

EASTERN POWER DISTRIBUTION COMPANY OF A.P. LTD

**CONVERSION OF EXISTING OVERHEAD POWER DISTRIBUTION NETWORK
TO UNDER GROUND CABLING SYSTEM OF VISAKHAPATNAM CITY UNDER
ANDHRA PRADESH DISASTER RECOVERY PROJECT (APDRP)**

**Volume III – Social Impact Assessment (SIA) Report
As part of
Environmental & Social Impact Assessment Report for
Package-4**

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Submitted by

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LIST OF ABBREVIATION

APDRP	Andhra Pradesh Disaster Recovery Project
APEPDCL	Andhra Pradesh Eastern Power Distribution Company Limited
BPL	Below Poverty Line
CBO	Community Base Organization
COI	Corridor of Impact
CPR	Common Property Resources
DC	District Collector
EP	Entitled/Eligible Person
ESMF	Environmental and Social Management Framework
GoAP	Government of Andhra Pradesh
GOI	Government of India
GRC	Grievance Redressal Cell
GVMC	Greater Visakhapatnam Municipal Corporation
NGO	Non-Governmental Organisation
PAP	Project Affected Person
PAF	Project Affected Family
PIU	Project Implementation Unit
PMU	Project Management Unit
R& B	Roads and Buildings
R&R	Resettlement and Rehabilitation
RAP	Resettlement Action Plan
RFCTLAR&R	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement act, 2013
REN	Resilient Electrical Network
RoW	Right of Way
RRO	Resettlement and Rehabilitation Officer
RTI	Right to Information Act
SC	Schedule Caste
ST	Schedule Tribe
SES	Socio-Economic Survey
SIA	Social Impact Assessment
SMF	Social Management Framework
SOR	Schedule of Rates
UG	Under Ground

1.1 BACKGROUND

Andhra Pradesh Eastern Power Distribution Company Limited (APEPDCL) is the designated project implementing unit (PIU) for implementation of the Resilient Electrical Network or Underground Cabling component under the Andhra Pradesh Disaster Recovery Project (APDRP) under funding assistance of the World Bank. The Resilient Electrical Network (REN) or Underground cabling project is one of the six components under APDRP and constitutes conversion of all existing 33kV, 11 kV and 415 volts overhead (OH) lines into underground cable network within the municipal limits of Visakhapatnam city. The REN or UG cabling project has been divided into four packages for operational requirements. (Ref Figure1).

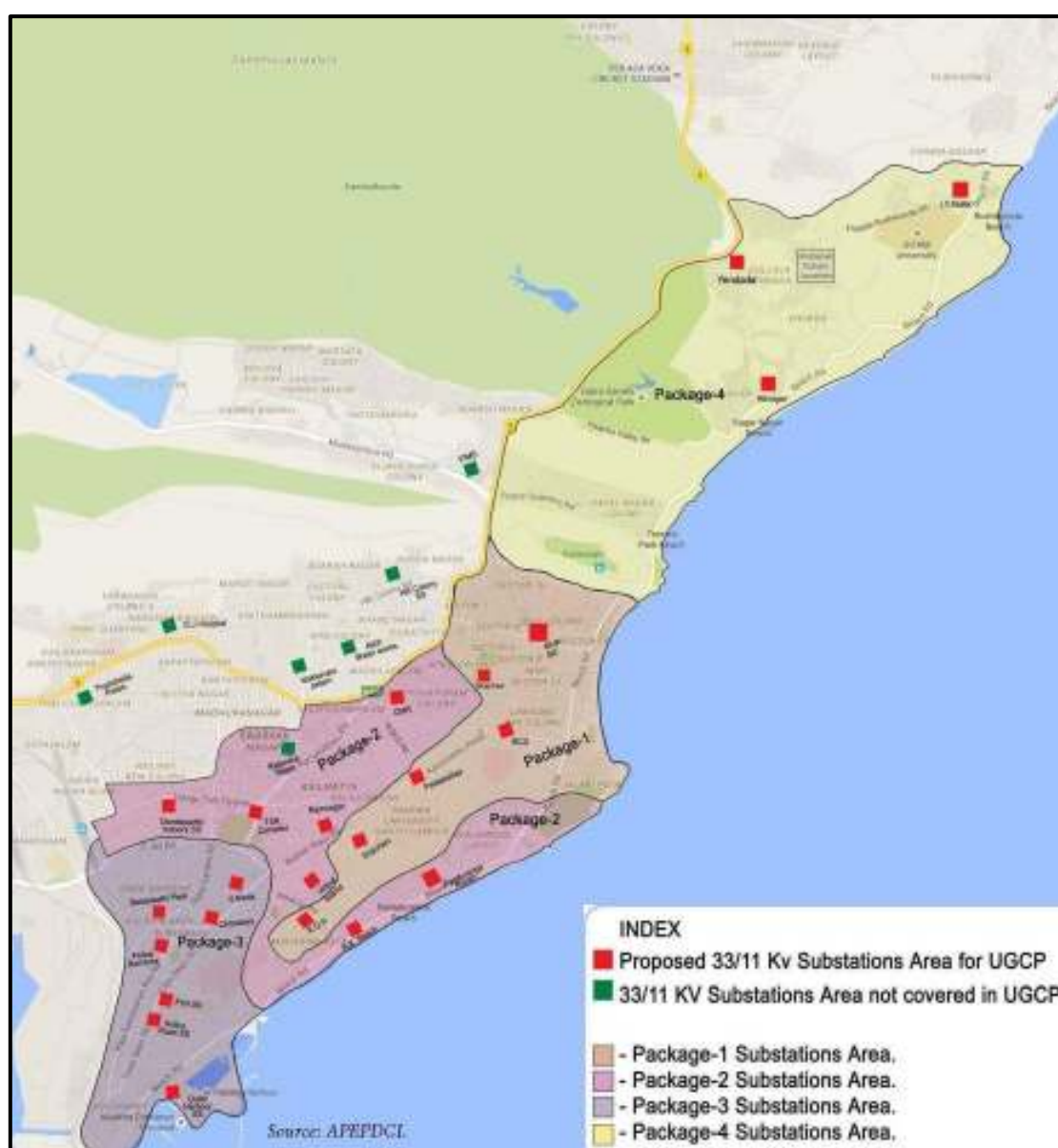


Figure 1: REN/UG Cabling Project spread within Visakhapatnam

APEPDCL is responsible for managing sub-transmission, distribution and bulk supply of power in the Operation Circles of Srikakulam, Visakhapatnam, and Vizianagaram, East and West Godavari districts and 20 Operation Divisions of Coastal Andhra Pradesh. APEPDCL supplies power to over 5.107 million consumers of different categories through a network consisting of 656 Sub-stations of 33/11 KV level, 2704 feeders of 11 KV level and more than 151,447 distribution transformers of different levels.

APEPDCL had appointed M/s Power Finance Corporation(PFC) Consulting Limited, New Delhi for the preparation of Detailed Project Report (DPR), in order to study the existing OH system and prepare DPR for replacement of existing OH system (2015) with Under Ground cables in entire Visakhapatnam city area (in 4 packages), duly carrying out the load flow studies of existing OH system (2015), existing OH system with load condition of year 2022 and proposed UG system with load condition of year 2022.

1.2 ABOUT REQUIREMENT OF ESIA

APEPDCL desires to conduct an Environmental and Social Impact Assessment (ESIA) of the REN/UG cabling project, covering all four packages spread across Visakhapatnam city municipal limits (GVMC area).

The ESIA studies are to be aimed at effective assessment of the likely environmental and social impacts and their management through efficient and appropriate management measures, in order to protect or enhance the quality of the environment and social settings within the UG project influence area and also facilitate implementation of REN/UG cabling project in an environmentally and socially sustainable manner.

The ESIA studies are also required to ensure the implementation of REN/UG cabling project is in consonance with the environmental and social management framework under APDRP as well as in compliance with the environmental and social safeguards requirements of the World Bank.

1.3 OBJECTIVES OF ESIA

APEPDCL has set out the objectives of the ESIA studies as hereunder:

- To conduct an Environmental and Social Impact Assessment (ESIA) of each package of the REN/UG cabling project by collecting required data, conducting necessary field investigations and primary surveys and assessing environmental, social, health and safety impacts of each package
- To recommend suitable mitigation measures; both for Environmental and Social impacts based on the detailed ESIA.
- To identify and recommend suitable measures for the disposal of various unserviceable materials generated due to the project such as electrical cables, transformers, electric poles, soil and other waste or recyclable/reusable materials.

- To submit compliance report after completion of REN/UG cabling works of each of the four packages.

1.4 SCOPE OF ESIA

The Scope of the ESIA studies includes:

- Preparation of Transect Walk strip plans (based on strip plans provided by APEPDCL) with all features along the alignment to be marked on these plans.
- Taking Videography of entire UG cabling alignment.
- Develop a detailed strip plan of the proposed underground cable alignment providing various features that are located along alignment and its immediate vicinity, at least double the width of the trench
- Preparation of environmental and socio-economical profile of the project (corridor of impact), through primary and secondary information (comprising demographic, socio-economic, physical, biological and ecological environmental features, etc).
- Conduct a socio-economic survey of the households along the alignment duly covering all indicators for the present and future evaluation and assessment.
- Preparation of a questionnaire or instruments for the ESIA study and share the same with World Bank for review.
- Based on the strip plan and field visits, develop an inventory of impacts of both temporary and permanent structures, trees and other environmental sensitive receptors such as schools, religious places and other common property resources and any other issues, which may be affected, while laying the underground cable network and during operation and maintenance.
- Identification of various other issues such as disposal of excess excavated earth, waste, disposal/ reuse of old overhead electric cables, dismantling/ disposal of electrical poles, disposal of excess transformers (if any), disposal of transformer oil (if any), etc.
- Assessment of the health and safety impacts of laying the underground cable network, both during construction and operation phase of the project.
- For all the impacts/ issues identified above, recommend elimination or mitigation/ management measures to be implemented by the project agencies and the construction contractors, in line with the Environmental and Social Management Frame work (ESMF) of APDRP.
- Study & inclusion of measures and plans mitigating temporary/ permanent impacts to the structures and communities along the cable alignment and prepare site specific EMP to mitigate environmental impacts, RAP (if there are resettlement/ rehabilitation issues) and/or SMP for mitigating social impacts and community engagement.
- Identify various regulatory clearances that may be required for the project, such as CRZ, clearances, tree cutting/lopping permissions, "No objections" from state / national agencies, utility agencies, etc.

- Preparation of a Monitoring Plan with reference to ESIA
- A Grievance Redressal mechanism is to be developed in accordance with the ESMF under APDRP and as per World Bank guidelines
- Conduct formal stakeholder public consultations (minimum of three), to understand the impacts anticipated by the communities and also to explain measures proposed under project to implement to mitigate such impacts. These Public Consultations are to be conducted with the communities for information dissemination and their feedback. At least one such consultation with women in each community. The World Bank and the APEPDCL need to be informed before conducting these consultations for possible participation.
- Finalize EMP and RAP/ SMP for implementation, after review and up-dation of comments from APEPDCL and the World Bank

1.5 CONSULTANT'S APPOINTMENT AND MOBILIZATION

APEPDCL appointed M/s Deccan Consulting Engineers Private Limited(Consultants) in order to carryout ESIA studies of the proposed REN/UG cabling project in accordance with the set out scope of work and Terms of Reference issued as part of RFP.

The agreement between APEPDCL and Consultants was signed on 19th December 2015 and consultant's mobilized their team with effect from 22nd December 2015 and initiated activities in accordance with the set out scope of work for ESIA studies. The consultant's team constituted key experts; HARI PRAKASH, Environmental Expert and DINESH GODIYAL, Social Expert. The key experts were supported by other junior professionals (non-key experts) and field personnel as indicated in the proposal on required basis.

Upon mobilization, key experts of consultants held a startup meeting chaired by ED/World Bank Projects and QC, Divisional Engineer (DE), Assistant Divisional Engineer (ADE) and Assistant Engineer (AE) along with other with concerned officials of APEPDCL.

During the meeting, the consultants were briefed by PIU officials about the REN/UG cabling project, status of project preparation activities and package wise DPRs prepared and submitted by PFC for REN/UG cabling project along with and APEPDCL's intended work program for an early implementation of this underground cabling project and therefore the requirement of completion of the ESIA in timely manner.

1.6 DATA/DOCUMENTS REVIEWED BY CONSULTANTS

Subsequent to start up meeting, APEPDCL provided the following data/documents as available with PIU, APEPDCL for consultant's review and understanding of the envisaged project.

- DPR drawings showing proposed cable routing for all 33/11KV lines under each of the 4 sub-stations within Package 4

- Environmental and Social Management Framework for the Andhra Pradesh Disaster Recovery Project(APDRP)

1.7 CONSTRAINTS OF DATA BASE

The consultants have the following observations on the Drawings of Package 4: 33/11kV Substations at VIMS, Adibatlanagar, Rushikonda and Yendada.

- The alignment of cable routes indicated in the DPR drawings are deemed to have been finalized after due consideration of several factors like most optimal length, analysis of alternatives, minimum obstacles among other influencing factors. Therefore, UG cable routes as proposed in the DPR drawings is considered as final for assessment of the likely environmental and social impacts.
- DPR drawings does not provide information of the underground utilities along as well as across the proposed UG cabling routes. Understandably, no Ground Penetrating Radar(GPR) surveys have been conducted under this component of APDRP, which could have otherwise provided information about the pre-existing underground utilities along and across the proposed cable routes
- The GIS maps does show only the road and proposed cable alignments and does not contain information like foot paths, drains, obstacles, private/public properties and other structures like roadside shops, temples, trees, which are likely to be impacted etc. although this forms one of the obligations of APEPDCL to Consultants under this assignment
- APEPDCL has informed that it has no other information about the existing underground utilities along or across the proposed UG cabling routes

1.8 STRUCTURE OF ESIA REPORT

The ESIA for REN/UG cable project– Package 4 area has been structured into four volumes as hereunder

- a) **Volume I** - Environmental Screening Report(ESR)
- b) **Volume II** - Environmental Impact Assessment (EIA) Report
- c) **Volume III** - Social Impact Assessment (SIA) Report
- d) **Volume IV** - Resettlement Action Plan (RAP)

This report presents the **Volume III – Social Impact Assessment (SIA) Report** and has been structured into **8 chapters** as hereunder.

Chapter 2 - Project Description: This chapter summarizes the project designs and proposed configurations for laying of underground cables under the resilient electrical network component of APDRP.

Chapter 3 - Social Regulatory Framework: This chapter summarizes the applicable Social Policies and Regulatory Framework, which are applicable to the REN/UG cable project.

Chapter 4- Baseline Socio-Economic Profile: This Chapter summarizes the baseline environmental profile of the Visakhapatnam city, within which the REN/UG cable project will be implemented based on both secondary data base as well as primary assessments. The socio economic profile of street hawkers/vendors/squatters (both ambulatory and stationery), presently operating within the operational or corridor of impact area of 2.5 metre wide for laying of the REN/UG cable route have also been captured through census survey, through a specially structured questionnaire. The public perception/viewpoints captured through public consultations and/or focus group discussions have also been summarized under this chapter.

Chapter 5- Social Impacts: This chapter summarizes the anticipated social impacts due to the proposed REN/UG cable project. The chapter also includes suggested management measures in order to avoid or to mitigate the likely impacts during pre-construction, construction and operation phases.

Chapter 6- Analysis of Alternatives: This chapter summarizes the alternatives considered in the project design in order to minimize and/or avoid the potential environmental as well as social impacts due the REN/UG cable project.

Chapter 7- Budget Estimate and Institutional Arrangement for Implementation: This chapter summarizes the **Environmental and Social Management Plan (ESMP)** in order to minimize and/or avoid the impacts of the REN/UG cable project. The chapter also includes the roles and responsibilities for both PIU (APEPDCL) and contractor(s) for managing the anticipated impacts. Budgetary provisions along with institutional arrangements required for implementing the ESMP and monitoring mechanism during project implementation phase is also included in this chapter in accordance with ESMF of APDRP. A grievance redress mechanism has also been included in this chapter.

Chapter 8- Grievance Redress Mechanism: This chapter summarizes a robust and responsive grievance redress mechanism, given the nature of this project component and its potential to disrupt public utilities, water, sanitary utilities, and impact upon street vendors/squatters among others and trigger public resentment, despite the benefits, that the project can usher on society.

2.1 BACKGROUND

On October 12, 2014, a very severe cyclonic storm “Hudhud” made landfall on the coast of Andhra Pradesh, near the city of Visakhapatnam. At the time of landfall, the estimated maximum sustained surface wind speed associated with the cyclone was about 180-220 kmph and height of the waves up to 3 meters. The tide gauge at Visakhapatnam reported maximum storm surge of 1.4 meters above the astronomical tide. By October 14, “Hudhud” drifted northwards toward Uttar Pradesh and weakened into a well-marked low-pressure area over east Uttar Pradesh and neighbourhood.

The Government of Andhra Pradesh (GoAP) was proactive in preparing for cyclone “Hudhud”. In addition to the updates from India Meteorological Department (IMD), the intensity and magnitude of the cyclone were continuously tracked at Andhra Pradesh State Disaster Management Authority (APSDMA) and a range of preparatory measures were launched to face the cyclone. Relief and rescue team were deployed in the coastal districts most likely to be impacted and regular warnings to vulnerable populations were issued through various channels. This, supplemented by the evacuation of close to 250,000 persons, mostly living in vulnerable kutchha houses or low-lying areas, helped limit the death toll from the cyclone to 61.

Cyclone “Hudhud” and the floods that followed the associated heavy rainfall caused extensive devastation in all the affected districts, uprooting vast number of trees, damaging roads, public buildings, livelihoods and disrupting telecommunications and power infrastructure.

2.2 THE PROJECT- APDRP

The Andhra Pradesh Disaster Recovery Project (APDRP) constitutes a large multi- sector engagement on risk and vulnerability reduction, with assistance for restoring and improving rural connectivity, public services and livelihood opportunities in targeted communities of Andhra Pradesh, and increase the capacity of the State Entities to respond promptly and effectively to an eligible crisis or emergency. APDRP is part of a broader package to support the GoAPs reconstruction and recovery efforts and to strengthen its capacity to manage future events.

2.3 PROJECT BENEFITS

The project, through its different components, will provide both direct and indirect benefits to the State of Andhra Pradesh and its 49.4 million inhabitants. Direct beneficiaries include populations of the vulnerable coastal areas, particularly the four heavily impacted districts of Srikakulam, Vizianagaram, Visakhapatnam and East Godavari with a total approximate population of 13.3 million residents.

Some of the most notable benefits of specifically REN/UG Project to Visakhapatnam City and its residents are hereunder

- The Package 4 area under REN/UG Cable project will be practically unaffected in future by cyclones or natural calamities/inclement weather conditions, hence resilient to natural disasters, the project development objective of APDRP
- REN/UG cabling network is safer to public lives and property, during

calamities/disasters/thunders/lightening instances

- Saves state' revenue in re-construction of damaged electrical network during every calamity – CONSERVES STATE's Resources
- Resilient network will help to retain/restore water and sanitation of the city during or after calamities/cyclones
- Helps State administration to restore other damaged infrastructure
- Visakhapatnam, being now the COMMERCIAL CAPITAL of newly formed Andhra Pradesh will essentially need such resilient electrical distribution network and thus aid in State's economic growth and enable to become attractive and destination to investors
- Will help in improving aesthetic of the city through conversion of all over ground electrical distribution network into resilient underground infrastructure.
- Visakhapatnam has already been selected for developing it into one of the SMART cities, by GoI. The REN/UG project is another forward step in developing Visakhapatnam into a definite SMART CITY, an ambitious program of both GoAP as well as GoI.

2.4 PROJECT COMPONENTS

The APDRP has the following seven components:

- I. Resilient electrical network/Under Ground Cabling Project;
- II. Restoration of connectivity and shelter infrastructure;
- III. Restoration and protection of the beach front;
- IV. Restoration of environmental services and facilities and livelihood support;
- V. Capacity building and technical support for disaster risk management;
- VI. Project implementation support; and
- VII. Contingency emergency response.

2.5 RESILIENT ELECTRICAL NETWORK/ UG CABLING PROJECT (COMPONENT 1)

The objective of this component is to reduce the vulnerability of the Visakhapatnam city's electrical network through conversion of all overhead power distribution system into underground the power distribution system through laying of underground cables. Under this component, all 33kV, 11 kV and 415 volts network lines are to be converted to underground cable network starting from consumers meter board and going to 11kV and 33 kV feeders, from the beach road and going towards landside. The component will also include provision for high-speed data/voice transmission cables in the city of Visakhapatnam. Conversion of the existing overhead distribution network i.e., LT upward to 33kV into underground cabling has been contemplated as a remedy to overcome cyclonic power disruption.

The Component 1 of resilient electrical network/UG (REN/UG) cabling project has been further divided into four packages for operational requirements as shown in **Figure 2.1**.

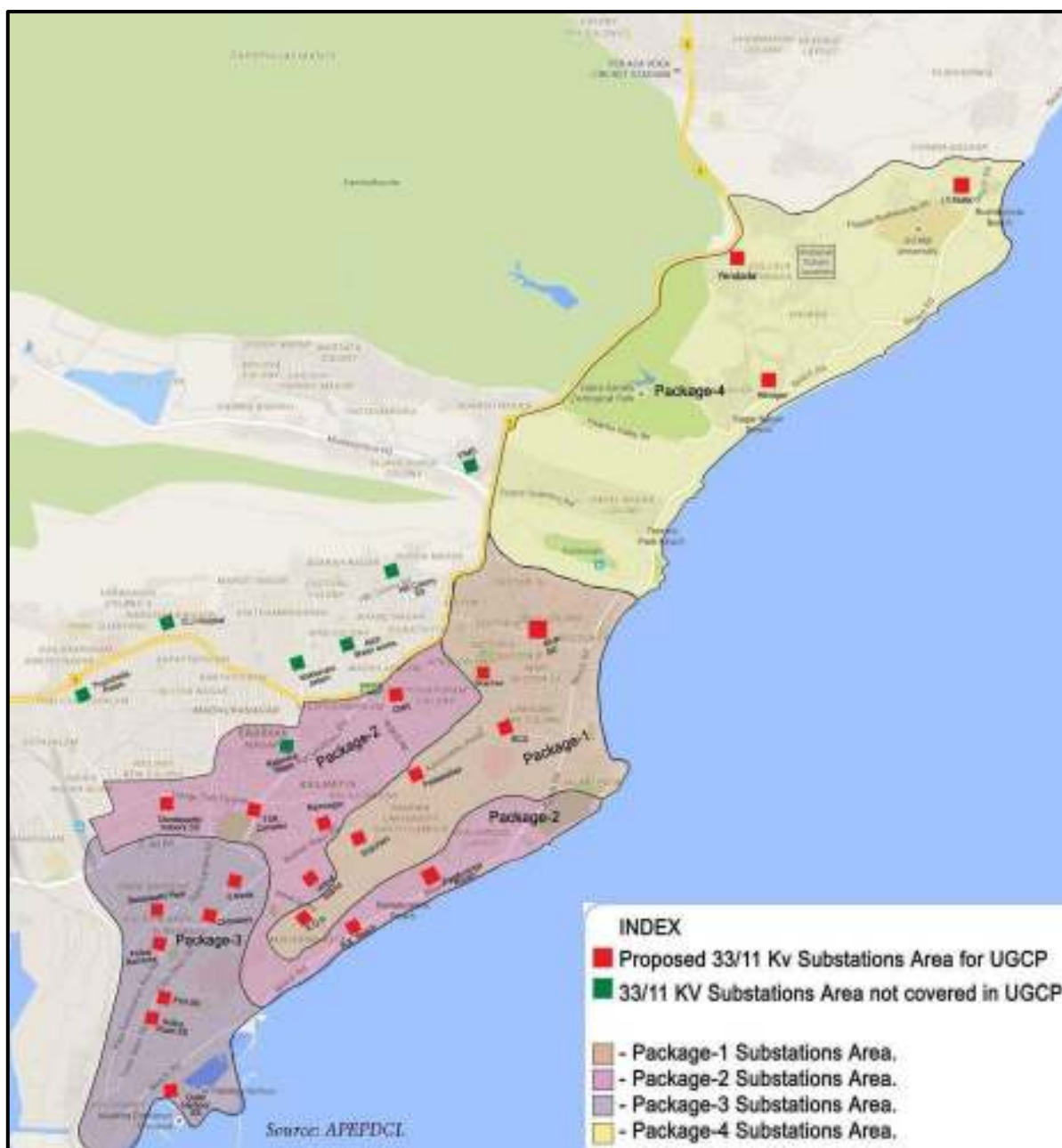


Figure 2.1: Package wise spread of REN/UG Cabling Project within Visakhapatnam

The Project preparation for REN/UG cabling project by APEPDCL included estimation of load flow studies of existing OH power distribution system (as of 2015), and prepare for replacement of existing OH system with underground cables with load condition of year 2022 in entire Visakhapatnam city area. APEPDCL has divided the REN/UG cabling component into 4 packages on the basis of operational requirements.

2.6 PROJECT IMPLEMENTING UNIT

The Government of Andhra Pradesh (GoAP) has designated Andhra Pradesh Eastern Power Distribution Company Ltd. (APEPDCL) as the Project Implementation Unit (PIU) for implementation of the Resilient Network Component/UG cabling Project within Visakhapatnam under APDRP.

Within Andhra Pradesh, APEPDCL is responsible for managing Sub-transmission,

Distribution and bulk supply of power in the Operation Circles of Srikakulam, Visakhapatnam, and Vizianagaram, East and West Godavari districts and 20 Operation Divisions of Coastal Andhra Pradesh. APEPDCL supplies power to over 5.107 million consumers belonging to different categories through a network consisting of 656 Sub-stations of 33/11 KV level, 2704 feeders of 11 KV level and more than 151,447 distribution transformers of different levels. The Corporate Office and Headquarters of APEPDCL are situated at Visakhapatnam.

2.7 RESILIENT ELECTRICAL NETWORK/ UG CABLING PROJECT (Package 4)

APEPDCL in accordance with the objectives of APDRP has drawn up an ambitious implementation schedule for REN/UG cable project within Visakhapatnam. The intended implementation schedule of APEPDCL for REN/UG cable project in four packages is given in **Table 2.1**.

Table 2.1 REN/UG Cable Project Implementation Schedule			
S.No	Package	Associated Substations	Schedule for Implementation
1	Package 1	MVP, Shivaji Park, Pedawaltair, KGH, RCD Hospital and Siripuram, Sivaji Park	Dec 2016 to May 2018
2	Package 2	Pandurangapuram, RK Beach, Kailasametta, Vidyut Sakha, TSR Complex, Dondaparty Indoor and Maddilapalem	Feb 2017 to July 2018
3	Package 3	Kotha Road, Port, Police Barracks, Outer Harbour, Venkateswarametta, Saraswathi Park and Chitralaya	Feb 2017 to July 2018
4	Package 4	Rushikonda, Adibhatlanagar, Yendada and VIMS	March 2017 to Aug 2018

Within the GVMC area, the Package 4 area of REN/UG cable project covers part wards number 5 & 6 of Zone 1.

GVMC as a whole is spread over an area of 682 Sq. Km and has 72 wards, grouped into 6 zones for administrative purposes.

Within the Package-4 area has four 33/11KV substations as per the existing distribution network VIMS, Adibatlanagar, Rushikonda and Yendada. The package 4 area of REN/UG component is given in **Figure 2.2**.



Figure 2.2: The Package 4 area of REN/UG component

2.8 REN/UG CABLE ROUTE ALIGNMENT - PACKAGE 4 AREA

The Project preparation studies have proposed to lay the underground cables alongside of footpath and or road edge in case where footpaths don't exist. The alignment of cable routes have been finalized after due consideration of several factors like most optimal length, analysis of alternatives, minimum obstacles among other influencing factors. Therefore, UG cable routes as proposed in the DPR drawings is considered as final for assessment of the likely environmental and social impacts. The substation area wise cable route alignments are given in **Figure 2.3 to 2.7**. Enlarged view of these cable route alignments with more details, substation area wise is provided in **Volume I - Environmental Screening Report**.

2.9 GENERAL ARRANGEMENT OF REN/UG CABLES

The project preparation studies for REN/UG cabling project component of APDRP has proposed four configurations/general arrangement of cable trenches for underground cables under Package 4 as shown in **Figures 2.8**. The cumulative length of cable trenches along with RCC duct under Package 4 of the REN/UG cabling project is 77.20 km and the configuration wise break up of cable trench length are given in **Table 2.2**. The REN/UG Project component will also include construction of manholes at every 250 metres all along the 74.80 km long UG cable route to facilitate maintenance, trouble shooting and repairs of the damaged UG cables (if any), during the operation phase.

Table 2.2: Substation Area wise Type and Length of Cable Trenches under Package 4						
S.No.	Trench Configuration	Trench Length in Km				
		ADIBATLANAGAR	RUSHIKONDA	YENDADA	VIMS	Total (km)
1	Type 1: 1000mm X 1250mm	2.84	6.90	3.98	0.07	13.79
2	Type 2: 600m X 1000mm	8.11	8.98	8.04	8.40	33.54
3	Type 3: 600mm X 1000mm	7.52	5.06	1.86	5.89	20.33
4	Type 4: 500 X 850mm	3.03	1.95	2.08	0.10	7.15
5	RCC Duct	2.4	0	0	0	2.4
6	Total Trench Length (km)	23.9	22.89	15.97	14.45	77.20
<i>Source: APEPDCL</i>						

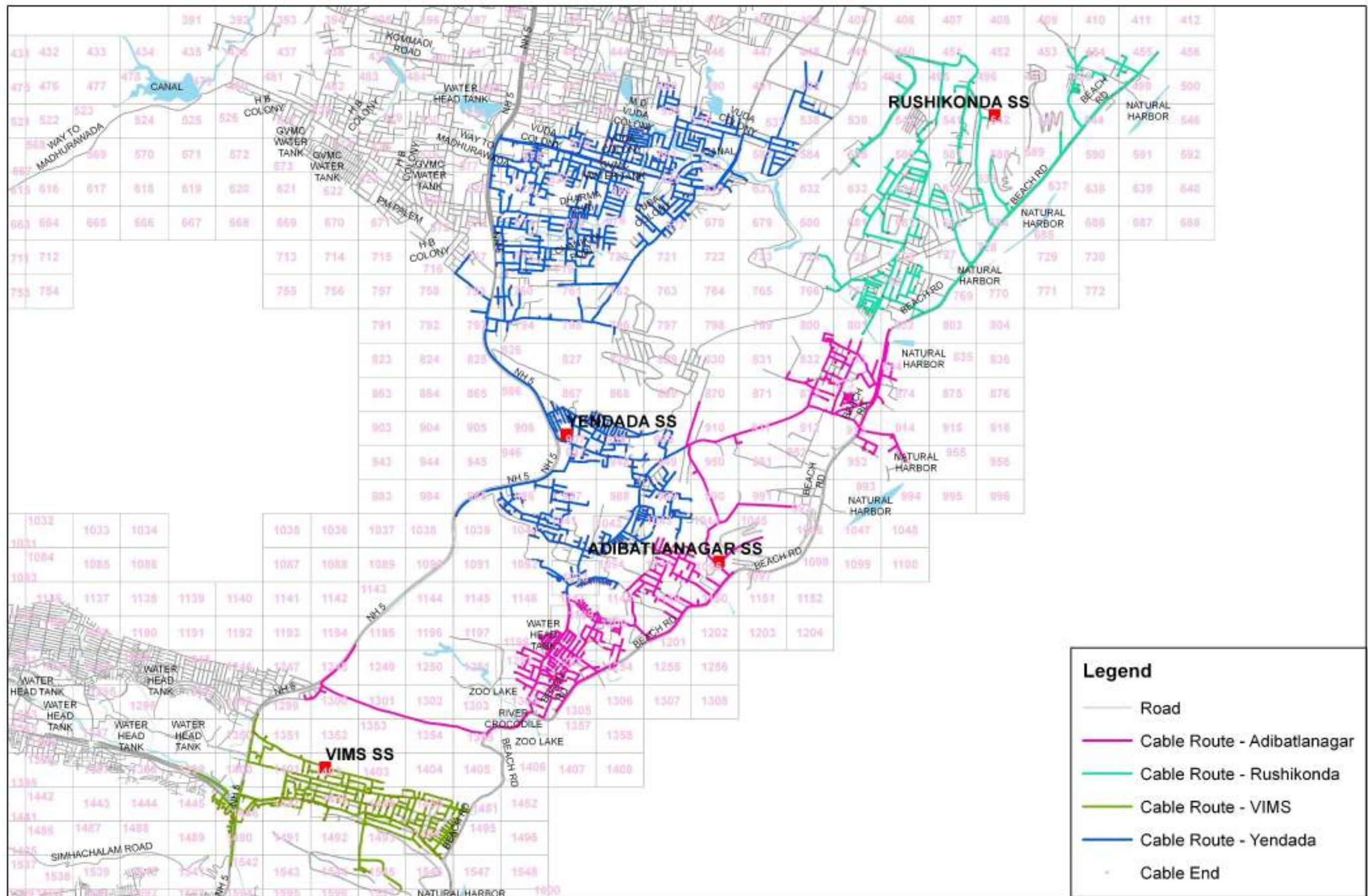


Figure 2.3: REN/UG Cable Route Alignment in all 4 Substation Areas within Package 4

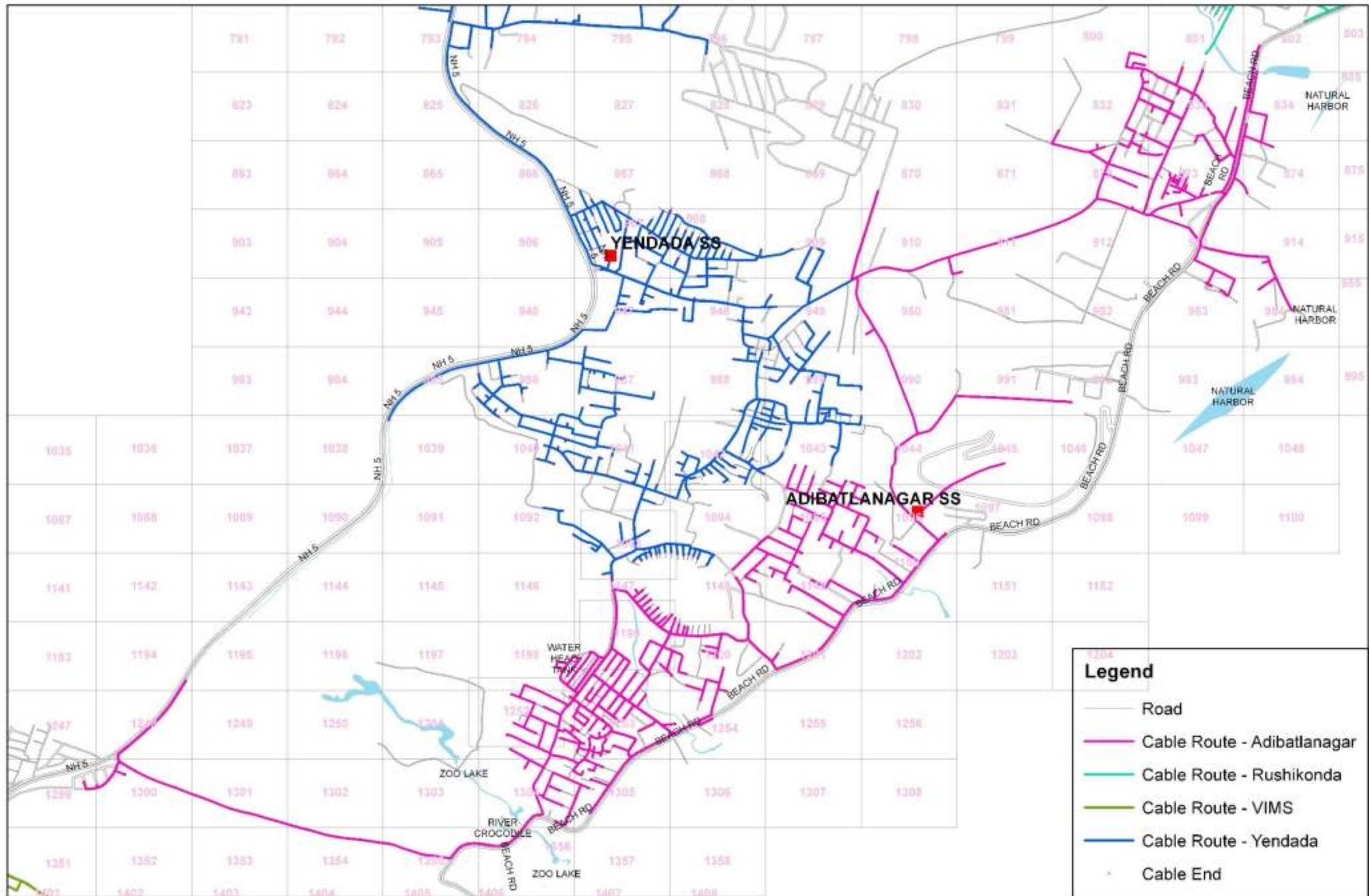


Figure 2.4: REN/UG Cable Route within Adibatlanagar Substation Area

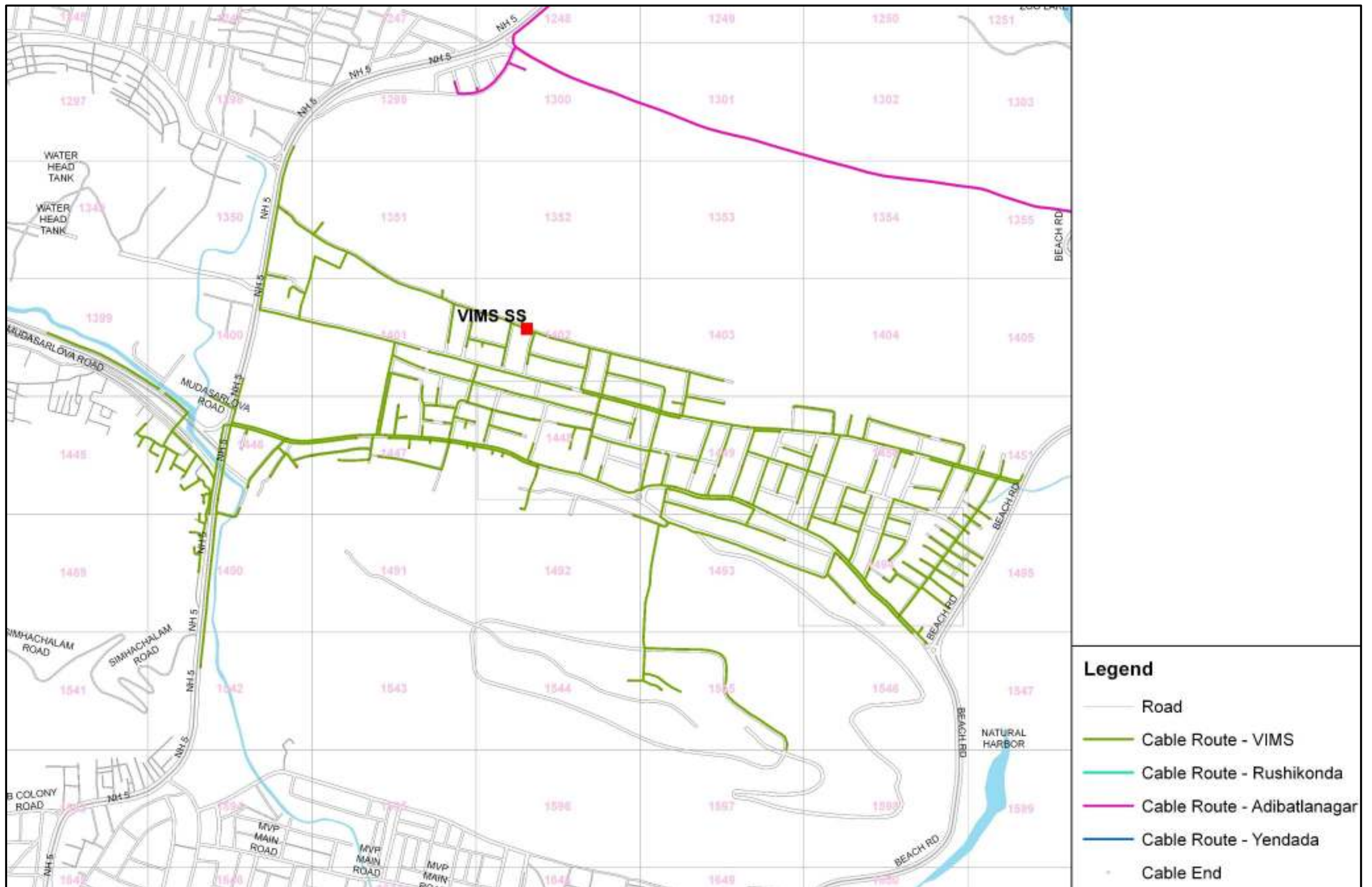


Figure 2.6: REN/UG Cable Route within VIMS Substation Area

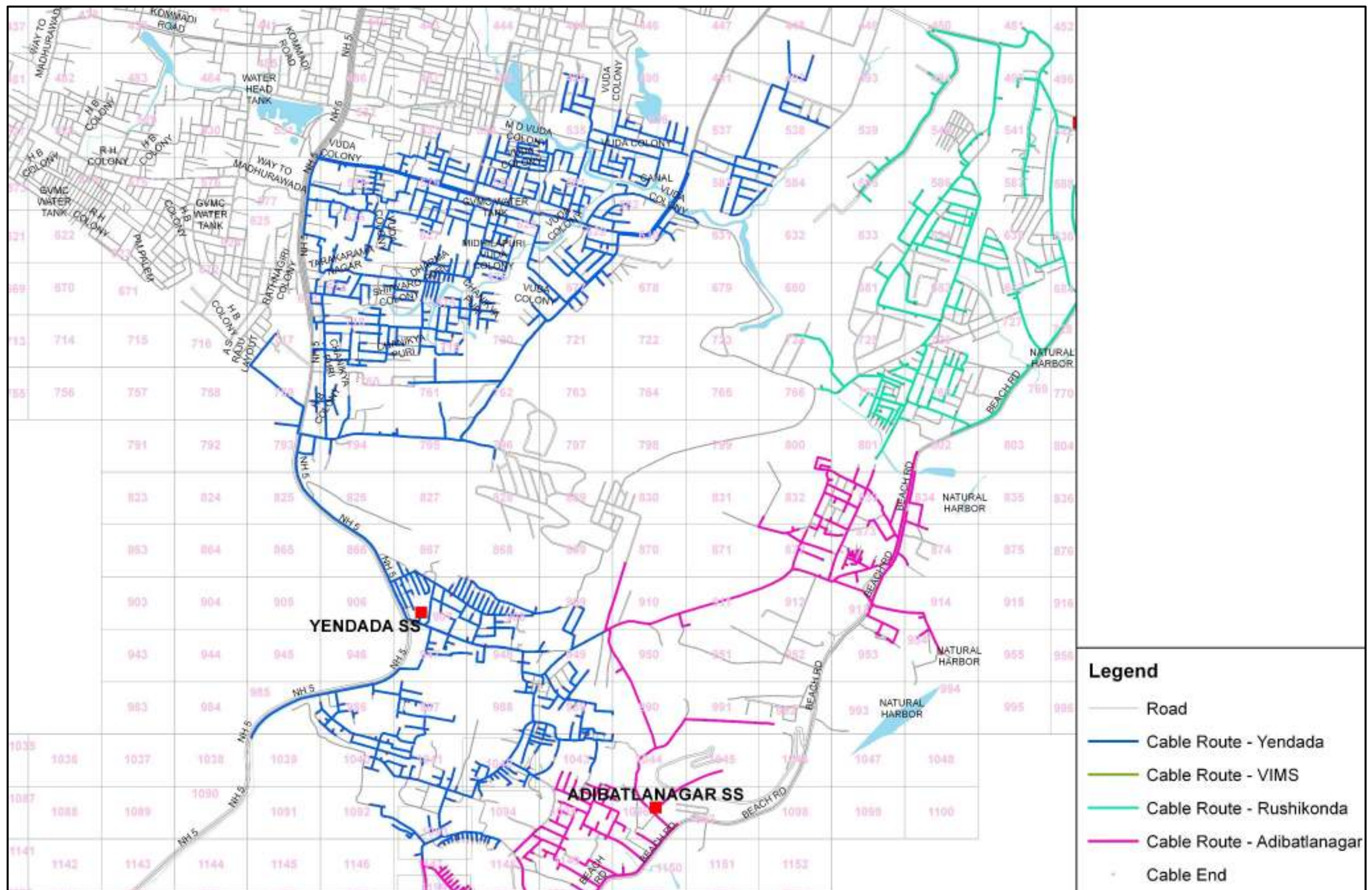
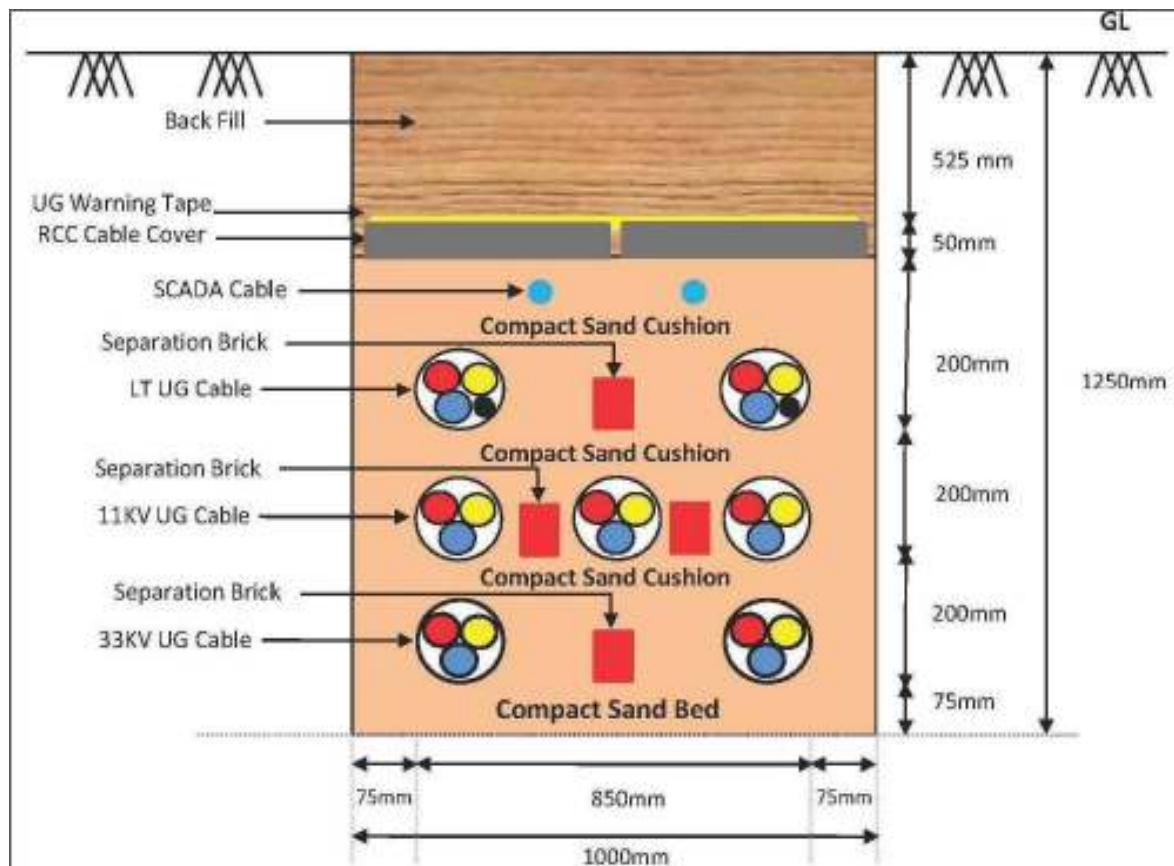
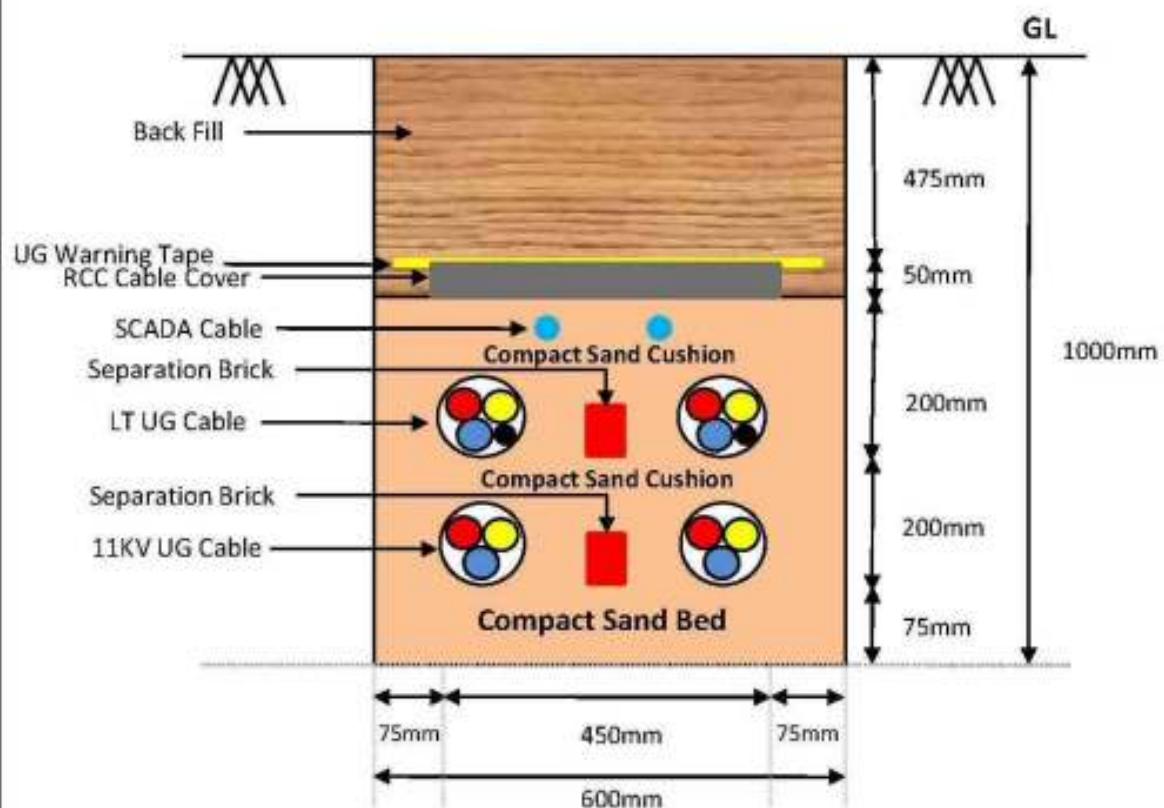


Figure 2.7: REN/UG Cable Route within Yendada Substation Area

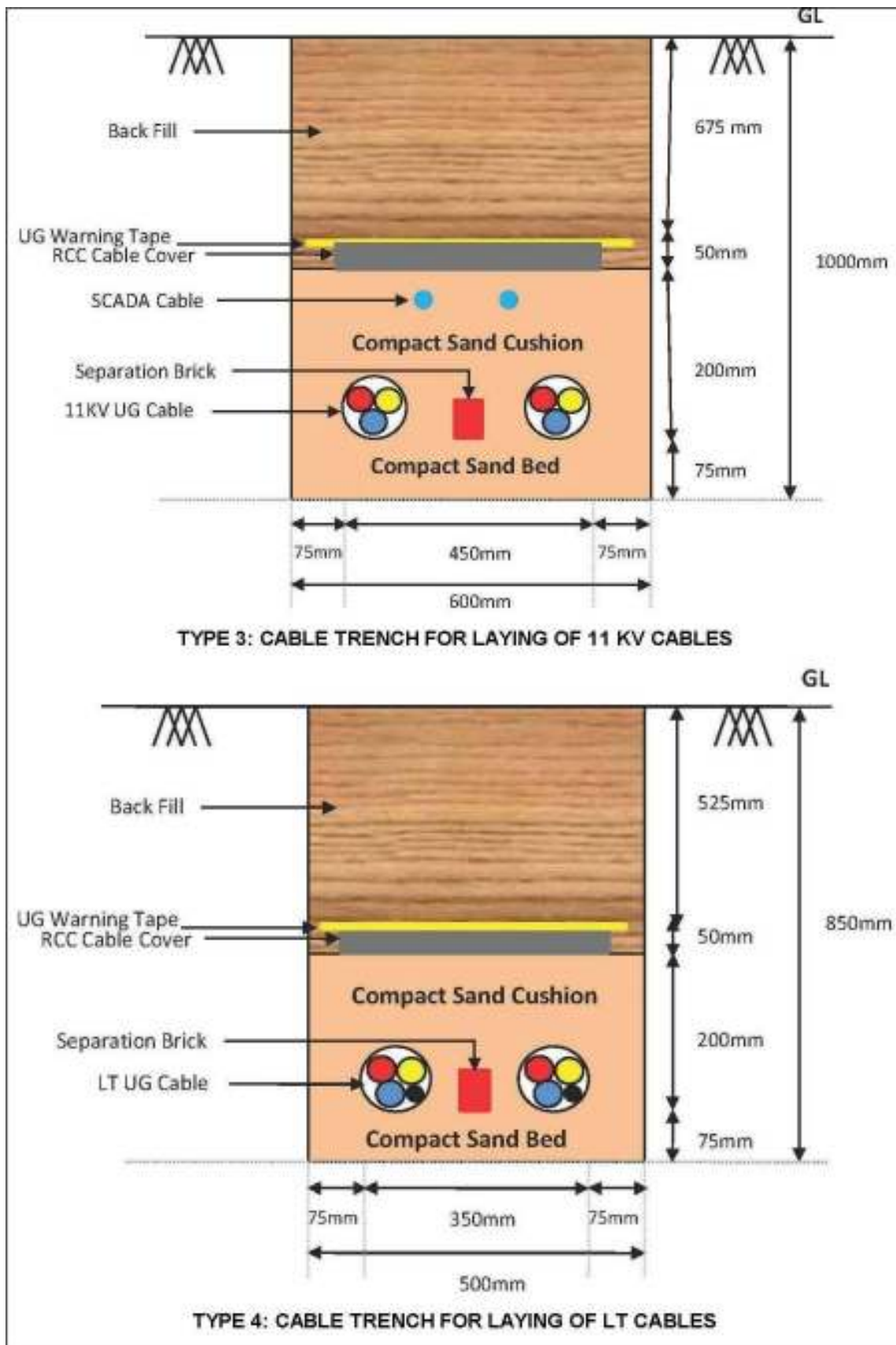


TYPE 1: CABLE TRENCH FOR LAYING OF 33 KV AND 11 KV UG CABLES



TYPE 2: CABLE TRENCH FOR LAYING OF 11 KV LT CABLES

Source: APEPDCL



Source: APEPDCL

Figure 2.8: Configuration of Cable Trenches under Package 4

2.10 REMOVAL OF THE EXISTING OH SYSTEM INFRASTRUCTURE

The REN/UG cabling project also includes dismantling of all existing overhead infrastructure (includes OH lines and DTR on an on as-is where-is basis, after commissioning of the newly laid underground cabling network.

3.1 APPLICABLE SOCIAL REGULATIONS

This chapter presents existing social policies, legislations and regulatory frame work relevant to the project at the National and State level.

3.2 APPLICABLE SOCIAL REGULATORY FRAMEWORK

3.2.1 General

The REN/UG cable Project is one of the several project components under APDRP and APDRP has a comprehensive ESMF to address the land acquisition, resettlement and Rehabilitation issues for PAPs under APDRP. The relevant/applicable ESMF provisions, which also includes the entitlements for eligible affected families as applicable for REN/UG cable project has been extracted and presented under this chapter. The ESMF under APDRP itself has been developed based on the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013, Government of India and World Bank's Operation Policies for Social Safeguards.

3.2.2 The Right to Fair Compensation and Transparency in Land Acquisition and Rehabilitation and Resettlement Act 2013

- The RFCTLARR, 2013 is an umbrella Act, which has been enacted to address the aspects on both land acquisition and resettlement and rehabilitation of the project affected population. This Act supersede all the previous act of Land Acquisition (LA) of 1894 amended in 1985 and National Rehabilitation and Resettlement Policy, 2007 and is applicable to the whole of India except the state of Jammu and Kashmir. The key provisions of this Act relating to land acquisition, compensation, rehabilitation and resettlement, briefed below:
- Government acquires land for its own use, hold and control, including land for Public sector undertakings.
- Government acquires land with the ultimate purpose to transfer it for the use of private companies for stated public purpose.
- Government acquires land for Public Private Partnership Projects.
- Schedule I outlines the proposed minimum compensation based on a multiple of market value.
- Schedule II through VI outlines the resettlement and rehabilitation entitlements to land owners and livelihood losers, which shall be in addition to the minimum compensation as per Schedule I.
- Below elaborates some important provisions:
- Section 16 of the Act briefs on the preparation of RAP, publication and public hearing of RAP. 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.

- A draft Rehabilitation and Resettlement Scheme shall be prepared by the Administrator which shall include particulars of the R&R entitlements of PAPs. The draft shall include time limit for implementing the Scheme. The Scheme shall be discussed in the concerned Gram Sabha or Municipalities.
- A public hearing shall be conducted after adequate publicity about the date, time and venue in the affected area. Following the public hearing, the Administrator shall submit the draft Scheme along with a specific report on the claims and objections raised in the public hearing to the Collector.
- As per Section 25, the Collector shall make an award within a period of twelve months from the date of publication of the declaration and if no award is made within that period the entire proceedings for the acquisition of the land shall lapse, provided that the appropriate Government shall have the power to extend the period in circumstances justifying the same and any such decision to extend the period shall be recorded in writing and be notified and uploaded on the website of the authority concerned.
- Section 25, 29 and 30 of the Act briefs on the methodology of determining the market value of the land and other properties.
- After determining the total compensation to be paid, a "Solatium" as prescribed in the Act shall be added to the compensation.
- The new Act emphasizes elaborate social assessment and resettlement planning even prior to issuance of the preliminary notification and proposes to provide a range of R&R benefits along with the compensation package. Some of the highlights are as follows:
 - Offers compensations up to 4 times the market value in rural areas and 2 times the market value in urban areas.
 - The Act applies retrospectively to cases where land acquisition award has not been made.
 - LA in Scheduled Areas will require consent of the local general assembly (Gram Sabhas).
 - No displacement or dispossession until full payment of compensation and RR benefits are made and alternative sites for the resettlement and rehabilitation have been prepared.
 - Bill requires the consent of no less than 70 per cent and 80 per cent respectively (in both cases) of those whose land is sought to be acquired in case of PPP or private projects.
 - To safeguard food security and to prevent arbitrary acquisition, the Bill directs States to impose limits on the area under agricultural cultivation that can be acquired.
 - In case land remains unutilized after acquisition, the new Bill empowers states to return the land either to the owner or to the State Land Bank.
 - No income tax shall be levied and no stamp duty shall be charged on any amount that accrues to an individual as a result of the provisions of the new law.

- Where acquired land is sold to a third party for a higher price than 40 per cent of the appreciated land value (or profit) will be shared with the original owners.
- In every project those losing land and belonging to the SC or ST will be provided land equivalent to land acquired or two and a one-half acres, whichever is lower (this is higher than in the case of non-SC/ST affected families) -Where the affected families belonging to the SC and the ST are relocated outside of the district then they shall be paid an additional 25% rehabilitation and resettlement benefits to which they are entitled in monetary terms along with a one-time entitlement of 50000 rupees.

3.2.2.1 Minimum R&R Entitlements under this Act

The following are the minimum R&R entitlements under this Act:

- i. Subsistence allowance at Rs. 3000 per month per family for 12 months;
- ii. The affected families shall be entitled to: (a) Where jobs are created through the project, mandatory employment for one member per affected family or (b) Rupees 5 lakhs per family; or (c) Rupees 2000 per month per family as annuity for 20 years, with appropriate index for inflation; The option of availing (a) or (b) or (c) shall be that of the affected family
- iii. If a house is lost in rural areas, a constructed house shall be provided as per the Indira Awas Yojana specifications. If a house is lost in urban areas, a constructed house shall be provided, which will be not less than 50sqmts in plinth area. In either case the equivalent cost of the house may also be provided in lieu of the house as per the preference of the project affected family;
- iv. One acre of land to each family in the command area, if land is acquired for an irrigation project if possible BUT the same shall be in lieu of Compensation;
- v. Rs 50,000 for transportation;
- vi. A one-time Resettlement Allowance of Rs 50,000;

3.2.2.2 Special Provisions for SCs and STs

In addition to the R&R package, SC/ST families will be entitled to the following additional benefits:

- i. Land to be given to each family in every project even in the case of irrigation projects;
- ii. One time financial assistance of Rs. 50,000 per family;
- iii. Families settled outside the district shall be entitled to an additional 25% R&R benefits;
- iv. Payment of one third of the compensation amount at very outset;
- v. Preference in relocation and resettlement in area in same compact block;
- vi. Free land for community and social gatherings;
- vii. In case of displacement, a Development Plan is to be prepared.
- viii. Continuation of reservation and other Schedule V and Schedule VI area benefits from displaced area to resettlement area.

The National Act on Right to Fair Compensation and Transparency in Land Acquisition, Resettlement and Rehabilitation Act, 2013 (RFCTLAR&R Act 2013) has more synergies and largely in consistent with the provisions of the OP 4.12 and 4.10. The critical synergies and provisions in common between the two are presented below.

- i. Mandatory ex-ante social assessments to determine whether an acquisition serves a public purpose;
- ii. Requirements to ascertain the minimum land requirements, assess the impact of the acquisition on livelihoods, shelter, public infrastructure, and community assets;
- iii. Provisions to minimize adverse impacts, assessment of cost and benefits of acquisition, enhanced land-loss compensation formulas; livelihoods support for affected persons; comprehensive resettlement and rehabilitation benefits and assistance; census of the affected families to record their socio-economic profile and potential losses, and inventory of affected public and community assets, options and choices for affected families and special provisions for disadvantaged groups; and a legal mandate that affected persons must receive compensation and assistance before their property is taken; and;
- iv. Consultations and disclosure, and post-implementation audits.

At the same time, there are a few notable differences between the Act and the World Bank's policy requirements:

- i. Persons who live or depend on rights-of-way or public lands excluded from the Act's benefits and entitlements;
- ii. A three-year residency requirement for persons losing livelihood, to receive resettlement and rehabilitation benefits. World Bank's Ops is not specific on this but the objective and the principles of OPs broadly supports for extending the entitlements to these persons if they are notified on the date of the census survey;
- iii. The valuation of assessing buildings and structures under the act remains based on depreciation method as under previous Act.
- iv. Provision for Negotiated settlement is not included in the new Act. Negotiated settlement is one of the key provisions in World Banks OPs.

The Entitlement Matrix specific to REN/UG Cabling Project was developed based on the provisions of the RFCTLARR Act, 2013 and World Bank's safeguard policies as suggested in the approved ESMF. The details are given below in **Table 3.1** hereunder.

Table 3.1: Entitlement Matrix for REN/UG Cabling Project				
Sl.N.	Impact Category	Unit of Entitlement	Details of Entitlements	Remarks
Loss of Assets - Titleholders				
Loss of Private Agricultural, Homestead and Commercial Land				
1	Private Land	Land owner(s) /Titleholder	<p>(a) Cash compensation for the land at market value, which will be determined as per provisions of RFCTLARR Act, 2013;</p> <ul style="list-style-type: none"> • or Direct purchase; • Or Voluntary land donation as per the provisions specified in the Project Policy. <p>(b) Amount equivalent to current stamp duty on compensation amount for replacement of lost assets.</p> <p>(c) In case of land owners become marginal farmers, landless or those who are already marginal, the following entitlement shall be provided:</p> <ul style="list-style-type: none"> • Subsistence allowance of Rs 36,000/- • Annuity of Rs 5,00,000/- for creating Income Generating Assets and • Training Assistance <p>(d) Post acquisition, if residual land becomes economically unviable, the land owner will have the choice of either retaining or selling it to the Government.</p> <p>(e) Loss of perennial and non-perennial crops will be compensated in accordance with the provisions of Horticulture and Agriculture department as applicable.</p> <p>(f) A Grant of Rs 25000 for loss of replacement of cattle shed.</p> <p>(g) In case those who lose a narrow strip of land, equivalent or less than 10% of total land, will be offered an allowance of Rs 40000/- and will be not entitled for any other R&R</p>	Compensation for land includes compensation for all assets attached to the land.

Table 3.1: Entitlement Matrix for REN/UG Cabling Project				
Sl.N.	Impact Category	Unit of Entitlement	Details of Entitlements	Remarks
			benefits.	
Loss of Private Structures (Residential/Commercial)				
2	Loss of structure (Residential or Commercial or Res-cum-Commercial)	Land Owner/Titleholder	<p>(a) Cash compensation determined on the basis of R&BD current Schedule Rates and without deducting depreciation cost and other provisions prescribed in RFCTLARR Act 2013;</p> <p>or direct purchase</p> <p>(b) Shifting allowance of Rs 50000 as per provisions of RFCTLARR Act, 2013</p> <p>(c) Provision of free house as per RFCTLARR Act 2013, for completely displaced residential/commercial or cost of @ Rs 1,50,000 will be offered if the affected family opts not take a house.</p> <p>(d) Subsistence allowance of Rs 36,000 if the structure is lost completely (RFCTLARR Act 2013)</p> <p>(e) Resettlement allowance of Rs 50,000 if the structure is lost completely (RFCTLARR Act 2013)</p> <p>(f) Additional 25% structure compensation for partially affected structures towards reconstruction of structures.</p> <p>(g) For those who lose their entire commercial structure, Annuity of Rs 5,00,000/- for creating Income Generating Assets and Training Assistance.</p> <p>(h) Right to salvage materials from affected land or structure</p>	

Table 3.1: Entitlement Matrix for REN/UG Cabling Project				
Sl.N.	Impact Category	Unit of Entitlement	Details of Entitlements	Remarks
3	Tenants and Lease holders	Tenants and lease holders	Registered lessees will be entitled to an apportionment of the compensation payable to structure owner as per applicable local laws.	
Loss of Residential and Commercial Structures - Non Titleholders				
4	Squatters		(a) Assistance amount equivalent for impacted structures at replacement cost determined on the basis of R&BD Schedule of Rates as on date without deducting depreciation cost. (b) All squatters will be paid subsistence allowance of Rs 30000. (c) All squatters will be paid Rs 10000 as shifting allowance (d) Right to salvage materials from affected structure	
5	Encroachers	Affected Person (Individual/Family)	(a) Assistance amount equivalent for impacted structures at replacement cost determined on the basis of R&BD Schedule of Rates as on date without deducting depreciation cost. (b) Encroachers shall be given advance notice of 2 months in which to remove assets/crops.	
Loss of livelihood – Title and Non-Titleholders				
6	Loss of livelihood – title holders and commercial squatters	(Individual/Family)	One time grant of Rs 25,000 (value prescribed under RFCTLARR Act 2013) Training assistance	For commercial squatters, the eligibility will become from the date of Census survey
7	Foreseeable and unforeseen impacts* likely during the construction stage	Owner, affected person	<ul style="list-style-type: none"> Payment of damages if any to structures Temporary access would be provided, where necessary 	Such as temporary impacts on structures, temporary disruption to access or passage, particularly in congested slums if the option of mobile units is not used

Table 3.1: Entitlement Matrix for REN/UG Cabling Project				
Sl.N.	Impact Category	Unit of Entitlement	Details of Entitlements	Remarks
8	Temporary loss of income of mobile kiosks, if any	Kiosk owner	Two months advance notice to vacate the area	
9	SC, ST and Disabled Persons		<ul style="list-style-type: none"> Assistance to include in government welfare schemes if not included, if eligible as per Government criteria; and Additional benefits to SC and ST as per the provisions of RFCTLARR Act 2013 Schedule 	
10	Women		<ul style="list-style-type: none"> In case of extending any productive asset, joint ownership in the name of husband and wife will be offered. While disbursing the entitlements, women will be given the first priority to receive the entitlement benefits over other entitled persons. 	
11	Loss of or impact on any Common or cultural Property Resource such as shrine, temple, mosque, hand pump, shed, etc.	Community, Village/ Ward	Resources such as cultural properties and community assets shall be conserved (by means of special protection, relocation, replacement, etc.) in consultation with the community.	
12	Unforeseen impacts		Any unforeseen impacts shall be documented and mitigated in accordance with the principles and objectives of the Policy	

4.1 GENERAL

The REN/UG project will be implemented at Visakhapatnam in Andhra Pradesh state of India. Andhra Pradesh, situated on the south eastern coast of the country is the eighth largest state in India covering an area of 160,205 Sq. Km, after the bifurcation in June 2, 2014, the north-western portion of the state was separated to form a new state of Telangana. In accordance with the Andhra Pradesh Reorganisation Act, 2014, Hyderabad will remain the de jure capital of both Andhra Pradesh and Telangana states for a period of 10 years from 2014

There are two regions in the newly formed Andhra state namely Coastal Andhra and Rayalaseema. These two regions comprise 13 districts, with 9 in Coastal Andhra and 4 in Rayalaseema. Andhra Pradesh has got a coastline of around 974 km, which gives it the 2nd longest coastline in the nation after Gujarat. Besides, the state includes the eastern part of Deccan plateau as well as a considerable part of the Eastern Ghats. The geographical location of state makes it vulnerable to many natural disasters like one Hudhud occurred on Oct 12, 2014 causing great devastation.

The state is bordered by Telangana in the north-west, Chhattisgarh in the north, Odisha in the north-east, Karnataka in the west, Tamil Nadu in the south and the water body of Bay of Bengal in the east. A small enclave of 30 km² of Yanam, a district of Puducherry, lies south of Kakinada in the Godavari delta to the northeast of the state.

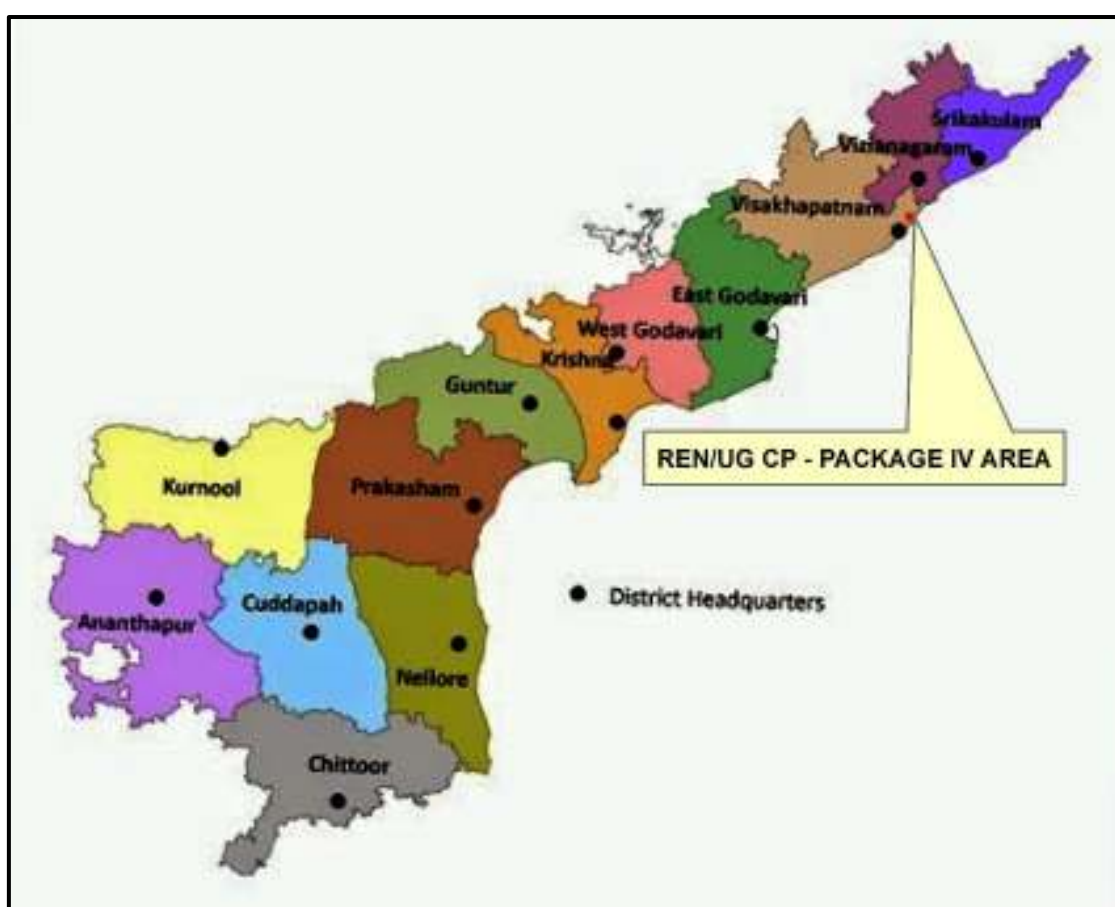


Figure 4.1: State of Andhra Pradesh (Project State)

4.2 SOCIAL AND DEMOGRAPHIC PROFILE OF THE STATE

4.2.1 Population

As of 2011 Census of India, the state had a population of 49,386,799 with a population density of 308/km². The total population constitutes 70.4% of rural population with 34,776,389 inhabitants and 29.6% of urban population with 14,610,410 inhabitants. Children in the age group of 0–6 years are 5,222,384, constituting 10.6% of the total population, among them 2,686,453 are boys and 2,535,931 are girls. Visakhapatnam district has the largest urban population of 47.5% and Srikakulam district with 83.8%, has the largest rural population, among others districts in the state. The overall population of the state comprises 17.1% of Scheduled Caste and 5.3% of Scheduled Tribe population. The Andhra Pradesh State at a glance is given in **Table 4.1**

4.2.2 Gender classification

There are 24,738,068 male and 24,648,731 female citizens—a sex ratio of 996 females per 1000 males, higher than the national average of 943 per 1000 males. The sex ratio in children 944 is also higher than the nation average of 919.

4.2.3 Literacy Rate

The literacy rate of the state stands at 67.41%. West Godavari district has the highest literacy rate of 74.6% and Vizianagaram district has the least with 58.9%.

Table 4.1: State Andhra Pradesh at a Glance		
S.N.	Development Indicators	Numbers/ Percentage
1	Population (2011 census)	49,386,799
2	Density of Population (2011)	308 person per sq.km
3	Percentage of Male Population	50.1%
4	Percentage of Female Population	49.9%
5	Sex Ratio	996
6	Percentage of Population between 0 to 6 Years	10.6%
7	Literacy Rate (2011)	67.41%
8	Male Literacy Rate	74.8%
9	Female Literacy Rate	60%
10	Percentage of Scheduled Caste Population	17.1%
11	Percentage of Tribal Population	5.3 %
12	Percentage of Total Workers	46.5%
13	Percentage of Main Workers	83.7%
14	Percentage of Marginal Workers	16.3%
15	Percentage of Non-Workers	53.5%
16	Percentage of Main Cultivators	13.4%
17	Percentage of Main Agriculture Labour	37.3%
Source: Official portal of Andhra Pradesh Government, Govt. of AP		

4.2.4 Economy of the State

Andhra Pradesh has a very diverse geography which led to a very diverse economy. 60 % of the population of the state is engaged in agriculture and allied sectors. Paddy is grown in large quantity and hence, rice is the staple food of the state. The fertile river plains in the delta regions of major peninsular rivers of Godavari and Krishna are rich with agriculture-based industries. 9 of the 13 districts of the state have sea coast along the Bay of Bengal, which has created manufacturing and export centric industries. The mineral deposits found in the districts of Rayalaseema, Eastern Ghats and neighbouring states has led to large-scale ore exports.

4.2.5 District Visakhapatnam

Visakhapatnam district occupies an area of approximately 11,161 square kilometres in Andhra Pradesh. The boundaries of this district are Bay of Bengal in the East, East Godavari district in the South, Orissa state in the West and North directions. The district has population of 42,90,589 as per the 2011 census which accounts for 8.68 % of the total population of the State with 11.89% decadal growth. The demographic profile of Visakhapatnam district is given **Table 4.2** hereunder.

Table 4.2: Demographic Profile of Visakhapatnam		
S.N.	Development Indicators	Numbers/ Percentage
1	Population (2011 census)	42,90,589
2	Population Growth (Decadal)	11.89
3	Density of Population (2011)	384 Person per sq. km.
4	Percentage of Male Population	49.8%
5	Percentage of Female Population	50.2%
6	Sex Ratio	1006 Females per 1000 Males
7	Percentage of Population between 0 to 6 Years	10.5%
8	Literacy Rate (2011)	66.9 %
9	Male Literacy Rate	74.6%
10	Female Literacy Rate	59.3%
11	Percentage of Scheduled Caste Population	7.7%
12	Percentage of Tribal Population	14.4%
13	Percentage of Total Workers	44.05%
14	Percentage of Main Workers	34.52%
15	Percentage of Marginal Workers	9.53%
16	Percentage of Non-Workers	55.95%
17	Percentage of Main Cultivators	17.05%
18	Percentage of Main Agriculture Labour	30.63%
Source: District Census Handbook 2011, Series-29, Part XII-B, Directorate of Census Operations, Andhra Pradesh, Official portal of Andhra Pradesh Government, Govt. of AP		

The District presents two distinct Geographic divisions. The strip of the land along the coast and the interior called the plains division and hilly area of the Eastern Ghats flanking it on the North and West called the Agency Division. The plains division with altitude 75 metres watered and drained by Sarada, Varaha and Thandava Rivers and rivulets Meghadrigedda and Gambheeramgedda.

Inscriptions indicate that the District was originally a part of Kalinga Kingdom subsequently conquered by the Eastern Chalukyas in the 7th Century, A.D. who ruled over it with their Head Quarters at Vengi. This District was also under the occupation of various rulers such as the Reddy Rajahs of Kondaveedu, the Gajapathis of Orissa, the Nawabs of Golkonda and the Moghal Emperor Aurangzeb through a Subedar. This territory passed on to French occupation in view of succession dispute among Andhra Kings and finally it came under the British Reign.

The Visakhapatnam District was reconstituted with the remaining area and residuary portions of Ganjam District namely Sompeta, Tekkali and Srikakulam Taluks in entirety and portion of Parlakimidi, Ichchapuram, and Berahmpur retained in Madras presidency. With the passage of time, the reconstituted District was found administratively unwieldy and therefore it was bifurcated into Srikakulam and Visakhapatnam districts in the year 1950. The residuary district of Visakhapatnam was further bifurcated and the Taluks of Vizianagaram, Gajapathinagaram, Srungavarapukota and portion of Bheemunipatnam Taluk were transferred to the newly created Vizianagaram District in the year 1979.

Administratively, the district is divided into four revenue divisions, namely Anakapalli, Paderu, Narsipatnam and Visakhapatnam, each headed by a sub collector. These revenue divisions are divided into 43 mandals in the district. These districts consist of 3265 villages and 15 towns including, 1 Municipal Corporation, 2 municipalities and 12 census towns. Visakhapatnam city is the only municipal corporation.

Of the total geographical area of district 36.45% alone is arable area while 39.53% is forest area. The rest is distributed among "Barren and uncultivable land" about 11.7% and "Land put to non-agricultural uses" about 9.0%. Out of the arable area, the net area sowed form 27.2% while cultivable waste and fallow (current and old) lands constitute about 9.2%.

Agriculture is the mainstay of nearly 70% of the households. The productivity of the crops is low as the irrigated area is only 36 %. The agriculture activities are supported by animal husbandry. Fishing is another important economic activity of the fishermen population living in about 59 fishery villages and hamlets on coastline stretching to a length of 132 KMs. covering 11 coastal mandals. Visakhapatnam district is the central hub for industry and education in the state of Andhra Pradesh. Visakhapatnam district hosts the Vizag Steel Plant and many other small and large scale industries. The district is found rich in mineral deposits like Rock Phosphate, Quartz and clay deposits.

4.2.6 The Visakhapatnam City

The Visakhapatnam city, also known as Vizag is located between the Eastern Ghats mountain range and the Bay of Bengal is the largest city, both in terms of area and population in the Indian state of Andhra Pradesh. It is the administrative headquarters of Visakhapatnam district and also the Financial Capital of Andhra Pradesh. It is well connected by air, rail and road with all the major cities in India.

4.2.6.1 Historical Perspective

Historically, Visakhapatnam was considered part of the Kalinga region, and later ruled by the Vengi kingdom, the Pallava and Eastern Ganga dynasties. Archaeological records suggest that the present city was built around the 11th and 12th centuries CE with control over the city fluctuating between the Chola Dynasty and the Gajapati Kingdom until its conquest by the Vijayanagara Empire in the 15th century. Conquered by the Mughuls in the 16th century, European powers eventually set up trading interests in the city, and by the end of the 18th century it had come under French rule. Control passed to the British in 1804 and it remained under British colonial rule until India's independence in 1947. After independence, Visakhapatnam developed into one of the country's chief ports and became the headquarters of the Eastern Naval Command of the Indian Navy

4.2.6.2 Demographic Profile of Visakhapatnam City

In 2011, Visakhapatnam district of Andhra Pradesh had population of 4,290,589 of which male and female were 2,138,910 and 2,151,679 respectively. The growth of district population is found to be high. There was change of 11.96 percent in the population compared to population as per 2001, while in 2001 it was recorded increase of 16.66 percent to its population compared to 1991.

Visakhapatnam city is the largest city in AP having total population around 1,728,128 (2011 Census). The total population constitutes 873,599 males, 854,529 females with a sex ratio of 978 females per 1000 males. There are a total of 1,279,137 literates, of which 6,88,678 were male and 5,90,459 were females literates. The average literacy rate of the city was found to be 81.79%. There were 164,129 children in the age group of 0–6 years, with 84,298 boys and 79,831 girls. The child sex ratio was 947 girls per 1000 boys. Visakhapatnam is ranked 122 in the list of fastest-growing cities in the world. Hinduism is practiced by the majority of its citizens, followed by Islam and Christianity.

There are many public sector companies like Visakhapatnam Port Trust, Visakhapatnam Steel Plant, Hindustan Shipyard Limited, Hindustan Petroleum Corporation Limited, Mines and Minerals Trading Corporation (MMTC), National Mineral Development Corporation (NMDC) etc. and also Private sector companies like Coromandal Fertilizers Limited and LG Polymers located in this city of destiny. The Visakhapatnam city is one of the major port cities of the state of Andhra Pradesh with the highest recorded throughput in India.

4.2.6.3 Economic Profile of Visakhapatnam

The City of Golden Beaches, Visakhapatnam was a small hamlet of traditional fishing community at the time of Indian Independence. The natural harbor and right location, just midway between Calcutta and Chennai; proximity to the developed network of road and rail has metamorphosed this tiny village to an ever expanding industrial city.

The city has developed into a logistics haven for the heavy industries. The world class port is suitable for steel, petroleum and fertilizer industries. Visakhapatnam Steel Plant, Rashtriya Iron and Steel Nigam Limited and Essar Steels Limited are located here along with Hindustan Petroleum Corporation Limited, the thermal power plant built by NTPC.

The other heavy industries contributing to the growth of Visakhapatnam are Hindustan Zinc Limited, Coromandel Fertilizers and Rain Calcining Limited. The Visakhapatnam port though commissioned in the early thirties came under the Visakhapatnam Port Trust in 1964 after promulgation of the Major Port Act 1963. The ship building industries like the Hindustan

Shipyard Limited and Bharat Heavy Plate and Vessels Limited owe their genesis to the Visakhapatnam Port. The heavy industry gives employment to hundreds of thousands of people directly and indirectly runs the whole economy of the city.

The government has sanctioned a 9200 acre Special Economic Zone (SEZ) in the city. Big industrial houses, Reliance, the Birla Group, HPCL and Brandix from Sri Lanka have acquired huge estates in the SEZ. The SEZ will be a mini industrial town with chemicals, fertilizers, petroleum industries. Baba Atomic and Research Centre has proposed to set up an atomic R&D facility in the region. The Indian government has earmarked the rocky caverns of Visakhapatnam for building a strategic crude reserve for the nation.

4.3 CORRIDOR OF IMPACT OF REN/UG PROJECT

The Package -4 of REN/UG Cabling Project consists of 4 nos. of 33/11kV Substations of Zone-3 namely- Adibatlanagar, Rushikonda, VIMS and Yendada.

After a review of trench excavation methods and assessment of minimum operational requirement, it was proposed to consider a 2.5 meter wide corridor as 'operational area or corridor of Impact' along the footpath, which are to be opened up for cable laying operations in 500 meter long segments. The COI area will be along footpath, with footpath/kerb being one edge, and other edge of corridor extending on to road up to a maximum of 2.5 m. Further, to minimize social impacts the manual excavation may be essentially required in narrow roads (less than 4 metres or even less than 2.5m in some cases), particularly, where LT cables are required to be laid to individual households/consumers. The corridor of impact or operational area for cable laying operations is depicted in **Figure 6.1**, under Chapter 6 – Analysis of Alternatives.

All the roads, along which underground cables are to be laid are under the jurisdiction of Greater Visakhapatnam Municipal Corporation (GVMC) and is lawfully owned by GVMC for road construction. Although road is owned by GVMC, a part of which will be used for underground cable laying (2.5 metre wide corridor) is not free of encumbrances, as can be seen in the strip maps. Using available records, the social team has verified the boundaries of legal right of way as well as boundaries of private properties within and in the vicinity of the corridor of impact. The limit of displacement will be limited not to the legal right of way but only to the corridor of impact. Within this corridor, there should be no structures or hindrances for underground cable laying.

In order to minimize disruptions to both pedestrian as well as to vehicular traffic, it is utmost necessary to limit the area of operation required for trenching, cable pull-out, lowering, jointing, prior to refilling and restoring trench to its previous state and at the same time ensure minimum working space is available for completing work in a timely manner.

During social survey the impact on land, property and the livelihood of people within COI was examined and recorded.

4.4 SOCIO-ECONOMIC PROFILE OF THE AFFECTED HOUSEHOLDS

A 100% census and socio-economic survey was conducted within 2.5 metre wide COI (From April 15-May 05, 2016) to register and document the status of the potentially affected population within the corridor of impact, their assets, and sources of livelihood. The survey provides a baseline information against which mitigation measures and support will be assessed. For this purpose, comprehensive information related to people's assets, income, socio-cultural and demographic indicators, religious structures, and other sources of support

such as common property resources were collected during the survey. The analysis has covered the needs and resources of different groups and individuals, including intra-household analysis and gender analysis. The questionnaire used for socio-economic the survey is attached as **Annexure 1**.

4.5 LIMITATION OF THE CORRIDOR OF IMPACT

The route/alignment proposed for laying of underground cable within Package 4 has a few roads, which are less than 4 metres wide and even less than 2.5 metres wide in some cases. Laying of cable in such small roads, which are narrow, coincidentally congested and populated will involve significant disruptions to local populace/residents, if UG cables were to be laid by mechanical means of excavation. Further, the cable laying through manual excavation may also pose severe challenges in such narrow and congested roads. The DPR drawings for Package 4 does not suggest any alternative to this notable constraint.

4.6 FINDINGS OF THE SURVEY

As per the data collated from the socio-economic survey, the REN/UG cable project will impact 65 households and 236 PAPs under Package-4. Out of total PAPs 51 % are male and 49 % are females. The total sex ratio is found to be 967 females per thousand males. Yendada and Adibatlanagar S/S have comparatively low sex ratio. The details of the affected population are given below in **Table 4.3**.

Table 4.3: Demographic Profile of Affected Households under Package 4						
Sl.No	Sub Station wise Number of Affected Households and PAPs					
	Substation	No. of Affected Households	No. of PAPs	Male	Female	Sex Ratio
1	VIMS	2	8	3	5	1667
2	Adibatlanagar	11	38	20	18	900
3	Rushikonda	11	46	21	25	1190
4	Yendada	41	144	76	68	895
Total		65	236	120	116	967

Source: Socio-Economic Survey, June-July, 2016

The distribution of PAPs according to their age suggests that majority of them are young (63% between the age group 15-35). Only 5 persons were found having age more than 60 years. The details are presented in **Table 4.4** below.

Table 4.4: Age wise Distribution of PAPs under Package 4								
S.No	Age wise Distribution of PAPs							
	Substation	No. of PAPs	<15	15-25	25-35	35-45	45-60	>60
1	VIMS	8	3	1	1	2	1	0
2	Adibatlanagar	38	3	9	13	6	7	0
3	Rushikonda	46	6	17	7	13	3	0
4	Yendada	144	25	27	37	28	22	5
Total		236	37	54	58	49	33	5

Source: Socio-Economic Survey, June-July, 2016

The survey revealed that 97 % of the households are Hindu by religion. The rest 3% are Muslim and Christian. Most of the PAHs belong to OBC (61.5%) category of caste followed

by General (15%), SC and MOBC (11 % each). Only one ST household was found to be affected by the Project. The details of social categories (religion and caste) of the affected households are being provided in **Table 4.5** below.

Table 4.5: Social Category of PAHs under Package 4										
S.No	Social Category of Affected Households									
	Religion					Caste				
	Substation	Hindu	Muslim	Sikh	Christian	Gen	SC	ST	OBC	MOBC
1	VIMS	2	0	0	0	1	1	0	0	0
2	Adibatlanagar	11	0	0	0	2	4	0	3	2
3	Rushikonda	11	0	0	0	1	0	1	8	1
4	Yendada	39	1	0	1	6	2		29	4
	Total	63	1	0	1	10	7	1	40	7

Source: Socio-Economic Survey, June-July, 2016

Among all the PAPs, 63% are married. The percentage of Widow is 1.3 %. The marital status of PAHs is given in **Table 4.6** hereunder.

Table 4.6: Marital Status of Affected PAPs						
Sl.No	Marital Status					Total
	Substation	Married	Un-married	Women		
				Widow	Separated	
1	VIMS	2	4	2	0	8
2	Adibatlanagar	25	13	0	0	38
3	Rushikonda	29	17	0	0	46
4	Yendada	92	51	1	0	144
	Total	148	85	3	0	236

Source: Socio-Economic Survey, June-July, 2016

The field survey revealed that small families are generally come from different parts of the state to earn livelihood in Visakhapatnam city. It was found that out of 65 PAHs, 56 (86%) are nuclear in their family composition. The average size of the family is around 4 members. The details are presented in **Table 4.7** below.

Table 4.7: Type and Size of Affected Households under Package 4						
SI.No	Substation	No. of Affected Households	Type of Family			Average Size of Family
			Nuclear	Joint	Extended	
1	VIMS	2	2	0	0	4
2	Adibatlanagar	11	11	0	0	3.4
3	Rushikonda	11	8	3	0	4
4	Yendada	41	35	6	0	3.5
	Total	65	56	9	0	3.6

Source: Socio-Economic Survey, June-July, 2016

The educational profile of the respondents indicates that around 33% of them are illiterate, further indicating the poverty and deprived conditions of the PAPs. Around 35 % of PAPs

have attained secondary education while, 11% are aspiring for higher education. The details are provided in **Table 4.8**.

Table 4.8: Educational Attainment of PAHs under Package 4						
S.No	Sub Station wise Educational Profile of PAPs					
	Substation	Illiterate	Primary (Class 4)	Secondary (5-10)	Higher (Graduate)	Technical
1	VIMS	1	0	7	0	0
2	Adibatlanagar	13	5	16	3	1
3	Rushikonda	6	10	19	7	0
4	Yendada	55	19	37	15	13
5	Total	75	34	79	25	14

Note: Children below 6 yrs has been excluded

Source: Socio-Economic Survey, June-July, 2016

Distributing respondent by their occupational categories, it was found that 27.5 % of PAPs are working and all of them are engaged in business activities mainly selling of products on push cart (Bandy) along the road side. Around 72% of total PAPs are unemployed/not working due to various reasons. The details are given in **Table 4.9**.

Table 4.9: Occupational Profile of Surveyed Population under Package 4								
S.No	Substation	Working Status			Non-Working Status			
		Non-Agriculture Labor	Trade/ Business	Private Service	No Job	Household Duties	Old/ Young	Student
1	VIMS	0	2	0	0	2	0	4
2	Adibatlanagar	0	11	0	8	11	0	8
3	Rushikonda	0	11	0	15	13	4	3
4	Yendada	0	41	0	27	36	18	22
5	Total	0	65	0	50	62	22	37

Source: Socio-Economic Survey, June-July, 2016

The annual income of affected Households varies between Rs. 25000.00 to above Rs. One lac. Around 45% households earn between Rs. 50000 to 1 lac and 54% above Rs. 100000. Only 1 households was reported to be having income less than Rs. 50000.00 per year. The details are given in **Table 4.10**.

During the socio- economic survey, an attempt was made to understand the broad savings of the PAHs by calculating their income and expenditure on yearly basis. It was found that the respondents are fully dependent on commercial activities to meet out their family needs. Since, most of them are migrants living on rented house their income from other sources are negligible. However, they manage to meet out the expenditure. As far average expenditure pattern of household is concerned, major share is spent on most necessary item like food, house rent, education, electricity, water, cooking fuel, and transport. The details of Income and Expenditure Pattern of PAHs are given in **Table 4.11** below.

Table 4.10: Income Level of Affected Households under Package 4						
Sl. No.	Annual Income (in Rs.)	Substation wise Number of PAHs				Total
		VIMS	Adibatlanagar	Rushikonda	Yendada	
1	Less than 25000	0	0	0	0	0
2	25000-50000	0	0	0	1	1
3	50000-100000	2	5	6	16	29
4	Above 100000	0	6	5	24	35
5	No Response	0	0	0	0	0
Total		2	11	11	41	65

Source: Socio-Economic Survey, June-July, 2016

S. No	Table 4.11: Income and Expenditure Pattern of PAHs Respondents under Package 4					
	Income (Rs.)		Expenditure (Rs.)			
1	Agriculture		Food	34800	Water	2430
2	Commercial	95630	Cooking Fuel	12000	Electricity	4500
3	Service		Clothing	2040	Social Event	1800
4	Livestock		Transport	8000	Agriculture input	00
5	Remittance		Health Care	825	Others	15000
6					(House rent and miscellaneous)	
7	Other		Education	4500		
8	Total	95630	Total			85895

Source: Socio-Economic Survey, June-July, 2016

All the affected household earning their livelihood along the road side are found vulnerable as all of them are making a living on subsidized food provided by the government to families below poverty line. There are 3 women headed households also found to be vulnerable. The vulnerability status of affected households under Package 4 along the Corridor of Impact is given below in **Table 4.12**.

Table 4.12: Vulnerability Status of Affected Households under Package 4				
S.No	Category of Vulnerability			Total
	Substation	BPL	WHH	
1	VIMS	1	1	2
2	Adibatlanagar	11	0	11
3	Rushikonda	11	0	11
4	Yendada	39	2	41
5	Total	62	3	65

Source: Socio-Economic Survey, June-July, 2016

An attempt was also made to understand the project related awareness of respondents. Out of 65 households only 17 were found aware of the REN/UG Cabling project. They got the information from newspaper and their colleagues.

4.7 COMMUNITY PERCEPTION ABOUT REN/UG PROJECT

Consultation with Project Affected Persons (PAPs) is the starting point to address involuntary resettlement issues, concerning resettlement. People affected by resettlement may be apprehensive that they will lose their livelihoods during the time of construction.

Participation in planning and managing resettlement helps to reduce their fears and gives PAPs an opportunity to participate in key decisions that affect their lives. The first step in developing plans for consultation and participation is to identify the primary and secondary stakeholders. Information sharing is the first principle of participation. This chapter provides details on the consultations carried out the affected households that lay en-route the REN/UG Cabling Project in Package-4.

Consultations were held with the impacted persons to hear about their perceptions and apprehensions of the project and to elicit suggestions from them, if any, on improvement to project design.

The project affected households were fully briefed about project development objectives/ components and were then consulted individually to understand their perceptions about the project. They were asked to give their perception on the anticipated positive and negative impacts of the project. All of them perceived reduction in sufferings during natural disasters after underground cabling. Around, 38 % of them expect improvement in quality of life due to the project. However, some apprehensions were also raised by the respondents in the form of loss of livelihood, access, disruption of services and undue delays for project completion. The details are presented in **Table 4.13** below.

Table 4.13: Project Impacts Perceived by the Community under Package 4						
S.No	Positive impacts perceived			Negative Impacts Perceived		
		Response Yes(Nos.)	%		Response -Yes (Nos.)	%
1	Reduced sufferings during cyclones and adverse climatic conditions	65	100	Loss of livelihood	52	80
2	Improved access to services			Loss of access to houses/ businesses	20	31
3	Productive use of time			Loss of structures/ assets	22	34
4	Increase in business opportunity			Increase in accidents during and after construction	0	0
5	Improvements in quality of life	25	38	Disruption of utilities such as water, electricity, telephone, cable, etc	12	18
6	Others (specify)			Others (specify)		

Source: Socio-Economic Survey, June-July, 2016

Further, consultation meetings were held with the community along the project corridor at different places – namely, Golayendada (Yendada), Ramalayam Street (VIMS), Lalitha Temple (Rushikonda) and Sagar Nagar (Adibatlanagar). Information was disseminated about the project, its benefits and possible impacts. The apprehensions and suggestions received at community level consultations are presented below in **Table 4.14**.

The Consultations during the socio-economic survey, were subsequently followed up with stakeholder consultations on Feb. 19, 2016 at city level, wherein local leaders, elected

representatives, prominent persons, NGO representatives, concerned govt. department officials were invited. All the invitees were handed new project brochures both in local language and English.

During the public consultation meeting, a detailed power point presentation was made to enable a complete understanding of the project dimensions and its possible implications. Altogether, some 172 people, comprising both women and men in equal number attended the consultation meeting.

The proceedings of the meeting, brochures circulated, list of persons attended and issues raised along with photographs taken during the consultation meeting are given in **Annexure 2**

Table 4.14: Key Issues Raised in Community Level Consultations		
Place of Meetings	Apprehensions raised by the community	Suggestions from community
1. Golayendada (Yendada S/S)	<ul style="list-style-type: none"> The ramps and steps will be damaged during construction resulting in loss of access 	<ul style="list-style-type: none"> The ramps and steps if damaged need to be restored by the authorities under the project
2. Ramalayam Street, Police Quarters (VIMS)	<ul style="list-style-type: none"> The trench and barricades will prohibit us to make a livelihood over project corridor i.e reduction in number of customer due to change of selling point. 	<ul style="list-style-type: none"> Advance notice should be given to push cart/bandy owners.
3. Lalitha Temple (Rushikonda)	<ul style="list-style-type: none"> Loss of Rs. 300 per day for all bundy (Push Cart) sellers if business is closed during construction. 	<ul style="list-style-type: none"> As compensation, Rs. 300 per day should be given to all bandy/push cart, people if business is impacted during construction period.
4. Sagar Nagar near Zoo Park (Adibatlanagar)	<ul style="list-style-type: none"> In narrow streets the house door is opened directly on to the road. This may lead to accidents. The important services like telephone, sewer, and water supply may get disrupted during construction period. Whether the street light will be removed after underground cabling. Whether the cost of electricity will increase. 	<ul style="list-style-type: none"> Proper barricading should be done to avoid any mishap. Utilities, if damaged during construction should be restored on urgent basis. The street lights should not be removed. The project is good for the city and city people People keeping their belongings on the project corridor will be informed to remove them. Manual digging should be done in narrow streets to minimize the impact.

Source: Socio-Economic Survey & FGD, June-July, 2016

CHAPTER 5

SOCIAL IMPACTS AND MITIGATION MEASURES

5.1 GENERAL

The social impacts of the REN/UG cable project are summarized under this chapter. The social surveys carried out by the consultants from 28th June – 18th July, 2016 and subsequent social impact assessment has revealed that the REN/UG cabling object is likely to trigger pre-dominantly (a) Temporary loss of access to residential and commercial buildings and (b) Temporary impact on livelihood of squatters.

5.2 Impacts on Land

5.3 Impacts on Structures

Temporary Loss of Access: The survey has revealed that both residential and commercial structures along the roads (within a 2.5 metre wide corridor of impact/operational area along UG cable route alignment) have direct access on to the road. In order to gain direct access, building owners have constructed ramps and /or steps from plinth level of their building(s) to road level (sometimes even over road side drain) to ensure easy vehicular or pedestrian movement from building to road (ref **Figure 5.1**).

During survey it was revealed that around 1021 ramps, 195 steps and 204 other structures will either partially or fully impacted during excavation of cable trench excavation for UG cables. The structures under other category include base of hand pump/water tank, part of small walls of extended shops, signboards, boundary walls of public utilities, etc. The details of structures, which are likely to be impacted during cable excavation is given in **Table 5.1**.

Table 5.1: Ownership wise Number and Area of Impacted Structures

S.No	Substation	Type of Structure								
		Encroachers							Govt. Structures/Common Property Resources	
		Ramp			Steps			Total Area of Private Structures (Sq.mt)	Others	
		No.	No. of Owner	Area (Sq.mt.)	No.	No. of Owner	Area (Sq.mt.)		No.	Area (Sq.mt.)
1	VIMS	175	175	2698.72	10	10	33.07	2731.79	19	17.88
2	Adibatlanagar	109	109	1491.23	34	34	155.17	1646.39	27	104.4
3	Rushikonda	88	88	1014.77	45	45	59.49	1074.26	26	142.92
4	Yendada	604	604	7461.31	102	102	282.36	7743.67	84	431.28
	Total	976	976	12666.03	191	191	530.09	13196.12	156	696

Source: Socio-Economic Survey, June– July, 2016

Note: * Indicate other structures like base of hand pump, water tank, part of small walls of extended shops, signboards, boundary walls of public utilities etc.



Figure 5.1: Survey of Impacted Ramps

Though, ramps and steps of buildings are illegal and have been constructed by the owners at their own risk, many of these are likely to get damaged (either fully or partially) during the trench excavation works for underground cabling. The entitlement matrix under ESMF for APDRP provides relief for such building owners (both commercial and residential) and thus they become eligible to get assistance at replacement cost for their impacted structures. The replacement cost will be estimated and included in the ESMP along with a provision for providing temporary access to all such buildings during REN/UG cable project implementation.

5.4 Impacts on Livelihood

The survey also indicated that there are appreciable numbers of ambulatory vendors at some selected stretches/locations along the roads (incidentally also UG cable route alignment). Many of these vendors change their locations to 2-3 times per day to cover more areas for maximizing their business activities. During the excavation works for underground cabling laying, they are unlikely to get directly affected as they can temporarily shift to nearby locations and continue with their business and thus they are unlikely to lose their livelihood due to UG cable laying.

The consultations held with such ambulatory vendors indicated that they do not hold this issue as serious and indicated that given some advance notice, they can temporarily shift to some nearby locations for the period of construction and relocate back, once cable laying activities are completed. However, few of them, who have occupied a particular location over a period of time and are found more or less stationary envisaged loss of their income during period of construction. During the consultations, such vendors expressed that they anticipate a loss of Rs. 300 per day.

In addition to the ambulatory vendors, many stationery kiosks of squatters within the COI have been observed during the surveys. All such stationary kiosks, which are likely to be affected due to the REN/UG cable project, were surveyed, consulted and enumerated for estimating the required assistances as per the entitlement matrix under APDRP. The details of impacted structures of stationery kiosks of such squatters are given in **Table 5.2**.

S.No	Table 5.2: Category wise details of Squatter’s Structures, impacted under -Package 4					Total
	Category of Structure	SUBSTATION				
		VIMS	Adibatlanagar	Rushikonda	Yendada	
1	Tiffin/Tea Stall		1	3	6	10
2	Dhobi/ Iron Shop		1			1
3	Grocery/General Store		1	1	1	3
4	Vegetables/ Fruits	1	1		3	5
5	Tailor shop		1		3	4
6	Pan/ Cigarette Shop		3	4	8	15
7	Mechanic Shop		1		3	4
8	Flower Shop				1	1
9	Barber Shop			2	4	6
10	Butcher/meat/Chicken/Fish		1		3	4
11	Kabari /Scrap Shop		1		2	3
12	Dairy/Milk Shop	1			1	2
13	Juice/coconut Shop				1	1
14	Xerox				2	2
15	Shoe Maker				1	1
16	Others (Garage, Cell point, Flower shop etc.)			1	2	3
17	Total	2	11	11	41	65

Source: Socio-Economic Survey, June-July, 2016

The census and socio- economic surveys of squatters likely to be impacted due to REN/UG project indicated that a total of 65 squatters, which will also entail some 236 PAPs (as documented during surveys) will be impacted temporarily during the time of cable laying under REN/UG project. The sub-station wise details of squatter's likely to be impacted are given in **Table 5.3**.

Table 5.3: Substation wise details of Squatters impacted under -Package 4			
S.No	Substation	No. of Affected Households	No. of PAPs
1	VIMS	2	8
2	Adibatlanagar	11	38
3	Rushikonda	11	46
4	Yendada	41	144
	Total	65	236

Source: Socio-Economic Survey, June-July, 2016



Selling of Fruits on Push Cart (Bandy)

Iron (Dhobi) Shop along the Project Corridor

5.5 RESETTLEMENT ACTION PLAN (RAP)

A RAP has been prepared to deal with all resettlement issues arising out of the REN/UG cable project in accordance with the ESMF provisions of APDRP. The RAP includes an analysis of the impacts, identification of nature and types of losses, and establish an entitlement for compensation and resettlement benefits as per the provisions made under ESMF, APDRP. The RAP is provided in separately as Volume IV titled Resettlement Action Plan (RAP), which may be referred for further information.

CHAPTER 6

ANALYSIS OF ALTERNATIVES

6.1 GENERAL

This chapter presents an analysis of alternatives considered in the project preparation to avoid or minimize both environmental and social impacts that would be inevitable, if technically optimal cable route alignment is followed. An analysis of various alternatives has been carried out prior to arriving at the technically best with minimal environmental and social impacts.

The main issues along the Operations Area/COI along cable routes are the physical obstacles like unauthorized ramps/steps of private and/or government buildings, which have been extended on to roads for ease of access, existing telecom and electricity poles, road side trees among others. The other issues are disruptions to public utilities, safety to pedestrians as well as road users apart from work force, who are directly involved for cable laying operations. The social issues due to the UG cabling project are;

- Temporary loss of access to residential and commercial buildings
- Temporary impact on livelihood of squatters/street hawkers/vendors.

The route alignments considered in the REN/UG cabling project (as indicated in Chapter 3) is flexible and therefore this factor has been used to avoid most of the impacts within the Operations Area (OA)/Corridor of Impact (COI).

6.2 WITH OR WITHOUT PROJECT SCENARIO

The 'with' and 'without' project scenarios are analyzed with respect to the development of the state by the backdrop of requirement of resilient electrical distribution infrastructure for sustained growth economy and consequent well-being of its citizens in the aftermath of cyclones/natural disasters.

The 'with' scenario of the REN/UG cabling project is expected to provide a resilient electrical network even if the coast of Visakhapatnam is struck with another cyclone/natural disaster, like the Hudhud in October 2014. The REN/UG cabling project is expected to minimize the miseries of people at large, minimize the damages to public and private property, help the state to handle the after effects of natural disaster(s), which the coastline of Andhra Pradesh, including Visakhapatnam stands exposed and most importantly help the state economy recover faster in the aftermath of natural disasters. The project also helps to upgrade the existing overhead network to construct an upgraded underground electrical network, which can cater to the projected power demand as of year 2025-2030.

The main objective of this component under APDRP is the conversion/replacement of all existing overhead electrical network into underground cabling network so as have a resilient electrical network (REN), which can stand the vagaries of cyclones and reduce/prevent the miseries of people and resources for reconstruction including helping the state economy to recover faster in the aftermath of natural disasters.

If the REN/UG cabling project is not implemented, there is every likelihood that the existing overhead electrical network within Visakhapatnam will stand exposed to damages and destruction that comes along with the cyclones, the last being the Hudhud in October 2014. Moreover, existing OH electrical network would need investments for up-gradation to meet increasing power demand of Visakhapatnam in the coming years. Any further investments

on the existing OH electrical infrastructure can't be justified, given the looming threat of cyclone disasters and the damages that comes along with that.

Therefore, the “with” project scenario, with its minor adverse impacts is more acceptable than the “without” project scenario which would mean an aggravation of the existing problems. Potential benefits of the proposed REN/UG cabling project are substantial and far-reaching in order to achieve all-round development of the State economy and progress for its people.

6.3 CABLE ROUTE ALTERNATIVES

The project preparation has considered several options/alternatives, during the finalization of the route alignment of the REN/UG project. The factors, which were considered included most optimal cable length, avoid or minimize relocation/shifting requirements of existing utilities along route alignment, avoidance of trees, which require felling, avoid or minimize road crossing points, minimum diversions to traffic as well as pedestrian traffic among others.

Any route alternatives, without considering optimal cable length, relocation/shifting requirements of utilities, avoidance of trees, minimum diversions of pedestrian and vehicular traffic will cause severe disruptions not only for project implementation but also for vehicular and pedestrians traffic, since cable routes are all spread across Visakhapatnam city's busy main roads to lanes and by-lanes.

6.4 'OPERATIONS AREA' ALTERNATIVES

The project preparation has proposed four configurations of cable laying, but with a uniform trench width of 1 meter and varying depth in all cases under the project. In order to minimize disruptions to both pedestrian as well as to vehicular traffic, it is utmost necessary to limit the area of operation required for trenching, cable pullout, lowering, jointing, prior to refilling and restoring trench to its previous state and at the same time ensure minimum working space is available for completing work in a timely manner.

In order to limit the area of operations, several cable trench excavation methods were assessed for minimal operations area requirement and a 2.5 meter wide corridor as 'operational area or corridor of Impact' along the footpath, has been considered, which are to be opened up for cable laying operations in 500 meter long segments. The 2.5 metre wide corridor in 500 meter long segments is to be barricaded on both sides considering the following;

- The corridor of impact/operations area will be along footpath, with footpath/kerb being one edge, and other edge of corridor extending on to road up to a maximum of 2.5 m.
- In case of roads which do not have foot paths, the line of sight with trees/poles shall be considered as one edge of the 2.5 m wide corridor and other edge of corridor extending on to road up to a maximum of 2.5 m.
- The 2.5 meter wide corridor of impact/operations area is to be barricaded on both sides in 500 meter long segments along cable alignment with provision for temporary access at regular intervals to cross over across barricaded area for pedestrians as shown in **Figure 6.1.**

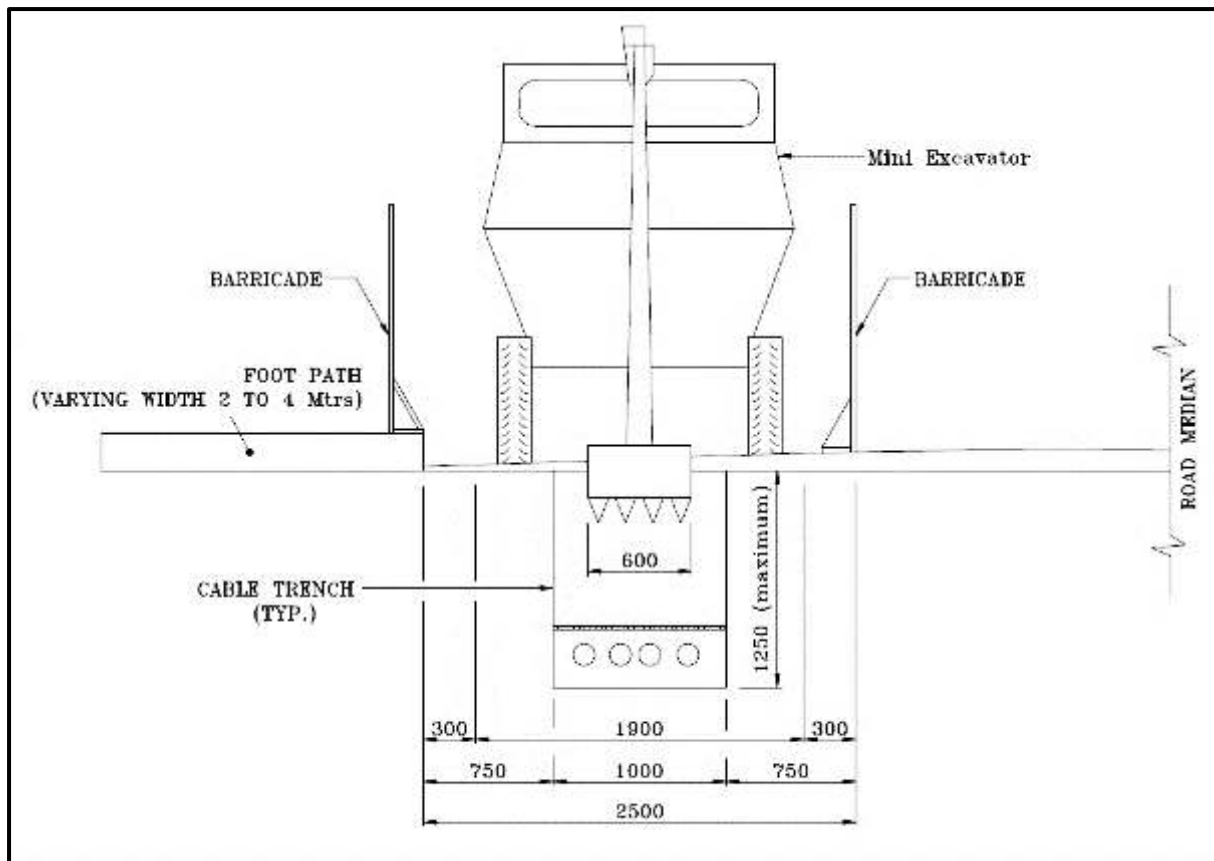


Figure 6.1: Corridor of Impact/ Operational Area for trench Excavation

- Within the barricaded operational area, 1meter wide cable trenches are to be excavated using mini excavators/ skid steer loaders like chain mounted Bobcat model E26 or Wheel mounted Vectra- model HEMAN 175 or wheel mounted model-JCB 155, trenchers, among others. Such mini excavators are especially designed and suited for excavations within limited operational areas and are commercially available with options for different attachments suited for operations like for rock breaking, trenching, cable pulling, earth back filling and compacting operations.
- The mechanical excavations are to be essentially supplemented by manual excavation at some places in order to maneuver minor obstacles within the barricaded operational area like kerb/road side small trees/saplings, telephone/electric poles, which will otherwise require shifting or removal for movement of excavators, if mechanical means of excavation is to be adhered all through the alignment.
- Other operations like cable pull out, lowering, refilling of trenches, removal of excess earth, compacting of backfilled earth etc can be done by using the same mini excavators, with additional accessory attachments. Thus, no operations related to cable laying work is ordinarily expected to spill out on to either footpath or the road, outside the barricaded area.
- The operational areas can be moved ahead in 500 meter long segments, once all required cable laying operations are completed including restoration of trenched area to its previous state as required/specified.
- The contractors shall be provided with adequate open areas (at least two to three locations per package) to store inventories like cable rolls, cement concrete slabs,

earth/sand for refilling, cement concrete batch mixers for restoration of trench area among others. The provision of open areas for inventories will minimize disruptions to vehicular /pedestrian movement near barricaded operational areas and avoid unwarranted storage of construction materials on roads.

- The barricaded areas in each segment shall be provided with fixed exit and entry points for bring in required inventories and taking out debris or disposables out of the operations area.
- The operational areas can be either on left or right side of the road depending upon of the cable route alignment considered in the project preparation.

In case, excavations are to be carried out using standard/full size excavators, the corridor of impact or required width of operations area required will be at least 3.5 m, which will further reduce the available lane space for traffic movement and can lead to disruptions to vehicular traffic.

Alternatively, if corridor of impact/operations area is to be limited to bare minimum, even then, required width will be 1.6 m and in such case trench excavation needs to be carried out through manual excavation. In case manual excavation is adopted, other operations like cable pull out; lowering into trenches will spill out on to roads and outside the barricaded area for limited periods during cable laying, which can lead to traffic disruptions. The manual excavation may be essentially required in narrow roads, where LT cables are required to be laid. Also, manual excavation of cable trenches for the entire UG cabling work will be time consuming and prolog the implementation of project.

BUDGET ESTIMATE AND INSTITUTIONAL ARRANGEMENT FOR IMPLEMENTATION**7.1. GENERAL**

This chapter deals with the mitigation measures for the temporary loss of access to residential and commercial buildings and temporary loss of livelihood of squatters likely to be triggered under Package-4 of REN/UG Cabling Project.

7.2. BUDGETARY PROVISION

The implementation of RAP entails expenditure, which is a part of the overall project cost. The R&R budget gives an overview of the estimated costs of the RAP and provides a cost-wise, item wise budget estimate for the Package-4 of resettlement implementation, including compensation, assistance, administrative expense, monitoring and evaluation and contingencies. Values for compensation amounts and other support mechanism will be adjusted, based on annual inflation factor. Around 3% of the total cost has been set aside for physical contingencies. Such type of contingencies will be utilized for consultations, community preparation, administrative cost and cost arise as a result of various other unforeseen circumstances. The costs estimated mainly include structure cost and R&R assistance costs for loss of livelihood.

7.2.1. Provision for Cost of Structures

Cost of Impacted structures will be utilized by the executing agency to restore the access of residential and commercial buildings and community resources like base of hand pump, boundary walls of temple or other community buildings, signage etc. immediate after the completion of project work. While preparing the budget, the R&R team laid special emphasis on arriving at an estimate of the market value of the assets based on govt. schedule rates and prevailing market rates.

7.2.2. Provision for R&R Assistance for Loss of Livelihood

The R&R assistance amounts such as shifting allowance and subsistence allowance has been taken from approved R&R policy as prescribed in the ESMF for the project.

7.2.3. Provision for Implementation Arrangement

The cost for hiring Social Officers and M&E agency has been estimated based on other projects, activities envisaged, and number of PAPs. The budget for RAP implementation comes to **Rs. 185 Lakhs** only. The detailed budget is presented below in **Table 7.1**.

Table 7.1: Estimated Costs for Resettlement Action Plan (RAP) as per Entitlement of Provisions of ESMF under APDRP		
S.No.	Item Particulars	Total Amount
		(Rs)
1	Restoration of ramps in cement concrete of M15 Grade and Brick masonry as required per site condition as replacement cost of structures for non-title holders	
	Total Quantity assessed during impact assessment	1900 cu.m
	Add for incidental damages of Ramps/Steps during excavation @ additional 25% of the estimated quantity	475 cu.m
	Total Quantity of Ramps to be restored	2375 cu.m
	Cost @ Rs. 5000/cu.m	2375 x 5000 = Rs. 11875000
	say	118.75 Lakhs
2	Restoration of steps in cement concrete of M15 Grade and Brick masonry as required per site condition as replacement cost of structures for non-title holders	
	Total Quantity (assessed during impact assessment) of Steps to be restored @ Rs. 5000/cu.m	45.87 cu.m
	Add for incidental damages of Steps during excavation @ additional 25 % of the estimated quantity	57.34 cu.m say 58 cu.m
	Total Quantity of Steps to be restored	58 cu.m
	Cost @ Rs. 5000/cu.m	58 x 5000 = Rs. 290000
	say	2.90 Lakhs
3	Replacement cost of Other Structures (part of boundary walls, kiosk's shop, base of handpump, signages etc.)	
	Total Quantity assessed during impact assessment of other structures to be restored	174.12 cu.m
	Add for incidental damages of other structures during excavation @ additional 25 % of the estimated quantity	261.18 cum say 262 cu.m
	Total Quantity of other structures to be restored	262 cu.m
	Cost @ Rs. 5000/cu.m	262 x 5000 = Rs. 1310000
	say	13.10 Lakhs
4	One-time grant of Rs 30000 as Subsistence Allowance and Rs. 25000 as Livelihood Allowance for Squatters (stationary) as per Entitlement Matrix for REN/UG Cable Project	
	No. of Squatters eligible for subsistence & livelihood compensation as per SIA	60

Table 7.1: Estimated Costs for Resettlement Action Plan (RAP) as per Entitlement of Provisions of ESMF under APDRP		
S.No.	Item Particulars	Total Amount
		(Rs)
	Total Cost for compensating Squatters eligible for subsistence & livelihood allowances (30,000+25,000)	55000 x 60 = Rs. 3300000
	Total	33.00 Lakhs
5	One-time grant of Rs. 25000 for loss of livelihood to all squatters (ambulatory) as per Entitlement Matrix for REN/UG Cable Project	
	No. of Squatters eligible for livelihood compensation as per SIA	5
	Total Cost for compensating Squatters eligible for livelihood allowance	5 x 25000 = Rs. 125000
	Total	1.25 Lakhs
6	Hiring of Social Officers (for package 4 of REN/UG Cabling Project) over 18 months to implementation supervision of RAP	This will be provided by PMC appointed by PIU, APEPDCL
7	Hiring of agency for M & E of RAP implementation	10 Lakhs
	Total Cost of Implementation of RAP (Total of 1 to 7)	179 Lakhs
	<u>Contingency@ 3 % of Total Cost</u>	5.37 Lakhs
	Grand Total (rounded off to)	184.37 lakhs say 185 lakhs

7.3. INSTITUTIONAL ARRANGEMENTS FOR EMP IMPLEMENTATION MONITORING

7.3.1. Over-all Project Administration Mechanism - APDRP

At the apex level, the State level Project Steering Committee (SCC) constituted for NCRMP will oversee and monitor the overall progress of APDRP. The State Project Implementation Unit (SPIU) for NCRMP will act as the Project Management Unit (PMU) for APDRP and will be supported by sector experts implementing the project investments. Apart from the sector experts, the PMU also has Environmental and Social Safeguard Experts. The implementation arrangements of APDRP as included in the ESMF are shown in **Figure 7.1**.

7.3.2. Project Implementation Arrangement – REN/UG Cable Project

The REN/UG Cabling project Component will be implemented by the APEPDCL and a dedicated PIU will be housed within APEPDCL. The PIU under APEPDCL will designate a nodal officer for environmental and social safeguards management or appoint an 'Environmental and Social Safeguards Specialist Auditor' for monitoring and overseeing ESMP implementation in all 4 packages during the implementation phase. The PIU will also appoint a 3rd party agency for day to day monitoring of ESMP implementation (at package level) The PIU also further have to engage a APPCB approved laboratory, for periodical environmental monitoring of ambient air and noise level during project implementation phase The PMU will also appoint a third party auditor for safeguards management of all project components under APDRP including the REN/UG cabling project. The PIU under APEPDCL will also be responsible for quality assurance through third party auditors appointed by PMU. The implementation arrangements of REN/UG Project at PIU level is given in **Figure 7.2**.

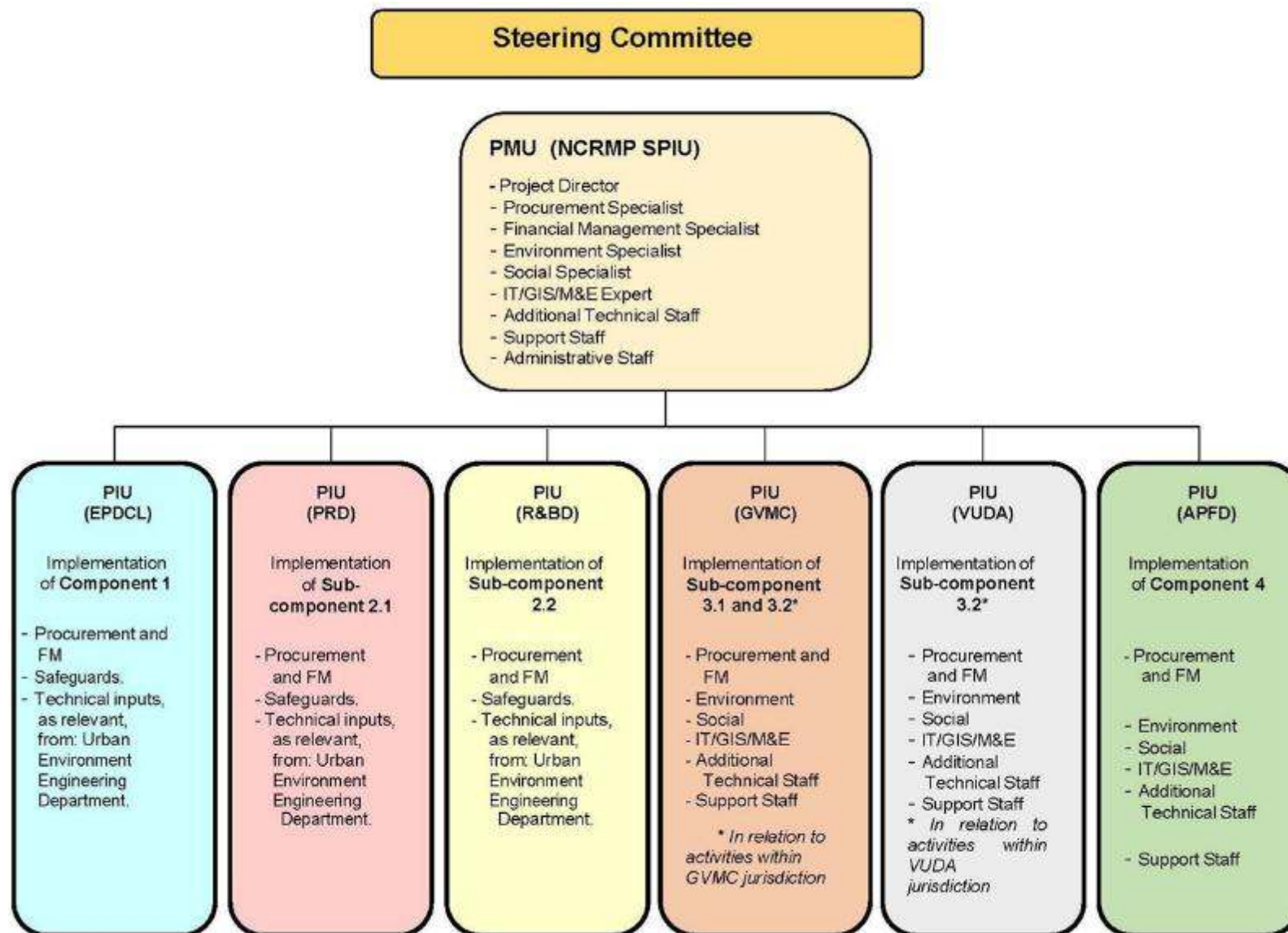


Figure 7.1: The implementation arrangements as included in the ESMF of APDRP

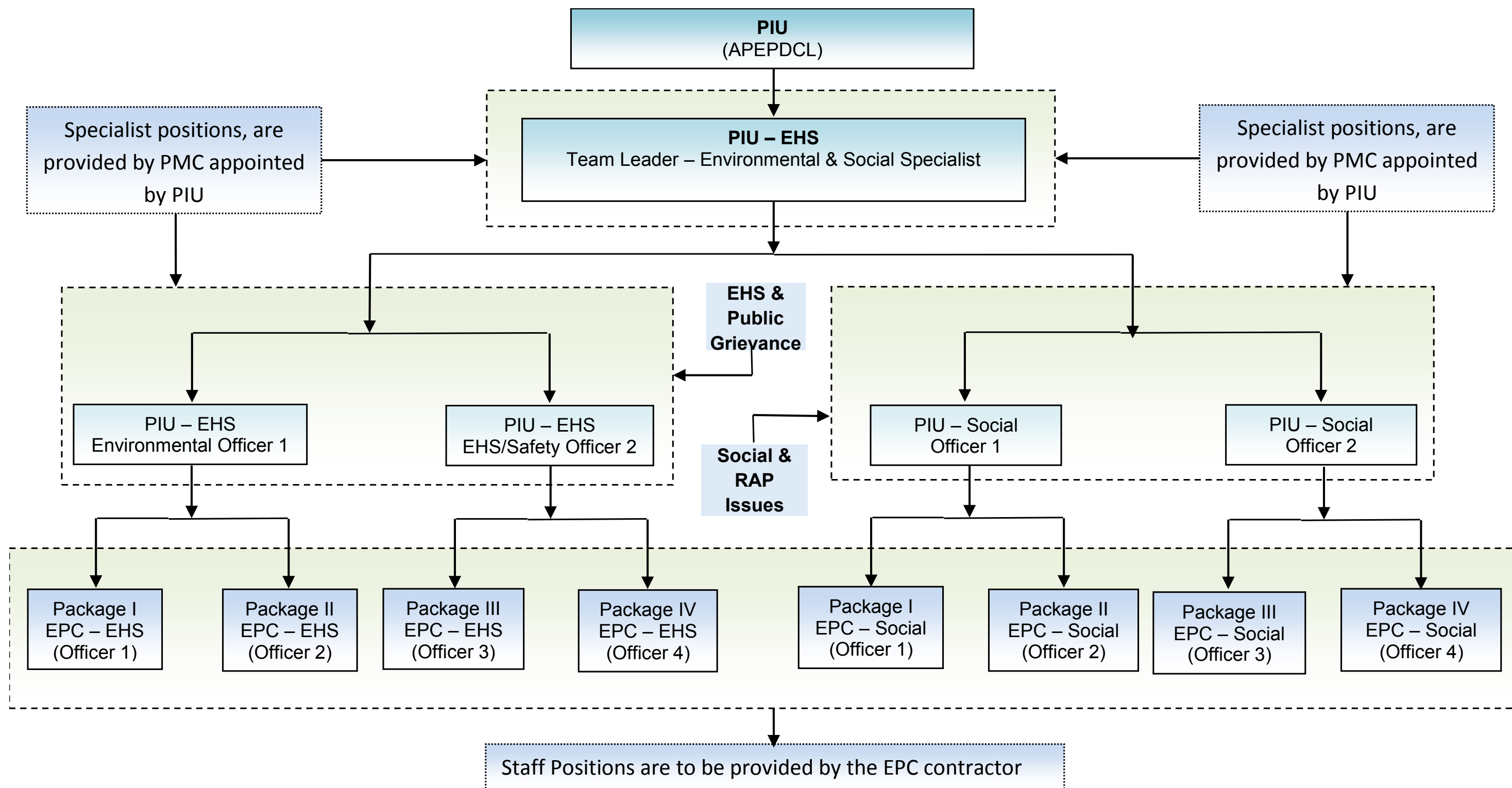


Figure 7.2: Institutional Arrangements for ESMP implementation
(Both at PMU & PIU level)

7.4. ROLES AND RESPONSIBILITIES RAP IMPLEMENTATION MONITORING

The roles and responsibilities of PMU and PIUs, particularly with respect to environmental and social safeguards management are laid out in the ESMF, APDRP. However, same has been reproduced hereunder in a summarized form for reference.

The SCC will be responsible for:

Approve project investments and help coordinate the activities of various departments, including in obtaining required approvals/ clearances for the Project. This shall be done through semi-annual review meetings, where the SCC shall:

- Review the budgets.
- Review progress against the defined milestones.
- Review critical findings of the audit and evaluation reports.
- Provide such guidance, as it may deem necessary for the Project.

The PMU will be responsible for:

- i. Overall project management and reporting;
- ii. Coordination with PIUs and line departments in approval of designs, assisting the PIUs in preparation of: Detailed Project Reports (DPRs), bidding documents, tendering schedules, etc.;
- iii. Implementation of Component 5;
- iv. Appointment of technical assistance consultants and others safeguards management support to the implementing agencies;
- v. Quality Assurance through third party audits;
- vi. Maintaining MIS and Quarterly reporting;
- vii. Progress reporting, financial management, monitoring and reporting;
- viii. Ensuring safeguards compliance with agreed implementation procedures and other Bank requirements, etc.;
- ix. Redressal of Grievance

The PIU will be responsible for:

- i. Preparation of DPRs including technical designs, surveys and investigations, etc.;
- ii. Tendering, bid evaluation, contract award, contract management, etc.;
- iii. Financial Management and safeguards compliance;

- iv. Progress and expense reporting to the PMU;
- v. Coordination with line departments for design, implementation, and hand- over arrangements;
- vi. Leading social and environment screening exercise for every sub-project site.
- vii. Integrate findings of the screening and assessments (where applicable) in the sub-project selection and/or design process.
- viii. Preparation of the EA/SA and EMP/RAP documents along with the DPRs, where applicable either through internal resources or external consultants.
- ix. On-site review for compliance with the ESMF, EMP and the RAP requirements.
- x. Take required actions, including application of contractual remedies, on contractors when needed.
- xi. Provide required update/data/information to the PIU on ESMF implementation.
- xii. Designate an officer or appoint expert(s) for environment and social management/safeguard activities.
- xiii. At the sub-project level, the contractor would be responsible for planning, executing and coordinating the implementation of the ESMF provisions as laid out in the contract documents; overseen by the concerned environmental and social management expert at PIU/Project level.
- xiv. Appoint an 'Independent/Third Party Auditor' to audit/review the implementation of the works in accordance environmental, health and safety management provisions set out in the respective contracts.
- xv. Grievance redress.

7.4.1. Independent third party auditor

The independent third party consultants will be appointed by the PMU to provide independent assurance on compliance with the ESMF across project components. The third party consultants shall:

- Support the PIU(s) in preparing the safeguards audit plan.
- Prepare compliance report for sub-project activities in line with ESMF guidelines and other statutory requirements as applicable through scheduled or unscheduled audits.
- Conducting random field visits and review compliance, especially at the environmentally or socially sensitive areas.
- Review the performance of the project through an assessment of periodical monitoring reports submitted by the line departments and PIU.
- Share REVIEW findings with the PIU to aid in timely decision making and adopting appropriate mitigation action/s, if necessary.

7.4.2. Over-all Project Supervision, Reporting and Monitoring (SRM)

The ESMF under APDRP has laid out the thematic areas that are to be supervised, monitored periodically as hereunder.

1. Periodic Physical Progress Monitoring
2. Regular Quality Supervision and Certification
3. Social and Environmental Monitoring & Third Party Quality Audit
4. Over-all Monitoring and Evaluation

7.4.3. Periodic Physical Progress Monitoring - Physical progress monitoring has to be carried out by APEPDCL on a monthly basis in their respective domains and also including environmental and social safeguards management to record and report on the progress of works. The PIU will also, in coordination with the respective beneficiaries and contractors, identify any constraints and delaying factors.

7.4.4. Environment and Social Monitoring - This will comprise of the following sets of activities:

- a) Monitoring compliance with environmental regulations, social safeguards and Environmental and Social Management Framework (ESMF) provisions and
- b) Monitoring and oversight of social and environmental issues at state/project levels.

A third party audit/review agency, appointed by PIU (specifically for REN/UG component) and PMU (common for all components under APDRP) will evaluate the level of compliance of ESMP provisions at all stages of project implementation. A comprehensive assessment report on environmental performance will be prepared by the APEPDCL at mid-term and end-term.

7.4.5. Regular Quality Supervision & Certification – PIU under APEPDCL will carry out regular quality supervision and certification, which shall form the basis of payment certification. Additionally, compliance on social and environmental aspects shall be taken into account before the bills are paid to contractors.

7.4.6. Social Monitoring

This will comprise of the following sets of activities:

- Monitoring compliance with social safeguards and Environmental and Social Management Framework (ESMF) provisions and
- Monitoring and oversight of social issues at project levels.

The internal monitoring and reporting will be done by line departments/implementing agency to PIU, which in turn will be reporting to PMU. While, for external monitoring, a Monitoring and Evaluation agency will be selected to evaluate the level of compliance with the project's social safeguard instruments. A comprehensive assessment report on social safeguard performance and implementation of RAP will be prepared by the Project Authority at mid-term and end-term.

The Social Specialist of M & E Agency shall be responsible for overseeing compliance of the sub-projects to Bank safeguards, GoI/GoAP regulations and applicable ESMF guidelines. They shall also review regularly the timely implementation of social provisions as per the ESMF, and RAP. Corrective actions shall be initiated in a planned manner as appropriate to ensure compliance to the ESMF measures.

8.1 GENERAL

This chapter deals with the Grievance Redressal Mechanism, the Grievance Redressal Cell and the legal options available to the PAPs to register their grievances.

8.2 GRIEVANCE REDRESS MECHANISM

The REN/UG cable project will not involve any land acquisition and therefore grievances related to inadequate compensation and associated issues are not anticipated/relevant. However, the most common/potential grievances could be but not limited to the following;

- Inadequate/inappropriate arrangements for access to occupants of buildings across barricaded area
- Damaged utilities like water supply, sewer/sanitary/drainage pipes etc during excavation and being non-responsive and time delays in restoration
- Noise and dust levels during construction
- Damaged ramps, steps and associated small structures during excavation, which are being shabbily restored and/or done without considering their views and/or not matching with previous condition
- Safety to pedestrian and vehicular traffic and public safety as a consequence of project operations
- Works are being executed at a slower pace, causing undue delays, which in turn extended period of their inconveniences

APEPDCL through its PIU for REN/UG cable project will establish a robust and responsive grievance redress mechanism to handle all types grievances within in a reasonable time frame and in a responsible way. The absence of a responsive grievance mechanism could trigger public resentment, despite the benefits, that the project can usher on society.

The REN/UG cable project will establish a package wise grievance redress mechanism (GRM) as shown in the **Figure 8.1**. The PIU will be primarily responsible for implementing the GRM, the contractor will also be severally and jointly responsible to receive and resolve complaints in a time-bound and effective manner and in close co-ordination with PIU.

The PIU-EHS, the package level in-charge for RAP implementation and supervision will establish a procedure for receiving grievances both online (through APEPDCL's web site) and offline at respective operational areas. APEPDCL will widely publicize and extend its present online compliant registration system as well as 24x7 call centre number 1912 (will be displayed on barricades along operational areas and elsewhere as required) to receive complaints/grievances related to REN/UG cable project. The GRM will include procedure for recording/documenting key information, and evaluating and responding to the complaints as per time frame stipulated in GRM. All concerns received/raised through the GRM are to be addressed earnestly, transparently and in a time bound manner, without retribution to the grieved/affected person(s).

The PIU and contractor periodically will inform the general public along the cable route

alignments, which have been opened up for cable laying on the available grievance redress procedure(s), whom to contact and when, where and how to file a grievance, time likely to be taken to redress minor and major grievances, etc.

The type and number of grievances received, resolved and outcomes are to be displayed /disclosed at PIU and included in the periodic progress reports and documented for the entire project implementation phase.

8.2.1 Legal Options to PAPs

The PAPs who are not satisfied with the mechanism given above has option to avail general legal environment consisting of court of law to address their grievance as per RFCTLARR 2013. These options will be disclosed to the PAPs during the public consultation process.

8.2.2 Grievance Redress Service of the World Bank

In addition to seeking to resolve their grievances through the GRM established at the government level, “communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project such as this operation may also submit complaints to the Grievance Redress Service (GRS) established by the World Bank. The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may also submit their complaint to the WB’s independent Inspection Panel, after having brought the complaint to the World Bank’s attention through its GRS. Information on how to submit complaints to the World Bank’s Grievance Redress Service is available at <http://www.worldbank.org/GRS>. Information on how to submit complaints to the World Bank Inspection Panel is available at www.inspectionpanel.org

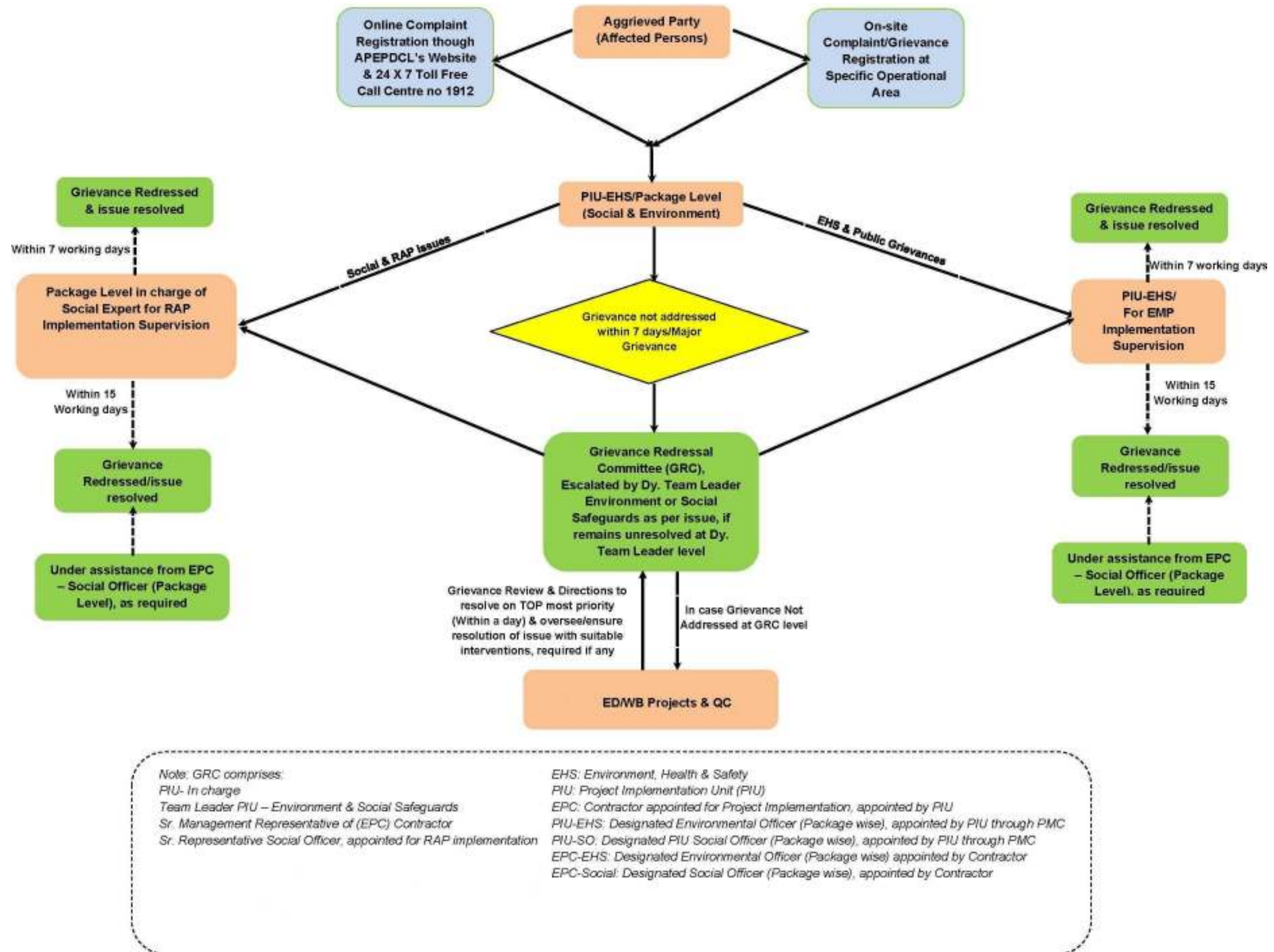


Figure 8.1: Grievance Redressal Mechanism under REN/UG Project

Annexure-1
Questionnaire Census and Socio-Economic Survey

Environment and Social Impact Assessment: Resilient Electrical Network (APDRP)

Census/Socio Economic Survey Questionnaire

Date										Road No.		Lane Name	
				2	0	1	5						
Investigator Name								Supervisor Name		Respondent Name			

A. IDENTIFICATION

A.1 General Identification.											
State				District				Zone			
A.2 Type of Property											
Private		Government		Trust		Community		Others			
1		2		3		4		5			
A.3.1 Ownership											
Owner	1	Tenant	2	Non-Titleholder	3						
A.3.2: If Non-Titleholder:				1. Encroacher				2. Squatter			
A.3.2 Occupiers Name:						Son/Wife of:					
A.3.3 Name, Address, Phone Number and LANDMARK											
A.3.4 If Tenant; Name, Address and Phone Number of the Owner											
A.3.5 Please provide with an ID Proof (Ration card, Voter Id, PAN Card, Driving Licence, any ONE) Record the details:											

B.1 ASSET DETAILS

B.1 Details/Measurement of the Structures: (In mts.)															
Age of Structure	Length:		Breadth:		Area		Type of construction			Typology of structure			Type of Use (Code)	Distance from Edge of the Road	
	Total	Affected	Total	Affected	Total	Affected	R	W	F	P	SP	K			
										1	2	3			
Type of Construction :															
Roof		Wall		Floor		Boundary									
RCC/RBC		1		Brick		1		Concrete		1		Brick		1	
Thatched		2		Wood		2		Mud		2		Barbed Wire		2	
Mud		3		Mud		3		Stone		3		Wood		3	
GI / Asbestos		4		Asbestos		4		Wood		4		Others (specify)		9	
Bamboo		5		Plastic		5		Others (specify)		9					
Others (Specify)		9		Others (specify)		9									
Type of Use:															
Residential		1		Commercial		2		Residential cum Commercial		3		Open Land/Plot		4	
Plantation/ Orchard		5		Graveyard		6		School		7		PHC/Hosp./Dispensary.		8	
Industrial		9		Mazar		10		Temple		11		Masjid		12	
Church		13		Shrine		14		Vill Com/ Panchyat/Govt. Land		15		Agriculture		16	
Waste/ Grazing/ Barren		17		Others (specify)		99									

B2. In case of commercial use, details of business					
Tes Stall	1	Kabari Shop	9	Blacksmith	17
Grocery (Kirana)/General Store	2	Educational Institution	10	Butcher/meat	18
Vegetables/ Fruits	3	Hotel/Restaurant/Motel	11	Barber Shop	19
Cloth/Garments	4	Electrical	12	Medicine Shop	20
Tailor shop	5	Furniture	13	Shoe Maker	21
Pan/ Cigarette Shop	6	Petrol Pump	14	STD PCO	22
Garage/	7	Handicrafts	15	Photocopy shop	23
Lubricant Shop	8	Video parlour/Cyber café	16	Any other, please specify	99
B.2.1 - Ownership		Yes		1	No
B.2.2 - If No, how many partners? (In Nos.)					
B.2.3 - How many people have you employed?					
B.2.4 - Do you think excavation in front of your shop will affect your business adversely?		Yes	1	No	2
B.2.5: Where would you prefer to move from here? (Residential and Commercial Both)					
S.No	Place	Where (Specify)		Distance from Current Location	
1	Within same locality				
2	Outside the locality				

C.1. HOUSEHOLD DETAILS

C.1.1. Religion	Hindu - 1	Muslim - 2	Sikh 3	Christian 4	Others 9		
C.1.2. Caste	ST (hills)	ST (Plain)	SC	MOBC	OBC	General	Others
	1	2	3	4	5	6	9
C.1.3 Name of Tribal Group							
C.1.4 Vulnerability Status	BPL	1	WHH	2			
C.1.5. Type of Family	Nuclear	1	Joint	2	Extended	3	
C.1.6. No. of Persons in HH	Above 15 yrs (in nos.)			Below 15 yrs (in nos.)			

C.2. Family Profile. (Start from Head of the Household)

Member Number	1	2	3	4	5	6	7	8	9	10	11	12	
C.2.1 Name													Write names of all persons who live and eat together in this household but exclude persons under the age of 15 years.
C.2.2 Relationship	HH												Codes given below
C.2.3 Sex	1	1	1	1	1	1	1	1	1	1	1	1	Male
	2	2	2	2	2	2	2	2	2	2	2	2	Female
C.2.4 Age													Age on last birthday
C.2.5 Marital Status	1	1	1	1	1	1	1	1	1	1	1	1	Married
	2	2	2	2	2	2	2	2	2	2	2	2	Unmarried
	3	3	3	3	3	3	3	3	3	3	3	3	Divorced
	4	4	4	4	4	4	4	4	4	4	4	4	Separated
	5	5	5	5	5	5	5	5	5	5	5	5	Widow/Widower
C.2.6 Education	1	1	1	1	1	1	1	1	1	1	1	1	Illiterate
	2	2	2	2	2	2	2	2	2	2	2	2	Primary (class 4)
	3	3	3	3	3	3	3	3	3	3	3	3	Secondary (5 - 10)
	4	4	4	4	4	4	4	4	4	4	4	4	Higher (graduate)
	5	5	5	5	5	5	5	5	5	5	5	5	Technical
	6	6	6	6	6	6	6	6	6	6	6	6	Vocational
C.2.7 Health	1	1	1	1	1	1	1	1	1	1	1	1	Handicap by birth
	2	2	2	2	2	2	2	2	2	2	2	2	Handicapped later
	3	3	3	3	3	3	3	3	3	3	3	3	Chronic illness
	4	4	4	4	4	4	4	4	4	4	4	4	No illness/ healthy

Codes for Relationship

Head of the House Hold	HH	Wife	2	Husband	3	Son	4
Daughter	5	Son-in-law	6	Daughter-in-law	7	Grandfather	8
Grandmother	9	Grandson	10	Grand daughter	11	Grandson-in-law	12
Grand daughter-in-law	13	Brother	14	Sister	15	Brother-in-law	16
Sister-in-law	17	Father	18	Mother	19	Father-in-law	20
Mother-in-law	21	Uncle	22	Aunt	23	Cousin	24
Nephew	25	Niece	26	Any other (specify)			

D.1. EMPLOYMENT STATUS OF THE FAMILY MEMBERS

D.1 Employment Status	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Yes
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	No
D.2 Occupation (Main occupation)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Agriculture
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	Agri Labour
	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	Non Agri Labour
	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	Business/Trade
	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	Govt. Service
	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	Private Service
	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	Maid Servant
	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	Others
D.3 Non-Working Status (Give main reason)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	No work available
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	Seasonal inactivity
	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	Household duties
	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	Old/young
	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	Handicapped
	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	Student
	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	Others
D.4 Income per month	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Less than Rs.2000
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	Rs.2000 - 3000
	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	Rs. 3000 - 4000
	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	Above Rs 4000
D.5 Skills																This may have Multiple answers

D.6: INCOME AND EXPENDITURE

Income				Expenditure			
Sources	In Rupees		Items	In Rupees	Items	In Rupees	
Agriculture			Food		Electricity/Utilities		
Commercial			Cooking fuel		Water		
Service (Pvt./Govt.)			Clothing		Social events		
Livestock			Transport		Agriculture (labour/tools)		
Remittance (money order, etc)			Healthcare Medicines		Seeds/fertilizers/pesticides		
Others (Specify)			Education		Others (specify)		
Total					TOTAL		

D.7 PROJECT RELATED INFORMATION

Are you aware of the proposed project	Yes	1	No	2
If yes what is the source	TV - 1	Newspaper - 2	Govt. officials - 3	Other villagers - 4
				Other - 9
Positive impacts perceived		Negative Impacts Perceived		
Reduced sufferings during cyclones and adverse climatic conditions	1	Loss of livelihood		1
Improved access to services	2	Loss of access to houses/ businesses		2
Productive use of time	3	Loss of structures/ assets		3
Increase in business opportunity	4	Increase in accidents during and after construction		4
Improvements in quality of life	5	Disruption of utilities such as water, electricity, telephone, cable, etc		5
Others (specify)	9	Others (specify)		9

D.8 REHABILITATION OPTIONS

OWNER		Commercial structure	
What is preferred rehabilitation measure	Cash compensation at replacement cost		1
	Shifting, and rental allowance and training		2
	Others (specify)		9
TENANT		Commercial structure	
What is preferred rehabilitation measure	Shifting, and rental allowance and training		1
	Others (specify)		9

D.10 Provide a hand-sketch drawing indicating the dimensions of the property (Structure/Land) in this blank space along with the land mark)

Questionnaire for Enumeration of Structures

Details of Affected Structure												
S. No.	ID No. Road Number/01	Latitude	Longitude	Road Type (Code)	Type of Structure	Affected Area of Structure			Pole <0.3 mt-1 >0.3mt-2	Tree		Ownership of Property (Code)
						Length	Width	Area		<0.3 mt-1 (S, M, B)	>0.3mt-2 (S,M,B)	
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												

Code

Type of Road: BT-1, CC-2, Mud Road-3, No Road-4

Type of Structure: Ramps-1, Steps-2, Stall/ Shop-3, Pushcart-4, Others (Specify)-5

Ownership of Property: Private-1, Squatter-2, Religious committee-3, Govt department-4

ANNEXURE -2 PUBLIC CONSULTATION (PRIMARY STAKEHOLDERS)

PUBLIC CONSULTATION AT SAGAR NAGAR – ADIBATLANAGAR FEEDER

[illegible]

ATTENDANCE SHEET OF PUBLIC CONSULTATION

S. No.	Name of person	Sex	Occupation	Phone Number	Signature
①	K. APPALA NARASAYA	M.			K. Appala Narasaya
②	G. APPALA REDDY	M.		9967547688	G. Appala Reddy
③	D. RAMANA REDDY	M.		9394171136	x. PRAMANA
④	K. APPALA DASU	M.		7702228439	x. K. Appala Dasu
⑤	G. APPALA REDDY	M.	GOVT. SDB	9694184124	G. Appala Reddy
⑥	K. NAGAMANI	F	HOUSE WIFE	7702228439	K. Nagamani
⑦	K. APPAYAMMA	F	HOUSE WIFE		K. Appayamma
⑧	P. RAMA	F	HOUSE WIFE	8519889671	P. Rama
⑨	MERS LAKSHMI	F			Mers Lakshmi
⑩	V. MADHAMMA	F	HOUSE WIFE		V. Madamma
⑪	D. MUTHAYA REDDY	M.	CAR DRIVER	8341190304	D. Muthaya Reddy
⑫	B. ESWAR REDDY	M.	SALE LADDER	8577858886	B. Eswar Reddy
	G. CHINAYYA	M.		9869071617	G. Chinayya
	D. CHINA	M.	LYBAR	961366569	D. China



PUBLIC CONSULTATION AT SAGAR NAGAR – ADIBATLANAGAR FEEDER

PUBLIC CONSULTATION AT LALITHA TEMPLE – RUSHIKONDA FEEDER



PUBLIC CONSULTATION WITH LOCAL PEOPLE

Appendix-

Date	Road Number Lane Name	Issue Discussed	Suggestion given by local people	Remarks if any
30-07-16		1. అవకాశం కల్పించి నిర్మించాలి.	1. నిర్మాణం అవసరం ఉన్నా దానిని	
		2. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	2. కేంద్రం ఏర్పాటు	
		3. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	3. నిర్మాణం అవసరం ఉన్నా దానిని	
		4. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	4. కేంద్రం ఏర్పాటు	
		5. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	5. నిర్మాణం అవసరం ఉన్నా దానిని	
			6. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			7. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			8. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			9. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			10. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			11. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			12. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			13. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			14. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			15. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			16. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			17. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			18. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			19. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	
			20. రోడ్డు పక్కన ప్రాంతాలను నిర్మించాలి.	

ESIA-Resilient Electrical Network

Andhra Pradesh Disaster Recovery Project

ATTENDANCE SHEET OF PUBLIC CONSULTATION

S. No.	Name of person	Sex	Occupation	Phone Number	Signature
①	Y. APPALA RAO	M	OWN BUSINESS	9866481464	Y. Appala Rao
②	C. CHENNA	M	PRESENET	90590 77999	C. Chenna
③	G. RAMANA	M	DEALY LABOUR	—	G. Ramana
④	S. AMMA RAMMA	F	TEA SHOP		S. Amma Ramma
⑤	G. DURGA RAO	F	HOUSE WIFE		G. Durga Rao
⑥	K. RAMANAMMA	F	HOUSE WIFE	7386462711	K. Ramanamma
⑦	U. RAMA LAKSHMI	F	HOUSE WIFE		U. Rama Lakshmi
⑧	B. NARASIMHAMMA	F	HOUSE WIFE		B. Narasimhamma
⑨	P. GOPI KRISHNA	M	EDUCATION	8520523297	P. Gopinath
⑩	A. JANYAS RAO	M	G.V.M.C WORKER	9573187644	A. Janayasa Rao
11	V. Lakshmi Rao	M	CHIEF	95756 55564	V. Lakshmi Rao
12	U. Durga	M	Barber	7036657516	U. Durga

PUBLIC CONSULTATION AT RAMALAYAM STREET - VIMS FEEDER

Appendix

PUBLIC CONSULTATION WITH LOCAL PEOPLE

Date	Road Number Lane Name	Issue Discussed	Suggestion given by local people	Remarks if any
27-07-16		1. ముంజుగూడ రోడ్డు పక్కం.	1. పనులు పూర్తి చేయాలి.	
		2. ముంజుగూడ రోడ్డు పక్కం.	2. రవాణా సౌకర్యం పెంచాలి.	
		3. ముంజుగూడ రోడ్డు పక్కం.	3. పనులు పూర్తి చేయాలి.	
		4. ముంజుగూడ రోడ్డు పక్కం.	4. రవాణా సౌకర్యం పెంచాలి.	
		5. ముంజుగూడ రోడ్డు పక్కం.	5. పనులు పూర్తి చేయాలి.	
			6. రవాణా సౌకర్యం పెంచాలి.	
			7. పనులు పూర్తి చేయాలి.	
			8. రవాణా సౌకర్యం పెంచాలి.	
			9. పనులు పూర్తి చేయాలి.	
			10. రవాణా సౌకర్యం పెంచాలి.	
			11. పనులు పూర్తి చేయాలి.	
			12. రవాణా సౌకర్యం పెంచాలి.	
			13. పనులు పూర్తి చేయాలి.	
			14. రవాణా సౌకర్యం పెంచాలి.	
			15. పనులు పూర్తి చేయాలి.	
			16. రవాణా సౌకర్యం పెంచాలి.	
			17. పనులు పూర్తి చేయాలి.	
			18. రవాణా సౌకర్యం పెంచాలి.	
			19. పనులు పూర్తి చేయాలి.	
			20. రవాణా సౌకర్యం పెంచాలి.	

PSA - Resilient Electrical Network

Andhra Pradesh Disaster Recovery Project

ATTENDANCE SHEET OF PUBLIC CONSULTATION

S. No.	Name of person	Sex	Occupation	Phone Number	Signature
(1)	Y. Srinivas Reddy	M	President	9700374123	Y. Srinivas Reddy
(2)	E. Lakshmi	F	HOUSE-WIFE	9963695831	E. Lakshmi
	D. Lakshmi	F	HOUSE-WIFE	-	D. Lakshmi
	B. Achiamma	F	HOUSE-WIFE	-	B. Achiamma
	V. Naga Appa Rao	M	VISAKHA-DAIRY	9949510790	V. Naga Appa Rao
	M.V. Lakshmi	F	TEACHER	9949716879	M.V. Lakshmi
	CH. Rajeswari	F	HOUSE-WIFE	9502102386	CH. Rajeswari
	S. Alivani	F	HOUSE-WIFE	9899816768	S. ALIVANI
	Y. SUDHA	F	ASHA-WORKER	9550232346	Y. Sudha
	Y. Biji	F	HOUSE-WIFE	703283829	Y. Biji
	A. Satya Narayana	M	Electrician	7207750933	A. Satya Narayana
	B.V. Ramana	M	POLICE (Retd)	7207279076	B.V. Ramana
	G.V. Raju	M	Business	9866382499	G.V. Raju
	D. Sathish Babu	M	Business	7159898871	D. Sathish Babu
	K. Ramana Babu	M	Business	9809595025	K. Ramana Babu

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[illegible]



PUBLIC CONSULTATION AT RAMALAYAM STREET - VIMS FEEDER

PUBLIC CONSULTATION AT GOLAYENDADA - YENDADA FEEDER



PUBLIC CONSULTATION WITH LOCAL PEOPLE

Appendix-

Date	Road Number / Lane name	Issue Discussed	Suggestion given by local people	Remarks if any
26-07-20	R-160		ఈ సర్కిల్ కలెక్షనర్స్ కు ఈ సర్కిల్	
	Urelayenthan		వారంకోసం ఎంబీబీ రోడ్డు మీద	
Yendab	Yendada		పెట్టేట సర్కిల్ ఫర్మి, ఐస్ కలెక్షనర్	
			కూడా - ఐస్ కలెక్షనర్ నెలకొని	
			ఈ సర్కిల్ కలెక్షనర్స్ కు నగరం మీద	
			చెట్లకు, ఇంకా సాంకేతిక మెట్ల	
			మరింతగా కాపాడుకోవాలి.	
			ప్రైవేట్ : ఇంకా ఎంబీబీ కి ఎంబీబీ	
			కలెక్షనర్స్ కు ఇవ్వాలి.	
			ఈ సర్కిల్ కు ఇంకా సర్కిల్	

ES/AC - Resilient Electrical Network

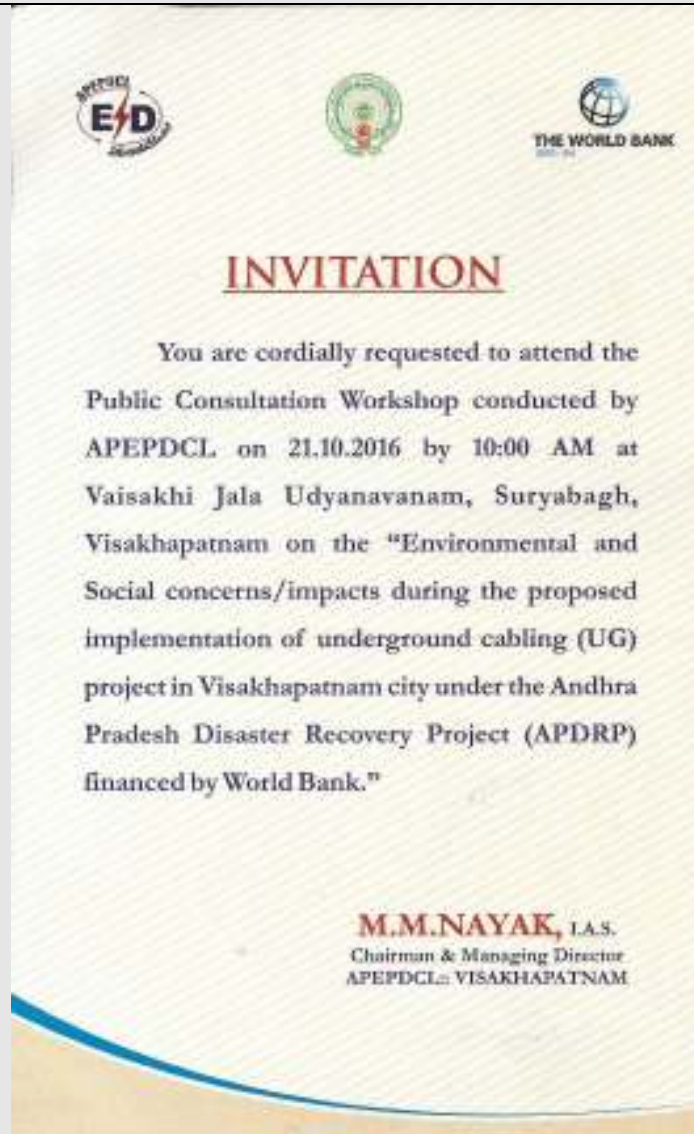
ఈ సర్కిల్ వారంకోసం రోడ్డు

సర్కిల్ ఐస్ కలెక్షనర్ ఈ సర్కిల్ కలెక్షనర్.

Andra Pradesh Disaster Recovery Project

ATTENDANCE SHEET OF PUBLIC CONSULTATION

S. No.	Name of person	Sex	Occupation	Phone Number	Signature
①	G. VISAYA	F	ANGANWADI TEACHER	8019781987	G. Visaya
②	T. NARAYAN RAO	M	PRESENT	9949867826	T. Narayan Rao
③	D. RAVI KUMAR	M	G.V.M.C. SWPER	8143610908	R. Ravikumar
④	B. CHANDRA	M	DAILY LABOUR	-	B. Chandra
⑤	S. Kondamma	F	HOUSE-WIFE	-	S. Kondamma
⑥	S. Appalaxanthamma	F	HOUSE-WIFE	-	S. Appalaxanthamma
⑦	V. parvathi	F	HOUSE-WIFE	9550812163	V. Parvathi
⑧	P. Ramanamma	F	HOUSE-WIFE	-	P. Ramanamma
⑨	D. Vimaladevi	F	Anganwadi Worker	9032459912	D. Vimaladevi
⑩	T. surudamma	F	HOUSE-WIFE	9666215538	T. Surudamma
⑪	T. Appiamma	F	HOUSE-WIFE	-	T. Appiamma
⑫	T. parvathi	F	HOUSE-WIFE	9177677538	T. Parvathi
⑬	V. Santhi	F	HOUSE-WIFE	9573821948	V. Santhi
⑭	S. GETHA LATHA	F	HOUSE-WIFE	9059340277	S. Gethalatha





Eastern Power
Distribution Company of A.P. Ltd
ఆంధ్ర ప్రదేశ్ తూర్పు ప్రాంత విద్యుత్ పంపిణీ సంస్థ

- + ಕುರಿತು, ಉದಾಹರಣೆ, ಉಳಿತಾಯ ಮೊದಲಾದ ವಿಷಯಗಳನ್ನು ಸ್ಪಷ್ಟಪಡಿಸುವ ಛಾ ಅಧಿಕಾರವನ್ನು ಸ್ಪಷ್ಟಪಡಿಸುವ ಕಾನೂನು.
- + ಸ್ವಾಭಾವಿಕವಾಗಿರುವ, ಛಾ ಸ್ವಾಭಾವಿಕವಾಗಿರುವ ವಿಷಯವನ್ನು.
- + ಸ್ವಾಭಾವಿಕವಾಗಿರುವ, ಛಾ ಸ್ವಾಭಾವಿಕವಾಗಿರುವ ವಿಷಯವನ್ನು.
- + ಸ್ವಾಭಾವಿಕವಾಗಿರುವ, ಛಾ ಸ್ವಾಭಾವಿಕವಾಗಿರುವ ವಿಷಯವನ್ನು.
- + ಸ್ವಾಭಾವಿಕವಾಗಿರುವ, ಛಾ ಸ್ವಾಭಾವಿಕವಾಗಿರುವ ವಿಷಯವನ್ನು.
- + ಸ್ವಾಭಾವಿಕವಾಗಿರುವ, ಛಾ ಸ್ವಾಭಾವಿಕವಾಗಿರುವ ವಿಷಯವನ್ನು.

- [illegible]

- All chain drains along work areas will be cleaned before and after works, so that drainage pattern is not altered.
- All roads, which will be dug up for cable laying will be restored to its previous condition.
- Road side vendors who are likely to be effected directly or indirectly will also be suitably compensated as per provisions of APDRP.
- A grievance redressal mechanism (GRM) will be established to resolve and redress all types of complaints / disruptions as a result of UBC laying operations.
- APEOCL will also be appointing an authority specially to redress all social concerns of the affected street side vendors to resolve their issues and ensure proper compensation as per APDRP rules is disbursed to the affected vendors.

