Gujarat State Disaster Management Authority

Executive Summary – SIA/RAP

Consultancy Services for Conducting Environment Impact Assessment (EIA), Social Impact Assessment (SIA) And Preparation of Environment Management Plan (EMP) & Resettlement Plans for Underground Electrical Cabling Works at Gandhidham and Adipur Cities Of Kutch District, Gujarat

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Enhancing Society Together

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Executive Summary

1.0 Background

The "National Cyclone Risk Mitigation Project" (NCRMP II) is being implemented by the National Disaster Management Authority (NDMA) with support from the Ministry of Home Affairs (MHA), GoI. It includes states of Gujarat, Maharashtra, Kerala, Karnataka and Goa on the west coast and West Bengal on the east coast. The project seeks to achieve its objectives by undertaking structural and non-structural measures under its four main project components:

Project Development Objective (PDO)

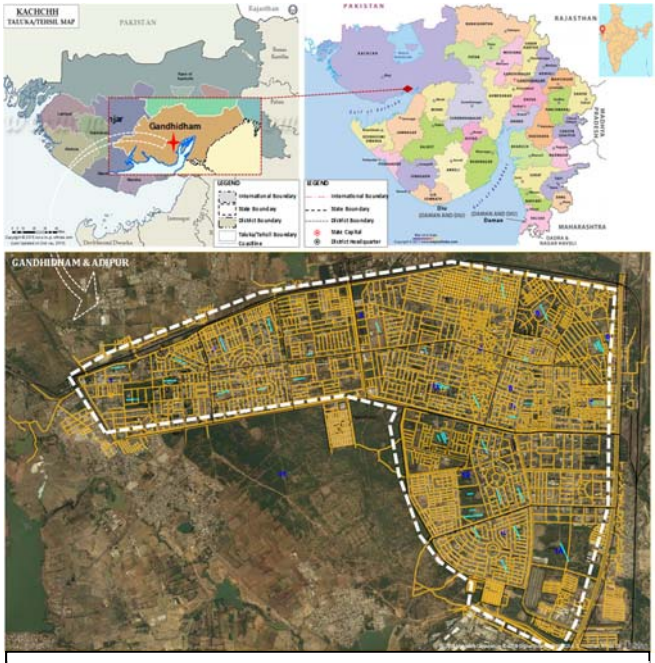
To reduce vulnerability to cyclones and other hydro-meteorological hazards of coastal communities in project states and increase the capacity of the State entities to effectively plan for and respond to disasters.

A. Early warning Dissemination Systems
B. Cyclone Risk Mitigation Infrastructure
C. Technical Assistance for Multi-Hazard Risk Management and
D. Project Management and Implementation Support

The Gujarat Disaster Management Authority (GSDMA) is the nodal agency for the implementation of the NCRMP II project in Gujarat.

2.0 Sub-Project

The sub-project "underground electrical cabling works at Gandhidham and Adipur cities of Kutch district, Gujarat" is covered under sub-component B1 (Cyclone Risk Mitigation Infrastructure in Gujarat) of Component B (Cyclone Risk Mitigation Infrastructure), NCRMP II.



Sub-project Location - Gandhidham & Adipur, Kutch, Gujarat

The impact of climate change hazards & natural calamities is threatening the economic growth of the State and is also disproportionately affecting the vulnerable who are least equipped with the resources to adapt to changing conditions.

In the past, Gandhidham and Adipur cities were severly affected by :

- the cyclonic storm that made landfall on the coast of Kandla (Kutch) near the city of Gandhidham on June 09, 1998. 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 6 meters. The tide gauge at Kandla reported maximum storm surge of 1.5 meters above the astronomical tide. The death toll from the cyclone was about 10000.
- a severe earthquake (on January 26, 2001) that measured 7.9 on richter scale. The epicenter being Bhachau (kutch), Gandhidham & Adipur and the entire kutch region faced tremendous loss of human lives & infrastructure. The death toll was about 60000.

These cyclone & earthquake caused extensive devastation in all the affected districts, uprooting vast number of trees, damaging roads, public buildings, livelihoods and disrupting telecommunications and power infrastructure.

The Need is to move forward towards a resilient infrastructure that can serve as a foundation for growth and economic development of Gandhidham-Adipur cities and help build disaster resilient-communities thus, ensuring development benefits over the longer term. The robustness of UG electrical network to the effects of high speed cyclonic wind gust when compared to the overhead electrical system makes it a more viable choice when providing a safe environment in all aspects.

This sub-project is part of a package to support Government of Gujarat (GOG) for reconstruction and recovery efforts and to strengthen its capacity to manage future disasters. Hence, the conversion of existing overhead HT & LT electrical lines into underground electrical cabling network has been proposed in Gandhidham and Adipur cities of Kutch district to provide a resilient infrastructure that can withstand natural disaters like cyclones. The underground electrical cabling works will be implemented by the Paschim Gujarat Vij Company Ltd (PGVCL).

Significant features of an Underground Electrical Cabling network are:

- **Resilient infrastructure-** It is safer to public lives and property particularly of vulnerable sections of society, during calamities/disasters/thunders/lightening instances, reduces risk of vehicular accidents, electrocutions etc.
- **Reliable-** Effective and reliable alternative to overhead lines due to real-time monitoring, low wear and tear risk, reduced outages (about half of their equivalent overhead networks), etc.
- **Low carbon footprint & energy *s*avings-** Approx. 30% lower power losses in comparison to overhead lines at high circuit loads. Improved system efficiency in UG cables, lowering greenhouse gas emissions and energy savings.
- **Safe and aesthetic-** UG cable network enhances the visuals of the area which improves aesthetics, higher public acceptance and convey environmental benefits. Also, it reduces the vehicular accident risks due to removal of HT and LT poles along the road side.

Key Benefits of Undergrounding the existing overhead electrical network are:

- All areas covered under this project will ensure to practically remain unaffected in future from power disruptions and associated implications during or after cyclone/high winds or natural calamities/extreme weather conditions, hence, resilient to natural disasters, the main project development objective of UG cabling project component under NCRMP II.
- UG cables have lower transmission losses and can absorb emergency power loads. UG cables have lower maintenance costs and emit no electric field and can be engineered to emit a lower magnetic field than an overhead line.
- While the upfront investment required for an underground cable distribution system is higher, the recurring expenses are lower and therefore a fair financial comparison with overhead lines should consider the NPV of both types of costs over a long planning period e.g. 25 to 30 years. In most cases, underground cabling turns out to be cost effective in a financial sense.
- It is an established fact that UG Cable network will lower the transmission losses, which will result in energy saving and subsequently reduction in green house gases (GHG) for generation of saved energy/electricity for UG Cable network.
- UG cables are not affected by momentary interruptions as occurring from lightning and falling of tree branches on overhead lines, which de-energize and then re-energize the circuit moment later, a most common feature in over head lines.

- It will substantially conserve state's resources required during re-construction of damaged electrical network after the devastation caused by a cyclone and other natural disasters.

3.0 Objectives of the Assignment

The overall objective of the project is to carry out Social Impact Assessment (SIA) of the proposed project and to identify adverse social impacts; prepare commensurate Resettlement Action plan to mitigate the impacts that are likely to arise due to implementation of the proposed sub-project and ensure that the proposed works are designed and constructed in line with the regregulations made of Government of India and Government of Gujarat. The specific objectives of the assignment are as below:

- To assess the social impacts and issues in line with the over-all guidance given under the project's approved Environmental and Social Management Framework (ESMF).
- To prepare a baseline/existing conditions; analysis of data/information; consultations with stakeholders and; assessment of impacts, including any alternatives that can help avoid/minimize the identified impacts.
- To review and verify the adequacy of existing system/practices for application of relevant safeguard procedures and practices, and adherence to various applicable regulations/rules and guidelines detailed out in the ESMF.
- Preparation of relevant/comprehensive sub-project specific SIA and RAP, including resettlement budget for implementation of RAP.

4.0 Approach & SIA Methodology

Our approach follows a goal-oriented methodology, wherein the social impact assessment was carried out in close coordination with technical/engineering team of PGVCL. There were intensive consultations with various stakeholders for providing necessary inputs to the study. The methodology for the study included the following:

- Desk-Based Assessment
- Reconnaissance Surveys
- Social Screening
- Census Survey
- Socio-Economic Survey
- Transect Walk
- Videography & Photography
- Stakeholders Engagement

5.0 Legal framework

This deals with the applicable acts, notifications, guidelines and policies in context of the underground electrical cabling works at Gandhidham and Adipur cities. The ESMF has been prepared as per Government of India and World Bank's Operation Policies for Social and Environmental Safeguards. The PaschimGuajaratVij Company Ltd (PGVCL – implementing agency) will ensure compliance of legal and regulatory framework during the project cycle.

Safeguard policies of the World Bank relevant to the proposed UG electrical cable project are:

- **Indigenous Peoples (referred as tribal in Indian context) (OP/BP 4.10):** The policy underscores the need to identify indigenous peoples, consult with them, ensure that they participate in, and benefit

from Bank-funded operations in a culturally appropriate way - and that adverse impacts on them are avoided, or where not feasible, minimized or mitigated. Based on site visits, initial consultations with stakeholders and local people no specific locality or area within the city where tribal population with distinct socio-cultural identity vis-à-vis the mainstream population have been reported. The socio-economic survey also confirms non-availability of tribal habitations with unique socio-cultural identity in Gandhidham and Adipur cities. As such OP 4.10 is not triggered.

- **Involuntary Resettlement (OP 4.12):** Policy is intended to ensure that affected persons are assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-impact levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. This policy is triggered as the proposed sub-project implementation is likely to impact encroachers and squatters along the proposed electrical cabling route particularly, in congested areas and may lead to loss of shelter, access, ramp, platform, sources of livelihood, etc. The above policy is thus applicable and adverse impacts would be mitigated as per entitlements covered in ESMF of NCRMP II..

The National Legal and Regulatory Compliances Acts, guidelines, laws and policies pertaining to this project are:

- **The Right to Fair Compensation and Transparency in Land Acquisition & Rehabilitation and Resettlement Act 2013 (Act 30of 2013) & The Right to Fair Compensation and Transparency in Land Acquisition and Rehabilitation and Resettlement (Gujarat Amendment) Act, 2016 (Act 12 of 2016): Not applicable** as the land acquisition is not proposed in this sub-project therefore, the provisions of this Act (compensation and R&R assistance as per First & Second Schedule) will not apply unless otherwise requirement of additional land is necessitated during the time of implementation.
- **Government of Gujarat (Resolution No LAQ 22-2014 /179 / GH) dated 10 /11 / 2016:** ***Not applicable*** as the above resolution will apply only when land acquisition is proposed, which is not the case with the sub-project .
- **The Right to Information Act, 2005:** ***Applicable*** as under the provisions of this citizens may seek information by following due procedure in order to promote transparency and accountability in the working of the public authorities.
- **Resettlement and Rehabilitation Principles:** ***Applicable*** as the sub-project activities involve adverse impacts on land, structure, livelihood and other assets and hence, a Resettlement Policy Framework has been formulated to lay down the principles and procedures for social impact assessment and preparation of Resettlement Action Plan
- **Entitlement Matrix:** The entitlement matrix for NCRMP II has been prepared in accordance with the Central & State Acts and World Bank Operational Policies 4.12 & 4.10 dealing with involuntary resettlement and indigenous people for projects across participating states. The PAPs will be eligible for a combination of compensation and assistance measures depending upon the nature of ownership rights of lost assets, type of impact and their socio-economic status. The GSDMA and PGVCL (executing agency) will ensure compliance of entitlement matrix.
- **Voluntary Land Donation:** In case of land requirement in future provision has been made in the ESMF for voluntary donation of land by different entities (individual land owners, Gram Panchayats, trust, religious institutions, temples, etc)

6.0 Project Description

The sub-project is spread across an area of 36.6 sq.km covering a population of approximately 0.3 million as per Census 2011. ***The Existing OH Electrical Network*** in Gandhidham-Adipur has two sub-stations:

- **Sub-station 1:** 66 kV Gandhidham-2 substation, covering Sadhu Vasvani, Gopalpuri, Bharat Nagar and Sunderpuri 11 kV Feeders which is distributed over an length of 362.54 Kms in Gandhidham & Adipur Cities
- **Sub-station 2:** 66 kV KFTZ substation covering Gandhidham, New Gandhidham-2, Lilashah, New Lilashah-2, Jhulelal, KERF, Jagjivan, Ganeshnagar, Aerodram, Gurukul, Adipur, DC 5, New GJ 11 kV Feeders

PGVCL is the Implementation agency for the proposed UG electrical cabling network within Gandhidham & Adipur Cities. The total project cost is estimated to be 161.71 crores, implementation period being 18 months after the award of work.

Salient features of the proposed UG electrical network as per DPR prepared by PGVCL are:

- Underground electrical cabling network (high tension & low tension) covers a length of 430.74 Kms in Gandhidham and Adipur cities. Length of HT Cable laying is approximately 164.74 Kms and of LT Cable laying is approximately 266 Kms
- Gandhidham and Adipur will be fed from seventeen 11 kV feeders emanating from two 66 KV sub-stations.
- Provision of three new additional 11kV feeders namely, New Gandhidham, New Lilashah, New GJ for balanced load sharing among the 11kV feeders of Gandhidham sub-station.
- Provision of diversion of load of one feeder to another feeder through the proposed Ring Main Units (RMUs) network for achieving a resilient & flexible electrical network.
- Installation of 559 nos. of 11kV RMUs (Ring Main Units).
- Installation of 642 nos. LT Feeder Pillar and 4950 nos. LT Service Pillar for power to individual LT consumers.
- Provision of duct for telecommunication cables, etc.
- Installation of 642 nos. new distribution transformers along with 27 nos. (63 KVA –18 Nos. and 25 KVA 9 Nos.) existing distribution transformers based on regrouping by considering the future load growth.
- SCADA (Supervisory Control and Data Acquisition System) compatible RMU's (Ring main unit) will be employed with a view of developing Gandhidham city into the Smart City regime in the near future.
- Separate trench for OFC cable routing will be provided, hence, avoiding re-excavation & probable damage to roads/footpaths, other utilities etc.

The proposed project has considered different types of cable trench configuration (owing to different locations and suitability) and methods for laying of UG cables. The trench configurations will vary as per the site conditions i.e. soil type, width of the lane & space available to carry out construction works. The trench will be excavated upto a maximum of 1200 mm depth and 500 mm width in the city with wide roads. However, in conjusted areas, where cable laying operations will be difficult, LT cable will be erected from FSP of Transformer to MSP so that more width is not required (250-300 mm). Here, small MSP's (mini section piller) among 4 to 5 consumers will be erected in front of the consumer premises and from the MSP, cables will be provided via DWC pipe to the meter of the consumers (pipe will be clamped to the compound wall of the consumer or as desired by the consumer). For congested areas with narrow lanes and by-lanes Aerial Bunch (AB) method will be employed as it is considered to be the best choice for power distribution in congested urban areas. This method is already being implemented in many areas in Gandhidham- Adipur.

The Commissioning of the UG System will be carried out after performing and achieving tolerable results of the tests after laying in compliance with specifications & standards. The existing overhead infrastructure will be **Decommissioned** and dismantled after six months of the commissioning of the UG electrical cable project. It will involve dismantling of all the existing overhead infrastructure (including overhead conductors, insulators, straight and Vcross arms, guywires, poles, distribution transformers etc.). It is estimated that 1278 number of distribution transformers (DT's) will be dismantled. The dismantled transformers during decommissioning phase will be reused entirely by PGVCL locally or in there other projects.

Further, as per the discussions with PGVCL officials, it is estimated that 80% of the dismantled electric poles which are in good condition will be reused in other projects and the rest by local people in rural areas (to make boundary wall etc.). Approx. 20% of the dismantled electric poles will be scrapped (end-of-life) and auctioned online by PGVCL which is an existing method too for rejected electrical items generated from the exsiting electrical network. Debris generated will be disposed with the consent of Gandhidham NagarPalika in the existing waste disposal site or any other site designated for Construction & Demolition waste or reused in other construction works (filling potholes etc.)

7.0 Socio-Economic Profile

Direct Impact Zone –Sub-Project Location

The sub-project area comprises the cities of Gandhidham-Adipur in Gadhidham Taluka of Kutch district, Gujarat. Both towns are governed by Gandhidham NagarPalika comprising 14 wards. The project site lies within the Kutch region/district which has been assigned Zone V, a "severe intensity zone" where earthquakes of magnitude 8.0 can be expected. Gandhidham - Adipur area falls into high damage risk zone with a wind speed of 47m/s. In view of the above it is pertinent to note here that the Sub Project - "Conversion of high tension and low tension overhead electrical lines into underground cabling of high tension and low tension electrical lines in Gandhidham and Adipur cities of Kutch district" is proposed under NCRMP II for which, resilient infrastructure needs to be put in place for withstanding natural disasters, mainly cyclones. The electrical infrastructure gets badly affected during cyclones resulting in breakdown of power supply, causing injury and even death. The proposed underground electrical HT & LT cable system covers a length of 430.74 kms network.

The brief overview on the sub- project indicates that there's no land acquisition proposed under this sub-project and 294 structures are getting affected. Laying of underground cabling, specifically in areas that are congested will require dismantling of boundary walls, sitting space (utha), ramp and partial dismantling of residential/commercial structures. However, the repairing work of these structures will be carried out by PGVCL.

Table 1.0: Overview of Project State, District and City

Description	Gujarat	Kutch	Gandhidham
Total Population	6,04,39,692	20,92,371	2,47,992
Area(Km^2)	1,96,244	45674	36.6
Change in Population, 2001-2011 (%)	19.28%	32.16%	63.48%
Urban Population (%)	42.6	34.82	100
Rural Population (%)	57.4	65.18	0
SC Population (%)	6.74%	12.3	20.36

Description	Gujarat	Kutch	Gandhidham
ST Population (%)	14.75	1.16	1.65
Sex Ratio	919	908	886
Child Sex Ratio	890	921	912
Population Density/km^2	308	45.8	6775
Overall Literacy (%)	78.03	70.59	81.80
Male Literacy (%)	85.75	79.40	87.9
Female Literacy (%)	69.68	60.87	74.82
Contribution to Gross State Domestic Product (2011-2012)	12.2%	-	-
Primary (%)	49.6	37.34	0.78
Secondary (%)	1.39	1.39	1.55
Tertiary (%)	49.0	61.27	97.67

Source: Census of India, 2011

Demography and Socio-Economic Profile of Gandhidham and Adipur

Demography: Gandhidham Municipal Council encompassing an area of 36.6 sq.km accounts for population of 2,47,992 and 54565 households (Census, 2011). The household size of the city is 4.5. The density of the population is about 6775.7 persons per sq.km, which is higher than the district and state average of 46 and 308 persons per sq.km respectively. This is so because a vast area of the district is Rann (desert) area.

As per census 2011, the sex ratio in the town accounts for 886 which is lower than the state average of 919 and national average of 943. The scheduled caste (SC) and scheduled tribe (ST) population accounts for 20 percent and 1.65 percent of the total population of the town. The total scheduled caste population of the district is 12.37% with 4.23% residing in urban areas. The literacy rate of the town accounts for 81.80 percent, which is higher than the state average and national average of 79.31 percent and 74.04 percent respectively. While the male literacy rate comprises 87.9 %, female literacy accounts for 74.8 %.

The Hindus constitute the maximum share of population (91.23%) , followed by Muslims (5.48%) , Christians (1.21 %).

The the work participation rate (WFPR) of Gandhidham accounts for 36 percent. Out of the total workers in the town, 0.32% are engaged in cultivation, 0.46% are Agricultural labourers, 1.55% are engaged in household industrial works and 97.67% are engaged in other works. The town is primarily a service town. As the city is one of the fastest growing cities of Gujarat itis considered as the economic capital of Kutch district. The city is a popular destinations for conventions, business, meetings and major industries and Kandla port and KASEZ are located in the hinterland of the city. The city is a service town and caters to its neighbouring areas

Status of Infrastructure (physical & social) facilities in the city

Physical Infrastructure:

Roads and Highways: The twin cities of Gandhidham and Adipur are connected to the other parts of Gujarat through National Highway (8A)41 and State Highway 46 (SH46). Tagore Road passing through

the centre of the town links the State Highway 46 (SH46) to the Kandla Port Road. The road network within the twin cities can be broadly classified into 60m, 45m and 30m wide roads.

Water Supply: Raw water for Gandhidham Water Supply Scheme is sourced from both groundwater and surface water. The groundwater is abstracted from the deep tubewells (about 100m to 120m deep) situated between Anjar and Bhuj and the surface water is sourced from Tappar Dam constructed on River Sakara, situated at 35km from Gandhidham and also from pipelines drawing water from River Narmada and River Macchu. Around 25.00 MLD is supplied within Gandhidham municipal limits. The water supply scheme in Gandhidham is managed by GWSSB.
Sanitation: The existing underground sewerage network in Gandhidham was designed by Kandla Port Trust and is about 25 years old. The city generates about 70.00 MLD of sewage daily, served by 256 kms of underground sewerage network.

Health: Gandhidham and Adipur cities have adequate health facilities which include Hospitals, dispensaries, health centres, maternity homes etc run by government, private organisations and trusts.

Education: There are about 79 schools and 27 colleges in the city per 1000 population (Census 2011). Further as per the Gandhidham Nagarpalika the total number of schools present in the city is about 20 which includes both government and private schools.

Recreation: The city of Gandhidham was developed with a view to accommodate the refuges from West Pakistan, hence the city does not include much of planned recreation and tourist places. However, a few tourist and recreation spaces in the city comprises the Gandhi Samadhi, the IFFCO Colony which includes many parks, green areas, cricket ground, water bodies and religious places.

Housing and slums: There are 54054 properties in the city of which 14640 are commercial and Institutional properties. (Census 2011).

The slum population in Gandhidham city account 24,914 residents, accounting for around 10.05% of total population the city. The slum household of the city mainly comprises the immigrants working in the Kandla port and other industries which are located in the surrounding region of the Gandhidham and Kanda. The largest (un-notified) slums in the Gandhidham are Sunderpuri and Gopalpuri.

Main source of Lighting in Gandhidham: Approximately 96 percent household of Gandhidham has electrical connections and only 0.77 percent have no source of lighting.

8.0 Social Impact Assessment & Mitigation Measures

The implementation of "Underground Electrical Cabling System in Gandhidham and Adipur cities" is likely to cause adverse impacts on structures and assets falling along the cabling route particularly, especially in congested areas. The nature of impacts identified based on the census survey conducted comprises partial impacts on residential, commercial, residential cum commercial structures, kiosk, CPRs etc. Since, the resettlement impacts are only partial; it is not likely to result in physical displacement/relocation. Hence, an assessment of adverse impacts and development of mitigation measures has been carried out which mainly aims to assess the magnitude potential adverse impacts in terms of properties and assets and associated number of people. The details of impact of one feeder has been provided in the Strip Plan (Volume III)

The assessment is in accordance with the ESMF, which has been on the National, State Laws, and World Bank operational policies relating to social safeguards. The methodology adopted and the steps followed for conducting the SIA are:

- Secondary data and literature review and survey
- Stakeholders Consultation:
- Census and Baseline Socio-Economic Survey:

Major Findings of the survey:

- A total of 294 structures will be partially impacted due to sub-project implementation,
- Based on the average size of the household (5.9), it is estimated that more than 2053 persons would be impacted due to implementation of the project,
- Majority of the structures (96.2%) likely to be affected comprises floors/ramps of different types (cement concrete, tiled, interlocked, etc),
- Besides individual structures, 10 common property resources (CPRs) such as temples and passenger shelter are likely to affected,
- Physical dislocation of PAPs are not likely as only a part of the structure would be impacted,
- Majority of the structures likely to be affected have been constructed on government land. Thus the status of ownership may be categorised as encroachers and squatters,

It may be noted that though the social impact assessment provides extent of impacts on properties and persons associated with properties. However based on discussions with PGCVL officials and World Bank team during January 2018, these impacts will be minimized to a large extent during sub-project implementation.

The methodology adopted by PGVCL will focus on adopting alternate measures during cable laying (like shifting of cable route from inside of the premises towards the edge of the road/ street, shifting of cable route from one side of the road/street on to other side of road/street, making minor deviations in the cable laying route, etc) based on the site conditions to further minimize impacts on structures. Broadly, cable laying by trenching method would be followed in open areas. In congested areas/ narrow lines/by-lanes, aerial bunching method would be followed. Specifications for cable laying methodology would be suitably included in tender document. Wherever, avoiding impacts on structures will not be possible, structures will be repaired at project cost by PGVCL.

9.0 Stakeholder Consultations

Stakeholders' consultations were conducted at two levels: Local and City level. Local level consultations were held with individuals and with group of people in different parts of the city. The City Level Consultation workshop was organized on May 17th, 2017 in Conference Hall of Chambers of Commerce and Industries in Gandhidham. There were 62 participants comprising PAPs, local community, representative from various organisations, Forest Department, Pollution Control Board, KPT, GIDE, Gandhidham Nagarpalika, Chamber of Commerce and Industries, public representative, eminent citizens, PGVCL, etc. The identification and preparation of list of key stakeholders was done by the Consultant team in consultation with Divisional Office, PGVCL Gandhidham. The request letter and prior information for attending the stakeholders meeting was issued by the Executive Engineer, Divisional Office, Gandhidham.

A brochure providing brief information about the proposed works in Gujarati language was prepared for distribution to stakeholders before the consultation for developing an understanding of the proposed works. The content of the brochure was shared with PGVCL, Rajkot before finalizing the date and venue

of consultation. PGVCL officials from Rajkot and Divisional Office, Gandhidham were present during the stakeholders' consultation along with the Consultant team.

The major community concerns and feedback regarding the proposed project are as follows:

- During natural disasters, risk of electrocution increases due to snapping of overhead electrical transmission lines.
- During the monsoon, due to increased fluctuation in electricity supply household electrical items get damaged. The UG electrical system will reduce damage of such items
- Further, during rainy seasons children and animals are particularly at risk. The accidents sometime has been fatal. Number of such accidents will reduce due to the proposed works.
- Some cases of fire due to electrical short circuit have occurred. Such cases are likely to be reduced due to the UG electrical cable works.
- Stakeholders informed that there is no gas pipeline in the cities and also drainage system does not exist in some areas. People believed that underground cabling works is not likely to pose much difficulty and desired that utmost care should be taken to avoid impacting existing underground utilities in the cities.
- Existence of electrical poles cause a lot of hindrances and sometimes has been the cause of accident as well. Removal of electrical poles will increase space for mobility.
- Stakeholders informed that underground electrical cable system is very much needed for cities prone to natural disasters and appreciated the initiative taken by the PGVCL and expressed willingness to extend co-operation for early implementation of works.
- Demolition of structures/assets due to existence of electrical poles within the premises (residential/commercial units) or in close proximity to the structures.
- Quality of materials to be used so as to avoid frequent faults.
- Suitable precaution to be taken to maintain disposal of rain water systems.
- Safety aspects during implementation works should be paid due attention to avoid mishaps/ accidents.
- Height of distribution box from the ground level.
- Implementation works should be properly monitored to maintain quality of works.
- Digging works for various activities are carried out in cities frequently leading to inconveniences to citizens. They raised concern that further inconvenience is not created by the underground electrical cable works.

The major suggestions from the community regarding the proposed project are as follows:

- Cable route should be marked in advance and residents in the area should be informed at least one week advance before starting the cabling works to minimize impacts and inconvenience to individual consumers, schools, health facilities, etc.
- Electrical cable should be laid on the side which has less number of shops and houses. The depth of cable laying should be 2m instead of 1.2m.
- Regular coordination with community and leaders should be maintained for information dissemination and resolving problems/ hurdles during execution works.
- Electrical poles should be removed after completion of underground cabling works.

10.0 Institutional Arrangements

The NCRMP-II mandates establishment/setting up of institutional arrangements at national, state and sub-project levels for implementation of sub-project activities. The key elements of institutional arrangements at different levels aim to supplement and complement activities of various organizations/agencies involved in project planning and implementation.

The DPR has been prepared by the PGVCL Under the current project, for laying underground electrical cabling works at Gandhidham and Adipur cities (sub-project), the Line Department / execution agency is the Paschim Gujarat Vij Company Limited (PGVCL). Thus PGVCL is responsible for the implementation of the proposed UG electrical activities/work through contractors. The Executive Engineer, PGVCL Rajkot is the nodal officer for the implementation of the sub-project activities. The Executive Engineer, Divisional Office, PGVCL Gandhidham will be involved in actual execution and overseeing of underground cable laying works at site.

For RAP implementation, a Social Expert shall be appointed by GSDMA/PGVCL for a period of 2 years having experience in RAP implementation or resettlement and rehabilitation works, including organizing stakeholder/community consultations etc. The social expert will be engaged by the PGVCL for RAP implementation at site and will work in Site Office of PGVCL at Gandhidham.

11.0 Grievance Redressal Mechanism (GRM)

The GRM has been designed at national and state levels to address complaints and grievances and engagement of a third party auditor. Third party will be appointed by the GSDMA to provide independent assurance on compliance with the EMSF. The third party auditors shall:

- Support the GSDMA in preparing the 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 sensitive areas.
- Review the performance of the project through an assessment of periodical monitoring reports submitted by the implementation agency and PMSC.
- Share audit findings with the GSDMA to aid in timely decision making and adopting appropriate mitigation action/s, if necessary.

The Social Specialists at the state level (PMSC) shall provide feedback based on the field visits, regular supervision and monitoring activities, including those undertaken as part of Third Party audits to the Social Experts at the national level in NDMA. The Social Specialists at the national level will in turn provide technical assistance in planning and design of the activities, including reviews and trainings.

12.0 Monitoring & Evaluation

Monitoring and evaluation of Resettlement Action Plan implementation are critical in order to measure the project performance and fulfilment of sub-project objectives. The monitoring will occur as a periodic function, and will include process reviews/audits, reporting of outputs, and maintaining progressive records. It will cover Physical Progress and Social Monitoring.

(a) Periodic Physical Progress Monitoring - Physical progress monitoring will be carried out by the PMSC on a monthly basis. The RRO will report on the progress of RAP implementation. Monitoring will also cover constraints and delaying factors.

(b) Social Monitoring- This will comprise of the following sets of activities:

a) Compliance of entitlements to different categories of PAPs as per Environmental and Social Management Framework (ESMF), and

b) Monitoring and oversight of social issues at state level.

The format for internal monitoring will be developed by the PMSC based on site conditions with regard to RAP implementation and any other specific requirements of the project.

End Term Evaluation

Since the project impacts are very limited, the engagement of Third Party Auditor is not required for periodic monitoring. However, an agency may be engaged for end term evaluation.

13.0 Implementation Schedule

The standard conditions of civil contracts require availability of encumbrance free land to the contractor for executing construction works. Though acquisition of private land is not proposed for this sub-project, nevertheless entire land stretch (government land) is not free from encumbrances. The Right of Way (vacant land beyond carriageway) along the overhead electrical transmission lines has been occupied (encroached and squatted) for various purposes. Laying of UG electrical cable will be carried out in the available land (RoW) broadly following the existing overhead electrical transmission line.

Encumbrance free routes are not available at site. Thus, various methods for laying of underground electrical cabling is proposed viz: by buried, trench, pipe or duct method. While, major works laying for UG electrical cabling will done by manual digging, trenchless technology will be adopted, wherever electrical cable crosses from one side to another side. Nevertheless, a large number of structures would be affected partially, particularly in congested areas. A time line for the implementation of sub-project construction works is estimated to be two years. The time frame for implementation of RAP will be synchronized with the sub-project implementation (construction schedule) activities so that commencement and progress of civil works is not disturbed. The R&R activities under the sub-project shall be completed before the start of work on the groundso that the residents and business units remove their assets during the cable laying works.

14.0 Resettlement & Rehabilitation Budget

The resettlement and rehabilitation budget comprises amount equivalent for impacted structures at replacement cost determined as per the Schedule of Rates without depreciation, cost of hiring of Social Expert, contingency, etc. The replacement cost for impacted structures has been considered budget purpose. However, it is not likely to be disbursed as repairing of impacted structures would be carried out by PGVCL at project cost. Remuneration for engaging Social Expert for the implementation of RAP will be borne borne by the GSDMA. The budget for implementation of RAP is estimated to be Rs. 59.40 lakhs