ul style="list-style-type: none"> • Market value, if any, specified in the Indian Stamp Act, 1889 or • The average sale price for similar type of land situated in the nearest vicinity; or • Consented amount of compensation as agreed in case of acquisition of lands for private companies or for public private partnership project <p>6. Multiplier** (Factor by which market value is multiplied)</p> <ul style="list-style-type: none"> • In case of rural areas (other than Scheduled Areas) a multiplication factor of 1.25 will be applied • <i>In case of Scheduled (Tribal) Areas, a multiplication factor of 1.50 will be applied</i> • In case of urban areas, a multiplication factor of 1.00 will be applied <p>7. Value of asset attached to land: Building/Trees/Wells/Crop etc. as valued by relevant govt. authority</p> <p>8. Solatium: 100% of total compensation</p> <p>Total Compensation = Market value of land mentioned against (1) X relevant multiplier (2) + Value of assets (3) + Soaltium (4)</p> <p>(**)As determined by Government of Andhra Pradesh</p>

b. R&R Package		
S.No	Elements of R&R Entitlements	Provisons
1.	Provision of housing units in case of displacement	<ul style="list-style-type: none"> • If a house is lost in rural areas, a constructed house shall be provided as per Indira Awas Yojana specifications; or if the family opts not to take the house, the equivalent cost of the house may be offered instead • If a house is lost in urban areas, a constructed house shall be provided, which will be no less than 50 sq mts in plinth area; or if the family opts not to take the house offered, it shall get a one-time financial assistance for house construction which shall not be less than INR 1,50,000 / - • These benefits shall also be extended to any affected family which is without homestead land and which has been residing in the area continuously for not less than three years preceding the date of notification of the affected area <p>No family shall be given more than one house</p>
2.	Choice of Annuity or Employment	<p>The Appropriate Government shall provide the following options:</p> <ul style="list-style-type: none"> • Where jobs are created through the project, after providing suitable training and skill development, the Appropriate Government shall make provision for employment to at least one member per affected family in the project or arrange a job in such other project as maybe required. The wages for the job shall not be less than the minimum wages provided for in any law for the time being in force <p style="text-align: center;">Or</p> <ul style="list-style-type: none"> • Onetime payment of INR 5,00,000 / - per affected family <p style="text-align: center;">Or</p> <ul style="list-style-type: none"> • Annuity policies that shall pay not less than INR 2,000 per month per family for twenty years, with appropriate indexation to the Consumer Price Index for Agricultural Labourers
3.	Subsistence grant for displaced families for a period of one year	Each affected family which is displaced form the land acquired shall be given a monthly

		subsistence allowance equivalent to INR 3,000 per month for a period of year from the date of award
4.	Transportation cost for displaced families	Each affected family which is displaced shall get a onetime financial assistance of INR 50,000 /- as transportation cost for shifting of the family, building materials, belongings and cattle
5.	Cattle shed / petty shops cost	Each affected family having cattle or having a petty shop shall get onetime financial assistance of such amount as the Appropriate Government may specify subject to a minimum of INR 25,000 /- for the construction of cattle shed or petty shop
6.	Onetime grant to artisan, small traders and certain others	Each affected family of an artisan, small trader or self-employed person or an affected family which owned non-agricultural land or commercial, industrial or institutional structure in the affected area, shall get a one-time financial assistance of INR 25,000 /-
7.	Onetime resettlement allowance	Each affected family shall be give a onetime Resettlement Allowance of INR 50,000 /-
8.	Stamp duty and registration fee	<ul style="list-style-type: none"> • The stamp duty and any other fees payable for registration of the land or house allotted to the affected families shall be borne by the requiring body • The land for house allotted to the affected family shall be free from all encumbrances • The land or house allotted may be in the joint names of wife and husband of the affected family
<p>Special provisions for Scheduled Castes and Scheduled Tribes</p> <p>In addition to the R&R package, SC/ST families <i>will be entitled to the following additional benefits:</i></p> <ul style="list-style-type: none"> • One time financial assistance of INR 50,000 /- per family • Families settled outside the district shall be entitled to an additional 25% R&R benefits • Payment of one third of the compensation amount at very outset • Preference in relocation and resettlement in area in same compact block • Free land for community and social gatherings • In case of displacement, a <i>Development Plan is to be prepared</i> • Continuation of reservation and other Schedule V area benefits from displaced area to resettlement area 		

Right of Way

Unlike in case of substations, for the construction of transmission towers / distribution poles and the transmission / distributions lines, ownership of the land remains with the existing owner and is not transferred to the requesting body. The Electricity Act 2003, provides utilities with powers under the Telegraph Act 1885 which in turn states that **land for the lines and poles (towers) will not be acquired**. The utility will have the right of user only in the property under, over, along, across in or upon which the lines and poles / towers are placed.

Further affected families will receive compensation for temporary damage as well as for the land under the tower footing. Thus the compensations are made for following:

- Land under the tower footing
- Damage to trees
- Damage to crops
- Damage to constructed structure

The process to calculate compensation to be paid for transmission projects is provided below:

- Compensation towards temporary crop and tree damage will be paid as stipulated in the Electricity Act 2003 and Telegraph Act 1885. The value of compensation for fruit bearing trees is determined by the horticulture department and this is revised from time to time. The value of compensation for crop damage is determined by the agriculture officer and is determined on a case by case basis
- Over and above the normal crop and tree damage, the land owner is compensated for the land taken up by the tower base. The value of compensation is determined by the District Collector and is set on the basis of voltage. The compensation is determined separately for each zone.
 - **In the Kadapa Zone** (comprising of Ananthapur, Kadapa, Kurnool, Chittoor) compensation for 132 kV towers is INR 55,000 per tower and for 220 kV towers compensation is INR 99,500 per tower.
 - **In the Vishakhapatnam Zone**
 - Vizanagaram, Visakhapatnam- compensation for 132 kV towers is INR 55,000 and for 220 kV towers compensation is INR 99,500 per tower
 - Sirakulam, East Godavari, West Godavari- compensation for 132 kV towers is INR 43,900 and for 220 kV compensation is INR 79,600 per tower
 - **In the Vijayawada Zone** (comprising of Krishna, Guntur, Prakasham, Nellore) compensation for 132 kV towers is INR 55,000 and for 220 kV towers compensation is INR 99,500 per tower
- As of now, RoW compensation is not paid for corridor. Govt. of AP and APTRANSCO are yet to decide on payment of RoW compensation for corridor.

Consultation and Participation

In line with the World Bank operation policy on Indigenous People (OP 4.10), the affected Scheduled Tribes will be consulted in preparation of the tribal people plan (TPP). Consultations will be undertaken to ensure that needs, priorities and preferences of Scheduled Tribes are adequately reflected and considered in the TPP. The implementation agency should ensure that free, prior and informed consultations are undertaken with the affected Scheduled Tribes at each stage of the project. The key points to remember while undertaking consultations are:

- Scheduled Tribes should be informed about the potential impact and proposed mitigation methods and their views will be taken into account in finalizing the plan.
- Sufficient time should be provided to the stakeholder groups to participate in the consultations.
- The consultation should be undertaken in a manner accessible to project affected people where there are differing levels of literacy skills.
- The consultations will be undertaken by field staff of the utility with support from external experts/NGOs if required.

In this project, however, the process will go beyond consultations, as it is mandatory for the project to seek consent for all plans from the Gram Sabhas.

Disclosure

The final TPPF and TPP should be disclosed to the general public. The plan will be translated in local language and made available to the project affected people before implementation.

Following mechanisms are suggested for disclosure:

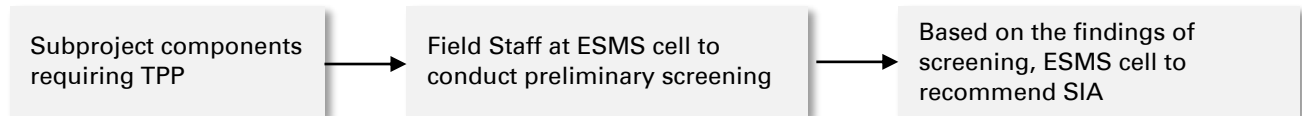
- Upload the final TPP and periodic monitoring reports on the website of each utility
- A copy of the documents will be made available at panchayat and municipal corporation office
- A copy of the documents will be made available at the local offices of the utilities
- A copy of the documents will be made available at the offices of any NGO and informal group working in the project area

Implementation and Institutional Arrangements

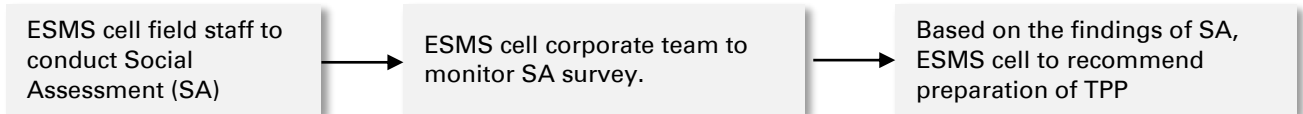
The implementing agencies (utilities) will have overall coordination, implementation and financing responsibilities. The implementing agencies will formulate, implement and monitor the TPP through the environment and social systems (ESMS) cell within the project implementation unit. Since the tribal issues are sensitive, the ESMS cell will ensure that a social specialist or consultant or designated official responsible for TPP has knowledge and experience of working among the tribal groups.

Figure 1: Flow of activities to design and implement TPP

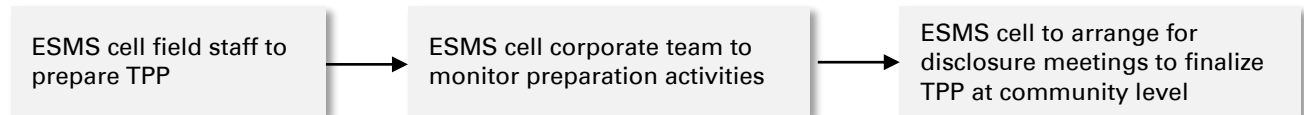
A. Preliminary Screening



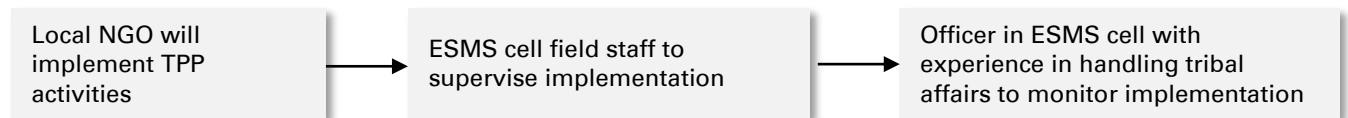
B. Social Impact Assessment (SIA)



C. Preparation of TPP



D. Implementation of TPP



Monitoring and Grievance Redressal Mechanism

The budgetary implications and monitoring mechanism for activities identified in TPP are provided below:

- Each Tribal Development Plan (TPP) will have its own budget. The implementing agencies (power utilities in this case) will provide sufficient resources to formulate TPP for each sub-project which impacts Scheduled Tribes. A detailed budget will be prepared by the social and environment cell within the project implementation unit, after taking into account all activities associated with formulation and implementation of TPP.
- The ESMS cell will be responsible to implement and monitor all the activities specified in this document with support from the field staff of the utilities (AE and ADE).
- For projects with significant adverse impacts²⁴ on Scheduled Tribes, participatory monitoring mechanism will be established involving the staff of project implementation unit, people from social and environment cell within implementation unit, representatives of affected Scheduled tribes and local community.
- The implementation of TPP will be monitored regularly and periodic monitoring reports will be submitted to World Bank. The monitoring reports will be prepared by social and environment cell.
- The implementing agency can hire an external expert agency/individual or an NGO to formulate and implement TPP and/or to monitor the implementation of TPP.
- The costs of monitoring requirement will be reflected in project budgets.

Grievance Redressal Mechanism

Apart from the project Grievance Redressal Mechanism (GRM) established by the utilities a multilevel grievance redress mechanism will be established for TPP implementation.

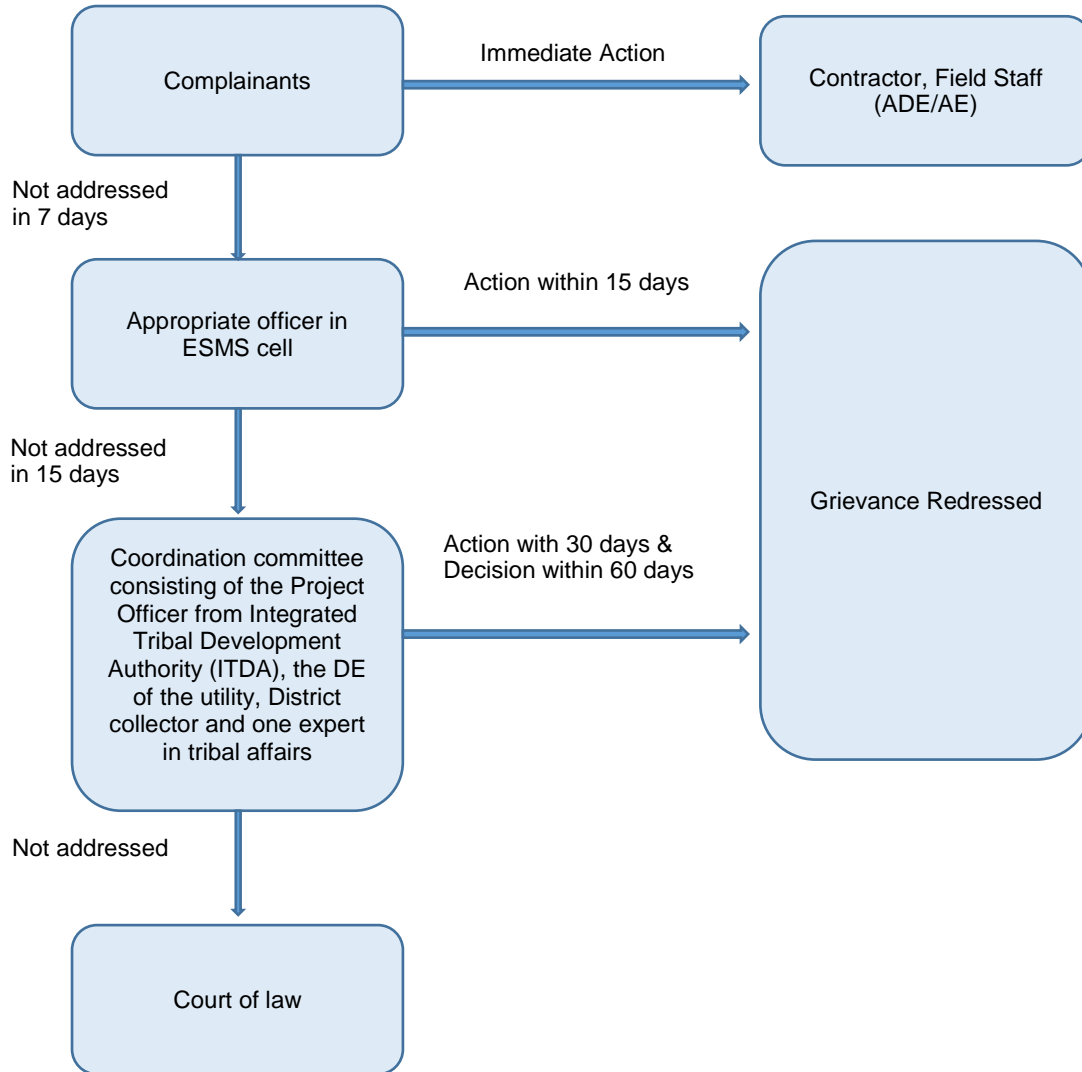
- The first level of grievances will be resolved by the contractors and field staff (AE,ADE) under the supervision of Divisional Engineer (DE) immediately through on-site consultations
- If grievance is not addressed at field level, it will be escalated to the appropriate officer in the ESMS cell
- Grievances of immediate and urgent nature should be resolved at ESMS cell level within 15 days of the registration of grievance
- Major grievances that cannot be resolved ESMS cell level will be forwarded to the coordination committee consisting of the Project Officer from Integrated Tribal Agency (ITDA)²⁵, the DE of the utility, District collector and one expert in tribal affairs
- In case, complainant is not satisfied by the resolution provided, he or she is entitled for approaching the judiciary.

The grievance redressal process is provided in the Figure 2.

²⁴ Involves displacement of Tribal people, affects their association to land or threatens their cultural identity

²⁵ Integrated Tribal Development Projects (ITDP) were conceived during fifth five year plan in India (and have continued ever since) to delineate projects for welfare of tribal population. Andhra Pradesh has opted for "Agency" model under the Registration of Societies Act and the ITDP are called Integrated Tribal Development Agencies (ITDA) in the state.

Figure 3: Grivevance Redressal Process



Annexure 8 - Resettlement Policy

Framework (RPF)

Land is required for construction of substations and erecting transmission and distribution towers. Land secured for construction of substations is no longer accessible to the existing owner and hence in such cases ownership is transferred from the existing owner to the respective utility. However, ownership of land used for erecting towers remains with the existing land owner and the utility only receives rights to use the land. Therefore when we talk of loss of land, it refers to land secured for substation construction. There are four ways in which this land can be secured; these are:

- (x) Transfer of Government land to utility
- (xi) Voluntary donation
- (xii) Purchase of land on willing buyer and willing seller basis on negotiated price
- (xiii) Involuntary acquisition of land

The RPF is applicable in instances where securing of land results in the need to rehabilitate and resettle affected families.

The proposed project includes the establishment of new of new sub-stations, the construction of which requires securing of land by the concerned utility. For a 132 / 33 kV sub-station 5 acres of land is required. While the majority of the land required for sub-station construction will be secured through transfer of Government lands, there is a possibility that some private land may need to be acquired. However, this will be done only as a demonstrable last resort in the case of non-availability of Government lands in the area.

Objective of the policy framework

The objective of the RPF is to appropriately identify, address and mitigate adverse socio-economic impacts that may occur due to the implementation of projects that involve the securing of land and subsequent resettlement of affected families. Without proper planning and management, resettlement may result in long-term hardship for affected people. Hence, the RPF aims to avoid resettlement wherever possible and in cases where it is unavoidable, the RPF requires the Appropriate Government to develop of a robust rehabilitation and resettlement plan to effectively manage the social impacts crated by the project. The plan would identify the full range of people affected by the project and justify

their displacement after consideration of alternatives that would avoid or minimize displacement.

Basic Principles

The basic principles on the basis of which the RPF has been developed are:

- **Avoidance:** wherever possible, securing of land that leads to displacement of people should be avoided
- **Least disturbance:** where displacement is not avoidable, efforts will be made to minimize displacement, damage to / loss of property, loss of livelihood and any other negative social impact the project may have. Only the minimum amount of land required for a project is to be secured
- **Public purpose:** the land secured must be found to serve a legitimate and bonafide public purpose and the social benefits should outweigh and potential social costs
- **Participative:** the process of land securing should be done through a humane, participative, informed and transparent process in which local self-government and Gram Sabhas are consulted and interested parties are fully informed and have a chance to air their grievances
- **Fair compensation:** the affected families will receive fair compensation for any loss of land along with a compensation award for resettlement
- **Maintaining the social and economic status of families:** the RPF is based on the principle that there should be minimal possible negative impacts on the livelihoods of the affected families. Where resettlement is unavoidable, the resettlement plan should attempt to ensure that affected families are able to maintain the same social and economic status as they did before displacement. Affected families will be provided appropriate compensation and where possible jobs in the project.

Resettlement Entitlement Matrix

• Compensation for Land Acquisition

The compensation shall be calculated by the Collector on the basis of the provisions laid down under section 26 to section 30 and the First Schedule of the RFCTLARRA 2013. The compensation shall be paid to all parties whose land or other immovable property or assets attached to the land or building have been acquired. As per the Act, land owners are defined as any person:

- Whose name is recorded as the owner of the land or building or part thereof, in the records of the authority concerned; or
- Who is granted forest rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 or under any other law for the time being in force; or

- Who is entitled to be granted Patta rights on the land under any law of the State including assigned lands; or
- Who has been declared as such by an order of the court or Authority

The Collector shall determine the market value of the land to be acquired on the basis of whichever of the following is higher:

- Market value, if any, specified in the Indian Stamp Act, 1889 for the registration of sale deeds or agreements to sell in the area where the land is situated; or
- The average sale price for similar type of land situated in the nearest village or nearest vicinity area; or
- Consented amount of compensation as agreed in case of acquisition of lands for private companies or for public private partnership project

The Collector having determined the market value of the land to be acquired shall calculate the total amount of compensation to be paid to the land owner by including all assets attached to the land. This will be done as follows:

	Component of Compensation	Manner of Determination of Value
1.	Market value of land	<p>Whichever of the following is higher:</p> <ul style="list-style-type: none"> • Market value, if any, specified in the Indian Stamp Act, 1889 for the registration of sale deeds or agreements to sell in the area where the land is situated; or • The average sale price for similar type of land situated in the nearest village or nearest vicinity area; or • Consented amount of compensation as agreed in case of acquisition of lands for private companies or for public private partnership project
2.	Factor by which the market value is to be multiplied	<ul style="list-style-type: none"> • In case of rural areas (other than Scheduled Areas) a multiplication factor of 1.25 will be applied • In case of Scheduled (Tribal) Areas, a multiplication factor of 1.50 will be applied • In case of urban areas, a multiplication factor of 1.00 will be applied
3.	Value of assets attached to land or building	
a.	Market value of the building and other immovable property or assets attached to the land or building that is to be acquired	<ul style="list-style-type: none"> • The Collector shall use the services of a competent engineer, or any other specialist in the relevant field, as may be considered necessary
b.	Damage sustained to standing trees and plats	<ul style="list-style-type: none"> • For fruit bearing trees, the value of compensation per tree will be determined from time to time by the Horticulture Department based on the species of tree • For non-fruit bearing trees, the value of compensation will be determined by the Forest Department
c.	Damage sustained to standing crops	<ul style="list-style-type: none"> • For standing crops, the compensation will be determined by the Agricultural Officer on a case by case basis
4.	Solatum	<ul style="list-style-type: none"> • The solatium shall be equivalent to one hundred percent of the market value of the land mentioned against serial number 1 multiplied by the relevant factor mentioned against serial number 2 plus the value of assets attached to land or building mentioned against serial number 4a, 4b and 4c.
5.	Total Compensation	<ul style="list-style-type: none"> • The total compensation = Market value of land mentioned against serial number 1 X relevant factor mentioned against serial number 2 + Value of assets as mentioned against serial number 3 + Soaltium mentioned against serial number 4

In addition to the market value of the land provided, the Collector shall, in every case, award an amount calculated at the rate of twelve per cent per annum on the market value for the period commencing on and from the date of the publication of the notification of the SIA till the date of the award of the Collector or the date of taking possession of the land, whichever is earlier.

- **Compensation for Rehabilitation and Resettlement**

In addition to the compensation detailed above, the Collector shall pass Rehabilitation and Resettlement Awards for each affected family. According to the RFCTLARRA 2013, affected family is defined as:

- A family whose land or other immovable property has been acquired;
- A family which does not own any land but a member or members of such family may be agricultural labourers, tenants including any form of tenancy or holding of usufruct right, share-croppers or artisans or who may be working in the affected area for three years prior to the acquisition of the land, whose primary source of livelihood stand affected by the acquisition of land;
- The Scheduled Tribes and other traditional forest dwellers who have lost any of their forest rights recognized under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 due to acquisition of land
- Family whose primary source of livelihood for three years prior to the acquisition of the land is dependent on forests or water bodies and includes gatherers of forest produce, hunters, fisher folk and boatmen and such livelihood is affected due to acquisition of land;
- A member of the family who has been assigned land by the State Government or the Central Government under any of its schemes and such land is under acquisition;
- A family residing on any land in urban areas for preceding three years or more prior to the acquisition of the land or whose primary source of livelihood for three years prior to the acquisition of the land is affected by the acquisition of such land

The elements of the rehabilitation and resettlement entitlements are as follows:

	Elements of R&R Entitlements	Entitlement / Provision
1.	Provision of housing units in case of displacement	<ul style="list-style-type: none"> • If a house is lost in rural areas, a constructed house shall be provided as per Indira Awas Yojana specifications; or if the family opts not to take the house, the equivalent cost of the house may be offered instead • If a house is lost in urban areas, a constructed house shall be provided, which will be no less than 50 sq mts in plinth area; or if the family opts not to take the house offered, it shall get a one-time financial assistance for house construction which shall not be less than INR 1,50,000 / - • These benefits shall also be extended to any affected family which is without homestead land and which has been residing in the area continuously for not less than three years preceding the date of notification of the affected area • No family shall be given more than one house
2.	Choice of Annuity or Employment	<p>The Appropriate Government shall provide the following options:</p> <ul style="list-style-type: none"> • Where jobs are created through the project, after providing suitable training and skill development, the Appropriate Government shall make provision for employment to at least one member per affected family in the project or arrange a job in such other project as maybe required. The wages for the job shall not be less than the minimum wages provided for in any law for the time being in force <p style="text-align: center;">Or</p> <ul style="list-style-type: none"> • Onetime payment of INR 5,00,000 / - per affected family <p style="text-align: center;">Or</p> <ul style="list-style-type: none"> • Annuity policies that shall pay not less than INR 2,000 per month per family for twenty years, with appropriate indexation to the Consumer Price Index for Agricultural Labourers
3.	Subsistence grant for displaced families for a period of one year	<ul style="list-style-type: none"> • Each affected family which is displaced from the land acquired shall be given a monthly subsistence allowance equivalent to INR 3,000 per month for a period of year from the date of award
4.	Transportation cost for displaced families	<ul style="list-style-type: none"> • Each affected family which is displaced shall get a onetime financial assistance of INR 50,000 / - as transportation cost for shifting of the family, building materials, belongings and cattle
5.	Cattle shed / petty shops cost	<ul style="list-style-type: none"> • Each affected family having cattle or having a petty shop shall get onetime financial assistance of such amount as the Appropriate Government may specify subject to a

		minimum of INR 25,000 /- for the construction of cattle shed or petty shop
6.	Onetime grant to artisan, small traders and certain others	<ul style="list-style-type: none"> Each affected family of an artisan, small trader or self-employed person or an affected family which owned non-agricultural land or commercial, industrial or institutional structure in the affected area, shall get a one-time financial assistance of INR 25,000 /-
7.	Onetime resettlement allowance	<ul style="list-style-type: none"> Each affected family shall be give a onetime Resettlement Allowance of INR 50,000 /-
8.	Stamp duty and registration fee	<ul style="list-style-type: none"> The stamp duty and any other fees payable for registration of the land or house allotted to the affected families shall be borne by the requiring body The land for house allotted to the affected family shall be free from all encumbrances The land or house allotted may be in the joint names of wife and husband of the affected family
9.	Special provisions for Scheduled Castes and Scheduled Tribes	<ul style="list-style-type: none"> Scheduled Castes and Scheduled Tribes displaced from Scheduled Areas shall receive an amount equivalent to INR 50,000 /- per family Families settled outside the district shall be entitled to an additional 25% R&R benefits; Payment of one third of the compensation amount at very outset; Free land for community and social gatherings;

Institutional and Implementation Arrangements

The following institutional arrangements have been provided for in the RFCTLARRA 2013 and the A.P. RFCTLARRR 2014 for the management of rehabilitation and resettlement of affected parties:

- 1) Commissioner for Rehabilitation and Resettlement:** As per section 44(1) of the RFCTLARRA 2013, the State Government shall appoint an officer of the rank of Commissioner or Secretary of that Government for rehabilitation and resettlement of affected families. The Commissioner shall be responsible for supervising the formulation of rehabilitation and resettlement schemes or plans and proper implementation of such schemes or plans. The Commissioner shall also be responsible for the post-implementation social audit in consultation with the Gram Sabha in rural areas and municipality in urban areas.
- 2) Administrator for Rehabilitation and Resettlement:** As per section 43(1) of the RFCTLARRA 2013, where the Appropriate Government is satisfied that there is likely to be involuntary displacement of persons due to acquisition of land, then the State Government shall, by notification, appoint in respect to that project, an officer not below

the rank of Joint Collector or Additional Collector or Deputy Collector or equivalent official of Revenue Department to be Administrator for Rehabilitation and Resettlement.

3) Powers of the Administrator for Rehabilitation and Resettlement: As per section 30 of the A.P. RFCTLARRR 2014, the Administrator shall exercise the following powers and have the following responsibilities:

- a. To conduct a survey and undertake a census of the affected families in the manner and within the time provided under the A.P. RFCTLARRR 2014;
- b. To prepare a draft Rehabilitation and Resettlement Scheme;
- c. To publish the draft scheme by the mode provided under the A.P. RFCTLARRR 2014;
- d. To make the draft scheme available to the concerned persons and authorities;
- e. To organize and conduct public hearings on the draft scheme;
- f. To provide an opportunity to the Requiring Body to make suggestions and comments on the draft scheme;
- g. To submit the draft scheme to the Collector;
- h. To publish the approved Rehabilitation and Resettlement Scheme in the affected area;
- i. To assist the Collector in preparing the Rehabilitation and Resettlement award;
- j. To monitor and supervise the implementation of the Rehabilitation award;
- k. To assist in post-implementation audit of Rehabilitation and Resettlement; and
- l. Any other work required to be done for Rehabilitation and Resettlement

4) Project Level Rehabilitation and Resettlement Committee: As per section 45(1 & 2) of the RFCTLARRA 2013, where land proposed to be acquired is equal to or more than one hundred acres, the Appropriate Government shall constitute a Committee under the chairmanship of the Collector to monitor and review the progress of implementation of the Rehabilitation and Resettlement Scheme and to carry out post-implementation audits in consultation with the Gram Sabha in rural areas and municipality in urban areas. The Committee shall include the following members:

- a. Officers from the Appropriate Government;
- b. A representative of women residing in the affected area;
- c. A representative each of the Scheduled Castes and the Scheduled Tribes residing in the affected area;
- d. A representative of a voluntary organization working in the area;
- e. A representative of a nationalized bank;

- f. The Land Acquisition Officer of the project;
- g. The Chairperson of the panchayats or municipalities located in the affected area or their nominees;
- h. The Chairperson of the District Planning Committee or his nominee;
- i. The Member of Parliament and Member of the Legislative Assembly of the concerned area or their nominee;
- j. A representative of the Requiring Body; and
- k. Administrator for Rehabilitation and Resettlement as the Member-Convenor

As per section 31(2) of the A.P. RFCTLARRR 2014, the Committee shall have its first meeting when a draft Rehabilitation and Resettlement Scheme has been prepared by the Administrator. The Committee shall discuss the scheme and make suggestions and recommendations. Thereafter the Committee shall meet and review and monitor the progress of Rehabilitation and Resettlement once in a month till the process is completed. For the post-implementation social audits, the Committee shall meet once in three months. In order to monitor the progress, the Committee may visit the affected area and hold discussions with the affected families and also visit the resettlement area.

Implementation Arrangements

The RPF follows the strategy of **avoidance, minimization and mitigation**. This means that preference is given to avoiding displacement and resettlement wherever possible. If it is not possible to avoid this, utilities will strive to minimize the extent of displacement and take appropriate mitigation measures for all social impacts caused by such displacement.

In order to **avoid** the loss of land and subsequent need for resettlement, the following safeguards are put in place:

- The Appropriate Government will endeavour, wherever possible, to secure Government land for projects even if this requires realignment of the proposed route
- Only the minimal amount of land required for substations will be secured; the land required for a 132kV / 33kV substation is approx. 5 acres.²⁶
- Only in rare cases that Government land is not available will other methods of securing land be pursued (voluntary donation or willing buyer and willing seller) with involuntary acquisition being the last resort
- Even, when Government lands are used, lands assigned to poor people for agriculture purpose will not be resumed unless unavoidable

²⁶ Reference manuals on construction and operational practices of EHV substations & lines and commercial and load dispatch operations. Available at: <http://www.aptransco.gov.in/transco/images/APTRANSCO-Technical-reference-book-2011-vol-ii.pdf>

- In case of voluntary donation, no undue pressure will be put on the land owner / user to transfer ownership of the land; and in the case of willing buyer and willing seller, the compensation shall not be less than the rate provided for under RFCTLARRA 2013
- There should be no unutilized land which has been previously acquired in the area where land is sought for the project. Further, any land acquired earlier and remaining unutilized is to be used for the purpose of the project before additional land is allotted
- The Appropriate Government shall ensure that a Social Impact Assessment (SIA) study is carried out in consultation with the concerned Panchayat, Municipality or Municipal Corporation in the affected area and also hold public hearings in the process
- An Expert Committee will be required to review the SIA and certify that the requested land serves a legitimate public purpose; that the social benefits of the proposed project outweigh any potential social costs; that only the minimum amount of land required is being utilized; and that no other less displacing option was available

Where it is not possible to avoid the acquisition of land and displacement of affected families, the provisions of RFCTLARRA, 2013 and the A.P. RFCTLARRR, 2014 shall be applicable.

The table below provides a snapshot of the process involved in land acquisition and determining the awards for rehabilitation and resettlement along with details who the competent authority responsible at each step of the process. Following the table, the implementation process is elaborated in detail.

Table 10: Competent Authority Responsible at Various Stages

	Milestone	Process	Responsibility
Involuntary Acquisition of Land – Process as per APRFCTLARRR, 2014			
1.	Request for Land	<ul style="list-style-type: none"> • <i>Requisition for land:</i> Requiring body files requisition to the concerned District Collector and the Commissioner Rehabilitation and Resettlement • <i>Preliminary inquiry</i> about the correctness of particulars furnished in the requisition • <i>Report on preliminary inquiry</i> submitted to the District Collector • <i>Preliminary estimate of the cost:</i> If the District Collector is satisfied that the requisition is consistent with the provisions of the RFCTLARRA, 2013, he shall make a preliminary estimate of the cost of acquisition 	<ul style="list-style-type: none"> • Principal Secretary Energy Department or any Person authorised by him • Team of Revenue and Agriculture Officers along with Representative of Requiring Body • District Collector

	Milestone	Process	Responsibility	
		<ul style="list-style-type: none"> The requiring body will deposit the estimated cost of acquisition in District collector's office 	<ul style="list-style-type: none"> Requiring body 	
2.	Social Impact Assessment	<ul style="list-style-type: none"> Notification to undertake SIA 	<ul style="list-style-type: none"> District Collector 	
		<ul style="list-style-type: none"> Disclosure of the notification 	<ul style="list-style-type: none"> District Collector 	
		<ul style="list-style-type: none"> Select team to carryout SIA from the individuals and institutions registered or empanelled in the state database of Qualified SIA Resource Partners and Practitioners 	<ul style="list-style-type: none"> Commissioner, Rehabilitation and Resettlement acting as state Social Impact Assessment Unit 	
		<ul style="list-style-type: none"> Undertake SIA in consultation with concerned Gram Panchayat, Mandal Parishad, Municipality or Municipal Corporation, followed by a public hearing to ascertain the views of the affected families 	<ul style="list-style-type: none"> Appointed team to conduct SIA 	
		<ul style="list-style-type: none"> Submit SIA report to Commissioner, Rehabilitation and Resettlement within a period of six months from the date of commencement 	<ul style="list-style-type: none"> Appointed team to conduct SIA 	
		<ul style="list-style-type: none"> Submit Social Impact Management Plan listing the ameliorative measures required to be undertaken for addressing the impacts 	<ul style="list-style-type: none"> Appointed team to conduct SIA 	
		<ul style="list-style-type: none"> Disclosure of SIA report and Social Impact Management Plan 	<ul style="list-style-type: none"> Commissioner, Rehabilitation and Resettlement 	
	Validation of SIA by Expert Group	<ul style="list-style-type: none"> Constitute an expert group consisting of two non-official social scientists, two representatives of panchayats, Gram Shabha, municipality or municipal corporation, two experts on rehabilitation and a technical expert in the subject related to the project 	<ul style="list-style-type: none"> AP State Government 	
		<ul style="list-style-type: none"> Recommendations of the expert group, within two months of its constitution, on whether the proposed project should be implemented or not 	<ul style="list-style-type: none"> Expert Group 	
		<ul style="list-style-type: none"> Disclosure of recommendations of the expert group 	<ul style="list-style-type: none"> AP State Government 	
	3.	Decision by appropriate Government	<ul style="list-style-type: none"> Decide area for acquisition based on the Social Impact Assessment report and the recommendations of the expert group 	<ul style="list-style-type: none"> AP State Government
			<ul style="list-style-type: none"> Obtain consent from the affected people, where required 	<ul style="list-style-type: none"> AP State Government
			<ul style="list-style-type: none"> Disclosure of the decision 	<ul style="list-style-type: none"> AP State Government
<ul style="list-style-type: none"> Create public website to upload and disclose each acquisition case 			<ul style="list-style-type: none"> Commissioner, Rehabilitation and Resettlement 	

	Milestone	Process	Responsibility
4.	Publication of Preliminary Notification	<ul style="list-style-type: none"> Preliminary notification shall be issued, after conclusion of SIA and consent of the affected persons or Gram Sabha, as the case may be, when it appears to the Government that land is required or likely to be required in any area for any public purpose 	<ul style="list-style-type: none"> AP State Government
		<ul style="list-style-type: none"> Update land records within 2 months of the notification 	<ul style="list-style-type: none"> District Collector
5.	Preliminary survey of land proposed for acquisition	<ul style="list-style-type: none"> Officer authorized by District collector to conduct preliminary survey and shall have powers as provided under the Section 12 of the RFCTLARRA 2013 	<ul style="list-style-type: none"> Officer authorized by District collector
6.	Disposal of objections	<ul style="list-style-type: none"> Every objection shall be made to the Collector in writing and the Collector shall give the objector an opportunity of being heard in person or by any person authorized by him in this behalf After hearing all such objections and making further inquiries as he thinks necessary, the Collector shall submit a report along with his recommendations on the objections to the District Collector for decision 	<ul style="list-style-type: none"> Collector / District Collector
7.	Preparation of Rehabilitation and Resettlement Scheme and Public Hearing:	<ul style="list-style-type: none"> The Administrator for Rehabilitation and Resettlement shall conduct a survey and undertake a census of the affected families within a period of two months from the date of publication of such preliminary notification. The Administrator shall prepare comprehensive and detailed draft Rehabilitation and Resettlement Scheme and give publicity in the affected area The Commissioner of Rehabilitation and Resettlement shall publish the approved Rehabilitation and Resettlement Scheme in the affected area 	<ul style="list-style-type: none"> Administrator for Rehabilitation and Resettlement Commissioner of Rehabilitation and Resettlement
8.	Development Plan for Scheduled Castes or Scheduled Tribes Families:	<ul style="list-style-type: none"> Prior consent of the concerned Gram Sabha or the Panchayats at the appropriate level in the Scheduled Areas under the Fifth Schedule to the Constitution shall be obtained before issue of a notification for acquiring land in Scheduled Areas In case there is involuntary displacement in Scheduled areas, a Development Plan will be prepared by the requiring body 	<ul style="list-style-type: none"> Concerned Utility

	Milestone	Process	Responsibility
9.	Publication of Declaration Regarding Acquisition of Land	<ul style="list-style-type: none"> A declaration for acquisition of the land along with the summary of the Rehabilitation and Resettlement Scheme shall be made by the appropriate Government in the prescribed format. 	<ul style="list-style-type: none"> Appropriate Government
10.	Payment of Compensation and Entitlements	<ul style="list-style-type: none"> The award for land acquisition shall be made within 12 months of the public declaration of the acquisition The compensation shall be calculated on the basis of provisions laid down under section 26 to section 30 and \ the First Schedule of the RFCTLARRA 2013. In addition to the compensation for land acquisition, Rehabilitation and Resettlement Awards will also be provided to each affected family 	<ul style="list-style-type: none"> Collector

The detailed implementation process is as follows:

1) Request for Land: Any Requiring Body, or its representative duly authorized by it, for whom land is to be acquired shall file the Requisition to the concerned District Collector and to the Commissioner, Rehabilitation & Resettlement as per Form I found in the annexures of the A.P. RFCTLARRR 2014. In case of acquisition for Government, the requisition shall be filed by concerned Secretary of the Department or a person authorized by him.

The District Collector upon receiving requisition shall constitute a team of revenue and agriculture officers to make field visit along with the representative of the requiring body to make a preliminary enquiry about the correctness of the particulars furnished in the requisition including the enquiry whether the requisition is consistent with the provisions of the Act, and submit a report to the District Collector

If the District Collector, based on the report of the team, other information available with him and instructions issued by the State Government in this regard, is satisfied that the requisition is consistent with the provisions of the RFCTLARRA 2013; he shall make a preliminary estimate of the cost of the acquisition as defined under Section 3 (i) of the Act. The administrative cost under item (A) of Section 3 (i) (vi) of the Act, shall be at the rate of 10% of the cost of compensation as provided in item (i) of Section 3 (i) of the Act. The District Collector will ask the Requiring Body to deposit the estimated cost of acquisition in his office within a period as may be specified by him.

2) Set up Social Impact Assessment Unit: The Commissioner, Rehabilitation & Resettlement shall be the state Social Impact Assessment Unit to arrange to carry out Social Impact Assessment Study (SIA). The Commissioner, Rehabilitation & Resettlement shall select the SIA team for each project from the individuals and

institutions registered or empanelled in the State Database of Qualified SIA Resource Partners and Practitioners. The size and selection criteria for the SIA team shall be as per the project-specific ToR developed by the State SIA Unit. The SIA team may be constituted by appointing individuals or an organization with experience in conducting SIAs or related field-based assessments and the team may include:

- A combination of independent practitioners, qualified social activists, academics, technical experts, who are not directly connected with the requiring body; and
- At least one woman member

The Requiring Body shall not be involved in any way in the appointment of the SIA team and while selecting the team it shall be ensured that there is no conflict of interest involving the team members appointed to assess the concerned project. If any team member is found to have a conflict of interest, the said member shall be disqualified.

3) Conduct Social Impact Assessment: A Social Impact Assessment (SIA) will be carried out for all land acquisition proposals except for when land is proposed to be acquired invoking urgency provisions under section 40 of RFCTLARRA 2013. In such cases, the District Collector, where he is not the Appropriate Government, shall submit a report to the State Government to issue appropriate directions. In other cases, the District Collector shall take the decision.

The District Collector shall, **within a period of fifteen days** from the date of deposit of the processing fee for carrying the SIA study by the Requiring Body, issue a notification for carrying out SIA in as per Form II found in the annexures of the A.P. RFCTLARRR 2014. The notification shall be made available in Telugu language to the Gram Panchayat, Mandal Parishad, Municipality or Municipal Corporation, as the case may be, and in the offices of the District Collector, the Sub-Divisional Magistrate and the Tahsildar at Mandal level.

The notification shall be published in the form of posters and pamphlets circulated in the affected area and by affixing the posters at some conspicuous places in the affected areas and shall be uploaded on the website of the State Government and the revenue district concerned. Provided that such notification shall be issued within thirty days after the deposit of the processing fee for carrying Social Impact Assessment by the Requiring Body.

The SIA shall be conducted in consultation with concerned Gram Panchayat, Mandal Parishad, Municipality or Municipal Corporation, as the case may be, at village level or ward level in the affected areas. This will be followed by a public hearing at the affected areas to ascertain the views of the affected families; these views shall be recorded in writing. Adequate publicity about the date and time and venue for the public hearing shall be given.

The SIA report shall be submitted as per Form III found in the annexures of A.P. RFCTLARRR 2014 to the Commissioner, Rehabilitation & Resettlement **within a period of Six months from the date of commencement** and shall include the views of the affected families recorded in writing. The SIA Report including summaries shall be prepared and divided into three parts;

- The Project Feasibility Report;
- The Project Impact Report, and
- The Social Impact Management Plan

4) Develop Social Impact Management Plan: A Social Impact Management Plan listing the ameliorative measures required to be undertaken for addressing the impact of the project shall be submitted as per Form IV found in the annexures of A.P. RFCTLARRR 2014 along with the SIA report to the Commissioner, Rehabilitation & Resettlement.

The SIA team must provide a conclusive assessment of the balance and distribution of the adverse social impacts and social costs and benefits of the proposed project and land acquisition, including the mitigation measures, and provide an assessment as to whether the benefits from the proposed project exceed the social costs and adverse social impacts that are likely to be experienced by the affected families or even after the proposed mitigation measures, the affected families remained at risk of being economically or socially worse, as a result of the said land acquisition and resettlement.

5) Publicizing the SIA Report and Social Impact Management Plan: The SIA Report and the Social Impact Management Plan shall be made available in the Telugu language to the concerned Gram Panchayat, Mandal Parishad, Municipality or Municipal Corporation, at village level or ward level in the affected areas and in the Offices of the District Collector, the Sub-Divisional Officer and Tahsildar. It shall also be published by way of a public notice by affixing at some conspicuous places in the affected areas and shall be uploaded on the website of the State Government and the revenue district concerned.

6) Validation of SIA by Expert Group: The Appropriate Government shall ensure that the SIA report is validated by an independent multi-disciplinary Expert Group, as may be constituted by it. The Expert Group shall have:

- Two non-official social scientists;
- Two representatives of Panchayat, Gram Sabha, Municipality or Municipal Corporation;
- Two experts on rehabilitation, and a technical expert in the subject relating to the project

If the Expert Group determines that the project does not serve any public purpose, or the social costs and adverse social impacts of the project outweigh the potential

benefits, it **shall make a recommendation within two months from the date of its constitution** and the project shall be abandoned forthwith and no further steps to acquire land will be initiated in respect of the same.

If the Expert Group believes that there is a public purpose and that the benefits outweigh social costs, it shall make recommendations within two months of its constitution as to whether the extent of land proposed to be acquired is the absolute bare-minimum extent needed for the project and whether there are no other less displacing options available.

All recommendations of the Expert Group shall be recorded in writing along with details and reasons for their decisions. The recommendations shall be made available in the Telugu language to the Panchayat, Municipality, or Municipal Corporation; and the offices of the District Collector, the Sub-Divisional Magistrate and the Tehsil; and shall be published in the affected areas and also uploaded on the website of the Appropriate Government.

- 7) Decision by Appropriate Government:** The Appropriate Government shall examine the Social Impact Assessment report, the recommendations of the Expert Group, if any, and decide such area for acquisition which would ensure minimum displacement of people, minimum disturbance to the infrastructure, ecology and minimum adverse impact on the individuals affected. Before taking a decision the appropriate Government shall ensure that consent is obtained the cases where such consent is required.

The decision of the Appropriate Government shall be made available in the local language to the Panchayat, Municipality, or Municipal Corporation; and the offices of the District Collector, the Sub-Divisional Magistrate and the Tehsil; and shall be published in the affected areas and also uploaded on the website of the Appropriate Government.

Each acquisition case will be uploaded, on a public website that is to be created by the Commissioner, Rehabilitation & Resettlement. All details regarding the case beginning with the notification of the SIA and tracking each step of decision making, implementation and audit will be made available on the website.

- 8) Publication of Preliminary Notification:** After conclusion of the SIA and consent of the affected persons or Gram Sabha, as the case may be, when it appears to the appropriate Government that land is required or likely to be required in any area for any public purpose, a preliminary notification shall be issued as per Form VI (a & b) found in the annexures of A.P. RFCTLARRR 2014.

The notification shall be published in the following manner:

- In the Andhra Pradesh Gazette;
- In two daily newspapers circulating in the locality of such area of which one shall be in the Telugu language

- In the Telugu language in the Panchayat, Municipality or Municipal Corporation, as the case may be and in the offices of the District Collector, the Sub-divisional Magistrate and the Tehsil;
- Uploaded on the website of the Appropriate Government;
- In conspicuous places in the affected areas and shall also be informed to the **public by beat of Tom-tom.**

After issuing the preliminary notification, the Collector shall updated land records within a period of two months.

9) Preliminary survey of land proposed for acquisition: The officer authorized by the District Collector to conduct preliminary survey shall have all the powers as provided under section 12 of the RFCTLARRA 2013.

10) Disposal of objections: Any person interested in any land which has been notified as being required or likely to be required for a public purpose, may **within sixty days from the date of the publication** of the preliminary notification object to:

- The area and suitability of land proposed to be acquired;
- Justification offered for public purpose;
- The findings of the SIA report

Every objection shall be made to the Collector in writing and the Collector shall give the objector an opportunity of being heard in person or by any person authorized by him in this behalf or by an Advocate and shall, after hearing all such objections and making such further inquiry, if any, as he thinks necessary, shall submit a report along with his recommendations on the objections to the District Collector for decision. The decision of the District Collector shall be final.

11) Preparation of Rehabilitation and Resettlement Scheme and Public Hearing: On publication of the preliminary notification by the Appropriate Government, the Administrator for Rehabilitation and Resettlement shall **conduct a survey and undertake a census of the affected families within a period of two months from the date of publication** of such preliminary notification.

For the survey and the census of the affected families the Administrator shall collect data based on the SIA report as well as data from secondary sources such as Panchayat and Government records and verify that data by door visit of the affected families and by site visits in case of infrastructure in the affected area.

The draft Rehabilitation and Resettlement Scheme prepared by the Administrator shall include particulars of the rehabilitation and resettlement entitlements of each land owner and landless whose livelihoods are primarily dependent on the lands being

acquired: Where resettlement of affected families is involved the scheme shall contain the following:

- List of Government buildings to be provided in Resettlement Area
- Details of public amenities and infrastructural facilities which are to be provided in Resettlement Area
- List of likely to be displaced families;
- List of infrastructure in the affected area;
- List of land holdings in the affected area;
- List of trades/business in the affected area;
- List of landless people in the affected area;
- List of persons belonging to disadvantageous groups like persons belonging to Scheduled Castes or Scheduled Tribes, handicapped persons in the affected area;
- List of landless agricultural labourers in the affected area;
- List of unemployed youth in the affected area.

The Administrator shall prepare comprehensive and detailed draft Rehabilitation and Resettlement Scheme, as per Form VIII found in the Annexures of the A.P. RFCTLARRR 2014, and give wide publicity in the affected area. The Administrator or an officer authorized by him shall conduct a public hearing in the affected areas on such date, time and venue as decided by **giving advance notice of fifteen days**.

The Commissioner of Rehabilitation and Resettlement shall publish the approved Rehabilitation and Resettlement Scheme in the affected area by affixing in conspicuous places in addition to making it public by other means as described above in the case of the preliminary notification.

12) Development Plan for Scheduled Castes or Scheduled Tribes Families: As far as possible, no acquisition of land shall be made in Scheduled Areas; and where this is done, it shall be only as a **demonstrable last resort**. Further the prior consent of the concerned Gram Sabha or the Panchayats at the appropriate level in the Scheduled Areas under the Fifth Schedule to the Constitution shall be obtained before issue of a notification. This prior consent shall be taken in all cases, even in the case of urgency.

In cases of a project involving land acquisition on behalf of a requiring body which involves involuntary displacement of the Scheduled Castes or Scheduled Tribes families, a Development Plan shall be prepared in the prescribed format. The Development Plan shall lay down the details of the procedure for settling land rights due, but not settled and restoring titles of the Scheduled Tribes as well as the Scheduled Castes on the alienated land by undertaking a special drive together with land acquisition.

The Development Plan shall also contain a programme for development of alternate fuel, fodder and non-timber forest produce resources on non-forest lands within a period of five years, sufficient to meet the requirements of tribal communities as well as the Scheduled Castes.

The affected families of the Scheduled Tribes shall be resettled preferably in the same Scheduled Area in a compact block so that they can retain their ethnic, linguistic and cultural identity. Further, the resettlement areas predominantly inhabited by the Scheduled Castes and the Scheduled Tribes shall get land, to such extent as may be prescribed by the Appropriate Government free of cost for community and social gatherings.

All the benefits, including the reservation benefits available to the Scheduled Tribes and Scheduled Castes in the affected areas shall continue in the resettlement area.

Any alienation of tribal lands or lands belonging to members of the Scheduled Castes in disregard of the laws and regulations for the time being in force shall be treated as null and void.

13) Publication of declaration for acquisition: A declaration for acquisition of the land along with the summary of the Rehabilitation and Resettlement Scheme shall be made by the appropriate Government in the prescribed format. However, no such declaration shall be made unless the requiring body has deposited an amount in full towards the cost of acquisition of the land. Every declaration shall be published in the same manner as described above in the case of the preliminary notification.

14) Land acquisition award: The Collector shall **make an award for land acquisition within a period of twelve months from the date of publication of the declaration for acquisition.** If no award is made within this period, the entire proceedings for the acquisition of the land shall lapse.

15) Mode of payment of compensation: The payment of compensation shall be made expeditiously through account payee cheques/electronic mail transfer.

Dispute Settlement

As per section 51(1) of the RFCTLARRA 2013, the Appropriate Government shall, for the purpose of providing speedy disposal of disputes relating to land acquisition, compensation, rehabilitation and resettlement, establish one or more Authorities to be known as "the Land Acquisition, Rehabilitation and Resettlement Authority".

Section 52(1, 2 & 3) specifies that the Authority shall consist of one person only (Presiding Officer) who will be appointed by the Appropriate Government in consultation with the Chief Justice of a High Court in whose jurisdiction the Authority is proposed to be established. The Presiding Officer must be, or have been, a District Judge; or a qualified legal practitioner who has been practicing for not less than seven years. The Presiding Officer shall hold office for a term of three years or until the age of sixty-five, whichever is earlier.

The Appropriate Government shall also provide the Authority with a Registrar and such other officers and employees as it deems fit. As per section 33 of the A.P. RFCTLARRR 2014, the salaries, allowances, and conditions of service of the Registrar and other Officers and employees of the Authority shall be the same as applicable to the officers and employees of similar grades working in the Judicial Department of the State Government; while the salaries and allowances of the Presiding Officer shall be the same as that applicable to a District Judge working in the State.

Any person interested who has not accepted the rehabilitation and resettlement award may, by written application to the Collector, require that the matter be referred by the Collector to the Authority for determination. The objection of the interested person may concern:

- a. Measurement of the land;
- b. The amount of the compensation;
- c. The person who is payable;
- d. The rights of Rehabilitation and Resettlement; or
- e. The appointment of the compensation among the interested persons

The application objecting to the award will be accepted if the application is made:

- a. Within six weeks from the date of Collector's award, in the case that the person making the application was present or represented before the Collector at the time when the award was made; or
- b. In other cases, within six weeks of receipt of the notice from the Collector, or within six months from the date of the Collector's award, whichever period shall expire first

However, the Collector may entertain an application within a further period of one year after the expiry of the stipulated period if there is sufficient cause for not filing it within the specified time period.

Once the Collector receives the application, he shall refer it to the Authority **within a period of thirty days** from the date of receipt of the application. If the Collector fails to refer the matter within the stipulated time period, the applicant may apply to the Authority, requesting it to direct the Collector to make the reference.

While making the reference to the Authority, the Collector shall specify:

- a. The situation and extent of the land, with particulars of any tress, buildings or standing crops on it;
- b. The names of the persons interested in the land;
- c. The amount awarded for damages and paid or tendered, and the amount of compensation awarded;
- d. The amount paid or deposited under any other provisions of the RFCTLARRA 2013; and
- e. If the objection is to the amount of the compensation or the grounds on which the amount of compensation was determined.

On receiving the reference, the Authority shall issue a notice specifying the day on which the objection will be determined and direct that the applicant and all interested persons

appear on the notified date. The proceedings shall take place in public and all persons entitled to appear in any Civil Court in the State shall be entitled to appear, plead and act in such proceedings.

In determining whether the amount of compensation awarded for land acquisition and rehabilitation and resettlement entitlements is appropriate, the Authority shall take into consideration whether the Collector has followed the parameters set under section 26 to section 30 of the RFCTLARRA 2013. If the Collector's award is not upheld by the Authority, the cost of the proceedings shall be paid by the Collector.

If the Authority believes that the compensation should have been in excess of that awarded by the Collector, the Authority may direct the Collector to pay interest on such excess at the rate of nine percent per annum from the date on which the Collector took possession of the land to the date of payment of the excess amount. If the payment of the excess amount is after the expiry of one year from the date the Collector took possession, the interest rate applied will be fifteen percent per annum for the period after the expiry of one year to the time the excess payment is made.

In such cases where the Authority awards compensation in excess of the amount awarded by the Collector, any person interested in any other land covered by the same preliminary notification, may submit a written application to the Collector to re-determine the amount of compensation made to them. Such applications should be made **within three months of the Authority's awards**.

If the Requiring Body or any person aggrieved by the Authority's award may file an appeal to the High Court **within sixty days from the date of the award**. This period maybe extended by a further sixty days if the High Court determines that the appellant was prevented by sufficient cause from filing the appeal in the stipulated period. The high Court will be require do dispose of any such appeal **within six months** from the date on which the appeal is presented to the High Court.

Monitoring Mechanism

As per section 50(1 & 2) of the RFCTLARRA 2013, the State Government shall constitute a State Monitoring Committee for reviewing and monitoring the implementation of rehabilitation and resettlement schemes or plans. The Committee may, besides having representatives of the concerned Ministries and Departments of the State Government, associate with eminent experts from the relevant fields.

Further, as per section 32(1) of the A.P. RFCTLARRR 2014, the State Monitoring Committee shall have its first meeting for review and monitoring the implementation of the rehabilitation and resettlement scheme within a month of the date that the said scheme is approved and published by the Commissioner for Rehabilitation and Resettlement. Thereafter, the meetings of the Committee shall be held once in three months to review and monitor the implementation of the rehabilitation and resettlement schemes.

Section 32(2) of the A.P. RFCTLARRR 2014 prescribes that the experts associated with the State Monitoring Committee shall be paid an amount of INR 1,000 as sitting fee and

travelling and daily allowance at the rate admissible to the Class-I rank Officers of the State Government for journeys outside headquarters.

Annexure 9 - Implementation Arrangements for RTFCTLARRA, 2013

	Milestone	Process	Responsibility
Involuntary Acquisition of Land – Process as per APRFCTLARRR, 2014			
1.	Request for Land	<ul style="list-style-type: none"> • <i>Requisition for land:</i> Requiring body files requisition to the concerned District Collector and the Commissioner Rehabilitation and Resettlement 	<ul style="list-style-type: none"> • Principal Secretary Energy Department or any Person Authorised by him
		<ul style="list-style-type: none"> • <i>Preliminary inquiry</i> about the correctness of particulars furnished in the requisition • <i>Report on preliminary inquiry</i> submitted to the District Collector 	<ul style="list-style-type: none"> • Team of Revenue and Agriculture Officers along with Representative of Requiring Body
		<ul style="list-style-type: none"> • <i>Preliminary estimate of the cost:</i> If the District Collector is satisfied that the requisition is consistent with the provisions of the RFCTLARRA, 2013, he shall make a preliminary estimate of the cost of acquisition 	<ul style="list-style-type: none"> • District Collector
		<ul style="list-style-type: none"> • The requiring body will deposit the estimated cost of acquisition in District collector's office 	<ul style="list-style-type: none"> • Requiring body
2.	Social Impact Assessment	<ul style="list-style-type: none"> • Notification to undertake social impact assessment 	<ul style="list-style-type: none"> • District Collector
		<ul style="list-style-type: none"> • Disclosure of the notification 	<ul style="list-style-type: none"> • District Collector
		<ul style="list-style-type: none"> • Select team to carryout SIA from the individuals and institutions registered or empanelled in the state database of Qualified SIA Resource Partners and Practitioners 	<ul style="list-style-type: none"> • Commissioner, Rehabilitation and Resettlement acting as state Social Impact Assessment Unit

	Milestone	Process	Responsibility
		<ul style="list-style-type: none"> Undertake SIA in consultation with concerned Gram Panchayat, Mandal Parishad, Municipality or Municipal Corporation, followed by a public hearing to ascertain the views of the affected families 	<ul style="list-style-type: none"> Appointed team to conduct SIA
		<ul style="list-style-type: none"> Submit SIA report to Commissioner, Rehabilitation and Resettlement within a period of six months from the date of commencement 	<ul style="list-style-type: none"> Appointed team to conduct SIA
		<ul style="list-style-type: none"> Submit Social Impact Management Plan listing the ameliorative measures required to be undertaken for addressing the impacts 	<ul style="list-style-type: none"> Appointed team to conduct SIA
		<ul style="list-style-type: none"> Disclosure of SIA report and Social Impact Management Plan 	<ul style="list-style-type: none"> Commissioner, Rehabilitation and Resettlement
	Validation of SIA by Expert Group	<ul style="list-style-type: none"> Constitute an expert group consisting of two non-official social scientists, two representatives of panchayats, Gram Shabha, municipality or municipal corporation, two experts on rehabilitation and a technical expert in the subject related to the project 	<ul style="list-style-type: none"> AP State Government
		<ul style="list-style-type: none"> Recommendations of the expert group, within two months of its constitution, on whether the proposed project should be implemented or not 	<ul style="list-style-type: none"> Expert Group
		<ul style="list-style-type: none"> Disclosure of recommendations of the expert group 	<ul style="list-style-type: none"> AP State Government
3.	Decision by appropriate Government	<ul style="list-style-type: none"> Decide area for acquisition based on the Social Impact Assessment report and the recommendations of the expert group 	<ul style="list-style-type: none"> AP State Government
		<ul style="list-style-type: none"> Obtain consent from the affected people, where required 	<ul style="list-style-type: none"> AP State Government
		<ul style="list-style-type: none"> Disclosure of the decision 	<ul style="list-style-type: none"> AP State Government
		<ul style="list-style-type: none"> Create public website to upload and disclose each acquisition case 	<ul style="list-style-type: none"> Commissioner, Rehabilitation and Resettlement
4.	Publication of Preliminary Notification	<ul style="list-style-type: none"> Preliminary notification shall be issued, after conclusion of SIA and consent of the affected persons or Gram Sabha, as the case may be, when it appears to the Government that land is required or likely to be required in any area for any public purpose 	<ul style="list-style-type: none"> AP State Government

	Milestone	Process	Responsibility
		<ul style="list-style-type: none"> Update land records within 2 months of the notification 	<ul style="list-style-type: none"> District Collector
5.	Preliminary survey of land proposed for acquisition	<ul style="list-style-type: none"> Officer authorized by District collector to conduct preliminary survey and shall have powers as provided under the Section 12 of the RFCTLARRA 2013 	<ul style="list-style-type: none"> Officer authorized by District collector
6.	Disposal of objections	<ul style="list-style-type: none"> Every objection shall be made to the Collector in writing and the Collector shall give the objector an opportunity of being heard in person or by any person authorized by him in this behalf or by an Advocate After hearing all such objections and making further inquiries as he thinks necessary, the Collector shall submit a report along with his recommendations on the objections to the District Collector for decision 	<ul style="list-style-type: none"> Collector / District Collector
7.	Preparation of Rehabilitation and Resettlement Scheme and Public Hearing:	<ul style="list-style-type: none"> The Administrator for Rehabilitation and Resettlement shall conduct a survey and undertake a census of the affected families within a period of two months from the date of publication of such preliminary notification. The Administrator shall prepare comprehensive and detailed draft Rehabilitation and Resettlement Scheme and give wide publicity in the affected area The Commissioner of Rehabilitation and Resettlement shall publish the approved Rehabilitation and Resettlement Scheme in the affected area 	<ul style="list-style-type: none"> Administrator for Rehabilitation and Resettlement Commissioner of Rehabilitation and Resettlement
8.	Development Plan for Scheduled Castes or Scheduled Tribes Families:	<ul style="list-style-type: none"> Prior consent of the concerned Gram Sabha or the Panchayats at the appropriate level in the Scheduled Areas under the Fifth Schedule to the Constitution shall be obtained before issue of a notification for acquiring land in Scheduled Areas In case there is involuntary displacement in Scheduled areas, a Development Plan will be prepared by the requiring body 	<ul style="list-style-type: none"> Concerned Utility
9.	Publication of Declaration Regarding Acquisition of Land	<ul style="list-style-type: none"> A declaration for acquisition of the land along with the summary of the Rehabilitation and Resettlement Scheme shall be made by the appropriate Government in the prescribed format. 	<ul style="list-style-type: none"> Appropriate Government
10.	Payment of Compensation and Entitlements	<ul style="list-style-type: none"> The award for land acquisition shall be made within 12 months of the public declaration of the acquisition 	<ul style="list-style-type: none"> Collector

	Milestone	Process	Responsibility
		<ul style="list-style-type: none"> • The compensation shall be calculated on the basis of provisions laid down under section 26 to section 30 and \ the First Schedule of the RFCTLARRA 2013. • In addition to the compensation for land acquisition, Rehabilitation and Resettlement Awards will also be provided to each affected family 	

Annexure 10 - Implementation of RTI Act

The Government of India has enacted Right to Information Act 2005 to provide for setting out the practical regime of right to information for citizens and to secure access to information under the control of Public Authorities²⁷ in order to promote transparency and accountability in the working of any public authority.

The right to information includes an access to the information which is held by or under the control of any public authority and includes the right to inspect the work, documents, records, taking notes, extracts or certified copies of documents/ records and taking certified samples of the materials and obtaining information which is stored in electronic form

Any citizen can request for information by making an application in writing in English / Telugu / official language of the areas, in which the application is being made together with the prescribed fees.

Procedure for Request of Information:

- Any request by any person seeking information shall be made in writing in any Official Language to the State Public Information Officer (SPIO)/SPIOs specifying the particulars of information sought by him either in English or in any Official language of the local area along with the prescribed fee.
- The person requesting for information need not give any reasons.
- The State Public Information Officer (SPIO) at Corporate Office of the utilities will receive the requests for information from the public and the State Asst. Public Information Officers (SAPIO) in all Operation Circle/Regional Offices and arrange for providing necessary information to the public as permitted under the Act. Response time to provide the information are provided below:

²⁷ "Public Authority" means any Authority or Body or Institution of Self- Government established or constituted:-

- a) by or under the constitution;
- b) by any other law made by the Parliament;
- c) by any other law made by the State Legislature;
- d) by notification issued or order made by the appropriate Government, and includes any:-
 - i. body owned, controlled or substantially financed;
 - ii. non-Government organization substantially financed directly or indirectly by funds provided by the appropriate Government;

48 hours	From the time of receipt of application concerning the life and liberty of person
30 days	From the date of application
5 days	If the information sought for by the public relates to another Public Authority the request should be transferred to such Public Authority not later than 5 days of receipt of such request.
40 days	If the interest of a third party is involved.

- Appeal Provision: Any person who, does not receive a decision within the time specified, or is aggrieved by a decision of the Central Public Information Officer or State Public Information Officer, as the case may be, may within thirty days from the expiry of such period or from the receipt of such a decision prefer an appeal to such officer who is senior in rank to the Central Public Information Officer or State Public Information Officer as the case may be, in each public authority:
- An appeal shall be disposed of within thirty days of the receipt of the appeal or within such extended period not exceeding a total of forty five days from the date of filing thereof, as the case may be, for reasons to be recorded in writing. The details of the Public Information Authority and Appellate authority for each of the utility is provided below:

APTRANSCO

Designation under RTI Act 2005	Designation of the officer
1 st Appellate Authority	Director(Projects)
State Public Information Officer	Executive Director(General) (Corporate Communications)
Appellate Authority, Vijayawada Visakhapatnam and Kadapa zone	Chief Engineer,(FAC) of the respective zone
Public Information Officer, Vijayawada Visakhapatnam and Kadapa zone	Superintending Engineer/OMC of the respective zone

APSPDCL/APEPDCL

Designation under RTI Act 2005	Name of the officer and designation	
	SPDCL	EPDCL
1 st Appellate Authority	Director Projects	Director (I/c)
State Public Information Officer	Executive Director	CGM/HRD
Public information officers in Circles		
District Public Information Officer	Divisional Engineer/Technical/Circle Office	
Appellate Authority in the District	Superintending Engineer/Operation	
Public Information Officer in the Division	Assistant Engineer/Technical, in the concerned Division Offices.	

Appellate Authority in the Division	Divisional Engineer/Operation
Assistant Public Information Officer(APIO)	Assistant Engineer/Operation in the concerned section office of the mandal

Thank you

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

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