Environment and Social Due Diligence Report

September 2015

IND: Accelerating Infrastructure Investment Facility in India
–NRSS XXXI (B) Transmission Limited

Prepared by

India Infrastructure Finance Company Limited for the Asian Development Bank

India Infrastructure Finance Company Limited

Environmental and Social Safeguards Due Diligence Report

Construction of 400 kV D/C line of 282.60 km length in the state of Haryana and Punjab to establish Transmission System for Northern Region System Strengthening Scheme (NRSS) XXXI B consisting of Kurukshetra-Malerkotla and Malerkotla-Amritsar Transmission line on Build, Own Operate and Maintain (BOOM) basis

Sub Project Developer – NRSS XXXI (B) Transmission Limited

August 2015

SUB PROJECT: Construction of 400 kV D/C line of 282.60 km length in the state of Haryana and Punjab to establish Transmission System for Northern Region System Strengthening scheme (NRSS) - XXXI B consisting of Kurukshetra-Malerkotla and Malerkotla-Amritsar Transmission line on Build, Own Operate and Maintain (BOOM) basis.

NRSS XXXI (B) Transmission Limited

Environmental and Social Safeguards Due Diligence Report (ESDDR)

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ABBREVIATIONS

ADB	Asian Development Bank
BOOM	Built, Own, Operate and Maintain
CA	Concession Agreement
CoI	Corridor of Impact
CSR	Corporate Social Responsibility
DBFOT	Design, Built, Finance Operate and Transfer
EC	Environmental Clearance
EIA	Environmental Impact Assessment
EIL	Essel Infraprojects Limited
EMP	Environmental Management Plan
EPC	Engineering Procurement and Construction
ESDDR	Environmental and Social Due Diligence Report
IIFCL	India Infrastructure Finance Company Limited
GoI	Government of India
IE	Independent Engineer
LOA	Letter of Award
LAO	Land Acquisition Officer
LIE	Lenders Independent Engineers
MoEF&CC	Ministry of Environment, Forests and Climate Change
MVA	Million Volt Ampere
NGO	Non-Governmental Organization
NOC	No Objection Certificate
NRSSTL	NRSS XXXI (B) Transmission Ltd.
PIAL	Prohibited Investment Activity List
PPP	Public Private Partnership
RO	Regional Office
RoW	Right of Way
SDDR	Social Due Diligence Report
TDP	Tribal Development Plan

PROJECT BACKGROUND

1. PURPOSE OF THE REPORT

1. This Environmental and Social Due Diligence Report (ESDDR) has been carried out by India Infrastructure Finance Company Limited (IIFCL) in consultation with the Concessionaire, NRSS XXXI (B) Transmission Ltd. (NRSSTL) to assess the adequacy of the project with the applicable National Safeguard compliance. The report has been prepared as per the documents/information received from the concessionaire and on the basis of site visit observations. In order to be eligible for funding from the ADB, IIFCL has prepared the Environmental and Social Due Diligence Report (ESDDR) for the sub-project on behalf of the concessionaire NRSSTL. The information given in the ESDDR is agreed and confirmed by the Concessionaire.

2. SUBPROJECT TITLE

2. Construction of 400 kV D/C line of 282.60 km length in the state of Haryana and Punjab to establish Transmission System for Northern Region System Strengthening Scheme (NRSS) - XXXI B consisting of Kurukshetra - Malerkotla and Malerkotla - Amritsar Transmission line on Build, Own Operate and Maintain (BOOM) basis.

3. SUBPROJECT SCOPE

3. The scope of the project include construction of 400 kV D/C line of approximately 282.60 km length in the state of Haryana and Punjab as depicted below:

Sl. No.	Transmission Line	Lengths in km	Conductor Per Phase	COD	Sub-Contractors
1	400 kv D/C Kurukshetra-Malerkotla	135.5*	Twin Moose ACSR or equivalent AAAC	September 2016	M/s UPTL
2	400 kv D/C Malerkota-Amritsar	147.1*	Twin Moose ACSR or equivalent AAAC	September 2016	M/s JSL

*As per the RFP document, the length of transmission lines is 135.5 km and 147.1 km. However, as per the Route Survey done by the Company, the actual length is estimated to be 139.27 km and 149.44 km. ACSR: Aluminium Conductor Steel Reinforced; AAAC: All Alloy Aluminium Conductor.

4. PROJECT BACKGROUND

4. The Government of India, Ministry of Power, vide its notification No. 15/1/2013-Trans dated 20th May, 2013 had notified REC Transmission Projects Company Limited (RECTPCL) to be the Bid Process Coordinator (BPC), for the purpose of selection of Bidder as Transmission Service Provider (TSP) to establish transmission system for Northern Region System Strengthening Scheme, NRSS – XXXI (B) through tariff based competitive bidding process.

5. NRSS XXXI (B) Transmission Limited (NRSSTL) is a project specific SPV, which was incorporated on 29.07.2013 under the Companies Act, 1956 as a wholly owned subsidiary of RECTPCL with the objective to establish the transmission system for

"Northern Region System Strengthening Scheme NRSS-XXXI (Part B)" on Build, Own Operate and Maintain (BOOM) basis. The SPV was acquired by Essel Infraprojects Limited (EIL) through a competitive bidding process for providing power transmission services in northern region in the State of Punjab and Haryana.

6. Essel Infraprojects Limited (EIL) emerged as the selected bidder for the Project by quoting the lowest levelized annual transmission charges of Rs. 88.65 Cr. Power Grid Corporation of India Limited (PGCIL) and Sterlite were other bidders for the Project. EIL has successfully received LOA on 26th February 2014 for development of above transmission project on Build Own Operate & Maintain (BOOM) basis. The project specific SPV NRSSTL was transferred to EIL on 12th May, 2014.

5. PROJECT DETAILS

7. Amritsar has an existing 2 x 315 Mega Volt Ampere (MVA) 400/220kV substation of Power Grid Corporation of India (PGCIL). Presently it is connected to Jalandhar through a 400 kV Single Circuit (S/C) line. To meet its growing power demand, 1x500 MVA 400/220 kV ICT is under implementation. To augment supply of power to Amritsar substation (S/S), 400kV connectivity to Parbati pooling station and Makhu S/S is under implementation. However, the power supply to Amritsar area would be mainly through Jalandhar 400kV substation as during winters, the generation of hydro projects would reduce to very low level as well as in case of low generation at Talwandi Saboo thermal power station, Makhu S/S may also draw power from Amritsar. Hence, it is necessary that power supply arrangement to Amritsar S/S is augmented. A High Voltage Direct Current (HVDC) station at Kurukshetra is being established for supply of power from pit head generating station of Chhattisgarh. Accordingly, for augmenting power supply to Amritsar S/S, following transmission works were proposed for Transmission System associated with NRSS-XXXI (B) Transmission Ltd.:

- Kurukshetra - Malerkotla 400 kV D/C transmission line;
- Malerkotla – Amritsar 400 kV D/C transmission line

8. Govt. of India, Ministry of Power, under sub section (i) of Section 68 of the Electricity Act. 2003, has given approval for laying of overhead transmission line in favour of the SPV NRSS XXXI (B) Transmission Ltd. This was approved in the 31st Standing Committee Meeting on Power System Planning of Northern Region held on 2nd January 2013. The approval copy of the laying of overhead transmission line attached as **Appendix-I**. Central Electricity Regulatory Commission (CERC) under Section 14 of the Electricity Act 2003 (36 of 2003), dated 25th August 2014, has granted the Transmission License to the subproject NRSSTL. The copy of the license attached as **Appendix-II.**

9. The proposed transmission line will be drawn from the switchyard of Amritsar PGCIL substation to Kurukshetra.

- **Kurukshetra - Malerkotla 400 kV D/C transmission line:** The proposed Transmission line takes off from Substation in Kurukshetra and terminates at Substation in Malerkotla. The shortest aerial distance between Sub-Station at Kurukshetra to Sub-Station at Malerkotla is 128.99 km. However, length of line is 139.27 km (approx.). The entire stretch of the proposed Transmission line from Substation at Kurukshetra to substation at Malerkotla lies in the State of Haryana and Punjab. This section does not pass through any forest land or any protected / ecologically sensitive area and does not pass through any major rivers.

- **Malerkotla – Amritsar 400 kV D/C transmission line:** The proposed Transmission line takes off from Proposed Switchyard at Malerkotla and terminates at Amritsar switchyard. The shortest aerial distance between Sub-Station at Malerkotla to Sub-Station at Amritsar is 143.45 km. However, length of Transmission line is 149.44 km (approx.). The entire stretch at Malerkotla to Amritsar lies in the state of Punjab. This section does not pass through any forest land and any protected / ecologically sensitive area. This transmission line passes through 6 numbers of railway crossings and passes through Satluj River and Beas River. The details of highway crossing, railway crossing, river crossing are given in the table 1 below:

Table 1: Various crossings in NRSS XXXI (B) Transmission Line

Sl. No.	Approval	Amritsar Line	Kurukshetra Line
1	Transmission Line Crossing	20 Nos.	16 Nos.
2	Railway Line Crossing	6 Nos.	3 Nos.
3	National Highway Crossing	2 Nos.	3 Nos.
4	State Highway Crossing	2 Nos.	3 Nos.

6. ANALYSIS OF ALTERNATIVES

10. During the finalization of transmission line, the following points were taken into consideration for selection of optimum transmission route and the best alternative has been selected based upon the criteria of optimum transmission route:

- The sub-project does not required any substation so no land acquisition is required for this project;

- The proposed transmission line corridor does not pass through any wildlife sanctuary/national park, any ecologically sensitive area or forest area;

- The proposed transmission line does not involve any rehabilitation and resettlement;
- Any monument of cultural or historical importance is not getting affected due to the proposed sections of the project;
- The project does not fall under any Schedule Area and no Tribal People are getting affected;
- The route does not affect any public utility services like playground, school or such other establishments, etc.;
- The proposed route alignment does not intersect any village settlement and also does not pass through any urban establishment in the entire stretch;
- The proposed route alignment has been finalized by avoiding common property resources, viz., schools, colleges, hospitals, community hall, etc.

11. NRSSTL has executed Transmission Service Agreement (TSA) the transmission assets are to be developed by the Transmission Service Provider (TSP) in line with the Scheduled Commercial Operation Date (COD) of each element of the project. Further, the quoted transmission charges shall be payable based on the percentage of the transmission charges that are recoverable on achieving scheduled COD of each element of the project.

7. DEBT COMPONENT OF THE PROJECT

12. The total cost of the project is estimated at Rs. 678.00 Cr. and is proposed to be financed with a debt to equity ratio. The total debt requirement for the project is Rs. 472.50 Cr. and the Equity is 205.50 Cr. ICICI Bank has underwritten an amount of 272.50 Cr. and the balance of Rs. 200 Cr. has been syndicated on best effort basis. The Consortium led by Lead Lender ICICI Bank has down sold Rs. 100 Cr. of its loan to National Bank for Agriculture and Rural Development (NABARD). Out of the balance Rs. 200 Cr. IIFCL has sanctioned Rs. 91.50 Cr. and PTC has sanctioned Rs. 65.00 Cr.

8. LENDER'S ENGINEER

13. The estimated total cost of the project is Rs. 678.00 Cr. The project is being implemented with financial assistance from different financial institutes including the Lead Lender ICICI Bank, who acts as Facility Agent, NABARD, PTC and IIFCL. Feedback Infrastructure Private Limited is working as the Lenders' Independent Engineer (LIE).

14. The location of the projects with respect to the transmission line are indicated in the transmission map below in Figure-1:

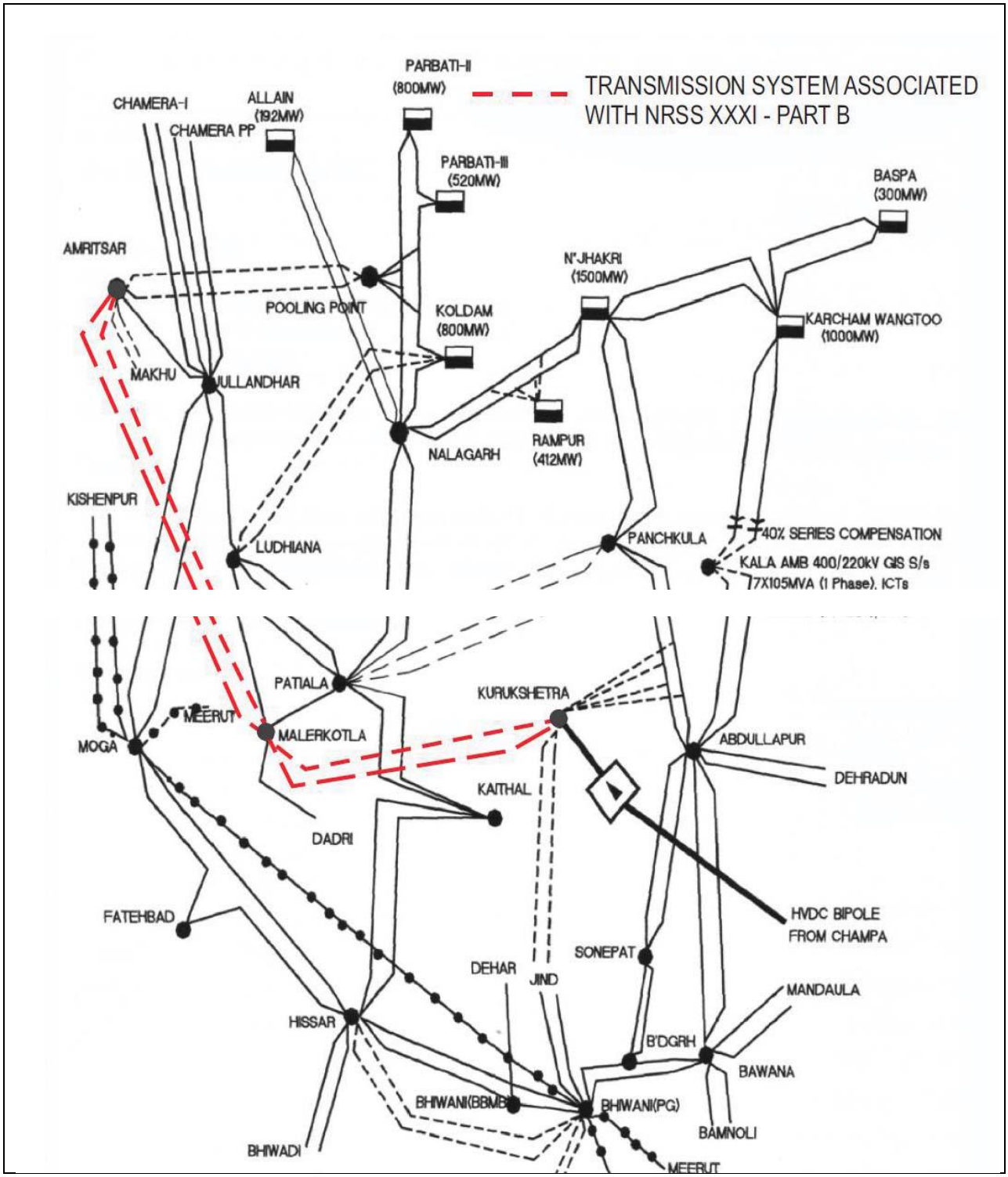


Figure-1: Project Locations with respect to the transmission line

9. PROJECT ADMINISTRATIVE DETAILS:

15. The administrative and financial details of the project as follows in the **Table-2** below:

Sl. No.	Description	Project Data
1	Project Name	**NRSS XXXI (B)**
2	Project Cost	Rs. 678.00 Cr.
3	Means of Finance	Debt: Rs. 472.50 Cr. Equity: Rs. 205.50 Cr.
4	Project Elements	• Kurukshetra - Malerkotla 400 kV D/C transmission line (139.27 km); • Malerkotla – Amritsar 400 kV D/C transmission line (149.44 km)
5	Name of the successful Bidder	ESSEL Infraprojects Ltd.
6	EPC Contractor	PAN India Infraprojects Pvt. Ltd.
7	Sub-Contractors	• Unitech Power Transmission Ltd. for Kurukshetra - Malerkotla 400 kV D/C transmission line (135.5 km) • Jyoti Structures Ltd. for Malerkotla – Amritsar 400 kV D/C transmission line (147.1 km)
8	Schedule COD of the Project	12th September 2016
9	Concession Period	35 Year (End of Concession 11th September 51)
10	Financial Bid Date	7th February 2014
11	LOA	26th February 2014
12	Lenders Independent Engineer	M/s Feedback Infra Pvt. Ltd.
13	Ecologically Sensitive Area	The Transmission line does not pass through National park/sanctuary/wildlife corridor/eco sensitive zone. Moreover, the project does not pass through Forest area and as such Transmission Project does not require Environmental Clearance of MoEFCC.

10. STATUS OF REGULATORY PERMISSIONS AND APPROVALS

Table 3: Availability of documents & requirements for setting up NRSS XXXI (B) Transmission Line

S. No.	Key Environmental & Social Safeguard documents/requirements	Availability Status	Remark
1.	Environmental & Social Impact Assessment Study (ESIAS)	Not Required	Environmental Impact Assessment Notification dated September 14, 2006 of Ministry of Environment, Forests & Climate Change (MoEFCC) provides a list of project activities requiring prior environmental clearance. This does not include transmission projects; hence no environment clearance from MoEFCC is required for the Project.
2.	Execution Documents	Available	Govt. of India, Ministry of Power, under sub section (i) of Section 68 of the Electricity Act. 2003, has given approval for laying of overhead transmission line in favour of the SPV NRSS XXXI (B) Transmission Ltd. This was approved in the 31st Standing Committee Meeting on Power System Planning of Northern Region held on 2nd January 2013. The approval copy of the laying of overhead transmission line attached as **Appendix-I.**
3.	Transmission License	Obtained	The Central Electricity Regulatory Commission (CERC) under Section 14 of the Electricity Act 2003 (36 of 2003), dated 25th August 2014, has granted the Transmission License to the subproject NRSSTL. The copy of the license attached as **Appendix-II.**
4	Gazette Notification	Available	Under Section 164 of The Electricity Act 2003 and Indian Telegraph Act 1885 NRSSTL has been granted approval by the Ministry of Power to establish and operate the transmission line. The copy of the Gazette Notification attached as **Appendix-III.**

5	Resettlement Action Plan	Not Applicable	As the proposed route alignment does not intersect any village settlement and also not pass through any urban establishment in the entire stretch of the project, it was also noted that the resettlement has been completely avoided. Since there is no resettlement impact, Resettlement Action Plan (RAP) is not required to be prepared for the project.
6	Common Property Resources (CPR)	Not Applicable	The proposed route alignment has been finalized by avoiding common property resources, viz., schools, colleges, hospitals, community hall, etc. in the whole stretch of the subproject.
7	Tribal Development Plan (if required)	Not Applicable	The route does not pass through any settlement area. The Developer has also confirmed that no tribal population is found on the corridor till date. Thus no Tribal Development Plan is required.
8	Labour License	Available	Labour License has been granted to the subproject Under Sub Section 2 of Section 7 of the Contract Labour (Regulation & Abolition) Act, 1970. The copy of the Certificate of Registration copy is given in **Appendix-IV.**

DUE DILIGENCE ON ENVIRONMENTAL SAFEGUARDS

11. ABOUT THE PROJECT

16. For augmenting power supply to Amritsar substation, following transmission works was approved under Transmission System associated with NRSS-XXXI – Part-B in the 31st Standing Committee Meeting for Northern Region held on 2nd January 2013:

- 400 kV D/C Kurukshetra – Malerkotla transmission line
- 400 kV D/C Malerkotla – Amritsar transmission line

17. While the predominant technology for electricity transmission and distribution has been Alternating Current (AC) technology, High Voltage Direct Current (HVDC) technology has also been used for interconnection of all regional grids across the country and for bulk transmission of power over long distances. The proposed transmission scheme would be included in National Transmission Pool for recovering transmission charges through Point of Connection (PoC) mechanism. The scheduled completion date of the sub-project is 11th September 2016.

18. The Government of India, Ministry of Power, vide its notification No. 15/1/2013-Trans dated 20th May, 2013 has notified REC Transmission Projects Company Ltd. to be the Bid Process Coordinator (BPC) for the purpose of selection of Bidder as Transmission Service Provider (TSP) to establish transmission system for Northern Region System Strengthening Scheme, NRSS – XXXI (Part B) through tariff based competitive bidding process.

19. The BPC had invited Bids for selection of Transmission Service Provider to establish the Transmission System as detailed above for NRSS – XXXI (Part B) on build, own, operate and maintain basis, and to provide transmission service on a long term basis to the Long Term Transmission Customers. Subsequent to RFP Price Bid Opening, M/s Essel Infraprojects Ltd has successfully received LOA on 26th February 2014 for development of above transmission project on Build Own Operate & Maintain (BOOM) basis. The SPV (NRSS XXXI (B) Transmission Limited) has been transferred to M/s Essel Infraprojects Ltd. on 12th May, 2014.

20. An EPC contract has been signed between NRSSTL and M/s Pan India Infra Projects Ltd. The sub-contractors appointed by M/s Pan India Infra Projects Ltd. are M/s Unitech Power Transmission Ltd. for Kurukshetra- Malerkotla line and M/s Jyoti Structures Ltd. for the Malerkotla-Amritsar line. The sub-project is under construction and the status progress of construction as on 21st August 2015, as informed by the developer is given in table 4. The total Number of towers in the entire NRSS XXXI (B) transmission line will be 787, out of which 375 are in the Kurukshetra - Malerkotla line and 412 in Malerkotla – Amritsar line.

Table 4: Status of NRSSTL Construction

Activity	Status
Detailed Survey	Completed
Soil Investigation	Completed
Foundation	48.5% completed
Tower Erection	15% completed
Stringing	2 km completed

12. PROJECT LOCATION AND SCALE

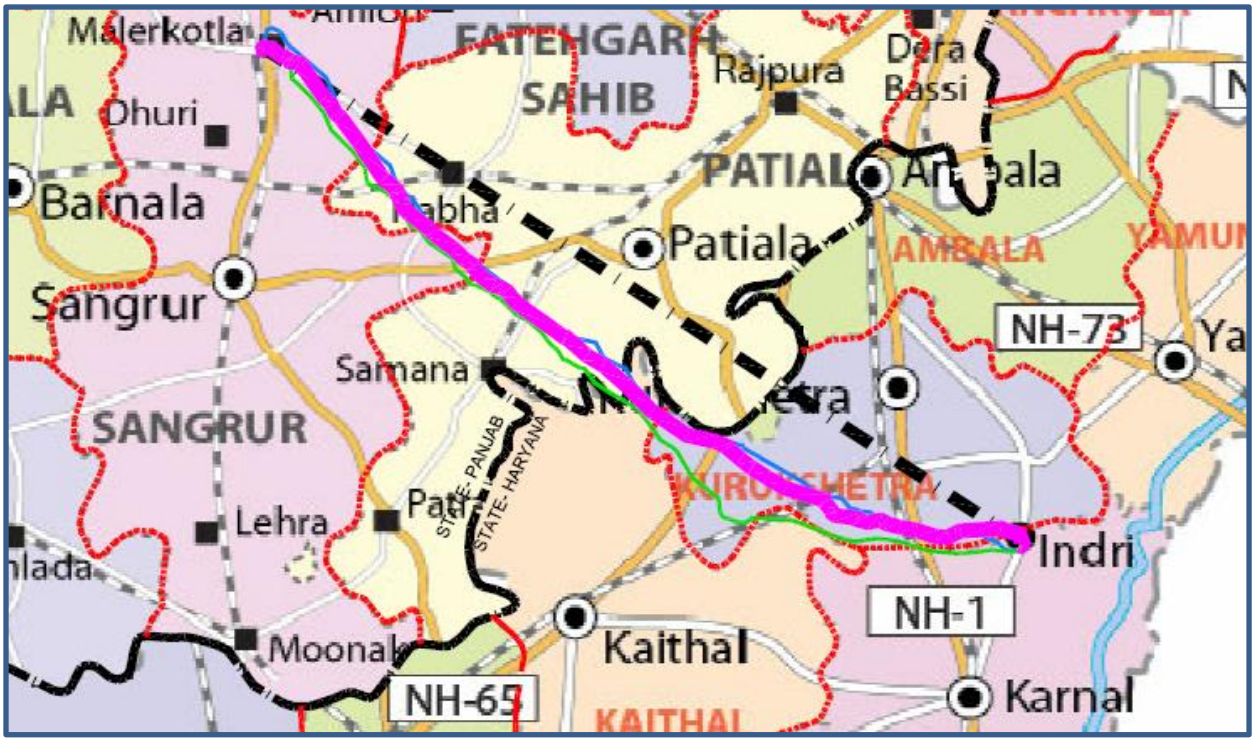
21. NRSS XXXI-B passes through two states, Haryana and Punjab in Northern India. The total actual length of the transmission line is 288.71 km. The 400 kV D/C twin moose Kurukshetra – Malerkotla transmission line, having a total length of 139.27 km traverses through Kurukshetra, Karnal and Kaithal districts in Haryana and Patiala and Sangrur districts in Punjab. The 400 kV D/C twin moose Malerkotla – Amritsar Transmission line having a length of 149.44 km traverses through Sangrur, Ludhiana, Tarn Taran, Jalandhar and Amritsar districts in Punjab. Hence, the transmission line passes through nine districts in the state of Haryana and Punjab. The route of transmission line is given in **Figure 2**. The location coordinates for the sub-project are:

Table 5: Location Co-ordinates for NRSS XXXI (B) Transmission Line

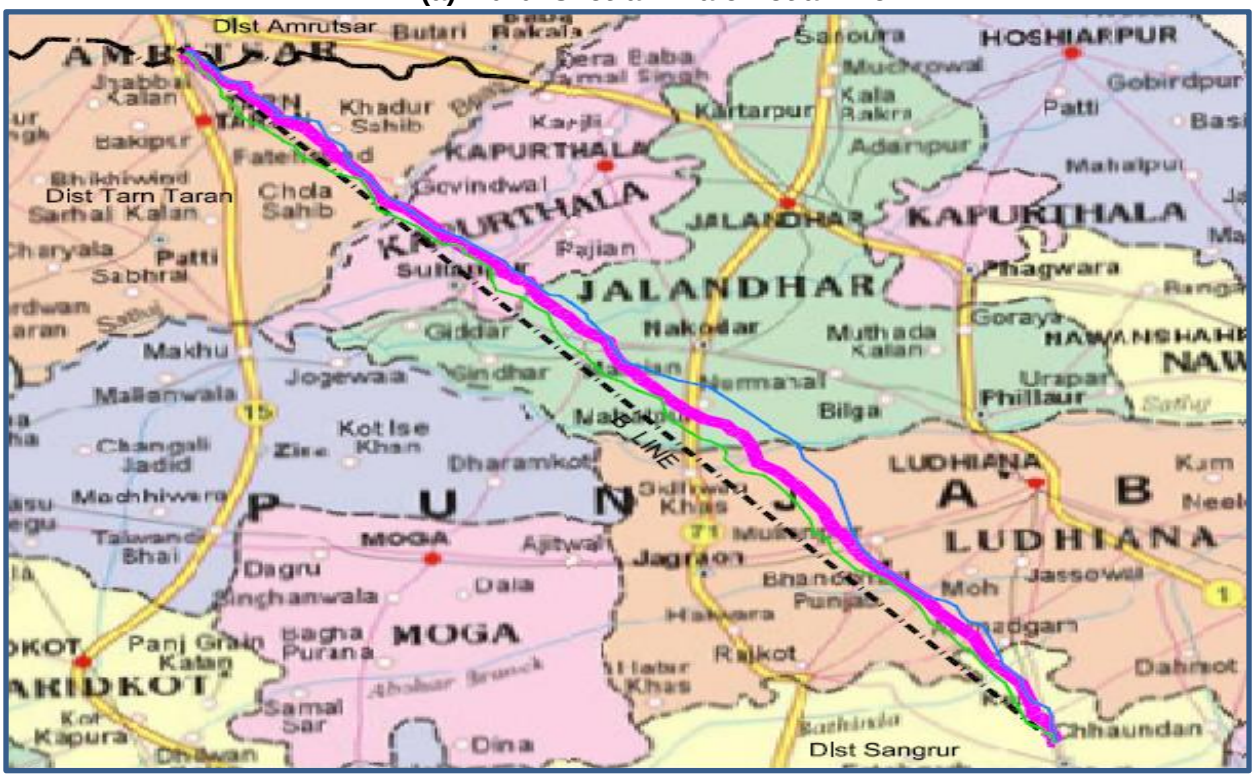
Location	Latitude	Longitude
Amritsar Gantry	34° 89' 48" N	49° 00' 53" E
Malerkotla Gantry	33° 80' 58" N	58° 35' 87" E
Kurukshetra Gantry	33° 10' 14" N	69° 24' 67" E

22. The Right-of-Way (RoW) is the physical corridor required for an overhead Transmission line to accommodate the line as well as safety clearances around the live parts. For 400 kV D/C Transmission line the stipulated RoW is 46 m.

23. The numbers of towers on Kurukshetra-Malerkotla line are 375 and in Malerkotla-Amritsar line are 412. The total numbers of towers to be erected in the transmission line are 787. The minimum ground clearance for 400kV D/C transmission lines shall be 8.84m.



(a) Kurukshetra – Malerkotla Line



(b) Malerkotla - Amritsar Line

Figure 2: Route of NRSS XXXI-B Transmission Lines

13. APPROACH TO THE ENVIRONMENT SAFEGUARDS DUE-DILIGENCE REPORT (EDDR)

24. The Environmental Due Diligence Report reviews the available documents and assesses the compliance of the sub-project with the respect to (i) regulatory clearances; (ii) environmental safeguards (iii) the process of identifying environmental impacts and environmental management measures; (iv) contractual obligations for Health Safety Environment (HSE) measures; (v) public consultations and information disclosure; (vi) implementation of HSE measures; (vii) institutional arrangement; (viii) site visit observations & photographs ; (ix) conclusions and recommendations.

25. The following documents were referred in order to prepare Environmental Safeguards Due-Diligence Report:

- Project Information Memorandum (PIM)
- Detailed Project Report
- Lender's Independent Engineer's Report for March 2015
- Project Statutory Approvals
- Project HSE Documents
- Public Notices
- Labour License
- EPC Contract Documents

26. In Section 14, the policy, legal and regulatory requirement pertaining to the environmental assessment of transmission line projects is given. This section gives a brief description of the legal and regulatory requirements and followed with the environmental safeguard policies of IIFCL and ADB. Section 16 provides the present status of statutory clearances. This is followed by the selection of present alignment integrating environmental considerations. As no Environmental Impact Assessment study was conducted for the sub-project, the construction and post construction time environmental impacts are assessed along with the mitigation measures in Section 20 and 21. Environmental sensitivity and due diligence is given in the subsequent sections. Section 23 provides Health and safety measures. An Environment Management Plan is proposed on the basis of impacts in section 24. Categorization of the sub-project and sub-project against the PIAL is given in Section 26 & 27. Public consultation and information disclosure are given in Section 28. Site visit observations are given in Section 30. The conclusion made on this EDDR and specific recommendation made towards finalizing the EDDR is given in the Section 31.

14. POLICY, LEGAL AND REGULATORY REQUIREMENT

27. This section briefly describes the policy, legal and regulatory requirements for implementing a new transmission line project. A transmission line project requires assessment for applicability of (i) Indian Electricity Act 2003; (ii) Environment (Protection)

Act, 1986; (iii) Forest (conservation) Act, 1980; (iv) Wildlife (Protection) Act, 1972; (v) Hazardous Waste (Management & Handling) Rules, 2003; (vi) Biological Diversity Act, 2002; (vii) other legislation applicable to construction activities; and (viii) Environment safeguard requirement of IIFCL as per the Environmental and Social Safeguard Framework (ESSF).

28. **Ministry of Power order/sanction under the Electricity Act, 2003**
The Electricity Act, 2003, is an act to consolidate the laws relating to generation, transmission, distribution, trading and use of electricity in India. Sanction of Ministry of Power, Government of India (GOI) is a mandatory requirement for execution of a new transmission project under the section 68(1) and section 164 of Electricity Act, 2003. The sanction authorizes NRSSTL to plan and coordinate activities to commission the new project. Electricity Act does not explicitly deal with environmental implications of the activities related to power transmission.

29. **Environment (Protection) Act, 1986**
The Environment (Protection) Act, 1986 (EPA-1986) provides holistic framework for the protection and improvement to the environment. Under the EPA-1986 certain development projects have been identified requiring environmental clearance as defined under EIA Notification dated 14th September 2006 including all its amendments. Since the transmission line projects are non- polluting in nature and do not involve any disposal of solid waste, effluents and hazardous substances on land, air and water, such projects are exempted from environmental clearance as per the EIA notification. However, if a transmission line is located in an ecologically sensitive area declared by MoEFCC then environmental clearance is required to be taken.

30. The applicable rules and regulations under the EPA, 1986 includes the compliance requirement with:
    - Batteries (Management and Handling) Rules, 2001;
    - Hazardous Waste (Management and Handling) Amendment Rules, 2003;
    - Ozone Depleting Substances (Regulation and Control) Rules, 2000

31. However, the above rules relate to associated facilities to transmission lines such as substations and switch yards. These facilities are not a part of NRSSTL; therefore, these regulations are not applicable to NRSS XXXI (B).

32. Developer has confirmed that SF_6 is not being used in the transmission line as insulator or in circuit break. Hence, no potent greenhouse gas is being used in the transmission line.

33. **Forest (Conservation) Act, 1980**
The Forest (Conservation) Act, 1980 provides for the conservation of forests and regulating diversion of forestlands for non-forestry purpose. When transmission projects falls within forestlands, prior clearance is required from relevant authorities under the

Forest (Conservation) Act 1980. The ROW of transmission line does not pass through any forest area, therefore does not require clearance under the Forest (Conservation) Act.

34. The sub-project may require tree cutting/pruning from non-forest areas along the alignment. In this regard, permission from tree cutting shall be taken from local authority or owner on whose land the trees are located. The developer has informed that no tree has been cut so far and tree cutting permission will be taken as and when required.

35. **Wildlife (Protection) Act, 1972**
The sub-project does not pass through any notified eco-sensitive areas like national park and wild life sanctuaries, therefore does not come under the purview of Wildlife (Protection), Act 1972. Wildlife Clearance is not required for the sub-project.

36. **Biological Diversity Act, 2002**
India is a party to the United Nations Convention on Biological Diversity signed at Rio de Janeiro on 5th June, 1992. India has enacted the Biological Diversity Act, 2002 to provide for conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge and for matters connected therewith. As per the provision of Act, certain area which are rich in biodiversity and encompass unique and representative ecosystems are identified and designated as Biosphere reserves to facilitate their conservation. All restrictions applicable to protected areas like National Parks and Sanctuaries are also applicable to these reserves. The project does not pass through any such ecologically sensitive areas.

37. **Other Legislation Applicable to Construction Activities**
The other applicable legislation pertaining to the construction activities of transmission lines are given below:

- **Contract Labour (Regulation and Abolition) Act, 1970**: The Act provides for certain welfare measures to be provided by the contractor to contract labour.
- **Minimum Wages Act, 1948:** The employer is supposed to pay not less than the minimum wages fixed by appropriate Government as per provisions of the act.
- **Child Labour (Prohibition and Regulation) Act, 1986:** The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupation and processes. Employment of child labour is prohibited in Building and Construction industries.
- **The building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996:** All the establishments who carry on any building or other construction work employs 10 or more workers are covered under this Act. The employer of the establishment is required to provide safety measures at the building or construction work and other welfare measures, such as canteens, first-aid facilities, ambulance, housing accommodation for workers near the workplace etc.

38. Unitech Power Transmission Ltd. and Jyoti Structures Ltd. have their health, safety and labour policy, which adheres to the above mentioned construction related legislations.

15. ESSF OF IIFCL

39. The Environmental and Social Safeguard Framework (ESSF) provides the enabling mechanism to IIFCL to deliver its policy objectives and applies to projects funded by IIFCL throughout the Project Cycle (PC). The ESSF defines procedures, roles, and responsibilities, at various project milestones for managing the adverse environmental impacts. Projects financed by IIFCL which are posed for MDB's line of credit, are required to undergo to an environmental and social due diligence process utilizing the procedures described in the ESSF to ensure sustainable project investment.

16. STATUS OF REGULATORY CLEARANCES

40. It is required that the sub-project meets the requirements of appropriate Indian legislations by considering appropriate obligations and guidelines of Regulatory Authorities. The sub project should have necessary national and local environmental clearances as well as permits and approvals for project implementation and suitable environmental management plan should be applied. The statutory clearances required related to environmental aspects and to be obtained from other regulatory authorities as part of the Transmission project development, was assessed and current status of availability of such clearances are given in **Table 6**.

Table 6: Statutory clearance required and present status of clearance

Clearance Required	Statutory Authority	Status	Remarks
License under section 68 and 164 of the Electricity Act, 2003	Ministry of Power, Govt. of India	Obtained	Obtained **(Appendix I & Appendix III)**
Environmental Clearance	Ministry of Environment, Forests and Climate Change, New Delhi	Not Applicable	Not Applicable as the transmission line development is not listed in Schedule I of the MoEF's EIA Notification 2006, including all its amendments that lists projects or activities requiring prior environmental clearance and hence this is exempted from obtaining the same except in case of transmission lines located in ecologically sensitive areas declared by MoEF.
Forest Clearance	Ministry of	Not	The transmission line does not pass

	Environment, Forests and Climate Change, New Delhi	Applicable	through forest area.
Tree Cutting Permissions from Non-Forest Area	Office of District Collector/ Tehsildar (Local Authority)/ Owners	Not taken so far	Developer has informed that some trees are coming in the ROW of transmission line. However, till date no tree has been cut and as per current assessment trees will only require pruning at the time of stringing. Developer has informed that tree cutting permissions will be taken as and when required.
Provisions under Biological Diversity Act, 2002	National Biodiversity Authority	Not Applicable	Not Required as project site does not lie within any National Park, Wild Life Sanctuary or biodiversity rich area as informed by project developer.
Consent for Establishment and Consent for Operation of Project Facility	State Pollution Control Boards of Haryana & Punjab State	Not Applicable	The project scope does not include activities which may cause water or air pollution, therefore, Consent under Water and Air Act is not applicable.
Water Usage Permission	State Ground Water Board and Irrigation Board	Not Applicable	Small quantities of water will be required at the time of excavation/ foundation work for which Ground Water is not used in the project and water requirement during construction phase has been met through using water tankers as informed by project team.
Buildings and other Construction Workers (Regulation & Employment & Conditions of Services) Act, 1996 and the rules made thereunder	Assistant Labour Commissioner, Govt. of Punjab/Haryana	Obtained	NRSS XXXI (B) Transmission project has obtained licence under this Act enclosed as **Appendix V (A) & (B)**
Labour License	Licensing Officer & Assistant Commissioner of Labour, Govt. of India	Obtained	The establishment is registered under the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the Contract Labour (Regulation and Abolition) Central Rules, 1971 and labour license has been obtained for the project under the said Act and is enclosed as **Appendix IV.**

41. For Coverage of accident risks for workers, all the sub- contractors have taken Workmen Compensation insurance (Copies are enclosed as **Appendix –VI (A) & (B)**. Proposed transmission line route will cross various types of other utilities like power lines, railway line, highways for which approvals have been taken from the various regulatory authorities. The application for permission from Power and Telecommunication Co-ordination Committee (PTCC) has been submitted on April 2015, approval for the same is awaited.

42. No Objection Certificate (NOC) for height clearance is a legal document issued by Airports Authority of India on behalf of Central Government so that the airspace around aerodromes is maintained free from obstacles. Application for Aviation NOC will be submitted by the Developer in August 2015. Brief summary of major crossings giving details for proposal status and approvals have been provided below in **Table 7.**

Table 7: Approval Status of various types of Crossings falling in route alignment of NRSS XXXI (B) Transmission Line

Approval	Amritsar Line	Kurukshetra Line
Power Line Crossing	Total : 20 Nos. Submitted : 16 No.	Total : 19 Nos. Submitted : 14 No.
Railway Line Crossings	Total : 6 Nos. Submitted :4 No.	Total : 3 Nos. Submitted :2 No.
National Highway Crossings	Total : 2 Nos. Submitted : 2 No.	Total : 3 Nos. Submitted : 3 No.
PTCC	Submitted on 18th Apr 2015	
Aviation	Shall be submitted in Aug 2015	

17. ALTERNATIVE ANALYSIS IN ROUTE SELECTION

43. Optimum route has been identified during the route alternatives for the transmission line. The present route is envisaged to have no/minimum impacts on the environment which are elaborated in the next sections. The following factors have been considered while identifying the route alternatives:

(a) The routing of transmission line through protected/reserved forest areas has been avoided; cutting of trees has been kept minimum;

(b) The no. of crossing of major rivers / railway lines, national / state highways, overhead extra high voltage / pipelines and communication Lines has been kept minimum;

(c) Marshy low lying areas, river beds, earth sleep zones, nallas, lakes have been avoided as far as possible;

(d) The alignment has been selected in such a fashion that as far as possible it is easily accessible both in dry and rainy seasons for ease in maintenance throughout the year;

(e) Routing has been kept away from large habitations, densely populated areas, animal / bird sanctuaries and hydrocarbon pipelines to the extent possible.

18. DESCRIPTION OF THE ENVIRONMENT

44. The entire stretch of the proposed NRSS XXXI (B) transmission line from substation at Kurukshetra to substation at Malerkotla lies in the State of Haryana and Punjab in Northern India. The elevation at the start and end point of the transmission line are 257 m and 227 m above MSL, respectively.

45. Both the states of Punjab and Haryana are located in the fertile North Indian plain. The state shares its borders with Pakistan on the west, on its northern frontier by the Jammu and Kashmir, Himachal Pradesh on the east while the south is bordered by Rajasthan and Delhi.

46. Abundance of fertile alluvial soil is irrigated with a robust system of rivers and canals in Punjab and Haryana. The land of Haryana and Punjab are categorized under the seismic zones II, III, and IV. The climate of Haryana is similar to other states of India lying in the northern plains. It is very hot in summer (up to a high of 49-51° Celsius) and cold in winters (down to a low of 0° Celsius in some areas). The hottest months are May and June and the coldest being December and January. Rainfall is varied, with the Shivalik region being the wettest and the Aravali Hills region being the driest. About 80% of the rainfall occurs in the monsoon season (July–September) and sometimes causes local flooding. Punjab's climate is characterized by extreme hot and extreme cold conditions. Annual temperatures in Punjab range from 1°C to 46°C (min/max), but can reach 49°C in summer and 0°C in winter. The northeast area lying near the foothills of the Himalayas receives heavy rainfall, whereas the area lying further south and west receives less rainfall and experiences higher temperatures. Average annual rainfall ranges between 960 mm in the sub-mountain region and 460 mm in the plains.

47. The proposed transmission line route crosses National Highway - 95 & 71 and State Highway – 13 & 20. The proposed transmission line route crosses railway track at 6 locations on route. The proposed transmission line route crosses Satluj River & Beas River as Major Rivers. The river crossing span is tentatively 420 m and 780 m, respectively, for Satluj & Beas River. The major crop encountered along the proposed route alignment is mainly paddy, mustard, wheat and sugar-cane. There are mainly high tension line crossings ranging from 132 kV to 400 kV. They are mainly of Power Grid

Corporation India Limited (PGCIL), Haryana State Electricity Board (HSEB) and Punjab State Electricity Board (PSEB).

19. VISIT TO SUB-PROJECT LOCATION

48. As part of the preparation of the ESDDR, the sub-project was visited by Environmental and Social Safeguard Specialists of IIFCL with the Financial Analyst and Safeguards Specialist of ADB on 16th June, 2015 for field verification of environmental safeguards. Consultation with the Project Head and health & safety team was also done regarding safeguards implementation during the site visit. The sub-project is currently in construction phase. The site visit photographs are given in Photo Plate-I.

20. ANTICIPATED ENVIRONMENTAL IMPACTS DURING CONSTRUCTION PHASE AND MITIGATION MEASURES

49. The proposed transmission line does not pass through forest land or through any wild life sanctuary/national park. The sub project is not close to eco-sensitive zones declared by the Government. The impacts during construction phase are elaborated below:

50. **Land Use**

At present all of the land is agricultural land and construction work would involve only construction of foundation, erection of towers and stringing of lines. Due to construction of towers, crop production in the area occupied by the tower will be stopped for short time period. After the erection of towers the crop production work can start again.

51. As per the information provided by the concessionaire, excavation and foundation take only 3-4 days. 95% of the excavated soil is compacted in the foundation and the balance 5% is evenly distributed in the fields with the permission of the owner / farmer. Erection of towers also takes 3-4 days and stringing another 5-6 days. Thus, the impact on land use during the construction work is temporary and not significant in nature.

52. **Ambient Air Quality**

Construction activities will involve excavation for erection of tower and movement of vehicles carrying the construction material, etc. This will result in limited fugitive emissions at site. Spraying of water during construction will reduce the dust fall to a great extent.

53. **Ambient Noise Levels**

During construction phase, the sources of noise pollution will primarily be limited to movement of vehicles transporting construction material and equipment to the site. The project sites are, however, mainly in the agricultural fields. Since the movement of traffic is not very significant and away from settlement areas of villages through which the alignment section is passing through; hence the villagers will not be affected due to

increased noise level. Use of low noise generating equipment and restriction of construction activity for limited periods will further reduce the disturbance from noise pollution.

54. **Water Quality**

Erecting of towers for transmission line will not have any significant impact on surface and groundwater quality along the line. The tower footing along the major river crossings are located at a sufficient distance from the embankment to ensure minimum disturbance to riparian vegetation. As informed by project developer and as per DPR, The proposed transmission line route (Amritsar line) crosses Satluj River and Beas River as major Rivers. The river crossing span is tentatively 420 m and 780 m, respectively for Satluj and Beas River. As informed by the developer, laborers are staying in rented accommodations at nearby villages with adequate sanitation facilities, thus minimizing the chances of degradation of water quality.

55. **Soil**

The excavation work involved in the project is limited to construction of tower foundation. The loss of top soil as envisaged during such construction activities can largely be reduced as 95% of the excavated soil is compacted in the foundation and the balance 5% is evenly distributed in the fields with the permission of the owner / farmer. During site visit, it was observed that topsoil was stockpiled on one side which will be compacted and spread after completion of construction activity.

56. **Flora**

The construction work along the alignment may cause loss of vegetation. Trees will be required to be cut or trimmed for laying of transmission lines causing a loss of flora. Further loss to flora would be due to loss of crops in the area occupied by the tower base during construction phase. The line does not pass through any forest area or protected area, therefore minimum impact is anticipated on the flora. The footing of the transmission towers is such that crops can be grown below the towers after erection. Pruning instead of cutting of trees will greatly minimize tree loss and compensation to be paid to tree owners. The developer has informed that tree cutting permissions will be taken as and when required. The sample copy of notice to be served to an individual regarding crop compensation and tree cutting is given as **Appendix – VII.**

57. **Fauna**

The existing land use for the transmission line is on agricultural land, which is rarely used for grazing by domestic animals. Hence minimal disturbance to local animals is anticipated during construction. No forest areas are falling in proposed transmission line route and the rout is not part of any eco-sensitive areas like national park or sanctuaries thereby no presence of rare and endangered species is anticipated.

58. **Socio-Economic Condition**

Socio-economic impacts during constructional phase due to erection of transmission lines will be mainly due to loss of agricultural land on which towers will be erected. However, as per the provisions of telegraph act, the land owners will be provided compensation for crop loss during the construction phase. Moreover, under unskilled category of labourers, locals are employed. The labour stays in rented accommodations in nearby villages, thus local people are benefited economically. Vehicles such as tractors, JCB machines are hired from the locals, which is a good source of income generation for them. Thus, the transmission line during construction phase is benefiting the local economy in many ways.

59. **Health and Safety**

Engineers, linemen may get injured or meet accidents during maintenance of transmission lines including injuries, bruises, transmissible diseases, etc. As part of the health and safety policy, NRSSTL though its sub-contractors Unitech Power Transmission Ltd. and Jyoti Structures Ltd. ensures that the workers involved working in heights are provided with necessary personal protective equipment like safety shoes, hand gloves, safety belts, helmets, ladders/monkey ladders, fall arrestor etc. The issues and measures taken regarding the health and safety of labour are elaborated in Section 25.

60. **Cultural Sites**

As informed by project developer, no archaeological, heritage, historical or culturally important sites are located close to the proposed transmission Line.

21. ANTICIPATED ENVIRONMENTAL IMPACTS DURING OPERATION PHASE AND MITIGATION MEASURES

61. **Land Use**

Minor changes in land use pattern are envisaged during the operation phase. At present the portion of the land where towers will be erected is mainly agricultural land. During operation phase, the same land can again be utilized for agricultural purpose. Therefore the impact on land use is negligible though permanent in nature.

62. **Air and Noise Quality**

The operation of transmission line does not involve any emission of gases and generation of dust particles and hence there is no impact on ambient air quality during erection of transmission lines. Similarly no change in ambient noise level is anticipated during the operational stage due to erection of transmission lines.

63. **Water Quality**

The operation of transmission line do not involve generation of any effluent and discarding of any hazardous chemical which could have chances of impact on nearby water bodies. Thus no impacts on ground water or surface water quality are anticipated during the operational stage.

64. **Soil**

The project line section will not block the drainage within the alignment and also do not increase the run-off in the local catchment area. Thus, from transmission line project the impact on soil quality is negligible during the operation stage.

65. **Flora**

Trees near transmission lines may increase the chances of fire hazards due to electric sparks requiring trimming of trees to minimize the risk of accidents and proper maintenance. As part of maintaining the ROW trimming of trees may need to be undertaken. In case damage is done to the crops during maintenance of line, compensation will be given as per applicable rates during operation phase, Hence a minor/ negligible impact on flora is predicted during operational phases.

66. **Fauna**

Since avian fauna might be at small risks by hitting the transmission lines, hence a minor impact is predicted during the operational phases.

67. **Health and Safety**

Engineers, linemen may get injured or meet accidents during maintenance of transmission lines including injuries, bruises, transmissible diseases, etc. As part of the health and safety policy, NRSSTL though its sub-contractors Unitech Power Transmission Ltd. and Jyoti Structures Ltd. ensures that the workers involved working in heights are provided with necessary personal protective equipment like safety shoes, hand gloves, safety belts, helmets, ladders/monkey ladders, fall arrestor etc.

68. **Socio-Economic Condition**

Socio-economic condition of the project villages around the proposed transmission lines is expected to be improved due to an overall increase in power supply in the grid and hence an increased power supply in the villages as well. Increase in power supply to these rural areas will beneficially impact the socio-economic conditions thereby directly/indirectly triggering the growth of agricultural up gradation, health and education facilities, infrastructural development etc. Therefore, the overall impact on socio-economic condition will be positive for this project.

69. **Operation and Maintenance**

NRSSTL has a maintenance strategy for proper functioning of the transmission line. This includes routine patrolling of transmission lines at regular intervals; inspection of foundations and completeness of tower members; pre and post monsoon inspections; special patrolling on tripping of the line; repair of conductor etc. Regular maintenance of the Transmission Lines will be undertaken to achieve the desired level of performance shall be carried out. The maintenance activities shall be predefined and the schedules shall be laid in advance.

22. ENVIRONMENTAL SENSITIVITY AND DUE DILIGENCE

70. The environmental sensitivity of the NRSS XXXI (B) transmission line has been assessed by reviewing the project related documents like Detailed Project Report (DPR), various permits/NOCs, health and safety related documents, supplemented by field visit and consultation with the concessionaire. The environmental sensitivity assessment is given below:

- No land has been acquired for the sub-project and necessary permissions for 46 m ROW have been taken.
- The entire ROW is over private land with agricultural activity.
- No notified forest area is getting affected due to the sub-project.
- The crop compensation for affected area has been given as per Government norms.
- The sub-project sites are not located in any protected area like wildlife sanctuary / national park or in close proximity of any eco-sensitive area.
- During site visit and as per discussions with the sub-project staff, it was informed that no wild animals are sighted in and around the sub-project area. There is no loss of bio-diversity as there are no fauna species within the project area.
- As informed by the concessionaire, there are no important cultural / heritage sites are getting affected due to the sub-project.
- Labour working at the sites stay in rented accommodation in nearby villages, there is no labour colony for the sub-project.
- The sub-project does not require Consent to Establish / Consent to Operate from the State Pollution Control Boards.
- The sub-contractors of NRSS XXXI (B), Unitech Power Transmission Ltd. for Kurukshetra - Malerkotla transmission line and Jyoti Structures Ltd. for the Malerkotla – Amritsar transmission line have their own safety policy.
- The impacts of the sub-project are temporary in nature.
- The concessionaire has undertaken the implementation of safety management system by adopting safety policy for the sub-project.

- The concessionaire has informed there is a vehicle at every 5 km to cater any emergency situation and a first aid kit is provided at each and every site.

23. HEALTH & SAFETY

71. The Clause 22 of the EPC contract between NRSS XXXI (B) Transmission Ltd. and Pan India Infraprojects Private Ltd., deals with the Occupational Health, Safety, Environmental Requirements and Acceptance Tests. The copy of the EPC Contract is enclosed as **Appendix – VIII.** As part of the health and safety policy, NRSSTL though its sub-contractors Unitech Power Transmission Ltd. and Jyoti Structures Ltd. ensures that the workers involved working in heights are provided with necessary personal protective equipment like safety shoes, hand gloves, safety belts, helmets, ladders/monkey ladders, fall arrestor etc. Unitech Power Transmission Ltd. and Jyoti Structures Ltd. have their own safety policies which are enclosed as **Appendix–IX** and **Appendix-X**. A safety meeting and personal protective equipment talk is conducted before start of work at site. A safety checklist is being filled for each and every location at NRSS XXXI (B) transmission line. A sample of the safety checklist is enclosed as **Appendix-XI.**

72. The sub-project NRSS XXXI (B) transmission line has Safety Officer at the Project level, who is directly reporting to the Project Head. The details of health and safety issues and the safety measures taken thereof at the sub-project are given in **Table-8.**

Table 8: Health & Safety Issues and Measures

Health and Safety Issues	Overall safety measures
Injury cases of Workers	No injury cases till date
Safety Measures taken for working in heights	Use of safety belts, safety shoes, helmets and double lanyard safety belts (being worn by the gang workers working at heights)
Use of Personal Protective Equipment and Safety measures Taken	Safety shoes, helmets, gloves, mask and double lanyard safety belts (being worn by the gang workers working at heights)
Emergency care facilities	• First Aid box provided in each camp. • Contact details of all Public Health centers and clinics along the line route with emergency numbers are prepared and are available at site. • The medical check-ups are being done by the Govt. doctors of the nearby village hospitals. • In cases of major illness, the labors are taken to the private clinics for medical checkup as well.

24. ENVIRONMENT MANAGEMENT PLAN

73. A consolidated EMP has been proposed to M/s. NRSSTL compiling all the necessary information related to the actual activities been undertaken by the developer towards selection of project alignment and construction activities considering environmental impacts. The EMP has been prepared by collecting the information on several measures integrated in project documents towards minimizing negative environmental impacts. The major components of the EMP include:

- Mitigation of potentially adverse impacts;
- Monitoring during the project implementation and operation; and,
- Institutional arrangements.

74. The environmental issues and suggested mitigation measures with institutional arrangements for implementation and their compliance status are given in **Table 9**.

Table 9: Environment Management Plan during Construction and Operation Stage

Project Activity	Potential Impacts	Mitigation Measure	Parameters for Monitoring	Compliance status
Alignment Selection	Chances of potential impacts on terrestrial habitat including (i) Forest Fire; (ii) Avifauna and bat collision and electrocutions; (iii) Impact on eco-sensitive Areas (like national parks, wildlife sanctuaries etc.); (iv) Impact on historical and cultural resources.	Selection of an optimum route primarily avoiding: (i) Human settlements; (ii) Notified Eco sensitive locations and forest areas; (iii) Environmental sensitive locations such as school, colleges, hospitals, religious structures, monuments, etc.; (iv) Socially, Culturally, Archaeologically sensitive area.	The project has already received authorization under section 68 and section 164 under electricity act under which the mitigation measures are already undertaken to avoid sensitive environmental location and no impact on forest land and minimizing tree cutting.	No forest area or monument of archaeological or historical importance or any Govt & private construction is coming in the project route alignment.
Tower Location	Exposure to safety related risks; impact on water bodies, railway lines and roads	Overhead line route designed in accordance with permitted level of power frequency and the technical specification for ground clearance of towers. Location of towers has been avoided to be nearer to water bodies, railway lines and roads to maximum extent possible.	For selection of optimum route, the analysis of alternative were taken into consideration so that the no. of crossing of major rivers / railway lines, national / state highways, overhead extra high voltage / pipelines and communication Lines are minimum and	The tower footing along the major river crossings are located at a sufficient distance from the embankment to ensure minimum disturbance to riparian vegetation.

			marshy low lying areas, river beds, earth sleep zones, nallas, lakes have been avoided as far as possible.	Also, approval from respective authorities has been taken in case of railway lines/ highways etc.
Tree cutting and impact on forest land	Impact on biodiversity, chances of forest fire and electrocutions and sometimes impact on livelihood.	Minimize the impact by maintenance of ROW.	• NRSSTL has avoided forest stretches for the project and as such no forest land is coming in the route alignment. • NRSSTL to comply with tree cutting requirements.	• The finalized route involves no forest. • The trees coming in ROW are on agricultural land. • So far no tree has been cut and tree cutting/pruning permissions will be taken as and when required by NRSSTL.
Air craft hazards from Towers	Nearest Airport and distance	The site should be at appropriate distance from the nearest airport. Civil aviation clearance in this regard is required.	Civil aviation clearance is required to be obtained. The details pertaining to such clearance shall be monitored by NRSSTL.	NRSSTL will apply in August 2015 for obtaining the necessary approval.
Construction Stage				
Project Activity	**Potential Impacts**	**Mitigation Measure**	**Parameters for Monitoring**	**Compliance status**
Physical Construction	Disturbance on farming activities and damage to crops	Construction activities on land shall be timed to avoid disturbance on the nearby field crops, care shall be given to carry out construction activities in post-harvest season minimizing crop loss.	Time period of available field crops and are generally managed by the line managers.	The disturbance to the farming activity is minimized by selecting the proper timing for the construction activity. Crop compensation is given to the farmer,

				whenever any damage is done. Concessionaire is keeping a record of the same.
	There could be impact on cultural and historical resources during excavation.	Construction work to stop immediately if any cultural property is found during excavation. The contractor is to intimate the same to JTCL, who will in turn report the same to State Archaeological Department and approval shall be taken for further construction.	Record of cultural properties found during the excavation work, if any.	Any monument of cultural or historical importance is not getting affected due to the proposed sections of the project.
Mechanized Construction	Impact on noise and vibration to construction workers.	Modern machines are deployed fitted with noise control measures like silencers. Personal protective equipment shall be provided to the workers.	Construction equipment to be monitored. NRSSTL generally monitors the construction activities and equipment.	Modern machinery & techniques already are in practice.
Construction of roads for accessibility	Increase of dust particles. Impact on trees/ biodiversity	Existing roads and tracks shall be used for construction and maintenance access to the line to the extent possible.		No new roads are built.
Impact on vegetation	Loss of vegetation	Tower erection to have minimum loss to vegetation/crops. Compensation shall be paid prior to tower erection.	Vegetation marking and clearance control Tree cutting/ trimming permission to be taken by NRSSTL	Minimization of area is priority for smooth conduct of works. Ensure the timely crop/tree compensation payment disbursement.
Impact on Utilities	Impacts on utilities coming in ROW	Utilities to be avoided to the maximum extent	For selection of optimum route, the analysis of alternatives were taken into consideration so that the no. of utilities are kept to minimum.	Permissions / approvals to be taken for any utilities coming in ROW.

Tower Erection	Health and Safety impacts	• The health and safety policy of UTPL and JSL outline the safety aspects to be undertaken during working. • Enforcement and use of safety practices / equipment to be ensured by the NRSSTL.	Records on accidents, if any, during the tower erection.	EHS daily/weekly/monthly report & compliance are in practice. A safety meeting and personal protective equipment talk is conducted before start of work at site.
Construction Waste Disposal	Impact on Aesthetics and landscape	Minimize the impacts from the disposal of construction waste.	The waste from construction activities should be disposed of in a holistic manner minimizing impacts on landscape and aesthetics.	The impacts due to construction are temporary. The soil excavated is again compacted in the foundation and is completely utilized. The towers are pre-fabricated and are assembled at the site, therefore no waste is being left after construction.

Operation Stage			
Project Activity	**Potential Impacts**	**Mitigation Measure**	**Parameters for Monitoring**
Workers Health and Safety	Injury and Sickness/ Health Hazards	Safety Precautions for the Workers	Usage of appropriate technologies, awareness amongst the staff, provision of facilities like vehicle/ ambulance etc.
Electrical Shock Hazards	Injury/Mortality	Safety awareness, emergency plan, medical facilities	Proper maintenance of fences, barriers, signals etc. along with a record of number of injuries and accidents.
Transmission Lines	Exposure to electromagnetic	Transmission line design to comply with the limits of	Required ground clearance to be maintained.

	Interference	electromagnetic interference from overhead power lines	
Tree cutting or trimming / crop damage for ROW Maintenance	Loss of vegetation	• Adequate clearance between the tree top and the conductor as per the technical specification. • Crop / tree compensation to be paid on damage during operation and maintenance of the transmission line.	Tree cutting / trimming permission and compensation to be paid by NRSSTL.
Orientation for Contractor, and Workers	Sensitivity of the work force towards environmental & safety requirements	Carry out training and awareness programmes for the workers	To ensure that the contractor and workers understand and have the capacity to ensure that environmental & safety requirements and implementation of mitigation measures are addressed and carried out appropriately.

25. INSTITUTIONAL FRAMEWORK FOR EMP IMPLEMENTATION

75. NRSS XXXI (B) has three tiers of institutional bodies to oversee the implementation of the project. The bodies are constituted at the head quarter/corporate office, regional office level and at the project level. The head quarter/corporate office level institutions are focused on financial aspects of the project, while in the regional/project level the technical aspects of the project are focused. The EMP implementation during the construction stage shall primarily be the responsibility of the contractor which will be constantly monitored by the project team of NRSSTL. The project team of NRSSTL consists of managers supported by engineers who will be supported by site supervisors. Safety Officer is responsible for project execution and shall be responsible for environment management, monitoring health and safety issues, ROW maintenance etc. The organization chart of the sub-contractors associated with NRSSTL is given in **Appendix-XII.**

26. CATEGORIZATION OF SUB-PROJECT

76. The sub-project can be classified as category B based upon ADB's EA requirements as per their Safeguard Policy Statement (2009). This classification is based on the review of the available documents and site visit with respect to the environmental sensitivity due to project activities.

27. PROJECT AGAINST THE PROHIBITED INVESTMENT ACTIVITIES LIST

77. The sub - project does not involve any prohibited activity as per the Prohibited Investment Activities List (PIAL) of ADB.

28. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

78. Whenever a power transmission system is planned and put up for the Government's approval, a Gazette notification of the transmission scheme is made in the Gazette under section 164 of the Electricity of 2003. The details of the schemes including the locations (villages/towns) through which it will pass should be published in daily newspapers of the area for information and to solicit comments, from the public within stipulated period. This is to allay fears and apprehensions of people and the objections or suggestions received, are considered in the location of the project. Under the project the same has already been published as per the rules and procedures in three languages, viz., Hindi, Punjabi and English. The newspaper notices in all languages are given in **Appendix-XIII (A), (B) & (C).**

79. Negotiations with the community/individuals are done at the time of crop compensation also. The negotiations and agreements on land utilization as well as assets valuations have been on bipartite agreement basis. The project has planned to maintain safe distances all along the corridor and ensure mitigations for adverse impacts. The project head has informed that grievances, if any are properly handled and addressed in a timely and appropriate manner.

29. INSTITUTIONAL FRAMEWORK & GRIEVANCE REDRESSAL

80. The Head of transmission line is responsible for the following:

- Ensuring availability of resources and appropriate institutional arrangements for implementation health & safety;
- Compliance of legislative requirements and contractual terms; and communication with the regulatory agencies;
- Overall implementation of the health & safety by construction contractors, sub-contractors, workforce deputed along the project corridor;
- Conduct audits, and inspection of all the project activities;
- Preparation of necessary documents and record keeping system; and

81. As informed by the project proponent, they have constituted its own Grievance Redressal Mechanism (GRM) to sort out issues and concerns early in the ground level. If some grievances/issues come to them, they first try to resolve it through Site-in-Charge, if not resolved then it is forwarded to Section-in-Charge, then to Project-in-Charge and finally to Corporate Head at the Head Office.

30. SITE VISIT OBSERVATIONS

82. A site visit was undertaken by IIFCL's Environmental and Social Safeguard specialists on 16th June 2015 alongwith Safeguards Analyst and Financial Sector Specialist, ADB. The site visit was undertaken to review the implementation of the project's environmental and social safeguards. During the site visit, following staff was mainly consulted regarding environmental safeguards related measures implemented at transmission project site:

(a) Mr. Rajnish Mahajan, General Manager & Project Manager, NRSSTL

(b) Mr. Ravinder Singh, Manager, NRSSTL
(c) Mr. Sudhir Tripathi, Assistant Manager (Safety Officer), NRSSTL
(d) Mr. K.R. Wadhwa, Additional General Manager (Projects), UPTL

83. At project office at Patiala, Project Head Mr. Rajnish Mahajan discussed project elements, progress of the sub-project so far, clearances, environment & social safeguards related aspects of NRSSTL project. Based on the discussions with abovementioned officials and visit, the site observations are given below:

- As informed by Project-in-charge, the ROW of the transmission line is 46 m (23 m on either side).
- The permits and NOCs required for the transmission line construction are in place.
- The developer informed that the sub-project does not involve any forest land, protected area, sites of cultural and heritage importance.
- The stretch from Kurukshetra - Malerkotla transmission line was visited.
- Land for towers and right of way is not acquired and agricultural activities are allowed to continue.
- Foundation laying for towers was seen in the stretch.
- During site visit, it was observed that top soil was stockpiled for later use after completion of construction activity.
- The area in foundation laying was cordoned off with signage strip for safety purpose. Developer informed that one guard stays at night at all locations where foundation work is going on.
- Two nos. of material stores were visited one was in rented building and other one is on leased land with proper fencing.
- Safety signs were placed at the store facility.
- At store facility, only one temporary resting tent was observed for labour use.
- First aid boxes were provided at work sites and labours are provided rented accommodation facilities in nearby villages.
- Labours were seen wearing personal protective equipment.
- Stringing activity was seen at Kurukshetra. In an isolated case, deficiency in safety measures was observed during stringing. The labour working at a height

was seen without helmet, although other safety gears like gloves, safety belts etc. were being used by the labour.

84. The site visit photographs regarding the environmental safeguard measures implemented during construction stage of transmission project are given in **Photo Plate-I.**

31. CONCLUSIONS AND RECOMMENDATIONS

85. Based upon the available documents and site visit for a section of NRSS XXXI (B) Transmission Line, it is concluded that NRSSTL through its EPC contractors has undertaken adequate safety and environmental safeguard measures. The conclusions for the sub-project are given below:

- The sub-project has been prepared by NRSSTL as per its own funding requirement and not in anticipation to ADB operation;
- The sub-project has necessary national and local level clearance as well as permits and approvals for project implementation;
- For selection of optimum route, the analysis of alternative were taken into consideration so that the no. of crossing of major rivers / railway lines, national / state highways, overhead extra high voltage / pipelines and communication Lines are minimum and marshy low lying areas, river beds, earth sleep zones, nallas, lakes have been avoided as far as possible;
- No forest land is coming in the ROW of the transmission line;
- Concessionaire has confirmed that all statutory clearances /approvals /permits are obtained by NRSSTL;
- Developer has informed that no tree has been cut so far, however some trees are coming in the ROW.
- Tree cutting / pruning will be done after taking appropriate permissions, as and when required.
- The sub-contractors Unitech Power Transmission Ltd. and Jyoti Structures Ltd. have a well - defined safety management protocols;
- NRSSTL has a safety officer deployed for enforcement of safety measures during construction;

- Commitment is shown by the developer to execute all construction and operation related activities for the transmission line as per the established environmental health and safety (EHS) practices;

- The sub-contractors, Unitech Power Transmission Ltd. and Jyoti Structures Ltd. have their health and safety policy;

- As observed during site visit, EPC Contractors are taking mitigation measures/precautions to safeguard environment and ensure safety;

- The developer has been informed to enforce the safety measures in complete spirit at the construction site;

- Concessionaire has confirmed that there will continued compliance by the facility owner and the civil works contractors with the terms and conditions stipulated according to statutory clearances /approvals / permits;

- Based on the due diligence findings, the sub-project developer has taken adequate measures for safety and environmental management so it can be deduced that the sub-project has no significant environmental safeguard issues.

- Regular field verification will be undertaken by IIFCL safeguards team to assess and confirm compliance as per the agreed environmental measures by the concessionaire.

86. The current sub-project therefore does not appear to involve any kind of reputational risk to ADB funding on environmental safeguards and recommended for funding under the proposed project.

DUE DILIGENCE ON SOCIAL SAFEGUARDS

32. OBJECTIVE OF SOCIAL SAFEGUARDS DUE DILIGENCE:

87. Social Safeguards due diligence study is carried out to assess the social monitoring compliance status of the project as per the applicable National policies/procedures as observed during the site visit as well as the information received. The main objective of this Social Safeguard Due Diligence Report (SSDDR) is,

- To assess the likely social impacts and its minimization/mitigation majors adopted of the project with respect to land acquisition, compensation and involuntary resettlement, common properties, if any, in terms of displacement, loss of incomes, and community links:

- To ascertain, in case of any adverse impact, if appropriate mitigation measures have been taken during the project planning, designing and frameworks established for carrying out safeguard measures during the implementation stage to minimize and mitigate such if any adverse impacts;

33. APPROACH AND METHODOLOGY:

88. The social due diligence report for the project has been initiated after review of Information Memorandum (IM), DPR, all other clearances, licenses, Gazette notification and notice under Indian Telegraph Act, 1885. On site visit and detail consultation/discussion with the project developer NRSSTL and various permits and approvals relating to the project to understand the salient features of the project and various social concerns. The following documents/Reports/Licenses and notifications were referred in order to prepare the Social Safeguard Due Diligence Report:

- Information Memorandum (IM);
- Detail Project Report (DPR)
- Lenders Independents Engineers Report (LIE) (March 2015);
- Gazette Notification;
- Transmission License;
- Labour License;
- Notice under Indian Telegraphic Act, 1885
- Information regarding the methodology adopted for crop compensation;

- Discussion with developer.

34. INFORMATION DISCLOSURE

89. The Transmission project was disclosed through Gazette Notifications, which were published dated 15th of October 2014 under Section 164 of the Electricity Act, 2003 and under Indian Telegraph Act, 1885. The notifications for the NRSSTL have also been disclosed for the local people which were published in the Vernacular language in the regional daily in Punjabi, Hindi as well as in the English Daily Newspapers like "The Punjabi Tribune" (Punjabi), "The Janasata" (Hindi) and "The Indian Express " (English), on dated 10th June 2014 simultaneously. A sample copy of the all three Gazette Notification in different language is attached as **Appendix-XIII (A), (B), (C).**

90. **Gazette Notifications for Transmission Line (NRSSTL) :-**The Gazette of India is a public journal and an authorized legal document of the Government of India published weekly by the Department of Publication, Ministry of Urban Development. It is authentic in content, accurate and strictly in accordance with the Government policies and decisions. Through the Gazette Notifications, the Central Government, Ministry of Power declared its intention to establish and operate the transmission line for inter-state transmission of electricity.

91. **Notice issued to the affected people:** Under the Indian Telegraphic Act. 1884, section 10 to 19 read with section 42 of Electricity (Supply) Act 1984, notices is issued to the property owner. The notice/intimation letters were issued to the project affected people to communicate them about the project and the transmission line will go through the property. It was also documented in the notice that due care will be taken to minimize the damage, if damage occurred to any standing crops and trees then compensation is being paid during the construction /erection of the line. The notice was framed in vernacular languages both in English and Punjabi which was handed over to the owner of the property with receiving. The copy of the notice regarding the tower foundation is given in **Appendix-VII.**

35. SOCIAL IMPACT OF THE PROJECT:

92. **Impact on Structure:** With the analysis of various alternatives, the final route has such been selected that the transmission line does not intersect any village settlement and also not pass through any urban establishment in both the section, the resettlement has been completely avoided. Since there is no resettlement impact, so there is no adverse impact on residential or commercial or any other structures along the proposed alignment therefore Resettlement Action Plan (RAP) is not required to be prepared for the project.

93. **Impact on land during Foundation, Erection, and Stringing:** As per section 164 of The Electricity Act 2003 and Indian Telegraph Act 1885, part III, section 10 to 19, the appropriate Government has the authority to place and maintain transmission lines under,

over, along or across and posts in or upon any immovable property. Indian Telegraph Act 1885, Part III, Section 10 (b) prohibits acquisition of any right other than that of use only. Land for towers and right of way is not acquired and agricultural activities are allowed to continue. Moreover, land would also be affected for creating access roads for bringing in the material and the mobility of machinery. Further it can be noted that the scope of the project does not involve any substation in both the section so no land acquisition is required for this project.

94. During the discussion with the subproject developer it was observed that the Right of Way (RoW) is being arranged by the EPC contractor. On behalf of NRSSTL the subcontractor has issued three stage notices to all the land owners for ROW clearance. Further, during the discussion with the developer, it was also noted that, the compensation for the loss crops or any other temporary impact due to the loss of property is paid in three stages during the whole construction stage. At first it is paid during the construction of foundation of the tower at excavation, second time during the tower erection and lastly during the stringing of the transmission line.

95. The calculation of damage area is done in the presence of landowners as well as in the presence of representatives of JSL/UPTL, based on the yield of the crop as per the yield chart collected from the District Agriculture dept. and subsequent Market Committee. The rate of the damaged crops is established as per market price as obtained from the Market Committee. The Crop Compensation chat is attached as **Appendix- XIV**. Moreover, for smooth implementation and timely completion of the project, NRSSTL has appointed the Project Management Consultant (PMC) M/s- Virtuous Energy Pvt. Ltd. (VEPL) to witness and negotiation with the affected landowners.

96. During foundation of tower, the land is temporarily excavated for the pit area which is then filled back and rehabilitated to allow continuation of normal agricultural activities by the owner. The standard tower base area of tower is in 169 m^2 to 324 m^2 depending on the type of tower.

97. Apart from the land used for foundation, tower erection also requires a larger peripheral region of about 2-4 m on each side will be required to be cleared temporarily to carry out the construction activities to erect the tower.

98. After tower erection the stringing activity starts which creates substantial impacts in terms of damage to standing crops is being also paid during the time of stringing, when the conductors are drawn from one transmission line tower to the next one across the fields lying in between the two towers.

99. **Impact on Schedule Tribe people:** NRSSTL is falling under the states of Punjab and Haryana which is not coming under the state wise list of schedule area. The project sections is passing through Karnal, Kurukshetra and Kaithal district of Haryana and

Patiala, Sangrur, Ludhiana, Jalandhar, Kapurthala, Taran Taran and Amritsar district of Punjab which is not a part of the notified Fifth Schedule Area1, hence, the project does not disturb any tribal settlement and does not have any adverse impact or create any threat to the survival of any tribal community along the alignment. Hence no Tribal Development Plan (TDP) is required to be prepared for this sub-project.

100. **Impact on Religious properties:** It was observed during the site visit that both the section of the transmission line alignment has been so designed that there is no religious property are going to be affected.

36. CROP COMPENSATION AND ERECTION PAYMENT AND ENTITLEMENTS:

101. As per section 164 of The Electricity Act 2003 and Indian Telegraph Act 1885, part III, section 10 to 19, the appropriate Government has the authority to place and maintain transmission lines under, over, along or across and posts in or upon any immovable property. Indian Telegraph Act 1885, Part III, Section 10 (b) prohibits acquisition of any right other than that of use only. Land for towers and right of way is not acquired and agricultural activities are allowed to continue. Moreover, land would also be affected for creating access roads for bringing in the material and the mobility of machinery. Further it can be noted that the scope of the project does not involve any substation in both the section so no land acquisition is required for this project. Crop compensation is being paid to the land owners as per section 164 of The Electricity Act 2003 and Indian Telegraph Act 1885, which is being paid to the affected land owners for use of Right of Way during excavation, erection and stringing of transmission line.

102. Since, the impact on land is temporary and the ownership status of the land remains with the landholder. On behalf of NRSSTL the subcontractor has issued three stage notices to all the land owners for ROW clearance. Further, during the discussion with the developer, it was also noted that, the compensation for the loss crops or any other temporary impact due to the loss of property is paid three times during the whole construction stage. At first it is paid during the construction of foundation of the tower, second time during the tower erection and lastly during the stringing stage.

103. The crop compensation procedure for the loss of crops is:

- Before taking up the work in any farmer's land, the ownership of land is verified by taking up Form Land Revenue Record of Rights and Register with the help of village Patwari;

- Notice is issued by the respective contractor to the farmer under the Indian Telegraphic Act,1885 in the name of NRSSTL;

[1] The Web link of the state wise list of "The Scheduled Areas":
http://www.tribal.gov.in/Content/StatewiseListofScheduleAreasProfiles.aspx

- Finding out the yield of the crop as per the yield chart collected from the District Agriculture dept. and subsequent Market Committee. The rate of the crops is established as per market price as obtained from the Market Committee. The rate of Crop Compensation attached as **Appendix- XIV.**

- The notice is accepted by farmer and then take-up of the construction, erection and stringing work in farmer's land;

- The area damaged at the farmer's land is measured in the form of "Panchnama" and it is done in presence of farmer or his representative.

- The total area is evaluated based on the crop existing in the land and crop rates of that area are taken up from the Mandal Patreshad-Agriculture products & Market rate price of deamaged crop per Qwintal. The Sample crop rate, which was fixed by District Agricultural Officer, of project area is being considered.

- The compensation is paid to farmers through cheques only.

- As informed by the subproject developer in total 409 numbers of farmers/landowners are compensated for Foundation, 136 numbers for erection of towers and for stringing activity 5 numbers of farmers are compensated in both the section of transmission line.

104. **Valuation of Damaged Crop/Yield:** Any damage for the loss of crops or any other temporary impacts due to the activities involved in tower erection and access roads during the construction stage is mitigated by providing adequate compensation. The damaged area and per sqm value of crop in the land is multiplied to get the value of compensation, (Valuation of the Damaged Crop = Area Damaged X Value of Crop yield as per in per Rs./sqm). The details copy of the Valuation of Damaged Crop and the calculation sheet is given in **Appendix-XV.**

105. **Tower foundation payment and compensation:** During the laying of the foundation and erection of the tower, construction materials will be carried to the tower site and required access to agricultural fields at many places. In such cases adequate compensation is being paid by the contractor to the persons whose land/ productivity is affected due to the creation of these temporary approach roads to get the tower erection equipment and power line conductors and other materials to the locations where they are required.

37. GRIEVANCE REDRESSAL MECHANISM:

106. The project proponent has constituted their own Grievance Redressal Mechanism (GRM) to set up the issues and concerns early in the ground level. If some issues come to them regarding any compensation and finalization of rate and fixation of crop price, at first they would like to resolve it through Site in Charge, then forward it to Section In Sharge, then Project In charge and finally to Corporate Head in the Head Office.

107. The notifications for the NRSS XXXI (B) Transmission Ltd. have also been published in the Vernacular language in the regional daily in Punjabi, Hindi as well as in the English Daily Newspapers in "The Punjabi Tribune" (Punjabi), "The Janasata" (Hindi) and "The Indian Express " (English), on dated 10th June 2014. The notice is given to the general public to make observation/representation on the proposed transmission system within two months from the date of publication if any in writing.

108. The Grievance Redressal Cell comprises as follows:

Site in Charge
↓
Section In charge
↓
Project in Charge
↓
Corporate Head at Head Office

38. LOCAL EMPLOYMENT:

109. The project provides limited employment opportunities to the local people during the construction stage, especially with respect to unskilled labor. As informed during the site visit, the nature of work requires specialized skill for the highly technical work such as erecting of tower or stringing of transmission line. Local people normally do not have such experience. Thus, the contractors working for tower erection have their own gang of skilled labour who are trained in similar activities. As informed by the developer, no local labour has been employed for the tower erection and stringing.

110. Further, as informed by the sub project developer the EPC contractors have given job opportunity to local people giving them as security guard, driver and office assistants. Few Vehicles tractors and four wheelers from the locality have taken on hire basis as per the requirements.

39. LABOUR LICENSE OBTAINED BY THE SUBPROJECT DEVELOPER:

111. The subproject developer has obtained the Labour license for the subproject received from Assistant Labour Commissioner (C), Chandigarh under sub section 2 of Section 7 of

the Contract Labour (Regulation & Abolition) Act, 1970 to NRSSTL, for administrative convenience and to facilitate compliance in respect of employees/ workers dated 12/09/2014. As per the labour license given by Asst. Labour Commissioner, Chandigarh, the maximum number of contract labour are to be employed on any day through each contractor is any number.

112. The sub-Contractors M/s Unitech Power Transmission Ltd. and Jyoti Structures Ltd. have also obtained their respective Labour license under Contract Labour (Regulation & Abolition) Act. 1970 and also the labours are covered under workmen's Compensation Insured for the respective section. The detail of labour licenses of NRSSTL and the respective subcontractors are given in **Appendix-IV & V**.

113. For occupational health and Safety of workers, every supervisor is given responsibility for managing the gang of labours and all the supervisors are provided the telephone numbers of nearby Public Health Centres. In case of any on or off site medical aid is required to any labours this has been facilitated by the supervisor for giving medical aid accordingly. Labours are also provided with basic amenities like drinking water, transportation to work site and safety gears. Moreover the subcontractors UPTL and JSL have ensured the labourers with Workmen Compensation Policy.

114. As far as the project site is concerned most of the site is available with good road networks. However, it is ensured that the subcontractor in charge of the section is responsible for site activity and available at site throughout the working period. For any emergency situation/incidents a vehicle is provided to each section in-charge along with telephone numbers of nearby hospital. The subproject developer has confirmed that the Emergency vehicle (SUV) remains within the radius of 5 Kms. of the site along with the first aid box will be available to the labours.

40. DISCLOSURE:

115. The final ESDDR report will be accepted by the subproject developer and endorsed by IIFCL. After getting the No Objection Certificate (NOC) from the ADB, the report will be uploaded for public disclosure in IIFCL's website, Project developer's website as well as ADB's website.

41. SITE VISIT OBSERVATION:

116. A site visit was undertaken by ADB's Fact Finding Mission accompanied by IIFCL's Environmental and Social Safeguard specialists during 16th -17th of June 2015 to review the implementation of the environment and social safeguards compliance status of the project. During the site visit it was observed that:

- During discussion with the project official it was informed that the project does not disturb any tribal community along the alignment.

- Since this project does not required any substation so no land acquisition is required for this project;

- On behalf of NRSSTL the subcontractor is required to pay only crop compensation for having RoW and need not acquire the land. The company has received approval under Section 68 of Indian Electricity Act, 2003 for laying overhead lines. The approval under section 164 of Indian Electricity Act, 2003 related to placing of electric lines and posts has also been obtained.

- Land for towers and right of way is not acquired and agricultural activities are allowed to continue.

- During the discussion it was noted that the sub project developer is in process of disbursing compensation through negotiations with the community where ever required. The negotiations and one to one discussion with the land owners on land utilization as well as assets valuations have been on bipartite basis.

- On behalf of NRSSTL the subcontractor has issued notices to all the land owners for RoW clearance. Further, during the discussion with the developer, it was also noted that, the compensation for the loss crops or any other temporary impact due to the loss of property is being paid in three stages during the whole construction stage. At first it is paid during the construction of foundation of the tower at excavation, second time during the tower erection and lastly during the stringing of the transmission line.

42. MONITORING AND EVALUATION:

117. On behalf of Lenders the Lenders Independent Engineer (LIE), M/s Feedback Infra Pvt. Ltd is monitoring the financial as well as physical progress of the project and submitting the Monthly Progress Report to the lenders which captures status of excavation, tower erection.

43. CONCLUSIONS AND RECOMMENDATIONS:

118. The sub-project has been prepared by NRSSTL which appears adequate social safeguard have been taken into consideration during project planning and implementations. Alternative alignments have been considered as part of the project to minimize the impact on settlements, forests and tribal groups.

- The subproject NRSSTL was prepared by REC Transmission Projects Company Ltd. to establish the transmission system for the Northern Region System Strengthen scheme through tariff based competitive bidding process.

- The sup project, NRSSTL has been prepared prior to the ADB's involvement and IIFCL entered into the project after technical closure and before the financial closure of the project.

- The subproject NRSSTL was prepared by REC Transmission Projects Company Ltd. for its own requirement not in anticipation of ADB's procedure.

- Crop compensation is being paid to the land owners as per section 164 of The Electricity Act 2003 and Indian Telegraph Act 1885;

- The compensation for the loss crops or any other temporary impact due to the loss of property is being paid in three stages. At first it is paid during the construction of foundation of the tower, second time during the tower erection and lastly during the stringing stage;

- The project has planned to maintain safe distances all along the corridor and ensure mitigations for adverse impacts if any. Grievances, if any are properly handled and addressed in a timely and appropriate manner.

- It appears that the proposed transmission line is not intersecting any village settlement and also not passing through any urban establishment;

- The Right of Way (ROW) is being arranged by the sub- contractor with payment of crop compensation on behalf of NRSSTL during execution of the project.

- It appears that the transmission line is not lead to any impact on common property resources;

- The sub-contractors have obtained requisite labour licenses and labours are insured and covered under work men's compensation for any untoward incident.

119. It can be summarized that apart from the temporary impact on land for which the land owners are being paid for use of access road to the tower excavation, erection and stringing site for loss of crops, the project does not involve any major social safeguard issues. It seems that the sub-project does not appear to involve reputational risk to Asian Development Bank funding on social safeguards and recommended for funding under the proposed project.
