

# Combined Resettlement and Indigenous Peoples Plan

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## India: Himachal Pradesh Clean Energy Transmission Investment Program - Tranche 3

Prepared by: Himachal Pradesh Power Transmission Corporation Limited (HPPTCL), Government of Himachal Pradesh for the Asian Development Bank.

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## ABBREVIATIONS

ADB	Asian Development Bank
AH	Affected Household
APs	Affected Persons
DC	District Collector
EA	Executing Agency
EHV	Extra High Voltage
ESC	Environment and Social Cell
ESSP	HPPTL's Environment and Social Safeguard Policy, May 2011
FGD	Focus Group Discussions
GIS	Gas Insulated Substation
GOHP	Government of Himachal Pradesh
GOI	Government of India
GRC	Grievance Redress Committee
ha	hectare
HEP	Hydro Electric Project
HP	Himachal Pradesh
HPCETIP	Himachal Pradesh Clean Energy Transmission Investment Program
HPPTCL	HP Power Transmission Corporation Limited
IA	Implementing Agency
IP	Indigenous Peoples
IEE	Initial Environment Examination
km	kilometre
MFF	Multitranchise Financing Facility
PGCIL	Power Grid Corporation of India Limited
PIU	Project Implementation Unit
PMU	Project Management Unit
RF	Resettlement Framework
RFCTLARRA	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act-2013
RIPP	Resettlement and Indigenous Peoples Plan
RoW	Right of Way
SIA	Social Impact Assessment
SPS	Safeguard Policy Statement, 2009
STs	Scheduled Tribes

## EXECUTIVE SUMMARY

i. The Government of Himachal Pradesh (GoHP) through the Government of India (GOI) requested Asian Development Bank (ADB) to provide a multitranche financing facility (MFF) to partly fund the Himachal Pradesh Clean Energy Transmission Investment Program (HPCETIP) in the Indian state of Himachal Pradesh (HP), the program is currently under implementation and considered on-track with regards to safeguards implementation. HP Power Transmission Corporation Limited (HPPTCL) is both the Executing Agency (EA) and Implementing Agency (IA) for the multitranche financing facility (MFF) program. Based on the nature, scale and significance of expected impacts, tranche 3 has been classified as Category “B” for impacts on Involuntary Resettlement (IR) and “B” for impact on indigenous peoples (IP) as per ADB Safeguard Policy Statement (SPS), 2009. As such, this document is a Combined Resettlement and Indigenous Peoples Plan (RIPP) for tranche 3 subprojects. The RIPP is based on the detailed route alignment survey and design. However, any changes in the alignment or subproject sites will be assessed prior to start of construction for each segment and accordingly, the same will be finalized and updated in a final version of the RIPP. The tranche 3 subprojects, with physical components, consist of 4 proposed new substations/pooling stations and 5 transmission lines as below.

### 1. Construction of Substations:

- i) 66/22 kV, 2x10 MVA GIS at Nirmand (Bagipul).
- ii) 132/220 kV, 2x80/100 MVA substation at Mazra (Distt.Chamba)
- iii) 220 kV Pooling substation at Hatkoti.
- iv) 220 kV Pooling substation at Barsaini.

### 2. Construction of Transmission Lines:

- i) 66 kV D/C transmission line from 66/22 kV GIS Nirmand to 66/220 kV Kotla Substation (24 kilometers).
- ii) 400kV D/C transmission line (Twin Moose) from 400/220 kV, 2x315 MVA Lahal GIS to 400/220 kV Chamera Pooling station of PGCIL (39 kilometers).
- iii) 220 kV D/C transmission line from 132/220 kV GIS Mazra 33/220 kV Karian (18 kilometers).
- iv) 220 kV D/C transmission line (Twin Moose) from Bhajoli Holi Hydro Electric Project (HEP to 400/220 kV Lahal GIS (17 kilometers).
- v) 132kV D/C transmission line from Barsaini to Charor (34 kilometers).

ii. There are 4 proposed substations out of which one will be built on government land at Hatkoti and the remaining 3 on private land. All the land has been acquired through negotiated settlement, obtaining consent from the land owners and the negotiation has been completed (see Due Diligence in Annex 1) except for one substation (Mazra), for which deliberations are ongoing with 5 households; subsequently the annex contains corrective actions to complete these negotiations. No homes will be demolished, and no households will lose 10% or more of their land holding; no informal settlers were residing on the land; there were no outstanding complaints with regards to the land; and there are no affected scheduled tribe households, nor are the substations lands within a scheduled area.

iii. The five proposed transmission lines will have both permanent and temporary impacts. Approximately, 148 households (1,208 persons) will be affected by loss of small parcels of land for tower footings. Approximately 435 towers of various sizes will be installed (depending on the voltage of line) of which 168 towers are proposed on private land and 267 are proposed on government land. An estimated 15.25 ha of land will be required in total for tower footings, of which 7.03 ha is private land and 8.22 ha is government land. Land for each tower to be placed

on private land will be compensated and paid to the affected households. Additionally, 861 trees will be affected (636 fruit trees and 225 non fruit/timber trees) by installation of tower footings. Six small agricultural huts (for husk storage) will be temporary affected (nobody resides in the huts). No residential structures will be demolished by the transmission lines.

iv. There will be temporary impacts during the construction of transmission lines along the right of way which will be limited to crop loss of one season and loss of trees. A preliminary assessment estimates the total area for this crop loss is 181.27 hectares, with approximately 181 AHs<sup>1</sup> and 1450<sup>2</sup> APs affected by temporary impacts. The impacts along the right of way are minimal in hilly areas as most of the towers and lines will pass from one hill top to another. Some loss of crops will still occur which will be finalised in segments during construction; however compensation for each section will be dispersed prior to any works commencing on a section-by-section basis. Additionally, an estimated 286 trees will be affected in the right of way.

v. Two transmission line components (total length of Bhajoli to Holi line and part of Lahal to Chamera line) in tranche 3 fall within the Bharmour sub-tehsil of Chamba district which is a scheduled area as per the constitution of India. Whilst many Scheduled Tribe (ST) households residing here no longer maintain their cultural traditions and have settled amongst the non-tribal populations they are considered vulnerable APs and therefore Indigenous Peoples (IPs) for the purposes of this RIPP. Thirty-nine (39) ST/IP households will be permanently affected in terms of loss of land by tower footings, of these 2 households will lose between 10%–12% of their land holding (from the tower footings) and the remaining 37 will lose less than 10% of their total land holding. None of the affected households are landless. In addition, an estimated 39 ST/IP households having a total of 39.84 hectares of land in Bharmour sub-tehsil will be temporary impacted by activities in the right of way. A separate socioeconomic profile and social impact assessment within the project area of influence has been prepared (see Section 3.3 and 3.4). A summary of impacts of tranche 3 subprojects are provided in **Table E.1**

**Table E.1: Summary Impacts**

#	Impacts	Quantity
1	Total number of towers on private land and area (ha) affected by the tower	168 towers (7.03 ha)
2	Total number of towers on government land and area (ha) affected by the tower in government land	267 towers (8.22 ha)
3	Total area for crop compensation for temporary Impact (ha) for transmission line RoW	181.27 ha
4	Total number of fruit trees	636
5	Total number of non-fruit/timber trees	225
6	Estimated number of trees along the right of way	286
7	Number of small agricultural sheds	6
8	Total number of affected households(AH) and affected Persons (APs) under tower footings	148 AH / 1,208 APs
9	Total number of estimated affected households (AH) and affected persons (APs) under the right of way	181 AH/ 1,450

<sup>1</sup> The average land holding size per household in Himachal Pradesh is 1 hectare. The total estimated affected private land in the right of way is 181.27 ha and therefore, the total number of estimated affected households in the right of way is 181 who will be temporarily impacted.

<sup>2</sup> The average household size as per the census and socioeconomic survey is 8.12 Therefore; the estimated number of affected persons along the right of way is 1450.

#	Impacts	Quantity
10	Grand total of affected households and affected Persons (Tower Footings and Right of Way) <sup>3</sup>	329 (AH)/ 2,658 (APs)
11	Total Number of vulnerable households (including 39 ST households) <sup>4</sup>	64
12	Total number of non-title holders (squatters/encroachers)	0
13	Total number of landless households	0

vi. Consultations were carried out in 28 locations with a variety of stakeholders, communities and affected people during the preparation of tranche 3 safeguards documents. These were carried out around the proposed transmission lines and substations with a total of 235 participants (8% female) which includes 79 numbers of ST participants. Participants were informed and consulted about the tranche 3 impacts and disclosure of information will continue during the implementation of the project. ST/IP affected households and community stakeholders were also consulted at this time, to understand their concerns and integrate their mitigation ideas into the project design and RIPP. HPPTCL will provide relevant resettlement information in a timely manner in an accessible place and in a form and language (Hindi/English) understandable to affected persons and other stakeholders. The draft and final RIPP will be disclosed on ADB's website and HPPTCL's website.

vii. Through its Environment and Social Safeguards Policy, HPPTCL has established a Grievance Redressal Mechanism (GRM) for APs, as per the Resettlement Framework and Indigenous Peoples Framework for the MFF. The GRM consists of a Grievance Redressal Committee (GRC) headed by a Project head and consists of the head of finance wing at the project level, a representative of local Panchayat and affected persons, a representative of ST APs in case of tribal area, a representative of the contractor, and project environment and resettlement and rehabilitation (R&R) staff. Minor grievances will be raised and addressed at the project implementation unit (PIU) level at field. Grievances not redressed by the PIU staff (field level) will be brought to the GRC at the project management unit (PMU) level. The GRC will meet every month (if grievances are brought to the Committee), to assess the grievance, and resolve grievances within one month. APs retain the right to utilise the court system at any point.

viii. A Resettlement Framework (RF) has already been prepared, approved and disclosed in 2011 for the entire MFF. The RF describes the legal and policy framework for compensation, resettlement and rehabilitation under the project, which is in turn defined by the relevant laws and regulations of the Government of India and ADB's Safeguard Policy 2009. An indigenous Peoples Planning Framework (IPPF) has also been prepared in 2011. Tranche 3 activities will not involve any private land acquisition by using eminent domain or enforcing the new land acquisition act of the country, "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (hereafter RFCT in LARR, 2013)", effective from 1 January 2014.<sup>5</sup> Therefore, the RIPP is based on ADB's SPS 2009 and HPPTCL's policies (i) Environment and Social Safeguard Policy, May 2011 (ESSP) and (ii) Resettlement, Relief,

<sup>3</sup> The grand total numbers of AHs and APs include impacts due to loss of small portion of land parcel for tower footings and temporary impact in terms of loss of crops along the transmission line which are not significant.

<sup>4</sup> The assessment vulnerable household is based on the permanent impact on the tower footings. Assessment on vulnerability on temporary impacted households especially along the right of way will be done prior to construction of lines; therefore, the total numbers of vulnerable AHs may change.

<sup>5</sup> There is a new national law related to land acquisition, "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013 (RFCTLARRA, 2013)" which has been effective since 1 January 2014. However, it may be noted that there will be no land acquisition in tranche 3 subprojects and the land for the substations has been procured through negotiated settlement through willing buyer and willing seller mechanism.

Rehabilitation and Compensation Policy, May 2011 (RRRCP) and the RF. The tranche 3 project also follows other relevant national acts such as (i) The Electricity Act, 2003, (iii) The Indian Telegraph Act, 1885 and (iv) Provisions of the Panchayat Extension to the Scheduled Areas Act (PESA), 1996. In addition, the legal framework for Indigenous Peoples has been established under the Project Indigenous Peoples Planning Framework (2011).

ix. Compensation for lost assets will be paid on the basis of replacement cost/market value, as per the Entitlement Matrix shown below. Special measures will be made available to vulnerable households, which includes STs. Compensation eligibility is limited by a cut-off date. APs who settle in the affected areas after the cut-off date will not be eligible for compensation. They, however, will be given sufficient advance notice. Tranche 3 subprojects do not require compulsory land acquisition. Land for tower footings will be compensated as land value and additionally, loss of crops and trees and temporary sheds will be compensated as per market rate.

**Table E-2: Entitlement Matrix**

Type of Losses	Definition of APs	Entitlement	Details
<b>Land</b>			
Loss of agricultural land <sup>6</sup> (Land for Tower Footings) (148 AHs)	<ul style="list-style-type: none"> <li>• Titled owners</li> <li>• affected persons (APs) with traditional land rights</li> </ul>	<ul style="list-style-type: none"> <li>• Compensation based on market/replacement value</li> <li>• Resettlement assistance</li> </ul>	<ul style="list-style-type: none"> <li>• Land to be possessed by the project authority with mutual and voluntary consent of the affected people, compensation will be paid on negotiated market price for the substation land</li> <li>• Compensation at market value for the land affected by tower footing</li> <li>• Transaction costs (documentary stamps, registration costs, etc.) Will be borne by the project authority during registration.</li> <li>• If the residual plot(s) is (are) not viable, i.e., the AP becomes a marginal farmer, resettlement assistances will be paid in the form of transitional allowances based on three months of minimum wage.</li> </ul>
<b>Trees</b>			
Loss of Trees	<ul style="list-style-type: none"> <li>• Land holders</li> <li>• Share- croppers</li> <li>• Lease holders</li> </ul>	<ul style="list-style-type: none"> <li>• Compensation at market value to be computed with assistance of horticulture department</li> </ul>	<ul style="list-style-type: none"> <li>• Advance notice to APs to harvest fruits and remove trees.</li> <li>• For fruit bearing trees compensation at average fruit production for next productive years to be computed at current market value.</li> <li>• For timber trees compensation at market cost based on type of trees.</li> </ul>
<b>Crops</b>			
Loss of Crops (181.27/hectares)	<ul style="list-style-type: none"> <li>• Land holders</li> <li>• Share- croppers</li> <li>• Lease holders</li> <li>• nontitled holders</li> </ul>	<ul style="list-style-type: none"> <li>• Compensation at Market value to be computed with assistance of agriculture department</li> </ul>	<ul style="list-style-type: none"> <li>• Advance notice to APs to harvest crops.</li> <li>• Cash compensation at market cost of mature crops based on average production.</li> </ul>

<sup>6</sup> For the tower footings, HPPTCL will pay the compensation in terms of land value for the affected area under tower footings to be placed on private land.

Type of Losses	Definition of APs	Entitlement	Details
<b>Temporary Huts/Sheds</b>			
Loss of Temporary huts/Sheds for agricultural use (6 sheds)	<ul style="list-style-type: none"> <li>Land holders</li> <li>Share- croppers</li> <li>Lease holders</li> <li>nontitled holders</li> </ul>	<ul style="list-style-type: none"> <li>Compensation at market value</li> </ul>	<ul style="list-style-type: none"> <li>Advance notice to APs to remove the sheds.</li> <li>Compensation at market value</li> </ul>
<b>Government Land and Property</b>			
Government Property (Loss of Land due to tower footings)	<ul style="list-style-type: none"> <li>8.22 hectares</li> </ul>	<ul style="list-style-type: none"> <li>Lump sum compensation as per government rules</li> </ul>	<ul style="list-style-type: none"> <li>Departmental transfer of land records and details.</li> </ul>
<b>Vulnerable Households<sup>7</sup></b>			
Impacts on vulnerable APs (64 AHs)	<ul style="list-style-type: none"> <li>All impacts</li> </ul>	<ul style="list-style-type: none"> <li>Vulnerable APs</li> </ul>	<ul style="list-style-type: none"> <li>Additional assistance based on three months of minimum wage.</li> <li>Vulnerable households will be given priority in project construction employment where feasible.</li> </ul>
<b>Temporary Loss of Land</b>			
Temporary loss of land during construction	<ul style="list-style-type: none"> <li>All APs with affected land on temporary basis</li> </ul>	<ul style="list-style-type: none"> <li>Prior notice</li> <li>Compensation at market value for loss of assets</li> <li>Restoration</li> </ul>	<ul style="list-style-type: none"> <li>Compensation for loss of assets at replacement value.</li> <li>Restoration of land to previous or better quality.</li> </ul>
<b>Unanticipated Impacts</b>			
Other Impacts Not Identified	<ul style="list-style-type: none"> <li>Affected households or individuals</li> </ul>	<ul style="list-style-type: none"> <li>Compensation and assistance</li> </ul>	<ul style="list-style-type: none"> <li>Unforeseen impacts will be documented and mitigated based on the principles agreed upon in the resettlement framework.</li> </ul>

x. The cost estimate for tranche 3 subprojects includes eligible compensation, assistance and support costs for RIPP implementation. This is a tentative budget which needs to be updated prior to the finalization of disbursement. The unit cost for land and other assets in this budget has been derived through rapid field appraisal, consultation with affected households and relevant government authorities. Contingency provision equivalent to 5% of the total cost has also been made to accommodate any variations from this estimate. The total RIPP cost for tranche 3 subproject is estimated to be INR226.90 million (equivalent to \$3.49 million). RIPP costs will be considered as an integral component of project costs. The EA, HPPTCL will make the funds available in its annual budget for the disbursement of compensation and assistance.

xi. HPPTCL is both the EA and IA for the project. The Project Management Unit (PMU) at corporate level is headed by Deputy General Manager (DGM) (Planning) who will be assisted by DGMs from various functions – Administration and Finance, Projects Planning and Design, Procurement and Contracts, Environment and Social Cell and Projects Construction Units. Project Implementation Units (PIUs) at divisional level of the tranche 3 project construction unit are headed by DGMs at four locations – Bhaba Nagar, Rorhu, Chamba, and Sarabhai (Kullu). The Environment and Social Cell (ESC) at the corporate level monitors the policy and implementation of safeguards impacts of all projects managed by HPPTCL. The ESC Environment and R&R

<sup>7</sup> Vulnerable households are defined as women-headed households, scheduled tribe households, below poverty line households, households headed by physically handicapped or disabled persons, severely affected households (household losing more than 10% of productive asset), landless household and nontitled/encroacher households.



Officers assist PIUs in all safeguard aspects of the subprojects in compliance with HPPTCL's Environment and Social Safeguards Policy, May 2011. The ESC is also responsible for implementation of the Environmental Management Plan and RIPP for tranche 3 subprojects. As per ADB's SPS 2009, PMU and ESC are required to conduct regular monitoring of safeguards compliance of each subproject funded by ADB to ensure compliance with project covenants.

xii. All land acquisition, resettlement, and compensation for a subproject having permanent impacts will be completed before start of civil works. All land required will be provided free of encumbrances to the contractor prior to handing over of subproject sites and the start of civil works. However, payment of compensation for loss of crops and trees due to the transmission line and the RoW will be parallel during construction; on a section by section basis. The implementation of the RIPP will include: (i) identification of cut-off-date and notification, (ii) verification of losses and extent of impacts, (iii) finalization of entitlements and distribution of identity cards, (iv) consultations with APs on their needs and priorities, and (v) resettlement, provision of compensation and assistance, as well as Indigenous Peoples related activities. However, public consultation and monitoring will be continued on an intermittent basis as needed during the entire duration of the project.

xiii. Monitoring is the responsibility of HPPTCL through its PMU, PIU and the Environment Social Cell and it will submit semiannual monitoring reports to ADB for review. The extent of monitoring activities, including their scope will be commensurate with the project's risks and impacts. ADB will require HPPTCL to establish and maintain procedures to monitor the progress of implementation of safeguard plans; verify the compliance with safeguard measures and their progress toward release of entitlements and benefits; document and disclose monitoring results and identify necessary corrective and preventive actions in the periodic monitoring reports and follow up on these actions to ensure progress toward the desired outcomes. HPPTCL through its PMU will be responsible for managing and maintaining an AP database and documenting the results of the census. Semiannual monitoring reports documenting progress on RIPP implementation and resettlement plan completion reports will be provided by HPPTCL through its PMU to ADB for review.

## 1.0 INTRODUCTION AND PROJECT DESCRIPTION

### 1.1 Overview and Background

1. This is a combined Resettlement and Indigenous Peoples Plan (RIPP) which has been prepared for the tranche 3 components of the Himachal Pradesh Clean Energy Transmission Investment Program (HPCETIP). The RIPP is draft at this stage.

2. For improvement, strengthening of existing and building of new infrastructure for effective power evacuation, the Government of Himachal Pradesh (GoHP) through the Government of India (GoI), had requested the Asian Development Bank (ADB) for a multitranche financing facility (MFF) to partly finance the power sector investment program in the state. The investment program covers investments for transmission of clean energy to national grid of India by construction of pooling substations and extra high voltage (EHV) transmission lines. To implement this activity, Himachal Pradesh Government has established H.P. Power Transmission Corporation Limited (HPPTCL) vide HP Government Notification Nos.: MPP-A (1)-4/2006-Loose dated 11th September, 2008 as the State Transmission Utility (STU). HPPTCL is both the Executing Agency (EA) and Implementing Agency (IA) for the program.

### 1.2 Project Description and Subproject Components (Tranche 3)

3. The \$350 million investments in the MFF will contribute to support the economic development in Himachal Pradesh through expanded power supplies from clean energy sources, and support a sustainable state electricity sector in the state. The HPCETIP will produce the following outcomes: (i) increase availability of clean energy downstream at pooling stations for effective power evacuation in a financially sustainable manner, (ii) improve state finances and power sector financial viability from sales revenue earned from power exports, (iii) improve sector governance, (iv) improve capacity in HPPTCL for better planning, implementation and management of power evacuation infrastructure, and energy efficiency through a better power management program, and (v) improvement in implementation standards of environmental and social safeguards in the sector.

4. The proposed tranche 3 project, located in Chamba, Shimla, and Kullu districts of Himachal Pradesh, consists of the following components. **Table 1.1** gives the investment component costs for tranche 3. The following sections present each of these components.

**Table 1.1: Tranche 3 Subprojects**

SNo	Name of Subproject	Cost in US Million Dollar
<b>COMPONENT I. Bhabha Nagar PIU (Kinnaur District) subprojects</b>		
T1	66 kV D/C transmission line from 66/22 kV GIS Nirmand to 66/220 kV Kotla Substation.	4.67
S1	66/22 kV, 2x10 MVA GIS at Nirmand (Bagipul).	6.33
<b>COMPONENT II. Chamba PIU (Chamba District) subprojects</b>		
T2	400kV D/C transmission line (Twin Moose) from 400/220 kV, 2x315 MVA Lahal GIS to 400/220 kV Chamera Pooling station of PGCIL.	27.33
S2	132/220 kV, 2x80/100 MVA substation at Mazra (Distt.Chamba)	19.33
T3	220 kV D/C transmission line from 132/220 kV GIS Mazra 33/220 kV Karian	8.17
T4	220 kV D/C transmission line (Twin Moose) from Bhajoli Holi HEP to 400/220 kV Lahal GIS	9.67

SNo	Name of Subproject	Cost in US Million Dollar
<b>COMPONENT III: Rohru PIU (Shimla Districts) subprojects</b>		
S3	220 kV Pooling substation at Hatkoti	7.43
<b>COMPONENT IV: Sarabhai PIU (Kullu and Mandi Districts) subprojects</b>		
S4	220 kV Pooling substation at Barsaini	8.08
T5	132kV D/C transmission line from Barsaini to Charor	10.67
<b>Sub Total for Subprojects</b>		<b>101.68</b>
	ERP+3% contingency	10.33
	Building auxiliaries	2.34
<b>V.</b>	Others/Capacity Development etc.	21.65
<b>Total in Cost in million US Dollars</b>		<b>136.00</b>

5. The Project Management Unit (PMU), headed by Deputy General Manager (Planning), has been established at corporate level located in Shimla who is assisted by corresponding personnel from various functions – Administration and Finance, Planning and Design, Procurement and contracts, Environment and Social Cell (ESC) and Project Construction. Project Implementation Units (PIUs) at divisional level are headed by Executive Engineers at six geographic locations in the state, and four PIUs are involved in tranche 3 among the six.

6. This draft RIPP is based on the transmission route alignment provided by HPPTCL and the locations of substations sites. Sites for the substations have been finalized and transmission routes visited and assessed based on the current alignments considered feasible by HPPTC which is almost near to final. However, the final line alignment may vary slightly. Therefore, this draft RIPP will need to be updated in such an instance and finalized.

### 1.3 Tranche 3 Subproject Details and Location of Subprojects

7. The tranche 3 of HPTECIP subprojects, having physical components, consists of 4 proposed new substations/pooling stations and 5 transmission lines which are as follows.

#### 1. Construction of Substations

- S-1: 66/22 kV ,2x10 MVA GIS at Nirmand (Bagipul).
- S-2: 132/220 kV, 2x80/100 MVA substation at Mazra
- S-3: 220 kV Pooling substation at Hatkoti
- S-4: 220 kV Pooling substation at Barsaini

#### 2. Construction of Transmission Lines

- T-1: 66 kV D/C transmission line from 66/22 kV GIS Nirmand to 66/220 kV Kotla Substation (24 kms having a standard RoW of 18 meters)
- T-1: 400kV D/C transmission line (Twin Moose) from 400/220 kV, 2x315 MVA Lahal GIS to 400/220 kV Chamera Pooling station of PGCIL (39 kms having a standard RoW of 46 meters)
- T-3: 220 kV D/C transmission line from 132/220 kV GIS Mazra 33/220 kV Karian (18 kms having a standard RoW of 35 meters)
- T-4: 220 kV D/C transmission line (Twin Moose) from Bhajoli Holi HEP to 400/220 kV Lahal GIS (17 kms having a standard RoW of 35 meters)
- T-5: 132kV D/C transmission line from Barsaini to Charor (34 kms having a standard RoW of 27 meters)

8. The proposed subprojects are located in different areas of the HP state. Negotiated settlement has been completed for three of the substations (see due diligence in Annex 1) except five households for Mazra substation. Corrective actions for the remaining Mazra substation for which negotiated settlement is outstanding for five households is also included in the annex 1. **Table 1.2** indicates details of the proposed subproject locations. Annex 2 provides maps and photos for the subprojects.

**Table 1.2: Locations of proposed subprojects**

PIU	Subprojects	Tehsil	District
Bhabha Nagar	S1 (Nirmand), T1	Bagipul, Kotla	Kullu/Shimla
Chamba	S2 (Mazra), T2, T3, T4	Bharmour, Churah, Shahpur	Chamba
Rohru	S3 (Hatkoti)	Jubbal	Shimla
Sarabhai	S4 (Barsaini), T5	Kullu	Kullu

#### **1.4 Measures to Minimise Impacts**

9. The following measures were taken to reduce impacts of tranche 3: avoidance of settlements/villages, while selecting the route alignments; and avoidance of public and private structures.

#### **Transmission Lines**

10. In order to achieve this, HPPTCL has undertaken route selection for transmission lines in close consultation with representatives from revenue department related to land ownership, forest, department, wildlife conservation department and the local community. Local communities were informally consulted by the HPPTCL engineering team during the finalization of substation sites and alignment of transmission lines in order to avoid any structures, houses, buildings, community property resources etc. Although under the national law, HPPTCL has the right of way, yet it considers alternative alignments during site selection, with minor alterations to avoid socially and environmentally sensitive areas and settlements at the implementation stage. As per ESSP May 2011, HPPTCL shall follow the following guidelines:

- Alternative routes shall be studied in detail using a set of techno-economical, environmental, ecological and social impact parameters to arrive at the most optimally suitable alignment that is technically feasible, economically viable, socially just and environmentally safe.
- A maximum width of Right of Way (RoW) for transmission lines on forestland and minimum clearances between conductors (depending on specific voltage) and trees to be adhered in route selection.
- HPPTCL shall attempt at reducing the number of trees affected and width of the Right of Way (RoW) etc. through adoption of appropriate technological option like construction of narrow base towers, towers with extension, compact towers, multi-circuits, and monopole towers and/or innovating upon standard procedures. Specially designed high towers shall be used for reducing impact on trees, orchards wildlife and crossing wetlands, riverbeds.
- Tower sites shall preferably, as far as technically feasible and permitted by the safety parameters mandatory under Indian Electricity Act Rules 77 and 80 regarding clearances from ground and buildings respectively (See Annex 1). The towers may be located on mountain ridges to save trees in the RoW below the conductors on the valley side between two successive towers.

- Transmission line design shall comply with the limits of electromagnetic interference from overhead power lines.
- In addition, care is also taken to avoid/minimise protected parks/forests, bird sanctuaries and any other forest area rich in wild life.

### **Gas Insulated Substations GIS**

11. For selection of appropriate site for substation, the following points are taken into consideration:

- Construction activities do not adversely affect the population living near the proposed substations and does not create any threat to the survival of any community with special reference to tribal community etc.
- The location of substation does not affect any monument of cultural or historical importance.
- No resettlement of households by the substation site, no loss of livelihoods, siting of transformers away from schools, hospitals and other sensitive receptors, with due consultation with the community and local government units concerned.
- Construction techniques and machinery selection shall be made with a view to minimize ground disturbance.
- Substation location/design to ensure that noise will not be a nuisance to neighboring properties. Provision of noise barriers near substation sites, if needed, will be made.
- Design of substations shall be made so as to include modern fire control systems/firewalls. Provision of firefighting equipment would be made to be located close to transformers, switchgears etc.

12. Keeping above in mind, various alignments of each transmission lines were considered. All alternatives were studied by the HPPTCL officials before being proposed to ADB for funding to arrive at most optimum route which can be taken up for detailed survey and assessment of environmental and social impacts. Annex 3.1 gives the alternative analysis for the GIS and Annex 3.2 gives an illustrative evaluation analysis of the alternative transmission line alignments for the proposed subprojects.

## 2.0 IMPACT ON LAND ACQUISITION, INVOLUNTARY RESETTLEMENT AND INDIGENOUS PEOPLES

### 2.1 Background

13. The inventory of losses (IoL) for the transmission lines, baseline socioeconomic surveys, public consultations, and census surveys of affected households were carried out according to the engineering design and available route alignment. Social surveys were carried out during November 2015 to December 2016 on intermittent basis. Inventory of losses (IoL) and census survey were commenced in the month of November 2015 and was completed in the month of December 2016 for the affected households (AHs)<sup>8</sup> losing land for each tower base. The impact in terms of loss of crops and trees along the right of way (RoW) of the transmission lines are estimated based on preliminary surveys.

14. The impacts are categorized as two types, permanent and temporary. Permanent impacts will occur from land requirements for tower footings and loss of private trees. The land for tower footings will be procured through negotiated settlement and has been identified in consultation with owners during IoL survey. A negotiated settlement will offer adequate and fair price for land and/or other assets. The EA will ensure that any negotiations with displaced persons openly address the risks of asymmetry of information and bargaining power of the parties involved in such transactions. Temporary impacts are foreseen in terms of loss of crops along the right of way during the construction of transmission lines and loss of trees along the right of way. There is no physical displacement in tranche 3 subprojects. Land for substations has primarily occurred through negotiated settlement, the due diligence for which is outlined in Annex 1 along with corrective actions for 5 remaining households to complete the negotiations. Impacts relative to the substation are not included in the summary below.

### 2.2 Summary of Impacts

15. A total of 329 households and 2,658 persons will be affected both permanently and temporarily from tranche 3 transmission line subprojects based on current estimates. Of these 148 households will be affected permanently and an estimated 181 households will be affected temporarily. A summary of impacts of tranche 3 subprojects are given in **Table 2.1**.

**Table 2.1: Summary Impacts**

#	Impacts	Quantity
1	Total number of towers on private land and area (ha) affected by the tower	168 towers (7.03 ha)
2	Total number of towers on government land and area (ha) affected by the tower in government land	267 towers (8.22 ha)
3	Total area for crop compensation for temporary Impact (ha) for transmission line RoW	181.27 ha
4	Total number of fruit trees	636
5	Total number of non fruit/timber trees	225
6	Estimated number of trees along the right of way	286
7	Number of small agricultural sheds	6
8	Total number of affected households(AH) and affected Persons (APs) under tower footings	148 AH / 1,208 APs

<sup>8</sup> Each affected household in the project has been considered as the one unit which is eligible for receiving the compensation. Household is comprised of people living under one roof and sharing one kitchen.

#	Impacts	Quantity
9	Total number of estimated affected households (AH) and affected persons (APs) under the right of way	181 AH/ 1,450
10	Grand total of affected households and affected Persons (Tower Footings and Right of Way) <sup>9</sup>	329 (AH)/ 2,658 (APs)
11	Total number of vulnerable households (including 39 ST households) <sup>10</sup>	64
12	Total number of non-title holders (squatters/encroachers)	0
13	Total number of landless households	0

Source: HPPTCL and Social Surveys, 2015–2016.

## 2.3 Impacts Due to Transmission Lines (Tower Footings)

### 2.3.1 Loss of Land

16. 148 households (1,208 persons) will be affected due to loss of small parcels of land for tower footings (a total of 7.03 ha of private land). There will be a total of approximately 435 towers of various sizes depending on the voltage of line of which 168 numbers of towers are proposed on private land and 267 are proposed on government/forest land. In Himachal Pradesh, most of the government land is considered as forest land. In the project, all the affected households possess land having titles to land and none are landless. In case of forest land, the compensation will be paid to the forest department and in case of government land, the land will be transferred from the concerned government such as roads department, revenue department etc. through departmental transfer.

17. A total of 15.25 hectares of land will be required for the tower footings on private land (7.03 ha) as mentioned above and government land (8.22 ha). Land for each tower to be placed on private land will be compensated. Details on the tower base and its impacts are described in **Table 2.2**.

**Table 2.2: Details on Transmission Lines**

Name of the Lines	Length of Line (km)	Total number of Towers	# of Towers on private Land	# of Towers on gov.land	Area of Tower footings on private land (ha)	Area of Tower footings on gov. land (ha)	Total Area under tower footings (ha)	# of AHs
66 kV D/C transmission line from 66/22 kV GIS Nirmand to 66/220 kV Kotla Substation (24 kilometers)	24	68	29	39	0.19	0.25	0.44	24
400kV D/C transmission line (Twin Moose) from 400/220 kV, 2x315 MVA Lahal GIS to 400/220 kV Chamera Pooling station of PGCIL. (39 kilometers)	39	114	60	54	5.40	4.86	10.26	64

<sup>9</sup> The numbers of AHs and APs include impacts due to loss of small portion of land parcel for tower footings and temporary impact in terms of loss of crops along the transmission line which are not significant.

<sup>10</sup> The assessment vulnerable household is based on the permanent impact on the tower footings. Assessment on vulnerability on temporary impacted households especially along the right of way will be done prior to construction of lines; therefore, the total numbers of vulnerable AHs may change.

Name of the Lines	Length of Line (km)	Total number of Towers	# of Towers on private Land	# of Towers on gov.land	Area of Tower footings on private land (ha)	Area of Tower footings on gov. land (ha)	Total Area under tower footings (ha)	# of AHs
220 kV D/C Line from 132/220 kV GIS Mazra , Chamba to 33/220 kV Karian GIS (18 km line)	18	53	17	36	0.38	0.81	1.19	15
220 kV D/C line (Twin MOOSE) from Bajoli Holi HEP to 400/220 kV Lahal GIS. (17 kilometers)	17	60	21	39	0.47	0.88	1.35	19
132 KV D/C line from Barsaini to 132/220 KV Sub-Station at Charor (34 kilometers)	34	140	41	99	0.59	1.43	2.02	26
<b>Total</b>	<b>132</b>	<b>435</b>	<b>168</b>	<b>267</b>	<b>7.03</b>	<b>8.22</b>	<b>15.25</b>	<b>148</b>

Source: HPPTCL and Social Surveys, 2015–2016.

### 2.3.2 Loss of Trees

18. As per the census surveys, it is found that a total of 861 trees will be affected due to the tower footings out of which 636 are fruit trees and remaining 225 are non-fruit trees. Details on the trees are described in **Table 2.3**.

**Table 2.3: Details on Loss of Trees (Tower footings)**

Name of Trees	Number of HH	Type of Trees	Total Number of Trees
Tuni	2	Non-Fruit/Timber	2
Shisham	1	Non-Fruit/Timber	2
Shehtoot	2	Non-Fruit/Timber	2
Plum	2	Fruit	8
Pine Tree	2	Non-Fruit/Timber	5
Naspati	5	Fruit	20
Liptus	1	Non-Fruit/Timber	1
Lemon	1	Fruit	2
Kunas	2	Non-Fruit/Timber	12
Krun	1	Fruit	2
Khumani	3	Fruit	9
Kent	1	Fruit	1
Kent	1	Non-Fruit/Timber	1
Kayal	1	Non-Fruit/Timber	2
Karun	1	Fruit	1
Karali	3	Non-Fruit/Timber	5
Kakar	3	Non-Fruit/Timber	4
Kainth	19	fruit Bearing	64
Kail	1	Non-Fruit/Timber	2



Name of Trees	Number of HH	Type of Trees	Total Number of Trees
Kahua	3	Non-Fruit/Timber	7
Japani	1	Fruit	3
Firewood	1	Non-Fruit/Timber	5
Faqore	3	Non-Fruit/Timber	7
Dhura	9	Non-Fruit/Timber	33
Dhaman	13	Non-Fruit/Timber	48
Chid	6	Non-Fruit/Timber	17
Chil	1	Fruit	1
Ban	9	Non-Fruit/Timber	70
Apricot	7	Fruit	17
Apple	57	Fruit	490
Anar	4	Fruit	15
Akhwani	1	Fruit	3
<b>Total</b>			<b>861</b>
<b>Total Fruit Trees</b>			<b>636</b>
<b>Total Non-Fruit/Timber Trees</b>			<b>225</b>

Source: Census Survey, 2015–2016.

### 2.3.3 Loss of Structures

19. The tower foundations will affect a total of 6 structures. These structures are nonresidential and are being used for storage of agricultural products. The huts are mostly semipermanent and made of stones and wood.

### 2.4 Temporary Impacts Due to Transmission Lines (RoW) on Crops and Trees

20. There will be temporary impacts during the construction of transmission lines along the ROW which will be limited to loss of one season of crops. The impacts are minimal in hilly areas as most of the towers and lines will pass from one hill top to another. However loss of crops will still occur, the exact loss will be known during construction. A preliminary assessment has been done to estimate the total area for crop loss which is 181.27 hectares on private land, as such approximately 181 households<sup>11</sup> (1,450 persons<sup>12</sup>) are anticipated to be affected on a temporary basis calculated based on the average plot size. In addition to the tower footings, it is also estimated that a total of 286 numbers of trees will be affected along the transmission line right of way. Summary Details are given in **Table 2.4** and the inventory of losses for each line is given in Annex 4.

<sup>11</sup> The average land holding size per household in Himachal Pradesh is 1 hectare. The total estimated affected private land in the right of way is 181.27 ha and therefore, the total number of estimated affected households in the right of way is 181 who will be temporarily impacted.

<sup>12</sup> The average household size as per the census and socioeconomic survey is 8.12. Therefore; the estimated number of affected persons along the right of way is 1,450.

**Table 2.4: Details on Loss of Crops and Trees**

#	Name of the Lines	Length of Line (km)	Standard RoW (meter)	Total Area under RoW (Ha)	Private Area under RoW for cultivation in RoW (%)	Private Area under RoW for cultivation in RoW (Ha)	Estimated number of Private Trees (RoW)	Estimated number of AH (RoW)	Estimated number of Aps (RoW)
T-1	66 kV D/C transmission line from 66/22 kV GIS Nirmand to 66/220 kV Kotla Substation (24 kilometers)	24	18	43.2	43.0%	18.58	41	19	151
T-2	400kV D/C transmission line (Twin Moose) from 400/220 kV, 2x315 MVA Lahal GIS to 400/220 kV Chamera Pooling station of PGCIL. (39 kilometers)	39	46	179.4	53.0%	95.08	32	95	761
T-3	220 kV D/C Line from 132/220 kV GIS Mazra , Chamba to 33/220 kV Karian GIS (18 km line)	18	35	63	32.0%	20.16	75	20	161
T-4	220 kV D/C line (Twin MOOSE) from Bajoli Holi HEP to 400/220 kV Lahal GIS. (17 kilometers)	17	35	59.5	35.0%	20.83	36	21	167
T-5	132 KV D/C line from Barsaini to 132/220 KV Substation at Charor (34 kilometers)	34	27	91.8	29.0%	26.62	102	27	213
<b>Total (ha)</b>						<b>181.27</b>	<b>286</b>	<b>181</b>	<b>1,450</b>

Source: Inventory Survey, 2015–2016.

## 2.5 Severity of Impact

21. Land required for each tower footing is minimal and is compensated rather than acquired under the HPPTCL's standard practice and as per their ESSP policy, 2011 of HPPTCL. Therefore, it will not have any significant impact on the loss of land and productive assets. Only, 11 households are losing more than 10% of their productive land holding (between 10% up to

12%). However, they will not be losing their basic source livelihood because the land requirement for tower footings is small parcel and does not affect critically. Those households losing more than 10% of their land are considered as vulnerable households for which additional assistance will be paid. Transmission line and the impact on agricultural land along the right of way are temporary in nature and people are allowed to cultivate the land below the line after the construction. Details on the severity of impact are given in **Table 2.5**.

**Table 2.5: Severity of Impact**

Magnitude of Impact	Number of Households
up to 2%	45
2% up to 5%	36
5% up to 10%	56
10% up to 12%	11
More than 12%	0
<b>Total</b>	<b>148</b>

*Source: Census Survey, 2015–2016.*

## 2.6 Vulnerable Households

22. Vulnerable households are defined as women-headed households, scheduled tribe households, below poverty line households, households headed by physically handicapped or disabled persons, severely affected households (household losing more than 10% of productive asset), landless household and nontitled/encroacher households (subject to social economic analysis). Total vulnerable households are 64 of which 39 are scheduled tribe (ST) households, 7 are WHH, 4 are BPL households, 3 are physically handicapped category households and 11 are severely affected households. Details are given in **Table 2.6**. For the purposes of this RIPP, BPL households were defined using the BPL card issued by the state government. Multiple vulnerability of one household will be considered as one unit for assistance.

**Table 2.6: Vulnerable Households**

Type of Vulnerability	Number of Households
Scheduled tribe household <sup>13</sup>	39
Women headed household	7
Household having physically handicapped Person	3
Below poverty line household	4
Severely affected household	11
Landless household, nontitled/encroacher households	0
<b>Total</b>	<b>64</b>

*Source: Census Survey, 2015–2016.*

## 2.7 Impact on Scheduled Tribe/Indigenous Peoples due to Subprojects

23. Two components in tranche 3 (i. 400kV D/C transmission line from Lahal GIS to Chamera Pooling station; and ii. 220 kV D/C transmission line from Bhajoli Holi HEP to Lahal GIS) fall within the Bharmour sub-tehsil of Chamba district which is a scheduled area. As specified by the Scheduled Areas (Himachal Pradesh) Order, 1975 (Constitution Order 102) dated 21.11.1975.

<sup>13</sup> These households are from the notified tribal area where the line will pass through.

Whilst many STs no longer maintain their cultural traditions and have settled amongst the non-tribal populations, the STs are considered vulnerable APs and therefore Indigenous Peoples for the purposes of this RIPP.

24. Impacts are limited to the transmission lines where some section of lines will pass through the designated/notified tribal area. There are 39 IP households with 316 persons affected by towerfootings, and of these 2 households will lose between 10%–12% of their land holding however, without losing the source of income and livelihood as these households have other source of income in addition to agriculture. A separate socioeconomic profile (Section 3.3) and social impact assessment (Section 3.4) within the project area of influence have been prepared.

## **2.8 Gender Considerations and Impacts**

25. There are 7 women headed households, of which 2 are scheduled tribe households and none of the ST women headed household are losing more than 10% of their land holding. Analysis of socioeconomic gender data for the subproject areas is contained in Chapter 3.2 and for scheduled tribes in Chapter 3.3. No significant impacts on gender are anticipated as a result of the subprojects, however in the loan agreements arrangements for contractors to ensure gender equal-pay-for-equal-work, an awareness program on HIV and sexually transmitted diseases and human trafficking.

### 3.0 SOCIOECONOMIC INFORMATION AND PROFILE

#### 3.1 Background

26. This chapter is divided into two parts. The first part is a general socioeconomic profile of the general project area and the second specifically covers the socioeconomic profile of the schedule tribe or indigenous peoples impacted by the tranche 3 subprojects. Socioeconomic household surveys were conducted in the project area between November 2015 to December 2016 as well as in the notified tribal area. A social analysis has been carried out in the subproject area through a sample socioeconomic baseline household survey. This survey includes households near to the subproject areas, however not all households are affected by the subprojects. A total of 269 sample households were surveyed of which 109 (41%) were from the general project area and 160 (59%) respondents from the notified tribal area of the Bharmour Tehasil of Chamba district.

27. Himachal Pradesh is considered a model of mountain area development, with relatively low poverty rates (7.63%) as of 2011–2012. The success of the region is attributed not only to a prosperous rural economy and high levels of per capita government expenditure but also to focused public interventions, greater participation of women and strong local institutions. Having obtained the status of “tribal state”, the people of HP have benefited from investments and subsidies from the central government. In addition, the State government has approved a series of pro-poor policies, including the abolition of tenancy which resulted in a redistribution of land to the landless to fight exploitation of labor and increase the productivity of the land. Now, 100% of the HP population owns land (with the exception of the Nepali labor) and many have invested in highly profitable apple growing business.

28. Himachal Pradesh has a total population of 6,856,509 including 3,473,892 males and 3,382,617 females as per the provisional results of the Census of India, 2011, recording a growth of 12.81%. This is only 0.57% of India's total population, placing the state at the 21st position. The population density is 123 per square kilometers. Himachal Pradesh has a literacy rate of 83% and a gender ratio of 974/1000, according to the 2011 Census figures. Himachal Pradesh has one of the highest literacy rates in India next to Kerala. Hamirpur District is among the top districts in the country for literacy. Education rates among women are quite encouraging in the state. The standard of education in the state has reached to a considerably high level as compared to other states in India. Agriculture contributes over 45% to the net state domestic product. It is the main source of income and employment in Himachal. Over 93% of the population in HP depends directly on agriculture which provides direct employment to 71% of its people. The main cereals grown are wheat, maize, rice and barley. Highlights of Census 2011 are presented in **Table 3.1**.

**Table 3.1: Highlights of Census 2011 Data**

Description	Himachal 2011	Kullu 2011	Chamba 2011	Shimla 2011
Actual Population	6,856,509	437,474	518,844	813,384
Male	3,473,892	224,320	260,848	424,486
Female	3,382,617	213,154	257,996	388,898
Population Growth	12.81%	14.65%	12.58%	12.58%
Area Sq. km	55,673	5,503	6,528	5,131
Density/km <sup>2</sup>	123	79	80	159
Proportion to Himachal Pradesh Population	100%	6.38%	7.57%	11.86%
Sex Ratio (Per 1000)	974	950	989	916
Child Sex Ratio (0-6 Age)	906	962	950	922

Description	Himachal 2011	Kullu 2011	Chamba 2011	Shimla 2011
Average Literacy	83.78	80.14	73.19	84.55
Male Literacy	90.83	88.80	84.19	90.73
Female Literacy	76.6	71.01	62.14	77.80
Total Child Population (0-6 Age)	763,864	50,041	69,409	80,778
Male Population (0-6 Age)	400,681	25,504	35,591	42,018
Female Population (0-6 Age)	363,183	24,537	33,818	38,760
Literates	5,1,04,506	310,487	328,940	619,427
Male Literates	2,791,542	176,552	189,641	347,013
Female Literates	2,312,964	133,935	139,299	272,414
Child Proportion (0-6 Age)	11.14	11.44%	13.38%	9.93%
Boys Proportion (0-6 Age)	11.53	11.37%	13.64%	9.90%
Girls Proportion (0-6 Age)	10.74	11.51%	13.11%	9.97%

Source: <http://www.census2011.co.in/census>.

### 3.2 Socioeconomic Profile of the Project Area (Affected and Non-Affected)

29. **Demography:** Socioeconomic survey data suggests that the average family size is 8 persons. Majority (54%) are staying in extended families. The sex ratio of the project area is 1,000 males: 992 females, which is higher than the overall sex ratio of HP 972 according to 2011 census.

30. **Literacy:** In the project affected area, the overall literacy rate is 79%, which is marginally lower than the state average of 82.2%. The male literacy rate (89%) similar to the state average. Among females the literacy rate is 74% in the subproject area, which is lower than the state average (76%). The survey data suggested similar education levels across genders, except for achievement of higher education among women with 44% of men achieving secondary or above education compared with 28% among women.

31. **Amenities:** All households surveyed receive piped water at their residence. Flush toilets are installed in 94% of subproject area households. Wood is the major source of fuel being used by the households for heating purpose as reported by 84% of households.

32. **Possession of Durable Goods:** Among the households in the sub project area, the commonly possessed durable goods are televisions and LPG gas. Refrigerators are possessed by 31% of households and washing machines by 18%. A two-wheeler for transportation is possessed by only 6% of the households. High end items like cars are possessed by only 7% of households.

33. **Energy Use:** All the surveyed households are electrified. The main source of electrification is supplied from the government grid; survey data suggests an average of 23 years connection. Electricity is available for more than 22 hours in a day. Households use electricity for limited purposes such as lighting and entertainment. The average hours of consumption of electricity for lighting are 4.63 hours. Similarly, 73 % of the households use electricity for running televisions and music systems and the average consumption is 4.6 hours. Only about 15 % of the households use electricity for heating and cooling and the average hours of consumption are 3.12 hours. Two households use electricity for running their business and the average use is 4 hours. Computers are also run by lesser number of households 6% and the average consumption is 2.83 hours. All the households use electric lamps in the sub project area. The average number of electric lamps per households is 6.09.

34. The average expenditure on electricity by the 109 households is INR473 per month. All the households stated that there is no case of electricity theft and the maintenance lies with the power and electricity department (HPSEB). Besides electricity the households use other fuels like wood and gas as an alternate energy. Almost all the households use wood (4.63 hours on average) and do not incur any costs. Similarly, gas is used by 67% of the households for an average of 2.91 hours. All the households are satisfied with the current status on electricity supply to their locality.

35. **Economic Activities:** Agriculture was reported as the main household economic activity in which all households reported engagement. Followed by service in government and the private sector (41% of households). Daily wage is an economic activity reported by one fourth of the households. Only 8% are engaged in business activities. All households in the subproject area possess land. All the households possess agricultural land. The average possession of land is 10.92 bigha (1.80 ha); however, the majority (44%) possess within the range of 5.1 bigha to 10 bigha. About 21% (one fifth) possess plots ranging from 10.1 to 20 bigha. Larger plots (i.e. more than 20 bigha) are possessed by 10% of households. Most importantly 98.7% of the lands are cultivable as reported by the households. Only 2 households possess non-cultivable land.

36. Wheat, Dal, Maize and fruit are major agricultural products for the households in the subproject area. Vegetables are cultivated by 39% of households. All the crops are cultivated or produced once a year. Fruits are cultivated by 91% of the households. The average yield of maize is 11.87 quintal,<sup>14</sup> wheat 10.53 quintals and pulses 3.56 quintals per household. Among these three major crops, pulses contributes to highest earning followed by maize and wheat.

37. **Income and Expenditure Pattern:** The average household income is reported to be INR454,398 (approximately \$7,329). Agriculture contributes to the highest average which is INR300,463 followed by business which is reported to be INR228,571. The income from fruits cultivation is a major contributor towards agricultural income. The Income from labour is reported by 26% of the households and the average annual income from wages is INR141,346. The total annual average expenditure per household is INR262,343 (approximately \$4,231); the major household expenditure is food (39%) followed by education (12%), and on inputs for agriculture (12%). Households spend about 7% on transport and 3% on health.

38. **Loans, Debts and Benefit Schemes:** Loans and debts among surveyed households was relatively low, with 11% reporting loans (all from banks). The average loan amount taken from bank is INR329,167 (approximately \$5,309); with interest rates from 4% to 16 %. About 17% of households surveyed benefit from different government schemes.

39. **Health and Migration:** More than one third of surveyed households reported a household member experiencing a major illness during the last year. The types of illness reported were joint pains and asthma. Noncommunicable diseases (i.e. diabetes and blood pressure) were not reported. Households preferred allopathic treatment. In the project area of influence migration is rare; with 3 of the households reporting migration movements out of the district and out of the state for work.

40. **Gender Dimensions:** Women reported most of their time spent was on unpaid household labour. Women also reported engagement in either agriculture or allied activities and collection and sale of forest products. Women are engaged in multiple activities (99% in agriculture, 96% in allied activities and 97% in collection of fuel and fodder), Despite engagement in different

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<sup>14</sup> One quintal is equivalent to 100 kg.

economic activities women's contribution to household income is not considered by the households as tangible. Six of the households reported that women contributed on average INR 40,166 to the family's annual income. Women in the subproject area are actively involved in household decision making. All the households gave importance to women in decision making related to family matters.

### 3.3 Socioeconomic Profile of the Indigenous Peoples

41. Two components in tranche 3 (i. 400kV D/C transmission line from Lahal GIS to Chamera Pooling station; and ii. 220 kV D/C transmission line from Bhajoli Holi HEP to Lahal GIS) fall within the Bharmour sub-tehsil of Chamba district which is a scheduled area. As specified by the Scheduled Areas (Himachal Pradesh) Order, 1975 (Constitution Order 102) dated 21.11.1975. The following section presents the socioeconomic profile of the households in the notified ST area of the subprojects; from a survey of 160 sample households including both APs and non-APs.

42. The major tribe in Bharmour Tehasil is Gaddi. The Gaddi inhabit the remote Bharmour valley of the Chamba district. Gadiali is their mother tongue and various dialects of the Himachal language are used for intergroup communication. Both these languages belong to the pahari group of the Indo-Aryan family of languages. Hindi is also widely spoken. The Devanagari script is used. Under the generic name of Gaddi, there are a number of groups such as the Brahmin, the Rajput, the artisans and the castes of the area. Members of the Gaddi often travel from one ecological zone to another in winter and summer. For about three to four months of winter's heavy snowfall, these seminomadic Gaddis generally migrate to the lower hills and plains along with their flock of sheep and goats.

43. **Demographics of APs:** The average family size of surveyed households was 4.98 with the majority (79%) having one nuclear family residing under the same roof; with the remaining 21% residing with multiple families. The major tribe in the Bharmour tehsil is Gaddies (Shepherd), of which households from the Brahmin and Rajput groups are affected. The sex ratio of the project area is 1,000 males: 814 females, which is lower than the overall sex ratio of Himachal Pradesh 972 according to 2011 census. All surveyed households in the notified areas belong to rural settlements (as opposed to urban/semi-urban).

44. **Literacy and Education:** The survey data suggests that the overall literacy rate is 93%, which is more than the state average of 82%. Among males, literacy rate is higher (97%), and among females, the literacy rate is 88%. Both the male and female literacy rates are higher than the state average from 2011 which potentially implies that households place high importance on education. Education attainment levels are more or less the same as per the socioeconomic survey. As shown in **Table 3.2** higher education attainment among females is low in comparison to male members. With 51% of males achieving secondary or above and only 37% among females.

**Table 3.2: Gender Desegregated Education Achievement**

SI No	Education level	Male		Female		Total	
		Nos.	%	Nos.	%	Nos.	%
1	School going	32	7	31	9	63	8
2	Primary	170	39	153	43	323	41
3	Secondary	189	43	118	33	307	39
4	Graduate	37	8	13	4	50	6
5	Illiterate	12	3	42	12	54	7



SI No	Education level	Male		Female		Total	
		Nos.	%	Nos.	%	Nos.	%
	<b>Total</b>	440	100	357	100	797	100

Source: Socioeconomic Survey, 2015–2016.

45. **Drinking Water & Sanitation:** The majority of households (92%) have piped water supply at the household level. Only 12% of the households reported to use other sources of drinking water (i.e. water from stream). All the households have access to toilets. There is use of flush toilets (59%) and simple latrines (41%) by the people living in the notified tribal area.

46. **Economic Activities:** Three major economic activities were found to be dominant: agriculture, government service employment and earning a daily wage, see **Table 3.3**. Around 1% of households reported to receive pension and depend on the pension.

**Table 3.3: Major Economic Activities of the Households**

SI No	Particulars	Number of Households	%Age
1	Agriculture	144	90
2	Working for other farmers	1	1
3	Small enterprise	3	2
4	Service in Govt. Sector	63	39
5	Business and trading	21	13
6	Daily Wage	69	43
7	Animal husbandry	3	2
8	Private Job	21	13
9	Pension	2	1
10	Retired	6	4
	<b>Total</b>	160	100

Source: Socioeconomic Survey, 2015–2016.

47. **Land Ownership & Agriculture:** All the households in the subproject area possess land. From analysis it follows that majority of the indigenous people are small farmers as 95% possess land in the range of 5 bigha, 4% possess land of more than 5 bigha. Pulses (dal) are one of the major agricultural products in the subproject area as reported by 78% of the households. About 66% of the households cultivate maize and 57% cultivate wheat. Fruit are cultivated by about 44% of the households and only 4% cultivates vegetables. All the crops are cultivated or produced once a year. The maximum earning from agricultural produce is from fruits. The average yields are presented in Table 3.4 below.

**Table 3.4: Average Yield of Different Crops**

SI No	Type of Crop	Number of Households	% Age	Total Yield (Quintal)	Average Yield	Price per Quintile (Rs)	Total cost in lakhs
1	Wheat	82	57	57.8	0.70	998	0.58
2	Dal	113	78	103.1	0.91	1,127	1.16
3	Maize	95	66	80.55	0.85	1,000	0.81
4	Vegetables	6	4	3.7	0.61	1,917	0.07
5	Fruits	64	44	2,370*	37.03*	2,059*	48.80
6	Others	62	43	116.3	2.04	14,073	16.37

SI No	Type of Crop	Number of Households	% Age	Total Yield (Quintal)	Average Yield	Price per Quintile (Rs)	Total cost in lakhs
	Total N	144	100				67.78
* In packets							

Source: Socioeconomic Survey, 2015–2016.

48. **Household Income:** The average annual household income was reported to be INR186,796 (approximately \$3,012) as per **Table 3.5** below. The major income comes from service in government and private sector followed by business.

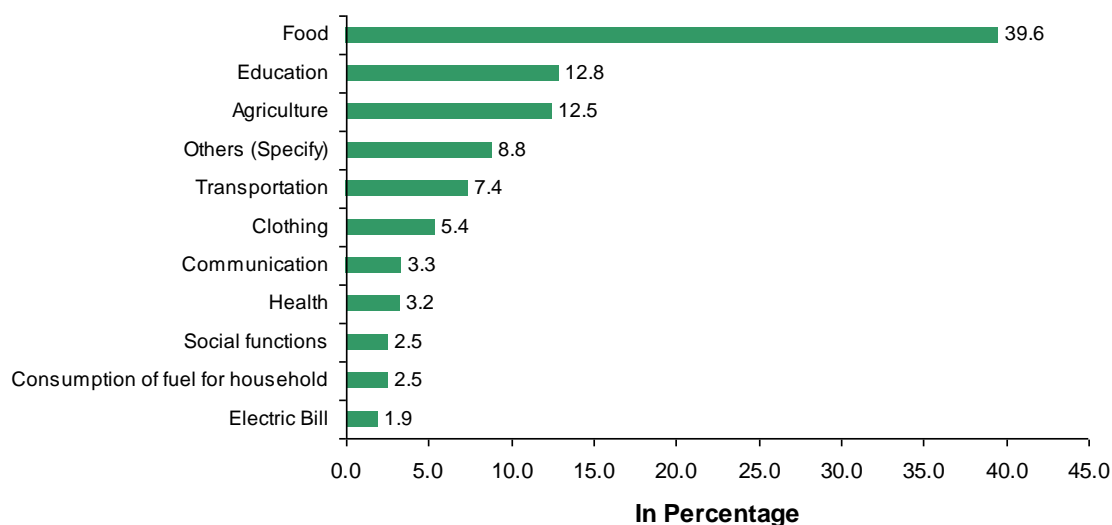
**Table 3.5: Average Annual Income**

SI No	Source of Income	No. of HH	% of HH	Average Annual Income in Rs
1	Agriculture	68	43.3	66,353
2	Service	68	43.3	212,647
3	Business	24	15.3	103,542
4	Labour	70	44.6	66,714
5	Others	25	15.9	128,000
6	Total Average	157	100.0	186,796

Source: Socioeconomic Survey, 2015–2016.

49. **Household Expenditure:** The total annual average expenditure per household is INR70,278 (\$1,133) of which the major expenditure is food (54%) followed by expenditure on education (10%) and transportation (7%), refer to **Figure 3.1**.

**Figure 3.1: Percentage of Average Annual Expenditure on Different Items**



50. **Durable Goods:** Television, a durable good is commonly possessed (96%) among all the households in the sub project area. LPG and refrigerators are possessed by 33% and 19% respectively. An equal percentage of households, around 4% each possess two-wheeler and high-end items like car for transportation.

51. **Loans, Debts & Benefits:** Among the households in the sub project area, a low

percentage (5%) of the households has reported that they have taken loan and remaining reported to not have taken any loan. Some households have taken loans from banks (4%) and relatives (3%). The average bank loan amount is INR124,167. The interest rate varies from 4% to 14%. Similarly, the average loan amount taken from the relatives is INR119,667. Only one household pays interest at the rate of 11%. Six percent of surveyed households reported availing of benefits from different government schemes; all surveyed households have benefitted from the National Rural Employment Guarantee Act, 2005 (NREGA) scheme and all have received employment via NREGA.

52. **Health Status & Migration:** In the sub project area, less than 8% of the households stated that a household member experienced major illness during the last year. The types of illness reported are like joint pains and gallbladder stones and other common illness. No chronic health problems were reported. The ST community does not believe in traditional medicine rather most of them preferred allopathic treatment. In the project area of influence migration was reported by 3% of households; with permanent exit of individuals out of the district and state.

53. **Gender Dimensions:** Findings for gender dimensions mirror those from the general social profile reported earlier. With the majority reporting their time is primarily spent doing unpaid household labour. In addition, women are engaged in either agriculture or collection and sale of forest products (see further details in **Table 3.6**).

**Table 3.6: Type of Activities for Women**

SI No	Activities	Number of Households In the activities among 160	%
1	Cultivation	144	90
2	Allied Activities*	6	4
3	Collection and Sale of forest products	143	89
4	Trade & Business	1	1
5	Agricultural Labour	0	0
6	Non Agricultural Labour	0	0
7	HH Industries	0	0
8	Service	2	1
9	Households Work	158	99

*Source: Socioeconomic Survey, 2016.*

54. **Dwellings:** All the households have reported to have their permanent structures and buildings. About 86% of the structures in the subproject area are of wooden made and rest 14% are cemented houses. All the houses are residential in nature in the subproject area except one that is residential cum commercial in nature. The average age of the structures is 61.46 years. The houses in the project influence zone are bigger in size as majority about 70% are having 4 or more rooms in their dwellings. The average number of rooms per structure, according to the survey, is 4.14 and all the available rooms are lighted.

55. **Energy:** Electricity is not a problem as all the households are electrified in the sub project area. The main source of electrification is government and usually supplied from the government grid. The average years of electrification are 41 years. The availability of electricity is not a problem as the average hours of availability of electricity is for more than 23 hours in a day. All households use electricity for limited purposes like lighting and for entertainment; with 6% for heating/cooling and only 1% for cooking. Besides electricity 98 % of the households use other fuels like kerosene, wood and gas as an alternate energy. Similarly, gas is used by 6% of

households for 2.55 hours per day on average.

### 3.4 Social Impact Assessment for IP

56. Tribal and non-tribal communities have lived side-by-side in Bharmour sub-tehsil leading to acculturation and assimilation to mainstream societies. Many STs no longer maintain their cultural traditions, and individuals and groups of STs have settled amongst the non-tribal populations. Bharmour sub-tehsil has been categorized as a scheduled area, whilst the people in this area are not typically indigenous considering their sociocultural and occupational pattern, but the STs have considered as vulnerable APs for the purposes of this project; given the two transmission lines pass through the scheduled area and the legal applications are outlined in chapter 6. The affected ST families in Bharmour sub-tehsil include Gaddi Rajput and Gaddi Brahmin groups. During the consultations in the tribal area, it was revealed that most of the people follow agriculture as major source of income and some of them are also employed in government sector jobs in army. They are assimilated in terms of speaking and understanding the mainstream language (Hindi) and children have the access to schools.

57. **Potential negative subproject impacts:** a rapid social impact assessment (SIA) has been conducted to identify tranche 3 subproject impacts both positive and negative on ST/IPs, as well as consideration of mitigation measures to minimize negative impacts and enhance project benefits. Results of the SIA show that impacts from land acquisition are minor (no houses demolished). Two of the transmission lines<sup>15</sup> pass through Bharmour sub-tehsil designated scheduled tribe areas, impacting 39 affected ST/IP households. Two of these households will lose 10% of their land holdings or more than 10% (maximum up to 12%) of their productive land. These households own their land and are involved in apple cultivation and other agricultural activities. Loss of livelihood is not foreseen as the amount of land required for tower footings are small in scale and only 2 households will lose up to 12% of their land holding, also they have other source of income as well. In addition, an estimated 40 ST households may be affected in the ROW (39.85 hectares) on a temporary basis. The losses will be compensated and the RoW will be restored to its normal use after the construction and the people will be allowed to continue their cultivation.

58. During construction, there will be some disturbance in the project area of influence Bharmour sub-tehsil (along the transmission ROW and access routes) on a temporary basis (during foundation, erection and stringing) due to civil works; as well as in-migration of workers to support construction. As such ST/IP households and Bharmour sub-tehsil communities may experience increased traffic, dust, construction waste and noise. These effects can be significantly reduced by the proposed mitigation measures through implementation of the environment management plan. These impacts are minimal in a transmission project as the nature of construction is not intensive and over a short period of time.

59. Any other potential impacts for the IPs such as forest livelihood activities will not be impacted adversely. The construction scheduled will follow the off-season period when no cultivation is there, and people will be allowed to harvest the crops. This being a liner project, the impacts will not occur in the entire stretch of line at one time; however, the construction will be done in section wise. Usually, the construction period for foundation and erection takes one to two months therefore the interruption period is minimal. The amount of labour force is small in scale and they keep on moving from one section to another, thereby, do not cause any threat to

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<sup>15</sup> (a) 220 kV D/C line (Twin MOOSE) from Bajoli Holi HEP to 400/220 kV Lahal GIS (17 kilometers) and (b) 400kV D/C transmission line (Twin Moose) from 400/220 kV, 2x315 MVA Lahal GIS to 400/220 kV Chamera Pooling station of PGCIL (39 kilometers).

the local people. Some of the local people will be also be involved in the construction work and will be part of this development project.

60. **Expected positive subproject impacts:** The subproject sites in the tribal area are located in remote hilly area and therefore, the reliability and continuity of power supply is matter of concern. The voltage of electricity supply also fluctuates. Construction of these lines will help directly in improving the grid system and will indirectly improve the distribution system through reliable power supply. Additionally, APs will get opportunities of temporary employment in unskilled construction jobs and small-scale business where the construction workers can buy their food and basic needs.

61. **Mitigation & Enhancement Measures:** In order to mitigate negative impacts on local peoples including IP/ST, before and during the subproject design, implementation, as well as monitoring process, the project staff will enhance the dissemination of project information and conducting meaningful consultation with IP/ST to ensure that they get the maximum benefit from the advantage conditions brought by the subproject in culturally appropriate manner and fully understand their entitlements under this RIPP (see Chapter 07).

62. During the subproject design process for the two transmission lines in scheduled areas, tower locations were selected to minimise impacts (i.e. house demolition) and stringing schedule will avoid cropping season.

63. Given the temporary in-migration of workers to support construction works, the project includes arrangements for a HIV, STI and human trafficking awareness campaign among the area of influence, to raise the profile of these issues in a culturally sensitive manner. The awareness campaign also includes measures on social and cultural sensitivity of the scheduled tribe population. Environmental impacts on human receptors will be significantly reduced by the proposed mitigation measures through implementation of the environment management plans. Some of the mitigation measures as per the environmental management plan (EMP) will be as follows:

- The surface soil will be restored to normal slope after tower erection.
- Water sprinkling at construction site, limited bare soils, maintenance of vehicles.
- Restriction of noise generating activities at night and use of personal protective equipment like ear plugs, mufflers.
- For transmission line, domestic wastewater treatment may be done by digging small ditches for waste water and then covering it with top soil once the construction team moves to next location. For substation site, the contractor shall provide soak pits for construction workers at the site.
- Disposal of construction waste and other waste to avoid polluting the river and streams
- Alignment route away from the settlement. No houses in the immediate vicinity will be allowed in the RoW of the alignment. No further mitigation required.
- Proper traffic signs at the construction site, ensuring availability and maintenance of proper access roads.

## 4.0 INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION

### 4.1 Consultation

64. As integral part of the safeguards planning, affected persons and local communities were consulted during the preparation of tranche 3 safeguards documents, i.e., RP and IEE. Initial public consultation has been carried out in the subproject areas with the objectives of minimising probable adverse impacts of the project through alternate design solutions and bringing awareness among the community on the benefits of the project. The community were also informed about the Grievance Redressal Mechanism for making complaints, including the place and the responsible person to contact in this regard.

65. Consultations and group discussions were carried out along the tranche 3 sites by the project safeguard consultants and survey team from November 2015 to November 2016. These activities were conducted at 28 locations through focused group discussions (FGDs) at various subproject sites comprising of 235 total participants (90.64% male 9.36% female). The discussion was carried out in various villages in the vicinity of the alignment of transmission lines and at proposed substation sites in all the PIUs. In addition to the census and socioeconomic survey, various informal consultations during the site assessment were held with concerned village heads and local people at various villages. A summary of people's perception of the project during the consultation is given in **Table 4.1** and the list of locations of various FGDs is given in **Table 4.2**.

66. Local communities were receptive to the proposed investment components as improved electricity supply is expected to improve quality of life. They also expect that employment opportunities will be created. Participant lists, and meeting summaries are given in Annex 5.1.

**Table 4.1: Summary Public Consultation**

#	Name of the Component/ subproject	Issues raised by the participants	Clarification, Mitigation and Issues Management
T1	66 kV double circuit (D/C) transmission line from 66 kV GIS Bagipl Substation to Kotla substation	<ul style="list-style-type: none"> <li>• People requested jobs during project implementation if possible.</li> <li>• Demand of 24 hours power supply if possible.</li> <li>• People requested that utility vehicle may be hired by HPPTCL from the village which will be used during and after the implementation.</li> <li>• Villages should get notice before construction.</li> <li>• People suggested that no such severe adverse impacts are foreseen as the line will pass through forest land.</li> </ul>	<ul style="list-style-type: none"> <li>• Where feasibly, efforts will be made by contractor to employ local people in temporary basis.</li> <li>• Supply of 24 hours electricity is subject to the regulatory and distribution departments and can not be committed by HPPTCL. However, it was clarified that the project will improve the overall electricity supply.</li> <li>• As a normal practice, the civil contractors will be hiring the local vehicles etc when needed.</li> <li>• The consultation process will be a continuous process and the field team at PIU will inform, in advance, the construction schedule.</li> <li>• Prior notice shall be provided to the villages before the start of construction.</li> </ul>

#	Name of the Component/ subproject	Issues raised by the participants	Clarification, Mitigation and Issues Management
T2	400 kV double circuit DS/C) transmission line from 220/400 kV Lahal substation to Rajera (Chamera-II) Substation).	<ul style="list-style-type: none"> <li>• Prior notice to the affected farmer is needed and more consultation during construction.</li> </ul>	<ul style="list-style-type: none"> <li>• This will be done by the filed team at PIU of HPPTCL where prior notice and information will be provided in order to mitigate any sudden damage.</li> </ul>
T3	220 kV D/C Transmission line from Mazra to Karian.	<ul style="list-style-type: none"> <li>• People requested jobs during and after the implementation of project if possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities for unskilled and temporary jobs during construction period will be available and efforts will be made to engage local people in the same where feasible. However, commitment on jobs post the implementation is not feasible.</li> </ul>
T4	220 kV transmission line from Holi Bhajoli to Lahal.	<ul style="list-style-type: none"> <li>• Local labour should be employed by the contractor.</li> <li>• Any damage to local area during construction should be fixed.</li> </ul>	<ul style="list-style-type: none"> <li>• All the damages related to common property resources, public utilities etc will be restored to normal condition post the construction.</li> </ul>
T5	132 kV D/C transmission line from Barsaini to 132/220 kV substation at Charor	<ul style="list-style-type: none"> <li>• People are generally receptive to the project.</li> <li>• Fair compensation is expected.</li> <li>• Temporary jobs expected during construction.</li> <li>• All the affected Panchayats should be given additional grants for development of work in the village.</li> <li>• People should be given prior notice to harvest their crops.</li> <li>• Construction schedule should be chosen during the off season to avoid lesser damage in standing crop.</li> </ul>	<ul style="list-style-type: none"> <li>• Fair compensation has been assured because the rates will be decided mutually by the affected persons and the HPPTCL in the presence of Panchayat and representative of revenue department.</li> <li>• People will be provided with advance notice so that the crops can be harvested and the scheduling of line construction will avoid cropping season. in case of any damage, the same will be compensated.</li> <li>• Providing of additional grant is subject to policy level decision and for bigger scale projects with major displacement. This being a small-scale project, HPPTCL may not guarantee on the demands.</li> </ul>

**Table 4.2: Locations and Number of Participants of FGDs**

#	Name of the Village	Number of Participants	Name of Sub Projects	Number of Women Participants
1	Village-Darmot	9	Bagipul-kotla Line	0
2	Village- Kasholi	8	Bagipul-kotla Line	0
3	Village Damehli	10	Bagipul-kotla Line	2
4	Village Khadej	8	Bagipul-kotla Line	0
5	Village- Khajera	9	Bagipul-kotla Line	1
6	Village- Pukhari	6	Mazara- Kariyan Line	0
7	Village- Charor	8	Barsaini-Charor Line	1
8	Village- Chhalal/Kasol/Chuj	10	Barsaini-Charor Line	0
9	Village- Sarsani/Banasha	8	Barsaini-Charor Line	2
10	Village- Manikaran	5	Barsaini-Charor Line	0
11	Village- Chouhak	8	Barsaini-Charor Line	0
12	Village- Chhiunr	7	Barsaini-Charor Line	0
13	Village- Khani	14	Holi Bajoli- Lahal Line	0

#	Name of the Village	Number of Participants	Name of Sub Projects	Number of Women Participants
14	Village- Kanouta, Dundarpla, Dapauta, Gadhouta	9	Holi Bajoli- Lahal Line	0
15	Village- Lamnouta	9	Holi Bajoli- Lahal Line	0
16	Village- Garima	8	Holi Bajoli- Lahal Line	0
17	Village- Sahan	4	Holi Bajoli- Lahal Line	2
18	Village- Dalli	7	Holi Bajoli- Lahal Line	1
19	Village- Tangaitha (Manjatha)	9	Lahal – Rajera Line	0
20	Village- Bailley	10	Lahal – Rajera Line	2
21	Village- Mohal (Manjatha) – Jalodi	9	Lahal – Rajera Line	4
22	Village- Tangaitha (Manjatha)	5	Lahal – Rajera Line	0
23	Village- Kharod	12	Lahal – Rajera Line	1
24	Lahal – Rajera Line, Village- Badheror/Kuther	12	Lahal – Rajera Line	1
25	Village- Bhatwara	7	Lahal – Rajera Line	2
26	Village- Malanth Bhatwara Luhanda	7	Lahal – Rajera Line	0
27	Village- Barai	7	Lahal – Rajera Line	0
28	Village- Tralla	9	Lahal – Rajera Line	0
Total		235	NA	19

#### 4.2 Consultation with Scheduled Tribe (IPs)

67. Consultations were carried out in various villages falling under the scheduled tribe area where the two lines pass through. Consultations were held at 9 villages of Bharmour Tehasil (Village-Khani, Village-Kanouta, Village-Lamnouta, Village-Garima, Village-Sahan, Village-Dalli, Village-Tangaitha, Village-Bailley and Village-Mohal). Consultations include a total of 79 participants of which 9 are women participants (see Annex 5.1 for participant lists). As a practice, HPPTCL has consulted with all the land owners individually prior to fixing up of the tower footings.

68. The key stakeholders in the consultations include village sarpach (an elected head of a village-level statutory institution) of the panchayat, affected people and other local people in the surrounding area. Issues related to project scope and time line etc were discussed and also negotiation mechanism related to land purchase was also discussed. The broad policy principles of the project were also discussed in order to make the affected IP people aware about their eligibility and entitlement.

69. Major concern of the IP people does not vary from the main stream population as they raised the similar issues such as fair compensation, avoiding physical structures, prior notice regarding the construction schedule etc to which their concerns were clarified. See Annex 5.2 for a summary of meeting minutes with ST/IP villages.

#### 4.3 Disclosure

70. HPPTCL will provide relevant resettlement information in a timely manner, in an accessible place, and in a form and language (Hindi/English) understandable to affected persons



and other stakeholders. The subproject components will pass through the scheduled area however; the ST and IP understand the Hindi language. Notification as per the Electricity Act, 2003 on project information will be disclosed in the local newspaper. The draft RIPP will be made available in relevant local government offices and in relevant HPPTCL/PMU and site offices (PIU) before the appraisal. The summary RIPP will be made available in Hindi language. The draft, updated and final RIPP will be disclosed in ADB's website and in HPPTCL's website.

#### **4.4 Continued Consultation and Participation**

71. The consultation process will be on going as necessary. The following public consultation measures are envisaged for the project:

- HPPTCL will disclose the construction schedule before the commencement of construction works to ensure that local villages are notified and informed of said activities.
- HPPTCL will inform the communities about progress made in the implementation of resettlement, social and environmental activities.
- HPPTCL will inform the APs on compensation and assistance to be paid for the temporary loss of crops and trees.
- All monitoring reports will be disclosed in the same manner as the RIPP.
- HPPTCL will disclose information and consult with APs at the project area, with the object of availing no objection from the community where the new sub stations are being proposed.
- HPPTCL will ensure that vulnerable groups, including ST/IPs understand the process and that their specific needs are taken into account.

## 5.0 GRIEVANCE REDRESS MECHANISM

### 5.1 Need of the GRM and its Formation

72. HPPTCL has established a Grievance Redress Mechanism (GRM) with suitable grievance redress procedure for the project affected persons (APs). The GRM would address APs' concerns and complaints promptly, using an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to the APs at no cost. Through its Environment and Social Safeguards Policy; Resettlement Policy Framework and Indigenous Peoples Policy Framework HPPTCL will establish a Grievance Redressal Mechanism (GRM) having suitable grievance redressal procedure for the project affected persons. The grievance redress mechanism would address affected persons' (including ST/IPs) concerns and complaints promptly, using an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to the affected persons at no costs and without retribution. The GRM consists of a Grievance Redressal Committee (GRC) led by project head comprised of the following persons including village and scheduled tribe representatives as listed in **Table 5.1** below:

**Table 5.1: Constitution of Grievance Redress Committee**

Project Head	Chairman
Head of Finance wing at the project level	Member
Representative of local Panchayat	Member
Representative of contractor	Member
Project Environment/R&R staff	Member Secretary
Representative from Affected ST household	Member

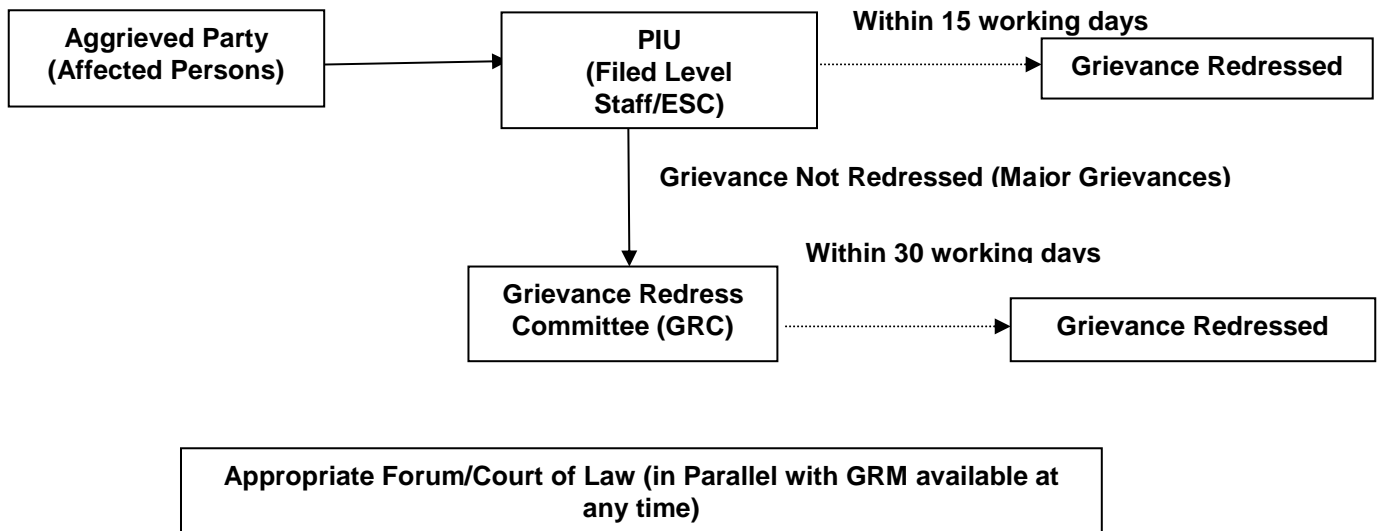
### 5.2 Function of the GRM

73. The GRM provides an effective approach for resolution of complaints and issues of the affected community. Project Management Unit (PMU) shall formulate procedures for implementing the GRM. The PIU shall undertake GRM's initiatives that include procedures of taking/ recording complaints, handling of on-the-spot resolution of minor problems, taking care of complainants and distressed stakeholders etc. paying particular attention to vulnerable groups. Environmental and social grievances will be handled in accordance with the project grievance redress mechanism. Open and transparent dialogue will be maintained with project affected persons as and when needed, in compliance with ADB safeguard policy requirements.

### 5.3 Process of GRM

74. Grievances of APs (minor grievance) will first be brought to the attention at the PIU level. Grievances not redressed by the PIU staff (field level) will be brought to the GRC at PMU level. The GRC will meet every month (if grievances are brought to the Committee), determine the merit of each grievance, and resolve grievances within a month of receiving the complaint. Use of the GRM does not stop APs using other forum or court of Law for redressal at any time. Grievance redress mechanism is depicted in **Figure 5.1**.

**Figure 5.1: Grievance Redress Mechanism**



75. If efforts to resolve disputes using the GRM remain unresolved or unsatisfactory, AHs also have the right to directly discuss their concerns or problems with the ADB South Asia Energy Division or the Indian Resident Mission. As well, ADB's Accountability Mechanism which allows people affected by ADB-supported Projects to submit complaints to ADB. This is a separate resolution mechanism from the GRM described above. The Accountability Mechanism provides an independent forum that allows people to voice their problems and seek resolution, and report alleged violations of ADB's operational policies and procedures.

## **6.0 POLICY AND LEGAL FRAMEWORK**

### **6.1 Overview**

76. This is the tranche 3 of the MFF. A Resettlement Framework<sup>16</sup> has already been prepared, approved and disclosed in 2011. The RF outlines the objectives, policy principles and procedures for land acquisition, compensation and other assistance measures for displaced persons. It includes guidance on screening and categorization, assessment, planning, institutional arrangements and processes to be followed for implementation of entire MFF which includes all the tranches. Tranche 3 subprojects will not involve any private land acquisition by using eminent domain or enforcing the new land acquisition act of the country, "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (hereafter RFCT in LARR, 2013)", effective from 1 January 2014. Therefore, the RP is based on ADB's SPS 2009m HPPTCL's policies (i) Environment and Social Safeguard Policy, May 2011 (ESSP) and (ii) Resettlement, Relief, Rehabilitation and Compensation Policy, May 2011 (RRRCP) and the RF.<sup>17</sup> Being a transmission project, the tranche 3 project also follows other relevant national act such as (i) The Electricity Act, 2003 and (ii) The Indian Telegraph Act, 1885. The compensation principles adopted for the project shall comply with applicable laws and regulations of the Government of India/State Government, as well as ADB's Safeguard Policy Statement (2009).

### **6.2 HPPTCL Policy on Safeguards**

77. HPPTCL is committed to the goal of sustainable development of power transmission network in harmony with nature and natural resources and seeks to avoid, minimize, mitigate or compensate adverse environmental and social impacts. HPPTCL approved its safeguards policies in the month of May 2011 which are (i) Environmental and Social Safeguards Policy (ESSP) and (ii) Resettlement, Relief, Rehabilitation and Compensation Policy (RRRCP). The Goal of HPPTCL's Environmental and Social Safeguards Policy (ESSP) is to ensure that development of power transmission system network in environmentally and socially sustainable manner and to bring clarity and transparency about it with public disclosure. HPPTCL shall proactively and voluntarily take all necessary steps to ensure environmental and social sustainability of all its projects. HPPTCL has developed this document of its corporate Environmental and Social Safeguards Policy (ESSP) to address the environmental and socioeconomic issues arising from its activities guided by the basic principles of Avoidance, Minimization and Mitigation. The ESSP outlines HPPTCL's approach and commitment to deal with environmental and social issues relating to its transmission projects. The main aim of ESSP is to move away from the classical cost-benefit approach to the larger realm of Corporate Social Responsibility, while mainstreaming the environmental and social concerns in its operations. The ESSP has the special provision to deal with social safeguards through its special policy, RRRCP. The RRRCP lays down the guiding policy of HPPTCL for preparation of project specific R&R Plans and its implementation for the transmission projects under HPPTCL.

### **6.3 ADB's Safeguard Policy Statement, 2009 (SPS)**

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<sup>16</sup> This RF requires future updating in order to address and comply with the new national laws related to land acquisition, "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013 (RFCTLARRA, 2013)". However, it may be noted that there will be no applicability of the new RFCTLARRA, 2013 because there will be no land acquisition in tranche 3 subprojects and the land for the substations have been acquired through negotiated settlement through willing buyer and willing seller mechanism.

<sup>17</sup> The detailed analysis of various applicable policies and comparison has been provided in the Resettlement Framework.

78. ADB has adopted Safeguard Policy Statement (SPS) in 2009 including safeguard requirements for environment, involuntary resettlement and indigenous people. The objective of the involuntary resettlement policy is to avoid involuntary resettlement wherever possible; to minimize involuntary resettlement by exploring project and design alternatives; to enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels; and to improve the standards of living of the displaced poor and other vulnerable groups.

79. The involuntary resettlement safeguards covers physical displacement (relocation, loss of residential land, or loss of shelter) and economic displacement (loss of land, assets, access to assets, income sources, or means of livelihoods) as a result of (i) involuntary acquisition of land, or (ii) involuntary restrictions on land use or on access to legally designated parks and protected areas. It covers them whether such losses and involuntary restrictions are full or partial, permanent or temporary. Followings are the basic policy principle of ADB's SPS, 2009:

- Identification of past, present, and future involuntary resettlement impacts and risks and determination of the scope of resettlement planning.
- Carry out meaningful consultations with affected persons, host communities, and concerned non-government organizations.
- Improvement or at least restoration of the livelihoods of all displaced persons.
- Ensure physically and economically displaced persons with needed assistance.
- Improvement of the standards of living of the displaced poor and other vulnerable groups.
- Development of procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement,
- Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets.
- Preparation of a resettlement plan elaborating on displaced persons' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget, and time-bound implementation schedule.
- Disclosure of resettlement plan, including documentation of the consultation process in a timely manner to affected persons and other stakeholders.
- Execution of involuntary resettlement as part of a development project or program.
- Payment of compensation and provide other resettlement entitlements before physical or economic displacement.
- Monitoring and assessment of resettlement outcomes, their impacts on the standards of living of displaced persons.

80. The project will recognize three types of displaced/affected persons like (i) persons with formal legal rights to land lost in its entirety or in part; (ii) persons who lost the land they occupy in its entirety or in part who have no formal legal rights to such land, but who have claims to such lands that are recognized or recognizable under national laws; and (iii) persons who lost the land they occupy in its entirety or in part who have neither formal legal rights nor recognized or recognizable claims to such land. The involuntary resettlement requirements apply to all three types of displaced/affected persons.

#### **6.4 Statutory Requirements**

81. As per the statutory requirements (IS-5613, Part 3, 1989) all the trees and bushes,

including saplings coming in the RoW limit i.e. clearance belt of transmission lines must be cut and removed. The provisions of the Electricity Act, 2003 and Indian Telegraph Act, 1885 regarding paying compensation for laying of transmission line are as follows:

#### **6.4.1 The Electricity Act, 2003, Part-VIII, Section 67 & 68**

##### **Section 67 (3–5):**

- (3) A licensee shall, in exercise of any of the powers conferred by or under this section and the rules made there under, cause as little damage, detriment and inconvenience as may be, and shall make full compensation for any damage, detriment or inconvenience caused by him or by any one employed by him.*
- (4) Where any difference or dispute [including amount of compensation under sub-section (3)] arises under this section, the matter shall be determined by the Appropriate Commission.*
- (5) The Appropriate Commission, while determining any difference or dispute arising under this section in addition to any compensation under sub-section (3), may impose a penalty not exceeding the amount of compensation payable under that sub-section.*

##### **Section 68 (5 & 6):**

- (5) Where any tree standing or lying near an overhead line or where any structure or other object which has been placed or has fallen near an overhead line subsequent to the placing of such line, interrupts or interferes with, or is likely to interrupt or interfere with, the conveyance or transmission of electricity or the 36 to interrupt or interfere with, the conveyance or transmission of electricity or the accessibility of any works, an Executive Magistrate or authority specified by the Appropriate Government may, on the application of the licensee, cause the tree, structure or object to be removed or otherwise dealt with as he or it thinks fit.*
- (6) When disposing of an application under sub-section (5), an Executive Magistrate or authority specified under that sub-section shall, in the case of any tree in existence before the placing of the overhead line, award to the person interested in the tree such compensation as he thinks reasonable, and such person may recover the same from the licensee.*

82. HPPTCL is covered under section 164 of electricity Act thereby empowered to use powers of the Indian Telegraph Act, 1885 for placing of towers /lines. The provisions of the Telegraph Act for compensation are as follows:

#### **6.4.2 The Indian Telegraph Act, 1885, Part-III, Section 10:**

**10. Power for telegraph authority to place and maintain telegraph lines and posts –** *The telegraph authority may, from time to time, place and maintain a telegraph line under, over, along, or across, and posts in or upon any immovable property: Provided that –*

- a) the telegraph authority shall not exercise the powers conferred by this section except for the purposes of a telegraph established or maintained by the [Central Government], or to be so established or maintained;*
- b) the [Central Government] shall not acquire any right other than that of user only in the property under, over, along, across in or upon which the telegraph authority places any telegraph line or post; and*

- c) *except as hereinafter provided, the telegraph authority shall not exercise those powers in respect of any property vested in or under the control or management of any local authority, without the permission of that authority; and*
- d) *in the exercise of the powers conferred by this section, the telegraph authority shall do as little damage as possible, and, when it has exercised those powers in respect of any property other than that referred to in clause (c), shall pay full compensation to all persons interested for any damage sustained by them by reason of the exercise of those powers.*

**Section 16 of the Indian Telegraph Act'1885 which stipulates as under:**

***16. Exercise of powers conferred by section 10, and disputes as to compensation, in case of property other than that of a local authority:***

- (1) *If the exercise of the powers mentioned in Section 10 in respect of property referred to in clause (d) of that section is resisted or obstructed, the District Magistrate may, in his discretion, order that the telegraph authority shall be permitted to exercise them.*
- (2) *If, after the making of an order under sub section (1), any person resists the exercise of those powers, or, having control over the property, does not give all facilities for this being exercised, he shall be deemed to have committed an offence under section 188 of the Indian Penal Code (45 of 1860).*

83. In exercise of the powers vested with HPPTCL under Indian telegraph Act'1885, part 3, section 10 to 19 conferred under section 164 of the Electricity Act 2003 has the authority to place and maintain transmission lines under over along or across and posts in or upon, any immovable property. As per the provisions of Indian Telegraph Act'1885 Part III Section 10 (b) which prohibits acquisition of any rights other than that of use only, land for tower and right of way is not acquired and agricultural activities are allowed to continue. However, as per clause 10 (d) of same act stipulates that the user agency shall pay full compensation to all interested for any damages sustained during the execution of said work. Accordingly, HPPTCL pays compensation to land owners towards damages.

## **6.5 Indigenous Peoples Legal Framework**

84. ADB's Safeguards Policy Statement (2009) ensures equality of opportunity for indigenous peoples. It aims to ensure that any bank-assisted development interventions which will have any impact on indigenous peoples will be consistent with the needs and aspirations of affected indigenous peoples and compatible in substance and structure with affected IP's culture and social and economic institutions. The IPPF recognizes the vulnerability of indigenous peoples and it specifically ensures that any project intervention, whether positive or adverse will be addressed by the implementing agencies. Moreover, the implementing agencies will ensure that affected IPs will have opportunities to participate in and benefit equally from such project interventions.

85. Article 366(25) in the Constitution of India refers to STs as those communities who are scheduled in accordance with Article 342 of the Constitution. According to Article 342 of the Constitution, STs are the tribes or tribal communities or part of or groups within these tribes and tribal communities which have been declared as such by the President through a public notification. Identification of tribes is a State subject. Thus, classification of a tribe would depend on the status of that tribe in the respective State. In Himachal Pradesh certain areas have been declared as scheduled V area as Specified by the Scheduled Areas (Himachal Pradesh) Order, 1975 (Constitution Order 102) dated 21.11.1975. These districts are Lahaul and Spiti district, Kinnaur district and Pangi tehsil (administrative circle under a district) and Bharmour sub-tehsil

(administrative circle under a tehsil in Chamba district. These districts avail special status irrespective of their tribal status. Some of the subprojects fall under the scheduled area (Bharmour Tehasil) of Chamba district. There will be no compulsory land acquisition in the project.

The Parliament of India passed the Provisions of the Panchayats Extension to the Scheduled Areas Act (PESA), 1996, to extend the provisions of the 73<sup>rd</sup> Constitutional Amendment to the Schedule V Areas of the country. This Act accords statutory status to the Gram Sabhas in Schedule V areas with wide-ranging powers and authority. The Act has recognized the prevailing traditional practices and customary laws besides providing the management and control of all the natural resources—land, water and forest in the hands of people living in the Schedule Areas. The Act empowers people in the tribal areas through self governance.

86. In order to deal with the IP issues, an Indigenous Peoples Planning Framework (IPPF) has been prepared with due analysis of applicable national laws and ADB SPS. The objectives of the IPPF are to ensure that if tribal populations are affected by a subproject that they: i) are adequately and fully consulted, ii) receive benefits and compensation equal to that of the mainstream population, (iii) are provided with special assistance as per laws and policies because of their vulnerabilities vis-à-vis the mainstream population, and (iv) receive adequate protection against project adverse impacts on their culture identities. Due to the low intensity of impacts in IPs, separate IPP was not required and the IP issue has been covered in the Resettlement Plan, therefore a combined RIPP has been prepared to deal with the IP issues.

## **6.6 Core Principles**

87. Based on the above analysis of applicable legal and policy frameworks of government and in consistent with ADB's policy requirements, broad resettlement principle for the project shall be the following:

- Involuntary resettlement would be avoided wherever possible or minimized as much as possible by exploring project and design alternatives. Where negative impacts cannot be avoided, assist affected persons (AP), in improving or at least regaining their standard of living and income.
- Carry out meaningful consultations with affected persons and inform all displaced persons of their entitlements and resettlement options. Ensure their participation in planning, implementation and monitoring of the project.
- Particular attention will be paid to the needs of vulnerable groups, especially those below the poverty line, the landless, the women headed households, and Indigenous Peoples, and those without legal title to land, and ensure their participation in consultations.
- An effective grievance redress mechanism will be established to receive and facilitate resolution of the affected persons' concerns. The social and cultural institutions of displaced persons and their host population will be supported through proper planning. Where involuntary resettlement impacts and risks are highly complex and sensitive, compensation and resettlement decisions should be preceded by a social preparation phase.
- A resettlement and indigenous peoples plan (RIPP) will be prepared elaborating on displaced persons' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget, and time-bound implementation schedule.



- The draft RIPP, including documentation of the consultation process will be disclosed in a timely manner, before project appraisal, in an accessible place and in a form and language(s) understandable to affected persons and other stakeholders. The final resettlement plan and its updates will also be disclosed to affected persons and other stakeholders.
- All common property resources lost due to the project will be replaced or compensated by the project.
- Provide compensation for acquired assets at replacement/market value in accordance with the RIPP.
- Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets.
- Provide resettlement assistance and income restoration to APs in case of permanent land acquisition.
- Provide for APs not present during enumeration. However, anyone moving into the project area after cut off date will not be entitled to assistance.
- Develop procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement where applicable to ensure that those people who enter into negotiated settlements will maintain the same or better income and livelihood status.
- Provide compensation and resettlement assistance prior to taking possession of the acquired lands and properties in case of permanent land acquisition. However, payment for loss of crops and trees for the transmission line can go simultaneously with the construction activities. A particular stretch of line can be made ready by paying the compensation for loss of crops/trees etc prior/during construction.
- Establish grievance redress mechanisms to ensure proper and timely resolution of disputes.
- Ensure adequate budgetary support to cover implementation costs for RIPP.
- Monitoring of the implementation of RIPP.

88. Additionally, the issues related to the Right of Way for the transmission lines will be dealt with proper care especially for the temporary loss. For the loss of crops and trees due to construction of overhead lines, cash compensation payable by cheque will be provided during construction works. HPPTCL will provide cash compensation (by cheque) to the APs for the temporary loss of crop and loss of trees if occurred, during the time of maintenance and repair.

## **6.7 Valuation of Compensation**

89. Compensation for land for tower footings will be determined through mutual negotiation with the land owners keeping in consideration of the latest circle rate<sup>18</sup> and the market rate as base. Valuation of compensation for loss of trees is done by the horticulture department. Compensation for non-fruit trees will be based on timber value at market price. Compensation for perennial crops and fruit trees will be based on annual net product market value multiplied by remaining productive years. Assessment of compensation for loss of crop is done by the HPPTCL with the help from revenue department/horticulture department and is based on the following parameters:

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<sup>18</sup> Circle rates are usually defined by the local state government's revenue departments or the local development authorities, in line with what they perceive the prices at which property sale or transfer should be undertaken. As such, circle rate is usually a determinant or a reference rate at best. Market rates, on the other hand, are determined by the seller's expectation of price and the buyer's inclination to pay.

- Area of the land considered for loss of crop;
- Type of crops which are existing during the construction;
- Yielding or productivity of the specific crops. This data is collected from the local Tehasil office where the list (quantity) of yielding of various crops is available for each area;
- The unit rate of the affected crop is collected from daily newspaper which is the latest market rate available. The market price index (mandi rate) in the newspaper is the latest market which is updated on a regular basis;
- Once the unit rate is collected, the actual amount of compensation for loss of crop is calculated by multiplying affected area, yielding and unit rate. (Affected area in sqmt. X yielding per sqmt. X unit rate per sqmt.).

## **6.8 Cut off Date**

90. For the substations land, the land has already been acquired through negotiated settlement and the date for first consultation with the affected land owners was considered as cut off date. For the tower footings, the date of completion of project census survey (December 2016) is considered as the cut off date. For the transmission lines, the impacts are temporary in nature in terms of loss of crops etc., which will occur during the construction. The compensation will be paid in parallel with construction activities of transmission lines as per assessment of actual damage. A prior notice will be served after the final survey informing that the proposed transmission line is being routed through the property of the individual. The notice shall contain the particulars of the land, ownership details and the details of the trees/crops likely to be damaged during the course of the construction of the proposed transmission line and acknowledgement received from land owner. This serves as a record for identifying the actual APs and the date of issuance of this notice can be treated as cut off date for identification and assessment of damages.

## 7.0 ENTITLEMENTS, ASSISTANCE AND BENEFITS

91. Compensation for lost assets will be paid on the basis of replacement cost/market value, in alignment with the entitlement provisions in the Project Resettlement Framework. Resettlement assistance for lost income will be provided to both title holders and nontitle holders. Additional support will be made available to vulnerable groups. APs entitled for compensation provisions under the Project are as follows (i) APs who lose land covered by legal title/traditional land rights, or without legal status; (ii) registered/nonregistered tenants and sharecroppers; (iii) owners of buildings, crops, plants, or other objects attached to the land; and (iv) APs losing business, income, and salaries. Compensation eligibility is limited by a cut-off date as described above. APs who settle in the affected areas after the cut off date will not be eligible for compensation. They, however will be given sufficient advance notice.

92. Land for 3 substations has been acquired, and compensation process for 1 substation with remaining 5 households has initiated. During the IoL surveys for transmission lines, land for tower footings has been identified in consultation with owners. A negotiated settlement will offer adequate and fair price for land and/or other assets. The EA will ensure that any negotiations with displaced persons openly address the risks of asymmetry of information and bargaining power of the parties involved in such transactions. Thus, tranche 3 subprojects do not require compulsory land acquisition; hence, the LARR 2013 is not enforced. Land for the tower footings will be compensated as land value in accordance with the negotiation and additionally, loss of crops and trees and temporary sheds will be compensated promptly as per replacement value. Entitlement matrix is described in **Table 7.1**.

**Table 7.1: Entitlement Matrix**

Type of Losses	Definition of APs	Entitlement	Details
<b>Land</b>			
Loss of agricultural land <sup>19</sup> (Land for Tower Footings of 148 AHs)	<ul style="list-style-type: none"> <li>• Titled owners</li> <li>• affected persons (APs) with traditional land rights</li> </ul>	<ul style="list-style-type: none"> <li>• Compensation based on market/replace ment value</li> <li>• Resettlement assistance</li> </ul>	<ul style="list-style-type: none"> <li>• Land to be possessed by the project authority with mutual and voluntary consent of the affected people, compensation will be paid on negotiated market price for the substation land.</li> <li>• Compensation at market value for the land affected by tower footing.</li> <li>• Transaction costs (documentary stamps, registration costs, etc.) Will be borne by the project authority during registration.</li> <li>•</li> </ul>
<b>Trees</b>			
Loss of Trees	<ul style="list-style-type: none"> <li>• Land holders</li> <li>• Share-croppers</li> <li>• Lease holders</li> </ul>	<ul style="list-style-type: none"> <li>• Compensation at market value to be computed with assistance of horticulture department</li> </ul>	<ul style="list-style-type: none"> <li>• Advance notice to APs to harvest fruits and remove trees.</li> <li>• For fruit bearing trees compensation at average fruit production for next productive years to be computed at current market value.</li> <li>• For timber trees compensation at market cost based on type of trees.</li> </ul>
<b>Crops</b>			

<sup>19</sup> For the tower footings, HPPTCL will pay the compensation in terms of land value for the affected area under tower footings to be placed on private land.

Type of Losses	Definition of APs	Entitlement	Details
Loss of Crops (181.27/hectares)	<ul style="list-style-type: none"> <li>Land holders</li> <li>Share-croppers</li> <li>Lease holders</li> <li>Nontitled holders</li> </ul>	<ul style="list-style-type: none"> <li>Compensation at Market value to be computed with assistance of agriculture department</li> </ul>	<ul style="list-style-type: none"> <li>Advance notice to APs to harvest crops.</li> <li>Cash compensation at market cost of mature crops based on average production.</li> </ul>
<b>Temporary Huts/Sheds for Agricultural Use</b>			
Loss of Temporary huts/Sheds for agricultural use (6 sheds)	<ul style="list-style-type: none"> <li>Land holders</li> <li>Share-croppers</li> <li>Lease holders</li> <li>nontitled holders</li> </ul>	<ul style="list-style-type: none"> <li>Compensation at market value</li> </ul>	<ul style="list-style-type: none"> <li>Advance notice to APs to remove the sheds.</li> <li>Compensation at market value</li> </ul>
<b>Government Land and Property</b>			
Government Property (Loss of Land due to tower footings)	<ul style="list-style-type: none"> <li>8.22 hectares</li> </ul>	<ul style="list-style-type: none"> <li>Lump sum compensation as per government rules</li> </ul>	<ul style="list-style-type: none"> <li>Departmental transfer of land records and details.</li> </ul>
<b>Vulnerable Households<sup>20</sup></b>			
Impacts on vulnerable APs (64 AHs)	<ul style="list-style-type: none"> <li>All impacts</li> </ul>	<ul style="list-style-type: none"> <li>Vulnerable APs</li> </ul>	<ul style="list-style-type: none"> <li>Additional assistance based on three months of minimum wage.</li> <li>Vulnerable households will be given priority in project construction employment where feasible.</li> </ul>
<b>Temporary Loss of Land</b>			
Temporary loss of land during construction	<ul style="list-style-type: none"> <li>All APs with affected land on temporary basis</li> </ul>	<ul style="list-style-type: none"> <li>Prior notice</li> <li>Compensation at market value for loss of assets</li> <li>Restoration</li> </ul>	<ul style="list-style-type: none"> <li>Compensation for loss of assets at replacement value.</li> <li>Restoration of land to previous or better quality.</li> </ul>
<b>Unanticipated Impacts</b>			
Other Impacts Not Identified	<ul style="list-style-type: none"> <li>Affected households or individuals</li> </ul>	<ul style="list-style-type: none"> <li>Compensation and assistance</li> </ul>	<ul style="list-style-type: none"> <li>Unforeseen impacts will be documented and mitigated based on the principles agreed upon in the resettlement framework.</li> </ul>

**93. Relocation and Income Restoration:** The subproject will not require physical displacement. Affected assets include six small huts used as storage for agricultural activities. No landless will happen and no household is losing more than 12% of their land. The farmers are not going to be marginalized and able to continue their income generation activities. The impacts are limited to the temporary loss/damage to crops during the construction phase for which adequate compensation will be provided as per the entitlement matrix which will be as per the current market value. Additionally, vulnerable households will be paid an additional assistance equivalent to three months of minimum wage. HPPTCLL will give priority to the vulnerable household where applicable. Advance notice is issued to the APs prior to the start of construction works and that

<sup>20</sup> Vulnerable households are defined as women-headed households, scheduled tribe households, below poverty line households, households headed by physically handicapped or disabled persons, severely affected households (household losing more than 10% of productive asset), landless household and nontitled/encroacher households (subject to socioeconomic analysis).

compensation is also completed before then or simultaneously. In case of future maintenance work, HPPTCL will pay APs for loss of crop due to work activities. Should construction activities result in unavoidable livelihood disruption, compensation for lost income for the period of disruption will be provided. Vulnerable APs will be given priority in project construction employment.

## 8.0 RESETTLEMENT BUDGET AND FINANCING PLAN

94. The cost estimate for tranche 3 subprojects includes eligible compensation, assistance and support cost for RIPP implementation. This is a tentative budget which needs to be updated prior to the finalization of disbursement. The unit cost for land and other assets in this budget has been derived through field appraisal, consultation with affected households and relevant government authorities.

95. Contingency provision equivalent to 5% of the total cost has also been made to accommodate any variations from this estimate. The total land acquisition and resettlement cost for the tranche 3 subproject is estimated to be INR226.90 million (equivalent to \$3.49 million). Resettlement and Indigenous Peoples activity costs will be considered as an integral component of project costs. The EA, HPPTCL will make the funds available in its annual budget for the disbursement of compensation and assistance. Cost related to IP activities, GRM and future consultations will be part of the administrative cost. Any unforeseen impact such as increase in number of vulnerable households or change in impacts due to change in alignment etc will be covered under the contingency. Detail cost estimate is given in **Table 8.1**.

**Table 8.1: Indicative Resettlement Cost**

Item		Unit	Unit Rates (INR)	Quantity	Total Cost (INR)
<b>A: Compensation for Acquisition of Private Land</b>					
A1	Land Acquisition for Substations through negotiated settlement	hectare	Actual	3	31,015,475
A2	Agricultural land for Tower footings	hectare	15,000,000	7.03	105,450,000
A2	Fruit Trees	Numbers	60,000	636	38,160,000
A3	Non-fruit /Timber Trees	Numbers	40,000	225	9,000,000
A4	Loss of crops	hectare	150,000	181.27	27,190,500
A5	Compensation for temporary Sheds	Numbers	20000	6	120000
<b>Subtotal: A</b>					<b>210,935,975</b>
<b>B: Assistance</b>					
B1	Allowances for Vulnerable Households	Lump Sum	13,500	64	864,000
<b>Subtotal: B</b>					<b>864,000</b>
<b>C: Support Cost for Implementation of RIPP</b>					
C1	Resettlement Specialist in PMU	Person month	75,000	24	1,800,000
C2	Monitoring	Lump Sum			1,000,000
C3	Administrative Cost	Lump Sum			1,500,000
<b>Subtotal C</b>					<b>4,300,000</b>
<b>TOTAL</b>					<b>216,099,975</b>
<b>Contingency (5%)</b>					<b>10,804,999</b>
<b>Grand Total</b>					<b>226,904,974</b>
<b>Grand Total (Million INR)</b>					<b>226.90</b>
<b>Grand Total (Million USD)</b>					<b>3.49</b>

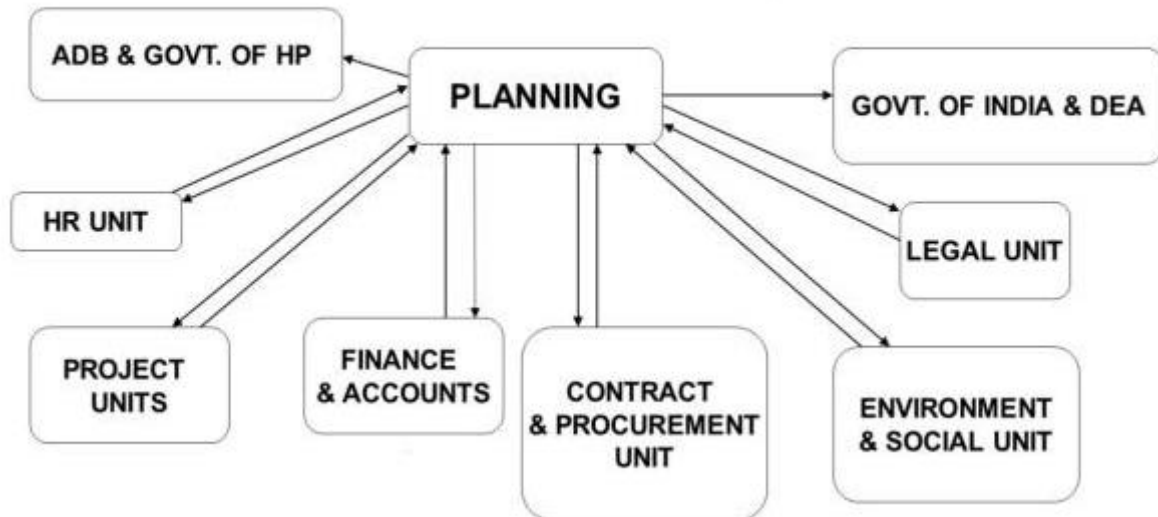
## 9.0 INSTITUTIONAL ARRANGEMENTS

96. HPPTCL will serve as the Executing Agency (EA) as well as the Implementing Agency (IA) for the investment program and for the tranche 3 implementation. HPPTCL has established a Project Management Unit (PMU) for implementing the ADB loan. Associated with the PMU, an Environment and Social Cell (ESC) has been established at HPPTCL which is headed by Chief Environment Specialist who is assisted by one Environment Specialist and one Social Development cum Resettlement Specialist having knowledge on indigenous peoples and scheduled tribe.

97. The Project Management Unit (PMU) at corporate level is headed by Senior Project Manager (Planning) who will be assisted by DGM's from various functions – Administration and Finance, Projects Planning and Design, Procurement and contracts, Environment and Social Cell and Projects Construction. Project Implementation Units (PIUs) at divisional level of the project construction unit are headed by Executive Engineers at four locations – Rohru (Shimla), Chamba, Bhabanagar (Kinnaur) and Sarabhai (Kullu).

98. The ESC at the corporate level monitors the policy and implementation of safeguards impacts of all projects of HPPTCL. The ESC through it's PIU will communicate with the affected ST people in each respective village through its village panchayat. The village panchayat in each affected village in the scheduled area will be involved in finalization and implementation of the RIPP. Consultations will be continued and the ESC through its PIU will educate and sensitize the panchayat regarding the policy and procedure related to eligibility, entitlement, compensation, assistance, institutional mechanism, monitoring mechanism etc. PMU structure is shown in **Figure 10.1.**

**Figure 10.1: PMU Structure**  
**PMU STRUCTURE**



99. Project Implementation Unit (PIU) will assume primary responsibility for the safeguards assessment on the site as well as implementation of RIPP for their respective components in consultation with ESC. Keeping in view the capacity of HPPTCL, it is proposed that the ESC head to coordinate with each PIU along with other engineering units to address safeguard issues. Additionally, PIU will depute concerned engineer for planning and implementation of social,

resettlement and indigenous people's issues at subproject sites. HPPTCL has been implementing previous tranche and has dedicated social safeguard consultant to assist in IR and IP issues.

100. The Chief Specialist Environment must be assisted by the PIU for planning, implementing and monitoring of the RIPP. The duties of the ESC Specialists (in-charge of environment and social) will include at a minimum: (i) oversight of PIU for implementing the RIPPs with timely payment of compensation and assistance to the APs (ii) liaising with the PIU and seeking their help to solve any grievance and related issues of project implementation; and (iii) preparation of monitoring reports every 6 months (as required by ADB).

101. For this RIPP for tranche 3 subprojects HPPTCL will do the overall coordination, preparation, planning, implementation, and financing of all activities. Additional third-party services may be employed by the HPPTCL as necessary. The EA through its PMU and PIU will ensure that key institutions including local governments are involved in RIPP preparation, updating and implementation. Further details on agencies responsible for RP activities are in **Table 9.1**

**Table 9.1: Institutional Roles and Responsibilities for Resettlement activities**

Activity	Responsible Agency
<b>Subproject Initiation Stage</b>	
Establishing PMU/PIU	EA (HPPTCL)
Establishing ESC in PMU	EA (HPPTCL)
Designating safeguard Specialist in PMU/ESC	EA (HPPTCL)
Finalization of sites for subprojects	EA (HPPTCL)/PMU/PIU
Disclosure of proposed land acquisition and subproject details by issuing Public Notice	EA (HPPTCL)/PMU/PIU
Meetings at community/household level with APs	PMU/PIU
<b>RP Preparation and Updating Stage</b>	
Conducting Census of all APs	PMU/PIU/ESC
Conducting consultation/FGDs/meetings	PMU/PIU/ESC
Updating the AP census and impact in case of change in alignment	PMU/ESC
Computation of replacement values of land/properties	PMU/PIU/ESC/Competent Authority
Finalizing compensation packages and entitlements	PMU/PIU/ESC/ Competent Authority
Disclosure of final entitlements and rehabilitation packages	PMU/PIU/ESC
Approval of RIPP	EA/ADB
<b>RP Implementation Stage</b>	
Sale deed execution and payment	EA/PMU/PIU/Appropriate Government Department
Taking possession of land	EA/PMU/PIU
Implementation of proposed rehabilitation measures	PMU/PIU/ESC
Consultations with APs during rehabilitation activities	PMU/PIU/ESC
Grievances redress	PMU/PIU/GRC
Monitoring	PMU/ PIU/ESC

ADB = Asian Development Bank, AP = affected person, EA = Executing Agency, ESC = Environment Social Cell, FGD = focus group discussion, GRC = Grievance Redress Committee, HPPTCL = Himachal Pradesh Power Transmission Corporation Limited, PIU = Project Implementation, RIPP = Resettlement and Indigenous Peoples Plan.



## 10.0 IMPLEMENTATION SCHEDULE, MONITORING AND REPORTING

### 10.1 Implementation Schedule

102. All land acquisition and compensation for tranche 3 subprojects having permanent impact will be completed before start of civil works. All land required will be provided free of encumbrances to the contractor prior to handing over of subproject sites and the start of civil works. However, payment of compensation for loss of crops and trees due to the transmission line and the RoW will be conducted parallel during construction (on a section by section basis)<sup>21</sup>. The implementation of the RIPP will include: (i) identification of cut off date and notification, (ii) verification of losses and extent of impacts, (iii) finalization of entitlements and distribution of identity cards, (iv) consultations with APs on their needs and priorities, and (v) resettlement, provision of compensation and assistance, and restoration for APs. However, public consultation and monitoring will be continued on an intermittent basis as needed during the entire duration of the project. A tentative implementation schedule is described in **Table 10.1**.

**Table 10.1: Implementation Schedule**

Subproject R&R Component/Activities	Months											
	1	2	3	4	5	6	7	8	9	10	11	12
Identification of sub project and notification	★											
Community Consultation	★	★	★	★	★	★	★	★	★	★	★	★
Identification of land and Census Survey		★	★									
Submission of RIPP for ADB Approval				★								
Disclosure of RIPP					★							
Establishment of PMU and PIU	★											
Establishment of ESC	★											
Establishment of GRC	★											
Updating the RIPP when required				★								
Issue compensation to APs				★	★	★	★	★	★			
Payment of all eligible assistance				★	★	★	★	★	★	★		
Schedule for Civil Work												★
Monitoring					★	★	★	★	★	★	★	★

Note: Establishment of PMU and ESC have already been done during the implementation of Tranche 1 sub projects. The same PMU and ESC will be responsible for Tranche 3 subprojects implementation.

### 10.2 Monitoring and Reporting

103. Monitoring is the responsibility of HPPTCL through its PMU, PIU and the Environment Social Cell and it will submit semiannual monitoring reports to ADB for review and posting to the ADB website. HPPTCL is responsible establish and maintain procedures to monitor the progress of implementation of safeguard plans; the document of negotiation and settlement processes; verify the compliance with safeguard measures and their progress toward release of entitlements and benefits; document and disclose monitoring results and identify necessary corrective and preventive actions in the periodic monitoring reports and follow up on these actions to ensure progress toward the desired outcomes. Monitoring will include daily planning, implementation,

<sup>21</sup> For identified impacts, compensation will be provided to APs before installation. For unexpected impacts which cannot be estimated before installation, compensation will be evaluated and provided based on the actual impacts.

feedback and trouble shooting, individual affected person file maintenance, community relationships, dates for consultations, number of appeals placed and progress reports. HPPTCL through its PMU will be responsible for managing and maintaining affected person databases, documenting the results of the affected person census. The ESC through its PIU will involve the ST households during the monitoring activities. Some of the broad key indicators (subject to modification) are presented in **Table 10.2** below.

**Table 10.2: Monitoring Indicators**

Type	Indicators	Indicator Explanation
First Monitoring Report	<ul style="list-style-type: none"> <li>• PIU established and functioning</li> <li>• Completion of IoL and ethnicity verification survey for all affected households completed;</li> <li>• Final entitlements for each household recorded (table);</li> <li>• GRM established and functioning;</li> </ul>	Reporting on these indicators should be included in the first monitoring report together with reporting on the semiannual indicators.
Semiannual Monitoring Indicators for Reporting	<ul style="list-style-type: none"> <li>• # households (of total affected HHs) met with to discuss final entitlements</li> <li>• # of entitlement discussions with both male and female household head met with during meeting (out of total HH).</li> <li>• Number of consultation/disclosure activities undertaken this period (6 months)</li> <li>• Number of male participants in consultation activities.</li> <li>• Number of female participants in consultation activities.</li> </ul>	During discussion of final entitlements, both male and female household heads should be present to ensure both understand the compensation package. This should be reported on during the period of entitlement disbursement.
	<ul style="list-style-type: none"> <li>• Total number of grievances this period (6 months)</li> <li>• Total number of grievances closed (this period)</li> <li>• Total number of grievances remaining open (at time of report)</li> </ul>	Grievances can be large or small, if grievances are outstanding include a short explanation in the monitoring report. Grievances should be distinguished by project component.
	<ul style="list-style-type: none"> <li>• Total number of affected households (final number).</li> <li>• % of total AHs received compensation payments (crops, trees, other assets).</li> <li>• Amount of compensation dispersed (total).</li> <li>• # of any temporary impacts during construction.</li> <li>• Were compensation payments free of deduction for depreciation, fees or transfer costs to the AP?</li> <li>• Were compensation payments sufficient to replace lost assets?</li> <li>• Was there enough budget allocated?</li> </ul>	All payments are made prior to any civil works starting. Please include an update on the % of HHs paid each period until finalized. For affected structures, please include an update, did they rebuild/or not
Long Term Indicator	<ul style="list-style-type: none"> <li>• What changes have occurred in income and expenditure patterns compared to the pre-project situation?</li> <li>• What changes have taken place in key social and cultural parameters relating to living standards?</li> </ul>	Affected households should be able to maintain/improve their livelihoods after being impacted. Primarily this is assessed through income, but other proxy indicators are included which can tell us about changes in livelihoods for the affected households

Type	Indicators	Indicator Explanation
		Refer to baseline date in the census for verification of livelihood changes.

## ANNEX 1: DUE DILIGENCE ON NEGOTIATED SETTLEMENT

### A. Introduction

104. There are 4 proposed substations out of which one will be built on government land at Hatkoti which does not require land acquisition and the remaining 3 are proposed to be on private land for which land is being acquired through negotiated settlement and willing buyer and willing seller mechanism. The total land required for the 4 proposed substations/pooling stations will be 3.80 hectares (ha), of which 0.8 ha is government owned land at Hatkoti and 3 ha of private land (1 ha for Barsaini s/s, 0.6 ha for Bagipul s/s and 1.4 ha for Mazra s/s). All the land has been acquired through negotiated settlement and through obtaining consent from the land owners and the negotiation has been completed; except at Mazra substation where there are 5 families for whom compensation is not completed, for which corrective actions has been prepared. Summary details on the substations are provided in Table A-1-1.

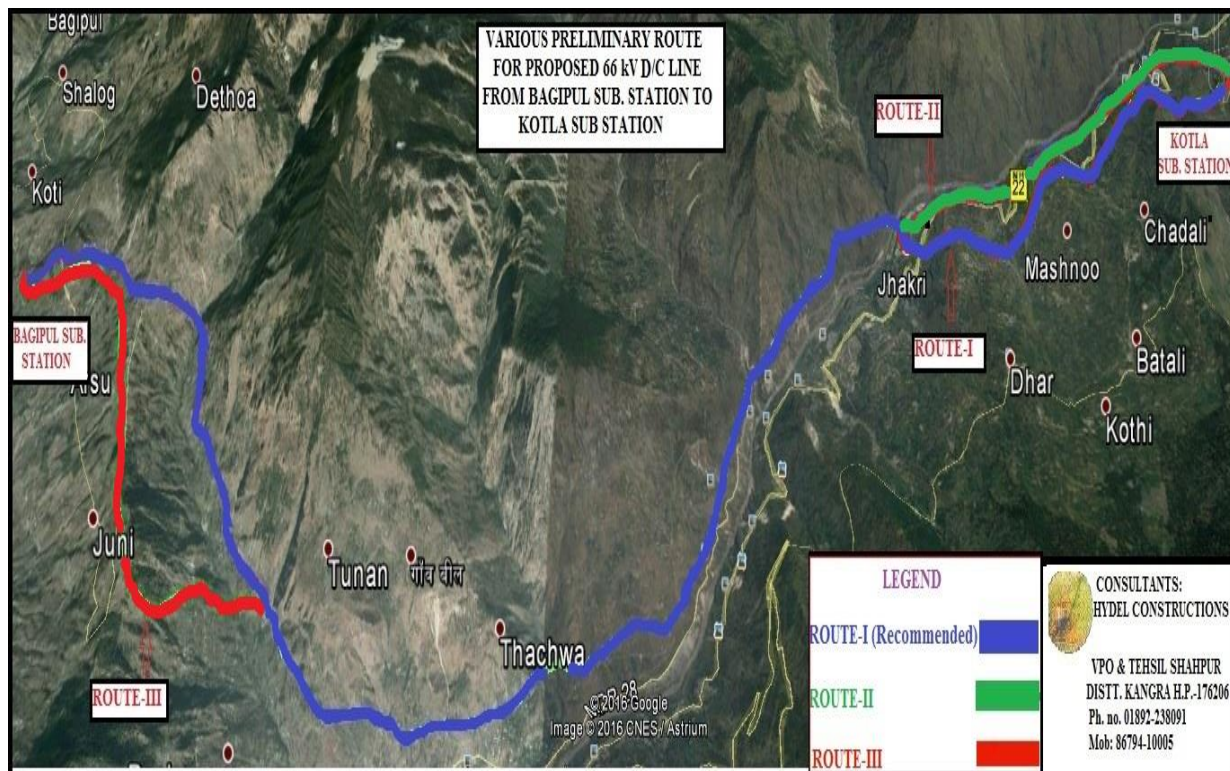
**Table A-1-1: Land Details for Substations**

#	Name of the Subprojects	Impact on Land Acquisition and Involuntary Resettlement	Impact on Indigenous Peoples	Remarks
<b>S</b>	<b>Sub Stations</b>			
<b>S-1</b>	66/22 kV, 2x10 MVa GIS at Nirmand (Bagipul).	0.6 hectare of private land will be acquired through negotiated settlement and willing buyer and willing seller mechanism. Two household will be impacted by the negotiated settlement.	Nil	No physical displacement is foreseen and no involuntary resettlement will trigger. Negotiation has been completed.
<b>S-2</b>	132/220 kV, 2x80/100 MVA substation at Mazra	1.4 hectare of private land will be acquired through negotiated settlement and willing buyer and willing seller mechanism. 20 households will be impacted by the negotiated settlement.	Nil	No physical displacement is foreseen and no involuntary resettlement will trigger. Negotiation is expected to be completed in January 2018 as payment for remaining 5 land owners are under process.
<b>S-3</b>	220 kV Pooling substation at Hatkoti	This is a government owned land (0.8 hectare) and HPPTCL will get the land transferred from the concerned department.	Nil	This is a government land free from all encumbrances and without having any informal settlers.
<b>S-4</b>	220 kV Pooling substation at Barsaini	0.96 hectare of private land will be acquired through negotiated settlement and willing buyer and willing seller mechanism. Two households will be impacted by the negotiated settlement.	Nil	No physical displacement is foreseen and no involuntary resettlement will trigger. Negotiation has been completed.

## B. Location Maps of Substations

105. Location maps of the substations are depicted in Figures A-1-1 to A-1-7

**Figure A-1-1: Proposed site for Subproject S1–22/66 kV Gas Insulated Switchgear (GIS) switching station at Bagipul**



**Figure A-1-2: Proposed land for Subproject S1 –22/66 kV Gas Insulated Switchgear (GIS) switching station at Bagipul**



**Figure A-1-3: Site for S2 132/220 kV 2x80/100 MVA Pooling station (P.S.) at Mazra**



**Figure A-1-4: S2- Mazra Substation Site pictures**

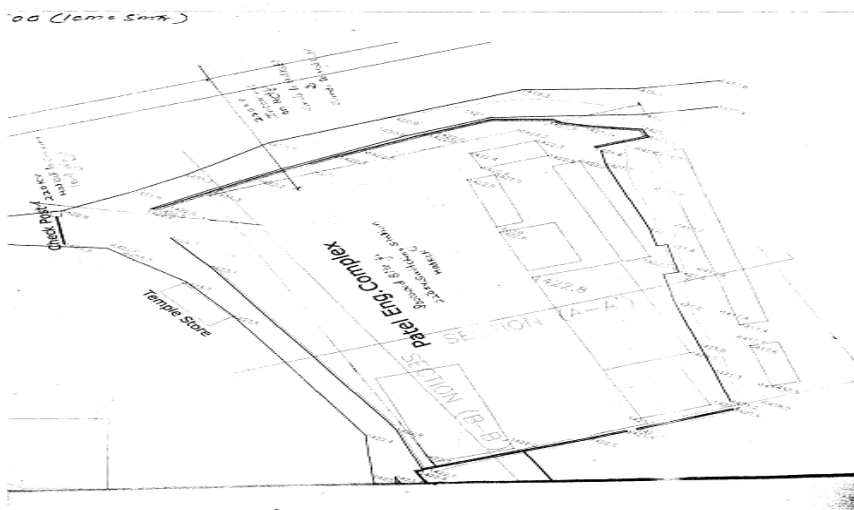




**Figure A-1-5: Proposed Subproject S3 - 220 kV GIS switching station at Hatkoti (Line termination)**



**Figure A-1-6: Proposed Subproject S3 - 220 kV GIS switching station at Hatkoti**



**Figure A-1-7: Proposed site for Subproject S4 - 33/132 kV 2x25/31.5 MVA GIS substation at Barsaini**





## C. Due Diligence Process

106. This section discusses the due diligence undertaken for the substations. Due diligence was conducted by HPPTCL through the consultant during November 2015 to December 2016 to ensure that the negotiation has followed ADBs requirements for negotiated settlement, such as the negotiation offered adequate and fair price for land and/or other assets. This has been noted that the entire process followed participatory consultation process by the EA with the land owners. The land requirement in these three sub stations is minimal and does not lead to any physical displacement. The land owners do not belong to any indigenous group or vulnerable category.

107. For the substation at Hatkoti which is proposed on the government land due diligence involved site visits and verification to ensure that there are no informal settlers in the proposed land which is free of all encumbrances.

108. For the other substations, on private land, the negotiation and fixing of compensation comprised the following steps and the details related to documentation of negotiation are provided in **Table A-1-1** above.

- Finalization of lay outs and intimation to the land owners after collection of land records.
- Consultations with affected land owners, seeking their preliminary and informal interest to sell the land.
- Collection of current land value information from the revenue department as per the circle rate which is updated yearly. However, this is the basis for negotiation and is not the final price. The final negotiated price goes higher than the circle rate.
- Constitution of the negotiation committee<sup>22</sup> which consists of the general manager projects, the deputy general manager projects, senior manager concerned, accountants and a representative from the deputy collector or Tehasildar.
- Joint site inspection by the negotiation committee to the project sites.
- The base rate for the land compensation starts with the current circle rate as fixed by the revenue department.
- Land owners then quoted their expected price to the committee.
- The base revenue circle rate plus the quotation from the land owners is then considered and the final price is negotiated.
- The final negotiated price is always more than the current market price.
- Following the completion of price negotiation, the payment is made through cheque and agreement is done between the land owners and HPPTCL and the land is transferred to HPPTCL.

## D. Status on Land Acquisition

109. There is no physical displacement and no involuntary resettlement associated with the substations. Nor are there any informal settlers or nontitled persons associated with the land for proposed new substations. There was no coercion and sufficient consultations were undertaken with the affected households. All the information (including their right to refuse the land sale) were made available. ADB consultats reviewed the process and prepared the due diligence report in Annex 1.

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<sup>22</sup> The representative from the district collector in the negotiation committee acts as the independent officer to the negotiation process.

110. The total number of affected households where land is being acquired through mutual negotiation is 24. There are 3 substations which are proposed on private land. As mentioned above, these have been acquired through negotiated settlement which is negotiated land acquisition<sup>23</sup> without enforcing the country's land acquisition act.

#### **D. Results of Due Diligence**

111. There are 5 households with pending payments for whom negotiated settlement has not been finalised at Mazra, completion of the negotiated settlement is included in the corrective action list contained at the end of this Annex. The pending payments for five owners are due to multiple ownership and HPPTCL is initiating the process to make one power of attorney with due consultations with these owners so that the payment can be made in one name. Land details, ownership details and the payment details of each substation are described in Table A-1-2 to A-1-4.

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<sup>23</sup> According to paragraph-25 of SR-II of SPS 2009, Safeguard Requirements 2 does not apply to negotiated settlements, unless expropriation would result upon the failure of negotiations. Negotiated settlements help avoid expropriation and eliminate the need to use governmental authority to remove people forcibly. The borrower/client is encouraged to acquire land and other assets through a negotiated settlement wherever possible, based on meaningful consultation with affected persons, including those without legal title to assets. A negotiated settlement will offer adequate and fair price for land and/or other assets. The borrower/client will ensure that any negotiations with displaced persons openly address the risks of asymmetry of information and bargaining power of the parties involved in such transactions. For this purpose, the borrower/client will engage an independent external party to document the negotiation and settlement processes. The borrower/client will agree with ADB on consultation processes, policies, and laws that are applicable to such transactions; third-party validation; mechanisms for calculating the replacement costs of land and other assets affected; and record-keeping requirements.

**TABLE A-1-2: -33/132/220 KV GIS SUBSTATION AT MAZRA**

SL. NO.	Name of the owner/ share holder	Area of land Affected (In Bigha)	Date of first consultation or negotiation	Rate of land as per current circle rate (per bigha)	Demand from the people (Rate per bigha)	Negotiation rate/ Final rate as agreed (Rs. Per bigha)	Whether payment made	Compensation amount	Date of payment
1	2	3	4	5	6	7	8	9	10
1	Sh. Partap Chand etc.	1=13=00	12/1/2016	3,46,400.00	6,50,000.00	6,30,000.00	Yes	1,039,500	6/9/2016
2	Sh. Joginder Pal etc.	3=17=00					Yes	2,425,500	6/9/2016
3	Sh. Mohinder Singh etc.	1=05=14					Yes	809,550	15/9/2016
4	Sh. Deso etc.	1=10=00					Yes	945,000	19/9/2016
5	Sh. Surinder Pal etc.	1=11=04					Yes	982,800	24/9/2016
6	Sh. Umesh Kumar etc.	0=11=00					Yes	346,500	5/10/2016
7	Sh. Chet Singh etc.	0=07=16					Yes	245,700	14/10/2016
8	Sh. Liyakat Chand etc.	0=08=00					Yes	252,000	20/10/2016
9	Sh. Rajesh Kumar etc.	0=19=07					Yes	607,375	2/11/2016
10	Sh. Dharam Pal etc.	1=02=18					Yes	693,000	7/11/2016
11	Sh. Yoginder Kumar etc.	0=12=18					Yes	406,350	11/11/2016
12	Sh. Ravinder Kumar etc.	0=06=09					Yes	203,175	18/11/2016
13	Sh. Ramesh Kumar etc.	0=19=06					Yes	607,950	10/1/2017
14	Sh. Kishori Lal etc.	00=03=11					Not paid	111,825	
15	Sh. Kartar Singh etc.	00=04=00					Not paid	126,000	
16	Sh. Paras Ram	00=01=04					Not paid	37,800	
17	Sh. Dharam Pal etc.	0=10=00					Not paid	315,000	
18	Sh. Jai Singh etc.	00=05=00					Not paid	157,500	

SL. NO.	Name of the owner/ share holder	Area of land Affected (In Bigha)	Date of first consultation or negotiation	Rate of land as per current circle rate (per bigha)	Demand from the people (Rate per bigha)	Negotiation rate/ Final rate as agreed (Rs. Per bigha)	Whether payment made	Compensation amount	Date of payment
19	Sh. Laxmi Chand	00=19=06					paid	607,950	02/05/2017
20	Sh. Raghu	00=04=00					paid	126,000	02/05/2017
<b>Total</b>		<b>17=10=15</b>						<b>11046475</b>	

**TABLE A-1-3: BARSAINI (DETAILS ON THE LAND)**

SL. NO.	Name of the owner/ share holder	Area of land Affected (In Bigha)	Date of first consultation or negotiation	Rate of land as per current circle rate (per bigha)	Demand from the people (Rate per bigha)	Negotiation rate/ Final rate as agreed (Rs. Per bigha)	Whether payment made	Compensation amount	Date of payment
1	Mr. Kanshi Ram	5 bigha 10 biswa	26 April 2013	INR2750 per cent	32,00,000 per bigha	28,93,207 per bigha	Yes	1,50,00,000	2014
2	Karam Veer								

**TABLE A-1-4: NIRMAND.BAGIPUL (DETAILS ON THE LAND)**

SL. NO.	Name of the owner/ share holder	Area of land Affected (In Bigha)	Date of first consultation or negotiation	Rate of land as per current circle rate (per bigha)	Demand from the people (Rate per bigha)	Negotiation rate/ Final rate as agreed (Rs. Per bigha)	Whether payment made	Compensation amount	Date of payment
1	Vyas Thakur	7 bigha 6 biswa	03 Feb 2016	INR650 per cent	800,000 per bigha	680,000	yes	496,9000	06 July 2016
2	Virat								

## E. Consultations:

112. Consultations were carried out in the substations area and the findings are summarized in Table A-1-5 below.

**Table A-1-5: Summary of Consultations (Substations)**

#	Name of the Component/ subproject	Issues raised by the participants	Clarification, Mitigation and Issues Management
S1	66 kV Gas Insulated Switchgear (GIS) switching station at Bagipul Tranche 3	<ul style="list-style-type: none"> <li>• People requested jobs during and after the implementation of project if possible.</li> <li>• Roads need to be improved.</li> <li>• Streetlights be made available in the village.</li> <li>• Continuous consultation with villagers needs to be carried out throughout construction</li> <li>• Substation land is quite agriculture and unused and people were happy to provide the land to HPPTCL through mutual negotiation. People said that compensation money would be used for development of small scale business activities.</li> </ul>	<ul style="list-style-type: none"> <li>• As far as the demand for jobs was concerned, it was clarified that HPPTCL will sensitize the contractor to employ local people on the construction activities for temporary employment based on the willingness and skilled. It was further clarified that opportunity for temporary unskilled employment will arise.</li> <li>• If the existing village road to be used for the project, the same will be improved where feasibly.</li> <li>• Provision of street light is not committed</li> </ul>
S2	132/220 kV 2x80/100 MVA substation at Mazra	<ul style="list-style-type: none"> <li>• People suggested for negotiated settlement with adequate price for the land and rendered the support for the project.</li> <li>• At Mazra, local People welcome the proposed project their land was useless over last 15 years. Land is outside the village and wild animals always damage the crops.</li> </ul>	<ul style="list-style-type: none"> <li>• The negotiation will be done in the presence of affected people, HPPTCL, local panchayat and representative from the revenue department and common consensus will be obtained to fix the rate.</li> </ul>
S3	33/132 kV 2x25/31.5 MVA GIS substation at Barsaini	<ul style="list-style-type: none"> <li>• Proper dialogue has to be initiated for the implementation of project.</li> <li>• Good compensation for the land.</li> <li>• Roads will improve.</li> <li>• People requested that jobs should be given to the affected people on priority.</li> <li>• People feel that power supply will be improved in the local area.</li> </ul>	<ul style="list-style-type: none"> <li>• HPPTCL has initiated the process of consultation since the inception and feasibility of the project and the same will be continued throughout the project cycle.</li> <li>• It was clarified that there was no forceful land acquisition and the land will be acquired through mutual negotiated settlement which allows all the parties to agree on to acceptable rates.</li> <li>• Efforts will be made to employ local people in unskilled labor employment.</li> </ul>

## F. Corrective Actions for Substation Mazra

113. There are 5 households with pending payments as of Dec 2017 (see Table A-1-2) for whom negotiated settlement has not been finalised at the Mazra substation. As such, the following corrective actions will apply, as outlined below in Table A-1-6, which must be completed by prior to land hand over. As mentioned, the pending payments for five owners is due to multiple ownership and HPPTCL is initiating the process to make one power of attorney with due consultations with these owners so that the payment can be made in one name. The corrective actions to be undertaken are specified in the table A-1-6.

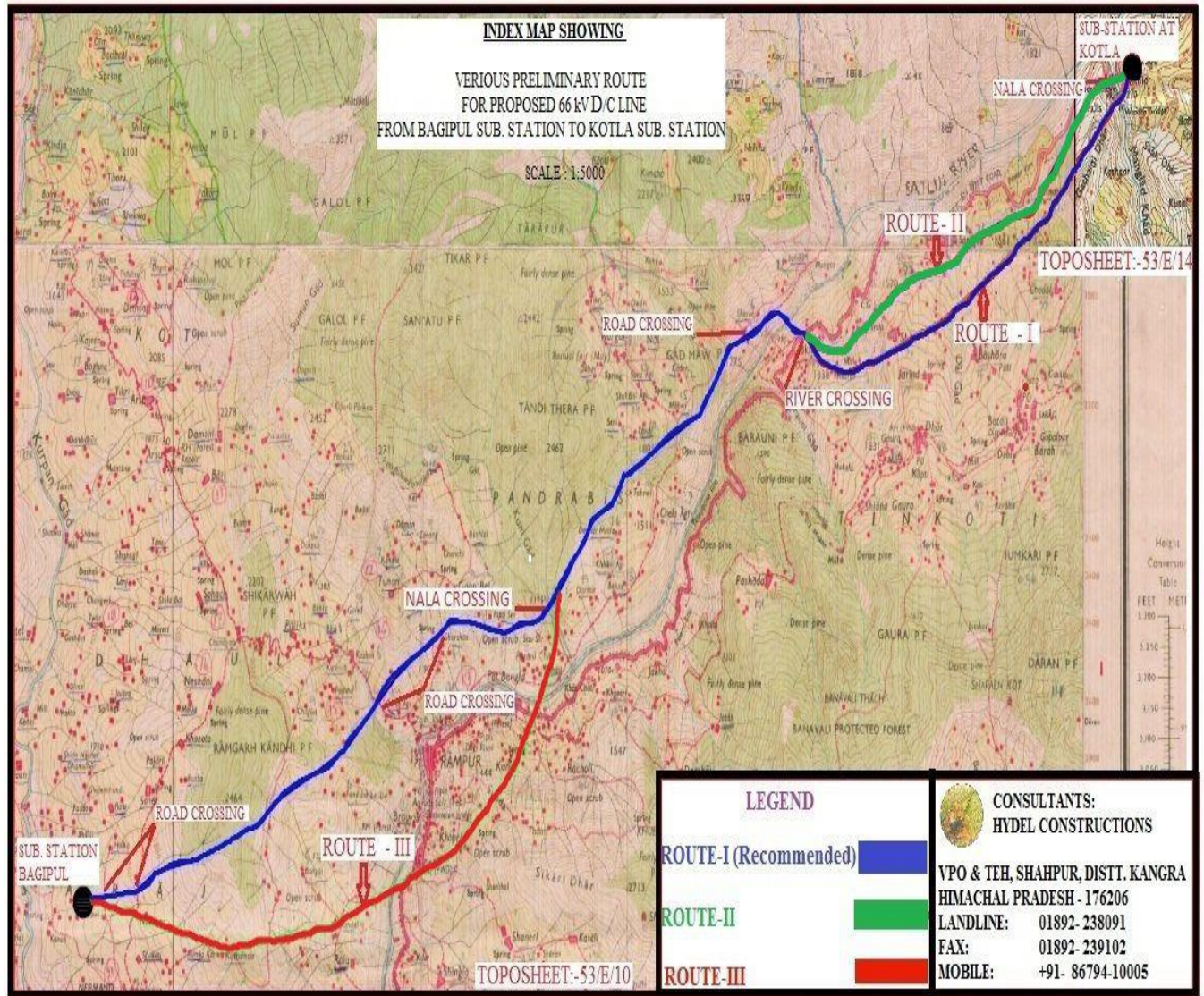
**Table A-1-6 Corrective Action Plan (CAP)**

<b>Corrective action</b>	<b>Deliverable / KPI</b>	<b>Responsibility</b>	<b>Timeline to resolve</b>	<b>Estimated budget (INR)</b>
CA1: negotiated settlement completed for 5 households at Mazra substation site	Finalization of deed and copy of the registration	HPPTCL	January 2018	IN4 748, 125
	Monitoring report provided to ADB. The payment information to be verified by a third party.	HPPTCL with a third party	Semiannually	INR 500,000

114. The above actions will be implemented and monitored by the ESC and PIU and reported to ADB. EA will ensure that the Households have received their negotiated settlement payments. The EA will also engage a third party to verify payment information and conduct follow-up surveys to confirm that the negotiation has been completed satisfactorily.

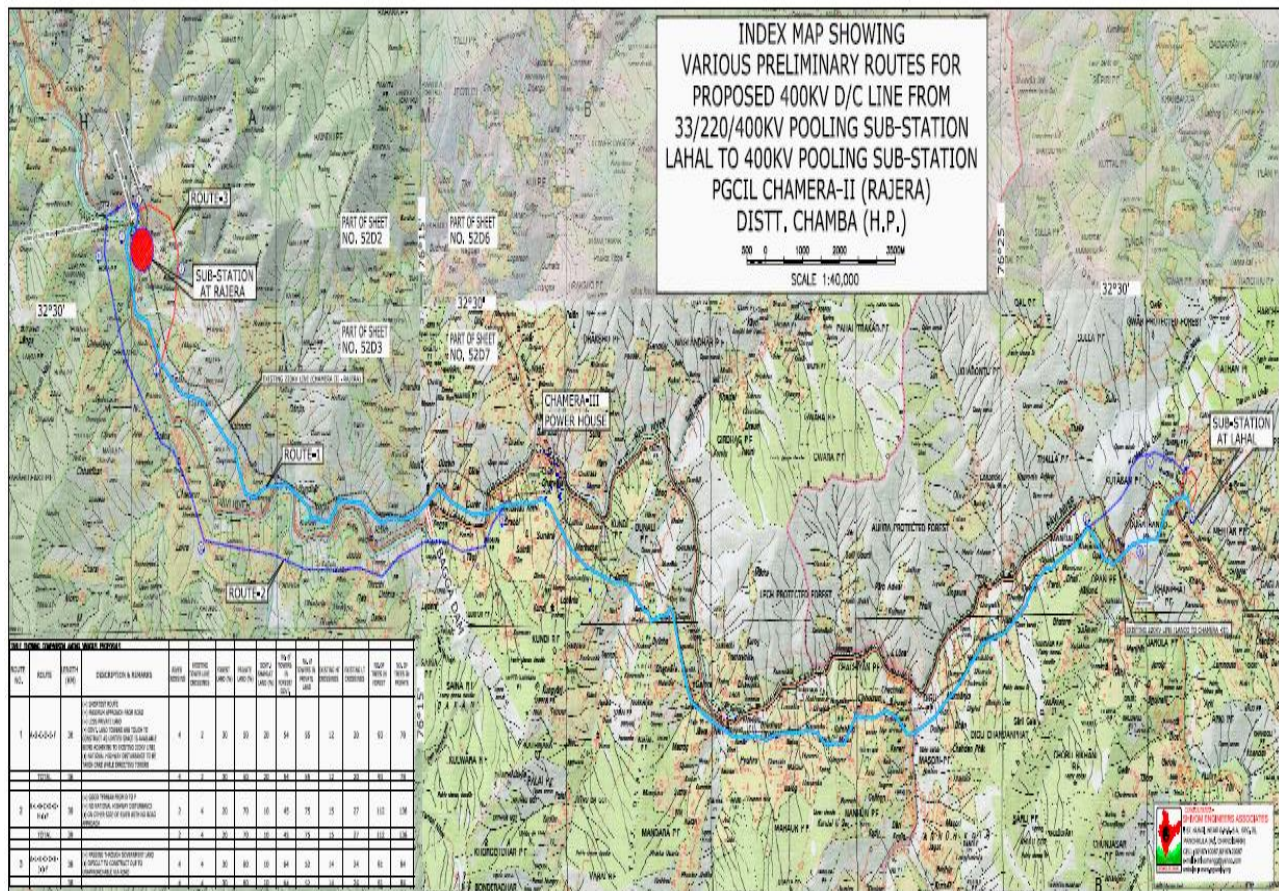
## ANNEX 2: TRANSMISSION LINE SUBPROJECT MAPS

**Figure A-2-1: Topographical survey yet to be done for T1- 66 kV double circuit (D/C) transmission line from 66 kV GIS Bagipul to Kotla substation**





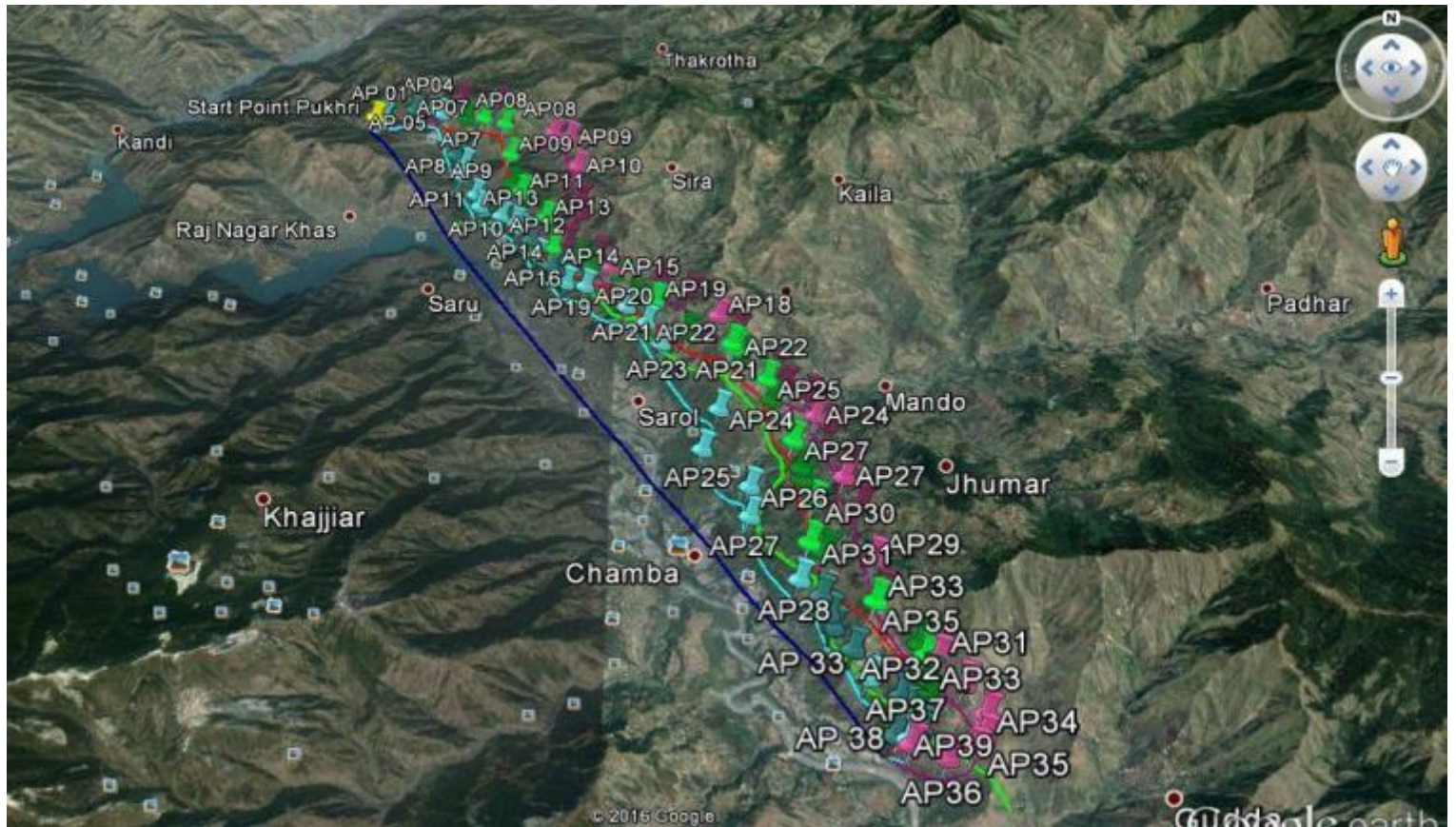
**Figure A-2-2: Topographical Survey Sheet (1:50,000 scale) of subproject T2 -400kV D/C transmission line (Twin Moose) from 400/220 kV, 2x315 MVA Lahal GIS to 400/220 kV Chamera Pooling station of PGCIL.**



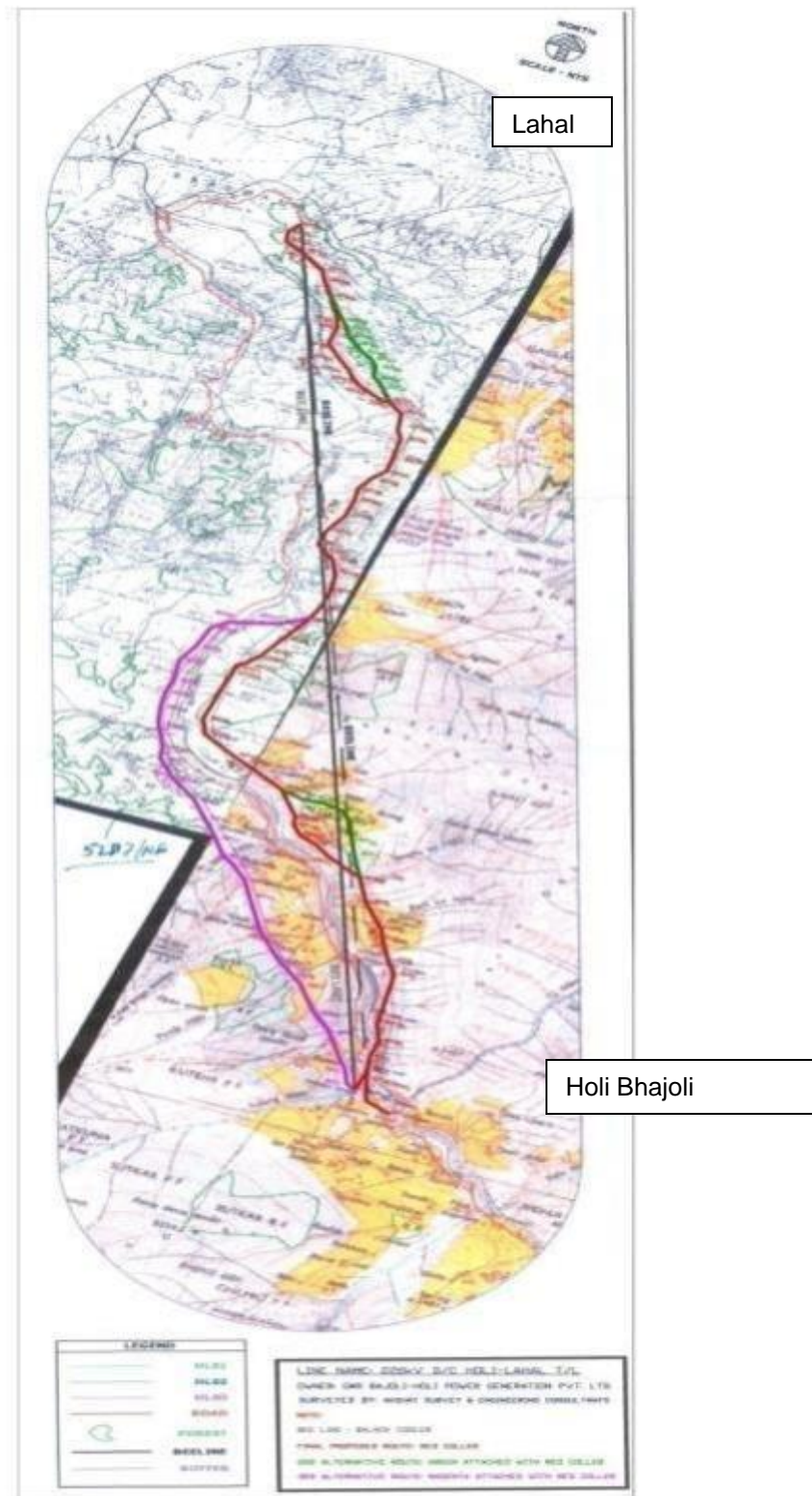
The final alignment of transmission line is marked in red.



**Figure A-2-3: Google earth map for Line T3 - 220kV D/C transmission line from 132/220 kV GIS Mazra to 33/220 kV Karian**

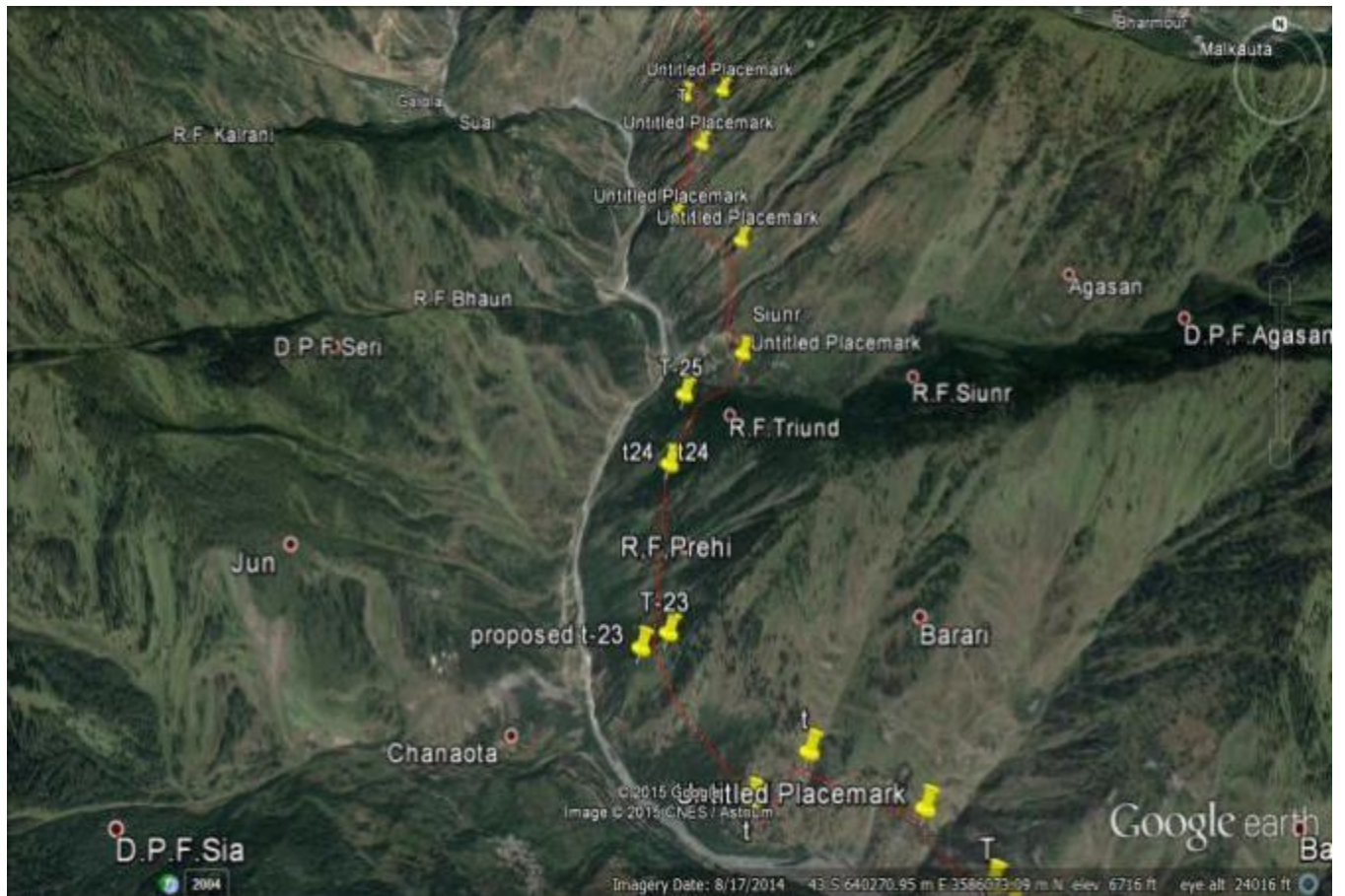


**Figure A-2-4: Topographic map of LineT4 -220kV D/C transmission line from Holi Bajoli HEP to 2x315 MVA Lahal GIS.**

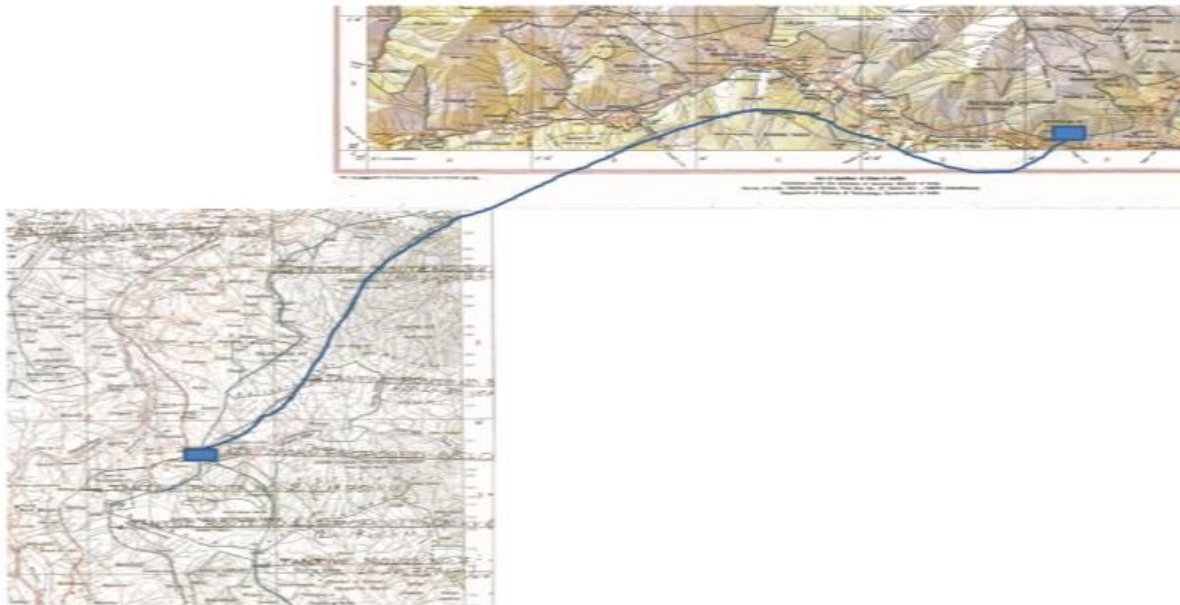




**Figure A-2-5: Googlemap of LineT4 -220kV D/C transmission line from Holi Bajoli HEP to 2x315 MVA Lahal GIS.**



**Figure A-2-6: Topographic map of Line 132 kV D/C line from Barsaini to Charor.**



### ANNEX 3.1: ALTERNATE ANALYSIS FOR SUB STATIONS

#### COMPONENT I: PIU Bhabanagar (District Shimla) subprojects

##### S1 - 66 kV GIS station at Bagipul

SNo	Description	Site - A	Site - B	Site - C
1.	Substation details	Above Nirmand Bagi pul Road	BelowNirmand Bagi pul Road	near power project
1a	Area (dimensions)	5058 sqm.	5264 sqm.	8272 sqm.
1b	Geographical coordinates	74°39'61" N, 34° 86' 69.6E	74°31'97 N,34° 88'68.7"E	74°35'72N, 34° 89'85.6"E
1c	Slope/Plain Land	plain	Sloping	Sloping
1d	Amount of land cutting required	Cutting/filling etc.1500 CMT approx.	Cutting/filling etc.2500 CMT approx	Cutting/filling etc. 3000 CMT approx.
2	Number of transformers	1	1	1
3	Number of Bays	4	4	4
4	Size/ type of oil sump			
5	Ownership of land (Private / Forest/ Other Government Department/ Other)  - Private - Government	Private	Private	Private
6	Private land (in Bighas)			
	(i) Agriculture:-  a. Irrigated b. Non-irrigated	Non-Irrigated	Non-Irrigated	Non-Irrigated
	(ii) Non-Agriculture/ Private waste land / banjar.			
	(iii) House or Building:  a. Residential b. Nonresidential	No Building exists	No Building exists	No Building exists
7.a	Distance from Nearest River	5KM Bagi Nallah	4.5KMtrs Bagi Nallah	Bagipul 2.km
7.b	Distance from Nearest National / State Highway	Shimla R State Highway 20kM	Shimla Rohru State Highway 20km	Shimla Rohru State Highway 22 Km
7.c	Distance from Nearest Forest Area	1Km	1.2Km	3Km
7.b	Distance from Nearest Village / town	Village Bagi	Village Bagi	Village Bagi-1Km
7.e	Distance from Nearest Market/Area of Economic Activity	Nirmand-11KM	Nirmand -11	Nirmand-13
8.	Land Strata- geology	Rocky/Slopy	Rocky/Slopy	Rocky/Slopy
9.	Road accessibility	No	No	No
10.	EHV line Passing Near By (Distance)	Nil	Nil	Nil
11.	HT line Passing Near By (Distance)	Nil	Nil	Nil
12.	Telephone line Passing Near By (Distance)	Nil	Nil	Nil

SNo	Description	Site - A	Site - B	Site - C
13.	National / State Highway Passing Near By (Distance)	Shimla Kaurik 20Km	20Km	24Km
14.	Distance from Interstate / International Boundaries	200Km Kaurik	200Km Kaurik	204Km
15.	Nos. of Forest Trees:- a. Trees to be felled b. Trees to be lopped	45 nos.	60	10 nos.
16.	Nos. of private trees			
	(i) Fruit Trees: a. Trees to be felled b. Trees to be lopped	40 22.	25	nill. 8 nos.
	(ii) Non-Fruit Trees: a. Trees to be felled b. Trees to be lopped	Nil	Nil	Nil
17.	Distance from snow area	Snow Area	Snow Area	Snow Area
18.	Distance from un cultivated area	Nil	Nil	Nil
19.	Altitude of substation	1744 msl	1624	1610 msl
20.	Nearest distance from Airport	150km	150km	150km
21.	Distance from nearest religious or Archaeological sites	Templetiuni near Bagipul 22Km		
22.	Name of villages involved/Name of District	Bagipul Dist. Kullu	Bagipul Dist. Kullu	Bagipul Dist. Kullu
23.	Land to be permanently acquired: a. Area (in ha) Cost	5058 sqm. NA	5264 sqm. NA	8272 sqm. NA
	Alternative Selected			Selected - Avoids the archeologically significant area. No reserve forest areas and no houses nearby, minimum number of fruit trees and no forest trees involved. The minimum land acquisition for road construction involved.
	Alternative Selected			Selected - No reserve forest areas. Optimal distance from the IPP's hence will reduce the mesh of transmission lines.

**COMPONENT II: Chamba PIU (Chamba District) subprojects**  
**S2 - 132 kV GIS station at Mazra**

S.No	Description	Site - 1	Site - 11	Site - 111
1.	<b>Substation details</b>	Pukheri	Mazra	Mazra
1a	Area (dimensions)	14 bighas	16 Bighas	18 Bighas
1b	Geographical coordinates	Lati: 32°-41.444'(N) Long: 76°-64.319'(E)	Lati: 32°-4.553'(N) Long: 76°-2.78'(E)	Lati: 32°-41.72'(N) Long: 76°-0.4.30'(E)
1c	Slope/Plain Land	Sloped	Sloped	Sloped
1d	Amount of land cutting required	2000 cum	2500 cum	2500cum
2	Number of transformers	2 Nos	2 Nos	2 Nos
3	Number of Bays	220 kV: -2 nos 132 kV: - 4 Nos.	220 kV: -2 nos 132 kV: -4 Nos.	220 kV:-2 nos 132 kV: - 4Nos.
4	Size/ type of oil sump			
5	Ownership of land (Private / Forest/ Other Government Department/ Other)  - Private - Government	Private	Private	Private
6	Private land (in Bighas)	14 bighas	16 Bighas	18 Bighas
	(i) Agriculture: -  c. Irrigated d. Non-irrigated	14 bighas Non-Irrigated	16 bighas Non-Irrigated	18 bighas Non-Irrigated
	(ii) Non-Agriculture/ Private waste land / banjar.	Nil	Nil	Nil
	(iii) House or Building:  c. Residential d. Nonresidential	Nil	Nil	Nil
7.a	Distance from Nearest River	Baira- Siul (300 mtrs)	Baira- Siul (250 mtrs)	Baira –Suil (300 mtrs)
7.b	Distance from Nearest National / State Highway	SH (300 mtrs)	SH (500 mtrs)	SH (250 mtrs)
7.c	Distance from Nearest Forest Area	Nil	Nil	Nil
7.b	Distance from Nearest Village / town	Pukheri (100 mtrs)	Mazra (450 mtrs)	Mazra (300 mtrs)
7.e	Distance from Nearest Market/Area of Economic Activity	Pukhari (100 Kms)	Mazra (450 mtrs)12.450 Kms)	Mazra (300 mtrs)
8.	Land Strata- geology	Sandy Loam with Quartzite origin	Sandy Loam with Quartzite origin	Sandy Loam with Quartzite origin
9.	Road accessibility	Yes	Yes	Yes
10.	EHV line Passing Near By (Distance)	220 kV T/L Kurthla-Bathri (3KM mtrs)	220 kV T/L Kurthla-Bathri (3.5K mtrs)	220 kV T/L Kurthla-Bathri (3.6K mtrs)
11.	HT line Passing Near By (Distance)	100 mtrs	150 mtr	100 mtrs
12.	Telephone line Passing Near By (Distance)	Nil	Nil	Nil
13.	National / State Highway Passing Near By (Distance)	120 & 0.300 Kms	120 & 0.500 Kms	120 & 0.250 Kms
14.	Distance from Interstate / International Boundaries	75 Kms from Punjab Boundary	85 Kms from Punjab Boundary	85 Kms from Punjab Boundary

S.No	Description	Site - 1	Site - 11	Site - 111
15.	Nos. of Forest Trees:- c. Trees to be felled d. Trees to be lopped	Nil	Nil	Nil
16.	Nos. of private trees			
	(iii) Fruit Trees: c. Trees to be felled d. Trees to be lopped	10 Nos 10 nos -	12 nos 12 nos -	2 nos 2 nos. -
	(iv) Non-Fruit Trees: c. Trees to be felled d. Trees to be lopped	10 nos 10 nos	14 nos 14 nos.	10 nos 10 nos.
17.	Distance from snow area	30 Kms	35 Kms	40 Kms
18.	Distance from un cultivated area	Nil	Nil	Nil
19.	Altitude of substation	Altitude:790 mtr (Approx)	Altitude: 807 mtr (Approx)	Altitude:785 mtr (Approx)
20.	Nearest distance from Airport	200 Kms	200 Kms	200 Kms
21.	Distance from nearest religious or Archaeological sites	15 Kms	15 Kms	15 Kms
22.	Name of villages involved/Name of District	Pukheri (Chamba)	Mazra (Chamba)	Mazra (Chamba)
23.	Land to be permanently acquired: b. Area (in ha) c. Cost	14 bighas 1.456704 ha Rs 1260 lacs	16 Bighas 1.375776 ha Rs 1190 lacs	18 Bighas 1.61856 ha Rs1400 lacs
	Alternative Selected	Selected - No reserve forest areas. Optimal distance from the IPP's hence will reduce the mesh of transmission lines.		

### COMPONENT III: Rohru PIU (Shimla District) subprojects

#### S3 - 220 kV GIS switching station at Hatkoti

S.No	Description	Site - A	Site - B	Site - C
1.	Substation details	Near HPPCL Barrage in Mohal Sari, Tehsil Jubbal, District Shimla (HP)	Below Patsari Khara Pather Link Road Sari, Mohal Sari, Tehsil Jubbal, District Shimla (HP)	Above Patsari Khara Pather Link Road Sari, Mohal Sari, Tehsil Jubbal, District Shimla (HP)
1a	Area (dimensions)	8000 sqm.	14300 sqm.	14400 sqm.
1b	Geographical coordinates	31°08'04" N, 77° 44' 25.3"E	31°08'06" N, 77° 44'32.2"E	31°08' N, 77° 44" E
1c	Slope/Plain Land	Sloping	Sloping	Sloping
1d	Amount of land cutting required	Cutting/filling etc. 3500 CMT approx.	Cutting/filling etc. 500 CMT approx	Cutting/filling etc. 1000 CMT approx.
2	Number of transformers	2	2	2
3	Number of Bays	4	4	4
4	Size/ type of oil sump			



S.No	Description	Site - A	Site - B	Site - C
5	Ownership of land (Private / Forest/ Other Government Department/ Other)  - Private - Government	HPPCL - 0.91.45 ha.(9.3 Bigha)	i) 01.43.28 ha.(19.1Bigha)	i) 1.19.55 ha.(15.18Bigha) ii) 0.19.00 ha.(2.10Bigha)
6	Private land (in Bighas)			
	(i) Agriculture:-  e. Irrigated f. Non-irrigated	Non-Irrigated	Non-Irrigated	Non-Irrigated
	(ii) Non-Agriculture/ Private waste land / banjar.			
	(iii) House or Building:  e. Residential f. Nonresidential	No Building exists	No Building exists	No Building exists
7.a	Distance from Nearest River	Pabbar 1.7km	Pabbar 0.8km	Pabbar 2.2km
7.b	Distance from Nearest National / State Highway	Shimla Rohru State Highway 1.5km	Shimla Rohru State Highway 3km	Shimla Rohru State Highway 3.5km
7.c	Distance from Nearest Forest Area	Government area involved	Government area involved (only for approach road)	Nil
7.b	Distance from Nearest Village / town	Village Hatkoti- 0.7Km Town Jubbal- 13km Rohru -12km	Village Hatkoti- 0.8Km Town Jubbal- 14km Rohru- 12km	Village Hatkoti- 2Km Town Jubbal- 12km Rohru- 13km
7.e	Distance from Nearest Market/Area of Economic Activity	Jubbal- 13km Sawra-4km Rohru-12km	Jubbal- 14km Sawra-10km Rohru-12km	Jubbal- 12km Sawra-11km Rohru-13km
8.	Land Strata- geology	Sandy	Rocky/Slopy	Rocky/Slopy
9.	Road accessibility	Yes	Yes	Yes
10.	EHV line Passing Near By (Distance)	Nil	Nil	Nil
11.	HT line Passing Near By (Distance)	Nil	Nil	Nil
12.	Telephone line Passing Near By (Distance)	Nil	Nil	Nil
13.	National / State Highway Passing Near By (Distance)	Khara Pathhar – Hatkoti road		Khara Pathhar – Hatkoti road
14.	Distance from Interstate / International Boundaries	Interstate Uttrakhand Kuddu (Snail 20km	Interstate Uttrakhand Kuddu (Snail) 26 km	Interstate Uttrakhand Kuddu (Snail) 27km
15.	Nos. of Forest Trees:- e. Trees to be felled f. Trees to be lopped	Nil	Nil	10 nos.
16.	Nos. of private trees			
	(v) Fruit Trees: e. Trees to be felled f. Trees to be lopped	Nil  Nil	2 nos.  Nil	85 nos.  8 nos.

S.No	Description	Site - A	Site - B	Site - C
	(vi) Non-Fruit Trees: e. Trees to be felled f. Trees to be lopped	Nil	Nil	Nil
17.	Distance from snow area	5kM	Snow Area	Snow Area
18.	Distance from un cultivated area	Nil	Nil	Nil
19.	Altitude of substation	1528 msl	1590.92 msl	1610 msl
20.	Nearest distance from Airport	150km	150km	150km
21.	Distance from nearest religious or Archaeological sites	Temple Hatkoti-1.5 km (Approx) Radhsoami Satsang Bhawan 0.03km (Approx)	Temple Hatkoti-0.7 km (Approx), Radhsoami Satsang Bhawan 0.15km (Approx)	Temple Hatkoti-1.5 km (Approx.)
22.	Name of villages involved/Name of District			
23.	Land to be permanently acquired: d. Area (in ha) e. Cost	8000 sqm. Rs.4.07Cr.	14300 sqm. Rs.1.43Cr.	14400 sqm. Say Rs.2.52Cr.
	Alternative Selected			Selected - Avoids the archeologically significant area. No reserve forest areas and no houses nearby, minimum number of fruit trees and no forest trees involved. The minimum land acquisition for road construction involved.
	Alternative Selected	Selected - No reserve forest areas. Optimal distance from the IPP's hence will reduce the mesh of transmission lines.		

**COMPONENT IV: Sarabhai PIU (Kullu Districts) subprojects**  
**S4 - 33/132 kV 2x25/31.5 MVA GIS substation at Barsaini**

SNo	Description	Site - A	Site - B	Site - C
1.	Substation details	Private land	NHPC land Near HPSEBL 33 kV S/Stn	Forest land at Barsaini
1a	Area (dimensions)	9600 sqm.	3760 sqm.	9024 sqm.
1b	Geographical coordinates	32° 0'1.69"N, 77°26'55.08"E	32° 0'2.09"N, 77°26'51.64"E	31°59'53.54"N, 77°26'46.26"E
1c	Slope/Plain land	Slope	Slope	Slope
1d	Amount of land cutting required	5000 cu.m	4500 cu.m	4800 cu.m
2	Number of transformers	2 no	2 no	2 no
3	Number of Bays	2 no 132 kV bays	2 no 132 kV bays	2 no 132 kV bays
4	Size/ type of oil sump	40,000 ltr,	40,000 ltr,	40,000 ltr,

SNo	Description	Site - A	Site - B	Site - C
		underground	underground	underground
5	Ownership of land (Private / Forest/ Other Government Department/ Other)	Private land	NHPC	Government/ Forest
6	Private land (in Bighas)	4888 sqm.		
	(i) Agriculture :- a. Irrigated b. Non-irrigated	Non irrigated		
	(ii) Non-Agriculture/ Private waste land / banjar.			
	(iii) House or Building: a. Residential b. Nonresidential			
7.a	Distance from Nearest River	Parvati/ 400 m	Parvati/ 800 m	Parvati/ 800 m
7.b	Distance from Nearest National / State Highway	800 m	1000m	1200 m
7.c	Distance from Nearest Forest Area	600 m	400 m	400 m
7.b	Distance from Nearest Village / town	150 m		
7.e	Distance from Nearest Market/Area of Economic Activity	2 km	1.5 km	3 km
8.	Land Strata- geology	Cohesive Soil/ soft Rock	Cohesive Soil/ soft Rock	Cohesive Soil/ soft Rock
9.	Road accessibility	Accessible by Road	Accessible by Road	Accessible by Road
10.	EHV line Passing Near By (Distance)	Nil	Nil	Nil
11.	HT line Passing Near By (Distance)	33 kV Tosh to Barsaini line/ 150 m	33 kV Tosh to Barsaini line/ 250 m	33 kV Tosh to Barsaini line/ 1000 m
12.	Telephone line Passing Near By (Distance)	Nil	Nil	Nil
13.	National / State Highway Passing Near By (Distance)	Bhunter to Barsaini Highway. / 800 m	Bhunter to Barsaini Highway. / 1000 m	Bhunter to Barsaini Highway. / 1200 m
14.	Distance from Interstate / International Boundaries	J & K Border 445 km	444 km J & K Border	438 km J & K Border
15.	Nos. of Forest Trees :- a. Trees to be felled b. Trees to be lopped	Nil		200
16.	Nos. of private trees			
	(i) Fruit Trees: a. Trees to be felled b. Trees to be lopped	120	100	
	(ii) Non-Fruit Trees: a. Trees to be felled b. Trees to be lopped	100	100	
17.	Distance from snow area	Snow Zone	Snow Zone	Snow Zone
18.	Distance from un cultivated area	200m	200m	500m
19.	Altitude of substation	2267 m	2275 m	2145 m
20.	Nearest distance from Airport	51 km	50 km	46 km
21.	Distance from nearest religious or Archaeological sites	Manikaran 17 km	Manikaran 16 km	Manikaran 12 km

<b>SNo</b>	<b>Description</b>	<b>Site - A</b>	<b>Site - B</b>	<b>Site - C</b>
22.	Name of villages involved/Name of District	Revenue Village Manikaran/ Distt. Kullu	Revenue Village Manikaran/ Distt. Kullu	Revenue Village Manikaran/ Distt. Kullu
23.	Land to be permanently acquired: a. Area (in ha) b. Cost	9600 sqm.	3760 sqm.	9024 sqm.
	Alternative Selected	Selected- Single owner and lesser number of trees to be felled and the location will reduce the mesh of low voltage transmission lines from IPP's.		

### ANNEX 3.2: ALTERNATE ANALYSIS FOR TRANSMISSION LINES

#### COMPONENT I. Bhabha Nagar PIU (Kinnaur District) subprojects T1-66 kV D/C transmission Line from Bagipul to Kotla

SNo.	Description	Route A (Red)	Route B (Blue)	Route C (Green)
1	Approximate line length in km	24.7	35.00	28.00
2	River/Nalla Crossing	4	6	7
3	Government/Forest area involvement			
	i) Nos. of towers	69	88	90
	ii).Approximate Length (in km)	24.7	35	28
	iii)18 mtr ROW Approximate area (in hectares)			
4	NonForest/Pvt area involvement			
	i.) Nos. of towers	50	52	52
	ii) Approximate Length (in km)	16.169	18.568	18.582
	iii)46 mtr ROW Approximate area (in hectares)	28.8039	30.5181	29.5463
	iv) wild life sanctuary/ National park (in ha.)	N/A	N/A	N/A
	v) Approximate distance from nearest wild life sanctuary	15 Km (Tundah wild life)	15 Km (Tundah wild life)	15 Km (Tundah wild life)
5	Development of Tower site	40	59	94
a	Number of Towers	114	120	116
b	Number of Gantries	2	2	2
c	Land to be acquired for Tower base (in ha.) bench20.00X 20.00 normal	5.2	6.96	6.86
6	<b>Land strata of Tower Location</b>			
	Non-Cohesive	20%	40%	47%
	Cohesive	40%	23%	23%
	Soft rock	19%	19%	19%
	Hard rock	31%	16%	21%
7	Road accessibility in km (Average lead from road to proposed line route.)	2.00	3.00	3.50
8	Approximate Private land involvement in hectares for the line.			
	i. Agricultural (in ha.)			
	Cultivated	24.07	30.5181	29.5463
	a. Irrigated			
	b. Non-irrigated			
	ii. Un Cultivated	0	0	0
	iii. House or Building			
	a. Residential	1	1	2
	b. Nonresidential			
9	Approximate EHV line crossing in no.	2	4	7
10	H T / 11kV line crossing in Approximate Nos.	4	4	4
11	Road crossing in Approximate Nos.	4	4	4
12	National /State crossing in Approximate Nos.	0	0	0
13	Telephone line crossing in Approximate Nos.	0	0	0
14	length of route / line passing in the	0	0	0

SNo.	Description	Route A (Red)	Route B (Blue)	Route C (Green)
	territory of other state			
15	Approximate Nos. of Trees in Forest land			
	Cutting	245	275	266
	non-cutting	0	0	0
16	Approximate Nos. of Private Trees in line route			
	i. fruit trees	35	87	37
	Cutting	15	45	16
	non-cutting	20	42	21
	ii. non-fruit trees	43	49	47
	Cutting	20	35	23
	non-cutting	23	14	24
17	Approximate Length of line route in snow zone area (in km)	19	19	20
	Nos. of towers	65	65	67
18	Approximate Length of line route in non-snow zone area (in km)	15.457	20	18
	Nos. of towers	39	55	49
19	Approximate Length of line route in cultivated area (in km)	10	25	18
	Nos. of towers	29	40	42
20	Approximate Length of line route in Un-cultivated area (in km)	14	10	10
	Nos. of towers	10	10	10
22	Highest Approximate altitude in route the line (in metres)		1950	1950
23	Approximate distance from Nearest Airport	185 Kms (Shimla)	185 Kms (Shimla)	185 Kms (Shimla)
24	Approximate distance from Nearest Religious / archaeological sites	12 Kms	8 Kms	8 Kms
25	Name of District	Kullu/Shimla	Kullu/Shimla	Kullu/Shimla
26	Land to be permanently acquired for revetment of tower base:			
	Area (in ha.)			
	Cost.			
	Alternative Selected	Selected- Less tree cutting, minimum length of transmission line through inaccessible terrain.		

**COMPONENT II. Chamba PIU (Chamba District) subprojects**  
**T2 - 400 kV D/C transmission line from Lahal GSS to Rajera GSS**

Sno.	Description	Route A (Red)	Route B (Blue)	Route C (Green)
1	Approximate line length in km	34.457	39.00	38.00
2	River/Nalla Crossing	4	2	4
3	Government/Forest area involvement			
	i) Nos. of towers	64	66	64
	ii).Approximate Length (in km)	18.288	20.432	19.418
	iii) 46 mtr ROW Approximate area	77.542	80.422	79.325

Sno.	Description	Route A (Red)	Route B (Blue)	Route C (Green)
	(in hectares)			
4	NonForest/Pvt area involvement			
	i.)Nos. of towers	50	52	52
	ii) Approximate Length (in km)	16.169	18.568	18.582
	iii)46 mtr ROW Approximate area (in hectares)	28.8039	30.5181	29.5463
	iv) wild life sanctuary/ National park (in ha.)	N/A	N/A	N/A
	v) Approximate distance from nearest wild life sanctuary	15 Km (Tundah wild life)	15 Km (Tundah wild life)	15 Km (Tundah wild life)
5	Development of Tower site	64	59	94
a	Number of Towers	114	120	116
b	Number of Gantries	2	2	2
c	Land to be acquired for Tower base (in ha.) bench20.00X 20.00 normal	5.2	6.96	6.86
6	<b>Land strata of Tower Location</b>			
	Non-Cohesive	20%	40%	47%
	Cohesive	40%	23%	23%
	Soft rock	19%	19%	19%
	Hard rock	31%	16%	21%
7	Road accessibility in km (Average lead from road to proposed line route.)	2.00	3.00	3.50
8	Approximate Private land involvement in hectares for the line.			
	i. Agricultural (in ha.)			
	c. Cultivated	28.8039	30.5181	29.5463
	d. Irrigated			
	d. Non-irrigated			
	ii. Un Cultivated	0	0	0
	iii. House or Building			
	c. Residential	1	1	2
	d. Nonresidential			
9	Approximate EHV line crossing in no.	2	4	7
10	H T / 11kV line crossing in Approximate Nos.	4	4	4
11	Road crossing in Approximate Nos.	4	4	4
12	National /State crossing in Approximate Nos.	0	0	0
13	Telephone line crossing in Approximate Nos.	0	0	0
14	length of route / line passing in the territory of other state	0	0	0
15	Approximate Nos. of Trees in Forest land			
	Cutting	245	275	266
	non-cutting	0	0	0
16	Approximate Nos. of Private Trees in line route			
	i. fruit trees	35	87	37
	Cutting	15	45	16
	non-cutting	20	42	21

Sno.	Description	Route A (Red)	Route B (Blue)	Route C (Green)
	ii. non-fruit trees	43	49	47
	Cutting	20	35	23
	non-cutting	23	14	24
17	Approximate Length of line route in snow zone area (in km)	19	19	20
	Nos. of towers	65	65	67
18	Approximate Length of line route in non-snow zone area (in km)	15.457	20	18
	Nos. of towers	39	55	49
19	Approximate Length of line route in cultivated area (in km)	13.169	14.568	14.582
	Nos. of towers	40	42	42
20	Approximate Length of line route in Un-cultivated area (in km)	3	4	4
	Nos. of towers	10	10	10
22	Highest Approximate altitude in route the line (in metres)	1700	1950	1950
23	Approximate distance from Nearest Airport	185 Kms (Gaggal)	185 Kms (Gaggal)	185 Kms (Gaggal)
24	Approximate distance from Nearest Religious / archaeological sites	8 Kms	8 Kms	8 Kms
25	Name of District	Chamba	Chamba	Chamba
26	Land to be permanently acquired for revetment of tower base:			
	Area (in ha.)			
	Cost.			
	Alternative Selected	Selected- Less tree cutting, minimum length of transmission line through inaccessible terrain.		

#### **T4-220 kV D/C transmission line (Twin Moose) from Bhajoli Holi HEP to 400/220 kV Lahal GIS**

Sno.	Description	Route A (Red)	Route B (Blue)	Route C (Green)
1	Approximate line length in km	17.803	22.940	23.304
2	River/Nalla Crossing	1/10	1/11	1/14
3	Government/Forest area involvement			
	i) Nos. of towers	39	40	42
	ii) Approximate Length (in km)	8.752	11.643	13.070
	iii) mtr ROW Approximate area (in hectares)	30.6321	40.7505	45.745
4	NonForest/Pvt area involvement			
	i.) Nos. of towers	22	25	25
	ii) Approximate Length (in km)	8.664	11.297	10.234
	iii) mtr ROW Approximate area (in hectares)	30.6321	40.7505	45.745
	iv) wild life sanctuary/ National park (in Ha)	Nil	Nil	nil
	v) Approximate distance from nearest	20 KM	20 KM	20 KM



Sno.	Description	Route A (Red)	Route B (Blue)	Route C (Green)
	wild life sanctuary	Kugti Sanctuary	Kugti Sanctuary	Kugti Sanctuary
5	Development of Tower site	61	65	67
A	Number of Towers	61	65	67
B	Number of Gantries	2	2	2
C	Land to be acquired for Tower base (in Ha) benchX Normal	1.3725 HA	1.4625 Ha	1.5075 Ha
6	Land strata of Tower Location			
	Non-Cohesive	22	24	20
	Cohesive	16	18	22
	Soft rock	14	3	5
	Hard rock	9	20	20
7	Road accessibility in km (Average lead from road to proposed line route.)	3	4.5	5.1
8	Approximate Private land involvement in hectares for the line	31.6785	32.8776	32.9775
	i. Agricultural (in Ha)			
	Cultivated			
	e. Irrigated			
	f. Non-irrigated	50%	50%	50%
	ii. Un Cultivated	50%	50%	50%
	iii. House or Building	-	-	-
	e. Residential	-	-	-
	f. Nonresidential	NIL	NIL	NIL
9	Approximate EHV line crossing in no.	NIL	NIL	NIL
10	H T / 11kV line crossing in Approximate Nos.	12 TIMES	12 TIMES	13 TIMES
11	Road crossing in Approximate Nos.	4 TIMES	3 TIMES	4 TIMES
12	National /State crossing in Approximate Nos.	NIL	NIL	NIL
13	Telephone line crossing in Approximate Nos.	1 TIMES	1 TIMES	1 TIMES
14	length of route / line passing in the territory of other state	NIL	NIL	NIL
15	Approximate Nos. of Trees in Forest land			
	Cutting	135	201	262
	non-cutting	-	-	-
16	Approximate Nos. of Private Trees in line route			
	i. fruit trees			
	Cutting	34	39	46
	non-cutting	-	-	-
	ii. non-fruit trees			
	Cutting	7	15	19
	non-cutting	-	-	-
17	Approximate Length of line route in snow zone area (in km)	17.803	22.940	23.304
	Nos. of towers	61	65	67
18	Approximate Length of line route in non-snow zone area (in km)	NIL	NIL	NIL

Sno.	Description	Route A (Red)	Route B (Blue)	Route C (Green)
	Nos. of towers			
19	Approximate Length of line route in cultivated area (in km)	4.525	5.82	1.5
	Nos. of towers			
20	Approximate Length of line route in Un-cultivated area (in km)	4.525	5.82	5.117
	Nos. of towers			
22	Highest Approximate altitude in route the line (in metres)	2390	2450	2500
23	Approximate distance from Nearest Airport	KANGRA 238 KM	KANGRA 238 KM	KANGRA 238 KM
24	Distance from nearest religious tourist or Archaeological sites	10 KM	10 KM	10 KM
25	Name of villages involved/Name of District	CHAMBA	CHAMBA	CHAMBA
26	Land to be permanently acquired for revetment of tower base: Area (in ha.)	1.3725 HA	1.4625 Ha	1.5075 Ha
	Alternative Selected	SELECTED-.		

**220 kV D/C Transmission Line From 132/220 kV Majra To Proposed 33/220 kV substation Karian In Dist. Chamba**

Sr.No.	Description	Route-1(Magenta)	Route-2(Red)	Route 3(Cyan)
1	Approximate line length in kms.	20	17.9	17.32
2	River/Nala Crossing	4-Nala	4-Nala	4-Nala
3	Forest area Involvement			
	i) Approximate GLKM	15.429	14	13.057
	ii) 35mtr ROW Area (in Ha)	54	49	45.7
	iii) Wild Life Sanctuary /National Park (in Ha)	0	0	0
	iv) Approximate Distance from Nearest Wild Life Sanctuary	kalatop (12km)	kalatop (12km)	kalatop (12km)
4	Development of Tower Site			
	i) Number of Towers	39	41	40
	ii) Number of Gentries	2	1	2
	iii) Land to Be Acquired for Tower Base (in Ha) Bench-15x15 m Considering Normal Tower	0.8775	0.9225	0.9
5	Land Status of Tower Location			
	i) Soil	8	8	5
	ii) Rock	31	33	35
6	Road Accessibility in GLK (Average Lead from Road to Proposed line Route)	2.0 km	1.0 km	0.7 km
7	Approximate Private Land Involvement in Hectare for The Line			
	i) Agriculture (in Ha & KM)			
	a) Cultivated	16 (4.571km)	13.65 (3.9km)	18 (5.143km)
	b) Irrigated	Nil	Nil	Nil
	c) Non-Irrigated			
	ii) Un Cultivated/Government/Forest Land (in Ha/km)	54 (15.429km)	49 (14km)	45.7 (13.057km)
	iii) House or Building	Nil	Nil	Nil

	a) Residential	Nil	Nil	Nil
	b) Nonresidential	Nil	Nil	Nil
8	Approximate EHV Line In X-ing in numbers	2	1	2
9	HT/11Kv Line X-ing in Approximate Number	18	16	23
10	Road X-ing In Approximate number	6	18	23
11	NH/SH X-ing in Approximate Number	0	2	6
12	Telecommunication Line X-ing In Approximate Number	Nil	Nil	Nil
13	Length of Route / Line Passing in the Territory of Other State	Nil	Nil	Nil
14	Approximate Number of Trees in Forest Land	316	248	343
	i) Fruit Trees	50	25	67
	a) Felling	16	10	23
	b) Non-Felling	34	15	44
	ii) Non-Fruit Trees	266	223	276
	a) Felling	126	120	137
	b) Non-Felling	140	103	139
15	Approximate Number of Trees in Private Land	66	57	90
	i) Fruit Trees	6	10	20
	a) Felling	4	6	15
	b) Non-Felling	2	4	5
	ii) Non-Fruit Trees	60	47	70
	a) Felling	20	35	30
	b) Non-Felling	40	12	40
16	Approximate Length of Line Route in Snow Zone Area (in KM)	Nil	Nil	Nil
17	Approximate Length of Line Route in Non Snow Zone Area (in Ha/km)	70 (20km)	62.65 (17.9km)	60.627(17.3 22km)
18	Approximate Length of Route in Cultivated Area (in Ha)	16 (4.571km)	13.65 (3.9km)	18 (5.143km)
19	Approximate Length of Line Route in Un-Cultivated Area (in Ha/km)	54 (15.429km)	49 (14km)	45.7 (13.057km)
20	Approximate Length of Line Route in Government/Shamlat/forest Area (in Km)	15.429km	14km	13.057km
21	Highest Approximate Altitude in route (in Meters)	1328	1630	1676
22	Approximate Distance of Nearest Airport	120.0km	120.0km	120.0km
23	Approximate Distance from Nearest Religious/ Archaeological Sites	50.0km	50.0km	50.0km
24	Name of District	Chamba	Chamba	Chamba
25	Land to Be Permanently Acquired (For Towers) Area (in Ha)	1.305	1.17	1.18

#### Component IV: Sarabhai PIU (Kullu and Mandi Districts)

##### T5 - 132 kV D/C transmission line from Barsaini to 132/220 kV substation at Charor

Sno.	Description	Route A (Red)	Route B (Blue)	Route C (Green)
1	Approximate line length in km	38.700	39.346	40.290
2	River/Nalla Crossing	1/7	1/7	1/7
3	Government area involvement			
	i) Nos. of towers			
	ii) Approximate Length (in km)			
	iii) 35 mtr ROW Approximate area (in hectares)			
4	Forest area involvement			
	i.)Nos. of towers			

Sno.	Description	Route A (Red)	Route B (Blue)	Route C (Green)
	ii) Approximate Length (in km)	2.75	9.40	15.00
	iii) 35 mtr ROW Approximate area (in hectares)	96.25	329	525
	iv) wild life sanctuary/ National park (in ha.)	N/A	N/A	N/A
	v) Approximate distance from nearest wild life sanctuary	N/A	N/A	N/A
5	Development of Tower site			
a	Number of Towers	130	149	171
b	Number of Gantries	2	2	2
c	Land to be acquired for Tower base (in ha.) bench 20.00X 20.00 normal	5.2	6.96	6.86
6	<b>Land strata of Tower Location</b>			
	Non-Cohesive	20%	40%	47%
	Cohesive	40%	23%	23%
	Soft rock	19%	19%	19%
	Hard rock	31%	16%	21%
7	Road accessibility in km (Average lead from road to proposed line route.)	0.43	0.61	0.98
8	Approximate Private land involvement in hectares for the line.			
	i. Agricultural (in ha.)			
	Cultivated	32	41	49
	g. Irrigated	0	0	0
	h. Non-irrigated		6.06	7.01
	ii. Un Cultivated	5.00	6.06	7.01
	iii. House or Building			
	g. Residential			
	h. Nonresidential			
9	Approximate EHV line crossing in no.	2	4	7
10	H T / 11kV line crossing in Approximate Nos.	4	4	4
11	Road crossing in Approximate Nos.	2	0	0
12	National /State crossing in Approximate Nos.	0	0	0
13	Telephone line crossing in Approximate Nos.	0	0	0
14	length of route / line passing in the territory of other state	0	0	0
15	Approximate Nos. of Trees in Forest land			
	Cutting	3200	4800	5600
	non-cutting	4000	4500	5000
16	Approximate Nos. of Private Trees in line route			
	i. fruit trees			
	Cutting	486	598	587
	non-cutting	112	89	99
	ii. non-fruit trees			
	Cutting	11	45	23
	non-cutting	23	78	112
17	Approximate Length of line route in snow zone area (in km)	80%	85%	100%

Sno.	Description	Route A (Red)	Route B (Blue)	Route C (Green)
	Nos. of towers			
18	Approximate Length of line route in non-snow zone area (in km)	20%	15%	0%
	Nos. of towers			
19	Approximate Length of line route in cultivated area (in km)			
	Nos. of towers			
20	Approximate Length of line route in Un-cultivated area (in km)			
	Nos. of towers			
22	Highest Approximate altitude in route the line (in metres)	2305	2345	2360
23	Approximate distance from Nearest Airport	5500	6000	6550
24	Approximate distance from Nearest Religious / archaeological sites	300	400	478
25	Name of District	Kulu	Kulu	Kulu
26	Land to be permanently acquired for revetment of tower base:			
	Area (in ha.)			
	Cost.			
	Alternative Selected	Selected-Less tree cutting, minimum length of transmission line through inaccessible terrain.		

## ANNEX 4: TRANSMISSION LINE INVENTORIES

### Component I Babhanagar (PIU) Shimla District subproject

#### T1: 66 kV Baipur Nirmand transmission line

#### Bagipul – Nirmand Transmission line Details

SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M <sup>2</sup> )	Name of Village/Tehsil/District	Distance of transmission line from nearby village (m)	Ownership of Land (Private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) of Trees cut
1	2	3	4	5	6	7	8	9	10	11	12	13
1	T-1		31°29'19.98"N	77°34'10.32"E	27mtr	Arsu/Nirmand/Shimla	1400mtr	Pvt	cultivation		5	Apple
		77.24										
2	T-2		31°29'19.56"N	77°34'13.20"E	27mtr	Arsu/Nirmand/Shimla	1400mtr	Pvt	cultivation		2	Khumani
		115.21										
3	T-3		31°29'20.57"N	77°34'17.37"E	27mtr	Arsu/Nirmand/Shimla	1300mtr	Pvt	cultivation		Nil	
		374.14										
4	T-4		31°29'19.31"N	77°34'31.47"E	27mtr	Arsu/Nirmand/Shimla	1200mtr	Pvt	cultivation		Nil	
		106.21										
5	T-5		31°29'18.71"N	77°34'35.39"E	27mtr	Arsu/Nirmand/Shimla	900mtr	Pvt	plantation		Nil	
		172.24										
6	T-6		31°29'17.24"N	77°34'44.14"E	27mtr	Arsu/Nirmand/Shimla	650mtr	Pvt	plantation		6	Apple
		634.18										
7	T-7		31°29'12.24"N	77°35'4.92"E	27mtr	Arsu/Nirmand/Shimla	600mtr	Pvt	plantation		2	Apple
		147.85										
8	T-8		31°29'11.10"N	77°35'10.26"E	27mtr	Arsu/Nirmand/Shimla	640mtr	Pvt	plantation		4	Apple
		414.25										
9	T-9		31°29'5.94"N	77°35'24.66"E	27mtr	Arsu/Nirmand/Shimla	540mtr	Pvt	plantation		Nil	
		116.52										
10	T-10		31°29'4.32"N	77°35'28.56"E	27mtr	Arsu/Nirmand/Shimla	450mtr	Pvt	plantation			
		142.958										
11	T-11		31°29'2.88"N	77°35'33.66"E	27mtr	Arsu/Nirmand/Shimla	650mtr	Pvt	plantation		4	Apple
		182.24										
12	T-12		31°29'2.10"N	77°35'40.44"E	27mtr	Arsu/Nirmand/Shimla	680mtr	Pvt	plantation		3	Apple
		465.24										
13	T-13		31°28'58.44"N	77°35'57.42"E	27mtr	Damedi/Nirmand/Shimla	850mtr	Pvt	plantation		Nil	
		339.24										
14	T-14		31°28'49.15"N	77°36'4.21"E	27mtr	Damedi/Nirmand/Shimla	900mtr	Govt	barren		7	Apple
		203.76										
15	T-15		31°28'42.65"N	77°36'5.02"E	27mtr	Damedi/Nirmand/Shimla	1000mtr	Govt	barren		Nil	
		99.57										
16	T-16		31°28'39.54"N	77°36'5.70"E	27mtr	Damedi/Nirmand/Shimla	1150mtr	Govt	barren		12	Chil (Forest)
		333.78										
17	T-17		31°28'30.30"N	77°36'12.12"E	27mtr	Prantala/Nirmand/Shimla	1230mtr	Govt	barren		Nil	
		192.78										
18	T-18		31°28'24.66"N	77°36'15.12"E	27mtr	Damedi/Nirmand/Shimla	1450mtr	Govt	barren		Nil	
		227.24										
19	T-19		31°28'22.71"N	77°36'16.79"E	27mtr	Damedi/Nirmand/Shimla	1530mtr	Pvt	cultivation		NIL	

SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M²)	Name of Village/Tehsil/District	Distance of transmission line from nearby village (m)	Ownership of Land (Private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) of Trees cut
1	2	3	4	5	6	7	8	9	10	11	12	13
		765.24										
20	T-20		31°27'58.68"N	77°36'37.02"E	27mtr	Damedi/Nirmand/Shimla	1650mtr	Pvt	cultivation		NIL	
		463.25										
21	T-21		31°27'49.44"N	77°36'50.88"E	27mtr	Damedi/Nirmand/Shimla	1860mtr	Govt	barren		NIL	
		241.258										
22	T-22		31°27'42.72"N	77°36'55.62"E	27mtr	Prantala/Nirmand/Shimla	2000mtr	Govt	barren		NIL	
		327.24										
23	T-23		31°27'32.88"N	77°37'0.30"E	27mtr	Damedi/Nirmand/Shimla	2353mtr	Govt	barren		NIL	
		257.21										
24	T-24		31°27'28.14"N	77°37'8.22"E	27mtr	Damedi/Nirmand/Shimla	2780mtr	Govt	barren		4	Apple
		356.24										
25	T-25		31°27'21.54"N	77°37'19.32"E	27mtr	Prantala/Nirmand/Shimla	2750mtr	Govt	barren		NIL	
		195.24										
26	T-26		31°27'21.72"N	77°37'22.73"E	27mtr	Prantala/Nirmand/Shimla	2790mtr	Govt	barren		NIL	
		430.78										
27	T-27		31°27'24.90"N	77°37'38.52"E	27mtr	Jagatkhana/Nirmand/Shimla	3100mtr	Govt	barren		NIL	
		450.25										
28	T-28		31°27'28.50"N	77°37'55.02"E	27mtr	Jagatkhana/Nirmand/Shimla	3250mtr	Govt	barren		NIL	
		153.89										
29	T-29		31°27'29.22"N	77°38'0.78"E	27mtr	Jagatkhana/Nirmand/Shimla	3550mtr	Pvt	cultivation		NIL	
		531.78										
30	T-30		31°27'30.78"N	77°38'20.82"E	27mtr	Jagatkhana/Nirmand/Shimla	3600mtr	Pvt	cultivation		NIL	
		105.87										
31	T-31		31°27'31.08"N	77°38'24.72"E	27mtr	Jagatkhana/Nirmand/Shimla	3743mtr	Pvt	cultivation		NIL	
		769.26										
32	T-32		31°27'36.90"N	77°38'53.04"E	27mtr	Jagatkhana/Nirmand/Shimla	4300mtr	Pvt	cultivation		NIL	
		192.84										
33	T-33		31°27'40.38"N	77°38'59.04"E	27mtr	Jagatkhana/Nirmand/Shimla	4450mtr	Pvt	cultivation		NIL	
		611.48										
34	T-34		31°27'44.58"N	77°39'21.66"E	27mtr	Tunar/Nirmand/Shimla	4956mtr	Pvt	cultivation		NIL	
		462.14										
35	T-35		31°27'52.92"N	77°39'36.24"E	27mtr	Tunar/Nirmand/Shimla	5320mtr	Pvt	cultivation		NIL	
		521.87										
36	T-36		31°27'59.41"N	77°39'51.70"E	27mtr	Tunar/Nirmand/Shimla	5462mtr	Pvt	cultivation		NIL	
		137.25										
37	T-37		31°28'1.44"N	77°39'59.10"E	27mtr	Tunar/Nirmand/Shimla	5842mtr	Pvt	cultivation		NIL	
		308.54										
38	T-38		31°28'5.46"N	77°40'9.78"E	27mtr	Tunar/Nirmand/Shimla	5989mtr	Pvt	cultivation		NIL	
		184.25										
39	T-39		31°28'9.66"N	77°40'14.76"E	27mtr	Tunar/Nirmand/Shimla	6189mtr	Pvt	cultivation		NIL	
		230.14										
40	T-40		31°28'13.92"N	77°40'20.76"E	27mtr	Tunar/Nirmand/Shimla	6357mtr	Pvt	cultivation		NIL	
		222.41										
41	T-41		31°28'20.76"N	77°40'25.74"E	27mtr	Tunar/Nirmand/Shimla	6596mtr	Pvt	cultivation		NIL	
		296.54										
42	T-42		31°28'28.32"N	77°40'32.70"E	27mtr	Tunar/Nirmand/Shimla	6700mtr	Pvt	cultivation		NIL	
		409.56										

SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M <sup>2</sup> )	Name of Village/Tehsil/District	Distance of transmission line from nearby village (m)	Ownership of Land (Private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) of Trees cut
1	2	3	4	5	6	7	8	9	10	11	12	13
43	T-43		31°28'40.08"N	77°40'39.96"E	27mtr	Badari.Nirmand/Shimla	7320mtr	Govt	barren		NIL	
		646.84										
44	T-44		31°28'59.70"N	77°40'48.60"E	27mtr	Badari.Nirmand/Shimla	7861mtr	Govt	barren		NIL	
		584.45										
45	T-45		31°29'15.18"N	77°41'1.38"E	27mtr	Badari.Nirmand/Shimla	8100mtr	Govt	barren		NIL	
		220.98										
46	T-46		31°29'19.80"N	77°41'7.74"E	27mtr	Badari.Nirmand/Shimla	8456mtr	Govt	barren		NIL	
		338.24										
47	T-47		31°29'29.64"N	77°41'13.44"E	27mtr	Badari.Nirmand/Shimla	8862mtr	Govt	barren		NIL	
		451.25										
48	T-48		31°29'37.86"N	77°41'27.60"E	27mtr	Badari.Nirmand/Shimla	9958mtr	Govt	barren		NIL	
		164.86										
49	T-49		31°29'39.42"N	77°41'33.54"E	27mtr	Badari.Nirmand/Shimla	10059mtr	Govt	barren		NIL	
		141.14										
50	T-50		31°29'40.50"N	77°41'38.76"E	27mtr	Badari.Nirmand/Shimla	11468mtr	Govt	barren		NIL	
		786.54										
51	T-51		31°29'56.34"N	77°42'2.10"E	27mtr	Badari.Nirmand/Shimla	12968mtr	Govt	barren		NIL	
		285.26										
52	T-52		31°30'0.06"N	77°42'12.00"E	27mtr	Badari.Nirmand/Shimla	14052mtr	Govt	barren		NIL	
		162.75										
53	T-53		31°30'2.94"N	77°42'17.16"E	27mtr	Badari.Nirmand/Shimla	14558mtr	Govt	barren		NIL	
		555.48										
54	T-54		31°30'8.40"N	77°42'37.20"E	27mtr	Jhakri/Rampur/Shimla	25056mtr	Govt	barren		NIL	
		392.48										
55	T-55		31°30'9.42"N	77°42'52.02"E	27mtr	Jhakri/Rampur/Shimla	280542mtr	Govt	barren		NIL	
		462.89										
56	T-56		31°30'11.16"N	77°43'10.56"E	27mtr	Jhakri/Rampur/Shimla	338058mtr	Govt	barren		NIL	
		840.36										
57	T-57		31°30'17.88"N	77°43'41.40"E	27mtr	Jhakri/Rampur/Shimla	340256mtr	Govt	barren		NIL	
		112.47										
58	T-58		31°30'20.40"N	77°43'44.46"E	27mtr	Jhakri/Rampur/Shimla	350689mtr	Govt	barren		NIL	
		136.24										
59	T-59		31°30'23.10"N	77°43'48.54"E	27mtr	Jhakri/Rampur/Shimla	370253mtr	Govt	barren			
		356.14									40	Chil
60	T-60		31°30'26.34"N	77°44'1.50"E	27mtr	Ratanpur/Rampur/Shimla	380256mtr	Govt	barren		20	Chil
		238.47										
61	T-60A		31°30'28.38"N	77°44'10.20"E	27mtr	Ratanpur/Rampur/Shimla	410163mtr	Govt	barren		15	Chil
		670.25										
62	T-61		31°30'39.17"N	77°44'41.37"E	27mtr	Ratanpur/Rampur/Shimla	440112mtr	Govt	barren			
		590.84										
63	T-62		31°30'42.18"N	77°44'54.96"E	27mtr	Ratanpur/Rampur/Shimla	450125mtr	Govt	barren			
		223.14										
64	T-63		31°30'46.56"N	77°45'1.68"E	27mtr	Ratanpur/Rampur/Shimla	470250mtr	Govt	barren			
		159.41										
65	T-64		31°30'49.62"N	77°45'6.54"E	27mtr	Ratanpur/Rampur/Shimla	520145mtr	Govt	barren			
		113.89										
66	T-65		31°30'51.66"N	77°45'10.14"E	27mtr	Ratanpur/Rampur/Shimla	570954mtr	Govt	barren			



SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M²)	Name of Village/Tehsil/District	Distance of transmission line from nearby village (m)	Ownership of Land (Private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) of Trees cut
1	2	3	4	5	6	7	8	9	10	11	12	13
		954.21										
67	T-66		31°30'58.74"N	77°45'45.36"E	27mtr	Kotala/Rampur/Shimla	690851mtr	Govt	barren			
		224.98										
68	T-67		31°30'56.22"N	77°45'53.34"E	27mtr	Kotala/Rampur/Shimla	740419mtr	Govt	barren		4	Apple

**Component II Chamba PIU (Chamba District) subprojects**  
**T2: Mazra-Karian Transmission Line Details**

SNo.	Tower No.	Section Length (M.)	northing	easting	Area under the ROW	Name of Village/Tehsil/District	Distance of transmission line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) of Trees cut
1	2	3	4	5	6	7	8	9	10	11	12	13
1	gantry	0	3612479	599959		Pukhari/Chamba/Chamba	1km	hpptcl	barren	nil	0	
		39.313			1376							
2	D/E		599980	3612512	0	Phukhari	1km	hpptcl	barren	nil	0	
		85.778			3002.2							
3	AP-1		600005	3612594	0	Phukhari	1km	govt.	Gov/Forest Area		0	
		89.35			3127.3							
4	AP-2		600086	3612631	0	Phukhari		pvt.	Cultivation	maize and wheat	1	chell
		503.91			17637							
5	AP-3		600572	3612767	0	Phukhari	300m	pvt.	Cultivation	maize and wheat	0	
		334.83			11719							
6	AP-4		600870	3612616	0	Bhatka	250m	govt.	Gov/Forest Area		2	chell,dhaman
		281.93			9867.4							
7	AP-5		601146	6312557	0	Bhatka	300m	pvt.	Cultivation	maize and wheat	3	chell,bann
		460.75			16126							
8	AP-6		601559	3612351	0	Bhatka	3km	govt.	Gov/Forest Area		0	
		332.98			11654							
9	AP-7		601891	3612327	0	Tikari	800m	govt.	Gov/Forest Area		0	
		431.87			15115							
10	AP-8		602272	3612124	0	Tikari	1km	pvt.	Cultivation	maize and wheat	0	
		104			3640							
11	(8/1)				0		900m	govt.	Gov/Forest Area		0	
		649.74			22741	Shakti Dera						
12	AP-9		602428	3611387	0		1km	govt.	Gov/Forest Area		12	chell,ban
		527			18445							
13	(9/1)				0		1.5km	govt.	Gov/Forest Area		0	
		182.75			6396.2							

SNo.	Tower No.	Section Length (M.)	northing	easting	Area under the ROW	Name of Village/Tehsil/District	Distance of transmission line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) of Trees cut
1	2	3	4	5	6	7	8	9	10	11	12	13
14	AP-10		602467	3610678	0	Bagodi	850m	govt.	Gov/Forest Area		0	
		381.95			13368							
15	AP-11		602686	3610365	0	Bagodi	450m	govt.	Gov/Forest Area		0	
		233			8154.9							
16	AP-12		602813	3610169	0	Bagodi	200m	govt.	Gov/Forest Area		0	
		710.29			24860							
17	AP-13		603161	3609550	0	Tharoi	500m	pvt.	Cultivation	maize and wheat	3	chell,kainth
		8E+06			3E+08							
18	AP-14		603330	3608779	0	Dhar	600m	pvt.	Cultivation	maize and wheat	0	
		608.34			21292							
19	AP-15		603754	3608343	0	Dhar	1km	govt.	Gov/Forest Area		0	
		382.95			13403							
20	AP-16		604011	3608059	0	Dhar	500m	govt.	Gov/Forest Area		0	
		289.11			10119							
21	AP-17		604286	3607970	0	Dhar	400m	pvt.	Cultivation	maize and wheat	4	chell,dhaman
		150			5250							
22	17/1				0		550m	govt.	Gov/Forest Area		4	chell,bann
		660.24			23108							
23	AP/18		604722	3607287	0	Sal	320m	govt.	Gov/Forest Area		1	chell
		260			9100							
24	18/1				0		150m	pvt.	Cultivation		3	chell
		117.64			4117.3							
25	AP-19		605039	36070852	0	Sal	100m	pvt.	Cultivation	maize and wheat	0	
		857.76			30022							
26	AP-20		605522	3606373	0	Nanu	80m	pvt.	Cultivation	maize and wheat	2	chell
		743			26005							
27	20/1				0		220m	govt.	Gov/Forest Area		3	chell
		104.21			3647.5							
28	AP-21		606173	3605831	0	Sudi	145m	pvt.	Cultivation		0	
		105			3675							
29	21/1				0		105m	pvt.	Cultivation	maize and wheat	0	
		166.24			5818.5							
30	AP 22		60443	3605865	0	Sudi	230m	govt.	Gov/Forest Area		1	chell
		108.56			3799.6							
31	AP 23		606499	3605712	0	Sudi	210m	govt.	Gov/Forest Area		1	chell
		285.47			9991.3							
32	AP 24		606600	3605445	0	Bannu	240m	govt.	Gov/Forest Area		0	
		139.89			4896							
33	AP 25		606716	3605372	0	Bannu	290m	govt.	Gov/Forest Area		0	
		352.72			12345							
34	AP 26		606764	3605022	0	Bannu	505m	govt.	Gov/Forest Area		0	

SNo.	Tower No.	Section Length (M.)	northing	easting	Area under the ROW	Name of Village/Tehsil/District	Distance of transmission line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) of Trees cut
1	2	3	4	5	6	7	8	9	10	11	12	13
		1000.2			35007							
35	AP 27		607138	3604094	0	Baridhera	209m	govt.	Gov/Forest Area		10	chell
		660.08			23103							
36	AP 28		607079	3603437	0	Bhalotha	300m	pvt.	Cultivation		2	chell
		234.53			8208.6							
37	AP 29		607032	3603207	0	Bhalotha	260m	govt.	Gov/Forest Area		6	chell,bann.kaninth
		421.47			14751							
38	AP 30		607149	3602802	0	Bhalotha	430m	govt.	Gov/Forest Area		11	chell,dhaman
		730.18			25556							
38	AP 31		607110	3602073	0	Kathanna	250m	govt.	Gov/Forest Area		0	
		303.18			10611							
39	AP 32		607288	3601828	0	Luddu	150m	govt.	Gov/Forest Area		0	
		550			19250							
40	32/1				0		500m	govt.	Gov/Forest Area		0	
		509.53			17833							
41	AP 33		607837	3600348	0	Lilianu	300m	govt.	Gov/Forest Area		0	
		759.68			26589							
42	AP 34		608335	3600348	0	Gagara	240m	pvt.	Cultivation		0	
		185.25			6483.9							
43	AP 35		608376	3600167	0	Zilo	850m	govt.	Gov/Forest Area		0	
		168			5880							
44	35/1				0	Zilo	764m	govt.	Gov/Forest Area		0	
		140			4899.8							
45	AP 36		608369	3599859	0	Zilo	500m	govt.	Gov/Forest Area		5	
		289.95			10148							
46	AP 36A		608359	3599570	0	Zilo	300m	pvt.	Cultivation	maize and wheat	0	
		23.38			818.3							
47	DE3/AP 37		608346	3599550	0	Zilo	270m	pvt.	Cultivation	maize and wheat	0	
		44.042			1541.5							
48	GE 1				0			govt.	Gov/Forest Area			
		40			1400							
49	GE 2				0			govt.	Gov/Forest Area			
		55.049			1926.7							
50	DE 2/AP 38		608243	3599456	0	Zilo	200m	govt.	Gov/Forest Area		0	
		203.65			7127.9							
51	AP 39		608101	3599310	0	Zilo	267m	pvt.	Cultivation	maize and wheat	1	chell
		152.97			5354.1							
52	D/E		607950	3599307	0	Zilo	300m	hpccl	barren		0	
		61.995			2169.8							
53	gantry		607894	3599352	0	Zilo	310m	hpptcl	barren		0	

### T3: Lahal-Rajera transmission line details

SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M²)	Name of Village/ Tehsil/D istrict	Distance of transmissi on line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) Of Trees Cut
1	2	3	4	5	6	7	8	9	10	11	12	13
1	T1	392.38	322824.0281N	762812.1009E	18049.48	Lahal	200	HPPTCL	-	-	NIL	
2	T2	91.55	322835.6965N	762818.1340E	4211.3	Seerad	600	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	3	Kau
3	T3	140.69	322838.2421N	76 28 16.3233E	6471.74	Seerad	500	Govt. Forest	Gov/Forest Area	-	-	Cheel,Deodar,Kail, Chilzoga,
4	T3A	621.19	322839.5030N	76 28 11.1436E	28574.74	Seerad	600	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	1	Kau
5	T4	101.11	322828.8136N	76 27 50.9665E	4651.06	Lahal	350	Govt. Forest	Gov/Forest Area	-	-	-
6	T5	82.64	322830.2239N	76 27 47.4694E	3801.44	Lahal	500	Govt. Forest	-do-	-	-	-
7	T6	680.65	322829.9574N	76 27 44.3197E	31309.9	Khani	2000	Govt. Forest	-do-	-	-	-
8	T7	281.62	322813.3571N	76 27 27.1101E	12954.52	Khani	2200	Govt. Forest	-do-	-	-	-
9	T8	715.14	322811.8296N	76 27 16.4755E	32896.44	Khani	2400	Govt. Forest	-do-	-	-	-
10	T9	34.95	322759.8811N	76 26 52.9902E	1607.7	Sulakhar	270	Govt. Forest	-do-	-		Cheel,Deodar,Kail, Chilzoga,
11	T10	269.22	32 27 59.8879N	76 26 51.6515E	12384.12	Sulakhar	330	Govt. Forest	-do-	-		Cheel,Deodar,Kail, Chilzoga,
12	T11	229.83	32 28 3.7515N	76 26 42.4022E	10572.18	Sulakhar	450	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	1 (in ROW)	
13	T12	193.69	32 28 9.1848N	76 26 36.3685E	8909.74	Sulakhar	700	Govt. Forest	Gov/Forest Area	-		Cheel,Deodar,Kail, Chilzoga,

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1	2	3	4	5	6	7	8	9	10	11	12	13
14	T13		32 28 12.5953N	76 26 30.1357E		Sulakha r	900	Govt. Forest	-do-	—		Cheel,Deodar,Kail, Chilzoga,
		343.37			15795.02							
15	T14		32 28 9.7120N	76 26 17.4317E		Hatt	1000	Govt. Forest	-do-	—		Cheel,Deodar,Kail, Chilzoga,Ban
		444.73			20457.58							
16	T16		32 28 4.2062N	76 26 1.6850E		Hatt	300	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	NIL	
		469.68			21605.28							
17	T17		32 28 1.1050N	76 25 44.0721E		Hatt	2000	Govt. Forest	Gov/Forest Area	—		Ban,Kail,Cheel
		394.00			18124							
18	T18		32 27 54.1336N	76 25 31.4196E		Hatt	2200	Govt. Forest	-do-	—		Ban,Kail,Cheel
		313.32			14412.72							
19	T19		32 27 45.8844N	76 25 24.3968E		Hatt	1500	Govt. Forest	-do-	—		Ban,Kail,Cheel
		89.08			4097.68							
20	T20		32 27 43.7590N	76 25 22.0828E		Hatt	800	Govt. Forest	-do-	—		Ban,Kail,Cheel,
		632.11			29077.06							
21	T21		32 27 32.4730N	76 25 1.8634E		Hatt	35	Pvt	cultivation	Wheat,Maze, Rajmah,Mah	NIL	
		655.03			30131.38							
22	T22		32 27 27.3375N	76 24 37.5202E		Guraith	110	Pvt	Cultivation	-do-	NIL	
		369.96			17018.16							
23	T23		32 27 19.4754N	76 24 26.8086E		Guraith	400	Pvt	Cultivation	-do-	NIL	
		391.75			18020.5							
24	T24		32 27 11.1133N	76 24 15.5039E		Guraith	450	Pvt	Cultivation	-do-	NIL	
		493.13			22683.98							
25	T25		32 27 1.6730N	76 24 0.2514E		Guraith	500	Govt. Forest	Gov/Forest Area	—		Ban,Kail
		415.53			19114.38							
26	T26		32 26 57.1059N	76 23 45.2790E		Guraith	980	Govt. Forest	-do-	—		Ban,Kail
		643.80			29614.8							
27	T28		32 26 48.6525N	76 23 22.7320E		Galthan	300	Govt.	-do-	—		Ban,Kail

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1	2	3	4	5	6	7	8	9	10	11	12	13
		360.29			16573.34			Forest				
28	T29		32 26 52.8489N	76 23 9.8538E		Galthan	440	Pvt	cultivation	Wheat,Maze, Rajmah,Mah	NIL	
		383.02			17618.92							
29	T30		322649.2391N	76 22 55.8184E		Massu	300	Pvt	Cultivation	-do-	8 (7 nos. in ROW )	Pine
		247.72			11395.12							
30	T31		32 26 45.5667N	76 22 47.3793E		Massu	250	Pvt	Plantation	—	8	Deodar ,Apple
		379.51			17457.46							
31	T32		32 26 44.1015N	76 22 32.9503E		Massu	300	Pvt	Cultivation	Wheat,Maje Rajmah,Mah	8 (6 nos. in ROW )	Deodar,Kainth,Dh aman
		272.24			12523.04							
32	T33		32 26 45.0629N	76 22 22.5877E		Massu	200	Pvt	Cultivation	-do-	11	Apple
		155.98			7175.08							
33	T34		32 26 44.7764N	76 22 16.6247E		Massu	320	Pvt	Cultivation	-do-	NIL	
		151.65			6975.9							
34	T35		32 26 44.7944N	76 22 10.8178E		Massu	410	Pvt	Cultivation	-do-	NIL	
		61.25			2817.5							
35	T36		32 26 45.0289N	76 22 8.4886E		Massu	600	Pvt	Cultivation	-do-	NIL	
		408.16			18775.36							
36	T36A		32 26 43.0957N	76 21 53.0265E		Maror	320	Pvt	Cultivation	-do-	6	Kainth , Pine
		114.86			5283.56							
37	T37		32 26 44.9260N	76 21 49.1944E		Maror	550	Pvt	Cultivation	-do-	NIL	
		286.96			13200.16							
38	T38		32 26 41.8640N	76 21 38.8166E		Maror	620	Pvt	Plantation	—	8	Apple
		313.31			14412.26							
39	T39		32 26 41.2855N	76 21 26.8389E		Maror	250	Pvt	Cultivation	Wheat,Maje Rajmah,Mah	5	Dhaman , Kau
		357.45			16442.7							
40	T40		32 26 41.2273N	76 21 13.1517E		Maror	260	Pvt	Plantation	—	8	Apple
		240.33			11055.18							
41	T41		32 26 42.0780N	76 21 4.0038E		Bhadur	230	Pvt	Cultivation	Wheat,Maje Rajmah,Mah	1	
		153.52			7061.92							
42	T42		32 26 44.2145N	76 20 58.6924E		Bhadur	260	Pvt	Cultivation	-do-	2 (1 nos. in	

SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M²)	Name of Village/ Tehsil/D istrict	Distance of transmissi on line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) Of Trees Cut
1	2	3	4	5	6	7	8	9	10	11	12	13
		145.36			6686.56						ROW )	
43	T43		32 26 45.7134N	76 20 53.4145E		Piyura	370	Pvt	Cultivation	-do-	NIL	
		434.66			19994.36							
44	T44		32 26 45.7905N	76 20 36.7705E		Piyura	240	Pvt	Cultivation	-do-	NIL	
		414.04			19045.84							
45	T45		32 26 43.7003N	76 20 21.1088E		Piyura	410	Govt. Forest	Gov/Forest Area	_		
		397.43			18281.78							
46	T45A		32 26 44.0207N	76 20 5.8950E		Gahera	110	Govt. Forest	-do-	_		
		289.24			13305.04							
47	T46		32 26 49.9311N	76 19 57.2878E		Gahera	160	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	4	Apple,Kainth, Dhaman
		168.05			7730.3							
48	T47A		32 26 54.4386N	76 19 53.6610E		Gahera	240	Pvt	Plantation	_	5	Apple
		126.72			5829.12							
49	T47		32 26 56.2208N	76 19 49.2871E		Gahera	415	Pvt	Cultivation	Wheat,Maje Rajmah,Mah	NIL	
		518.54			23852.84							
50	T48		32 27 5.8203N	76 19 32.9736E		Ladda	155	Pvt	Cultivation	-do-	NIL	
		205.21			9439.66							
51	T49		32 27 11.1997N	76 19 28.3366E		Ladda	264	Pvt	Cultivation	-do-	NIL	
		149.46			6875.16							
52	T50		32 27 15.8386N	76 19 26.6556E		Ladda	205	Pvt	Cultivation	-do-	NIL	
		91.07			4189.22							
53	T50A		32 27 17.4789N	76 19 23.7538E		Ladda	165	Pvt	Cultivation	-do-	4	
		124.98			5749.08							
54	T51		32 27 19.5488N	76 19 19.6370E		Ladda	105	Pvt	Cultivation	-do-	NIL	
		250.00			11500							
55	T52		32 27 24.2895N	76 19 11.8654E		Ladda	170	Pvt	Cultivation	-do-	NIL	
		147.77			6797.42							
56	T53		32 27 28.8798N	76 19 10.2181E		Ladda	41	Pvt	Cultivation	-do-	2 (in ROW )	
		76.08			3499.68							
57	T54		32 27 31.3445N	76 19 10.0209E		Ladda	165	Govt. Forest	Gov/Forest Area	_	NIL	
		264.84			12182.64							
58	T55		32 27 38.9839N	76 19 5.3639E		Ladda	620	Govt.	-do-	_	NIL	

SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M²)	Name of Village/ Tehsil/D istrict	Distance of transmissi on line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) Of Trees Cut
1	2	3	4	5	6	7	8	9	10	11	12	13
		91.10			4190.6			Forest				
59	T56		32 27 40.8938N	76 19 2.6995E		Sukral	105	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	NIL	
		165.65			7619.9							
60	T56A		32 27 42.7411N	76 18 56.7411E		Sukral	145	Govt. Forest	Gov/Forest Area	–		Kail,Cheel
		183.49			8440.54							
61	T57		32 27 45.9411N	76 18 50.8131E		Sukral	200	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	NIL	
		730.90			33621.4							
62	T58		32 27 58.3584N	76 18 26.9568E		Tur	310	Govt. Forest	Gov/Forest Area	–		
		214.03			9845.38							
63	T59		32 27 57.9693N	76 18 18.7722E		Tur	245	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	NIL	
		164.35			7560.1							
64	T60		32 27 58.7658N	76 18 12.5479E		Tur	130	Pvt	Cultivation	-do-	2 ( 1 nos. ROW)	
		72.99			3357.54							
65	T61		32 28 0.4921N	76 18 10.6325E		Lothal	230	Govt. Forest	Gov/Forest Area	–		
		281.29			12939.34							
66	T62		32 28 4.3361N	76 18 0.8594E		Lothal	410	Govt. Forest	-do-	–		
		304.27			13996.42							
67	T63		32 28 10.8493N	76 17 52.0963E		Lothal	165	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	1 (in ROW )	Kail
		226.85			10435.1							
68	T64		32 28 13.5118N	76 17 43.9946E		Lothal	120	Pvt	Cultivation	-do-	1	Akhrot
		311.27			14318.42							
69	T65		32 28 15.6622N	76 17 32.3449E		Lothal	230	Pvt	Cultivation	-do-	4	Faguda
		382.76			17606.96							
70	T66		32 28 21.7297N	76 17 19.5497E		Majatta	225	Govt. Forest	Gov/Forest Area	–		
		172.63			7940.98							
71	T67		32 28 26.8023N	76 17 16.7363E		Majatta	125	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	1	Malbury
		204.68			9415.28							
72	T68		32 28 33.0213N	76 17 13.9712E		Majatta	235	Pvt	Cultivation	-do-	6	Kainth
		315.08			14493.68							



SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M²)	Name of Village/ Tehsil/D istrict	Distance of transmissi on line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) Of Trees Cut
1	2	3	4	5	6	7	8	9	10	11	12	13
73	T69		32 28 37.4691N	76 17 3.1019E		Majatta	122	Pvt	Cultivation	-do-	2	Kail
		369.16			169747.36							
74	T70		32 28 36.7243N	76 16 48.9881E		Majatta	550	Govt. Forest	Gov/Forest Area	–		
		376.86			17335.56							
75	T71		32 28 36.4853N	76 16 34.5549E		Majatta	164	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	1	Dadu
		556.49			25598.54							
76	T73		32 28 34.4333N	76 16 13.3760E		Majatta	275	Govt. Forest	Gov/Forest Area	–		
		531.84			24464.64							
77	T74		32 28 31.1104N	76 15 53.3841E		Gurad	312	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	2	Kainth
		117.74			5416.04							
78	T74A		32 28 31.8497N	76 15 48.9592E		Gurad	264	Pvt	Cultivation	-do-	2	Kail
		366.65			16865.9							
79	T75		32 28 36.1647N	76 15 35.8691E		Gurad	222	Pvt	Cultivation	-do-	1 ( in ROW )	
		738.17			33955.82							
80	T76		32 28 38.9220N	76 15 7.7802E		Gurad	623	Govt. Forest	Gov/Forest Area	–		
		349.05			16056.3							
81	T77		32 28 35.4022N	76 14 55.0707E		Gurad	321	Govt. Forest	Gov/Forest Area	–		
		339.84			15632.64							
82	T78		32 28 31.2109N	76 14 43.0283E		Gurad	462	Govt. Forest	-do-	–		
		134.38			6181.48							
83	T79		32 28 29.8675N	76 14 38.1310E		Gurad	660	Govt. Forest	-do-	–		
		394.38			18141.48							
84	T80		32 28 28.8577N	76 14 23.0710E		Gurad	1250	Govt. Forest	-do-	–		
		254.47			11705.62							
85	T81		32 28 26.3161N	76 14 13.7961E		Rakh	213	Govt. Forest	-do-	–		
		188.58			8674.68							
86	T82		32 28 30.3307N	76 14 8.3414E		Rakh	325	Govt. Forest	-do-	–		

SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M²)	Name of Village/ Tehsil/D istrict	Distance of transmissi on line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) Of Trees Cut
1	2	3	4	5	6	7	8	9	10	11	12	13
		397.52			18285.92							
87	T83		32 28 36.5172N	76 13 54.9768E		Rakh	645	Govt. Forest	-do-	–		
		587.21			27011.66							
88	T84		32 28 35.6455N	76 13 32.5063E		Rakh	241	Govt. Forest	-do-	–		
		390.77			17975.42							
89	T85		32 28 27.5970N	76 13 20.9344E		Rakh	326	Govt. Forest	-do-	–		
		412.95			18995.7							
90	T85A		32 28 30.5873N	76 13 5.5146E		Rakh	215	Govt. Forest	-do-	–		
		120.02			5520.92							
91	T86		32 28 30.8128N	76 13 0.9250E		Rakh	246	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	3 ( in ROW )	
		113.51			5221.46							
92	T87		32 28 34.0530N	76 12 58.8527E		Rakh	345	Govt. Forest	Gov/Forest Area	–		
		1034.68			47595.28							
93	T90		32 28 43.7426N	76 12 20.9013E		Janghi	274	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	NIL	
		142.44			6552.24							
94	T91		32 28 42.0397N	76 12 15.8281E		Janghi	211	Pvt	Cultivation	-do-	5	Dhaman,Kainth
		217.55			10007.3							
95	T92		32 28 40.5039N	76 12 7.6935E		Janghi	156	Pvt	Cultivation	-do-	3 ( 2 nos. in ROW )	Dhura
		169.77			7809.42							
96	T93		32 28 42.4623N	76 12 1.6145E		Janghi	326	Pvt	Cultivation	-do-	NIL	
		347.88			16002.48							
97	T94		32 28 51.2185N	76 11 53.1952E		Janghi	614	Pvt	Cultivation	-do-	9 (4 nos. in ROW)	Dhaman,Kainth
		461.35			21222.1							
98	T95		32 29 3.4901N	76 11 43.0584E		Janghi	826	Govt. Forest	Gov/Forest Area	–		
		248.68			11439.28							
99	T95A		32 29 8.2753N	76 11 35.3846E		Janghi	1650	Govt. Forest	-do-	–		
		174.71			8036.66							
100	T96		32 29 13.5167N	76 11 32.8238E		Janghi	1700	Govt. Forest	-do-	–		

SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M²)	Name of Village/ Tehsil/D istrict	Distance of transmissi on line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) Of Trees Cut
1	2	3	4	5	6	7	8	9	10	11	12	13
		704.30			32397.8							
101	T97		32 29 28.1095N	76 11 12.0481E		Kuranh	328	Govt. Forest	-do-	—		
		474.90			21845.4							
102	T98		32 29 28.4933N	76 10 53.8589E		Kuranh	365	Govt. Forest	-do-	—		
		117.19			5390.74							
103	T99		32 29 31.5542N	76 10 51.1912E		Kuranh	416	Govt. Forest	-do-	—		
		602.70			27724.2							
104	T100		32 29 43.4708N	76 10 32.8736E		Gagla	367	Govt. Forest	-do-	—		
		697.28			32074.88							
105	T101		32 30 2.7680N	76 10 18.8989E		Kuranh	700	Govt. Forest	-do-	—		
		310.59			14287.14							
106	T102		32 30 6.6264N	76 10 7.9035E		Kuranh	870	Govt. Forest	-do-	—		
		755.84			34768.64							
107	T103		32 30 30.7129N	76 10 2.3439E		Valley	120	Pvt	Cultivation	Wheat,Maze, Rajmah,Mah	2 (in ROW )	Kainth,Dhaman
		89.73			4127.58							
108	T104		32 30 32.7927N	76 95 9.9358E		Valley	45	Pvt	Cultivation	-do-	NIL	
		118.75			5462.5						3	Kainth
109	T104A		32 30 36.4265N	76 95 8.4142E		Valley	155	Pvt	Cultivation	-do-	12 ( 8 in ROW )	Kainth , Dhaman
		123.57			5684.22							
110	T105		32 30 40.2081N	76 95 6.8307E		Valley	88	Pvt	Cultivation	-do-	3	Kainth,Dhaman
		204.06			9386.76							
111	T106		32 30 45.7545N	76 10 1.1089E		Valley	450	Pvt	Cultivation	-do-	13 ( 5 nos. in ROW )	Ban,Dhura
		53.49			2460.54							
112	G1		32 30 45.6763N	76 10 3.1568E		Valley	512	Govt. Forest	Gov/Forest Area	—		
		107.65			4951.9							
113	T107		32 30 45.0621N	76 10 7.2181E		Rajera	1450	Govt. Forest	-do-	—		
		41.95			1929.7							
114	T108		32 30 44.4517N	76 10 8.6550E		Rajera	1210	Govt. Forest	-do-	—		

**T4: Holi Bhajoli -Lahal transmission line details**
**220kv D/Ctransmission Line from Bajoli-Holi HEP to proposed 33/220/400 Kv Gis Sub Station Lahal, Chamba (H.P)**

SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M²)	Name of Village/Tehsil/District	Distance of transmission line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) of Trees cut
1	2	3	4	5	6	7	8	9	10	11	12	13
1	T-1		32 20 31.8	76 32 02.7		Key Nala		Pvt.	Barren		Nil	
		487.00			17045							
2	T-2		32 20 44.4	76 32 02.7		Loon	250	Pvt.	Cultivation	Maje,Rajmah, Wheat,Mah	Nil	
		250.00			8750							
3	T-3		32 20 51.9	76 32 00.5		Loon	520	Govt. Forest	Gov/forest area			
		174.00			6090							
4	T-4		32 20 57.8	76 32 01.2		Loon	840	Govt. Forest	-do-			
		140.00			4900							
5	T-5		32 21 01.8	76 32 00.3		Loon	900	Govt. Forest	-do-			
		313.00			10955							
6	T-6		32 21 11.5	76 31 55.6		Loon	940	Govt. Forest	-do-			
		142.00			4970							
7	T-7		32 21 16.1	76 31 54.7		Batada	420	Govt. Forest	-do-			
		749.00			26215							
8	T-8		32 21 40.4	76 31 50.8		Batada	300	Govt. Forest	-do-			
		293.00			10255							
9	T-9		32 21 47.2	76 31 44.9		Batada	210	Govt. Forest	-do-			
		331.00			11585							
10	T-10		32 21 57.1	76 31 37.5		Batada	600	Govt. Forest	-do-			
		225.00			7875							
11	T-11		32 22 03.7	76 31 33.7		Batada	125	Govt. Forest	Gov/forest area			
		521.00			18235							
12	T-12		32 22 16.9	76 31 21.2		Jeena	230	Govt. Forest	-do-			
		429.00			15015							
13	T-13		32 22 28.9	76 31 11.8		Shah	315	Govt. Forest	-do-			
		513.00			17955							
14	T-14		32 22 34.8	76 30 53.9		Shah	450	Pvt.	Cultivation	Maje,Rajmah, Wheat,Mah	Nil	
		272.00			9520							
15	T-15		32 22 39.5	76 30 45.1		Gwar	301	Pvt.	Cultivation	-do-	Nil	
		297.00			10395							
16	T-16		32 22 44.4	76 30 35.1		Shah	225	Pvt.	Cultivation	-do-	Nil	
		148.00			5180							
17	T-17		32 22 47.6	76 30 31.0		Sua	99	Govt. Forest	Gov/forest area			
		112.00			3920							
18	T-18		32 22 51.0	76 30 28.6		Sua	114	Govt. Forest	-do-			
		538.00			18830							
19	T-19		32 23 05.3	76 30 16.6		Machheter	431	Govt. Forest	-do-			
		620.00			21700							
20	T-20		32 23 12.5	76 29 54.7		Machheter	650	Govt. Forest	-do-			
		212.00			7420							
21	T-21		32 23 06.2	76 29 47.9		Machetter	612	Govt. Forest	-do-			

SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M²)	Name of Village/Tehsil/District	Distance of transmission line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) of Trees cut
1	2	3	4	5	6	7	8	9	10	11	12	13
		531.00			18585							
22	T-22		32 23 24.7	76 29 30.3		Praie	812	Govt. Forest	Gov/forest area	—		
		281.00			9835							
23	T-23		32 23 33.0	76 29 26.1		Praie	940	Govt. Forest	-do-	—		
		977.00			34195							
24	T-24		32 24 04.3	76 29 28.5		Praie	1050	Govt. Forest	-do-	—		
		139.00			4865							
25	T-25		32 24 09.0	76 29 30.9		Praie	1500	Govt. Forest	-do-	—		
		225.00			7875							
26	T-26		32 24 15.1	76 29 34.1		Praie	2000	Govt. Forest	-do-	—		
		159.00			5565							
27	T-27		32 24 20.7	76 29 36.5		Praie	943	Govt. Forest	-do-	—		
		798.00			27930							
28	T-29		32 24 44.14	76 29 48.58		Praie	215	Pvt.	Cultivation	Maje,Rajmah, Wheat,Mah	1	Cheel
		217.00			7595							
29	T-30		32 24 50.38	76 29 45.32		Praie	560	Pvt.	Cultivation	Maje,Rajmah, Wheat,Mah	1	Ban
		311.00			10885							
30	T-31		32 24 59.66	76 29 46.28		Praie	600	Govt. Forest	Gov/forest area	—		
		268.00			9380							
31	T-32		32 25 09.21	76 29 46.51		Praie	750	Govt. Forest	-do-	—		
		261.00			9135							
32	T-33		32 25 15.11	76 229 43.09		Praie	450	Govt. Forest	Gov/forest area	—		
		233.00			8155							
33	T-34		32 25 21.60	76 29 35.24		Raten	550	Govt. Forest	-do-	—		
		106.00			3710							
34	T-35		32 25 23.46	76 29 31.79		Raten	400	Govt. Forest	-do-	—		
		242.00			8470							
35	T-36		32 25 31.05	76 29 31.05		Raten	310	Govt. Forest	-do-	—		
		384.00			13440							
36	T-37		32 25 43.01	76 29 36.00		Raten	500	Govt. Forest	-do-	—		
		301.00			10535							
37	T-38		32 25 52.07	76 29 36.00		Raten	412	Govt. Forest	-do-	—		
		238.00			8330							
38	T-39		32 25 59.09	76 29 40.3		Raten	223	Govt. Forest	-do-	—		
		242.00			8470							
39	T-40		32 26 07.06	76 29 38.02		Garima	120	Govt. Forest	-do-	—		
		209.00			7315							
40	T-41		32 26 13.00	76 29 42.04		Garima	320	Govt. Forest	-do-	—		
		259.00			9065							
41	T-42		32 26 21.03	76 29 42.00		Garima	175	Govt. Forest	-do-	—		
		347.00			12145							
42	T-43		32 26 32.07	76 29 40.04		Garima	360	Govt. Forest	-do-	—		
		157.00			5495							

SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M²)	Name of Village/Tehsil/District	Distance of transmission line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees under cutting/trimming	Types (Names) of Trees cut
1	2	3	4	5	6	7	8	9	10	11	12	13
43	T-44		33 26 36.9	76 229 37.01		Garima	520	Govt. Forest	Gov/forest area	—		
		206.00			7210							
44	T-45		32 26 42.66	76 29 33.23		Garima	400	Govt. Forest	-do-	—		
		302.00			10570							
45	T-46		32 26 50.76	76 29 25.91		Bihat	200	Govt. Forest	-do-	—		
		78.00			2730							
46	T-47		32 26 50.56	76 29 23.52		Bihat	435	Govt. Forest	-do-	—		
		348.00			12180							
47	T-48		32 26 55.02	76 29 11.05		Khani	541	Pvt.	Plantation	—	5	Apple
		201.00			7035							
48	T-49		32 26 59.01	76 29 05.98		Khani	432	Pvt.	Plantation	—	6	Apple
		167.00			5845							
49	T-50		32 27 02.06	76 29 01.48		Khani	190	Pvt.	Plantation	—	6	Apple
		240.00			8400							
50	T-51		32 27 07.08	76 28 54.00		Khani	154	Pvt.	Plantation	—	4	Ban
		280.00			9800							
51	T-52		32 27 14.02	76 28 46.00		Khani	145	Pvt.	Cultivation	—	6	apple
		314.00			10990							
52	T-53		32 27 24.04	76 28 45.05		Khani	99	Pvt.	Plantation	—	6	Akhrot , Apple
		157.00			5495							
53	T-54		32 27 29.02	76 28 43.04		Khani	145	Pvt.	Cultivation	Maje,Rajmah, Mah,Wheat	1	Ban
		430.00			15050							
54	T-55		32 27 40.03	76 28 34.08		Khani	250	Pvt.	Cultivation	-do-	3	Akhrot
		261.00			9135							
55	T-56		32 27 47.08	76 28 28.06		Khani	320	Pvt.	Cultivation	-do-	—	—
		174.00			6090							
56	T-57		32 27 53.01	76 28 25.02		Lahal	150	Pvt.	Cultivation	-do-	—	—
		401.00			14035							
57	T-58		32 27 59.07	76 28 12.02		Lahal	123	Pvt.	Cultivation	-do-	—	—
		280.00			9800							
58	T-59		32 28 04.00	76 28 00.04		Lahal	124	Pvt.	Cultivation	-do-	2	Apple
		186.00			6510							
59	T-60		32 28 10.40	76 28 00.18		Lahal	160	Pvt.	Cultivation	-do-	-	-
		187.00			6545							
60	T-61		32 28 13.47	76 28 04.96		Lahal	175	Pvt.	Cultivation	-do-		

**T5 - 132 kV D/C transmission line from Barsaini to 132/220 kV substation at Charor**

SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M <sup>2</sup> )	Name of Village/Tehsil/District	Distance of transmission line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees to be retained	Types (Names) of Trees cut
1	2	3	4	5	6	7	8	9	10	11	12	13
1	T-1					Barshani	1000m	forest				
		254.62			6847	Barshani	500-1000m				-	-
2	T-2		32.0032393	77.45113093	99 pvt	Barshani	500-1000m	Private	Banjar	-	-	
		109.89			2876	Barshani	500-1000m					6 (Kail)
3	T-3		32.002432	77.44943422	99Govt	Barshani	500-1000m	Forest			-	
		79.20			2044	Barshani	500-1000m					1(Kail)
4	T-4		32.00221	77.448638	99Govt	Barshani	500-1000m	Forest			-	
		63.47			1552	Barshani	500-1000m					1(Kail)
5	T-5		32.0022929	77.447973	99Govt	Barshani	500-1000m	Forest			-	-
		230.75			6147	Barshani	500-1000m					
6	T-5A		32.002447	77.445456	99 pvt	Barshani	500-1000m	private	Plantation	Apple	-	-
		322.51			8631	Barshani	500-1000m					
7	T-6		32.0025042	77.442125	99 pvt	Barshani	500-1000m	private	Plantation	Apple/Pears	-	-
		471.54			12666	Barshani	500-1000m					
8	T-7		32.00278919	77.437147	99 Govt	Barshani	500 mtr	Forest			-	-
		428.36			11496	Barshani	500mtr					
9	T-8		32.00245323	77.43263227	99 pvt	Barshani	500-1000m	private	Plantation	Apple/Pears	-	-
		239.10			6373	Barshani	500-1000m					
10	T-9		32.00201127	77.43015623	99 pvt	Barshani	500-1000m	private	Plantation	Apple/Pears	-	-
		293.00			7832	Barshani	500-1000m					
11	T-10		32.00208278	77.42705736	99 Govt	Barshani	500-1000m				-	-
		197.96			5260	Tahuk	2500 m					1(Kail)
12	T-11		32.00224782	77.4249719	99 Govt	Tahuk	400-2500m					
		160.75			4253	Tahuk	400-2500m					
13	T-12		32.00246979	77.42329121	99 pvt	Tahuk	400-2500m	private	Plantation	Apple/Pears		
		176.77			4686	Tahuk	400-2500m					
14	T-13		32.00266856	77.42143551	99 pvt	Tahuk	400-2500m	private	Plantation	Apple/Pears		
		133.03			3503	Tahuk	400-2500m					
15	T-14		32.00294216	77.42006509	99 pvt	Tahuk	400-2500m	private	Plantation	Apple/Pears		
		301.18			8055	Tahuk	400-2500m					
16	T-15		32.00379855	77.41704106	99 Govt	Tahuk	400-2500m					
		83.30			2157	Tahuk	400-2500m					
17	T-16		32.00403102	77.41620296	99 pvt	Tahuk	400-2500m	private	Plantation	Apple/Pears		
		123.40			3241	Tahuk	400-2500m					2(Rai,Kail)
18	T-17		32.00410479	77.41490013	99 Govt	Tahuk	400-2500m					

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1	2	3	4	5	6	7	8	9	10	11	12	13
		319.46			8508	Tahuk	400-2500m				1(Rai)	2(Rai,Kail)
19	T-18		32.00496449	77.41167404	99 Govt	Tahuk	400-2500m					
		433.84			11646	Tahuk	400-2500m				3(Rai,Kail)	-
20	T-19		32.00580883	77.40719183	99 pvt	Tahuk	400-2500m	private	Plantation	Apple/Pears		
		230.87			6131	Tahuk	400-2500m					2(Kail)
21	T-20		32.00582702	77.40474912	99 pvt	Tahuk	400-2500m	private	Plantation	Apple/Pears		
		132.09			3477	Tahuk	400-2500m					
22	T-21		32.0058758	77.40335263	99 Govt	Tahuk	400-2500m					
		306.65			8201	Tahuk	400-2500m				10(Kail)	2(Kail)
23	T-22		32.00548879	77.40013993	99 pvt	Tahuk	400-2500m	private	Plantation	Apple/Pears		
		80.16			2071	Tahuk	400-2500m					
24	T-23		32.0053443	77.39930884	99 pvt	Tahuk	400-2500m	private	Plantation	Apple/Pears		
		258.43			6898	Tahuk	400-2500m				6(Robinia)	
25	T-24		32.0050598	77.39659493	99 Govt	Tahuk	400-2500m					
		130.62			3437	Tahuk	400-2500m				18(Kail,Robinia)	3(Robinia)
26	T-25		32.00522179	77.39522595	99 Govt	Tahuk	400-2500m					
		310.63			8319	Tahuk	400-2500m					2(Kail)
27	T-26		32.00548004	77.39195319	99 Govt	Tahuk	400-2500m					
		74.43			1899	Tahuk	400-2500m					2(Deodar,Kail)
28	T-27		32.00562026	77.39118299	99 Govt	Tahuk	400-2500m					
		460.94			12378	Tahuk	400-2500m				21(Deodar,Kail)	4(Kail)
29	T-28		32.00728738	77.38671541	99 pvt	Tahuk	400mtr	private	Plantation	Apple/Pears		
		75.41			1943	Tahuk	400-2500m					
30	T-29		32.00746835	77.38594623	99 Govt	Tahuk	400-2500m					
		456.63			12263	Uch	1000 m					
31	T-30		32.00885651	77.38139737	99 pvt	Uch	600-1000m	private	Banjar			
		536.81			14432	Uch	600-1000m					
32	T-31		32.01082568	77.37620849	99 pvt	Uch	600m	private	Banjar			
		303.67			8121	Uch	600-1000m				27(Kail,Popupal, Walnut)	6(Kail,Robinia)
33	T-32		32.01224884	77.37346329	99 Govt	Uch	600-1000m					
		149.29			3937	Uch	600-1000m					5(Kail,Rai)
34	T-33		32.01326505	77.37242732	99 Govt	Uch	600-1000m					



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1	2	3	4	5	6	7	8	9	10	11	12	13
		536.33			13808	Rasket	1000 m				28(Deodar,Rai, Kail,Popular,Chil )	3(Deodar,Rai)
35	T-34		32.01790216	77.37081761	99 Govt	Rasket	450-1000m					
		109.00			2861	Rasket	450-1000m					10(Kail)
36	T-35		32.01859038	77.36999418	99 Govt	Rasket	450m					
		710.45			19135	Rasket	450-1000m				12(Kail)	2(Kail)
37	T-36		32.02167263	77.36340329	99 pvt	Kiyani	250 mtr	private	Plantation	Apple/Pears		
		231.19			6158	Kiyani	250-1000m				1(Kail)	
38	T-37		32.02291599	77.36143951	99 Govt	Kiyani	250-1000m					
		150.40			3971	Kiyani	250-1000m				5(Kail)	1(Kail)
39	T-38		32.02363151	77.36008743	99 pvt	Kiyani	250-1000m	private	Plantation	Apple/Pears		
		96.55			2515	Kiyani	250-1000m					
40	T-39		32.02417055	77.35928508	99 pvt	Kiyani	250-1000m	private	Plantation	Apple/Pears		
		210.44			5599	Kiyani	1000m					
41	T-40		32.02531736	77.35751072	99 pvt	Shangna	1000 m	private	Plantation	Apple/Pears		
		152.13			4020	Shangna	200-1000m					
42	T-41		32.02626762	77.35634962	99 pvt	Shangna	200 mtr	private	Plantation	Apple/Pears		
		516.41			13881	Manikaran	1000m				5(Kail)	
43	T-42		32.02769464	77.35114709	99 Govt	Manikaran	500-1000m					
		269.62			7205	Manikaran	500-1000m				4(Kail)	
44	T-43		32.0287756	77.34859116	99 Govt	Manikaran	500 m					
		371.60			9972	Manikaran	500-1000m				1(kail)	
45	T-44		32.0296511	77.34479484	99 Govt	Manikaran	500-1000m					
		405.50			10879	Manikaran	500-1000m				18(Kail,Robinia)	
46	T-45		32.0280149	77.34095678	99 Govt	Manikaran	500-1000m					
		328.15			8781	Manikaran	500-1000m				11(Kail)	
47	T-46		32.0251216	77.34023055	99 Govt	Manikaran	500-1000m					
		216.60			5782	Gunje	1000 m					1(Kail)
48	T-47		32.0239334	77.33841132	99 Govt	Gunje	800-1000m					
		109.05			2852	Gunje	800-1000m				5(Kail)	
49	T-48		32.0226071	77.33713783	99 Govt	Gunje	800 m					
		70.14			1799	Chhalal	450-750m					2(Kail)
50	T-49		32.0219763	77.33708498	99 pvt	Chhalal	450-750 m	private	Plantation	Apple/Pears		
		204.47			5437	Chhalal	450-750m					
51	T-50		32.0214086	77.33502624	99 Govt	Chhalal	450 m					
		114.18			3001	Chhalal	450-750m				7(Chil,Robinia,K	2(Kail,Chil)

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1	2	3	4	5	6	7	8	9	10	11	12	13
											ail	
52	T-51		32.0209808	77.33392713	99 pvt	Chhalal	450-750m	private	Plantation	Apple/Pears		
		396.36			10632	Chhalal	450-750m				19(Kail,Chil)	7 (Kail,Khirk, Robinia)
53	T-52		32.0199188	77.32992196	99 Govt	Chhalal	750m					
		347.61			9312	Katagla	4500 m				6(Chil, Kail)	2(Chil, Kail)
54	T-53		32.0177967	77.32721484	99 pvt	Katagla	200-4500m	private	Plantation	Apple/Pears		
		164.87			4365	Katagla	200-4500m					
55	T-54		32.0165771	77.32621721	99 Govt	Katagla	200-4500m					
		227.07			6048	Katagla	200-4500m					5(Deodar,Kail)
56	T-55		32.0162398	77.32384701	99 Govt	Katagla	200-4500m					
		201.42			5359	Katagla	200-4500m					12(Deo,Kail,Chil)
57	T-56		32.0150930	77.32219424	99 Govt	Katagla	200-4500m					
		266.53			7128	Katagla	200-4500m					44(Deodar,Kail, chil)
58	T-57		32.0140851	77.31963381	99 Govt	Katagla	200-4500m					
		338.29			9050	Katagla	200-4500m				26(Deo,Kail ,Chil)	36(Deo,Kail,Chil)
59	T-58		32.0129218	77.31632446	99 Govt	Katagla	200-4500m					
		168.66			4475	Katagla	200-4500m				11(Deo,Kail, Chil)	5(Deo,Kail,Chil)
60	T-59		32.0122809	77.31470599	99 Govt	Katagla	200-4500m					
		343.42			9207	Katagla	200-4500m				13(Deodar,Chil)	2(Deodar,Chil)
61	T-60		32.0118379	77.31110924	99 pvt	Katagla	200-4500m	private	Plantation	Apple/Pears		
		171.30			4542	Katagla	200-4500m					1(Chil)
62	T-61		32.0111957	77.30945719	99 Govt	Katagla	200-4500m					
		114.12			3284	Katagla	200-4500m				6 (Chil)	9(Chil)
63	T-62		32.0112377	77.30825379	99 Govt	Katagla	200-4500m					
		161.85			4283	Katagla	200-4500m					35(Chil)
64	T-63		32.01197706	77.30677719	99 Govt	Katagla	200-4500m					
		156.71			4129	Katagla	200-4500m					4(Chil)
65	T-64		32.01228144	77.30515775	99 Govt	Katagla	200-4500m					
		333.30			8931	Katagla	200-4500m					2(Chil)
66	T-65		32.01200389	77.3016458	99 pvt	Katagla	200-4500m	private	Plantation	Apple/Pears		
		81.46			2115	Katagla	200-4500m					
67	T-66		32.01150225	77.30101612	99 pvt	Katagla	200-4500m	private	Plantation	Apple/Pears		
		172.09			4576	Katagla	200-4500m					
68	T-67		32.01116202	77.29923936	99 pvt	Katagla	200-4500m	private	Plantation	Apple/Pears		
		283.62			7579	Katagla	200-4500m					

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1	2	3	4	5	6	7	8	9	10	11	12	13
69	T-68		32.01220991	77.29650163	99 pvt	Katagla	200-4500m	private	Plantation	Apple/Pears		
		155.31			4106	Katagla	200-4500m				12(Chil)	
70	T-69		32.01209532	77.29486363	99 Govt	Katagla	200-4500m					
		98.65			2553	Katagla	200-4500m				1(Chil)	12(Chil)
71	T-70		32.01221496	77.29382922	99 Govt	Katagla	200-4500m					
		499.68			13431	Katagla	200-4500m				10(Chil)	6(Chil)
72	T-71		32.01009823	77.28916142	99 Govt	Katagla	200 mtr					
		110.89			2912	Katagla	200-4500m					
73	T-72		32.00963529	77.28812148	99 pvt	Katagla	200-4500m	private	Plantation	Apple/Pears		
		130.66			3458	Katagla	200-4500m					
74	T-73		32.00919639	77.28683826	99 pvt	Katagla	200-4500m	private	Plantation	Apple/Pears		
		306.32			8147	Katagla	200-4500m					
75	T-74		32.00923057	77.28359706	99 Govt	Katagla	200-4500m					
		684.61			18429	Katagla	200-4500m				53(Chil)	
76	T-75		32.00788862	77.27652586	99 Govt	Katagla	200-4500m					
		478.62			12876	Katagla	200-4500m				8(Chil)	6(Chil)
77	T-76		32.00733703	77.27150272	99 Govt	Katagla	200-4500m					
		116.57			3091	Katagla	200-4500m				3(Kosh,Chil)	1(Chil)
78	T-77		32.0069108	77.27037514	99 Govt	Katagla	200-4500m					
		181.68			4147	Katagla	200-4500m				4(Chil)	
79	T-78		32.00632312	77.26858061	99 Govt	Katagla	200-4500m					
		133.53			3514	Katagla	200-4500m				19(Chil)	6(Chil)
80	T-79		32.00603583	77.26720841	99 Govt	Katagla	200-4500m					
		332.42			8899	Katagla	200-4500m				2(Chil)	3(Chil)
81	T-80		32.00638001	77.2637141	99 Govt	Katagla	200-4500m					
		278.22			7435	Katagla	200-4500m				5(Chil)	21(Chil)
82	T-81		32.00662671	77.2607843	99 Govt	Katagla	200-4500m					
		239.66			6391	Katagla	200-4500m				4(Chil)	10(Chil)
83	T-82		32.00630068	77.25827729	99 Govt	Katagla	200-4500m					
		82.50			2134	Katagla	200-4500m				4(Chil)	4(Chil)
84	T-82A		32.00594121	77.25751303	99 pvt	Katagla	200-4500m	private	Plantation	Apple/Pears		
		203.85			5418	Chauki	1000m				7(Chil)	4(Chil)

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1	2	3	4	5	6	7	8	9	10	11	12	13
85	T-83		32.00590948	77.2553563	99 Govt	Chauki	100-1000 m					
		104.76			2745	Chauki	100-1000 m					4(Chil)
86	T-84		32.00629486	77.25434425	99 Govt	Chauki	100-1000 m					
		281.91			7550	Chauki	100-1000 m				6(Chil)	1(Chil)
87	T-85		32.0070432	77.25149328	99 Govt	Chauki	100-1000 m					
		395.09			10587	Chauki	100-1000 m				6(Chil)	1(Chil)
88	T-86		32.00798781	77.24746214	99 Govt	Chauki	100-1000 m					
		111.67			2924	Chauki	100-1000 m					
89	T-87		32.00807818	77.24628517	99 pvt	Chauki	100 mtr (Minimum)	private	Plantation	Apple/Pears		
		53.95			1363	Chauki	100-1000 m					
90	T-88		32.00825858	77.24575498	99 pvt	Chauki	100-1000 m	private	Plantation	Apple/Pears		
		176.20			4671	Chauki	100-1000 m					
91	T-89		32.00865184	77.24394845	99 Govt	Chauki	100-1000 m					
		623.94			16796	Pehal	500m				8(Chil)	2(Devidyir,Kail)
92	T-90		32.0078539	77.23741259	99 Govt	Pehal	100-500m					
		181.31			4809	Pehal	100-500m					
93	T-91		32.00671791	77.23603288	99 pvt	Pehal	105 mtr	private	Plantation	Apple/Pears		
		199.73			5315	Pehal	100-500m					
94	T-92		32.0066477	77.23392101	99 pvt	Pehal	100-500m	private	Plantation	Apple/Pears		
		549.99			14789	Valadi	1000m				10(Chil,Kail)	3(Chil)
95	T-93		32.00363124	77.22930152	99 Govt	Valadi	300-1000m					
		295.65			7897	Valadi	300-1000m					2(Chil)
96	T-94		32.0017014	77.22714319	99 Govt	Valadi	300 m					
		217.46			5782	Valadi	300-1000m				10(Chil)	
97	T-95		32.0001069	77.22580404	99 Govt	Valadi	300-1000m					
		241.67			6436	Valadi	300-1000m				17(Chil)	
98	T-96		31.99827988	77.22441033	99 Govt	Valadi	300-1000m					
		191.61			5090	Pini	2000 m				6(Chil)	3(Chil)
99	T-97		31.99666419	77.2236922	99 Govt	Pini	200-2000m					
		115.87			3053	Pini	200-2000m				4(Chil)	2(Chil)
100	T-98		31.995971	77.22276	99 Govt	Pini	200-2000m					
		226.40			6051	Pini	200-2000m				5(Chil)	
101	T-99		31.994318	77.221365	99 Govt	Pini	200-2000m					
		240.69			6436	Pini	200-2000m					
102	T-100		31.99217	77.220985	99 Govt	Pini	200-2000m					
		122.06			3207	Pini	200-2000m					

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1	2	3	4	5	6	7	8	9	10	11	12	13
103	T-101		31.991117	77.221352	99 Govt	Pini	200-2000m					
		200.74			5321	Pini	200-2000m					
104	T-102		31.989845	77.219839	99 Govt	Pini	200-2000m					
		230.87			6167	Pini	200-2000m					
105	T-103		31.98858	77.217904	99 Govt	Pini	200-2000m					
		925.00			24926	Pini	200-2000m				12(Kail, Deodar)	7(Kail)
106	T-104		31.98385	77.209843	99 Govt	Pini	200-2000m					
		111.17			2899	Pini	200-2000m				4(Kail)	2(Kail)
107	T-105		31.983345	77.208826	99 Govt	Pini	200-2000m					
		233.12			6205	Pini	200-2000m				2(Kail)	
108	T-106		31.98162	77.207409	99 Govt	Pini	200-2000m					
		449.73			12086	Pini	200-2000m				5(Chil)	
109	T-107		31.978164	77.204935	99 Govt	Pini	200-2000m					
		101.24			2630	Pini	200-2000m				4(Chil)	2(Chil)
110	T-108		31.977335	77.205391	99 Govt	Pini	200-2000m					
		101.05			2630	Pini	200-2000m				5(Chil)	1(Chil)
111	T-109		31.976504	77.204948	99 Govt	Pini	200-2000m					
		639.52			17222	Pini	200-2000m					
112	T-110		31.973985	77.198868	99 pvt	Pini	200-2000m	private	Plantation	Apple/Pears		
		194.44			5167	Pini	200-2000m					
113	T-111		31.973405	77.196928	99 pvt	Pini	200 mtr	private	Plantation	Apple/Pears		
		508.38			13664	Banasha	1000m					
114	T-112		31.96908	77.195132	99 pvt	Banasha	110-1000m	private	Plantation	Apple/Pears		
		156.21			4129	Banasha	110-1000m					
115	T-113		31.967736	77.194656	99 pvt	Banasha	110 mtr	private	Plantation	Apple/Pears		
		158.48			4190	Banasha	110-1000m					
116	T-114		31.96644	77.193937	99 Govt	Banasha	110-1000m					
		57.21			1389	Banasha	110-1000m					
117	T-115		31.965985	77.193652	99 Govt	Banasha	110-1000m					
		163.47			4321	Dhanali	500-1000m					
118	T-116		31.964868	77.192525	99 Govt	Dhanali	500-1000m					
		157.65			4168	Dhanali	500-1000m					
119	T-117		31.963851	77.191358	99 Govt	Dhanali	500-1000m					
		97.98			2553	Dhanali	500-1000m					
120	T-118		31.96348	77.190418	99 Govt	Dhanali	500m					
		473.61			12734	Dhanali	500-1000m				3(Kosh)	1(Chil)
121	T-119		31.960613	77.186711	99 Govt	Dhanali	500-1000m					
		143.23			3783	Dhanali	500-1000m					
122	T-120		31.960105	77.185313	99 Govt	Dhanali	500-1000m					
		390.36			10472	Sauhat	500-1000m				3(Kosh)	
123	T-121		31.959471	77.181257	99 Govt	Sauhat	500-1000m					
		195.86			5205	Sauhat	500-1000m					

SNo.	Tower No.	Section Length (M.)	Latitude	Longitude	Area under the ROW (in M <sup>2</sup> )	Name of Village/Tehsil/District	Distance of transmission line from nearby village (m)	Ownership of land (private, Govt. Forest)/ Use of Land	Use of land (cultivation, plantation/barren)	Name of Crops	Number of trees to be retained	Types (Names) of Trees cut
1	2	3	4	5	6	7	8	9	10	11	12	13
124	T-122		31.958077	77.179976	99 Govt	Sauhat	500-1000m					
		512.19			13767	Tipiri	800m					
125	T-123		31.95532	77.175626	99 Govt	Tipiri	130-800m					
		201.99			5369	Tipiri	130-800m				4(Kail)	
126	T-124		31.953862	77.174354	99 Govt	Tipiri	130-800m					
		464.68			12479	Tipiri	130-800m					
127	T-125		31.949807	77.173127	99 Govt	Tipiri	130 mtr					
		527.21			14160	Sarsadi	1100m				9(Kosh)	3(Kosh)
128	T-126		31.945621	77.175789	99 Govt	Sarsadi	300-1100 m					
		175.60			4858	Sarsadi	300-1100 m					
129	T-127		31.944149	77.176452	99 pvt	Sarsadi	300mtr	private	Plantation	Apple/Pears		
		555.09			14928	Sarsadi	300-1100 m				3(Kail)	2(Kail)
130	T-128		31.939174	77.175732	99 Govt	Sarsadi	300-1100 m					
		428.16			11513	Dhanogi					10(Kosh)	
131	T-129		31.935933	77.173276	99 Govt	Dhanogi	1000 mtr					
		182.65			4861	Dhanogi	250-1000m				7(Kosh, Robinia, Chil)	
132	T-130		31.934371	77.173884	99 Govt	Dhanogi	250-1000m					
		252.60			6743	Dhanogi	250-1000m				2(Chil)	
133	T-131		31.932127	77.174329	99 Govt	Dhanogi	250-1000m					
		419.24			11242	Dhanogi	250-1000m				6(Chil)	
134	T-132		31.928515	77.17565	99 Govt	Dhanogi	250 m					
		357.61			9588	Dhanogi	250-1000m					10(Chil)
135	T-133		31.925472	77.1769	99 Govt	Dhanogi	250-1000m					
		196.01			5205	Dhanogi	250-1000m				3(Chil)	1(Chil)
136	T-134		31.924105	77.178211	99 Govt	Dhanogi	250-1000m					
		910.30			24540	Fagu	1200 m				11(Chil)	1(Chil)
137	T-135		31.916477	77.181774	99 Govt	Fagu	500					
		574.50			15454	Chhoror	1000m				5(Chil)	5(Chil)
138	T-136		31.911305	77.182054	99 pvt	Chhoror	700mtr	private	Plantation	Apple/Pears		
		120.15			3154	Chhoror	400-1000m				-	-
139	T-137		31.910224	77.181933	99 pvt	Chhoror	400-1000m	private	Plantation	Apple/Pears		
		69.63			1787	Chhoror	400-1000m				-	-
140	T-138		31.909643	77.181666	99 pvt	Chhoror	400 mtr	private	Plantation	Apple/Pears		
		60.92			1550	Chhoror					-	-

## ANNEX 5.1: DETAILS OF PUBLIC CONSULTATIONS

### 1. LIST OF PARTICIPANTS OF CONSULTATIONS

Sl. N <sup>o</sup>	Name of the Participant	Sex	Occupation	Signature (If agreed by the participants)
<b>Bagipul-kotla Line, Village-Darmot</b>				
1	Padam Singh	M	Agriculture	
2	Krishan Kaith	M	Service	
3	Amit Kaith	M	Student	
4	Somtu Ram	M	Agriculture	
5	Ram Lal	M	Labor	
6	Sher Singh	M	Student	
7	Komal Kumar	M	Agriculture	
8	Paras Ram	M	Agriculture	
9	Dharm Singh	M	Labor	
<b>Bagipool- Kotla Line, Village- Kasholi</b>				
10	Tirath Ram	M	Service	
11	Akshay Kumar	M	Student	
12	Tej Ram	M	Agriculture	
13	Om Prakash	M	Student	
14	Kamalu Ram	M	Agriculture	
15	Sundar Lal	M	Agriulture	
16	Bodh Ram	M	Agriculture	
17	Seva Ram	M	Agriculture	
<b>Bagipool – Kotla Line, Village Damehli</b>				
18	Hari Chand	M	Agriculture	
19	Jaju Ram	M	Agriculture	
20	Mangat Ram	M	Service	
21	Rakesh Kumar	M	Student	
22	Jay Ram	M	Agriculture	
23	Shiv Dayal	M	Agriculture	
24	Saraswati Devi	F	Agriculture	
25	Bega Devi	F	Agriculture	
26	Khem Raj	M	Agriculture	
27	Amarender Singh	M	Agriculture	
<b>Bagipool –Kotla Line, Village Khadej</b>				
28	Layak Ram	M	Agriculture Labour	
29	Rewat Ram	M	Agriculture Labour	
30	Bhoga Ram	M	Agriculture Labour	

31	Tej Ram	M	Agriculture	
32	Ramesh	M	Agriculture	
33	Mohar Singh	M	Student	
34	Kewal Ram	M	Labour	
35	Pune Ram	M	Labour	
<b>Bagipool- Kotla Line, Village- Khajera</b>				
36	Tej Ram	M	Agriculture	
37	Ram Dayal	M	Agriculture	
38	Seema Sharma	F	Agriculture	
39	Ajay Sharma	M	Student	
40	Pawan Thakur	M	Agriculture	
41	Manohar	M	Agriculture	
42	Ravinder Singh	M	Labour	
43	Pratap Singh	M	Agriculture	
44	Amar Ram	M	Labour	
<b>Mazara- Kariyan Line, Village- Pukhari</b>				
45	Pratap Singh	M	Business	
46	Rajnish Kumar	M	Private Job	
47	Sanjay Kumar	M	Government Job	
48	Rajat Kumar	M	Student	
49	Ashok Kumar	M	Teacher	
50	Jay Singh	M	Agriculture	
<b>Barsaini-Charor Line, Village- Charor</b>				
51	Om Prakash	M	Vice President Gram Panchayat, Chharor	
52	Desh Raj	M	Agriculture	
53	Bhag Chand	M	Agriculture	
54	Om Nath	M	Agriculture	
55	Annu Devi	F	Agriculture	
56	Chaman Lal	M	Agriculture	
57	Tanuj Kumar	M	Agriculture	
58	Manoj Kumar	M	Agriculture	
59	Raj Kumar	M	Horticulture	
<b>Barsaini-Chharor Line, Village- Chhalal/Kasol/Chuj</b>				
60	Om Prakash	M	Vice President Gram Panchayat, Chharor	
61	Man Chand	M	Agriculture-Retd. Army	
62	Tek Singh	M	Agriculture	
63	Deep Chand	M	Agriculture	
64	Dhale	M	Agriculture	
65	Dile Ram	M	Agriculture	



66	Bali Ram	M	Agriculture	
67	Om Prakash	M	Service	
68	Naresh Kumar	M	Un-employed	
69	Duglesh Kumar	M	Agriculture	
<b>Barsaini-Chharor Line, Village- Sarsani/Banasha</b>				
70	Naula Ram	M	Agriculture	
71	Mrs. Godawari	F	Agriculture	
72	Raj Kumar	M	Pradhan - Agriculture	
73	Gehar Singh	M	Agriculture	
74	Khaura Ram	M	Agriculture	
75	Gridhar	M	Agriculture	
76	Neerat Ram	M	Agriculture	
77	Smt. Lali Devi	F	Agriculture	
<b>Barsaini-Chharor Line, Village- _Manikaran</b>				
78	Fateh Chand	M	Ex Vice Pradhan	
79	Kishan Sharma	M	Service	
80	Tehal Singh	M	Pradhan – Manikaran, Goj	
81	Krishan Chand	M	Retired service	
82	Nathu Ram	M	Agriculture	
<b>Barsaini-Chharor Line, Village- _Chouhak</b>				
83	Labh Chand	M	Agriculture	
84	Kehar Chand	M	Service	
85	Sant Ram	M	Agriculture	
86	Bala Ram	M	Agriculture	
87	Ved Raj	M	Agriculture	
88	Tikam Ram	M	Agriculture	
89	Bahadur Singh	M	Agriculture	
90	Ambar	M	Agriculture	
<b>Barsaini-Chharor Line, Village- _Chhiunr</b>				
91	Hukam Chand	M	Agriculture	
92	Jeevan Das	M	Service	
93	Shyam Chand	M	Agriculture	
94	Luder Chand	M	Agriculture	
95	Pritam Singh	M	Agriculture	
96	Prakash Chand	M	Agriculture	
97	Satish	M	Agriculture	
<b>Holi Bajoli- Lahal Line, Village- _Khani</b>				
98	Pratap Singh	M	Agriculture	
99	Gopal Singh	M	Retired	
100	Sunil	M	Agriculture	
101	Harvanee Singh	M	Gov. Employee	

102	Vijay Singh	M	Gov. Employee	
103	Madan Singh	M	Gov. Employee	
104	Bali Ram	M	Agriculture	
105	Arjun Singh	M	Agriculture	
106	Tek Chand	M	Agriculture	
107	Pradip Kumar	M	Agriculture	
108	Milap Singh	M	Army	
109	Keval Singh	M	Gov. Employee	
110	Shiv dev	M	Agriculture	
111	Rajiv Kumar	M	Agriculture	
<b>Holi Bajoli- Lahal Line, Village- Kanouta, Dundarpla, Dapauta, Gadhouta</b>				
112	Kuldeep Singh	M	Dundarda	
113	Nek Singh	M	Daparta	
114	Shyam Singh	M	Kanouta	
115	Ashok Kumar	M	Kanouta	
116	Jhuni Lal	M		
117	Chaman Singh	M		
118	Manish Kumar	M	Gadhauta	
119	Madan Singh	M	Gadhauta	
120	Om Prakash	M	Jagarouta	
<b>Holi Bajoli- Lahal Line, Village- Lamnouta</b>				
121	Uttam Thakur	M	Reporter Punjab Kesri	
122	Jaram Singh	M	Agriculture	
123	Inder Singh	M	Ex-president Bharmour	
124	Arjun Singh	M	Agriculture	
125	Upendra Singh	M	Unemployed	
126	Deepak Singh	M	Unemployed	
127	Suresh Thakur	M	LIC/OIC agent	
128	Tarsem Singh	M	Student	
129	Madan Singh	M	Agriculture	
<b>Holi Bajoli- Lahal Line, Village- Garima</b>				
130	Churu Ram	M	Agriculture	
131	Purushottam	M	Agriculture	
132	Abhinash Kumar	M	Agriculture	
133	Amit Kumar	M	Agriculture	
134	Vikram Singh	M	Agriculture	
135	Pawan Kumar	M	Agriculture	
136	Yashpal Kapoor	M	Ward Member- Business	
137	Prakash Chang	M	Army Retired	
<b>Holi Bajoli- Lahal Line, Village- Sahan</b>				

138	Yog Raj	M	Private Service	
139	Bramhu Ram	M	Retired (PWD)	
140	Neelam	F	Housewife	
141	Kusum Lata	F	Housewife	
<b>Holi Bajoli- Lahal Line, Village- Dalli</b>				
142	Barfi Ram	M	Agriculture	
143	Onkar Singh Dallayil	M	Small govt. contractor	
144	Sanjeev Kumar	M	Gov. Employee	
145	Santosh Kumar	M	Business	
146	Balveer	M	Un-employed	
147	Tek Chand	M	Gov. Employee	
148	Ms. Rani Devi	F	SDL member	
<b>Lahal – Rajera Line, Village- Tangaitha (Manjatha)</b>				
149	Satish Kumar	M	Student	
150	Ravan Kumar	M	Retired	
151	Man Singh	M	Service	
152	Jashveer Singh	M	Business	
153	Machlu Ram	M	Private Service	
154	Gyan Ram	M	Agriculture	
155	Bindu Ram	M	Agriculture	
156	Satyaveer	M	Agriculture	
157	Jashveer	M	Agriculture	
<b>Lahal – Rajera Line, Village- Bailley</b>				
158	Rinku	M	Agriculture	
159	Sanjeev	M	Agriculture	
160	Mukesh	M	Agriculture	
161	Geeta Devi w/o Jaso Ram	F	Agriculture/business	
162	Geeta Devi w/o Chaman Singh	F	Agriculture	
163	Jaso Ram	M	Business	
164	Om Prakash	M	Agriculture	
165	Dilip	M	Agriculture	
166	Daulat Ram	M	Service	
167	Chandragupt	M	Service	
<b>Lahal – Rajera Line, Village- Mohal (Manjatha) – Jalodi</b>				
168	Preetam	M	Agriculture	
169	Dhari Ram	M	Contractor	
170	Suresh Kumar	M	Service	
171	Mahendra Bhindu Ram	M	Agriculture	
172	Lambo Devi	F	House wife	
173	Satish	M	Student	
174	Annu Kumari	F	Student	

175	Nisha Devi	F	House wife	
176	Panju Devi	F	Agriculture	
<b>Lahal – Rajera Line, Village- Tangaitha (Manjatha)</b>				
177	Mahendra	M	Agriculture	
178	Atama Ram	M	Agriculture	
179	Shiv Ram	M	Agriculture	
180	Kuldeep	M	Student	
181	Majnu	M	Agriculture	
<b>Lahal – Rajera Line, Village- Kharod</b>				
182	Om Prakash	M	Private Service	
183	Parsem Chand	M	Agriculture	
184	Pradeep	M	Agriculture	
185	Manoj Kumar	M	Agriculture	
186	Shiv Kumar	M	Agriculture	
187	Sukanya Devi	F	Agriculture	
188	Keval	M	Agriculture	
189	Jarmo Ram	M	Agriculture	
190	Ravi	M	Agriculture	
191	Sunil	M	Private Service	
192	Raj Kumar	M	Agriculture	
193	Rakesh	M	Agriculture	
<b>Lahal – Rajera Line, Village- Badheror/Kuther</b>				
194	Prem Lal	M	Agriculture	
195	Kultar Chand	M	Agriculture	
196	Bhala Ram	M	Agriculture	
197	Surendra	M	Agriculture	
198	Gurcharan Singh	M	Service	
199	Prittam Chand	M	Agriculture	
200	Kamala Devi	F	Tea Stall	
201	Jarmo Ram	M	Agriculture	
202	Ravi	M	Agriculture	
203	Sunil	M	Private Service	
204	Raj Kumar	M	Agriculture	
205	Rakesh	M	Agriculture	
<b>Lahal – Rajera Line, Village- Bhatwara</b>				
206	Dharmu	M	Agriculture	
207	Rekha	F	Housewife	
208	Karan Chand	M	PWD service	
209	Satya Prakash	M	Teacher	
210	Subhash	M	Teacher	
211	Roshan Lal	M	Teacher	

212	Nirmala Devi	F	MDM worker	
<b>Lahal – Rajera Line, Village- Malanth Bhatwara Luhanda</b>				
213	Rabo Ram	M	Retired	
214	Bhutia Ram	M	Agriculture	
215	Chaman Ram	M	Unemployed	
216	Prakaram	M	Agriculture	
217	Kehan Singh	M	Agriculture	
218	Ratan Chand	M	Agriculture	
219	Kamal	M	Agriculture	
<b>Lahal – Rajera Line, Village- Barai</b>				
220	Bhagi Ram	M	Business	
221	Kailash Chand	M	Laborer	
222	Vijay Kumar	M	Business	
223	Saino	M	Service	
224	Gyashu	M	Service	
225	Raj Kumar	M	Service	
226	Roshan Lal	M	Service	
<b>Lahal – Rajera Line, Village- Tralla</b>				
227	Khem Raj	M	Agriculture	
228	Piyar Singh	M	Agriculture	
229	Krishna Chand	M	Agriculture	
230	Om Prakash	M	Agriculture	
231	Dharmo	M	Agriculture	
232	Hans Raj	M	Labor	
233	Narendra	M	Service	
234	Madan Lal	M	Labor	
235	Chaman Singh	M	Retired	

## 2. CONSULTATIONS DETAILS

Issues Discussed	People's Views and perception
General Perception about Project	<p>Almost all the villages reported that people are aware about the project. However, people at Barsaini village were hesitant sacrifice their land for this project without adequate compensation. Now the adequate land has been provided and land has been acquired.</p> <p>People in general felt that roads and electricity will improve with the initiation of this project. Furthermore, the villagers of Bagipul, Kotla, Mazra, Karian, Barsaini, Hatkoti, Holi Bhajoli people believe that project will improve the electricity in the village. Similarly the people of Bagipul, at Lahal substation stated that they will provide support if their demands of good compensation and permanent jobs in the project is promised.</p>
Support of local people for proposed project	People at most of the villages unequivocally agreed that they will support the project.
Critical issue and concern by the local people for the project	Majority of people did not mention about any critical issues related to the project. People at Lahal, Bhajoli Holi, Bagipul, Kotla, Hatkoti doubted that the project might reduce the availability of electricity in the village due to

Issues Discussed	People's Views and perception
	export (transmission to the grid) of electricity.
Criteria liked to see during project design, operation stage and construction	Adequate safety measures are needed to be taken during construction and post construction.
Employment potential in the project	Most of the villages want that the project should offer labour jobs during and after the implementation of the project. Moreover, majority of villages perceive that the youths are educated and they will get jobs during construction and after the construction of the project. Similarly, most of the villages opined that they have utility vehicles and the project should use this during and after the implementation of project. The villagers of Thiyara under Chambi substation opined that some of the youths are diploma holders in electric jobs and the project should employ them.
Ethnic Minorities	Projects under Chamba district is declared as tribal area. Zanakpuri under Lahal and Holi bhajoli.
No of shops/commercial establishments	No large scale commercial activities are found in the villages except few small shops in each village. Commercial activities in the form of different types of shops are present in 3 villages. 70 to 100 shops (the maximum number) fall within the Hatkoti village which is having 40 to 50 shops followed by Mazra under Mazrasubstation. Similarly in Kotla village under Kotla substation there are about 25-30 shops at Jeori. Mazra, Hatkoti, Bagipul, and Barsainiare also large villages having 250 to 400 households. In Lahal, Holi, Karianvillage commercial establishments are moderately present and number varies between 10 to 15 shops. All other villages have at least 4 to 10 shops. Holivillage does not have any commercial establishment.
Number of industrial units	In the subproject area, large industries are not present. Very few small scale industrial units and cottage industries are seen. In 9 villages covered there are no industrial units or cottage industries. However, Lahal and Karian have some small scale and cottage industries. In Lahal, there is 1 wool weaving unit, 2 oil refining units, 2 wood cutting units and 1 at Lahal and Hatko furniiture shop. Similarly, in Kotla there is 1 cottage industry making shawls and 3 wood cutting units. Likewise, there are 2 flour mills in Barsaini. In the village Hatkoti, an apple factory is there 5 km away from the village.
Socioeconomic standing: land use, cropping pattern	Invariably agriculture and horticulture are dominant occupation of the subproject area in all the villages. Similarly, agriculture, labour and services are major occupations in the villages. In 10 villages, agriculture is at least one of the major occupations. Similarly, in 9 villages horticulture is one of the main occupations. Likewise in 5 villages, both agriculture and horticulture are major economic activities. Floriculture is one of the occupations of villagers in Banjal. White collar jobs in government and private sectors was a major occupation in 5 villages. In agriculture, wheat and maize are major crops cultivated and followed by rice, vegetables, pulses (like kidney beans) is being cultivated in the villages. The cost of maize is Rs 1500/- per quintal, wheat is Rs. 1500 to Rs.1800/- per quintal and rice is Rs. 1800/- per quintal in the subproject area. Apple, Plum, Pomegranate, Pear, Naspati, Apricot, and Mango are some of the horticultural produce of the area. In the project area, 6 villages have small farmers who had land possession in the range of 5 to 20 Bigha, whereas in 4 villages had big farmers whose average land possession ranged from 70 to 100 Bigha.
Sources of irrigation	Almost all the villages rely on natural resources like rainwater and spring for irrigation. Only 2 of the villages, Pukheri, Hatkoti, have access to canal water for irrigation.

<b>Issues Discussed</b>	<b>People's Views and perception</b>
Access to Forest Land and Use	Bagipul and Hatkoti are the two villages those don't have access to forest in their areas. All other villages have access to forestland and mainly use forest produce for fodder for the animals.
Sources of power supply	All the areas covered during consultation admitted of getting power from the government sources.
Sources of electricity	Similarly, the source of electricity is the government grid for all the areas covered.
Average amount of electricity used by per household	The average unit varies in the range of 5 to 8 units per households per day.
Unit Rate	All the villagers reported that they spend in the range of Rs. 0.70 to Rs. 1.50 only per 1 unit consumption of electricity.
Average total monthly expenditure per household on grid electricity	The average monthly bill varies between the range of Rs. 175/- to Rs. 275/- per month as reported by all the households.
Other non-grid electricity to use in your village and expenditure	Nothing
Source of drinking water	For drinking water, most villages have multiple sources. Majority, about 14, villages use natural water mostly spring water for drinking purpose, besides other sources. Similarly the government supply of IPH water is used by 14 villages. In Lahal, there is a water tank in the village. Similarly, in Hatkoti, Barsaini, and Kotla villages, the villagers also use water from I&PH Tanks for drinking purpose.
Loss of residential / commercial structures, if any due to the project	No loss of structures or buildings anticipated.
Loss of community life like any Market Places or community activities to be affected	Nothing was reported in terms of loss of community property.
Shortage of water for human consumption, irrigation, and other downstream uses	There is no shortage of water for human consumption. However, the villagers of Lahal reported that there is shortage of water for irrigation.
Negative impact on food grain, availability /land use	There is no perceived negative impact on food grain but in Barsaini, Holi, Lahal and Hatkoti the villagers felt that there might be crop related losses during the time of construction of the project.
Will project cause landslides or soil erosion	Majority of the villages covered denied that the project will cause any landslides or soil erosion,
Will project cause widespread imbalance	None reported by all the villages.
Will project cause health and safety issues	Only one village Pukheri feel that the project may cause health problems.
Resettlement and land acquisition	People expect minor land acquisition which can still be managed with proper compensation. HPPTCL pays compensation to land owners as per land acquisition Act
Protected areas	No such protected area has been reported
Health status	There is no evidence of any health-related problems in the sub project area. All villages reported that people are healthy. In 10 villages, a primary health centre is available. In 2 villages, ayurvedic dispensary is also available along with primary health centre. In other villages, a hospital is accessible within a distance of 5 to 19 km. Few villages reported that people are aware of HIV/AIDS and about sexually transmitted diseases.
Will project setting change migration pattern of animals	None reported by all the villages.
Will project site adversely impact the water and soil	None reported by all the villages.

<b>Issues Discussed</b>	<b>People's Views and perception</b>
Educational status	Most of the villages have literacy rate of 85 %. In only 2 villages, the literacy rate is about 75 % to 80 %.
Employment status	Invariably agriculture and horticulture are dominant occupation of the subproject area in all the villages. In 10 villages, agriculture is one of the major occupations. Similarly, in 9 villages, horticulture is one of the main occupations. Majority about 80 % of the population are engaged in agriculture. Likewise, in 5 villages both agriculture and horticulture are major economic activities. White-collar jobs both in government and private sectors are major occupations in 5 villages. In these villages about 25 % of the households are in white collar jobs. In Bagipul, Lahal, Mazra village about 50 % of the households are depending on labour work. In Hatkoti, 20 % of the populations are unemployed.
Migration pattern	All the villages reported of "in" migration. There is no "out" migration.
Type of compensation expected	All the villages expect cash compensation
Perceived benefits from project	Villagers perceive that roads and street light might improve due to the project. Majority villages feel that there will be job opportunities will improve for the people. Similarly, the villagers also perceive that they will get labour jobs during and after implementation of project. Some of the villages feel that utility vehicle will be used during and after the implementation of project.
Perceived loss	Most of the villages fear that they will lose minimum land in case of transmission lines and substantial land in case of substation.
Other organizations active in the area	In all the villages Mahila Mandal (women groups) are present. Few of the villages have Yuvak Mandal (youth groups). There are about 6 organisations.
Village Committee	In all the villages, the decisions are taken by gram Panchayat and Gramsabha held on any critical and community related issues. All the Panchayat members and Sarpanch actively participate to take a decision on any community related issues.
Other issuers	In most villages, people welcomed the project and agreed to cooperate during the implementation of project. Some of the villages demand that power should be available for 24 hours. As discussed the villagers of Chharor are not so receptive of the project because of unforeseen impacts, however, adequate clarification was provided to explain the nature of impact in the project. The villagers of Lahal need primary health care centre and a high school in their village.
Usefulness of consultation	All the villagers admitted that the consultation is useful, and happy as they got an opportunity to share their views before the government officials.
Involvement of people in implementation	All the participants during the consultation admitted that the local people will provide full cooperation and involvement for the implementation of the project. As discussed the villagers of Charor, Barsaini and Hatkoti are against the project.



## ANNEX 5.2 MEETING MINUTE SUMMARIES FROM IP/ST CONSULTATIONS

Details of Consultations	Concerns and Issues
<p><b>Date: 15- 10- 2015</b>  <b>Village: Khani</b>  <b>Attendance: Affected Households and Panchayat</b>  <b>Number of Participants: 14</b></p>	<ul style="list-style-type: none"> <li>➤ Apple orchards will be affected in the surrounding area of the tower footing by retention wall and land landfill. It was clarified that all losses will be compensated</li> <li>➤ For tower footing, the land acquisition is required especially on private land. No land was acquired in the past. This time proper process of land acquisition and compensation package should be followed. HPPTCL has clarified that the land for tower footing will be purchased and compensation will be paid or if agreed, this can be taken on lease as per HPPTCL policy.</li> </ul>
<p><b>Date: 26-10-2015</b>  <b>Village: Kanouta</b>  <b>Attendance: Affected Households and Panchayat</b>  <b>Number of Participants: 8</b></p>	<ul style="list-style-type: none"> <li>➤ According to the local people, the project is very important for the department of HPPTCL but they don not foresee direct benefit for the local people.</li> <li>➤ Acquiring land for the tower and HT line directly has affect on farming land for which adequate compensation is expected.</li> <li>➤ People in fear that high tension line may flow heavy current and lightening during rainy season and may have effect on health and safety. It was clarified that adequate safety measures such as height of the lines etc have been taken in to consideration by the engineering team.</li> <li>➤ Through proposed project, farming land/orchard of apples will be affected badly to which it was clarified that proper compensation will be paid and all the losses will be assessed.</li> </ul>
<p><b>Date: 25/10/15</b>  <b>Village: Lamnouta</b>  <b>Attendance: Affected Households and Panchayat</b>  <b>Number of Participants: 9</b></p>	<ul style="list-style-type: none"> <li>➤ People worried due to proposed transmission line passing through apple orchard. However, it was assured that all the losses will be compensated.</li> <li>➤ People do not foresee any loss of residential/commercial structure.</li> <li>➤ The line should avoid residential area to which it was clarified that no residential area will be affected.</li> </ul>
<p><b>Date: 15/10/15</b>  <b>Village: Garima</b>  <b>Attendance: Affected Households and Panchayat</b></p>	<ul style="list-style-type: none"> <li>➤ People of this village are well aware about of the project as officials visited the village last year and discussed about the transmission line. They are aware about the tower footings mark.</li> </ul>

Details of Consultations	Concerns and Issues
<p><b>Number of Participants: 8</b></p>	<ul style="list-style-type: none"> <li>➤ Full support from local people without any concern or issue but want proper compensation and fruit trees should be avoided.</li> <li>➤ Claim/compensation should be proper as per local market rate.</li> <li>➤ Want employment opportunity in the project. However, it was clarified that some temporary jobs will be generated for the local people during the construction.</li> </ul>
<p><b>Date: 24/10/15</b>  <b>Village: Sahan</b>  <b>Attendance: Affected Households and Panchayat</b>  <b>Number of Participants: 8</b></p>	<ul style="list-style-type: none"> <li>➤ People want the line shall pass through lower side of the hill so that no residential area and farm is affected. It was discussed that the line usually avoids habitat area.</li> <li>➤ Possible loss of crops/fruit tree which is source of income and the same need to be compensated and it was assured that full compensation will be provided by HPPTCL</li> <li>➤ In future, people perceive that no one can build houses along or near the tower.</li> </ul>
<p><b>Date: 16/10/15</b>  <b>Village: Dalli</b>  <b>Attendance: Affected Households and Panchayat</b>  <b>Number of Participants: 8</b></p>	<ul style="list-style-type: none"> <li>➤ People said that they were fully aware about the project prior to the present consultation. They were only aware about the survey as surveyor contact the local people.</li> <li>➤ People requested for no construction activities during crop seasons to which it was clarified that crop season will be avoided.</li> <li>➤ Safety issues are to be given priority and it was assured that all safety measures will be taken.</li> <li>➤ General supports of the people are there with condition of proper compensation for all losses and it was assured that all the losses will be assessed and compensated as per the rules and regulations of government of Himachal Pradesh and HPPTCL.</li> </ul>