Executive Summary- ESIA Report for Lakadia Banaskantha Transco Limited (LBTL) Project, Gujarat

Executive Summary

Introduction

Adani Transmission Limited (herein after referred to as ATL) owns and operates various High voltage AC transmission lines and substations of 132kV, 220kV, 400kV, 765kV voltage level and also High Voltage DC transmission lines and substations of +/- 500kV voltage level. ATL has won the Lakadia Banaskantha Transco Limited (LBTL). Transmission System Strengthening Project on a Tariff Based Competitive Bid.

This report intends to assess Environmental and Social Impact Assessment (ESIA) of the proposed transmission line.

Route of Transmission line

Lakadia Banaskantha Transco Limited (LBTL) which is includes of Lakadia - Banaskantha 765kV D/C(Route length in 176.148km).Out of the total length 64.9 km,69.7km and 42.3km length is present in the Kutch, Patan and Banaskatha district respectively. The transmission line is through three districts of state in Gujarat i.e. Kutch, Patan and Banaskatha.

Need &Objective

The objective of the ESIA is

- To document various environmental and social impacts related to field activities that are being undertaken by ATL for laying of transmission line and
- To highlight the environmental and social management strategies, systems and procedures being employed along the transmission line route and to meet the environmental and social requirements of the funding institutions.

Project Description

The LBTL transmission line alignments traverses through the 49 villages located in 2 Tehsil of Kutch district and 2 Tehsil of Patan district and 3 Tehsils of Banaskantha district.

NH 15 and NH 14 is main access road for Lakadia- Banaskatha 765 kV line proposed transmission line. During construction phase project team will access entire alignment through this road. There are different village which is connecting SH 51,52,58 and respective tower location and will be used as approach road during project execution.

Total number of towers in Bhuj Lakadia 765 kV D/C line would be 473. Among them 337 nos A, 29 nos B, 31 nos C, 76 nos D types tower and Gantry type would be present. All construction activities would be carried out within the Right of Way for the safe operation of the transmission lines as per IS: 5613.The design, fabrication, testing, erection procedures and materials to be used for erection of towers, line materials, construction foundations etc. will conform to the Bureau of Indian Standards (BIS), as amended up to date and provisions of the Indian Electricity Act Electricity rules and related statutory approval. The tower construction would start after the setting of the concrete is complete. As of 11.02.2021, 197number of towers has been already erected and 215 number of foundation activity has been completed i.e. approximately 69% of the towers are either partially or fully constructed. During the O&M stage of the project ground patrolling would be carried out. The patrolling would monitor the growth of tress in violation of the minimum safety clearance., development of any house or settlement within the RoW. Roads and bridges constructed within the ROW would also reduce the minimum safety clearance so these would also be monitored.

The foundation construction team would have around 15-20 labours in each team while the tower erection teams which would follow would have 25-35 labour in each team. There would be number of teams working on foundation and erection simultaneously in different stretches. Finally, the stringing team would also have around 45-65 labour in each team involved in the job. During the foundation and tower construction approximately 20-50 teams would be working in parallel. Thus approximately 200-250 labours would be working at any time in the project.

The project implementation has been planned over a period of 18 months, this would include the Detailed design Phase as well as Construction (Detailed Surveys, material supply, foundation, erection of tower, stringing, testing and commissioning). The date of commissioning is December 2021.

Pollution and control measures

The pollution expected from construction activities includes fugitive dust emission due to excavation and project related vehicular movement and waste debris from casting of foundations. There is potential for disturbance to habitations in proximity of the towers due to construction activities. Implementation of suggested measures will enable suppression of dust generation, disposal of waste debris and other adverse impacts.
From the preliminary environmental and social impact identified it is estimated that these are “potentially limited adverse social or environmental impacts that are few in number, generally site specific, largely reversible and readily addressed through mitigation measures”. The project is categorized as Category B.

Baseline

The baseline studies have profiled the environmental and social conditions along the transmissions line, covering in general a buffer distance of 500m of both side of the alignment where any significant environmental sensitive is identified. The studies were designed to collect information from secondary sources and to obtain primary information through site visits and consultation switch local communities and other related stockholders. Overall the is reflective of the environmental and social landscape of the districts through which the alignment would pass.
The transmission line is located in 2 Tehsil of Kutch district and 2 Tehsil of Patan district and 3 Tehsil of Banaskantha district. The area has quite high temperatures during summer and moderate cold in winter. The average annual maximum temperature is 34.3^{o}C while the average annual minimum temperature is 19.3°C. The Kutch area experiences very low rainfall with the total rainfall of about 276.4mm (as per IMD 30 year’s average data) with 13.9 numbers of rainy days. The annual average wind speed recorded at the IMD weather station at Rudramata Aerodrome, Bhuj indicate that the highest monthly wind speed is 5.0 m/s in June followed by 4.7 m/s in May. The lowest windspeed was recorded in December 0.3 m/s.
Existing sources of generation of particulate matter and gaseous air pollutants is primarily because of the transportation of vehicles through adjoining road considering this context the ambient quality is expected to be well within the National Air Quality Standards for all parameters. The soils found in Kutch district can broadly be grouped into four types, i.e., Shallow Black soils, Residual Sandy soils, Coastal Alluvial soils and Desert soils. The depth to water was monitored by the Central Groundwater Board and it was found that in the pre- monsoon period (2012) the depth to groundwater is 2-5 m bgl along the alignment between Adipur Jn and Anjar. In regions near Bhuj the water level was 5-10 m bgl (below ground level). However, in the post – monsoon (2012) groundwater levels indicate that they are 5-10 m bgl across the entire alignment.

Details Forest Along the Alignment within AOI

Forest of Kachchh district classified under the Type 6B- Northern Tropical Thorn Forest, as per the forest classification of Champion and Seth (1968). These forests also known as Open scrub thorn forest due to poor canopy formation. This can be further divided in to 5/D-Dry deciduous Scrub, 6/E4 -Salvadora scrub, 6B/C-Desert Thorn Forest, 6B/DS2-Tropical Euphorbia scrub, 6B/ DS1- Zizyphus sp. scrub and Capparis sp. association 5/E3 -Babul (Acacia nilotica) forest, 5/DS5-Dry Savannah type vegetation (Acacia nilotica- Salvadora sp. association, 6/E2-Gorad (Acacia Senegal). However, due to the invasion of Prosopis juliflora in these forests, has changed the floral composition and vegetation structure. The transmission line wise protected/reserve/social forest area are given below:
765KV Lakadia-Banaskatha Transmission Line: Within this segment of the transmission line 25.1315ha forest land is present under four Forest Division namely Kutch-East Division, Kutch SF Division, Patan Division and Banaskantha SF Division in Kutch, Patan and Banaskantha District. Within eleven villages namely Kairai (0.2903ha), Sanwa (15.104ha), Patanka (4.3885ha), Daldi (3.9867ha), Dahisar (0.1545ha), Chichodra (0.2713ha), Chachasna (0.1251ha), Warsara (0.1868ha), Kantheriya (0.1551ha), Padardi (0.1872ha) and Khimana (0.282ha) the forest land is present.
The transmission line has been passed through Wild Ass Sanctuary, Reserve forest and social forest area. Project Area under Protected Area (Wild Ass Sanctuary) 9.749 ha of which forest land is 3.887 ha and non-forest land is 5.862 ha. No part of the project area falls under any Conservation Reserve, National Park and Ecologically Sensitive Zone. For forest clearance and wildlife clearance the proposal has been already submitted in “Parivesh” portal of MoEF&CC and both are under processing.

Flora

Sixty-nine (69) floristic species were recorded collectively at the sampling sites. The study area comprises of 20 tree species belonging to 10 families, 10 shrubs species belonging to 8 families and 38 herbs species belonging to 16 families. Most common species were *Azadirachta indica*, *Prosopis cineraria*, *Prosopis juliflora*, *Salvadora oleoides. Ziziphus nummularia*, *Blumea sp*., *Aristida sp*.

Mammals

At least thirty-four (34) species of mammals have reported ranges that include the Study Area. With respect to the IUCN Red List, one (01) of these species is designated as endangered and two near threatened. With respect to the WPA Schedules, eight (08) of these species are listed under Schedule I. Six (06) species of mammals were observed and six (06) recorded from consultation as part of the primary data. Though some portion of the project Area will be fall under Protected Area (Wild Ass Sanctuary), however, during the field visit no Wild Ass has been observed. It was reported that in rare cases the wild ass stray to the fringe areas of the sanctuaries where the transmission line is located.

Birds

One hundred sixty-seven (167) species of birds have reported ranges that include the Study Area. These include eighty (80) species which are resident with respect to the Study Area and Eighty-seven (87) species, which are migratory with respect to the Study Area. With respect to the IUCN Red List, out of 80 resident bird species one vulnerable (Sarus Crane) and one near threatened birds (Black-necked Stork) have reported ranges in study area. Out of 87 migratory birds' species one endangered, four vulnerable and five near threatened birds' species have reported ranges along the study area. With respect to the WPA Schedules, three (03) bird species from resident and five (05) birds species from migratory birds of the Study Area are listed under Schedule I. Forty-eight (48) species of birds, consisting of thirty-six (36) resident species and twelve (12) migratory species, were recorded as part of the primary data. Though within the 10km (5km of each side from the centre of the line) study area through the line no such globally significant concentration of migratory species and/or congregatory species have been reported and not observed during field visit.

Reptiles

At least twenty-five (25) species of reptiles have reported ranges that include the Study Area. With respect to the IUCN Red List, one (01) of these species is designated as vulnerable. With respect to the WPA Schedules, one (01) of these species is listed under Schedule I. Two (02) species of reptiles were observed and five (05) recorded from consultation as part of the primary data.

Amphibians

At least six (06) species of amphibians have reported ranges that include the Study Area. With respect to the IUCN Red List, none of these species are designated as globally threatened. With respect to the WPA Schedules, none of these species are listed under Schedule I. No species of amphibians were observed as part of the primary data and however two (02) recorded from primary consultation.

Social Issues and Management

The project Lakadia-Banaskantha 765 kV transmission line of length 176.148 km will pass through agricultural lands that falls under 3 districts of Gujarat. Total 473 towers would be constructed and the total estimated land requirement for tower footing would be 378400 sq. m (93.50 acre). The tower footing falls on private agricultural land belongs to approximately 600 landowners. Though the project does not involve permanent land take however, there is restrictions on land use for carrying out construction on these lands. Such restriction in future land-use changes diminishes the land value especially road facing plots which have a potential for non-agricultural use in the future will be restricted and will have a permanent implication on use of these lands for non-agricultural purpose.

During ESIA study, the compensation for land price for 20 villages (out of 58) was fixed for INR 881 for unirrigated land and INR 970 and 1772 for irrigated land per sq. m. For the remaining 38 villages, the land prices are yet to be fixed by the District Collector. The land prices in the area was reported to be INR 300000 -500000 per bigha (area within the village and far from road connectivity) and INR 500000-1000000 for land near to highways.

The community had raised concern on issues with regards to health and safety and potential exposure to electromagnetic fields during operation especially during rainy season. Besides, the community also had raised concern for adequate compensation for land use along the tower footprint as. current government circle rate was reported to me much lower than the prevailing market. In lieu to the MoP guidelines, the project has addressed the situation and

land valuation was carried out through a committee formed by the District Magistrate in consultation with the affected landowners. The land value was reported to be 15 times higher than the prevailing government rate. The Project has completed payment compensation to more than 150(as of November 2020) affected landowners and still on-going. It is estimated that the total number of impacted landowners in the project would be 1627, of which 600 numbers of landowners would be affected due to the tower footing and 1027 numbers would be affected due to the RoW of the transmission line. Limited consultation could be carried out indicated that the local community were positive of the project and are willing to support the project. Embedded measure maintaining minimum ground clearance is mandatory and will be strictly monitored during operational stage to avoid any risk of exposure to any kind of safety hazards. A site engineer will be appointed by the project who will undertake a regular inspection of all lines from time to time.

Impact Assessment

Potential impacts of proposed transmission line during:

- The construction of the towers which would involve earthwork for excavation of the foundation would lead to air quality and noise impacts, but these would not be significant as the transmission line alignment are away from settlements. in addition, impacts on flora and fauna are also envisaged. For the portion of the line passing through the Wild Ass Sanctuary there are risk of the animal falling into the excavation and getting hurt.
- During the stringing operation winching machine would be used and is expected to have a noise levels of approximately 70 dB(A). However, since the transmission line is away from the settlement the noise levels are expected attenuate to levels within standards for residential areas.
- Construction of tower and the transmission lines would lead to restriction on the use of land which has been addressed by payment of compensation. Loss of the crops from land are also envisaged but these have would not be significant and crop compensation are paid
- Operational phase involves disturbances to vegetation and noise etc. The social impacts will be from movement along the corridor, expectation management and perception about generation of electromagnetic field.
- Mitigation to counter adverse impacts are discussed in the Environmental and social management plan.

Environmental and Social Management Plan

The ESMP provides a delivery mechanism to address potential adverse impacts, to instruct contractors and to introduce standards of good practice to be adopts for project activities taken up during construction and operation phases of the project. Inspection and monitoring of the environmental and social components phase activities will increase the effectiveness of suggested mitigations.

Through the process of inspection, audit and monitoring ATL will ensure that all the contractors comply with the requirements of conditions of forest clearance, and other permits including suggested action plans.

The inspection and audits will be done by trained team ATL's Environment, Health and Safety (EHS) department as well subject to be reviewed and conducted by external agencies/experts. The entire process of inspections and audits are being documented. The inspection ad audit findings are to be implemented by the contractors in their respective areas.

Conclusion

The ESIA has assessed overall acceptability of environmental and social impacts likely to arise as a result of construction and operation of transmission line for LBTL project. The proposed project is categories as category B as the social or environmental impacts are assessed as limited, few in number, site specific, largely reversible, and readily addressed through mitigation measures. Though some portion of the project Area will be fall under Protected Area (Wild Ass Sanctuary), however, during the field visit no Wild Ass has been observed. It was reported that in rare cases the wild ass stray to the fringe areas of the sanctuaries where the transmission line is located. Moreover, the transmission line is not considered as high-risk project because of the inherent low risks that they carry. Also, with these embedded mitigation measures the risk to the wild ass from the project is reduced. Also, note that the actual habitat of the wild ass is in the Little Rann of Kutch which is approximately 24 km south direction from the proposed transmission line.

The project is likely to generate some environmental and social impacts both during construction and operation. During construction phase the environmental impacts expected from the project include disturbance to fauna and flora, construction waste of disposal, increase of noise level and social impacts mainly from engagement of land and loss of crop. During operation phase the impacts include disturbance to vegetation, noise generation and social impacts of restricted activities within corridor.

Environmental and social management plan describes implementation mechanism for recommended mitigation measures during construction and operation phase to verify overall project performance.