



Document stage: Draft  
16 May, 2017

**PAK: 48078-002 MFF II Power Transmission Enhancement Program (PTEIP II)**

**Social Due Diligence Review of Upgradation/ Extension of NTDC's Telecommunication & SCADA System**

**Prepared by:**

Environment & Social Impact Cell of National Transmission and Despatch Company (NTDC), WAPDA House, Lahore with Assistance of PPTA for Asian Development Bank (ADB).

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**Asian Development Bank**

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## ABBREVIATIONS

ADB	Asian Development Bank
DDR	Due Diligence Report
ESIC	Environment and Social Impact Cell
GOP	Government of Pakistan
kV	Kilo Volt
IR	Involuntary Resettlement
IPs	Indigenous Peoples
IPDP	Indigenous Peoples Development Plan
LARF	Land Acquisition and Resettlement Framework
MFF	Multi tranche financing facility
NTDC	National Transmission and Dispatch Company (Pakistan)
PPTA	Project Preparatory Technical Assistance
SDO	Sub Divisional Officer
SPS	Safeguard Policy Statement 2009

## I.INTRODUCTION

### A. Project Background

1. The 2<sup>nd</sup> Power Transmission Enhancement Investment Programme (PTEIP 2) is planned for implementation with financial assistance of Asian Development Bank (ADB) through the 2<sup>nd</sup> multi-tranche financing facility (MFF 2). The objective of the program is to improve Pakistan's Power Transmission Infrastructure and Management. National Transmission and Despatch Company (NTDC, the implementing agency) will implement the programme through various tranches of MFF 2. Each tranche has constituted a project, which, in turn, is divided into a number of sub-projects involving the construction/ upgradation of power grid stations (or sub-stations) and installation of power transmission lines and upgradation/ extension of NTDC telecommunication and SCADA system.

2. The tranche II of MFF II, phase-II contains 05 subprojects (Annex 1) which mainly involve construction, upgradation/ extension and augmentation of substations and rehabilitation and setting up of existing and transmission lines.

3. **Upgradation/ extension of NTDC Telecommunication and SCADA System:** The power system of Pakistan is expanding continuously by addition of new Power Houses and 500/ 220kV Grid Stations but the existing facilities at National Power Control Center (NPCC) are insufficient to interface the units with Supervisory Control & Data Acquisition (SCADA) system. As a result, a large number of IPPs, GENCOs, WAPDA Hydel and NTDC Grid Stations are not being real time monitored for despatcher at NPCC. Thus new and better facilities are now intensely required for Load Despatch System, and enhancement of capacity building of NTDC Engineers to interface all the upcoming stations. Therefore, the scheme for upgradation of Load Despatch System (Phase-III) along with revamping of NTDC's Telecom system has been prepared which aims at interfacing of remaining and upcoming Power Plants and Grid stations with existing load despatch system and enhanced backup telecommunication facilities.

The sub-project scope of work includes, (i) Addition and upgradation of existing SCADA system by installation of hardware and software for data base to perform system operation at National Power Control Center Islamabad & establishing backup control center at Jamshoro Old RCC building; (ii) RTU/SAS/DCS Interfacing with Main SCADA System; (iii) Backup of NTDC's telecom network. *The component-wise detailed scope of work includes the Data Processing System (DPS) for Power System Operation including:*

- **Hardware** consists of (a) servers, (b) local area network and (c) split type air condition in control room at NPCC.
- **Software** includes (a) addition and upgradation of Supervisory Control And Data Acquisition (SCADA) Software, (b) addition and upgradation of Energy Management System (EMS) software; (c) addition and upgradation of Data Processing System (DPS) software, (d) addition and upgradation of Man Machine Interface (MMI) software, and (e) addition and upgradation of Economic despatch and load forecast software.

## B. Need for Social Due Diligence Review of NTDC Telecommunication & SCADA

4. A detailed due diligence work of NTDC Telecommunication and SCADA System has been undertaken with the purpose to identify any land acquisition and resettlement and indigenous people related impacts; and recommend preparation of appropriate safeguards document (if required), i.e. DDR/ RP/IP plan to comply with the ADB's Safeguard Policy Statement (SPS) 2009.

## C. Methodology

5. The due diligence was carried out by adopting the following methodology:

- i) **Desk Review of project documents:** The documents include PC-I of the sub-project (project description), maps of NTDC SCADA-III Project), ADB SPS 2009, Aide memoirs, list of sub-projects identified under the Tranche 2 of investment program as presented in Annex A, social safeguard documents including IR checklist, and IP checklist;
- ii) **Meetings and consultations:** with NTDC/ Environment Social Impact Cell (ESIC) officials;

6. **Meeting with NTDC/ESIC Officials:** A meeting of PPTA consultant was held with NTDC (ESIC) officials on 8<sup>th</sup> of May, 2017 with the purpose of sharing the scope of work of sub-project of upgradation / extension of NTDC's Telecommunication and SCADA System. The due diligence report in consultation with ESIC confirmed that the upgradation of SCADA system neither involved any land acquisition and resettlement impacts nor any impacts related to the Indigenous people.

7. The list of participants is mentioned below:

- Mahr Khalid Mehmood (Director ESIC)
- Mr. Irfan, Deputy Manager (Environment)
- Mr. Shahid Saleem, Assistant Manager (Environment)
- Mr. Shaukat Ali Shahid, PPTA Consultant

## II. FINDINGS OF DUE DELIGENCE REPORT

### A. Brief Background of Sub-project:

8. The power system of Pakistan is expanding continuously by addition of new Power Houses and 500/ 220kV Grid Stations but the existing facilities at National Power Control Center (NPCC) are insufficient to interface the units with Supervisory Control & Data Acquisition (SCADA) system. As a result, a large number of IPPs, GENCOs, WAPDA Hydel and NTDC Grid Stations are not being real time monitored for despatcher at NPCC. Therefore, the scheme for upgradation of Load Despatch System (Phase-III) along with revamping of NTDC's Telecom system has been prepared which aims at interfacing of remaining and upcoming Power Plants and Grid stations with existing load despatch system and enhanced backup telecommunication facilities.

9. **Proposed Work:** The sub-project scope of work includes, (i) Addition and upgradation of existing SCADA system by installation of hardware and software for data base to perform system operation at National Power Control Center Islamabad & establishing backup control center at Jamshoro Old RCC building; (ii) RTU/SAS/DCS Interfacing with Main SCADA System; (iii) Backup of NTDC's telecom network.

#### **B. Scope of Land Acquisition:**

10. The meetings and consultations with NTDC/ ESIC officials as well as review of Sub-project PC-I, it is concluded that the proposed work will be upgraded/ installed in the space available within existing buildings/ GS and will not involve/ cause any LAR and IPs impacts.

#### **C. Resettlement Related Impacts:**

11. This is also concluded that this proposed sub-project is not affecting any built-up area such as any private, residential, commercial or agricultural structures (including any agricultural fields, trees or crops), enterprises or communal assets.

#### **D. Indigenous Peoples:**

12. This sub-project will not have any impact on the indigenous people, so that an Indigenous Peoples Development Plan (IPDP) is not required.

#### **E. Land Acquisition and Resettlement Framework:**

13. The proposed work of NTDC telecommunication and SCADA is not expected to cause any LAR and IPs impacts; however, the NTDC has already prepared and endorsed the LARF for its implementation. NTDC has done this in compliance with the requirements of ADB's SPS 2009 and to address any unanticipated social impacts of the sub-project. The framework provides guideline about LAR impacts, entitlement and compensation payments, institutional arrangements and implementation schedules for preparation, implementation and monitoring of the land acquisition and resettlement plans (where needed) and grievance redress mechanism to address any grievances of affected peoples.

#### **F. Institutional Arrangements:**

14. NTDC has established an environment and social impact cell (E&SIC) which is managed by a Director Social and Environment, assisted by deputy and assistant managers. The E&SIC works closely with project consultants and reviews the safeguard documents to ensure the quality control & safeguard compliance. The implementation schedule of the proposed sub-project is presented in **Annex D**.

## **G. Telecommunication Network Drawings**

The telecommunication network and drawings are given in Annex E.

## **III. CONCLUSIONS**

15. The sub-project of Phase-II of Tranche-2 is given as Annex-A. This subproject has been categorized as "C" for involuntary resettlement as well as indigenous peoples impacts screening checklists (Annex B&C) as all activities of the sub-project are to be implemented within the existing premises of grid stations/ buildings. Therefore, no compensation of any kind is applicable in this sub-project. No further safeguards documentation work is needed unless there is any change in the impacts situation, which NTDC (if it happens so) will inform ADB in advance for appropriate actions.

16. The following recommendations are forwarded:

- i. Keeping in view the implementation schedule, the quarterly progress reports will need to be prepared;
- ii. In case of any emerging or unanticipated LAR impact during implementation, prepare resettlement plan and obtain ADB's approval prior to its implementation.



# **ANNEXES**



**Annex-A: List of Subprojects of Tranche 2 (Phase-II)**

Scope of work	Cost (\$ mil)**	PC-1 Status	COD	Safeguards	
				Environmental (IEE)	Involuntary Resettlement (LARP/DDR)
Subproject 1: 220 kV Mirpur Khas Substation with associated Transmission Line					
<ul style="list-style-type: none"><li>• 2x220/132kV 250MVA transformers with allied equipment</li><li>• In/Out of 220kV D/C T/L Hala Road - Jamshoro at Mirpur Khas (70km)</li><li>• 220kV D/C T/L T.M.Khan - Hala Road (10 km)</li></ul>	37	Approved by ECNEC on 7 Nov 2017	2017-2018*	IEE of T/L from T.M.Khan to Hala cleared by ADB  IEE of G/S and associated T/L being updated	LARP of T/Ls cleared by ADB  LARP of Mirpur Khas GS being prepared, final LARP to ADB 20 Apr 2017.
Subproject 2: 220 kV Zhob Grid Station with associated Transmission Line					
<ul style="list-style-type: none"><li>• New 220kV S/S with 2x160MVA transformers (near existing 132 kV S/S).</li><li>• 220 kV D/C T/L from D.I. Khan to Zhob (220 km)</li></ul>	66	Approved by ECNEC on 7 Nov 2017	2017-2018*	Being reviewed by ADB	Location of Zhob G/S to be identified by 15 March 17, and LARP to be submitted to ADB in April 2017. LARP of T/L cleared by ADB
Subproject 3: Revenue Metering System (RMS) and SCADA Phase 3 Project for NTDC, System for Settlement (SFS) Project for CPPA-G					
	121 (NTDC) + 10 (CPPAG)	Feasibility studies for NTDC and CPPA-G parts to be prepared by March and April 2017.	2019-2020	IEE or DDR to be prepared	NTDC and CPPA-G to confirm locations of respective back-up centers which may have no land acquisition, by mid-Mar 17. DDR to be prepared.
Subproject 4: Reinforcement of 220 kV Guddu-Shikarpur-Uch-Sibbi PC Poles Transmission Line					
<ul style="list-style-type: none"><li>• 220kV Guddu to Interconnection point of 220kV Shikarpur (150 km)</li><li>• 220kV Shikarpur Interconnection point to Uch power plant (100 km)</li><li>• □Uch Power Plant to 220kv Sibbi Substation (110 km)</li></ul>	80	Draft PC-1 submitted to MoWP on 24 Jan 2017	2017-2018*	Being reviewed by ADB	DDR of associated G/S cleared by ADB. LARP of T/L being revised against ADB’s comments.
Subproject 5: 500 kV Lahore North Grid Station with associated Transmission Line					
<ul style="list-style-type: none"><li>• 500/220/132kV S/S with 3x750 MVA, 500/220kV, and 3 x250 MVA 220/132 kV transformers</li><li>• 500 kV D/C T/L Lahore North - proposed Lahore HVDC switching/ converter station (105km)</li><li>• 500 kV D/C T/L Lahore North - existing Gujranwala (Gakkhar) S/S (45km)</li><li>• 220kV D/C T/L for in/out of 220 kV Ghazi Rd.-KSK S/C T/L (15km)</li><li>• 220kV D/C T/L for in/out of 220 kV Lahore-Ravi Rd. S/C T/L (14km)</li><li>• 220kV D/C T/L for in/out of 220 kV KSK-Ravi Rd. S/C T/L (15km)</li></ul>	200	Under Preparation, draft PC-1 will be sent to MoWP by early March 2017.	2019-2020	Being reviewed by ADB	LARPs cleared by ADB

## Annex-B: IR Checklist of Upgradation/ Extension of NTDC's Telecommunication & SCADA System

### INVOLUNTARY RESETTLEMENT IMPACT CATEGORIZATION

Date: May 8, 2017

<b>A. Project Data</b>			
Country/ Project No. /Project Title		: <b>Upgradation/ Extension of NTDC's Telecommunication &amp; SCADA System</b>	
		<b>TA 8818-PAK: Power Transmission Enhancement Investment Program: Tranche-2 (Phase-II), NTDC</b>	
<b>B. Involuntary Resettlement Category</b>			
[   ] New      [   ] Recategorization — Previous Category [   ]			
<input type="checkbox"/> Category A	<input type="checkbox"/> Category B	<input checked="" type="checkbox"/> <b>Category C</b>	<input type="checkbox"/> Category FI
<b>C. Comments</b>			
Director ESIC: All civil work will be commenced within the existing Grid Station's boundary.		Resettlement Consultant of PPTA: The Project does not involve any land acquisition and resettlement as confirmed by the NTDC (E&SIC) officials and verified by the consultant. The sub-project will be implemented/ upgraded in the existing premises/ building/ grid stations and the construction activities are limited to already available premises/ building with NTDC.	
<b>D. Approval</b>			
Prepared by:		Reviewed/Cleared by:	
			
Resettlement Consultant of PPTA: Shaukat Shahid		Director ESIC:	
Date: May 08, 2017		Date: May 08, 2017	

#### Involuntary Resettlement Impact Categorization Checklist

Probable Involuntary Resettlement Effects	YES	NO	NOT KNOWN	Remarks
Involuntary Acquisition of Land				
1. Will there be land acquisition?		√		
2. Is the site for land acquisition known?		√		Not applicable
3. Is the ownership status and current usage of land to be acquired known?		√		Not applicable
4. Will easement be utilized within an existing Right of Way (RoW)?	√			There will be no impact



Probable Involuntary Resettlement Effects	YES	NO	NOT KNOWN	Remarks
5. Will there be loss of shelter and residential land due to land acquisition?		√		
6. Will there be loss of agricultural and other productive assets due to land acquisition?		√		
7. Will there be losses of crops, trees, and fixed assets due to land acquisition?		√		
8. Will there be loss of businesses or enterprise due to land acquisition?		√		
9. Will there be loss of income sources and means of livelihood due to land acquisition?		√		
<b>Involuntary restrictions on land use or on access to legally deigned parks and protected areas</b>				
10. Will people lose access to natural resources, communal facilities and services?		√		
11. If land use I changed, will it have an adverse impact on social and economic activities?		√		
12. Will access to land and resources owned communally or by the state be restricted?		√		
<b>Information on Displaced Person:</b>				
Any estimate of the likely number of persons that will be displaced by the Project?      [ √ ] No      [ ] Yes If yes, approximately how many? _____				
Are any of them poor, female-heads of households, or vulnerable to poverty risks?      [ √ ] No      [ ] Yes				
Are any of displaced persons from indigenous or ethnic minority groups?      [ √ ] No      [ ] Yes				

Note: the project team may attach additional information on the project, as necessary.

## Annex-C: IP Checklist of Upgradation/ Extension of NTDC's Telecommunication & SCADA System

### INDIGENOUS PEOPLES IMPACT CATEGORIZATION

Date: May 8, 2017

<b>E. Project Data</b> Country/Project No./Project Title : <b>Upgradation/ Extension of NTDC's Telecommunication &amp; SCADA System</b> <b>TA 8818-PAK: Power Transmission Enhancement Investment Program: Tranche-2 (Phase-II), NTDC.</b>			
<b>F. C. Indigenous Peoples Category</b> [ ] New [ ] Recategorization — Previous Category [ ]			
<input type="checkbox"/> Category A	<input type="checkbox"/> Category B	<input checked="" type="checkbox"/> Category C	<input type="checkbox"/> Category FI
<b>G. Project requires the broad community support of affected Indigenous Peoples communities.</b>		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>H. Comments by NTDC/ESIC: IP Community doesn't exist over there</b>			
Project Team Comments: It is confirmed that Indigenous People presence is not in project area and local people doesn't recognized themselves as Indigenous People. Therefore, IPDP is not required for this project.		Comments by PPTA Resettlement Specialist: It is confirmed during discussions with NTDC (E&SIC) officials that the sub-project activities will be implemented in the existing premises/ buildings of the NTDC, so that the project do not have the presence of IPs, as well as other local community/ group of people hence, an Indigenous Peoples Development Plan (IPDP) is not required for this sub-project.	
<b>I. Approval</b>			
Prepared by:  Resettlement Consultant of PPTA: Shaukat Shahid Date: May 8, 2017		Reviewed/Cleared by: Director ESIC:  Date: May 8, 2017	

### Indigenous Peoples Impact Screening Checklist

<b>KEY CONCERNS</b> (Please provide elaborations on the Remarks column)	<b>YES</b>	<b>NO</b>	<b>NOT KNOWN</b>	<b>Remarks</b>
<b>A. Indigenous Peoples Identification</b>				
1. Are there socio-cultural groups present in or use the project area who may be considered as "tribes" (hill tribes, scheduled tribes, tribal peoples), "minorities" (ethnic or national minorities), or "indigenous communities" in the project area?		√		Not applicable
2. Are there national or local laws or policies as well as anthropological researches/studies that consider these groups present in or using the project area as belonging to "ethnic minorities", scheduled tribes, tribal peoples, national minorities, or cultural communities?		√		Not applicable
3. Do such groups self-identify as being part of a distinct social and cultural group?		√		Not applicable
4. Do such groups maintain collective attachments to distinct habitats or ancestral territories and/or to the natural resources in these habitats and territories?		√		Not applicable
5. Do such groups maintain cultural, economic, social, and political institutions distinct from the dominant society and culture?		√		Not applicable
6. Do such groups speak a distinct language or dialect?		√		Not applicable
7. Has such groups been historically, socially and economically marginalized, disempowered, excluded, and/or discriminated against?		√		Not applicable
8. Are such groups represented as "Indigenous Peoples" or as "ethnic minorities" or "scheduled tribes" or "tribal populations" in any formal decision-making bodies at the national or local levels?		√		Not applicable
<b>B. Identification of Potential Impacts</b>				
9. Will the project directly or indirectly benefit or target Indigenous Peoples?		√		Not applicable
10. Will the project directly or indirectly affect Indigenous Peoples' traditional socio-cultural and belief practices? (e.g. child-rearing, health, education, arts, and governance)		√		Not applicable
11. Will the project affect the livelihood systems of Indigenous Peoples? (e.g., food production system, natural resource management, crafts and trade, employment status)		√		Not applicable
12. Will the project be in an area (land or territory) occupied, owned, or used by Indigenous Peoples, and/or claimed as ancestral domain?		√		Not applicable

<b>KEY CONCERNS</b> (Please provide elaborations on the Remarks column)	<b>YES</b>	<b>NO</b>	<b>NOT KNOWN</b>	<b>Remarks</b>
<b>C. Identification of Special Requirements</b> <i>Will the project activities include:</i>				
13. Commercial development of the cultural resources and knowledge of Indigenous Peoples?		√		Not applicable
14. Physical displacement from traditional or customary lands?		√		Not applicable
15. Commercial development of natural resources (such as minerals, hydrocarbons, forests, water, hunting or fishing grounds) within customary lands under use that would impact the livelihoods or the cultural, ceremonial, spiritual uses that define the identity and community of Indigenous Peoples?		√		Not applicable
16. Establishing legal recognition of rights to lands and territories that are traditionally owned or customarily used, occupied or claimed by indigenous peoples ?		√		Not applicable
17. Acquisition of lands that are traditionally owned or customarily used, occupied or claimed by indigenous peoples ?		√		Not applicable

**D. Anticipated project impacts on Indigenous Peoples**

<b>Project component/ activity/ output</b>	<b>Anticipated positive effect</b>	<b>Anticipated negative effect</b>
<b>1.</b> Not applicable	-	-
<b>2.</b> Not applicable	-	-
<b>3.</b> Not applicable	-	-
<b>4.</b> Not applicable	-	-
<b>5.</b> Not applicable	-	-

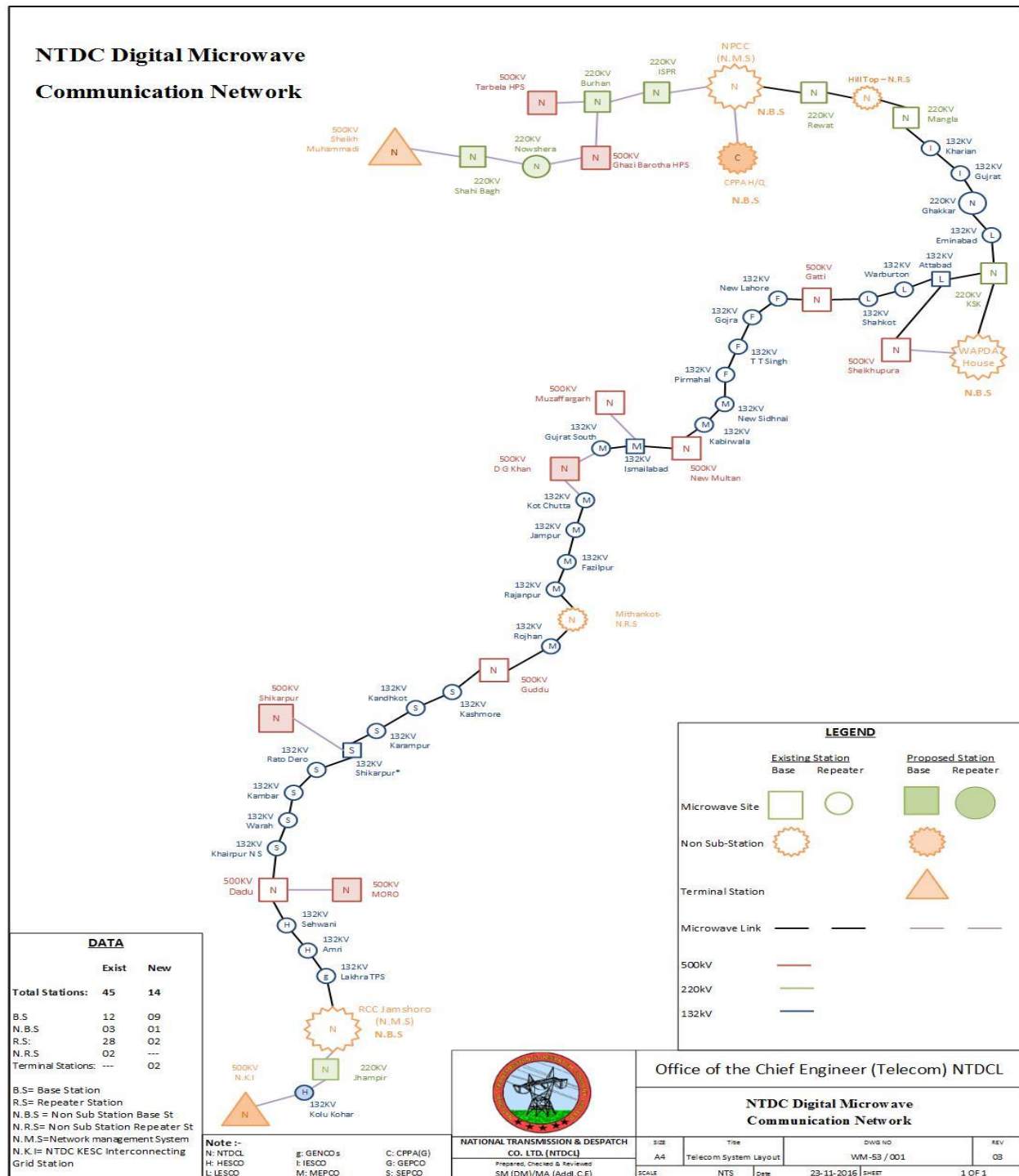
Note: The project team may attach additional information on the project, as necessary.

### Annex-D: Implementation Schedule of NTDC Telecommunication and SCADA System as per PC-I

Sr. No.	Description	2016-17												2017-18												2018-19												2019-20											
		J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
1	Appointment of consultants, preparation of bidding documents and award of contract																																																
4	Manufacturing and shipment of equipment.																																																
5	Installation																																																
6	Testing & commissioning																																																
6	Clearing Pending Liabilities																																																



## Annex-E: NTDC Telecommunication Network Drawings



## Fiber Optic Network

