

Public Disclosure Authorized



**National Transmission & Despatch  
Company Limited (NTDC) Pakistan**

E4416 V6



Public Disclosure Authorized

**Vol: I**

**SOCIO ECONOMIC PROFILE AND IMPACT SCREENING  
500 KV DASU ISLAMABAD  
TRANSMISSION LINE PROJECT**

Public Disclosure Authorized



Public Disclosure Authorized

**FEBRUARY 2013**

**SUBMITTED BY:  
ENVIRONMENT AND SOCIAL IMPACT CELL (E&SIC) - NTDC**

## Table of Contents

EXECUTIVE SUMMARY	1
1. BACKGROUND, OBJECTIVES AND SCOPE OF WORK	7
1.1 Purpose and Scope	7
1.2 Project Background	7
1.3 Key Features of the Project	9
1.4 Project Construction and Operation	9
1.5 500 KV Dasu –Islamabad Transmission Line	10
1.6 TOR for Social Assessment Study:	10
1.7 Specific Tasks for the Study Team	10
1.7.1 <i>Review the Project Details</i>	10
1.7.2 <i>Review of the Legislative and Regulatory Framework</i>	11
1.7.3 <i>Scoping</i>	11
1.7.4 <i>Analysis of Alternatives</i>	11
1.7.5 <i>Baselines Studies</i>	11
1.7.6 <i>Public/stakeholders' Consultations</i>	12
1.7.7 <i>Identification of Social Impacts of Transmission Lines</i>	12
1.7.8 <i>Mitigation measures</i>	12
1.7.9 <i>Resettlement Plan / Resettlement Policy Framework</i>	13
1.8 Route Alignment Sheets	13
1.9 The Study Team	13
1.10 Structure of the Report	14
2 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK	16
2.1 The IFCs Operational Policies	16
2.2 World Bank Operational Policies	16
2.3 ADBs Social Protection Strategy (SPS) 2009:	27
2.4 Obligations under International Treaties	30
2.5 National Provincial Laws and Regulations	33
2.5.1 <i>Pakistan Environmental Protection Act, 1997</i>	33
2.5.2 <i>Pakistan Environmental Protection Agency Review of Regulations, 2000</i>	34
2.5.3 <i>National and International Environmental Standards</i>	35
2.5.4 <i>Land Acquisition Act, 1894 (LAA)</i>	35
2.5.6 <i>National Resettlement Policy / Ordinance 2004</i>	37
2.5.7 <i>Forest Act, 1927</i>	38
2.5.8 <i>NWFP Hazara Forest Act, 1936</i>	38
2.5.9 <i>Provincial Wildlife Protection Acts</i>	38

<i>2.5.10 Provincial Local Government Ordinances, 2001</i>	38
<i>2.5.11 Antiquity Act, 1975</i>	38
<i>2.5.12 Mines, Oil Fields and Mineral Development Act, 1948</i>	39
<i>2.5.13 Factories Act, 1934</i>	39
<i>2.5.14 Pakistan Explosive Act, 1884</i>	39
<i>2.5.15 Pakistan Penal Code, 1860</i>	39
<b>2.6 Institutional Setup for Environmental Management</b>	39
<i>2.6.1 Environmental and Social Guidelines</i>	40
<i>2.6.2 Environmental Protection Agency's Environmental and Social Guidelines</i>	40
<i>2.6.3 World Bank Environmental and Social Guidelines</i>	40
<b>2.7 Institutions</b>	41
<b>3. DESCRIPTION OF PROPOSED PROJECT</b>	42
<b>3.1 Project Components:</b>	42
<i>3.1.1 Power House Complex</i>	42
<i>3.1.2 Generation Equipment</i>	43
<i>3.1.3 Power Take-off yard and Transmission Lines</i>	44
<i>3.1.4 Transmission Lines</i>	44
<b>3.2 DESCRIPTION OF ROUTE ALIGNMENT SHEET</b>	47
<i>3.2.1 Physical Location of Dasu Hydropower Project</i>	47
<i>3.2.2 Physical Location of the Dasu-Islamabad Transmission Line</i>	47
<i>3.2.3 Altitude</i>	48
<i>3.2.4 Delineation Corridor Of Impact (Coi)</i>	48
<i>3.2.5 Geology</i>	48
<i>3.2.6 Access to Road:</i>	50
<i>3.2.7 Climate</i>	50
<i>3.2.8 Soil Conditions</i>	51
<i>3.2.9 Water Resources</i>	51
<i>3.2.10 Agriculture:</i>	52
<b>3.3 Description of Alternative Route</b>	52
<i>3.3.1 No Action Scenario</i>	53
<i>3.3.2 Alternative Transmission Line</i>	54
<i>3.3.3 Changes within the Proposed Transmission Line</i>	54
<b>4. SOCIO-ECONOMIC PROFILE OF THE CORRIDOR</b>	57
<b>4.1 Area:</b>	57
<b>4.2 Population</b>	57
<b>4.3 Ethnicity and Language:</b>	58

4.4	Human Development Indicators	58
4.5	Poverty and Vulnerability	60
4.6	Literacy and Educational Attainments	62
4.7	Health Coverage	63
4.8	Access to Road	63
4.9	Electricity and Cooking /Heating Fuel.	64
4.10	Gender Equity and Equality:	64
4.11	Rural Economy:	65
5.	<b>PUBLIC CONSULTATIONS</b>	69
5.1	Introduction	69
5.2	Objectives of the Consultations	69
5.3	Methodology:	71
5.4	Number and Level of Participation in Consultations:	72
5.5	Findings of the Consultations	73
5.5.1	<i>Consultation Process:</i>	73
5.5.2	<i>Suggestions/Recommendations</i>	73
6.	<b>ANALYSIS OF SOCIAL IMPACTS</b>	76
6.1	Background for Social Impact Assessment	76
6.1.1	<i>Current Practices:</i>	77
6.1.2	<i>Demand for Operation &amp; Maintenance Period Allowance:</i>	77
6.2	Impact Assessment	77
6.3	<b>SIGNIFICANCE OF IMPACTS</b>	78
6.4	Indigenous People Issue	79
6.5	Socio-Economic and Cultural Environment	79
6.6	Resettlement Impacts:	80
6.6.1	<i>Land Acquisition</i>	80
6.6.2	<i>Crop and Tree Loss</i>	81
6.6.3	<i>Local Communities/Workforce</i>	81
6.6.4	<i>Loss of Income</i>	81
6.6.5	<i>Gender Issues</i>	81
6.6.6	<i>Vulnerable Populations</i>	82
6.6.7	<i>Health and Safety</i>	82
6.6.8	<i>Project Affected Persons</i>	83
6.6.9	<i>Relocation of Public Infrastructure</i>	83
6.7	<b>Menu of Benefit Sharing Options</b>	84
6.7.1	<i>How the Menu Identified:</i>	84

6.7.2	<i>Wish List of Options:</i>	84
6.7.3	<i>Ranking of Options:</i>	84
6.8	<b>Need to Enhance Local Ownership of the Project.</b>	85
	<b>Annexure-A</b>	86
	<b>Annexure-B</b>	98

## **List of Abbreviations**

ADB	Asian Development Bank
AHs	Affected Households
APs	Affected Persons
COs	Community Organizations
COI	Corridor of Impact
DPs	Displaced Persons
ESA	Environmental and Social Assessment
ESIC	Environmental and Social Impact Cell of NTDC
EMP	Environmental management Plan
EA	Executing Agency
EIA	Environmental Impact Assessment
FGDs	Focus Group Discussions
GRC	Grievance Redress Committee
HPPs	Hydropower Projects
HDI	Human Development Index
IMD	Index of Multiple Deprivations
IFCs	International Finance Corporations
IPO	Indigenous Peoples Organization
ISDSs	Integrated Safeguard Data Sheet
IEE	Initial Environmental Examination
IPs	Indigenous Peoples
KKH	Kara Kuram Highway
KPK	Khyber Pakhtun Khawah
LARF	Land Acquisition and Resettlement Framework
LARP	Land Acquisition and Resettlement Plan
LARDDR	Land Acquisition and Resettlement Due Diligence Report
masl	Meters above sea level
NTDC	National Transmission & Dispatch Company
NEQS	National Environmental Quality Standards
NGO	Non Governmental Organizations
OPs	Operational Procedures
PAPs	Project Affected Persons
Pak EPA	Pakistan Environmental Protection Agency
PCN	Project Concept Note
PID	Project Information Document
RoW	Right of Way
RP	Resettlement Plan
RPF	Resettlement Plan Framework
SA	Social Assessment
SRP	Short Resettlement Plan
SPS	Social Protection Strategy
TTL	Task Team Leader
UNFCCC	United Nations Framework on Climate Change
WAPDA	Water and Power Development Authority
WB	World Bank

## **EXECUTIVE SUMMARY**

### **BACKGROUND**

The NTDC is proposing to construct a 500 KV double transmission line from Dasu to Islamabad to dispatch 4941 MW of electricity from two downstream Indus river sources (Dasu and Palal Hydropower projects) into the national grid near Islamabad. The proposed 250 km long double transmission will traverse through 5 districts before joining the national grid Hasan Abdal in Attock district near Islamabad. In terms of environmental and social aspects the construction of transmission line may encounters some of serious issues, including resettlement of residents, restoration of their livelihoods, environmental health and social use of the small corridor of impact (COI). Therefore, to make country's hydropower expansion program successful and ensuring an environmental and social sustainability there is a strong need to minimize the adverse impacts.

The environmental and social assessments are an integral part of the upfront feasibility work that must be presented to potential financiers of the project. The findings on social and environmental safeguards and required mitigation actions are critical for estimating overall project cost and ensuring compliance with World Bank safeguard standards.

The National Transmission and Dispatch Company (NTDC) and the World Bank in November 2012 agreed to that the Environmental and Social Impact Cell (ESIC) of NTDC along with PMC will conduct a short Environment and Social Assessment Study (ESA) of this line. The World Bank will provide financial assistance while the Ministry of Water & Power will be the implementation agency for this project. The World Bank in order to ensure social and environmental safeguards is undertaking series of measures at various levels including this short Environmental and social assessment (ESA) of COI communities' enroute Dasu –Islamabad transmission line.

### **PROJECT PURPOSE AND OBJECTIVES**

The purpose of this Environmental and Social Assessment (ESA) is to credibly address the environmental and social risks of hydropower dispersal from two Hydropower Projects (HPPs) to be constructed on the Indus River by minimizing the impact of the development and ensuring an environmental and socially sustainable development.

The specific objectives of the ESA are;

- a. identify adverse environmental and social impacts associated with Dasu-Islamabad Transmission Line.
- b. Develop an Environmental management Plan (EMP) for the adverse environmental impacts.
- c. Under take Social Assessment (SA) and recommend mitigation measures (as required).

- d. Ensure the ESA report fully complies with the government national laws and regulatory framework and World Bank's safeguard's policies.

The Power planners International Limited back in February 2012 conducted a Feasibility Study for Evaluation of Power from 26 Hydropower Projects in the North and developed Geology Maps for the Route Dasu-Palnas Lines I&II. The maps showing tower spotting from Dasu to Mansehra at 1:25000 m scale. The design section of WAPDA further developed GT Sheet based line route from Battagram to Hasan Abdal, end point of the proposed line. The ESIC team joined the missing link between Palnas and Battagram using the Google map and local wisdom during consultations. The other important secondary sources include the Socioeconomic Baseline and Impact Assessment reports for Dasu and Palnas Hydropower Projects<sup>1</sup>. The information in these reports, were however, limited to the project areas and for Kohistan district only. The major secondary sources to get existing relevant environmental and social information for the entire has been the alignment sheets, the community organization (CO) level data of the NGOs and consultations held with the local community representatives enroute.

This ESA report contains three stand alone documents

1. Volume-1, a detailed Social Assessment (SA) report containing a social alignment sheets, socioeconomic profile of the districts enroute, document specific social safeguards concerns through public consultations and proposed mitigation measures along the entire Dasu –Mansehra-Islamabad T/L route.
2. Volume-2, is a detailed Land Acquisition and Resettlement Framework (LARF) through which the NTDC will mitigate the social impacts during the construction and maintenance phases of the TL.
3. Volume-3, a comprehensive Environmental Assessment (EA) and an Environmental Management Plan (EMP) providing a framework describing how environmental impacts of the Dasu–Mansehra-Islamabad T/L Project to be managed during the construction phase, when the majority of impacts are expected to occur. The Implementation of the EMP will ensure that effective mitigation measures identified in the EA are put into place, data gaps are bridged in and the loan covenants safeguarding the social and environmental issues are complied with. The EA report is submitted as a separate document.

### ***Dasu-Islamabad TL at a Glance***

The Dasu and Palnas hydropower stations combine are designed to generate 4941 MW (Dasu 4320MW and Palnas 621MW) electricity. The World Bank has recently agreed to finance the construction of 250 km long Transmission Line. The 500 Kv TL route will traverses about 50 km in District Kohistan, 58 km in District Battagram, 30 km in Mansehra and 35 km in Abbotabad

---

<sup>1</sup> 1) Dasu Hydropower Project, Socioeconomic Baseline and Impact Assessment Report, Vol.2 by Dasu Hydropower Consultants, November 2012.

and 45 km in Haripur districts before connecting the proposed grid station near Hasan Abdal in Attock district.

From Dasu to Islamabad around 3/4<sup>th</sup> of the TL traverses through the mountainous areas of Kohistan, Battagram, Mansehra and Abbot Abad districts from point 1 to 17 (see fig.1). The red line in fig.1 showing the proposed Transmission line while a thick vertical blue line indicates the altitude of Indus River. The TL in this area will be constructed on a wide range of altitude from 670 to 2745 masl in Kohistan district (1 to 5) , 1219 to 2042 masl in Battagram district (6 to 11) , relatively even altitude between 1100 to 1200 masl in Mansehra district, followed by slightly higher altitude (1250-1000 masl) in Abbot Abad district. The last 1/3<sup>rd</sup> section of the TL will traverse through plain areas of Haripur and Attock districts where the altitude ranges between 500 to 410 masl.

The right of way (RoW) is the strip of land along either side of the centerline. Vegetation within the RoW is not allowed to grow to a height above 3 m and no permanent structures shall be constructed within the RoW. Proper clearance to ground and other structures has to be maintained. The total width of this RoW will be 50 to 60 m (25 to 30 m on both sides).The RoW will not be used for public road access. Any maintenance road access should be on the edge of the RoW so as not to encroach on the design clearances required. Defining the Corridor of Influence (COI) of the Project is an important indicator in determining the magnitude of impact. This study delineate the COI which have been used for this baseline information and impacts assessment.

The Project area falls in very cold, humid climatic zone of Pakistan and is characterized by large seasonal variation. The climate in this region is mainly determined by the altitude and precipitation in the form of rain and snowfall in some areas. The project area is influenced by two rainy seasons: (i) south-eastern monsoon during summer: and (ii) western winds during winter. The lower altitudes generally experience humid to sub-humid sub-tropical conditions, the higher altitudes experience temperate conditions. For detailed climatic information see Part-2 Environmental Assessment Report for Dasu –Islamabad Transmission Line.

### **Analysis of Alternatives:**

The analysis of alternatives presented in this report is based on the sitting of transmission line in terms of its environmental and social impacts and benefits. The analyses includes a) sitting process, based on the description of the selected route; b) alternative routes and the justification for the choice; c) maps showing the corridor of impact, and d) analysis of alternatives is based on two major principles i.e. avoid/minimize involuntary resettlement and the affectees will be compensated or their income will be restored irrespective of their legal status. Three options are discussed in this report i) No Project option; ii) Alternate Routes/Alignments; and iii) change in the Proposed Alternatives. The report finally recommended for the third option.

While proposing alternative within the proposed transmission line, the study team the strategic criteria under consideration was a) total length of the Line and how the length of line can be reduced; b) difficult terrain and high altitudes; c) in the difficult terrain and high altitude the

line should find nearest access to the existing access roads, and finally minimizing the environmental and social impacts.

The study proposing two routes:

**1. Route-A** will be around 250 km long, taking off from Dasu to Pattan, Badakot, Tailos, Banna Allai, Shamdara, Khaki, Darwaza to Hasan Abda. The line will cross through highest altitude of 2950-2040 masl on the mountains with 40% access to existing road network. At least 30% of the route will only be available during summer for construction and maintenance.

**2. Route-B** will be around 230 km long, taking off from Dasu to Pattan, Besham, Thakot, Shamdharra, Khaki, Darwaza to Hasan Abda. The line will cross through highest altitude of 1125-1250 masl on the mountains with over 70% access to existing road network. Route –B will save construction of around 140 towers and enjoy all weather working environment during construction and post operation maintenance.

### **Socio-Economic Profile of the area enroute**

**Population:** Around 95 percent of the entire transmission line will be constructed in the 5 districts of Hazara division of KPK province with total area over 17084 square kilometer, 3.53 million population and density of population 271 persons per sq.km, ranges between highest 448 persons in Abbot Abad to the lowest 66 persons in Kohistan. The average household size in the entire division is around 6.5 persons. The female to 100 male ratio widely varies between 98 in Mansehra to 100 in Abbot Abad and Haripur and 107 in Battagram and 81 in Kohistan.

**Poverty and Vulnerability:** The Human Development Index (HDI) and the Index of Multiple Deprivations (IMD) in Hazara division presents a direct correlation i.e. higher the HDI in the entire unit (division) or a component (district) lower the IMD in the unit or component.

The estimated Human Development Index (HDI) of Hazara division is 0.564<sup>2</sup> which is ranked between medium to low. The districts with more than 0.5 HDI value are Abbot Abad (0.625), Haripur (0.616) and Mansehra (0.569) respectively. The remaining two districts i.e. Battagram (0.432) and Kohistan (0.388) with HDI value less than 0.5 and thus come in the category of “low level human development”. The human development index for health (0.614) is in the medium category as against education (0.491) and income (0.468) in the lower level of human development.

The overall Index of multiple deprivations (IMD) in Hazara division is 42.6 percent with as high as 67.2% in Kohistan and 55.3% in Battagram and relatively low in Abbot Abad (33.9%), Haripur (35.1%) and Mansehra (39.7%) respectively. Highest deprivation is estimated in housing sector where about 48.7 percent population of Hazara division is deprived. The ratio of deprived population in housing is highest in Kohistan (69.08%) as against only 36.22% in Haripur. Health is the second highest deprived sector with 34.9% of the total population is without health facilities. District Kohistan again is the highest deprived district with 62.3%.

---

<sup>2</sup>Indices of Multiple Deprivations and Human Development in Khyber Pakhtunkhwa Province, 2011.

Education sector follow health sector where around 38% of the total population is deprived of health facilities. The corresponding ratio is highest in Kohistan (66.7%) and Battagram (49.1%) districts. On economic indices the situation is somewhat better with 35.9% of the total population is deprived of the economic opportunities.

Poverty is prevalent in the entire COI districts and assuming menacing proportions with the passage of time. The poverty ratio in this region ranges between 42% and 70% in different districts. The lowest ratio of population below poverty line is 42% in Haripur and 51% in Abbotabad. Further in the north the corresponding ratio is 56% in Mansehra and 65% and 70% in Battagram and Kohistan respectively. Poverty in this context perpetuates due to ongoing political instability, uneven distribution of resources, poor human resource development and polarization of power and resources in the hands of a small percentage of population. The unemployment ratio in the COI districts ranges from 28.5% in Mansehra to 30 % in Haripur, 31% in Abbot Abad<sup>3</sup> and 41% in Battagram.

### **Public Consultations**

The ESIC team held a total of 20 consultation sessions in the COI villages with an average of 10 participants in each session and each session held for two to three hours in the well heated Hujra of any local malik or ex-UC Nazim or Naib Nazim. Two ex-members of provincial assembly from Kohistan and one sitting member of provincial assembly KPK were also part of these consultations held in Komila and Badakot in Kohistan and Banna Allai in Battagram. Two major sessions were also held with NGOs –Salik Development Foundation at Dasu and Pak Mission Society at Pattan.

Under the proposed Project, public consultations were carried out in the villages from Dasu to Pathar Garh (near Hasan Abdal) in 5 districts, 10 tehsils and 19 Union Councils. Total 21 consultative meetings including 2 local NGOs were held with 273 participants. Major categories of participants include political representatives, local government councilors, development activists, local jirga members and potential project affected persons. As per the local traditions elders have the right to participate in the decision making process. Although young people were also present in consultations but their role was limited to an observer. Over the span of 250 km at least one meeting was conducted at a distance of 12-15 km.

The domain effect of these consultations has been;

- a. Wide range of qualitative information about the perception, myths, apprehensions and reactions of the local population.
- b. An important outcome of these consultations is identification of opportunities and constraints of the construction and operation of proposed TL as well as the alternatives.
- c. identified types and nature of social safeguard impacts and how the impacts can and should be minimized.
- d. provided guideline for the EA to develop implementation mechanism.

---

<sup>3</sup> SUNGI Development Foundation, Situation Analysis of District Haripur, Abbotabad, Mansehra and Battagram.

- e. developed initial contacts and identified the local community leadership to participate in the grievance redress committee (GRC).

### **Impact Assessment**

The significance of the potential impacts from the construction and operation of the 250 km long 500 Kv double Transmission Line from Dasu to Islamabad, on the physical and social environment in Hazara division is identified and assessed in this section. The Land Acquisition and Resettlement Framework (Annex-1) of this report contains a set of management plans to mitigate project impacts. With a robust LARF in place, the possible negative social impacts of the Dasu-Islamabad TL project can be comprehensively mitigated.

The two parallel running 500 KV lines will be constructed over 250 km length from Dasu to Islamabad. The construction of line will impact on around 3250 hectares of land for the construction of transmission line and almost 50 percent more area for temporary acquisition for access road during construction phase.

The total magnitude of resettlement impact on the 250 km long or 1 km wide COI of the transmission line will be only 0.15 percent of the total area. Based on the overall density of population for the entire region only 0.14 percent (7182 persons or 1100 households) are expected to face some impact during the construction of this transmission line.

The LARF does not impose any restriction on access to, or use of land during and after the construction. The impact on crops and trees will not be more than 10% or more of their productive assets (income generating). Therefore the overall resettlement impact of this subproject is considered minor and non-significant.

# CHAPTER-I

---

## 1. BACKGROUND, OBJECTIVES AND SCOPE OF WORK

### 1.1 Purpose and Scope

The scope of this study is limited to develop a Socio Economic profile and impact Screening of the COI area of the proposed 500 KV double Transmission Line from the Dasu Hydropower Project to Islamabad. Since the construction of Transmission Line is a component of the larger Dasu Hydropower Project, the major permanent involuntary resettlement impacts will occur in Kohistan district of KPK while the other COI districts will face temporary impacts that will be mitigated through compensations.

This report has been prepared to describe and assess the current socioeconomic conditions in the proposed transmission line from Dasu Hydropower Project (the Project) to the ultimate dispersal of power generated from Dasu HPP at proposed grid station at Pathar Garh near Islamabad. The report presents the baseline conditions, and then summarizes the social impact, and finally the approaches and methods designed for mitigating Project impact and risks. The baseline or the benchmark will form the basis for pre- and post-Project comparison and evaluation.

The document also fulfills the requirements of the World Bank Operational Policy 4.12 on involuntary resettlement<sup>4</sup> as well as the Pakistan Land Acquisition Act 1894. The report draws on work prepared under the Project, including additional studies and analyses to improve impact assessment and management of mitigation and social development.

### 1.2 Project Background

The power situation in Pakistan is critical with an estimated shortfall of 6,000 to 7,000 megawatts; long periods of 'load-shedding' are having adverse economic and social impacts across the country. To meet this shortfall, power generation from burning of fossil fuels is being expanded, which causes harm to the environment. Fossil fuels are non-renewable and will run out one day. Burning fossil fuels generates greenhouse gases and relying on them for energy generation is unsustainable. Hence, there is a need to find more renewable and sustainable ways of generating energy. The power crisis Pakistan is facing was avoidable. This proposition is supported by the calculation that Pakistan has the potential for generation of 46,000 megawatts of electricity through water resources alone (almost twice the total current demand) but at present, generation of hydropower is less than 7,000 megawatt.

---

<sup>4</sup>World Bank OP 4.12 – Involuntary Resettlement, December 2004

There are some 13 hydroelectric facilities of varying sizes in Pakistan with installed capacity of 6,627 MW, all run by the Water and Power development Authority (WAPDA). This is far short of the potential endowed capacity of over 54,000 MW, most of which is located in Khyber Pakhtunkhwa (KP) and the Gilgit-Baltistan. Failure to realize this potential and use indigenous power sources increases Pakistan's dependence on expensive imported fossil fuels. The major hydropower stations in Pakistan and their installed capacity are given in Table 1.1. Increasing sedimentation in the reservoirs is slowly reducing the installed capacity of these hydropower stations.

Table 1.1: Pakistan's Hydropower Capacity<sup>5</sup>

Hydropower station	Installed capacity
Tarbela Dam	3,478 MW
Chasma	184 MW
Ghazi-Barotha	1,450 MW
Mangla Dam	1,000 MW
Warsak dam	243 MW
Various small hydro stations (combined)	89 MW

To meet country's energy requirements Pakistan has extensive portfolio of hydropower projects which are either under preparations or under implementation in Indus Basin including Diamer-Bhasha Dam, Kurrum Tangi Dam, Munda Dam, Kohala Dam, Golen-Gol hydropower, Dasu hydropower, Bunji hydropower, Neelum Jhelum hydropower, and Palas hydropower etc. and needs large investment for development of such multi-purpose water infrastructure projects. Furthermore, these multi-purpose water infrastructure development projects encounter risk of serious problems, due to environmental and social aspects which include resettlement of residents, restoration of their livelihoods, adverse impacts on downstream river flows, environmental health and social use of the river. Therefore, for making country's hydropower expansion program successful, there is a strong need to credibly address the environmental and social risks of storage and hydropower development projects in Indus Basin in order to minimize the impact of the development and ensuring an environmental and social sustainable development.

In the year 2000, the Pakistan Water and Power Development Authority (WAPDA) adopted a 25-year "Vision 2025 Program" to improve hydropower generation capacity to support the growing needs of the country for agro-industrial development. The Vision 2025 Program consists of short-term projects (2001 to 2006), medium-term projects (2006 to 2011) and long-term projects (2011 to 2025). Dasu Hydropower Project is included in the medium-term projects of the program. Construction of the Project will be one of the most important achievements of the Vision 2025 Program.

<sup>5</sup> Michael Kugelman and Robert Hathaway, eds., *Running on Empty: Pakistan's Water Crisis*, (Woodrow Wilson International Centre for Scholars), p. 76.

### **1.3 Key Features of the Project**

The Dasu HPP has two components i.e. 1) The Dasu Hydropower Project, and 2) 500 KV 250 km long double transmission line from Dasu to Islamabad and construction of a new 500 KV Grid Station.

1.3.1 The Project is proposed on the Indus River in Kohistan District in KPK. It is a run-of-the river Project, involving the construction of a dam on the Indus River, including associated hydraulic and electrical infrastructure. The dam axis is about 8 km upstream of Dasu, the headquarter of Kohistan District, which is about 350 km north of Islamabad, on the Karakorum Highway (KKH), the road link between Pakistan and China.

The Project layout plan includes the following permanent physical components to be constructed:

- (i) Main dam structure (Roller Compacted Concrete type) with a height of 242 m above foundation level (maximum height);
- (ii) Two diversion tunnels on the left bank (average 1.2 km length);
- (iii) Spillway having eight bays with nine low-level outlets;
- (iv) Four power-tunnels with underground powerhouse (left bank of Indus) with 12 turbines;
- (v) Four tail race tunnels; and
- (vi) Two coffer dams (one upstream and one downstream of the dam).

As a run-of-the river Project, the reservoir extension will reach maximally 74 km upstream of the dam flooding an area of 23.85 sq km at a maximum flood level of 957 m above mean sea level (amsl). The average discharge at the dam site will be 2,068 cubic meters per second (cumecs). The water reservoir upstream of the dam will require the relocation of 68 km of the existing KKH on the left bank of the Indus. The access road to the dam site will follow the current route from KKH at Komila along the Seo road and contractor facilities will be on the right bank near Kaigah.

1.3.2 A 500 KV around 250 km long double transmission line from Dasu Hydropower Project to Islamabad will be constructed through high and medium altitude mountains and hinterlands of four Hazara districts before connecting to a new grid station at Pathar Garh, some 30-35 km outskirts of Islamabad.

### **1.4 Project Construction and Operation**

According to the detailed design plan, the Dasu Hydropower Project will be completed in four phases. Phase I will comprise of construction of the dam and installation of three of the planned twelve turbines. Phases II, III, and IV will involve installation of three more turbines each. For construction purposes, the four phases have been grouped into two stages. Under Stage 1 (Phases I and II), Phase I is planned to commence operation in 2019 and Phase II in 2022. Stage 2 includes Phases III and IV. Timings of the start of operations of phases II and IV are still undecided; tentatively, Phase III is anticipated to commence in 2031 and Phase IV by 2037. Once completed, the installed capacity of the

Project would be 4,320 MW. The total Project investment is estimated at US\$7 billion over a 20-year period.

Although the detailed design and cost estimation for the 500 KV transmission line and grid station, has not yet been started but it is assumed that the detailed design and construction will be completed well before the Hydropower project commences operation in 2019.

### **1.5 500 KV Dasu –Islamabad Transmission Line**

The Dasu and Palas hydropower stations combine are designed to generate 4941 MW (Dasu 4320MW and Palas 621MW) electricity. The World Bank has recently agreed to finance the construction of 250 km long Transmission Line. The 500 Kv TL route will traverse about 50 km in District Kohistan, 58 km in District Battagram, 30 km in Mansehra and 35 km in Abbotabad and 45 km in Haripur districts before connecting the proposed grid station near Hasan Abdal in Attock district.

The World Bank will provide financial assistance while the Ministry of Water & Power will be the implementation agency for this project. The World Bank in order to ensure social and environmental safeguards is undertaking series of measures at various levels including this short Environmental and social assessment (ESA) of COI communities' enroute Dasu –Islamabad transmission line.

### **1.6 TOR for Social Assessment Study:**

The Terms of reference stipulated following three major objectives of this study i.e.

- a. Identify adverse social impacts associated with transmission line.
- b. Undertake Social Assessment (SA) and recommend mitigation measures (as required).
- c. Ensure that the SA report comply with the governing national laws & regulatory framework on environment and Bank's safeguard's policies (given at Annex-1).

### **1.7 Specific Tasks for the Study Team**

To achieve above three objectives the NTDC Team carry out the following activities:

#### **1.7.1 Review the Project Details**

- Review the proposed project and its geographic, ecological, social, and temporal context, including any offsite investments that may be required.
- Identify need for any resettlement plan or indigenous people's development plan.
- Define the Impact Area and the "Corridor of Influence (COI)" of the project on the basis of the project scope and extent.

### **1.7.2 Review of the Legislative and Regulatory Framework**

- Review the policy, legal, and administrative framework within which this SA is being carried out.
- Review the national and World Bank/IFIs environmental and social safeguard requirements of the project.
- Indicate relevant international social and environmental safeguards related agreements to which the country is a party.
- Specifically review the World Bank OPs and their triggering status for the Project.

### **1.7.3 Scoping**

Scoping is the first step of the ESA and is essentially the process of identifying the significant issues relating to the proposed action and of determining the scope of the issues to be addressed in the ESA. The key tasks include:

- Carry out reconnaissance field visit(s);
- Hold initial stakeholder consultations;
- Prepare work plan for the subsequent ESA tasks; and
- Prepare the Scoping Statement compiling the process and outcome of the scoping tasks described above.
- Review the definition of Area of Impact and the Corridor of Influence and revise (if necessary).

### **1.7.4 Analysis of Alternatives**

Analyze alternative sitting of transmission lines in terms of their environmental and social impacts and benefits. The analyses should include

- The sitting process, based on the description of the selected route.
- The alternative routes and the justification for the choice.
- Identify and prepare maps showing the corridor of impact (CoI).
- The analysis of alternatives should also avoid/minimize involuntary resettlement (including involuntary acquisition of land and impact on livelihood of PAP). Furthermore, affectees will be compensated / income restored irrespective of their legal status.

### **1.7.5 Baselines Studies**

The consultants will review the available literature, visit the project area and consult NTDC and other line departments to establish the baseline conditions in terms of physical and biological environment and socio-economic conditions in the project area.

The consultants will prepare maps of suitable scale to highlight the socio-environment resources of the project area. The baseline will also identify the

project affectees with anticipated impacts and include an income/asset survey; identify the application of social safeguards particularly OP 4.12; OP 4.10.

#### **1.7.6 Public/stakeholders' Consultations**

Public consultations at certain intervals of the TL route to;

- a. Identify project stakeholders and hold consultations with them to delineate the appropriate boundaries of the environmental and social assessment
- b. Screen potential adverse environmental and social issues.
- c. Receive feedback on the expected social issues related to the project impact and suggested mitigation measures.

The stakeholders will include the primary stakeholder (those directly affected by the intervention) and secondary stakeholders (those indirectly affected and those who have an interest in the project).

The consultants will document the proceedings of the consultations along with the list of participants and photographs.

#### **1.7.7 Identification of Social Impacts of Transmission Lines**

The consultants will identify potential environmental and social issues of transmission lines in terms of their nature, magnitude, extent and location, and timing and duration.

- a. These impacts may relate to the project design stage, construction stage and/or the project operation and decommissioning stage.
- b. Based on impact prediction methods and result of public consultations, the consultants will screen adverse environmental impacts for inclusion in mitigation measures and environmental management plan.
- c. The same process will be followed for identification of social impacts and the public consultants will provide feedback of impacts from stakeholder's viewpoint.

#### **1.7.8 Mitigation measures**

- a. Propose appropriate mitigation measures for the adverse environmental and social impacts. These measures could base on exploring the ways to achieve the project objectives by alternative ways, proposing changes in the project design (size of the ROW/ sitting of facilities), through improved monitoring, and management practices (storage of materials, labor camps, waste disposal, disposal of construction debris etc.) and / or through monetary compensation (resettlement).
- b. Social mitigation measures will follow from the alternative design implication ( size, row, sitting of grid stations and towers, location of high voltage transmission lines particularly through crowded urban areas,

- need for land, project's impact on land prices, if any etc.) and stakeholders consultation.
- c. Social screening will provide input for the Social Assessment that may include an Entitlement Framework and the justification for a Resettlement Plan (RP).

#### 1.7.9 Resettlement Plan / Resettlement Policy Framework

- a. The social screening and Social Assessment will identify the need for a Resettlement Plan / Resettlement Policy Framework (if social safeguards, particularly OP 4.12 on involuntary Resettlement, are triggered, through involuntary land acquisition and impact on livelihood of affectees).
- b. Mitigation measures may include an entitlement framework, (as a part of the Social Assessment) or a Resettlement Plan / Resettlement Policy Framework.
- c. The requirements for any particular mitigation measure will be informed by the Social Assessment.
- d. Social costs / benefits of the project will be reflected in the project budget as project costs / benefits.

### 1.8 Route Alignment Sheets

The alignment sheets are Important because

- They provide site specific environmental and social information at a 1:40,000 scale along the entire RoW of the Dasu-Mansehra transmission line.
- The alignment sheets provide a new analysis of environmental and social concerns along the COI.
- They also provide site specific management measures that are linked to environmental and social protection
- They are intended to be a living document to add more information as available and a tool to be used by the Construction Contractor to minimize site specific environmental and social impacts during the design and construction phase.

### 1.9 The Study Team

The following team members participated in the preparation of the document.

<b>Name</b>	<b>Designation / Position</b>
<b>Environmental and Social Team</b>	
Rana Muhammad Sarwar	Team Leader, Safeguards Specialist, PMC Consultant
Mahr Khalid Mehmood	Manager Environment and Social Impact Cell, NTDC

Engr. Muhammad Tariq	Deputy Manager Environment (E&SIC-NTDC)
Muhammad Shahid Saleem	Assistant Manager Environment (E&SIC-NTDC)
Samina Bilal	Assistant Manager Social Safeguards (E&SIC-NTDC)
Mir Ghazanfar Afzal	Senior Environmental Engineer, PMC Consultant
<b>Technical Team</b>	
Manzoor Ahmad	Additional Manager (EHV-1), Islamabad
Abdul Razzaq	Surveyor

## 1.10 Structure of the Report

The outcome of the Environmental and Social Assessment Study for Dasu-Islamabad Transmission Line is presented in the following three stand alone Volumes;

**Vol-1 Socio Economic Profile and Impact Screening**

**Vol-2 Land Acquisition and Resettlement Framework**

**Vol-3 Environmental Assessment and Review Framework**

This report ***Socio Economic Profile and Impact Screening*** comprises of six chapters and an executive summary.

**Chapter 1, Introduction Background and Objectives;** provides an introduction of the Project, scope of work for socio economic profile and impact screening, process, methodology and composition of study team etc.

**Chapter 2, Policy, Legal and Administrative Framework;** provides an overview of the policy framework and local, provincial, national and international laws, protocols, best practices and covenants that applies to the proposed project. The project is bound to comply with all national and provincial legislation relating to social and environmental safeguards in Pakistan, and to obtain all the requisite regulatory/statuary clearances from the respective national or international institutions. It also deals with the requirements of international donor agencies and other international protocols for protection of biodiversity for which Pakistan has firm commitment.

**Chapter 3, Description of the Project;** gives a rather detailed account of the Project particularly emphasizing those project components which are of importance in relation with environmental and social aspects.

**Chapter 4, Socio Economic profile of COI Districts;** provides detailed information about the socio economic and cultural settings of the project area, geology, climate, flora, fauna, water resources, socioeconomic conditions, poverty and vulnerability etc. A detailed analysis of alternatives also provided in this chapter to minimize the impacts of this transmission line on the recipient communities.

**Chapter 5, Stakeholders and Public Consultations;** deals with the outcome of the consultation carried out with the local communities, knowledgeable people, public

representatives, etc. It discusses the concern of various tiers of the people and provides an outline how these have been addressed within the framework of the project.

**Chapter 6, Analysis of Social Impacts;** identifies the potential impacts due to the implementation of two parallel running 500 kV transmission lines, power stations as well as grid station on the physical, biological and social environment of the Project Area.

**Annexes;**

**Annex-1:** Detailed Description of Consultations held with the Community and NGOs.

**Annex-2:** Detailed Description of Consultations held with Institutions.

# CHAPTER-2

## 2 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

This Chapter discusses the policy, legal and administrative framework and institutional set-up relevant to the proposed project. This Chapter also includes guidelines from the national agencies and International Financial Corporation's (IFCs) and other international organizations. The proposed transmission line mainly falls within KPK province and around 10 km in Punjab. Comprehensive legislation on the environment, in the form of an act of parliament is relatively new in Pakistan. The following institutions and statutes are relevant to this Transmission line project.

### 2.1 The IFCs Operational Policies

The mandate of NTDC is to construct 220 kV and 500 KV transmission lines and grid stations to dispatch electricity for the distribution companies. Three major IFC –World Bank, Asian Development Bank (ADB) and JICA besides the Government of Pakistan are current major stakeholders of the NTDC GS/TL projects. The transmission line and grid station related operational policies of the World Bank, ADB, Government of Pakistan and project related Provincial Governments are discussed in the following sections.

### 2.2 World Bank Operational Policies

Relevance of the WB Operational Policies (OPs) with respect to the environmental and social issues associated with the proposed project is tabulated below.

World Bank Operational Policy	Relevance to the Project
OP-4.01 Environmental Assessment	Relevant
OP-4.12 Involuntary Resettlement	Relevant, SA will determine the type and magnitude of involuntary resettlement.
OP-4.36 Forestry	Relevant to the project
OP-4.04 Natural Habitat	Relevant, the EA will determine the impact of the project on Natural Habitat
OP-4.09 Pest Management	Unlikely to be relevant
OP-4.37 Safety of Dams	Relevant
OP-7.50 Projects in International Waters	Unlikely to be relevant
OP 4.11 Cultural Property	Relevant, SA will determine the magnitude of impact
OP 4.10 Indigenous People	Relevant, SA will determine the magnitude of impact.
OP 7.60 Projects in Disputed Area	Unlikely to be relevant

### 2.2.1 Environmental Assessment (OP 4.01)

Environmental Assessment (EA) is one of the major requisite for the projects proposed for World Bank financing and the bank ensures that the projects are environmentally sound and sustainable. The OP 4.01 defines the process of the ESA and various types of the ESA instruments<sup>6</sup>.

The proposed project consists of activities which are likely to have environmental and social consequences, such as:

- Damage to assets (such as crops),
- Deterioration of air quality
- Water contamination and consumption
- Damage to top soil, land erosion
- Safety hazard.

The OP 4.01 entails the executing agencies to carry out ESA in accordance with this OP and identify the extent and consequences of these impacts, and develop an EMP for their mitigation,

### 2.2.2 Involuntary Resettlement (OP 4.12)

1. The involuntary resettlement under development projects, if unmitigated, often gives rise to severe economic, social, and environmental risks: production systems are dismantled; people face impoverishment when their productive assets or income sources are lost; people are relocated to environments where their productive skills may be less applicable and the competition for resources greater; community institutions and social networks are weakened; kin groups are dispersed; and cultural identity, traditional authority, and the potential for mutual help are diminished or lost. This policy includes safeguards to address and mitigate these impoverishment risks.

#### **Policy Objectives**

2. The overall objectives of the Bank's policy on involuntary resettlement are the following:
  - (a) Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs.
  - (b) Where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits. Displaced persons should be meaningfully consulted and

---

<sup>6</sup>Excerpt from WB OP 4.12. WB Operational Manual, January 1999.

should have opportunities to participate in planning and implementing resettlement programs.

- (c) Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.

### **Impact: Covered**

3. This policy covers direct economic and social impacts that both result from Bank-assisted investment projects, and are caused by

- (a) the involuntary taking of land resulting in
- (i) relocation or loss of shelter;
  - (ii) lost of assets or access to assets; or
  - (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location; or

(b) the involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons.

4. This policy applies to all components of the project that result in involuntary resettlement, regardless of the source of financing. It also applies to other activities resulting in involuntary resettlement, which in the judgment of the Bank, are

- (a) directly and significantly related to the Bank-assisted project,
- (b) necessary to achieve its objectives as set forth in the project documents; and
- (c) carried out, or planned to be carried out, contemporaneously with the project.

5. Requests for guidance on the application and scope of this policy should be addressed to the Resettlement Committee

### **Required Measures**

6. The borrower prepares a Resettlement Plan (RP) or a Resettlement Policy Framework (RPF) that covers the following:

(a) Includes measures to ensure that the displaced persons (DPs)<sup>7</sup> are (i) informed about their options and rights pertaining to resettlement; (ii) Consulted on, offered choices among, and provided with technically and economically feasible resettlement alternatives; and (iii) Provided prompt and effective compensation at full replacement cost for losses of assets attributable directly to the project.

---

<sup>7</sup> The Dasu-Islamabad Transmission Line subproject will not displace any person.

(b) If the impacts include physical relocation, the RP or RPF includes measures to ensure that the displaced persons are (i) provided assistance (such as moving allowances) during relocation; and (ii) provided with residential housing, or housing sites, or, as required, agricultural sites and other factors are at least equivalent to the advantages of the old site.

(c) Where necessary the RP or RPF include measures to ensure that DPs are (i) offered support after displacement, (ii) provided with development assistance such as land preparation, credit facilities, training, or job opportunities.

7. In projects involving involuntary restriction of access to legally designated parks and protected areas. In such cases, the borrower prepares a process framework acceptable to the Bank, describing the participatory process by which (a) specific components of the project will be prepared and implemented; (b) the criteria for eligibility of displaced persons will be determined; (c) measures to assist the displaced persons in their efforts to improve their livelihoods, and (d) potential conflicts involving displaced persons will be resolved.

8. Particular attention is paid to the needs of vulnerable groups among those displaced, especially those below the poverty line, the landless, the elderly, women and children, indigenous peoples, ethnic minorities, or other displaced persons who may not be protected through national land compensation legislation.

9. The implementation of resettlement activities is linked to the implementation of the investment component of the project. The measures to be taken include: a) provision of compensation and of other assistance required for relocation, prior to displacement, and preparation and provision of resettlement sites with adequate facilities, where required, and b) assistance to the DPs is implemented in accordance with the plan of action.

10. Payment of cash compensation for lost assets may be appropriate where (a) livelihoods are land-based but the land taken for the project is a small fraction of the affected asset and the residual is economically viable; (b) active markets for land, housing, and labor exist, displaced persons use such markets, and there is sufficient supply of land and housing; or (c) livelihoods are not land-based. Cash compensation levels should be sufficient to replace the lost land and other assets at full replacement cost in local markets.

### **Eligibility for Benefits**

11. The borrower carries out a census to identify the persons who will be affected by the project to determine who will be eligible for assistance, and to discourage inflow of people ineligible for assistance. The borrower also develops a procedure, satisfactory to the Bank, for establishing the criteria by which displaced persons will be deemed eligible for compensation and other resettlement assistance. The procedure includes provisions for meaningful consultations with affected persons and communities, local authorities,

and, as appropriate, nongovernmental organizations (NGOs), and it specifies grievance mechanisms.

12. *Criteria for Eligibility.* Displaced persons may be classified in one of the following three groups:(a) those who have formal legal rights to land, (b) those who do not have formal legal rights to land at the time the census begins but have a claim to such land or assets and, c) those who have no recognizable legal right or claim to the land they are occupying.

13. Persons covered under above eligibility criteria are provided compensation for the land they lose, and other assistance.

### **Resettlement Planning, Implementation, and Monitoring**

14. Depending on the type of project different planning instruments will be used;

- (a) aResettlement Plan or abbreviated Resettlement Plan.
- (b) aResettlement Policy Framework , and
- (c) aProcess Framework.

15 The borrower is responsible for preparing, implementing, and monitoring a resettlement plan, a resettlement policy framework, or a process framework. The resettlement instrument presents a strategy for achieving the objectives of the policy and covers all aspects of the proposed resettlement. Borrower commitment to, and capacity for, undertaking successful resettlement is a key determinant of Bank involvement in a project.

16. Resettlement planning includes

- a) Early screening, scoping of key issues, the choice of resettlement instrument, and the information required to prepare the resettlement component or subcomponent.
- b) The scope and level of detail of the resettlement instruments vary with the magnitude and complexity of resettlement.
- c) The NTDC will prepare the resettlement plan after the detail design of the Transmission line.
- d) In preparing the resettlement component, the NTDC will draw on appropriate social, technical, and legal expertise and on relevant community-based organizations and NGOs.

### **Resettlement Instruments**

17. The borrowers has to prepare three major Resettlement Instruments

- 1. *Resettlement Plan*
- 2. *Resettlement Policy Framework*
- 3. *Process Framework*

### **Assistance to the Borrower**

18. In furtherance of the objectives of this policy, the Bank may at a borrower's request support the borrower and other concerned entities by providing
- (a) Assistance to assess and strengthen resettlement policies, strategies, legal frameworks, and specific plans at a country, regional, or sectoral level;
  - (b) Financing of technical assistance to strengthen the capacities of agencies responsible for resettlement, or of affected people to participate more effectively in resettlement operations;
  - (c) Financing of technical assistance for developing resettlement policies, strategies, and specific plans, and for implementation, monitoring, and evaluation of resettlement activities; and
  - (d) Financing of the investment costs of resettlement.

Since the design details for this Dasu-Islamabad TL project, are not known at this stage, it cannot be decided whether the project will require a full Land Acquisition and Resettlement plan (LARP) or a Short Resettlement Plan (SRP).

The analysis of line alignment sheets, stakeholder's analysis and the consultations suggest the need for compensations for the damages to the crops and trees. That will require the preparation of SRP based on the detailed design of the project.

The proposed line will certainly be connected to a Grid station before dispersal in to distribution network. The NTDC is currently searching for an appropriate site for the new Grid Station. The process will require preparation of full Land Acquisition and Resettlement Plan.

#### **2.2.3 Natural Habitat (OP 4.04)**

The operational procedure 4.04 originally prepared in 2001 and was revised in September 2004 to reflect the term "development policy lending". The conservation of natural habitats, like other measures that protect and enhance the environment, is essential for long-term sustainable development. The Bank therefore supports the protection, maintenance, and rehabilitation of natural habitats and their functions in its economic sector work, project financing and policy dialogue<sup>8</sup>. The bank supports and expects the borrowers to apply, a precautionary approach to natural resources management to ensure opportunities for environmentally sustainable development.

As the proposed TL will be traversing through the snow capped mountains, natural water bodies, valleys', forests and cultivated areas along the Tarbela lake and agriculture areas, this OP will certainly trigger. The borrower (NTDC) during the construction and operation and maintenance period will apply a precautionary

---

<sup>8</sup>Excerpt from WB OP 4.04. WB Operational Manual, June 2001.

approach to natural resources management to ensure opportunities for environmentally sustainable development.

#### *2.2.4 Pest Management (OP 4.09)*

In assisting borrowers to manage pests that affect either agriculture or public health, the WB through this OP supports a strategy that promotes the use of biological or environmental control methods and reduces reliance on synthetic chemical pesticides. The borrowers in the Bank financed projects are requested to address pest management issues in the context of projects environmental assessment.

For the proposed TL project this OP is not triggered since the project does not involve usage of pesticides. The NTDC will not allow at any stage of the project to use chemical herbicides to clear vegetation under the transmission lines.

#### *2.2.5 Safety of Dams (OP 4.37)*

Dam safety is a matter of significant importance for the existing, under construction or planned Dams. The safe operation of dams has significant social, economic and environmental relevance.

The Safety on Dams, *Operational Policy (OP 4.37)* requires that experienced and competent professionals design and supervise construction, and that the borrower adopts and implements dam safety measures through the project cycle. The policy also applies to existing dams where they influence the performance of a project. In this case, a dam safety assessment should be carried out and necessary additional dam safety measures implemented.

OP 4.37 recommends, where appropriate, that Bank staff discuss with the borrowers any measures necessary to strengthen the institutional, legislative, and regulatory frameworks for dam safety programs in those countries.

The Policy seeks to ensure that appropriate measures are taken and sufficient resources provided for the safety of dams the WB finances. However this OP is not relevant since the proposed project does not involve construction of dams.

#### *2.2.6 Projects on International Waterways (OP 7.50)*

**Projects on International Waterways** may affect the relations between the World Bank and its borrowers, and between riparian states. Therefore, the Bank attaches great importance to the riparian's making appropriate agreements or arrangements for the entire waterway, or parts thereof, and stands ready to assist in this regard.

In the absence of such agreements or arrangements, the Bank requires, as a general rule, that the prospective borrower notifies the other riparian of the project. The Policy lays down detailed procedures for the notification requirement, including the role of the

Bank in affecting the notification, period of reply and the procedures in case there is an objection by one of the riparian to the project.

This OP defines the procedure to be followed for projects the WB finances that are located on any water body that forms a boundary between, or flows through two or more states. However, the proposed project does not involve any works on such waterways; hence this OP is not triggered.

### **2.2.7 Cultural Property (OP 4.11)**

The physical cultural resources are those movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources are important as sources of valuable scientific and historical information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices.

The objective of Cultural Property (OP 4.11) is to avoid or mitigate adverse impacts on physical cultural resources from development projects. The impacts on physical cultural resources resulting from project activities, including mitigating measures, may not contravene either the borrower's national legislation or its obligations under relevant international environmental treaties and agreements.

In accordance with the Bank's EA requirements the borrowers;

- a. identifies the physical cultural resources likely to be affected by the project and assesses and assesses the project's potential impacts on these resources.
- b. During the EA, if the borrower finds that the project is likely to have adverse impacts on physical cultural resources, the borrower identifies appropriate measures for avoiding or mitigating these impacts as part of the EA process.
- c. hold consultations with the relevant project-affected groups, concerned government authorities, and relevant NGOs in documenting the presence and significance of physical cultural resources, assessing potential impacts, and exploring avoidance and mitigation options.
- d. Develop a physical cultural resources management plan, consistent with the country's overall policy framework and national legislation and takes into account institutional capabilities with regard to physical cultural resources.
- e. Disclosure the findings on negative impacts and PCRMs of the EA.

The World Bank's general policy regarding cultural properties is to assist in their preservation, and to seek to avoid their elimination. The specific aspects of the policy are given below<sup>9</sup>.

- The Bank normally declines to finance projects that will significantly damage nonreplicable cultural property, and will assist only those projects that are sited or designed so as to prevent such damage.
- The Bank will assist in the protection and enhancement of cultural properties encountered in Bank-financed projects, rather than leaving that protection to chance. In some cases, the project is best relocated in order that sites and structures can be preserved, studied, and restored intact in situ. In other cases, structures can be relocated, preserved, studied, and restored on alternate sites. Often, scientific study, selective salvage, and museum preservation before destruction is all that is necessary.
- Most such projects should include the training and strengthening of institutions entrusted with safeguarding a nation's cultural patrimony. Such activities should be directly included in the scope of the project, rather than being postponed for some possible future action, and the costs are to be internalized in computing overall project costs.
- Deviations from this policy may be justified only where expected project benefits are great, and the loss of or damage to cultural property is judged by competent authorities to be unavoidable, minor, or otherwise acceptable. Specific details of the justification should be discussed in project documents.
- This policy pertains to any project in which the Bank is involved, irrespective of whether the Bank is itself financing the part of the project that may affect cultural property.
- The existence of any archeological, cultural, historical or religious significance in or near the COI is identified in the environmental report of this project.

### 2.2.8 *Indigenous People (OP 4.10)*

The OP 4.10 triggers for all investment projects in which Indigenous Peoples are present in, or have collective attachment to, the project area. The OP requires to hold *Free, Prior, and Informed Consultations with* affected communities about the proposed project throughout the project cycle, taking into consideration the following;

- "free, prior, and informed consultation" is consultation that occurs freely and voluntarily, without any external manipulation, interference, or coercion, for which the parties consulted have prior access to information on the intent and

---

<sup>9</sup>Excerpt from the OPN 11.03. WB Operational Manual, September 1986

scope of the proposed project in a culturally appropriate manner, form, and language

- consultation approaches recognize existing Indigenous Peoples Organizations (IPOs), including councils of elders, headmen, and tribal leaders, and pay special attention to women, youth, and the elderly
- the consultation process starts early, since decision making among Indigenous Peoples may be an iterative process, and there is a need for adequate lead time to fully understand and incorporate concerns and recommendations of Indigenous Peoples into the project design; and
- record of the consultation process is maintained as part of the project files.

### **Stages of Indigenous Peoples Plan**

#### **a. Screening:**

At this early stage of project cycle, the task team leader (TTL) is required to initiate a process to determine whether Indigenous Peoples are present in, or have collective attachment to, the project area. In doing so, the TTL seeks technical advice from qualified social scientists and hold consultations with the social and cultural groups in the project area. If adequate information is not available, the TTL will hold direct consultations with the Indigenous Peoples who would be affected by the proposed project

#### **b. Consultation with the Borrower.**

If the screening indicates that Indigenous Peoples are present in, or have collective attachment to, the project area, the TTL shall;

- informs the borrower that the Indigenous Peoples policy applies to the project and brings the provisions OP 4.10 to the borrower's attention;
- discusses with the borrower its policies and institutional and legal arrangements for Indigenous Peoples;
- reaches agreement with the borrower on how the policy will be implemented under the project; and discusses any technical assistance to be provided to the borrower

#### **c. Documentation, Review, Clearance and Disclosure.**

The TT summarizes in the Project Concept Note (PCN) and Project Information Document (PID) the results of the screening and the agreements reached with the borrower to comply with policy requirements, and notes in the Integrated Safeguards Data Sheet (ISDS) that is triggered. The TTL seeks comments on and clearance of the PCN, PID, and ISDS from the Regional unit responsible for safeguards.

For purposes of this policy, the term “Indigenous Peoples” is used in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees of self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;

- collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
- an indigenous language, often different from the official language of the country or region.

The OP also defines the process to be followed if the project affects the indigenous people. The ESA of the project will identify the presence of indigenous people, if any, at or near the proposed project sites.

**Social Assessment Finding:** The task team leader (TTL) during the social screening of the Dasu-Islamabad TL project initiated a process to determine whether Indigenous Peoples are present in, or have collective attachment to, the project area. In doing so, the Task Team Leader;

- a. Sought technical advice from qualified social scientists from KPK.
- b. Held consultations with the social and cultural groups in the project area.
- c. raised question in all the consultations held with the anticipated APs throughout the COI

A clear consensus emerged from these consultations that “the majority population in Hazara division is Pathan speaking different dialects of Pushto language, are essentially Muslim by faith with clear alignment to different sects. Their social and cultural roots are well entrenched in the local tribal traditions. Not a single tribal unit or any branch claim or posses itself a “distinct, vulnerable, social and cultural group”. The distinct agro-ecological and climatic conditions never attracted mass settlement from others regions of the country rather a massive seasonal or permanent outmigration from Hazara to other regions.

The consultations also find some visible traces of “collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories”. And that emerging gradually with the pace of development/exploring the hydropower potential from this region. This needs to be addressed properly through the benefit sharing initiatives.

The Hazara society is quite independent in its customary cultural, economic, social, or political institutions and rejects any threat perception from any other dominant society and culture. There is no endangered indigenous language. Besides Urdu the national

languages other languages Pushto, shina, gojri, hindko and many other languages are spoken across and within the tribes.

Thus the Indigenous Peoples OP 10.4 for this TL project will not trigger either in its “generic” or contextual terms.

### *2.2.9 Projects in Disputed Areas (OP 7.60)*

Projects in disputed areas may raise a number of delicate problems affecting relations not only between the Bank and its member countries, but also between the borrower and one or more neighboring countries. In order not to prejudice the position of either the Bank or the countries concerned, any dispute over an area in which a proposed project is located is dealt with at the earliest possible stage.

The Bank may proceed with a project in a disputed area if the governments concerned agree that, pending the settlement of the dispute, the project proposed for country A should go forward without prejudice to the claims of country B.

The Hazara division as neither a whole from Kohistan to Haripur nor any waterways that will be used for power generation and that power dispatched through this proposed project falls in any disputed territory. Hence during implementation and operation of the proposed project the project in Disputed Areas (OP-7.60) will not trigger.

### **2.3 ADB's Social Protection Strategy (SPS) 2009:**

The NTDC for its power enhancement program signed a ten year (2007-2017) signed a Multi-Tranche Financing facility (MFF) agreement with the Asian Development Bank. For implementing the environmental and social safeguards the ADB and NTDC agreed on a Land Acquisition and Resettlement Framework (LARF) based on the ADB social and environment guidelines. The LARF is a living document applicable to work with all IFCs. (LARF is attached as annex). The MFF loan covenants require the borrower to implement ADB's Social Protection Strategy (SPS).

Following table provides review of ADB –SPS Involuntary Resettlement Principles, Pakistan Land Acquisition Act and gap filling measures that are currently applicable in NTDC projects.

**Objectives:** 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.

**Scope and Triggers:** 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.

### **SPS & Pakistan Land Acquisition Act Gap Filling Measures**

<b>S#</b>	<b>ADB Safeguard Policy Principles</b>	<b>Pakistan's Land Acquisition &amp; Telegraph Acts</b>	<b>ADB SPS Involuntary Resettlement Principle Gap filling Measures</b>
1	<p>Screen the project early on to identify past, present, and future involuntary resettlement impacts and risks.</p> <p>Determine the scope of resettlement planning through a survey and/or census of displaced persons, including a gender analysis, specifically related to resettlement impacts and risks.</p>	No equivalent requirements.	Screened and categorized. Scope defined, social assessment and gender analysis undertaken.
2	<p>Carry out meaningful consultations with affected persons, host communities, and concerned nongovernment organizations. Inform all displaced persons of their entitlements and resettlement options. Ensure their participation in planning, implementation, and monitoring and evaluation of resettlement programs. Pay particular attention to the needs of vulnerable groups, especially those below the poverty line, the landless, the elderly, women and children, and Indigenous Peoples, and those without legal title to land, and ensure their participation in consultations. Establish a grievance redress mechanism to receive and facilitate resolution of the affected persons' concerns. Support the social and cultural institutions of displaced persons and their host population. Where involuntary resettlement impacts and risks are highly complex and sensitive, compensation and resettlement decisions should be preceded by a social preparation phase.</p>	Land Acquisition Collector (LAC) or District Judge (in case of the Telegraph act) are the final authorities to decide disputes and address complaints regarding quantification and assessment of compensation for the affected lands and other assets.	<p>Complaints and grievances are resolved informally through project grievance redress mechanisms</p> <p>Consultations conducted, vulnerable groups identified and supported as relevant</p>
3	<p>Improve, or at least restore, the livelihoods of all displaced persons through (i) land-based resettlement strategies when affected livelihoods are land based where possible or cash compensation at replacement value for land when the loss of land does not undermine livelihoods, (ii) prompt replacement of assets with access to assets of equal or higher value, (iii) prompt compensation at full replacement cost for assets that cannot be restored, and (iv) additional revenues and services through benefit sharing schemes where possible.</p>	No equivalent requirements.	<p>Livelihoods restoration is required and allowances are provided.</p> <p>Provided as relevant.</p>
4	<p>Provide physically and economically displaced persons with needed assistance, including the following: (i) if there is relocation, secured tenure to</p>	No equivalent requirements.	Support provided commensurate with impacts

	relocation land, better housing at resettlement sites with comparable access to employment and production opportunities, integration of resettled persons economically and socially into their host communities, and extension of project benefits to host communities; (ii) transitional support and development assistance, such as land development, credit facilities, training, or employment opportunities; and (iii) civic infrastructure and community services, as required.		
5	Improve the standards of living of the displaced poor and other vulnerable groups, including women, to at least national minimum standards. In rural areas provide them with legal and affordable access to land and resources, and in urban areas provide them with appropriate income sources and legal and affordable access to adequate housing.	No additional support to vulnerable households	Vulnerable households identified and support provided
6	Develop procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement to ensure that those people who enter into negotiated settlements will maintain the same or better income and livelihood status.	Equivalent, negotiation responds to displaced persons requested price but no clear procedure.	Procedures put in place.
7	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.	Land compensation only for titled landowners or holders of customary rights.	Non-title holders are provided with resettlement and rehabilitation support. Provide with compensation for non-land assets.
8	Prepare 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.	No resettlement Plans prepared	Plans prepared and disclosed
9	Disclose a draft resettlement plan, including documentation of the consultation process in a timely manner, before Project appraisal, in an accessible place and a form and language (s) understandable to affected persons and other stakeholders. Disclose the final resettlement plan and its updates to affected persons and other stakeholders.	No plans prepared.	Plans prepared and disclosed
10	Conceive and execute involuntary resettlement as part of a development project or program. Include the full costs of resettlement in the presentation of project's costs and benefits. For a project with significant involuntary resettlement impacts, consider implementing the involuntary resettlement component of the project as a stand-alone operation.	No equivalent requirement	Addressed as relevant.
11	Pay compensation and provide other resettlement entitlements before physical or economic displacement.  Implement the resettlement plan under close supervision throughout project implementation.	No equivalent requirement The Telegraph act (TA) provides that land for tower construction or under a transmission line is not to be acquired or compensated as long	Compensation payments paid before damages occur. Implementation monitored and reported. Based on ADB policy all land impacts are to be compensated. The same will happen in the case of rural/agricultural land

		as the land's permanent productive potential is not affected. Under the TA therefore only temporary impacts on crops are compensated.	when the land under a tower is no longer usable or access is restricted.
12	Monitor and assess resettlement outcomes, their impacts on the standards of living of displaced persons, and whether the objectives of the resettlement plan have been achieved by taking into account the baseline conditions and the results of resettlement monitoring. Disclose monitoring reports.	Monitoring reports not required	Monitoring reports prepared and disclosed

## 2.4 Obligations under International Treaties

Pakistan is signatory of several Multilateral Environmental Agreements (MEAs), including:

### 2.4.1 Basel Convention 1992:

The Convention on the control of transboundary movements of hazardous wastes and their disposal entered into force in May 1992 and as of January 2011, there were 175 parties to the convention including Pakistan. The proposed project may not trigger this convention.

### 2.4.2 Ramsar Convention 1971:

The convention on Biological Diversity and Wetlands was held in Ramsar Iran in 1971. The Convention on Wetlands called the "Ramsar Convention" is an intergovernmental treaty that embodies the commitments of its member countries to maintain the ecological character of their Wetlands of International Importance and to plan for the "wise use", or sustainable use, of all of the wetlands in their territories. Pakistan is signatory and maintaining several Ramsar sites. The proposed project may not trigger this convention. Unlike the other global environmental conventions, Ramsar is not affiliated with the United Nations system of MEAs but it works very closely with the other MEAs and is a full partner among the "biodiversity-related cluster" of treaties and agreements.

### 2.4.3 Convention on International Trade in Endangered Species (CITES) 1973:

An international agreement on International Trade in Endangered Species of Wild Fauna and Flora, adopted in March 1973 to regulate worldwide commercial trade in wild animal and plant species. The goal of CITES is to ensure that international trade does not threaten the survival of any species. Since 1973 the number of state parties to the convention has grown to more than 170. There is a likelihood of triggering this convention. For discussion these issues see Environmental Assessment Report of this project.

#### **2.4.4 UN Framework Convention on Climate Change (UNFCCC) 1992 and Kyoto Protocol 1995.**

In 1992, countries joined an international treaty, the United Nations Framework Convention on Climate Change, to cooperatively consider what they could do to limit average global temperature increases and the resulting climate change, and to cope with whatever impacts were, by then, inevitable. By 1995, countries realized that emission reductions provisions in the Convention were inadequate. They launched negotiations to strengthen the global response to climate change, and, two years later, adopted the Kyoto Protocol.

The Kyoto Protocol legally binds developed countries to emission reduction targets. The Protocol's first commitment period started in 2008 and ended in 2012. The second commitment period began on 1 January 2013 and will end in 2020.

There are now 195 Parties to the Convention and 191 Parties to the Kyoto Protocol. The UNFCCC Secretariat supports all institutions involved in the international climate change negotiations, particularly the Conference of the Parties (COP), the Conference of the Parties serving as the meeting of the Parties (CMP), the subsidiary bodies (which advise the COP/CMP), and the COP/CMP Bureau (which deals mainly with procedural and organizational issues arising from the COP/CMP and also has technical functions). For a brief depiction of how these various bodies are related to one another.

#### **2.4.5 Montreal Protocol 1987:**

The Montreal Protocol on Substances that Deplete the Ozone Layer was adopted in 1987 as an international treaty to eliminate the production and consumption of ozone-depleting chemicals. A subsequent amendment created the Multilateral Fund for the Implementation of the Montreal Protocol, becoming the first of the multilateral environmental agreements to establish a financial mechanism for implementation.

The World Bank has developed a strong partnership with the Multilateral Fund (MLF) since its establishment in 1990. The Bank continues to assist the MLF to preserve human health and the environment by protecting the earth's stratospheric ozone layer.

The Montreal Protocol's ultimate success will be based on having created an enduring global commitment to stop producing and consuming substances that deplete the ozone layer. This commitment must be maintained across boundaries and by all peoples of the world. The sustainability of our efforts requires empowered partners for technical innovation, policy implementation and project management.

#### **2.4.6 UN Convention to Combat Desertification 1994**

The UN Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, *Particularly in Africa*, the Convention's full name, was adopted on 17 June 1994 and opened for signature in Paris in October that year. As at 14

January 1997, the Convention (CCD) had been ratified by 60 countries. It entered into force on 26 December 1996.

The stated objective of the Convention is "to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa ...." To achieve this goal, the Convention calls for action involving international cooperation and a partnership approach. It focuses on improving land productivity, rehabilitation of land, conservation and sustainable management of land and water resources. Such action should also prevent the long-term consequences of desertification, including mass migration, species loss, climate change and the need for emergency assistance to populations in crisis. "The Convention's entry into force offers an opportunity for the international community to turn its attention to the most impoverished peoples of the planet."

The Convention establishes a framework for national, sub regional and regional programs to counter the degradation of drylands, including semi-arid grasslands and deserts. It calls on developed countries to:

- Actively support the efforts of affected developing country parties to the Convention;
- Provide "substantial financial resources" to assist affected developing country parties;
- Promote the mobilization of adequate, timely and predictable financial resources from all official and private sources; and
- Promote and facilitate access to appropriate technology, knowledge and know-how.

Desertification-affected countries are obliged to:

- Give priority to combating desertification and drought by allocating adequate resources in accordance with capabilities;
- Establish strategies to combat desertification and drought;
- Address the underlying causes of the problem and pay special attention to relevant socio-economic factors;
- Promote awareness and the participation of local population in action to combat desertification and drought; and
- Provide an enabling environment through appropriate laws, policies and action programs.

The Convention also aims to improve the efficiency of desertification aid to developing countries by coordinating donors' efforts and encouraging affected countries to set up national action plans to combat desertification with grass-roots participation, particularly with people who live off the land. Convention framers believed that local people, who are often poor, know more than anyone else about the fragile ecosystems in which they live and work and are thus in the best position to contribute to the fight against desertification.

A "bottom-up" approach to action is stressed by the Convention. A significant component of this approach is the protection, promotion and use of relevant traditional and local technology, knowledge, know-how and practices. It has become evident that

desertification cannot be effectively addressed unless the people most affected are fully involved and committed. Although the idea of participation has been accepted for many years, it has often been attached to old "top-down" ways of doing things. People could participate, but key decisions were made elsewhere, often alienating those they intended to serve. By incorporating a "bottom-up" orientation in international law, the Convention breaks new ground and enhances the chances for success through partnership. It specifically underlines the important role played by women. It also stresses the special role of non-governmental organizations, particularly in ensuring implementation.

#### ***2.4.7 Stockholm Convention on Persistent Organic Pollutants (POPs) 2004***

Stockholm Convention on Persistent Organic Pollutants is an international environmental treaty, signed in 2001 and effective from May 2004, that aims to eliminate or restrict the production and use of persistent organic pollutants (POPs). The proposed project has direct relevance to the convention. The Convention addresses the eradication of the persistent organic pollutants (POPs). The transformer oil used to contain poly-chlorinated biphenyl (PCB), which is one of the OPs. Presently its usage has been abandoned.

#### ***2.4.8 Implementation of Above MEAs***

These MEAs impose requirements and restrictions of varying degrees upon the member countries. In order to meet the objectives of these agreements the implementation mechanism for most of these MEAs in Pakistan is weak due to lack of an institutional setup. The GoP is planning to set up a National MEA Secretariat under the Ministry of Environment in Islamabad. The Secretariat will handle and coordinate activities, and develop action plans for each MEA vis-à-vis the country's obligation under these agreements.

### **2.5 National Provincial Laws and Regulations**

Pakistan's statute books contain a number of laws concerned with the regulation and control of the environmental and social aspects. However, the enactment of comprehensive legislation on the environment, in the form of an act of parliament, is a relatively new phenomenon. Most of the existing laws on environmental and social issues have been enforced over an extended period of time, and are context-specific. The laws relevant to the developmental projects are briefly reviewed below.

#### ***2.5.1 Pakistan Environmental Protection Act, 1997***

The Pakistan Environmental Protection Act, 1997 (the Act) is the basic legislative tool empowering the government to frame regulations for the protection of the environment (*the 'environment' has been defined in the Act as:*

- (a) air, water and land;*
- (b) all layers of the atmosphere;*
- (c) all organic and inorganic matter and living organisms;*
- (d) the ecosystem and ecological relationships;*
- (e) buildings, structures, roads, facilities and works;*
- (f) all social and economic conditions affecting community life; and*
- (g) interrelationships between any of the factors specified in sub-clauses 'a' to 'f'.*

The Act is applicable to a broad range of issues and extends to socioeconomic aspects, land acquisition, air, water, soil, marine and noise pollution, as well as the handling of hazardous waste. The discharge or emission of any effluent, waste, air pollutant or noise in an amount, concentration or level in excess of the National Environmental Quality Standards (NEQS) specified by the Pakistan Environmental Protection Agency (Pak-EPA) has been prohibited under the Act, and penalties have been prescribed for those contravening the provisions of the Act. The powers of the federal and provincial Environmental Protection Agencies (EPAs), established under the Pakistan Environmental Protection Ordinance 1983, have also been considerably enhanced under this legislation and they have been given the power to conduct inquiries into possible breaches of environmental law either of their own accord, or upon the registration of a complaint.

The requirement for environmental assessment is laid out in Section 12 (1) of the Act. Under this section, no project involving construction activities or any change in the physical environment can be undertaken unless an initial environmental examination (IEE) or an environmental impact assessment (EIA) is conducted, and approval is received from the federal or relevant provincial EPA. The Section 12 (6) of the Act states that this provision is applicable only to such categories of projects as may be prescribed. The categories are defined in the Pakistan Environmental Protection Agency Review of IEE and EIA Regulations, 2000 and are discussed in Section 2.5.2 below. The requirement of conducting an environmental assessment of the proposed project emanates from this Act.

### **2.5.2 *Pakistan Environmental Protection Agency Review of Regulations, 2000***

The Pakistan Environmental Protection Agency Review of IEE and EIA Regulations, 2000 (the 'Regulations'), developed by the Pak-EPA under the powers conferred upon it by the Act, provide the necessary details on preparation, submission and review of the initial environmental examination (IEE) and the EIA. Categorization of projects for IEE and EIA is one of the main components of the Regulations. Projects have been classified on the basis of expected degree of adverse environmental impacts. Project types listed in Schedule I are designated as potentially less damaging to the environment, and those listed in Schedule II as having potentially serious adverse effects. Schedule I projects require an IEE to be conducted, provided they are not located in environmentally sensitive areas. For the Schedule II projects, conducting an EIA is necessary. The proposed project falls under the Schedule II of the Regulations; hence an EIA has to be conducted for it.

### 2.5.3 *National and International Environmental Standards*

#### **I. National Standard:**

The National Environmental Quality Standards (NEQS), promulgated under the PEPA 1997, specify the following standards<sup>10</sup>:

- Maximum allowable concentration of pollutants (16 parameters) in gaseous emissions from industrial sources,
- For power plants operating on oil and coal:
  - Maximum allowable emission of sulfur dioxide,
  - Maximum allowable increment in concentration of sulfur dioxide in ambient air,
  - Maximum allowable concentration of nitrogen oxides in ambient air, and
  - Maximum allowable emission of nitrogen oxide for steam generators as function of heat input.
- Maximum allowable concentration of pollutants (32 parameters) in municipal and liquid industrial effluents discharged to inland waters, sewage treatment and sea (three separate set of numbers).
- Selected NEQS for liquid effluents discharged to inland waters, gaseous emission from industrial sources and emissions from motor vehicles are provided in Exhibits 2.1, 2.2 and 2.3, respectively. These standards will be applicable to the gaseous emissions and liquid effluents discharged to the environment from the proposed project.

#### **II. International Standard:**

The NEQS do not cover the ambient air quality or water quality standards. The international standards for ambient air quality and drinking water quality are presented in Exhibits 2.4 and 2.5. For noise, the NEQS are limited to the vehicular noise. For noise generated by other sources, the WB standards are usually applied. The allowable noise limits per these standards are 55 dB(A) for daytime and 45 dB(A) for nighttime, measured at the receptor.

### 2.5.4 *Land Acquisition Act, 1894 (LAA)*

The Land Acquisition Act (LAA) of 1894 amended from time to time has been the defacto policy governing land acquisition and compensation in the country. The LAA is the most commonly used law for acquisition of land and other properties for development projects. It comprises of 55 sections pertaining to area notifications and surveys, acquisition, compensation and apportionment awards and disputes resolution, penalties and exemptions.

---

<sup>10</sup> Superseded by the Pakistan environmental Protection Act, 1997

WAPDA has been acquiring land for the grid stations under the provisions of this Act. However, for the proposed project, the grid station sites will be procured directly from the owners, after paying the mutually agreed price. And in case some parts of the land required for the proposed project is acquired under this Act, the Urgency/Emergency Clause (Section 17) will not be used, in the absence of an urgency or emergency.

The LAA has been variously interpreted by local governments, and some province has augmented the LAA by issuing provincial legislations. The LAA and its Implementation Rules require that following an impacts assessment/valuation effort, land and crops are compensated in cash at market rate to titled landowners and registered land tenants/users, respectively. The LAA mandates land valuation on the latest three years average registered land sale rates, though, in several recent cases the median rate over the past year, or even the current rates, have been applied. Due to widespread land under-valuation by the Revenue Department, current market rates are now frequently used with an added 15% Compulsory Acquisition Surcharge as provided in the LAA.

Based on the LAA, only legal owners and tenants registered with the Land Revenue Department or possessing formal lease agreements, are eligible for compensation or livelihood support. The rights of the non-titled are however addressed under the 1986 Punjab Jinnah Abadis for Non-proprietors in Rural Areas Act which recognize to squatters the right to receive rehabilitation in form of a replacement plot. It is to be noted that this right has been sometimes extended in practice to include some form of rehabilitation in cash or in forms different from land. Projects such as the Chotiari Dam, Ghazi Barotha Hydropower, and National Highways Improvement, have awarded compensation and assistance to unregistered tenants and other forms of AH (sharecroppers/squatters).

The LAA does not automatically mandate for specific rehabilitation/ assistance provisions benefiting the poor, vulnerable groups, or severely affected AHs, nor does it automatically provide for rehabilitation of income/livelihood losses or resettlement costs. This however it is often done in many projects in form of ad hoc arrangements based on negotiations between a specific EA and the AHs.

As noted above, there are exceptions to the rule and the law is broadly interpreted at provincial level depending on operational requirements, local needs, and socio-economic circumstances. The above is also influenced by the fact that an amendment of the LAA has been considered necessary by the Ministry of Environment. Accordingly, a National Resettlement Policy and a Resettlement Ordinance have been drafted to broaden LAA provisions and current practices so as to widen the scope of eligibility, but both these documents are still awaiting Government approval for implementation.

#### *2.5.5 Telegraph Act, 1885 (TA)*

In case of impacts caused by the poles and towers for public facilities and transmission lines land acquisition is not regulated by the LAA but instead by the Telegraph Act, 1885

(amended in 1975). The NTDC has in the past been adopting TA the construction of transmission lines only. Where as for the construction of grid stations it is going through the LAA.

The Telegraph Act (TA) was conceived in the British era for telegraphic poles and then was passed to post-independence Pakistan with a broader application covering also electric poles and towers. The original provision of this law was that the land occupied by telegraph poles was not to be compensated (only crops destroyed during the erection of the pole were compensated). This was based on the logic that a pole, covering only a negligible land area, does not cause substantial impacts to land users. This however is no longer applicable with the 220 or 500 KV transmission lines where the average area of impact is 900 sq. meters.

The Telegraph Act (section 11) confers powers to NTDC to enter private lands and (section 10) construct/maintain electricity towers and transmission lines without the need to acquire the land affected and paying compensation for it. However sub-section 10 (d), provides that the NTDC is required to avoid causing unnecessary damages to the affected land and associated assets. Finally section 16 provides that if any such damage occurs (i.e. damages to crops, irrigation facilities, and land quality or land income) the project proponent has to provide just compensation for the damages caused.

The PEPCO and eight DISCOs agreed to apply the Telegraph Act liberally by: (i) properly informing the affected people through written notices and onsite public meetings; (ii) compensating at market rates all the lands occupied by towers in urban areas, or replacing the broad-based conventional towers by narrow-based tubular poles to minimize impact on land; (iii) by avoiding land impacts in rural areas through the use of towers with sufficient vertical clearance to allow the continuation of unrestricted farming and animal grazing; and, (iv) if the construction of such towers is impossible, by compensating the land occupied by tower bases also in rural areas. In addition, the DISCOs will compensate by default all the crops, trees and other assets expected to be affected by the three TL construction phases: (i) construction of tower bases; (ii) tower erection; and (iii) stringing of power cables.

#### **2.5.6 National Resettlement Policy / Ordinance 2004**

The Ministry of Environment, Local Government and Rural Development formulated a draft policy in 2004 on involuntary resettlement with technical assistance from ADB. The policy aims to compensate for the loss of income to those who suffer loss of communal property including common assets, productive assets, structures, other fixed assets, income and employment, loss of community networks and services, pasture, water rights, public infrastructure like mosques, shrines, schools and graveyards.

The government has also developed a document entitled "*Project Implementation and Resettlement of the Affected Persons Ordinance, 2002*", later referred to as the "*Resettlement Ordinance*", for enactment by provincial and local governments, after incorporating local requirements. The Ordinance, being a new law, shall be

supplementary to the LAA as well as other laws of Pakistan, and wherever applicable under this policy. However, if necessary, appropriate amendments to the LAA 1894 will also be proposed to facilitate the application of the Resettlement Ordinance. There has not been much progress on the enactment of the Resettlement Ordinance; hence this is not relevant for the proposed project.

#### **2.5.7 Forest Act, 1927**

The Act authorizes Provincial Forest Departments to establish forest reserves and protected forests. The Act prohibits any person to set fire in the forest, quarries stone, removes any forest-produce or cause any damage to the forest by cutting trees or clearing up area for cultivation or any other purpose.

#### **2.5.8 NWFP Hazara Forest Act, 1936**

In general this act bears similar laws and regulations for the Reserved and Protected Forests as that in the Forest Act of 1927. However, in addition to the above it regulates the privately/community owned forests, viz., Guzara Forest, which account for 53% of the total forested area in NWFP as against 7% Reserved Forest and 40% Protected Forest.

#### **2.5.9 Provincial Wildlife Protection Acts**

Provincial Wildlife (Protection, Preservation, Conservation and Management) Acts, Ordinances and Rules (NWFP 1976) In addition to empowering provincial wildlife departments to establish game reserves, parks, and wildlife sanctuaries, the acts and rules regulate the hunting and disturbance of wildlife. While reviewing the IEE or EIA, the provincial EPA may consult the provincial wildlife department in case the project has an impact on wildlife. The EPA may require the NHA to coordinate the implementation and monitoring of project impacts with the provincial wildlife department.

#### **2.5.10 Provincial Local Government Ordinances, 2001**

These ordinances were issued under the devolution process and define the roles of the district governments. These ordinances also address the land use, conservation of natural vegetation, air, water and land pollution, disposal of solid waste and wastewater effluents, as well as matters relating to public health.

#### **2.5.11 Antiquity Act, 1975**

The Antiquities Act of 1975 ensures the protection of cultural resources in Pakistan. The Act is designed to protect 'antiquities' from destruction, theft, negligence, unlawful excavation, trade and export. Antiquities have been defined in the Act as ancient products of human activity, historical sites, or sites of anthropological or cultural interest, national monuments, etc. The law prohibits new construction in the proximity of a

protected antiquity and empowers the Government of Pakistan to prohibit excavation in any area that may contain articles of archeological significance.

Under this Act, the project proponents are obligated to:

- Ensure that no activity is undertaken in the proximity of a protected antiquity,
- If during the course of the project an archeological discovery is made, it should be reported to the Department of Archeology, Government of Pakistan.

#### ***2.5.12 Mines, Oil Fields and Mineral Development Act, 1948***

This legislation provides procedures for quarrying and mining of construction material from state-owned as well as private land. These procedures will have to be followed during the proposed project.

#### ***2.5.13 Factories Act, 1934***

The clauses relevant to the MEPCO's proposed project are those that address the health, safety and welfare of the workers, disposal of solid waste and effluents, and damage to private and public property. The Act also provides regulations for handling and disposing toxic and hazardous substances. The Pakistan Environmental Protection Act of 1997(discussed above), supersedes parts of this Act pertaining to environment and environmental degradation.

#### ***2.5.14 Pakistan Explosive Act, 1884***

This Act provides regulations for the handling, transportation and use of explosives during quarrying, blasting and other purposes. The transmission line tower installation may need blasting at rocky/mountainous areas, thus these regulations will be applicable for the proposed project.

#### ***2.5.15 Pakistan Penal Code, 1860***

The Code deals with the offences where public or private property or human lives are affected due to intentional or accidental misconduct of an individual or organization. The Code also addresses control of noise, noxious emissions and disposal of effluents.

Most of the environmental aspects of the Code have been superseded by the Pakistan Environmental Protection Act, 1997.

## **2.6 Institutional Setup for Environmental Management**

The apex environmental body in the country is the Pakistan Environmental Protection Council (PEPC), which is presided over by the Chief Executive of the Country. Other bodies include the Pakistan Environmental Protection Agency (Pak-EPA), provincial EPAs (for four provinces, AJK and Northern Areas), and environmental tribunals.

The EPAs were first established under the 1983 Environmental Protection Ordinance; the PEPA 1997 further strengthened their powers. The EPAs have been empowered to receive and review the environmental assessment reports (IEEs and EIAs) of the proposed projects, and provide their approval (or otherwise). All of the components of the proposed projects would be located in Punjab and KPK Provinces. Hence this ESA report will be sent to the respective EPAs for review.

### ***2.6.1 Environmental and Social Guidelines***

Three sets of guidelines, the Pak-EPA's guidelines, World Bank Environmental Guidelines and ABDs Social Protection Strategy Principles are reviewed here. These guidelines and principles address the environmental as well as social aspects of the energy enhancement projects.

### ***2.6.2 Environmental Protection Agency's Environmental and Social Guidelines***

The Federal EPA has prepared a set of guidelines for conducting environmental assessments. The guidelines derive from much of the existing work done by international donor agencies and NGOs. The package of regulations, of which the guidelines form a part, includes the PEPA 1997 and the NEQS. These guidelines are listed below.

- Guidelines for the Preparation and Review of Environmental Reports,
- Guidelines for Public Consultation,
- Guidelines for Sensitive and Critical Areas,
- Sectoral Guidelines.

It is stated in the Pakistan Environmental Protection Agency Review of IEE and EIA Regulations, 2000 that the EIA or IEE must be prepared, to the extent practicable, in accordance with the Pakistan Environmental Protection Agency Environmental Guidelines.

### ***2.6.3 World Bank Environmental and Social Guidelines***

The principal World Bank publications that contain environmental and social guidelines are listed below.

- Pollution Prevention and Abatement Handbook 1998: Towards Cleaner Production.
- Environmental Assessment Sourcebook, Volume I: Policies, Procedures, and Cross-Sectoral Issues.
- Social Analysis Sourcebook.
- WB environmental and social safeguard policies.

## **2.7 Institutions**

The key institutions responsible for the establishment and implementation of environmental policy in Pakistan are:

- A. Local Government (District, Tehsil and Union Council)
- B. Ministry of Environment (KPK and Punjab)
- C. Department of Agriculture (KPK and Punjab)
- D. Wild Life Department (KPK and Punjab)
- E. Forest Department
- F. Hazara Forest Division
- G. National Highway Authority
- H. Irrigation and Power Department (KPK )
- I. Environmental Protection Agency (KPK and Punjab<sup>11</sup>)

---

<sup>11</sup> The role of EPA – Punjab will trigger for the proposed Grid station at Hasan Abdal.

# CHAPTER -3

## 3. DESCRIPTION OF PROPOSED PROJECT

### 3.1 Project Components:

The proposed Project is essentially a linear T/Ls Project with some components which are of non-linear nature such as Power Station and Grid Stations, etc. The proposed Project comprises following major components:

- Power House Complex
- Transmission line
- Grid Station

#### 3.1.1 Power House Complex

Dasu powerhouse will be located near village Seo, about 15km upstream to the Dasu Komila as shown in Fig 3.1 The powerhouse complex comprises three major underground caverns, the powerhouse cavern (PH cavern), transformer/GIS cavern (TR cavern) and tailrace surge chambers. The PH cavern accommodates twelve 360 MW generating units. The TR cavern houses main step-up transformers and gas-insulated switchgears (GISs) for all units. The surge chambers are four large cylindrical caverns, one surge chamber serves for three turbine units.

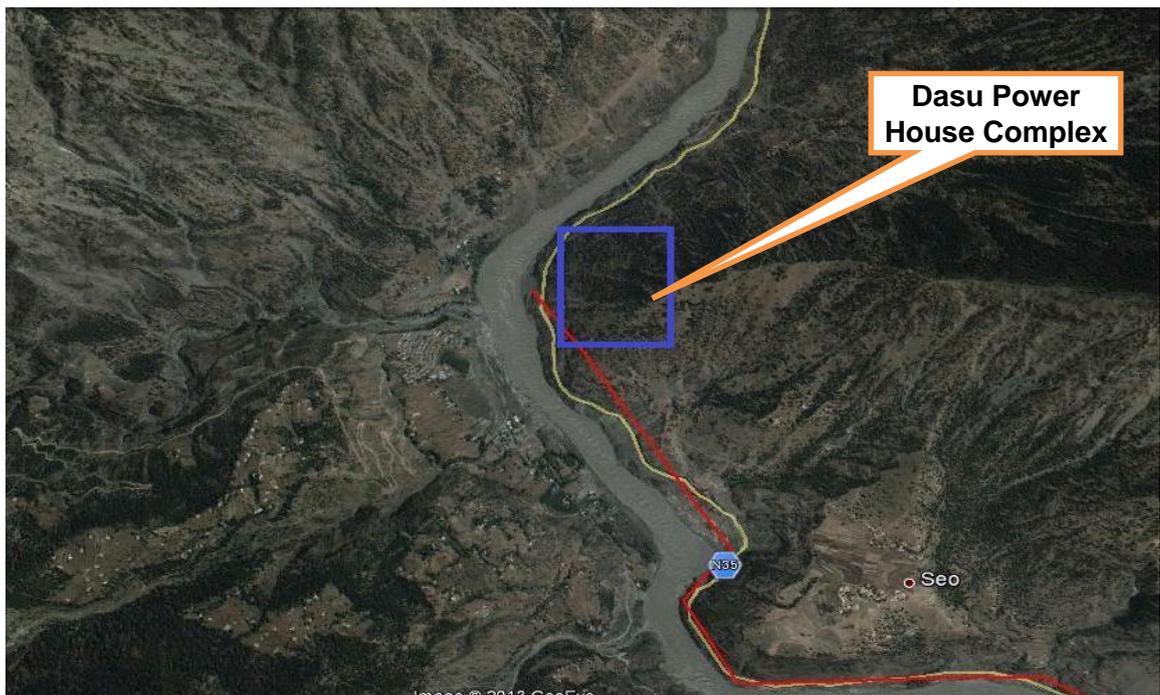


Fig. 3.1: Location of Dasu Power House Complex

The underground powerhouse complex will be constructed on left bank abutment of the main dam. The adopted alignment of the powerhouse complex is shown in Fi 3.2. In deciding the detailed alignment (position, orientation, etc.) of the powerhouse complex, the following considerations were taken into account:

1. Upstream waterway system between intake and powerhouse receives higher internal pressure than tailrace waterway. Provisions of the shortest possible length of the upstream waterway are advantageous to reduce costly high pressure waterways.
2. Major parts of caverns should be located within sound rock mass not containing inappropriate weak or fractured rock zones.
3. The axis of the PH cavern should be oriented in the direction perpendicular to major discontinuity planes in rock mass so as to minimize rock instability caused by cavern excavation.
4. The PH cavern should be located as close from the river bank as practical to minimize length of access tunnel and bus (cable) tunnel as well.

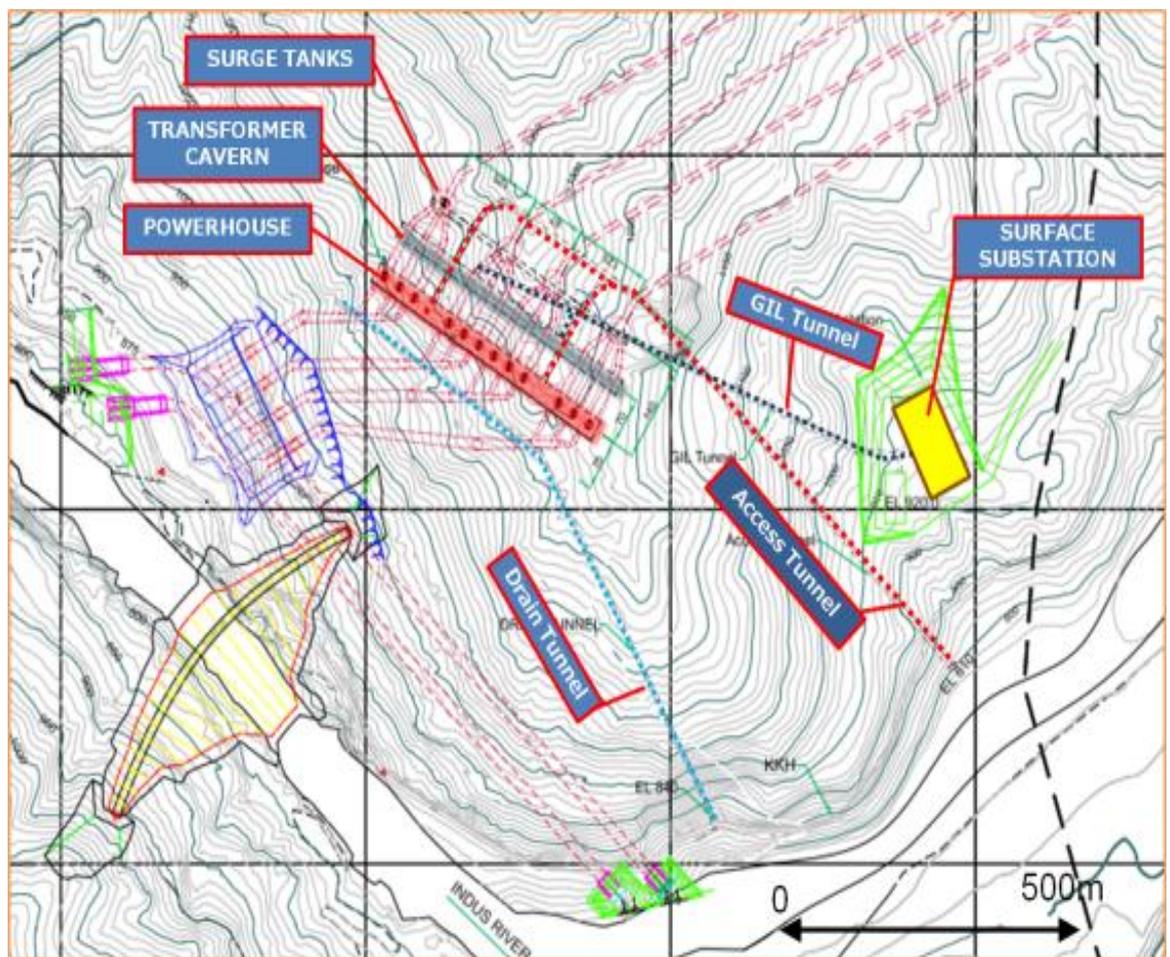


Fig 3.2: Alignment of Power House Complex

### 3.1.2 Generation Equipment

Twelve (12) No. 360MW generating equipment units will be installed. Three (3) units will be connected to each power tunnel. Vertical shaft Francis turbine is selected for the rated output of 360MW and the rated head (design head) of 179.51m.

### ***3.1.3 Power Take-off yard and Transmission Lines***

A take-off yard will be constructed and the power will be taken from the underground substation through underground tunnels up to the take-off yard where gantries are to be installed and then it will be connected to the Dasu - Pathar Garh T/Ls for power dispersal. The 500Kv T/Ls with two double circuit towers and four bundle conductors will be constructed from Dasu to Pathar Garh Tehsil Hassan Abdal, District Attock.

### ***3.1.4 Transmission Lines***

The power dispersal from Dasu to Pathar Garh will be carried out by two parallel double circuits 500Kv T/Ls to connect 500Kv Grid Station near Pathar Garh Tehsil Hassan Abdal, District Attock. The 500Kv T/Ls will extend over a distance of about 250km, the 200km route will traverse five districts of KPK including Kohistan, Battagram, Mansehra, Abbottabad and Haripur. The 50km route will pass through Darwaza Tehsil & District Haripur before connecting the proposed Grid Station near Village Pathar Garh Tehsil, Hassan Abdal, in District Attock of Punjab Province. The transmission line route is shown in Fig 3.3.

The ESIC and Consultant team has considered the environmental and social issues associated with the proposed T/L routes for the comparison of options. The Route Alignment Criteria was developed based on the technical as well as critical environmental and social issues including resettlement parameters in order to minimize the impacts to the extent possible.

The total estimated towers for the proposed T/Ls for each line will be 850 from Dasu to Pathar Garh. The spacing between the towers shall not be uniform because of the physical and other considerations like high altitudes, difficult terrain, crossing of rivers, main roads, railway lines, avoiding houses, infrastructure and cultural properties. However, average distance between towers can vary from 275 to 300m considering the topography and land use of the areas.

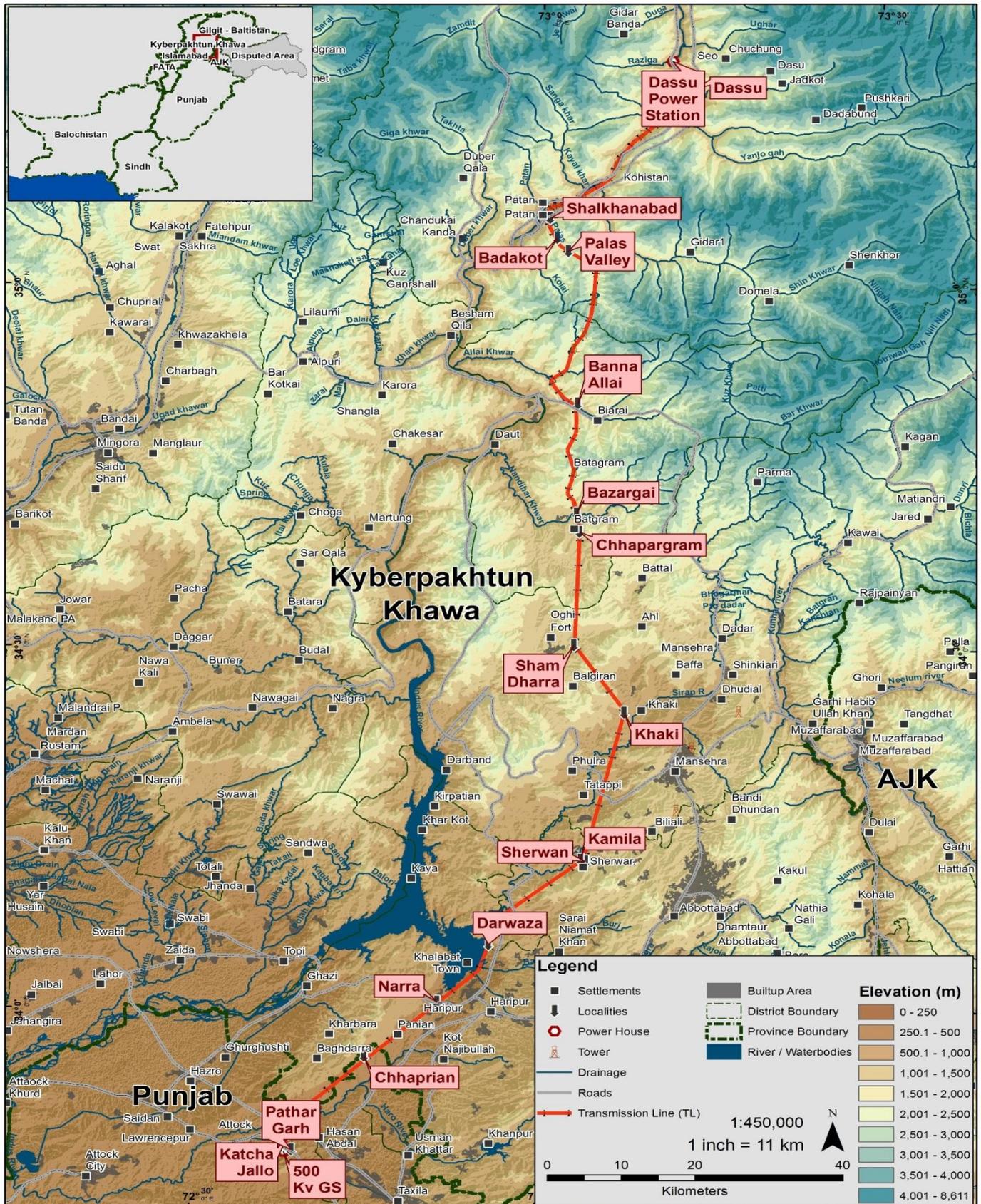
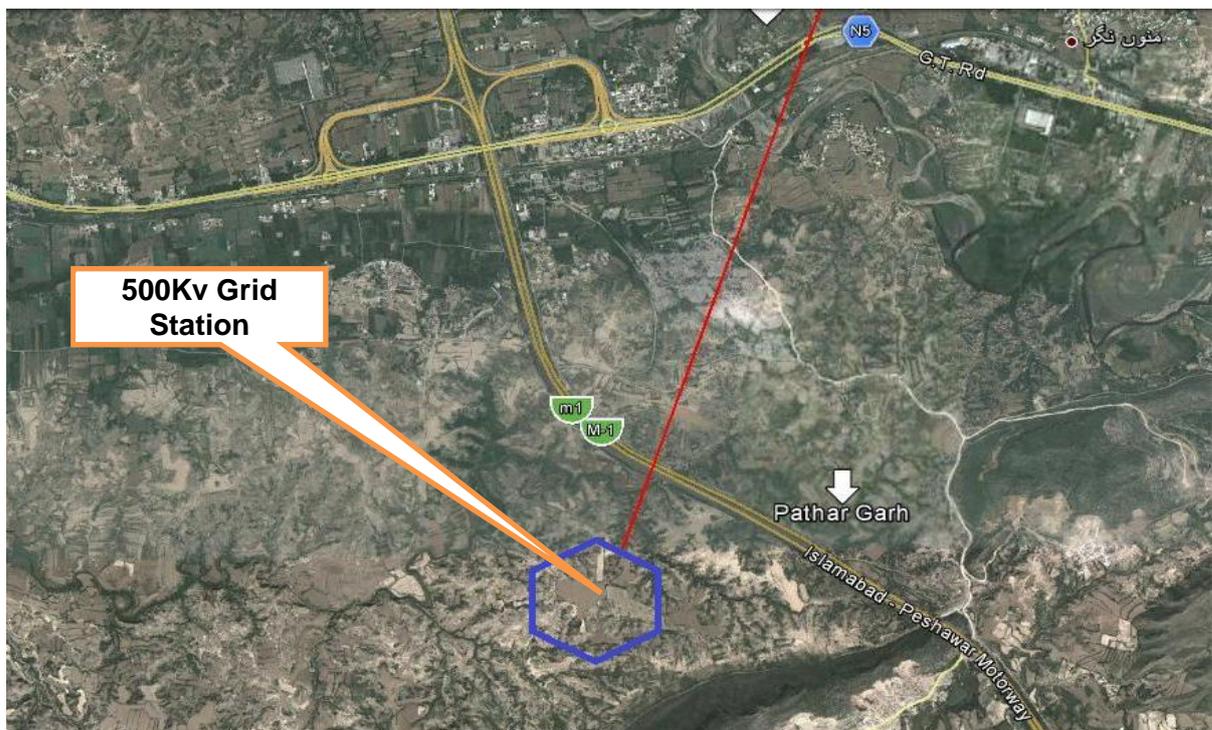


Fig.3.3: The Transmission Lines Route

### 3.1.5 Grid Station

The 500Kv Grid Station is proposed in the east west direction of Islamabad – Peshawar Motorway (M-1), near Village Pathar Garh, Tehsil Hassan Abdal and District Attock as shown in Fig 3.4. The Grid Station is initially proposed due to the following:

- Minimum Population and land availability
- A 500Kv Grid Station will require 3 to 4 in and out circuits which require sufficient vacant area.
- Close to National T/Ls Ring System
- Land is barren and privately owned by the resident of village Pathar Garh.



**Fig. 3.4: Proposed 500Kv Grid Station at Pathar Garh, Hassan Abdal**

The detail project description including design aspects, safety parameters, construction aspects of the above Project Components are briefly described in the Environment Assessment and Review Framework (EARF). As this report is specifically dealing with the Transmission line we hereby presenting the analysis of Dasu –Islamabad Transmission Line in the following section 3.2.

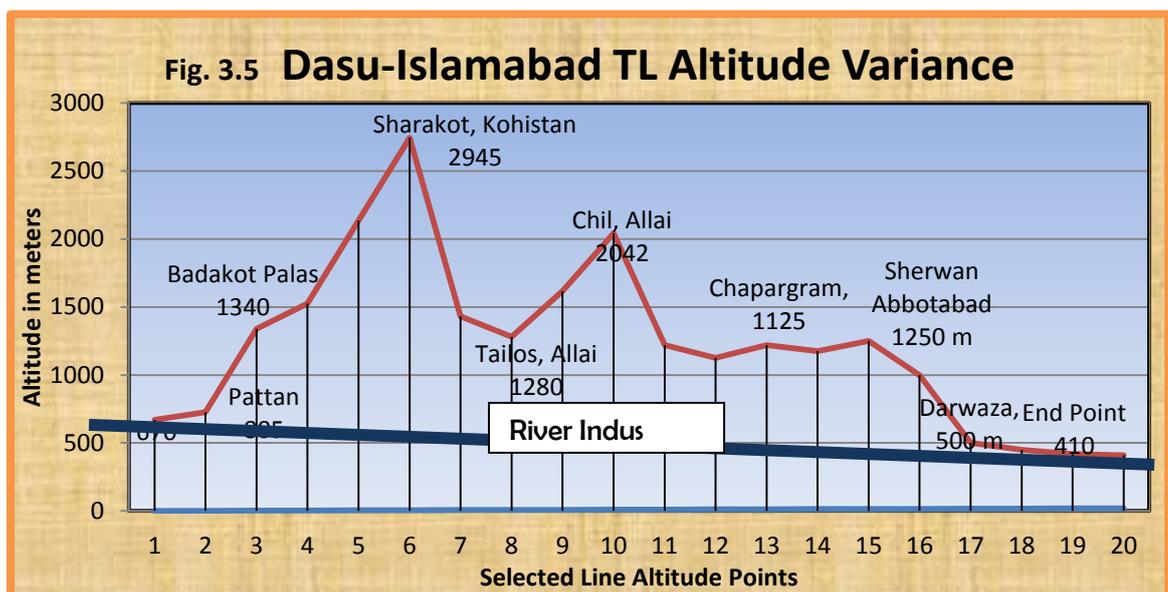
## 3.2 Description Of Route Alignment Sheet

### 3.2.1 Physical Location of Dasu Hydropower Project

The Dasu Hydropower Project will be constructed on the Indus River in Kohistan District in KPK. It is a run-of-the river Project with the dam axis about 7 km upstream of Dasu, the administrative headquarters of Kohistan District. It is about 350 km north of Islamabad, the capital city. The project reservoir upstream will be 74 km long from the dam site with an area of 23.85 sq km at elevation of 957m. The catchment area will be 158,800 sq km. The average discharge at dam site is 2,068 cumecs. The Project inundation upstream will require relocation of 46 km of the existing KKH on the Left bank of the Indus. The access road to the dam site will follow the current route from KKH at Komila along the Seo road and contractor's facilities will be on the Right bank near village Kaigah.

### 3.2.2 Physical Location of the Dasu-Islamabad Transmission Line

The proposed 500 KV Dasu –Islamabad double Transmission Line route begins at Seo some 10 km upstream of river Indus at Dasu Hydropower Plant in Kohistan District of KPK and extends along downstream Indus till Pattan. From there, the corridor proceeds through the lower Palas valley to Battagram district via Sharakot to Tailos and Banna in Allai tehsil of Battagram.



From Banna the line will pass through Karkat Nullah and will take 2045 masl altitude till Chill near Battagram. There with a slight southwest turn towards Ogi in Mansehra in the vicinity of Chaprian and then to Sherwan in District Abbotabad and gradually turning south east will enter into Haripur District on the eastern flanks of Tarbela Dam Darwaza. The entire 200 km line from Dasu to Darwaza, as shown in Fig.1 above is mountainous, hard rocks, forests and falls in snow winter zone. The next 50 kilometers from Darwaza to Hasan Abdal is plain with rugged land with some agriculture fields

### 3.2.3 Altitude

Almost 3/4<sup>th</sup> of the TL from Dasu to Islamabad traverses through the mountainous areas of Kohistan, Battagram, Mansehra and Abbot Abad districts from point 1 to 17 (see fig.1). The red line in fig.1 showing the proposed Transmission line while a thick vertical blue line indicates the altitude of Indus river. The TL in this area will be constructed on a wide range of altitude from 670 to 2745 masl in Kohistan district (1 to 5) , 1219 to 2042 masl in Battagram district (6 to 11) , relatively even altitude between 1100 to 1200 masl in Mansehra district, followed by slightly higher altitude (1250-1000 masl) in Abbot Abad district. The last 1/3<sup>rd</sup> section of the TL will traverse through plain areas of Haripur and Attock districts where the altitude ranges between 500 to 410 masl.

### 3.2.4 Delineation Corridor Of Impact (Coi)

The Corridor of Influence (COI) of RoW is the strip of land along either side of the centerline. Vegetation within the RoW is not allowed to grow to a height above 3 m and no permanent structures shall be constructed within the RoW. Proper clearance to ground and other structures has to be maintained. The total width of this RoW will be 50 to 60 m (25 to 30 m on both sides).The RoW is not to be used for public road access. Any maintenance road access should be on the edge of the RoW so as not to encroach on the design clearances required.

Defining the Corridor of Influence (COI) of the Project is an important indicator in determining the magnitude of impact. This study defined two types of project corridors, which have been used for this baseline information and impact assessment.

- i) **Corridor of Impact-1 (COI-1);** is a 130 m wide strip through which two parallel running 500 kv transmission lines will pass and direct impact on the social and economic life of the residents, the habitat and public or private infrastructure ( relocation of infrastructure (if any), clearing of vegetation, loss of crops, etc.)
- iii) **Corridor of Impact-2 (COI-2);** is a limit which identifies the area where indirect impacts of the project activities are envisaged like existence of forests, wildlife habitats, wetlands, etc. This limit varies from a 200 m wide strip to 2 km or even more depending upon the nature of area available. The socio-economic baseline information is thus collected on the basis of the area rather than the specific localities or settlements.

### 3.2.5 Geology

The geology of project area varies considerably and fall in three different geological zones along the transmission line route.

**1. Dasu-Palasz–Allai Section:** The rocks of Dasu, Pattan, and Allai route area are of Cretaceous age. Drosch formation to the south of Main Karakorat Thrust (MKT), thickly



### 3.2.6 Access to Road:

The overall access to the proposed transmission line route is difficult, climatically hard, financially very expensive and technically a challenge for the engineers to design and implement. There is an acute problem of accessibility to road infrastructure in the entire division. On an average for one square kilometer of the area the access to road is only 0.30 km in Abbotabad, 0.25km in Haripur, 0.20 km in Mansehra and Battagram and 0.10 km in Kohistan districts.

Table 3.1 **Transmission Lines Access to Road**

	<b>Area</b>	<b>Length of TL Km</b>	<b>Road Access Along or 2-3 km nearby</b>	<b>No of Rural Road Crossing</b>
1	Dasu to Pattan –Palas	32	32	Both sides of the Indus . KKH
2	Palas to Palas Valley	10	12	
3	Palas Valley to Tailos	30	0	Only one jeep able
4	Tailos-Banna	10	6	Both side of Allai Khor
5	Banna–Chill-Battagram	35	2	One jeep track one road
6	Battagram-Shamdara /Khaki	30	0	Two rural roads
7	Khaki –Darwaza	30	0	Two rural roads
8	Darwaza-Hasan Abdal	50	15	KKH and other link roads
	<b>Total</b>	<b>250</b>	<b>65</b>	

The proposed line direction of the proposed transmission line (see Fig.3.3) is from north to south. Even than less than 1/3<sup>rd</sup> of the TL route may have access from any main road, rural connecting road or jeep able roads. The remaining more than 2/3<sup>rd</sup> is entirely inaccessible mountains, forests or fellow lands. The most difficult mountainous and unexplored area (75 km) is between Palas Valley to Battagram (item 3,4,5 table 3.1). To enhance the implementation efficiency of this project demands an alternative route. We hereby suggest the NTDC design department to avoid this section and go far an alternative proposed in the analysis of alternatives (**section 3.3**)

### 3.2.7 Climate

The Project area falls in very cold, humid climatic zone of Pakistan and is characterized by large seasonal variation. The climate in this region is mainly determined by the altitude and precipitation in the form of rain and snowfall in some areas. The project area is influenced by two rainy seasons: (i) south-eastern monsoon during summer: and (ii) western winds during winter. The lower altitudes generally experience humid to sub-humid sub-tropical conditions, the higher altitudes experience temperate conditions. For detailed climatic information see Part-2 Environmental Assessment Report for Dasu –Islamabad Transmission Line.

### 3.2.8 Soil Conditions

Soils in the region of Dasu, Pattan and Palas are derived from mixed source of alluvial deposits of Indus River, Kohistan River and Nullahs and colluviums from weathered rock material from side slopes of the valleys. The soils are gravely/gritty silt loam, loam to sandy loam. The lands at the valley floor and low-level terraces at the side slopes of the mountains are used for agriculture purposes, while at upper level the slopes are barren in Dasu and Pattan, while in Palas Valley, these are covered with grasses and shrubs with occasional trees. Here the lands are used for grazing.

Because of very steep slopes of the mountains in Dasu and Pattan, the soil material rarely get chance to remain intact along the slopes. Consequently, the area is not of any economic use from agriculture or grazing point of view and even for establishing settlements.

The alluvial deposits of Battagram and Mansehra area are composed of slightly reworked and weathered material derived from the Mansehra granite along with silt clay/clayey silt, gravels and boulders occur at some places and are covered with vegetation.

In Abbottabad and Haripur Districts, the loess plain (Rash Plain) consists of deep deposits of wind laid material (loess). These aeolian deposits are probably of Pleistocene age. The surface of the plain is mainly level to nearly level or gently undulating. In view of the age of the deposits, any relief has to be attributed to erosion rather than to deposition. In most of the area, recognized as loess plain, there is no serious gully erosion. Soil texture in the landform is very uniform locally but ranges from silt loam to silt clay over greater distances. The soils of Haripur, Abbottabad and Mansehra districts are very fertile and used for agriculture purposes. The whole area is covered with vegetation.

### 3.2.9 Water Resources

The major surface water sources in the Project area include River Indus (Dasu to Pattan), Tarbela Lake (near Khalabatt Township, Haripur) and River Siran. The other resources are nullahs or Khawars and fresh water springs/ waterfalls. From Dasu to Pattan, there are about 17 nos. of freshwater springs/waterfalls and River Kohistan falling in the Indus. Some are perennial and others are seasonal. The discharge of these springs depends upon the intensity of annual rainfall and snowfall and extent of the respective catchments. Therefore, the discharges of these springs increase in summer due to heavy rainfall and snow melts and reduces in winter.

The main Nullahs/Khawars in the remaining strip of project corridor are; Allai Khawar and Karkat Nullah (Banna Allai), Shamdharra Kati Nullah (village Shamdharra, Oogi), Katha Nullah (village Khaki, Mansehra), Dour River (Near Darwaza, Haripur), Harro River (near Chhaprian Hasan Abdal), Chablat Nullah (Katcha Jallo, Hasan

Abdal). At higher elevation (i.e. Dasu, Pattan, Palas, Allai, and Battagram), normally the water tanks are constructed at spring locations to regulate the water supply and to improve accessibility to the water flow.



The ground water is almost unavailable from Dasu to Battagram. While in lower areas viz., Abbot Abad, Mansehra, Haripur and Hasan Abdal, the ground water is available at the depth varying from 100ft to 140 ft. The water is of good quality and used for drinking purposes, while in upper areas, spring is considered to be of good quality and used for drinking. In Hasan Abdal, the tube wells have been installed and water is used for irrigation purposes.

### **3.2.10 Agriculture:**

Agriculture and livestock forms major occupation of the residents along the transmission line route. The landholding size on the other hand, is very small because of the scarcity of arable land and resources to develop terrace for cultivation. Total area of the division is 1.705 million hectare of which only 18% (282968 hectare) is under cultivation, 43% under forest coverage and remaining 39% is fellow land (mountains, rivers, nullas etc. The ratio of area under cultivation to total area of the district varies from as high as 45.7% in Haripur to only 4.9% in Kohistan. The corresponding ratio in Abbot Abad, Mansehra and Battagram is 32.2%, 17.7% and 18.6% respectively. The average agriculture land per household for the entire division is only 1.25 hectares which is less than one hectare<sup>12</sup> in Battagram and Kohistan and around one hectare for Haripur and Abbotabad.

### **3.3 Description of Alternative Route**

This description of alternatives is based on the field observations and identification of implementation problems of proposed the Transmission line. The consultants during the field visits also investigated the possibility of an alternative route and comparative analysis of social and environmental impacts. The analyses include;

- a. The sitting process, based on the description of the selected route.
- b. The alternative routes and the justification for the choice.

---

<sup>12</sup> See table above

- c. Maps showing the corridor of impact (CoI).
- d. The analysis of alternatives is based on the principles
  - I. Avoid/minimize involuntary resettlement (including involuntary acquisition of land and impact on livelihood of PAPs).
  - II. Affectees will be compensated or their income will be restored irrespective of their legal status.

Three options discussed in this section

- The No Project option;
- Alternate Routes/Alignments;
- Change in the Proposed Alternatives.

### 3.3.1 No Action Scenario

The power generation capacity of Pakistan falls significantly short of its current and future needs. At present it is estimated that only half of Pakistan's 141 million people have access to electricity. Additional pressure is being put on already deficient electrical capacity by a growing population, increasing urbanization and expansive industrialization. Pakistan's current shortfall is estimated at 5,000 MW and the Government of Pakistan is actively looking for different options to reduce this gap.

According to the detailed design reports the construction of Dasu Hydropower project is expected to be completed in two stages with four phases. Under Stage 1 (Phases I & II), Phase I is planned to commence operation in 2019 and Phase II in 2022. Phase III is anticipated to commence in 2031 and Phase IV by 2037. The dam will provide significant relief with a generation capacity of 1080 MW with the commissioning of the Dam in 2019 and a final total capacity of 4,320 MW by 2037.

The Palas Valley/Spat Gah Hydropower Complex, virtually a run of the river project, is a cascade arrangement of 6 dams located on different nullahs in three valleys. The total storage capacity of this cascade is about 190 M<sup>2</sup> and combined power installed capacity will be about 2'457 MW.

To cater for this gap of power supply and also to meet the future power demand, Pakistan is in need of exploitation of all resources of power generation. The combined power generation capacity of 6777 MW from these two projects will be sufficient to meet the current gap. The hydropower generated from these sources needs to be transmitted and need to be dispatched to the national grid at a cost effective and manageable manner. Therefore, the option of —No Action option cannot be adopted because;

- a. The social and environmental impacts by construction of the proposed transmission line are insignificant over the 250 km long right of way.
- b. the proposed Transmission line is not a standalone but a support to dispatch the electricity produced by another project.

- c. the long term benefits of this project to industrial, commercial and agriculture sectors of Pakistan are much greater than the short-term and insignificant impacts to the APs.

### *3.3.2 Alternative Transmission Line*

A number of hydro stations are currently planned in the northern region of Pakistan. A new transmission is planned for the Diamer–Bhasha Hydropower project some 50 km upstream of Dasu Hydropower project. The proposed line will take further northern route (Diamer-Babusar-Balakot Mansehra Islamabad East.) That could be considered as alternatives by enhancing the power transmission capacity of the transmission line to cater electricity from Dasu-Hydropower plant. Using that route may be cost effective in terms of extensive technical, geological, environmental, and social studies and mitigating environmental and social safeguards for a separate 250 kilometer transmission line.

The alternative will however will lose 36% connectivity with the lower Palas Complex (2457 MW) and another 100 MW from Basham and Allai Khwar. There is another technical issue related to the above mentioned TL whether it can bear the additional load of 6777 MW or not.

The alternative transmission line is still an imagery line and only considered as an available option to reduce the length of proposed TL. The nature of access, construction and operational difficulties may reject or accept this option.

### *3.3.3 Changes within the Proposed Transmission Line*

While proposing alternative within the proposed transmission line, the following criteria was considered by the ESIC-NTDC team.

- Total length of the Line;
- Difficult terrain and high altitudes;
- Routes near existing roads; and
- Environmental and social impacts

The proposed and alternative routes are;

**Route-A:** Dasu-Pattan-Palas Valley-Tailos-Chill-Chapargram-Khaki-Sherwan-Darwaza –Hasan Abdal

**Route-B:** Dasu-Pattan-Besham-Thakot-Chapargram-Khaki-Sherwan-Darwaza –Hasan Abdal

### 3.3.3.1 Length of the Transmission Line:

During the initial reconnaissance and consultations the length was an initial consideration that forced the team to investigate for an alternative. The table 3.2 calculated the road distance between Dasu and Battagram along the Indus river is around 20 km less than the proposed route-A Dasu-Badakot-Tailos route. For a 250 km plus transmission line around 8% difference which in the normal circumstance is not considered as significant. The alternate route will save the construction cost of a total of 140 towers on the double transmission line. The others factors described below will explain how significant is this new route alternative.

Table 3.2 **Transmission Lines Access to Road**

	<b>Proposed Line (Route-A)</b>		<b>Alternative (Route-B)</b>	
	Area	Length Km	Length Km	Area
1	Dasu to Pattan –Palas	46	46	Dasu to Pattan
2	Palas to Palas Valley	20	42	Pattan to Bisham
3	Palas Valley to Tailos	30	0	
4	Tailos-Banna	10	28	Bisham to Thakot
5	Banna–Chill-Battagram	34		
6	Battagram-Shamdara /Khaki	30	34	Thakot to Shamdara /Khaki
7	Khaki –Darwaza	30	30	Khaki –Darwaza
8	Darwaza-Hasan Abdal	50	50	Darwaza-Hasan Abdal
	<b>Total</b>	<b>250</b>	<b>230</b>	

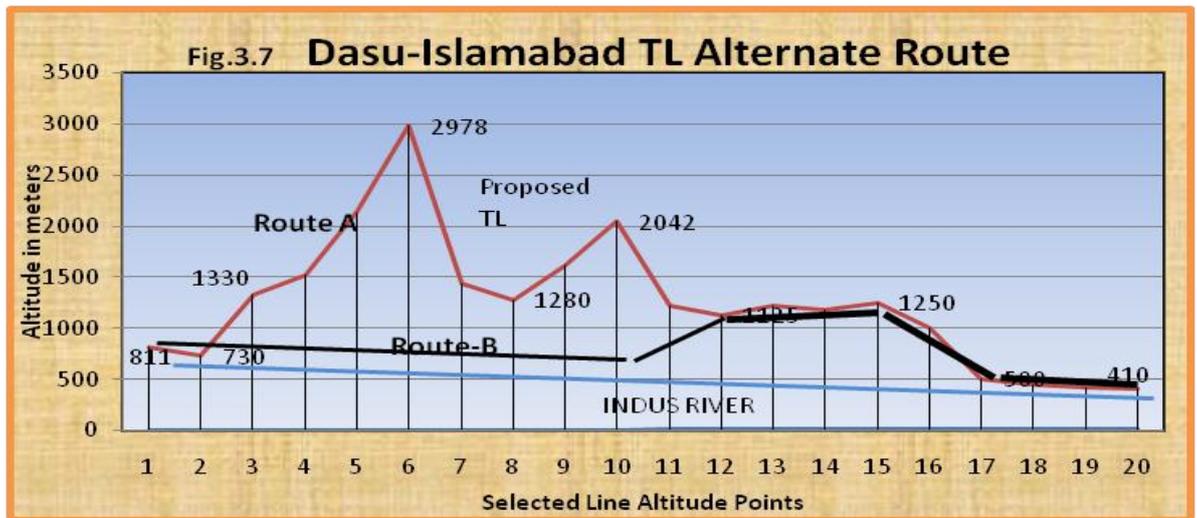
### 3.3.3.2 Difficult Terrain and High Altitudes:

The altitude levels have already been explained in section 3.1.1 and also visible in fig. 3.7 below.

**Route-A:** The altitude variance in route A is 810 masl from origin at Dasu to as high as 2940 masl at Sharakot and gradually coming down to 2042 masl at Chill, 1250 masl at Sherwan to the lowest 410 masl at the final connection with national grid at Hasan Abdal. The higher altitude areas with swear and prolonged winter climate and snow bound mountains, void of any permanent human settlement and access road. The entire Transmission line crosses at least 10 access roads but all are rural jeep tract. Any detailed design, geological investigations, construction and finally the operation and maintenance activity at these high altitude areas will demand higher cost, unusual delays and complete work stoppages for at least 3-4 months a year.

**Route-B:** The highest altitude on route-B is around 1250 masl at Sherwan which is accessible through an all weather road. The local population is permanently settled and maintaining all weather communication linkages and livelihood activities. Detailed

design, geological investigations, construction and finally the operation and maintenance may continue in a cost effective manner. The total length of line will be around 230 km.



### 3.3.3.3 Access to Existing Road Network:

**Route-A:** The proposed line will traverse along the Karakorum Highway and on both sides of Indus river from Dasu to Pattan (46 km) and again around 50 km from Hasan Abdal to Darwaza (Haripur ) at some distance but through many connecting roads. Hence only 40% of the line will access the existing all weather road network, another 20% will have partial access through crossing rural roads while remaining 40% will cross over the higher altitude mountains without and road facility.

**Route-B:** The alternate route will traverse along the KKH and Indus River from Dasu to Thakot and further till Battagram (120 km) and again around 50 km from Hasan Abdal to Darwaza (Haripur) at some distance but through many connecting roads. Hence about 70% of the line will access existing all weather road networks and another 20% will have partial access through crossing rural roads. There remains only 10% without direct road access.

### 3.3.3.4 Environmental and social impacts:

The environmental and social impacts of route A has already been discussed in the respective sections. As most part of the Alternative route B will traverse along the Indus River from Dasu to Thakot and further near the KKH till Battagram. Both sides of the Indus River and KKH have heavy concentration of population. The NTDC has already constructed two transmission line along the Dasu-Battagram route. The construction of additional two lines will certainly impact on the esthetic value of the Indus River route, social and economic resources of the local population. The magnitude of social impacts in terms of compensation of crops and trees as well as rehabilitation of structures will be significant.

# CHAPTER- 4

---

## 4. SOCIO-ECONOMIC PROFILE OF THE CORRIDOR

### 4.1 Area:

The entire 250 km long double Transmission Line will cross through the all five districts of Hazara COI districts i.e. Kohistan, Battagram, Mansehra, Abbot Abad and Haripur. of KPK province of Pakistan. The main features of the proposed route of the TL are high to medium altitude mountains, very small sized terrace farming, swear and prolonged winter season, high to medium sized forests, limited number of access roads, void of any commercial or industrial activity and employment opportunities, marginal health and educational facilities and thinly population settlements are main features of route.

### 4.2 Population

The total population of the districts through which the transmission line pass through is around 3.33 million of which around 9 percent is urban and 91 percent rural. The ratio of urban population in Abbot Abad, Haripur and Mansehra districts is 18 percent, 12 percent and 5.3 percent respectively. Two out of five districts (Kohistan and Battagram) are rural where not a single settlement is over 5000 population. Around 46 percent of the population is less than or equal to 15 years of age, the middle age population is 51 percent while only 3 percent over 65 years of age.

The total area of Hazara COI districts is over 17084 square kilometer and is thinly populated with an overall population density of 271 persons per sq.km. The population density ranges from the highest 448 persons in district Abbot Abad to the lowest 66 persons in Kohistan district.

The average household size in the entire COI districts is around 6.5 persons, which is highest 6.7 persons in Kohistan and lowest 6.4 persons in Abbot Abad district. For other three districts the household size is near to the average.

The female to 100 male ratio widely varies between 98 in Mansehra to 101 in Abbot Abad and Haripur and 107 in Battagram and 124<sup>13</sup> in Kohistan. Polygamy is a social norm in Kohistan and Battagram districts.

---

<sup>13</sup> NWFP Census Report

**Table:4.1 Area and Demographic Indicators for Districts enroute TL**

No	District	Area (Sq.km)	Population (000)	Density of Population (sq.km)	Average HH Size (persons)
1	Attock <sup>14</sup>	1518	1,518	221	5.8
2	Haripur	1725	0,692	400	6.6
3	Abbot Abad	1967	0,880	448	6.4
4	Mansehra	4570	1,152	252	6.7
5	Battagram	1302	0,307	204	6.6
6	Kohistan	7492	0,500	066	6.7
Total		<b>18574</b>	<b>5,049</b>	<b>271</b>	<b>6.5</b>

### 4.3 Ethnicity and Language:

The entire population belongs to two major ethnic groups namely the *Hindkowan*s who speak *Hindko*s their mother tongue, and the *Pashtun*s who speak *Pashto*. *Hindko* language is further divided into two dialects i.e. Kagani and northern Lahnda which is spoken by the majority of population in Abbot Abad, Haripur and Mansehra districts. Pashto is spoken by the majority of population in Battagram and parts of Mansehra District. The Sirikot area of Haripur District is also predominantly Pashtun. Most part of Kohistan population speaks *Kohistani* but significant number of Kohistani's in the western part speaks Pashto and in the southeast Hindko is also a used as mother tongue.

The 250 km long 1 to 2 km wide COI of the transmission line will traverse through only 0.15 percent of the total area. Based on the overall density of population for the entire region only 0.14 percent (7182 persons or 1100 households) are expected to face some impact during the construction of this transmission line.

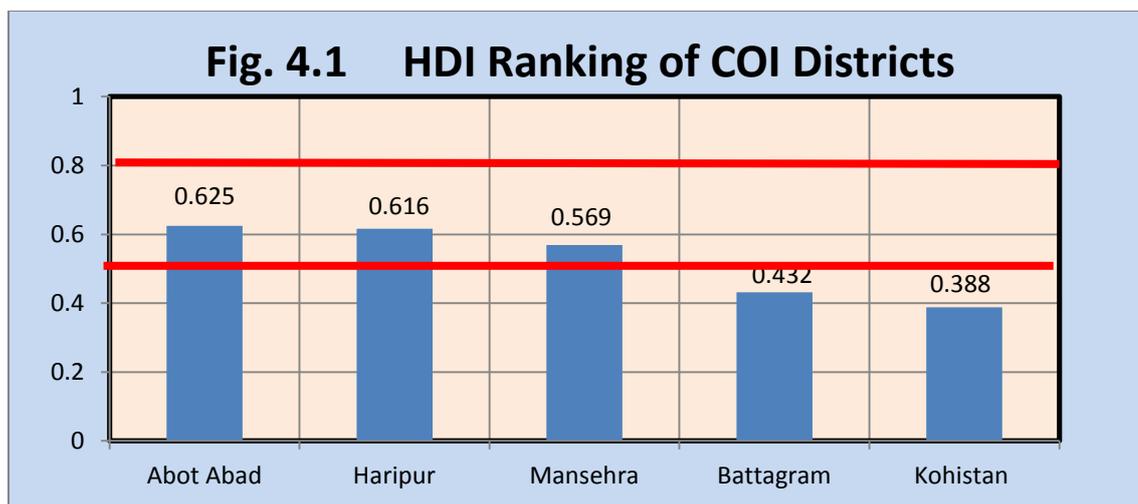
### 4.4 Human Development Indicators:

The districts enroute transmission line as a whole is in transition from low to medium stage of social development. The degree of social development gradually increasing from north (Kohistan) to south (Abbot Abad and Haripur Based on the life expectancy (health), education and per-capita Gross National Income the overall level of human development (HDI) of the area is estimated at 0.564<sup>15</sup>, the number falls between medium to low HDI<sup>16</sup>.

<sup>14</sup> District Attock is included in this table because village Pathar Garh may face two types of impacts –one from the transmission line and other from purchase of land for Grid station.

<sup>15</sup>Indices of Multiple Deprivations and Human Development in Khyber Pakhtunkhwa Province, 2011.

<sup>16</sup> The areas with HDI value 0.8 and above are defined as higher level human development, while the areas with HDI value between 0.8 and 0.5 are estimated as middle medium level human development and any value less than 0.5 is considered as low level human development.



The medium level human development is defined as the estimated HDI value of more than 0.5 while any number below 0.5 is defined as low HDI. The fig. 3.1 below shows three out of five southern COI districts are with more than 0.5 HDI value and attained middle level social development in the three above mentioned indicators. The districts are Abbot Abad (0.625), Haripur (0.616) and Mansehra (0.569) respectively, The higher HDI value for a certain are reflecting a lower poverty ratio.

The remaining two northern districts i.e. Battagram (0.432) and Kohistan (0.388), with HDI value less than 0.5 and thus falls in the category of “low level human development” or the districts with higher poverty ratio.

The Fig.4.2 below shows that the 0.5 is the poverty line, where Kohistan and Battagram population as a whole is under the poverty line, while Mansehra is slightly above but near the poverty line and Abbot Abad and Haripur are also subject to poverty shocks.

**Table 4.2 HDI Indices of COI Districts (2008)**

District	Overall HDI Value	HDI Value Against Indicators		
		Education	Health	Income
Abbot Abad	0.625	0.654	0.628	0.592
Haripur	0.616	0.580	0.631	0.635
Mansehra	0.569	0.595	0.659	0.453
Battagram	0.432	0.388	0.571	0.339
Kohistan	0.388	0.239	0.604	0.321
Overall	0.564	0.491	0.614	0.468

Source: Indices of Multiple Deprivations and Human Development KPK, UNDP-SPRSM Project, table A.9, p.41.

The overall human development index is above average due to higher value for health index which is quite satisfactory (0.614) and places the region in the medium category. The level of development in education (0.491) and income (0.468) on the other hand is at the lower level ( see table 4.2). The lower level of human development index is a

direct result of higher level of deprivation from the civic facilities and economic opportunities.

#### 4.5 Poverty and Vulnerability

Poverty is unequally distributed in the COI districts. Kohistan is the top most vulnerable district in the country in terms of poverty incidences. In Kohistan an overwhelmingly large proportion of population (89 per cent) lives in extreme poverty. Percentage of poor households in Kohistan is 26 points higher than that in the second poorest district of KPK, Shangla, where 63 per cent households are poor. The neighboring districts- Battagram- have more than half of the households as poor<sup>17</sup>.

Haripur, on the other hand, is the least poor district in the COI with only 11 per cent households falling below the poverty line. Next come Abbottabad where 18 per cent households live below the poverty line. All the three districts of Hazara COI districts (Haripur, Abbottabad and Mansehra) are amongst the least poor in KPK.

The prevalence of poverty in the entire COI districts is assuming menacing proportions with the passage of time. Poverty in this context perpetuates due to ongoing political instability, uneven distribution of resources, poor human resource development and concentration of power and resources in the hands of a small percentage of population. The unemployment ration in the COI districts ranges from 28.5% in Mansehra to 30 % in Haripur, 31% in Abbotabad<sup>18</sup> and 41% in Battagram.

As with the other factors affecting poverty, the relationship between poverty and insecurity is complex and works in both directions. High levels of poverty and unemployment, especially amongst young men, have a major effect on insecurity and this insecurity then affects the well-being and incomes of the wider population.

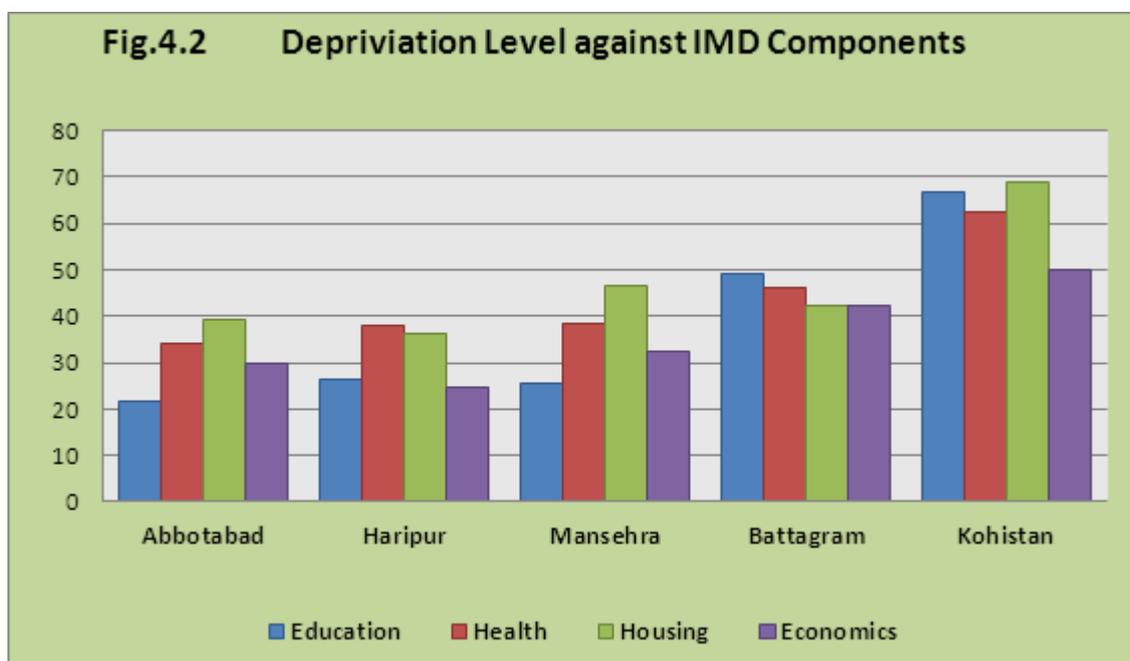
The entire region in the past has faced scarcity of resources and civic facilities that resulted in the large scale seasonal and economic migration of Hazara workforce into other regions and especially in the Punjab plains and urban centers of Sindh. The economic migration of youth from this area negatively affected the human development of women and children. There are significant evidences of deprivations in the entire region/ area.

District	Overall IMD Value	IMD Value Against Components (Percentages)			
		Education	Health	Housing	Income
Abbot Abad	32.6	21.6	34.1	39.6	29.9
Haripur	33.3	26.2	37.9	36.2	24.7
Mansehra	37.3	25.5	38.6	46.5	32.2
Battagram	50.6	49.1	46.6	52.3	42.3

<sup>17</sup>Clustered deprivation: District profile of poverty in Pakistan', SDPI Islamabad, Sept. 2012.

Kohistan	62.8	66.7	62.3	69.1	50.1
<b>Overall</b>	<b>44.6</b>	<b>37.8</b>	<b>43.9</b>	<b>48.7</b>	<b>35.9</b>

The overall level of multiple deprivations against 18 indicators in the entire Hazara region is 42.6 percent. Besides income, education and health components, the IMD broadly addresses publicly provided services and infrastructure. The estimated magnitude of index of multiple deprivations (IMD) suggests that it is highest in Kohistan (67.2 percent) and Battagram (55.3%) and relatively low in Abbot Abad (33.9%), Haripur (35.1%) and Mansehra (39.7%) respectively.



Highest deprivation is estimated in housing sector where about 48.7 percent population of Hazara COI districts is deprived. The ratio of deprived population in housing is highest in Kohistan (69.08%) as against only 36.22% in Haripur. Health is the second highest deprived sector with 34.9% of the total population is without health facilities. District Kohistan again is the highest deprived district with 62.3%. Education sector follow health sector where around 38% of the total population is deprived of health facilities. The corresponding ratio is highest in Kohistan (66.7%) and Battagram (49.1%) districts. On economic indices the situation is somewhat better with 35.9% of the total population is deprived of the economic opportunities. The above indicators of multiple deprivations clearly identified sectoral priorities (education, health and housing) as well as the priority districts within the COI zone of Dasu-Islamabad Transmission line.

Another important finding the above IMD reveals that Kohistan district is most deprived in overall IMD value and its components. The proposed project is also entirely dependent on the exploitation of the natural resources (power generation from Dasu and Palas HPPs) from this district. Kohistan in this respect required special attention to reduce the deprivation level from the current 62.8% to at least 32% to stand at par with Abbot Abad within the same region.

The findings are useful for profiling and benchmarking districts' positions and growth in terms of economic and social development. The exercise facilitates in making decisions on

regional and sectoral priorities for public expenditure and in targeting public interventions through area specific poverty alleviation programs.

#### **4.6 Literacy and Educational Attainment;**

Literacy is an effective and important parameter in measuring social development of a society, area or region. The extent of deprivation in education is discussed in the above sections. The overall literacy in 5 COI districts is only 35 percent which is far lower than the national average of 57 percent. The literacy ratio is highest in Abbotabad and Haripur districts 56.6% and 53.7% respectively. The literacy ratio in other three districts presents a dismal picture with 36.3% in Mansehra, 18.3 % in Battagram and only 11.2% in Kohistan District.

Poverty, gender discrimination and the political will of the local elite are the major causes of such a lower level of literacy in the entire region and specially in Kohistan and Battagram districts. It is very expensive to be poor and on the other hand poverty is the major barrier to schooling in the Hazara mountainous region where average school going child has to travel / walk 3-5 km to reach a school. Sending one child to school costs about half of the annual income of poor rural families.

A recent UNESCO report on education in KPK identified “highest form of gender disparity in school enrolment in the COI districts. The report estimated that the Overall net school enrolment rate (NER) in Abbot Abad is 68% as against only 37% in district Kohistan. Beside the overall 37% ratio the female NER in Kohistan is only 11 percent and only 1 percent female completed primary schooling”<sup>19</sup>.

There are significant number of school buildings in all the districts with equal number of school teachers enrolled. But over 80% of the teachers are either political appointees or non-residents or working in the urban areas. Majority of the rural school buildings are used for other purposes then education.

There also exit a huge gender gap in literacy in the entire region. The ratio of literate male population (48.5%) is more than double the female population both in overall and in the context of individual districts. The district –wise male and female literacy ratio follows the trend in overall literacy ratio (see table 4.4 below)

---

<sup>19</sup> Ghulam Mustafa, “Education Policy and Analysis Report of KPK”, UNESCO, Pakistan, January 2012.

Table 4.4 **Literacy Levels in Hazara COI districts**

District	Population (000)	Literacy (10 year and Above)		
		Male	Female	Ratio in Total Population
Abbot Abad	0,880	74.5	39.1	<b>56.6</b>
Haripur	0,692	70.5	37.4	<b>53.7</b>
Mansehra	1,152	50.9	22.7	<b>36.3</b>
Battagram	0,307	29.4	6.5	<b>18.3</b>
Kohistan	0,500	17.2	2.9	<b>11.1</b>
<b>Overall Literacy</b>		<b>48.5</b>	<b>21.7</b>	<b>35.2</b>

#### 4.7 Health Coverage

Although the number of health related public and private sector infrastructure significantly increased in the post-earthquake reconstruction phase (2006--2008), that helped in improving the IMD at around 44%. But the services level in the entire region is still devoid of health care staff and medicines. The current data shows the presence of significant number of health institutions but there is a complete silence on the number of doctors and paramedic staff in Hazara COI districts. Available estimates reveal that for every 25,000 people there is one doctor and the ratio of population to a nurse is 50,000. During the ESIC consultations in 20 villages only two village communities (10%) villages informed working basic health facility in or near to their settlement. Interestingly both health facilities are being operated by NGO<sup>20</sup>s. The EPI coverage is below 60% in the entire region where as it is even worse in both Battagram and Kohistan.

The link between health and poverty is complex and takes place mainly through the effects of poor nutrition. The tendency of the poor in the COI areas is to make fewer visits to health services because of poor health coverage, availability and quality of public health services and cost of available private health services. Access and affordability are two main problems for majority of the population.

#### 4.8 Access to Road

There is an acute problem of accessibility to road infrastructure in the entire COI districts . On an average for one square kilometer of the area the access to road is only 0.30 km in Abbotabad, 0.25km in Haripur, 0.20 km in Mansehra and Battagram and 0.10 km in Kohistan districts.

SDF – a Pakistan Poverty Alleviation Fund (PPAF) partner and Mission Society funded by some German Philanthropy.

#### **4.9 Electricity and Cooking /Heating Fuel.**

The area has been generally void of physical infrastructure since decades and whatever has been achieved was washed away by the 2005 earthquake. The provision of electricity followed the north south regional disparity trend. The KPK government statistics confirmed this trend. The ratio of households with electricity gradually decreases from south to north. It is as high as 76% in Haripur, 75% in Abbotabad, 49% in Mansehra, 42% in Battagram and less than 3% in Kohistan. The natural gas is only available in main towns of Haripur, Abbotabad and Mansehra. Around 79% of the population in Haripur uses wood as a source of cooking and heating fuel. The corresponding ratio of households using wood as cooking fuel in Abbotabad and Mansehra is 78% and 95% respectively. The entire population of Battagram and Kohistan are dependent on wood for cooking and heating.

#### **4.10 Gender Equity and Equality:**

Hazara region as a whole is a strong patriarchal society and presents a dismal performance on gender empowerment. A low investment in (female) human capital, negative social biases and prejudices, controversial and discriminatory policies and laws, restriction on female mobility and the internalization of patriarchy by women themselves, has become the basis for gender discrimination and disparities in all spheres of life.

Women lack representation in the decision making process both social life, local government institutions and public service institutions like health and education. Exceptions are in the urban areas of Abbot Abad and Haripur districts. There is a zero visibility of women in public life in Kohistan and Battagram districts. Mansehra district is at a crossroad between patriarchy and gender equality. Employment rates for women are low and representation in government and senior decision-making positions is very limited. A low access to education and health services, and especially to maternal health, is leading towards a high maternal mortality.

Most women are subject to economic dependence and are often forced to take on the majority of the manual work of the household. They do not have any say in decision-making, even within the household. There are serious concerns about violence against women, gender discrimination, polygamy, segregation, early and forced marriages and Purdah. Kohistan and Battagram were among the districts in Pakistan where the local jirga's unanimously decided not to field any female councilors for the local government system introduced through the Local Government Ordinance (LGO) 2001, in which 33 percent of all local government seats were reserved for women.

As already mentioned in section 4.6 that the region presenting a "highest form of gender disparity in school enrolment in the COI districts. The report estimated that the overall net school enrolment rate (NER) in Abbot Abad is 68% as against only 37% in district

Kohistan. Beside the overall 37% ratio the female NER in Kohistan is only 11 percent and only 1 percent female completed primary schooling”<sup>21</sup>.

Polygamy is the norm in Kohistan and part of Battagram districts where most of men having two or more wives and numerous children. The first wife is typically from within the family/sub-tribe, usually a first cousin. But increasingly, those with the means will have second or third wives from Swat or Gilgit. They consider the women there to be ‘cleaner’ and more refined and educated than their local women. These outside women are often kept in a better living environment than those of local wives. The local traditions consider polygamy as honor for men, religious duty and tribal bond and the act does not require any permission or consent from the existing wife/wives. A careful analysis of district level court cases revealed the unprecedented polygamy leading to a significant ratio of adultery, honor-killing cases, domestic violence, inter-tribe killings and insecurity.

The insecurity syndrome leads men in the name of tribal traditions to keep women away from any awareness or influence from the outside world. Television, radio and cell phones are always kept in male areas and access to these areas is denied to women and children. The Dasu –Hydropower Baseline report summarized a case of outside influence as “A *malik* bought a television set to watch the news, and otherwise kept it shut and the remote control locked away. Once he came home and see his daughter watching Indian film songs. He immediately got rid of the television.”<sup>22</sup>

The term “outside world” applies to anybody, men or women, out of the immediate family, no matter a female doctor or a school teacher, co-ethnic or linguistic, is considered “outsider”. A national NGO hired Pashto speaking female doctor from another district in KPK and she spent three months in a Mother and Child health Care (MCH) center in Pattan (Kohistan). Not a single local woman turned up in the center for treatment. She only treated some 150 children accompanied by male parents. The age group of female children never crossed over 10-11 years.

The restriction on the visibility or participation of women in public is not merely a tribal tradition that applied to their own women. This is an attitude towards all women and in cases they are unable to force others to follow they use their right to boycott the occasion. During a recent public hearing on Bhasha-Diamer Dam in Chilas, a female environmentalist traveled around 900 kilometer from Lahore to participate in the meeting. The participants strongly resisted her presence at the venue and threatened to walk out if a women is allowed to sit in the meeting even as a silent observer.

#### **4.11 Rural Economy:**

The rural economy of the area is heavily dependent on Agriculture. Around half of employed labor force is engaged in agriculture. The highest ratio of labor force engaged in agriculture is in Kohistan (82.1%) followed by Battagram (55%) and Mansehra (47%). The dependence on sources other than agriculture is high in Abbotabad and Haripur resulting only 19% labor force is engaged in agriculture in Abbotabad and 32% in

---

<sup>21</sup> Ghulam Mustafa, “Education Policy and Analysis Report of KPK”, UNESCO, Pakistan, January 2012.

<sup>22</sup> Interview with a local *malik*, October 2012.

Haripur. In Kohistan the 70.53<sup>23</sup> percent of total labor force is working while the remaining around 30 percent is unemployed.

The people in the rural areas of the COI districts largely dependent on herd rising for their economy. Culturally, they go on seasonal migration. The main elements of their economy are agriculture, forest, hunting and herd rising. Only one crop grows in the high altitudes. However, at the lower areas two crops are also grown depending on the availability of water and seasonal rains. Cultivation of wheat and paddy is common in Battagram and Mansehra districts.

The main sources of livelihood are agriculture, livestock and collection of forest products. Given the mountainous terrain, flat cultivable land is very limited and there is a high degree of terrace agriculture. People usually keep livestock – goats, sheep, even cows and bullocks – and the search for pasture is one reason for the seasonal migration between low and high altitudes. Economic migration of the youth to urban areas specially in winter season from Mansehra, Battagram and Kohistan is common.

Poverty is common in the area due to which people rapidly cutting pine, spruce, Chilghoza, *Olea erruinea* (kao), cedar and oak trees for sale. Many medicinal herbs are vanishing in the area on account of short-sighted exploitation. Generally people rear buffaloes, cows, sheep, goats and bullocks. They get wool, skin and butter of them.

Besides this, for cash income, timber logging, sale of herbs, fuel wood, walnuts, walnut bark (dindasa), honey, butter, wool, pulses, weapons and minerals and hunting are common. Honeybees are reared and honey is grown in plenty. In winter season, the local men go to urban areas in search of work.

Increasing environmental degradation in Pakistan is a constant threat to the biological diversity and natural resource base of the country and is unfavorably influencing the lives of the poorest sections of society. It is worth to mention that the last few decades have witnessed increasingly exploitative and disenfranchising practices including illegal timber harvesting, deforestation on mountains and hill sides, rangeland degradation, over-cultivation, uncontrolled grazing, low productivity in agriculture and livestock, poor water resource management and a host of socio-political factors contributing to the ecological degradation.

**Area Under Cultivation:** Since majority of the COI area is mountainous, there is scarcity of agricultural land. Ninety-five percent of lands in the mountainous area are uncultivable due to the steep slopes covered with forest or rocky waste land. Total area of the region is 1.705 million hectare of which only 18% (282968 hectare) is under cultivation, 43% under forest coverage and remaining 39% is fellow land (mountains, rivers, nullas etc .

---

<sup>23</sup> Dasu Hydropower Consultants “ Baseline report Vo.I.1, 2012.

Table 5.5 **Distribution of Area under Cultivation and Cropping Intensity**

<b>Categories</b>	<b>Abbotabad</b>	<b>Haripur</b>	<b>Mansehra</b>	<b>Battagram</b>	<b>Kohistan</b>
Area Under Cultivation (ha)	63424	77875	80747	24173	36749
Area under Forest	83201	57398	332252	37983	216699
Land Use	83.4%	73.6%	82.7%	47.5	75.5
Cropping Intensity	88.3%	109%	136.7%	125.2	125.2
<b>Average per Hectare Yield</b>					
Maize (kg)	1342	1346	1718	1305	1961
Wheat(Kg)	1402	1526	1554	1531	1624
Average Agriculture Land per Household (ha)	1.01	1.01	2.48	0.85	0.85
<b>Animals per household</b>					
Buffalo/cattle	1.80	1.80	5.01	3.58	4.08
Sheep/goats	1.85	1.52	16.51	3.28	11.20

Source : *Agriculture Statistics KPK 2006*

The ratio of area under cultivation to total area of the district varies from as high as 45.7% in Haripur to only 4.9% in Kohistan. The corresponding ratio in Abbot Abad, Mansehra and Battagram is 32.2%, 17.7% and 18.6% respectively

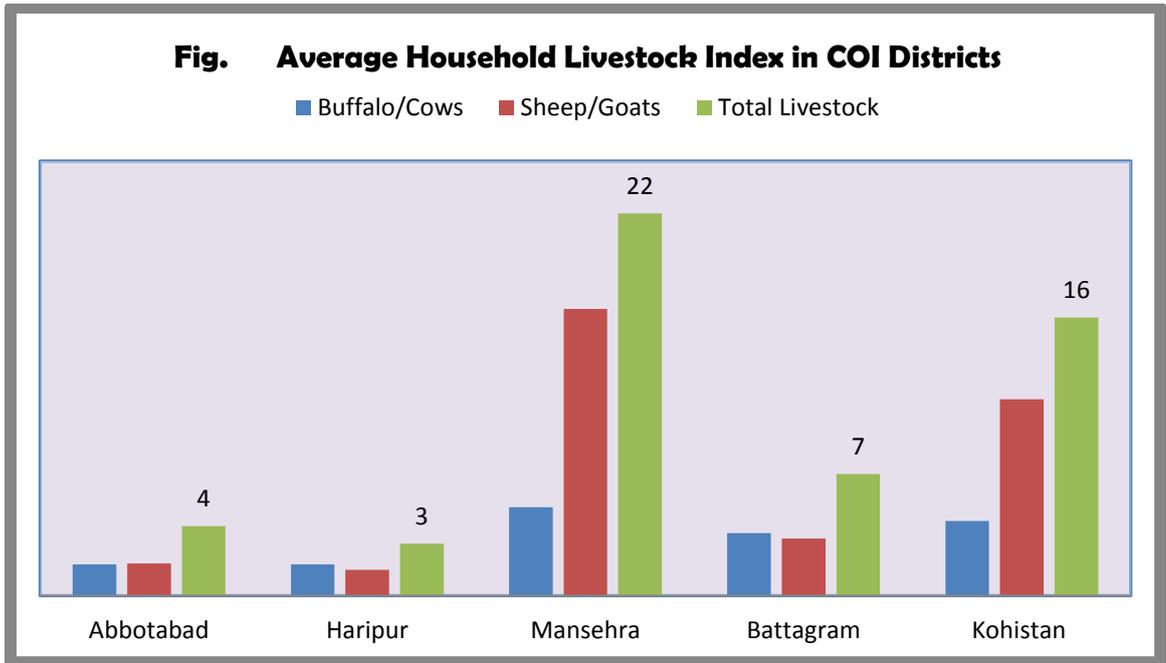
**Area under Forests:** Total area of the COI districts is 1.705 million hectare of which only 43% (727533 hectare)<sup>24</sup> is under forests. The ratio of area forests to total area of the district varies from as high as 72.7% in Haripur to around 29% in Kohistan and Battagram, and 32.3% and 42.3% in Haripur and Abbot Abad respectively.

**Agriculture:** The average agriculture land per household in the entire COI districts is only 1.25 hectares which is less than one hectare<sup>25</sup> in Battagram and Kohistan and around one hectare for Haripur and Abbotabad. The consideration for any land use or cropping intensity becomes irrelevant with such a small land holding for agriculture.

The small agriculture landholding and availability of community grazing areas around the settlements and on top of the hills providing opportunities for livestock rearing in the entire COI districts. Average household in the entire COI districts keeps over 10 animals to substitute their livelihood. The ratio is as high as 22 animals in Mansehra and 16 in Kohistan to 7 in Battagram and lowest 4 and 3 in Abbotabad and Haripur respectively.

<sup>24</sup> Sum of the area under forest in above table

<sup>25</sup> See table above



The lowest per household livestock ration is due to highest (45.7%) area under cultivation as against the lowest (17% and 4.9%) area under cultivation in Mansehra and Kohistan with highest per household ratio of livestock 22 and 16 respectively.

# CHAPTER-5

---

## 5. PUBLIC CONSULTATIONS

### 5.1 Introduction

Consultations were aimed at informing the COI communities about the proposed project and brainstorm on the possible impacts either positive or negative, on the local population and initiate confidence building process measures between the project staff and the local communities. A systematic consultation implies a sustained and rigorous sharing of opinion and ideas. Empirical evidences shows that consultations often yield best project and resettlement alternatives, help in developing operational procedures for continued participation, decision making on critical issues, uninterrupted implementation and benefit sharing of the development. The process in the end will crystallize identification of vulnerable groups, minimize the risk of marginalization and develop a viable operational plan to reduce poverty and vulnerability in the project area. The consultations held in the COI areas of the proposed TL were based on the principles of active listening and careful consideration of the comments, ideas and recommendations provided by the stakeholders.

### 5.2 Objectives of the Consultations

The consultations were held to achieve the following objectives;

- Inform the stakeholders about the proposed TL project.
- Provide the local population an opportunity to present their views, values and concerns.
- Provide opportunity to the NTDC to critical examine the current situation and ensure that the benefits of the project are maximized and that no major impacts are overlooked.
- Provide opportunity to the proposed PAPs to influence project design in a positive manner.
- Assess the nature of contentious issues and working through these find out acceptable solutions.
- Create a sense of ownership in the stakeholders and develop sustainable solutions.
- Promote a dialogue among the stakeholders-government, communities, NGOs and the implementing agency.

The consultations at this screening stage of the project concentrated on the safeguards related aspects such as;

- a. Environment (OP 4.01).
- b. Natural Habitat (OP 4.04).
- c. Forests ((OP 4.36)
- d. Indigenous People (OP 4.36)

- e. Physical and Cultural Resources (OP 4.11)
- f. Involuntary Resettlement (OP 4.12)

This chapter provides perceptions of various stakeholders, specially the proposed COI community representatives with respect to the 500 KV double transmission line. Majority of the participants of these consultations especially in Kohistan and Battagram districts were already aware of the development being made for the Hydropower projects-proposed and under implementation. They were already aware of the fact that the construction of run of the river and other hydropower projects are already affecting and will affect their land and water resources, construction activities will affect the current social and environmental setup of the area, and may impact, negative or positive, the economy of this area. The consultations in this background took more time than expected, were more demanding and faced lots of antagonism from the recipient community leadership. The end result, however, lead to a better outcome and laid the basis of ongoing relationship between the NTDC and local communities.

With prior knowledge on impacts, the participants of the consultations tried to divert the consultations towards the political economy of development projects. In order to keep the consultations “meaningful” and “exclusive” the consultant team kept the participants on track to discuss social and environmental aspects of the Transmission line project.

Thanks to the post earthquake communication revolution in the north that the remotest villages and scattered population in the high altitude mountains is well linked through the mobile phone that helped the ESIC team mobilize for the proposed consultation sessions during a prolonged spell of rains and snow fall during the second and third week of December 2012.

The ESIC team held a total of 20 consultation sessions in the COI villages with an average of 10 participants in each session and each session held for two to three hours in the well heated Hujra of any local malik or ex-UC Nazim or Naib Nazim. Two ex-members of provincial assembly from Kohistan and one sitting member of provincial assembly KPK were also part of these consultations held in Komila and Badakot in Kohistan and Banna Allai in Battagram. Two major sessions were also held with NGOs – Salik Development Foundation at Dasu and Pak Mission Society.

The team at the same time was much disappointed when after best efforts and long travels, we were simply told that the officer in charge is either not appointed or the officer is from Mardan or Peshawar and rarely visit his duty station once a month. This is especially true in health, education and municipal services departments. We failed to locate a doctor in Dasu, Pattan, Besham, Thakot, Allai and Battagram during the two weeks travel for treatment to one of sick team member and finally he was driven to Abbotabad for treatment.

The domain effect of these consultations has been;

- a. Wide range of qualitative information about the perception, myths, apprehensions and reactions of the local population.
- b. An important outcome of these consultations is identification of opportunities and constraints of the construction and operation of proposed TL as well as the alternatives.
- c. identified types and nature of social safeguard impacts and how the impacts can and should be minimized.
- d. provided guideline for the EA to develop implementation mechanism.
- e. developed initial contacts and identified the local community leadership to participate in the grievance redress committee (GRC).

### **5.3 Methodology:**

The objective of this exercise was to hold informal consultations with the maximum number of community members' enroute Dasu-Islamabad Transmission line and investigate about their perceptions on the impacts of the project on local environmental and social life. The informal discussions were recorded with the consent of the participants. In order to keep the discussions on track a check list of issues and a structured questionnaire was used to compile profiles of participants. Consultations were held with at least 24 hour notice/information and agenda and the type of participants. The choice of meeting place was left with the local community with a condition that the meeting will be held in the respective settlement at some common place where everyone can join and participate.

The checklist used comprises of the following questions

#### ***Introduction:***

You may be aware of the fact that a number of Hydropower projects are being planned on the Indus River and Dasu and Palas Hydropower projects are also in the list of some 26 HPP planned in the northern areas including Hazara division. The power generated through these HPPs will be ultimately inducted into the national grid for further distribution for industry, agriculture and household use.

The Electricity production, dispatch and distribution is handled by three different wings of WAPDA – Hydropower, NTDC and DISCOs. The NTDC is currently involved in planning for the dispatch and transmission of potential power to be generated from DASU and Palas HPPs.

#### ***Structured checklist:***

- a. know about the socio-economic conditions of the area enroute the proposed TL
- b. inform the COI communities in advance that NTDC is planning to construct a 500 KV double line through this area
- c. discuss about the type and nature of direct and indirect impacts the construction of TL may have on the economy and culture of this area.

- d. In case the feasibility confirms the construction of TL through this area, what do you expect the government should do as benefit sharing in your area?
- e. What is the current pattern of distribution of Land and other resources in the village?
- f. What are the major sources of income in this village how does these sources relate increase or decrease in the poverty levels?
- g. What is the level of vulnerability in this village, and what support the community providing to the vulnerable households?
- h. What is the current level of civic facilities in this area and how the current level of civic facilities achieved?
- i. What are the development priorities of the village and how they can be achieved?
- j. Whether in the past any electricity project planned in your area? If yes, whether the implementing agency offered /paid any compensation?
- k. Has the implementing agency offered you any rehabilitation measures?
- l. Whether the political, local government or jirga played any role in maximizing the benefits for the direct or indirect beneficiaries?

#### 5.4 Number and Level of Participation in Consultations:

Under the proposed Project, public consultations were carried out in the villages from Dasu to Pathar Garh (near Hasan Abdal) in 5 districts, 10 tehsils and 19 Union Councils. Total 21 consultative meetings including 2 local NGOs were held with 273 participants (table 5.5). Major categories of participants include political representatives, local government councilors, development activists, local jirga members and potential project affected persons. Only local traditions elders have the right to participate in the decision making process. Although young people were also present in consultations but their role was limited to an observer. Over the span of 250 km at least one meeting was conducted at a distance of 12-15 km.

**Table 5.1: List of settlements Selected for Consultations**

S.N.	District	Tehsil	Union Councils	Locations	No. of Participants
1	Attock	Hasan Abdal	Sontaki	Pathargarh	19
			Jallo	Katcha Jallo	16
		Ghazi	Chaprian	Chaprian	11
2	Haripur	Haripur	Dheldal	Narra	8
			Beer	Darwaza	18
3	Abbotabad	Abbot Abad	Sherwan	SherwanKalan	10
4	Mansehra	Ugi	Icharrian	Kotla Bala	13
			Perhenna	Khaki	10
			Shamdara	Shamdara	15
5	Battagram	Battagram	Ajmera	Bazargai	9
			Ajmera	Chapargram	13
		Allai	Banna	Banna	17
			Tailoos	Tailos	8
			Pashto	Pashto	14

<b>SN.</b>	<b>District</b>	<b>Tehsil</b>	<b>Union Councils</b>	<b>Locations</b>	<b>No. of Participants</b>
6	Kohistan	Palas	Haran	Bada Kot	18
			Shalkhan Abad	Shalkhan Abad	17
		Pattan	Pattan Islahi Comitte	Pattan	12
			Pak Mission Society (NGO)	Shalkhan Abad	5
		Dassu	Seo	Seo	11
			Komila	Komila	22
			Salak Development Foundation (NGO)	Komila/ Pattan	7
		<b>Grand Total</b>			

## 5.5 Findings of the Consultations

### 5.5.1 Consultation Process:

- Appreciated the team to provide better understand of the proposed TL project to dispatch electricity in the national grid from Dasu and Palas HPPs.
- Appraised the NTDC to start consultations with the stakeholders at the planning stage, with maximum number of APs at their door step.
- The consultation participants at the same time suggested that the confidence level build between the COI communities and the NTDC can only be maintained with the continuity of ESIC team for the micro-level assessment. Any change in the NTDC team for future consultations may result in conflict of opinion on the issues already settled.
- Majority consultation sessions followed by a joint physical verification of the local environment in which the proposed line will be constructed i.e. the size and strength of agriculture terraces, settlement pattern, civic facilities, living environment, cohesion and conflict factors in which the Hazara communities survive.
- Each consultation concluded with the formation of a informal committee to represent local APs in further consultations and assessment at the time of detail design of the project<sup>26</sup>.

### 5.5.2 Suggestions/Recommendations

<sup>26</sup> Names and contact numbers of the committee members are documented separately.

- Participants identified two categories of Affectees – one, direct affectees from loss of crops, trees and structures, and second indirect affectees i.e. the branch of tribe or local community.
- The participants of consultations held in Komila and Patten specially mentioned their experience with NTDC. A 220 KV Dubair-Khankhawar-Mansehra-Islamabad transmission line recently completed by NTDC where the implementation agency never holds consultation with the APs at design and implementation stages. Numbers of direct APs are not paid compensation even after the tower erraction and stringing. Further even the direct APs were not consulted for the assessment of losses. The entire Pattan community decided to block the construction of two towers in protest. The consultations recommended for a fair and transparent process with the involvement of local representatives.
- Consultations identified different forms of vulnerability in different districts. A higher ratio of vulnerables identified in district Kohistan and Battagram as against middle level in Mansehra and low level in Abbotabad and Haripur.
- Demands the affectees or their representatives be involved /consulted at the time of any assessment for the loss of land, crops and trees and structures. They will be in a better condition to assess the nature of loss or impact on the affectees.
- Non interference in the local cultural and tribal traditions.
- A clear policy and entitlement matrix be discussed and agreed with the APs representatives. While fixing the compensation packages the implementing agency should also consider the poverty levels in the COI districts.
- Construction labor from other regions without practice in the local traditions often violates customary rules and causes disputes with local residents. The project should give preference to hire local labor. The project will benefit from local labor in terms of their knowledge and working conditions as well as confidence of the local communities.
- Avoid construction of towers or develop any road through the cultivation terrace as terrace cultivation is the lifeline of the household and cost months of labor and years to stabilize.
- In case it is extremely unavoidable to save the terrace the executing agency should be responsible to restore it in its original condition and pay proper compensation for at least three crops.
- Avoid cutting of trees under the COI with a height less than 5-8 feet in the government forests, Guzara forests and in the private forests. ,
- A fair price of the affected land, trees and fruit trees be fixed and paid before start of the Project.
- The land ownership in this area is not recorded but the local elders (Jirga members) knew who the genuine occupant and how the compensation will be divided.

- As the entire TL route is mountainous with acute shortage of access roads. The access road along the transmission line will be a blessing for the local population. The participants recommended that the NTDC should instruct the construction contractors to coordinate with the local representatives at the time of planning for the access road, use the local wisdom to construct sustainable road network that local communities can also use and maintain.
- As the major part of the TL will traverse through communal lands and Guzara forest areas, the overall community should be provided some benefits of development. .
- The participants insisted on a special package of benefits for the development of civic facilities for indirect affectees.
- The menu of options for benefit in priority order included 1) employment opportunities in the project, 2) technical training for the youth, 3) ensured availability of school teachers and 4) training of local youth in livestock care.

# CHAPTER 6

---

## 6. ANALYSIS OF SOCIAL IMPACTS

### 6.1 Background for Social Impact Assessment

The NTDC Land Acquisition and Resettlement Framework (LARF)<sup>27</sup> is the basic document providing principles for any social assessment and preparation of any Land Acquisition and Resettlement Plan (LARP). The LARF directs that the “initial poverty and social assessment” for the transmission line and/or grid station will only indicate whether the land acquisition and resettlement impacts are likely to occur, their types and likely magnitude. The assessment process, at the same time it will also identify the presence of any Indigenous Peoples (IPs) and justification of any impact on these people. In case the Initial poverty assessment and social assessment report recommend that the subproject requires some land acquisition and resettlement or rehabilitation. The institution involved (public or private) in detailed design on the recommendation of the “initial poverty and social assessment” report will prepare a “Land Acquisition and Resettlement Plan (LARP), in case the private land assets are to be acquired or a “Land Acquisition and Resettlement Due Diligence Report (LARDDR)” in case of government or state land.

In some cases the preparation of a LARP or LARDDR may have to wait until the detailed design and the exact locations requiring land acquisition are known. A LARDDR is to be prepared for subprojects where the IFIs policy on involuntary resettlement will not be triggered (see below), usually where government owned land is acquired. In both cases;

- a. The LARDDR will provide detailed information on how and at what cost the land will be procured.
- b. The LARP will detail out the compensation and/or rehabilitation plan to be implemented before access to the land for civil works is allowed.

The present social assessment report, therefore concentrated only to identify potential social issues/impacts of the proposed transmission lines in terms of their nature, magnitude, extent and location, timing and duration of impacts. The impacts may relate to the project design stage, construction stage and/or the project operation and decommissioning stage.

---

<sup>27</sup> The NTDC LARF is attached as Volume-2 of the Environmental and Social Assessment (ESA) of the Dasu-Islamabad Transmission Line.

### **6.1.1 Current Practices:**

The NTDC does not acquire ROW for the transmission line. The affected Households (AHs) under the RoW are paid one time compensation for the loss of crops and trees and the infrastructure and also provided rehabilitation assistance during the construction stage. After the construction the APs are bound not to construct any infrastructure and grow trees under the RoW. However, NTDC allow growing fruit trees of lower height.

### **6.1.2 Demand for Operation & Maintenance Period Allowance:**

During the operation and maintenance (O&M) of the TL the NTDC uses the ROW for trouble shooting and periodic clearance of ROW. The periodic clearance also involves tree cutting and bush clearance under the ROW. That causes loss of trees and crops for the APs. The NTDC rules do not provide any compensation or allowance for the use private property for the installations for indefinite period neither loss of crops and trees during operation and maintenance. A significant number of participants during the consultations demanded O&M period allowance to the AHs especially for the erection of towers on the private property.

## **6.2 Impact Assessment**

Using the standard impact prediction method, the ESIC team completed this impact assessment exercise in consultation with the stakeholders and field observations throughout the transmission line route. The significance of the potential impacts from the construction and operation of the 250 km long 500 Kv double Transmission Line from Dasu to Islamabad, on the physical and social environment in Hazara division is identified and assessed in this section. The Land Acquisition and Resettlement Framework (Annex-1) of this report contains a set of management plans to mitigate project impacts. With a robust LARF in place, the possible negative social impacts of the Dasu-Islamabad TL project can be comprehensively mitigated.

It is proposed that two parallel running 500 KV lines will be constructed over 250 km length from Dasu to Islamabad. The construction of line will impact on around 3250 hectares of land for the construction of transmission lines that includes 861 hectares of area under towers. Around 60 percent (2000 hectare) more area will be under temporary acquisition for access road during construction phase. The total magnitude of resettlement impact is estimated in the table 6.1 below

Table 6.1 **Magnitude of Impact**

	Item	Line-1	Line-2	Total
1	Total Length of Transmission Line	250 km	250 km	500 km
2	Area Under Towers			
3	Total Towers (at @285 m/tower)	890	890	1780
4	Area Under towers (30*30 meter)	81 ha	81 ha	162 ha
5	COI Area			
6	Corridor width 130 meter	65 meters	65 meters	130 meters
7	Corridor Area	1625 ha	1625 ha	3250 ha

The 250 km long 130 m wide COI of the transmission line will traverse through only 0.15 percent of the total area of 5 Hazara districts. Based on the overall density of population for the entire region only 0.14 percent (7182 persons or 1100 households) are expected to face some impact during the construction of this transmission line.

As the entire COI will be rural thus the construction of TL will;

- \* have no impact on the urban property or livelihood of any urban dweller
- \* almost all the rural settlements will be avoided to minimize the resettlement or rehabilitation impacts.
- \* major part of the line will traverse through barren or forested mountainous thus major impacts will be on trees.
- \* it may be unavoidable to construct some towers on the flat areas where people usually develop terraces for agriculture. We expect minor impacts on the terrace agriculture.
- \* Some isolated housing structures or animal sheds may also face damage during stringing or pulling up construction material on the slopes.

### **6.3 Significance Of Impact:**

The LARF does not impose any restriction on access to, or use of land during and after the construction except for a short period to allow access to the contractor to complete foundation, erection and stringing activities. The impacts will be temporary. The area under 220KV and 500 KV towers provides sufficient vertical clearance to resume agriculture activity through the use of tractors.

The impact on crops and trees is such that AHs will not experience a loss of 10% or more of their productive assets (income generating). The design of the line will avoid any private or public structure and housing structure take care that no other built-up structures, whether private or community owned, will be affected. Thus, none of the 1100 AHs will experience any significant impacts. Therefore the overall resettlement impact of this subproject is considered minor and non-significant.

## 6.4 Indigenous People Issue

All the AHs are Muslim and ethnically Pashtun and gujars. There are no minority people amongst the AHs, and all affected land is either held in private ownership or communal guzara forests or provincial government owned. The term indignity does not apply either on the social setup or on the economic resources of the people living in the entire corridor of impact. Thus, the ADB's *Policy on Indigenous People*, as specified in the Indigenous Peoples Development Framework (IPDF) or the World Bank OP 4.10 is not triggered, and therefore neither an IPDF nor special action is required for this subproject.

## 6.5 Socio-Economic and Cultural Environment

### Social Realities:

The socio-political realities in this Hazara region are complicated. There is currently a savage feud between the Barlvi sects of Sunni and Shias of Gilgit Baltistan. Some areas have also been described as an area of criminal activity, drug mafias (poppy production and trade) and militancy. There are few legal livelihood opportunities. What is available in terms of a legal livelihood is primarily pastoral with some agricultural activity in the fertile valleys. Agriculture is limited in most of the Hazara and especially in Kohistan and Battagram, due to the rocky soils, steep slopes, lack of suitable land and limited water. There is relatively little agriculture in the Northern two thirds of the COI. Most of the farming occurs in the southern third between Haripur and Hasan Abdal where the land is relatively fertile. The project has to find its way through these social realities.

The following paragraphs provide the anticipated impacts and the related measures that can be taken to mitigate the social effects that may occur during various stages of the implementation of the project. Mitigation measures are considered for each stage of the project activity.

### Design Stage:

- The alignment of the transmission line can easily be selected in such a way that settlements in the vicinity of the proposed COI will not be affected;
- Privacy is an important matter for potentially affected people and the activities and customs of local people must be taken into account when selecting the route alignment;
- The project can easily be routed to avoid the small patches of cultivation terraces under the tower foundations.
- The transmission line should be routed to avoid schools and settlements; and
- Avoid shifting and maximize the distance of the T/L from existing permanent structures.

### **Pre-Construction Stage:**

- Compensation will be made prior to occupation of the land by the Contractor;
- In the event structures need to be moved or demolished, compensation will be negotiated and provided prior to project implementation; and
- The same protocol will apply to crops, trees and productive land.

### **Construction Stage:**

- To avoid conflicts/disputes with local people, the project staff and contractors and their activities will be confined within clearly the demarcated construction areas;
- The Contractor will dispose of materials only within designated areas;
- A worker code of conduct will be established and enforced;
- The Project will not affect the mobility of local people;
- Noise and dust emissions during the project execution will be controlled;
- The Contractor will respect and follow local norms and traditions; and
- The Contractor will respect local women; and their privacy.

## **6.6 Resettlement Impact:**

### **6.6.1 Land Acquisition**

It is anticipated that permanent land acquisition will not be required for the transmission line project<sup>28</sup>. As the land surrounding the towers and in the RoW under the strings may be used for agricultural proposes. Land may need to be acquired to relocate residential structures if the height of structures is more than 10 feet. In case of any permanent land acquisition the resettlement and rehabilitation action plan will be trigger – guidance for mitigation measures are provided in the LARF.

Temporary land acquisition will be necessary for the Contractors camps/work areas, aggregate quarries, and access roads. The public consultations strongly recommended that the construction of access roads for the transmission line will benefit the local residents and once these roads are constructed they will help in maintaining these roads. The temporary land acquisition in this context will not cause any acquisition cost provided access roads are constructed with the consent of the local population.

One camp will extend over approximately 2500 m<sup>2</sup>. The impact of temporary land acquisition is not expected to be significant with implementing mitigation measures outlined in LARF of this report.

---

<sup>28</sup>As the site for the proposed Grid Station is not yet been identified and it is anticipated that grid station may be a standalone project

### **6.6.2 Crop and Tree Loss**

The magnitude of loss will depend on the season in which construction is done and the type of crops damaged. Through careful route selection, avoidance of cultivation terrace which are the valuable land for the people living in Hazara region and following the mitigation measures, crop loss will be kept to a minimum following the mitigation management plans provided in the LARF.

### **6.6.3 Local Communities/Workforce**

Particularly sensitive communities such as tribal communities of Kohistan and part of Battagram will be avoided in the final selection of tower location. Majority of the construction labor will be hired from the local communities and will receive social sensitivity training to minimize the potential for impacts on local communities.

### **6.6.4 Loss of Income**

Local farmers may experience loss of income due to tower and/or access road construction. The magnitude of the losses will be estimated once the tower and access road locations have been determined and mitigation measures are provided in the entitlement matrix of the LARF.

Through judicious route selection, crop losses should be minimized. Compensation will be negotiated for all crop and tree loss and provided as per the resettlement policy framework. Preference will be given to affected people while hiring local labor by the contractor. Local residents will have the opportunity to work for the Contractor and local goods and services will be used when possible, therefore the effects on employment are expected to be positive.

### **6.6.5 Gender Issues**

Women in rural Hazara spend most of their time in the field or livestock rearing. Women also take an active part in agricultural activities, collect fuel wood and fetch water, in addition to attending to any domestic related duties. Even in these conditions the local cultural traditions does not allow them to talk to anybody specially the male members of other families from within their own communities.

The Tribal traditions in some part of the region has made it difficult for women to seek any level of education – as under stricter forms of Sunni Islam a woman's place is in the home. The women seeking education from urban areas, and willing to work in rural areas of their own cultural identity are receiving formal threats from rural religious leaders. In rural areas threats have been more serious, resulting in violence against women.

Construction through these areas may cause an invasion of privacy. Every effort should be made to ensure the privacy of local women. Specific concerns will be discussed with the appropriate tribal Elders and guidance is provided in the LARF towards this end. Traditionally the household head (elder) has the ultimate decision making power over the whole family.

#### **6.6.6 Vulnerable Populations**

As estimated in Chapter 4, section 5.3 many of the residents within the proposed transmission line route live below the poverty line and are considered “vulnerable”. The Land Acquisition and Resettlement Framework (LARF) address the magnitude of impacts and which mitigation measures should be implemented. Health and education and livelihood issues are of a high concern. A majority of people live well below the poverty line and a majority of people possess a nil to low literacy level. The ecology of this area suggests that the areas that used to provide forage and firewood are diminishing at a fast pace, pushing people to become more reliant on other forms of livelihood (legal and illegal) that exist in the surrounding areas.

#### **6.6.7 Health and Safety**

Construction workers may be exposed to minor nuisances from severe cold weather to serious health and privacy concerns. Impacts on public health and safety will not be significant during the operational phase.

To ensure the health and safety of construction workers and local residents, the following mitigation measures will be implemented and guidelines are provided towards this end in the EMP in the Environmental Assessment Report. The summary of the guidelines is;

- All construction workers must be provided with clean food, water and sanitation facilities during their employment for the project;
- Workers are to be trained in first aid, and first aid stations are to be easily accessed;
- Workers will be tested for HIV, Hepatitis A, B and C prior to hiring;
- Workers must receive training in construction safety, health and environmental awareness;
- All workers will be provided with personal protective equipment (safety boots, helmets, gloves, masks, etc);
- Compliance with International Labor Organization (ILO) Convention No. 62 is mandatory;
- The Contractor is responsible for development of Safe Work Practices for workers;
- Compliance is to be monitored through safety inspections/audits of the work site and equipment; and
- The Contractor is responsible to ensure safety of the public.

### **6.6.8 Project Affected Persons**

The land holding along the COI takes different forms and entitlements. From communal property by the tribes and local clans, partial private land holding and communal grazing and livelihood areas to well registered private land with clearly defined share in inheritance. Communal land is managed by tribal customary laws ensuring in principle, a degree of fairness and equitable distribution.

Social support mechanisms operate relatively high in these areas as community projects and developments are approached collectively when it comes to community needs such as: death and marriage ceremonies; construction of community meetings places (Hujra) mosques; building and cleaning irrigation channels; protection from floods; maintaining paths; and wood and grass cutting.

The DCO plays a supervisory role for development projects and chairs district development sub-committee, comprising various government officials, to recommend proposals and approve development projects. This person also serves as project coordinator for rural development schemes –making this person the first person to contact in relation to the state and communications with tribal elders.

Jirga systems are strong and powerful local institutions for the reconciliation and resolution of local disputes and punishment for those who violate the local rules and customs. This is especially applicable in Kohistan and Battagram.

The poor and vulnerable populations however, cannot afford the jirga system. The jirga requires hospitality among other things that the vulnerable and poorer populations cannot afford. Accusations have been made by the poor and vulnerable populations that the jirga's ultimate decision tends to favor the rich and influential – those whom are financially able to please the expectations of the jirga's.

Particularly sensitive communities, such as Komila, Pattan, Palas, Tailos and Banna should be avoided during final tower location selection. Construction crews will receive social sensitivity training to minimize the potential for impacts on local communities. Provisions for camps and minimizing community disturbance are presented in the EMP.

### **6.6.9 Relocation of Public Infrastructure**

The transmission line will be routed to avoid cultural, historical, religious structures, schools or public buildings. Although unlikely, in the event existing electric poles, or bridges and culverts required to be removed for construction of the T/L the impacts and mitigation measures are provided in the LARF of this report for the method of valuation and protocols involved in the relocation of public infrastructure.

## 6.7 Menu of Benefit Sharing Options

The main focus of the study has been the assessment and prioritization of needs of the communities situated close to the transmission line. Benefit sharing activities with the selected communities required a strategic focus on those challenges that affect the population most critically, and that the consultation participants themselves identify as key issues in their area. The process also ensured the voice of vulnerable is heard and their needs are assessed properly.

### 6.7.1 How the Menu Identified:

The participatory need assessment process through the consultations with the community members a set of 6 different problems identified as listed in Table-9. The FGDs qualified a menu of options from the wish list of priorities identified by the community members. The key informants on the other hand, not only crystallized the wish list but on the basis of their past experience, identified opportunities and constraints related to the implementation of each option.

### 6.7.2 Wish List of Options:

At the end of each consultation the participants were asked one major question “*what are the development priorities of you area?*” This listing of development priorities was followed by a supplementary question “*how they can be achieved?*”. As expected the wish list starded from 7 to 10 problems including political, social and economic problems. The consultation coordinator than has to intervene to concentrate on “development priorities for the entire village and that are achievable”.

The shortlist of menu of options includes sectors such as education, health, employment, skill development and access roads in the region. The priorities are presented in table-9 in the triangulated form.

### 6.7.3 Ranking of Options:

The ranking of options below is based on the number of times each priority is repeated.

<b>Sector</b>	<b>Health Facilities</b>	<b>Education</b>	<b>Employment</b>	<b>Skill Development</b>	<b>Road Access</b>
Count	19	18	21	20	17
% age	20%	19%	22%	21%	18%
Ranking	3 <sup>rd</sup>	4 <sup>th</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	5 <sup>th</sup>

The above ranking is an academic exercise that emerges from the data analysis. Some of the priorities for instance “availability of functional health facilities” and in the larger community context “employment” may be out of the context of this study or the resultant actions. Infact overall social development itself is a precondition and demand for implementation of this project. Rigid tribal traditions do not allow female education and local social environment discourages teachers and doctors from other districts. Government record shows all schools and health facilities functional with full staff strength. Whereas, over 50% schools and health facilities buildings are either closed or being used for other purposes by local influential’s.

### **6.8 Need to Enhance Local Ownership of the Project.**

There is a strong need to enhance local ownership of the project. Local ownership can only be enhanced through the participation of local communities in the inception, design, implementation and operation and maintenance of the project as well as investing in some resources in some social development projects which are visible functional and long term. Investing in charity or buying in of some influential’s will not create local ownership of the project.

## Annexure-A

## Record of Public Consultations

Sr. No.	Date	Venue	Name of Participants	Concerns
1.	11-12-2012	<b>Village/Town</b> Pathar Garh <b>Union Council</b> Sontaki <b>Tehsil</b> Hassan Abdal <b>District</b> Attock	<ol style="list-style-type: none"> <li>1. Irfan Afzal - Ex UC Nazim</li> <li>2. Muhammad Aslam – Ex Wapda Employee</li> <li>3. Haji Alla Dad</li> <li>4. Muhammad Fayyaz</li> <li>5. Asif Mehmood</li> <li>6. Habibul Rehman</li> <li>7. Muhammad Maskeen</li> <li>8. Sarfraz Khan</li> <li>9. Tariq Mehmood</li> <li>10. Amad Ali</li> <li>11. Muhammad Zareen</li> <li>12. Razi Khan</li> <li>13. Farman Elahi</li> <li>14. Sher Ali Khan</li> <li>15. Shafqat Ali Khan</li> <li>16. Liaqat Ali Khan</li> <li>17. Arshad Ali Khan</li> <li>18. Rab Nawaz</li> <li>19. Gulzar Ali</li> </ol>	<ul style="list-style-type: none"> <li>• We are in the favor of the project but NTDC should satisfy the affected persons regarding the compensation of lost assets.</li> <li>• Agriculture area should be avoided and barren land will be utilized for construction of T/Ls.</li> <li>• Similarly, populated area should be avoided and vacant lands would be utilized for the installation of towers.</li> <li>• Land for Grid Station in Pathar Grah should be acquired according to prevailing market value of land.</li> <li>• Privacy of women regarded with due respect during construction and operational stages of the proposed project.</li> <li>• Local labor of the village should be hired during the construction of the project.</li> <li>• Before start of the work, the affected persons should be consulted and compensated for their losses.</li> </ul>
2.	11-12-2012	<b>Village/Town</b> Katcha-Jallo <b>Union Council</b> Jallo <b>Tehsil</b> Hassan Abdal <b>District</b> Attock	<ol style="list-style-type: none"> <li>1. Malik Nasir</li> <li>2. Malik Rab Nawaz</li> <li>3. Syed Mubarik Shah</li> <li>4. Hameed Mubarik</li> <li>5. Ishrat Ali</li> <li>6. Shamsheer Khan</li> <li>7. Bilal Ahmdad</li> <li>8. Malik Ahsan</li> <li>9. Malik Nisar</li> <li>10. Saadat Ali Khan</li> <li>11. Muhammad Din</li> <li>12. Mujahid Khan</li> <li>13. Kareem Khan</li> <li>14. Ahmad Ali Khan</li> <li>15. Ashraf Ali Khan</li> <li>16. Altaf Ahmad</li> </ol>	<ul style="list-style-type: none"> <li>• We are already facing land shortage, because due to construction of Motorway, GT Road and Railway Line, major part of agriculture land was utilized by these projects.</li> <li>• Already three heavy T/Ls are crossing over our lands; therefore, you are requested to change the T/L routes.</li> <li>• There is also a housing society (Wah Model Town Phase III) nearby our village, which could also cause hindrance in this project.</li> <li>• The participants of the meeting suggested an alternate route of</li> </ul>

<b>Sr. No</b>	<b>Date</b>	<b>Venue</b>	<b>Name of Participants</b>	<b>Concerns</b>
				<p>the T/Ls. NTDC plan to pass the line along the right side of the M-1 from Khacha-Jallo to Phathar Garh and at Pather Garh the T/Ls will cross the M-1 and connect with proposed Grid Station. The said area is heavily populated and also includes a large residential society (Wah Model Town Phase-III), which is under planning and can be a hindrance for NTDC. The Participants suggested that if NTDC cross the T/Ls to M-1 straight on the west side of the village Kacha-Jallo and go to proposed site of Grid Station (Jang Bahtar) along the left side of the M-1 that will be more feasible. The ESIC team has visited the proposed route along the both sides of M-1 and observed the impacts that can be reduced to adopt the route along left side as compare the right side of the M-1.</p>
3.	12-12-2012	<b>Village/Town</b> Chaprian <b>Union</b> <b>Council</b> Chaprian <b>Tehsil</b> Ghazi <b>District</b> Haripur	1. Muhammad Daood 2. Muhammad Masood 3. Maqbool Ali 4. Muhammad Riasat 5. Tanvir Ali 6. Ali Jan 7. Ghulan Khan 8. Abid Ali 9. Sojat Ali 10. Sajawal Ali 11. Muhammad Ameer	<ul style="list-style-type: none"> <li>• Agriculture land is in the form of small holdings, therefore it should be endeavored to save that the line would pass through barren land.</li> <li>• We provide two options for smooth execution of the project: (a) The line should pass along the base of the mountains, so that settlement and agriculture land will be saved; (b) The route of T/line should be along the Qay Nulla involving the settlements; Katcha-Jallo – Bafad – Niko – Sabz Peer – Goonga – Bharwal – Mohri – Kanwan – Palar Chugi – Bherian – Chamba – Khalabatt. This route will involve relatively less resettlement and other social impacts because along this the</li> </ul>

<b>Sr. No</b>	<b>Date</b>	<b>Venue</b>	<b>Name of Participants</b>	<b>Concerns</b>
				<p>mostly land is barren and not being used for any productive activities.</p> <ul style="list-style-type: none"> <li>• A newly proposed road by NHA from Hassanabdal to Gilgit is also passing through the Chapprian village and most of the land is being acquired from the land owners of the Chapprian village for the purpose of this road construction.</li> <li>• We will not support this project, unless they are provided with alternate land. Because the land will be lost forever and they will not be able to construct house and plant trees under the line.</li> </ul>
4.	12-12-2012	<b>Village/Town</b> - Narra <b>Union Council</b> Dheldal <b>Tehsil</b> Haripur <b>District</b> Haripur	<ol style="list-style-type: none"> <li>1. Muhammad Usman</li> <li>2. Zafar Ali</li> <li>3. Shoukat Ali</li> <li>4. Muhammad Javed</li> <li>5. Misbah Khan</li> <li>6. Khalid Nawaz</li> <li>7. Rab Nawaz</li> <li>8. Raheem Bux</li> </ol>	<ul style="list-style-type: none"> <li>• It is good development to invest in power enhancement projects as we are facing acute power shortage.</li> <li>• Rights of the affected persons should be expedite and given due attention while implementing project.</li> <li>• Sufficient compensation should be given for the damages due to the installation of towers and stringing activities.</li> <li>• The area under T/Ls towers will be wasted and cannot be utilized appropriately, so handsome compensation should be given to affected persons.</li> </ul>
5.	13-12-2012	<b>Village/Town</b> Darwaza <b>Union Council</b> Bher <b>Tehsil</b> Haripur <b>District</b> Haripur	<ol style="list-style-type: none"> <li>1. Haibat Khan</li> <li>2. Azam Khan</li> <li>3. Muhammad Altaf</li> <li>4. Muhammad Sajjad</li> <li>5. Tahir Iqbal</li> <li>6. Asim Shehzad</li> <li>7. Muhammad Iqbal</li> <li>8. Amar Nawaz Khan</li> <li>9. Abuzar Ghaffari</li> <li>10. Mian Khan</li> </ol>	<ul style="list-style-type: none"> <li>• We are in the favor of project but adequate compensation should be paid for the loss of trees and crops and other losses.</li> <li>• The affectees of already constructed T/L by WAPDA have not yet been compensated. It is anticipated that the same would not be practiced for the proposed project.</li> </ul>

<b>Sr. No</b>	<b>Date</b>	<b>Venue</b>	<b>Name of Participants</b>	<b>Concerns</b>
			11. Aureng Zaib 12. Kudadad Khan 13. Rajib Ali 14. Kazim Ali 15. Muhammad Tariq 16. Shahid Ali 17. Muhammad Khalid 18. Afzal Ali	<ul style="list-style-type: none"> <li>• Bab-e-Tanawal foundation comprising of 25-30 members which is actively working in the village and participating in all kind of the developmental activities of the area.</li> <li>• We do not expect any direct benefit from this project, but for the development of the country, we are ready to cooperate to the possible extent.</li> <li>• Project benefits will be shared for well being of the affected persons.</li> </ul>
6.	14-12-2012	<b>Village/Town</b> Sherwan Kalan <b>Union Council</b> Sherwan <b>Tehsil</b> Abbotabad <b>District</b> Abbotabad	1. Fida Muhammad Khan 2. Haji Rahim Dad 3. Jan Muhammad 4. Kareem Tanoli 5. Iftikhar Hussain 6. Jahan Sher Khan 7. Muhammad Moosa 8. Ibrahim Tanoli 9. Tufail Mughal 10. Ilyas Ali	<ul style="list-style-type: none"> <li>• It is a good step that all the developmental activities are evaluated from social point of view and the residents of project area are being consulted before start of the project.</li> <li>• It is proposed that the T/Ls route should be along the road, so that the access would be available during construction, operation and maintenance of transmission line.</li> <li>• The people of the area are cooperative and will not pose any problem during the T/L construction provided they are satisfactorily compensated by the NTDC.</li> <li>• The residents of this area will be happy if new access routes are made by the contractors during T/L construction. Because, there are many areas near villages; Rattian and Kamila, where access is not available.</li> <li>• In the jurisdiction of Sherwan Police Station, a committee/Jirga has been formulated. This Jirga plays vital role in the resolution of all the disputes of area. During construction of T/L, if any such hindrance arises, that will be resolved by the Jirga.</li> </ul>

<b>Sr. No</b>	<b>Date</b>	<b>Venue</b>	<b>Name of Participants</b>	<b>Concerns</b>
7.	15-12-2012	<b>Village/Town</b> Kotla Bala <b>Union Council</b> Icharrian <b>Tehsil</b> Ougi <b>District</b> Mansehra	1. Raees Azam 2. Dildar Khan 3. Shafi Khan 4. Haq Nawaz 5. Haji Muhammad Saleem 6. Sado Khan 7. Muhammad Riffique 8. Muhammad Tufail 9. Muhammad Sadiq 10. Rashid Iqbal 11. Muhammad Din 12. Amjad Ali 13. Sahib Khan	<ul style="list-style-type: none"> <li>• Good to see that the power infrastructure development is gradually improving in the country. We hope that investment in the power sector will help to reduce power shortage and minimize the frequent power outages.</li> <li>• We want that social issues will be given top priority while constructing T/Ls and minimum loss policy will be adopted as far as possible.</li> <li>• However, we suggest that right of the affected persons will be restored to satisfactory level so that the developmental activities will be accepted and appreciated throughout the country.</li> </ul>
8.	15-12-2012	<b>Village/Town</b> - Khaki <b>Union Council</b> Perhenna <b>Tehsil</b> - Ougi <b>District</b> Mansehra	1. Asif Khan 2. Hakim Khan 3. Pir Muhammad 4. Roshan Khan 5. Khush Rang Khan 6. Feroz Din 7. Nazir Khan 8. Muhammad Iqbal 9. Javaid Ali 10. Qadir Bux	<ul style="list-style-type: none"> <li>• Agriculture land is in small patches, therefore, the line should cross through barren mountains. If inevitable, the affected persons should be paid for the loss of crops and trees.</li> <li>• The proposed T/Ls are of high voltage, therefore the populated areas should be avoided to the possible extent.</li> <li>• No direct benefit is expected from the line but, it is recommended that the labor for construction of T/L should be hired from local areas.</li> <li>• Local norms and customs would be practiced during project construction and operation. The privacy of underlying resident should not be impaired.</li> </ul>
9.	16-12-2012	<b>Village/Town</b> Shamdarrah <b>Union Council</b> Shamdarrah <b>Tehsil</b> - Ougi	1. Haq Nawaz 2. Khan Bahadur 3. Muhammad Inayat 4. Khadim Hussain 5. Bashir Ahmad 6. Like Muhammad 7. Iftikhar Ahmad	<ul style="list-style-type: none"> <li>• Initially the T/Ls will be constructed in open areas and on vacant lands, but later on, due to increasing population, the houses cannot be constructed under the lines.</li> <li>• No large trees can be grown</li> </ul>

<b>Sr. No</b>	<b>Date</b>	<b>Venue</b>	<b>Name of Participants</b>	<b>Concerns</b>
		<b>District</b> Mansehra	8. Hussain Khan 9. Nazir Ahmad 10. Shahid Khan 11. Gulzar Khan 12. Jahangir Khan 13. Jahanzeb Khan 14. Rustam Khan 15. Tayyab Khan	<p>under the transmission line, which is another obstruction.</p> <ul style="list-style-type: none"> <li>• If an affected person has only 10 marla area for growing crop and vegetables, which will be lost due to construction of tower in that land. The NTDC should compensate him by providing alternate land.</li> <li>• Construction of two towers does not mean only the loss of 6 marla land, rather whole canal is devalued. Nobody will be agreed to purchase that land after tower construction.</li> <li>• Before start of the work, the affected persons should be consulted and compensated for their losses.</li> <li>• In spite of all the aforementioned apprehensions, the residents of this area will cooperate in the construction of proposed transmission lines.</li> </ul>
10.	17-12-2012	<b>Village/Town</b> Bazargai <b>Union Council</b> Ajmera <b>Tehsil</b> Battagram <b>District</b> Battagram	1. Riaz Khan 2. Chan Zaib 3. Baz Khan 4. Shamroz Jan 5. Dukhtar Khan 6. Niaz Akhtar 7. Gul Khan 8. Taj Haider 9. Haji Ghulam Ishaque	<ul style="list-style-type: none"> <li>• Construction of T/L is very prospective development in our area but we cannot see any direct benefit from the proposed project. The main obsession is that the electricity will not provided to us. Similarly, the labor will be hired by the Contractor from other areas of the country and the overall situation of the area remains same.</li> <li>• The Government and NTDC should plan some social welfare projects along with such major projects for the well being of the affected persons as well as other people along the T/L corridor.</li> </ul>
11.	17-12-2012	<b>Village/Town</b> Chapagram <b>Union Council</b>	1. Haji Dalwar Khan 2. Zameen Khan 3. Shafiq Khan 4. Attaullah Khan 5. Noraz Khan 6. Muhammad Shah	<ul style="list-style-type: none"> <li>• Dasu Dam construction and hydro power generation is very good development to cater energy loss as well as for the prosperity of Kohistan. We will cooperate for the proposed</li> </ul>

<b>Sr. No</b>	<b>Date</b>	<b>Venue</b>	<b>Name of Participants</b>	<b>Concerns</b>
		Ajmer a <b>Tehsil</b> - Batta gram <b>District</b> - Batta gram	7. Syed Waqar Shah 8. Gul Zaman 9. Muhammad Navid 10. Muhammd Khan 11. Zahid Khan 12. Usman Khan 13. Muhammad Hussain	project in national interest. • It is also worth mentioning that often development projects of such nature deprived from the project benefits for the local people. So, it is suggested that the project benefits will be shared with local people. • We will accept that minimum damage will be occurred during the installation of towers and for that adequate compensation will be paid to affected persons.
12.	29-11-2012	<b>Village/Town</b> - Banna <b>Union Council</b> - Banna <b>Tehsil</b> - Allai <b>District</b> - Batta gram	1. Jamal Nasir – Political Representative 2. Muhammad Kamal – WAPDA Employee 3. Gul Muhammad 4. Muhammad Sultan 5. Shah Faisal Khan 6. Qazi Rehman 7. Falak Khan 8. Sherin Rehman 9. Anwar Rehman 10. Aslam Ali 11. Abdul Rehman 12. Bakhtiar Khan 13. Hasan Khan 14. Niaz Khan 15. Muhammad Javaid 16. Safdar Khan 17. Zameer Khan	• We will cooperate with the proposed development to the possible extent. However, the generous demands of affected persons will be fulfilled for smooth work progress. • In the recently constructed T/L in our area, I was actively involved in the dialogue process between protestors and executing agencies for restoration of the terminated work at site. • Allai area is rich of vegetation being high an altitude. The rich biodiversity is recognition of this area. If possible alternate route will be analyzed or may consider minimum disturbance to the biodiversity.
13.	29-11-2012	<b>Village/Town</b> - Tailoos <b>Union Council</b> - Tailoos <b>Tehsil</b> - Allai <b>District</b> - Batta	1. Mian Khan 2. Shams ul Haq 3. Arshad Ali 4. Arshad Iqbal 5. Khayyal Muhammad 6. Gul Rehman 7. Nizam Khan 8. Gul Zaman	• Job opportunities will be provided to the locals on priority basis during the construction of the proposed project as people of our area will go to other areas for the labor and employment. • During construction local customs and norms will be followed particularly with respect to privacy of women.

<b>Sr. No</b>	<b>Date</b>	<b>Venue</b>	<b>Name of Participants</b>	<b>Concerns</b>
		gram		<ul style="list-style-type: none"> <li>Infrastructure facilities will be improved along with basic utilities in our village as we are lacking the basic services. Educational facilities will also be provided to educate and aware our children's.</li> </ul>
14.	29-11-2012	<b>Village/Town</b> - Pasht <b>Union Council</b> - Pasht <b>Tehsil</b> - Allai <b>District</b> - Batta gram	1. Shahbaz Khan 2. Sarwar Khan 3. Noor Khan 4. Barkatullah 5. Ghulamullah 6. Jawad Khan 7. Gul Nawaz 8. Ghulam Khan 9. Bahroz Khan 10. Arshad Khan 11. Habib Ahmad 12. Ashfaq Khan 13. Muhammad Asif 14. Iqbal Khan	<ul style="list-style-type: none"> <li>During the construction of T/L project approach roads will be required for the construction purposes. It is an old practice that compensation will be only made for the land under T/L tower base and the compensation was not made for constructing approach roads. It is requested that compensation should be made for the damages that occur during the construction of approach roads.</li> <li>It is also recommended that the Contractor will inform locals prior to construction work at site. So, the crops, trees, assets etc. in ROW will be salvaged.</li> </ul>
15.	28-11-2012	<b>Village/Town</b> - Bada Kot <b>Union Council</b> - Haran <b>Tehsil</b> - Palas <b>District</b> - Kohistan	1. Moulana Asmatulla Khan 2. Muhammad Afzal 3. Younis Khan 4. Abdul Hannan 5. Mufti Khan 6. Ayub Khan 7. Nowsher Khan 8. Moulana Abdul Mustahan 9. GulRoh Khan 10. MalakWadan 11. Abdul Qadeer 12. Haji Rehman 13. Seqool Khan 14. Abdul Sajood 15. Sarwar Khan 16. Malik Sabir 17. Malik Mehabab 18. Malik Sehrab	<ul style="list-style-type: none"> <li>Job opportunities should be provided to the locals for the proposed T/L.</li> <li>Rights of the APs should be given due consideration and issues of APs should be addressed properly.</li> <li>In our area young's are very determine to gain trainings, so training opportunities should be given to the Younger's of the area.</li> <li>Most of the people migrated in other areas only to provide quality education to their children's. So education and health facilities should be provided for the welfare of the locals.</li> <li>In our area electricity is not available, so the Pattan grid station should be upgraded for the dispersal of power to our</li> </ul>

<b>Sr. No</b>	<b>Date</b>	<b>Venue</b>	<b>Name of Participants</b>	<b>Concerns</b>
				<p>area.</p> <ul style="list-style-type: none"> <li>Houses and agriculture lands should be avoided as much as possible.</li> <li>Maximum weightage should be given to the agriculture lands as compare to the easy approach for the installation of tower (plain areas).</li> </ul>
16.	28-11-2012	<p><b>Village/Town</b></p> <ul style="list-style-type: none"> <li>Shalkhan Abad</li> </ul> <p><b>Union Council</b></p> <ul style="list-style-type: none"> <li>Shalkhan Abad</li> </ul> <p><b>Tehsil</b></p> <ul style="list-style-type: none"> <li>Palas</li> </ul> <p><b>District</b></p> <ul style="list-style-type: none"> <li>Kohistan</li> </ul>	<ol style="list-style-type: none"> <li>Haibut Khan-X Nazim UC Shalkan Abad</li> <li>Mufti Mahmood</li> <li>Jahnzeb Khan</li> <li>Haji Abdul Qayum</li> <li>Haji Gulzar</li> <li>Haji Orangzeb</li> <li>Noor Dad</li> <li>Muhammad Ilyas</li> <li>Ahmad Yousaf</li> <li>Gulab Khan</li> <li>Abdul Rahim</li> <li>Anwar Badshah</li> <li>Moulvi Qasim</li> <li>Naseem Khan</li> <li>Saiful Rehman</li> <li>Abdul Rehman</li> <li>Khalil Ullah</li> </ol>	<ul style="list-style-type: none"> <li>We will welcome any kind of development in the best interest of our country. However, we will also demand that the electricity should be provided free of cost in our area.</li> <li>The compensation should be provided sufficiently to cater the loss of our land and livelihood.</li> <li>Installation of tower will cause disturbance to our crops, lands, trees etc. people of area have small land holdings for agriculture, so the compensation should be handsome to restore their livelihood.</li> <li>No revenue record of land is available here.</li> <li>Land is marked by the owner tribe</li> <li>Major occupations in the area are livestock rearing, wood cutting, agriculture, labour etc.</li> <li>Govt. Middle School in the area is operational since 1995 by a local NGO.</li> <li>Basic utilities are not available in the area i.e. electricity and natural gas</li> <li>Disputes are solved by Jirga</li> </ul>
17.	18-12-2012	<p><b>Village/Town</b></p> <ul style="list-style-type: none"> <li>Pattan</li> </ul> <p><b>Tehsil</b></p>	<p><b>Pattan Islahi Committee/Jirga</b></p> <p><b>Pattan,</b></p> <ol style="list-style-type: none"> <li>Jamal Khan</li> <li>Haji Yar Dad</li> </ol>	<ul style="list-style-type: none"> <li>Construction of T/Ls in the hilly area towards Palas valley will be a difficult task, therefore, it is proposed that the T/Line should run parallel to the Indus River.</li> </ul>

Sr. No.	Date	Venue	Name of Participants	Concerns
		<ul style="list-style-type: none"> <li>- Pattan District</li> <li>- Kohistan</li> </ul>	<ol style="list-style-type: none"> <li>3. Dasham Khan</li> <li>4. GulShehzad</li> <li>5. Muhammad Saffa</li> <li>6. Haji Abdul Kareem</li> <li>7. Haji Abdul Majid</li> <li>8. Haji Dost Muhammad</li> <li>9. Haji Nawab</li> <li>10. Qari Dost Muhammad</li> <li>11. Mir Dad</li> <li>12. Malik Badshah</li> </ol>	<ul style="list-style-type: none"> <li>• The major hurdles in Palas valley route will include; protected forest, small patches of land used for agriculture, snow falling during winter, lack of access and difficulties for repair and maintenance activities.</li> <li>• The objective of this suggestion was that the community wanted the line should cross through their area of influence so that their own community would be benefited from the project.</li> <li>• Willingness to participate in the process of execution of the project.</li> <li>• The compensation should be assessed based on prevailing local market rates of the area and the nature of the land involved under the proposed T/Ls.</li> </ul>
18.	19-12-2012	<b>Pak Mission Society (NGO) Pattan, Tehsil Pattan District Kohistan</b>	<ol style="list-style-type: none"> <li>1. Rajar Rofis – Project Manager</li> <li>2. Abdul Sattar– Tehsil Coordinator</li> <li>3. Ashfaq Maqbool – Assistant Project Manager</li> <li>4. Dushnm Khan– Field Worker</li> <li>5. Gul Shahzada– Field Worker</li> </ol>	<ul style="list-style-type: none"> <li>• Pak Mission Society is a Para-Movement Church based relief and development organization, which cover business, development, financial, management, technical, pastoral, health and education expertise. Pak Mission Society is working in Kohistan area for the above mentioned expertise. The society is also running Middle School at Shelkhan Abad in the Govt. school building. We are engaged in the education and health sector improvement at Shelkhan Abad and other areas of Kohistan. Our objective is to provide quality education and better health facilities for the people of Kohistan.</li> <li>• The proposed development will be beneficial for the Kohistan area and bring prosperity along with better opportunities in the</li> </ul>

<b>Sr. No</b>	<b>Date</b>	<b>Venue</b>	<b>Name of Participants</b>	<b>Concerns</b>
				area.
19.	20-12-2012	<b>Village/Town</b> - Seo <b>Union Council</b> - Seo <b>Tehsil</b> - Dassu <b>District</b> - Kohistan	1. Jan Muhammad 2. Gul Muhammad 3. Nawazish Ali 4. Akbar Ali 5. Yasir Khan 6. Naveed Jan 7. Noor Khan 8. Dilbar Khan 9. Dost Khan 10. Sohrab Khan 11. Kamal Khan	<ul style="list-style-type: none"> <li>It is requested that tree cutting will be avoided in the ROW to the possible extent, as the trees are precious here and prevailing trend of the trees cutting in the area has significantly reduced dense forests.</li> <li>The fair compensation will be made for the affected crops, trees, lands, and other assets prior to construction of the proposed project.</li> <li>The land ownership in this area is not recorded but the local elders (Jirga members) knew who the genuine occupant and how the compensation will be divided in their tribe.</li> <li>Local labor will be hired so that the locals will support proposed development and will allow room in their areas for construction of T/L.</li> </ul>
20.	28-11-2012	<b>Village/Town</b> - Komila <b>Union Council</b> - Komila <b>Tehsil</b> - Dassu <b>District</b> - Kohistan	<b>Chirag Abad Society</b> 1. Gulab Shah 2. Ahsanullah 3. Ahsan Ayoub 4. Salam Dar 5. Hibab Shah 6. Haji Sulmain Shah 7. Mannan Khan 8. Habibul Rehman 9. Zainul Rehman 10. Ziadad Khan 11. Jamroz 12. Mujeeb Rehman 13. Haji Shah 14. Ameer Khan 15. Akbar Shah 16. Syed Haroon 17. Muhammad 18. Noorul Haq 19. Nazar Rehman 20. Muhammad Feroze 21. Muhammad	<ul style="list-style-type: none"> <li>Three major tribes in Komila 1) Shamat Khel, 2) But Khel, and 3) Akhar (blacksmith)</li> <li>In our area decision are usually made by jirga and Jirga is the highest decision making institution -elder persons / influentials are nominated to become Jirga member. For decision within the tribe -elders from different branches normally takes the role of Jirga members. Jirga decisions are always oral and announced in public and accepted by all.</li> <li>In case one party disagree with Jirga decision, that case goes to Maulvi for Sharia decision-group of Mullahs (5-6) than decide the case through sharia laws.</li> <li>The participants of consultations held in Komila and Pattan specially mentioned their</li> </ul>

Sr. No	Date	Venue	Name of Participants	Concerns
			Ayoub 22. Sardar Ayoub	<p>experience with NTDC. A 220 KV Dubair-Khankhawar-Mansehra-Islamabad transmission line recently completed by NTDC where the implementation agency never holds consultation with the affected persons at design and implementation stages. Numbers of affected persons are not paid compensation even after the tower erection and stringing. Further even the direct affected persons were not consulted for the assessment of losses. The entire Pattan community decided to block the construction of two towers in protest. The consultations recommended for a fair and transparent process with the involvement of local representatives.</p> <ul style="list-style-type: none"> <li>• Avoid construction of towers or develop any road through the cultivation terrace as terrace cultivation is the lifeline of the household and cost months of labor and years to stabilize.</li> <li>• In case it is extremely unavoidable to save the terrace the project should be responsible to restore it in its original condition and pay proper compensation for at least three crops.</li> </ul>
21.	30-11-2012	<b>Salak Development Foundation (NGO) Komila, Pattan Tehsil Dassu, Pattan District Kohistan</b>	<ol style="list-style-type: none"> <li>1. Fazal Subhan - Field Coordinator</li> <li>2. Dr. Hafeez</li> <li>3. Dr. Taj Muhammad</li> <li>4. Jahnzeb Salik</li> <li>5. Liaqiat Ali - Field Coordinator</li> <li>6. Ahmad Khan - Field Coordinator</li> <li>7. Jahnzeb Khan – Education</li> </ol>	<ul style="list-style-type: none"> <li>• Salik Foundation is providing better health facilities in five health centers in district Kohistan. The Salik Foundation has also established fix center for polio campaign in their respective center on request of Health Department Kohistan</li> <li>• We will accept that with the implementation of proposed development the social life of the Kohistani people will</li> </ul>

Sr. No.	Date	Venue	Name of Participants	Concerns
			Promoter	improve. It is also accepted during construction activities health of local people will not be compromised.

## Annexure-B

### Detailed Description of Consultations held with Stakeholders

Project Stakeholder	Name/Designation	Comments/Concerns
<b>EPA Khyber Pakhtunkhwa</b>	<b>Dr. Amjad Ali</b> Deputy Director EPA-KPK	<ul style="list-style-type: none"> <li>After 18<sup>th</sup> Constitutional Amendment, the environment department has been shifted to provinces. EPA Khyber Pakhtunkhwa is in process to notify amendments.</li> <li>The EIA report will be submitted simultaneously to both EPAs Khyber Pakhtunkhwa and Punjab as the project corridor falls in both the provinces. However, the decision will be made by the Director Generals of both EPAs amicably to carry out Public Hearing and for the issuance of NOC.</li> <li>It is also informed by EPA Khyber Pakhtunkhwa that EIA study will be carry out in accordance with the local and national laws and guidelines and will fulfill all the legal requirements of the area and country for the proposed project.</li> </ul>
<b>Wildlife Department</b>	<b>Syed Mubarak Ali Shah</b> Chief Conservator <b>Muhammad Faiq</b> DFO Abbottabad Former DFO Kohistan	<ul style="list-style-type: none"> <li>The Kohistan area is of utmost importance from biological aspects particularly Palas Valley. The various kinds of wildlife species are present in the area.</li> <li>The Palas Valley is distributed in three distinct sections which are known as the biodiversity core zones. However, the proposed T/L routes crossed among the lower Palas Valley which may not crossed the three biodiversity core zones. It is recommended that the EIA Consultant will review the route alignment in detail particularly in Palas Valley to assess potential environmental and social impacts.</li> <li>It is also informed by Wildlife Officials that is the only area Palas Valley which is untouched or protected. Therefore, it is requested to endeavor alternate route for the proposed T/Ls.</li> <li>Horny pheasants (Tragopan) are endangered species of Palas Valley, which will require particular attention during environmental assessment in order to determine anticipated impacts from the proposed project.</li> </ul>

<b>Project Stakeholder</b>	<b>Name/Designation</b>	<b>Comments/Concerns</b>
	<p><b>Fazal Azeem</b> Range Officer Dasu  Kohistan Wildlife Division Khyber Pakhtunkhwa</p>	<ul style="list-style-type: none"> <li>• <i>The district Kohistan is blessed with a variety of wildlife and hence known as “The Land of Wildlife”.</i></li> <li>• <i>More than 600 Markhors are present in District Kohistan and about 50 sq.km area is marked for protection of Markhor. This area is present about 20 km upstream to the proposed Power Station Dasu, therefore no impact is expected due to construction of Power station and high voltage transmission line.</i></li> <li>• <i>This area is also the route of migratory birds and known as Flyway No. 7 (The Green Flyway). The number of migratory birds has increased due to Afghan War. As such no impact on this flyway is envisaged due to construction of proposed project, because the birds fly are at high elevations.</i></li> <li>• <i>It is advisable that all the protective measures would be adopted during project construction to eliminate the chances of disturbance to wildlife of the project area.</i></li> </ul>
<b>Forest Department</b>	<p><b>Abdullah Khan</b> DFO Direction</p>	<ul style="list-style-type: none"> <li>• <i>The Kohistan area is rich of forestation particularly Palas Valley, which is protected forest. It is the only forest in the Kohistan area which is untouched or protected. It is suggested that the alternate route will be analyzed even the cost is higher than the proposed Palas Valley T/Ls route.</i></li> <li>• <i>It is requested that official permission will be obtained prior to construction of T/Ls from Forest Department, Khyber Pakhtunkhwa. The proposed mechanism is to acquire permission via sending official letter to Secretary Environment, Khyber Pakhtunkhwa. The Secretary Environment will forward the letter to Chief Conservator Forest (CCF-II) for further processing.</i></li> </ul>
	<p><b>Azhar Ali Khan</b> DFO Upper Kohistan Forest Division</p> <p><b>Eissa Khan</b> Assistant Forest Officer  Lower Kohistan Forest Division</p>	<ul style="list-style-type: none"> <li>• <i>There cannot be two opinions on the possible benefits of the construction of two high voltage transmission lines, but the removal of trees from tower foundations and those lying below the transmission lines is obvious. This impact can be minimized by planting trees at least three if one is cut. The forest department Khyber Pakhtunkhwa will extend its assistance in selecting the species for compensation plantation.</i></li> <li>• <i>No dislocation of human population and infrastructure appears to result from the construction of the project. But, for smooth execution of the project, it is advisable that local community should be taken in complete confidence and thoroughly consulted before</i></li> </ul>

<b>Project Stakeholder</b>	<b>Name/Designation</b>	<b>Comments/Concerns</b>
		<p><i>launching of the Project.</i></p> <ul style="list-style-type: none"> <li>• <i>After completion of the project, all the construction sites would be restored to its original shape to avoid soil erosion.</i></li> </ul>
<b>Ministry of Climate Change</b>	<p><b>Muhammad Mansoor Khan</b> Deputy Project Manager National Impact Assessment Program Ministry of Climate Change Government of Pakistan</p> <p><b>Dr. MameonaWali Muhammad</b> Deputy Director (Biodiversity)</p>	<ul style="list-style-type: none"> <li>• <i>It is a good step that all the projects are evaluated from environmental point of view before implementation. The Environmental Assessment as envisaged by the authorities concerned is a step in the right direction.</i></li> <li>• <i>It will be appropriate to preserve all the vegetation, as far as possible, where inevitable, the compensation plantation should be done after consultation with the Forest Departments of Khyber Pakhtunkhwa and Punjab.</i></li> <li>• <i>After 18<sup>th</sup> Constitutional Amendment, the environment department has been shifted to provinces. For NOC purpose, both the departments viz. EPAKhyber Pakhtunkhwa and EPD Punjab would be consulted.</i></li> </ul>
<b>Conservator</b>	<p><b>Dr. Abdul Aleem Chaudhry</b> Ex-Chief Conservator of Forests Ex-DG Wildlife and Parks Department Punjab, Member IUCN World Commission on Protected Areas, Formerly Member WWF Board of Trustees, Member WWF Scientific Committee</p>	<ul style="list-style-type: none"> <li>• <i>Importance of faunal resources of the area can hardly be overemphasized in view of their aesthetic, recreational and commercial value.</i></li> <li>• <i>Similarly, vegetation of the area bears high significance because of its complementarity to fauna, in ecosystem.</i></li> <li>• <i>The bird flyway no. 07 exists in the proposed project corridor, but no impact is envisaged, as the bird fly at height of 1000m to 2000m, while height of tower is low.</i></li> <li>• <i>The district Kohistan is known as the "Land of Wildlife" therefore, special measure would be adopted during construction phase to minimize the disturbance to wildlife.</i></li> <li>• <i>Although no protected area falls in the whole project corridor, but extreme care is required to exercise full protection to the fauna/flora, during the construction and post construction phases of the Project.</i></li> </ul>