



# **NATIONAL TRANSMISSION & DESPATCH CO. LTD**

**General Manager (Technical)**

No. GMT/NTDC/1171-80

Dated: 12/ -07-2023

**The Registrar (NEPRA),**  
National Electric Power Regulatory Authority  
Attaturk Avenue,  
G-5/1. Islamabad.

**Atten: Mr. Shahzad Anwar, Director (Technical) NEPRA**


**Subject: SUBMISSION OF NTDC REVISED TRANSMISSION INVESTMENT  
PLAN FOR TARIFF CONTROL PERIOD FY 2022-23 TO FY 2024-25**

It may please be recalled that NTDC had submitted its Transmission Investment Plan to NEPRA Authority for approval vide our letter no. GMT/NTDC/T-2(Tariff)/641-49 dated: 23.09.2022. Since a significant time has lapsed and NTDC has not been informed about the fate of the case as yet, meanwhile BOD NTDC has also approved up-dated investment plan as per the prevailing situation. In the present circumstances, NTDC finds a good opportunity to submit a "Revised Transmission Investment Plan" for the tariff control period of Financial Years 2022-2023 to 2024-2025, for the consideration for approval by NEPRA in line with NEPRA approved Indicative Generation Capacity Expansion Plan (IGCEP) 2023.

This is issued with the approval of Dr. Rana Abul Jabbar Khan, Managing Director NTDC.

DA

Revised Transmission Investment Plan

  
(Munawar Hussain)  
General Manager (Technical) NTDC 12/7/23

**cc:**

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2. Dy. Managing Director (P&E) NTDC, 419-Wapda House, Lahore.
3. Dy. Managing Director (AD&M) NTDC. 435-Wapda House, Lahore.
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9. Master File.



# **NTDC TRANSMISSION INVESTMENT PLAN (REVISED)**

**FY 2023 – FY 2025**

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## 1. BACKGROUND

### 1.1. STATUARY PROVISIONS

Reference to the clause 6.2.(g) & 7.3.A.1. of NEPRA Guidelines for Determination of Revenue Requirement & Use of System Charges notified vide NEPRA/SAT-01/LAT-01/4781 & SRO 241 (I)/2017 dated 6th April 2017, NTDC is required to submit Approved Planning Documents and Assessment of Transmission Losses for next years.

NEPRA vide letter No. NEPRA/Consultant(RE/Tech)/LAT-01/9518 dated 09-06-22 and subsequent correspondence thereof, has directed NTDC to submit following information for upcoming Tariff Control Period i.e. FY 2022-23, FY 2023-24, & FY 2024-25.

- i. Transmission Investment Plan
- ii. T&T Losses Assessment

This submission is pursuant to the requirements laid down in Section 8.3 of the NEPRA Guidelines for determination of Revenue Requirement & Use of System Charges notified vide NEPRA/SAT-01/LAT-01/4781 & SRO 241 (I)/2017 dated 6th April 2017.

### 1.2. TIMELINE OF INVESTMENT PLAN FY 23-25 SUBMISSION

Pursuant to NEPRA's directives and statutory provisions, NTDC has always strived to ensure expedited compliance as indicated by following milestone submissions:

Sr. No.	Milestone	Reference
1	Initial Submission of NTDC TIP FY23-25	CFO/NTDC/364-369 dated 29-06-22
2	<b>Comprehensive Submission of NTDC TIP FY23-25 after incorporation of NEPRA provided formats</b>	<b>GMT/NTDC/641-49 dated 23-09-22</b>
3	1 <sup>st</sup> Hearing by Authority	14-12-2022
4	Co-ordination with external provincial govt energy departments on the instructions of Authority	19-12-2022 to 26-12-2022
5	2 <sup>nd</sup> Hearing by Authority	02-01-2023

A significant time had lapsed while the NTDC originally submitted Investment Plan remained pending for Regulatory Approval. Meanwhile Board of Directors NTDC had also approved up-dated investment plan as per revised estimates and in the present circumstances, NTDC considered it appropriate to submit "Revised Transmission Investment Plan" FY 2023-2025 which was submitted to NEPRA as follows:

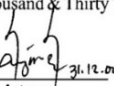

Sr. No.	Milestone	Reference
1	<b>Final Submission of Revised NTDC TIP FY23-25</b>	<b>GMT/NTDC/1171-80 dated 12-07-23</b>

## 2. NTDC PROFILE

National Transmission and Despatch Company (NTDC) was incorporated on 6th November 1998 to plan, design, build, operate and maintain extra high-voltage electric power transmission system in Pakistan, and commenced its commercial operation on 1st March 1999. NEPRA granted Transmission License to NTDC vide No. T.L/01/2002 on 31st December 2002, shown in Figure 1.1, with the mandate to engage in the exclusive transmission business for a term of thirty years, pursuant to Section 17 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

NTDC is a public corporation established under the Companies Ordinance 1984 as an unlisted public company. The Government of Pakistan (GoP) is the majority and controlling shareholder of NTDC. The Ministry of Energy (MoE), the line ministry, is the agency within the Government charged with overseeing GOP's ownership of electricity sector entities including NTDC.

The transmission voltage as defined in the NTDC transmission license is 220 kV and above. NTDC is responsible for load forecasting, generation planning, expansion planning of the transmission network, prudent design of the transmission project, its development on ground, and operation and maintenance of the transmission network. NTDC currently acts as the transmission services provider, metering services provider and system planner for the power producers, DISCOs, and end users as well as it provides balancing services and interconnection services for the transmission network.

<p align="center"><b>National Electric Power Regulatory Authority (NEPRA)</b> <b>Islamabad - Pakistan</b></p> <p align="center"><b>TRANSMISSION LICENCE</b></p> <p align="center">No. <u>T.L/01/2002</u></p> <p>In exercise of the Powers conferred on the National Electric Power Regulatory Authority (NEPRA) under Section 17 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997), and subject to the provisions of Section 7(4) thereof, the Authority hereby grants a Transmission Licence to</p> <p align="center"><b><u>NATIONAL TRANSMISSION AND DESPATCH COMPANY LIMITED</u></b></p> <p align="center">Incorporated under the Companies Ordinance, 1984 Under Certificate of Incorporation <b>No. L09689 of 1998-99</b></p> <p>to engage in the transmission of electric power in the Territory subject to and in accordance with the terms and conditions of this Licence.</p> <p>Issued under my hand this <u>31<sup>st</sup></u>, day of <u>December</u>, Two Thousand &amp; Two, and expires on <u>30<sup>th</sup></u> day of <u>December</u>, Two Thousand &amp; Thirty Two.</p> <p align="center">   <b>Registrar</b> </p> <p align="center">  </p>
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## **2.1.CORE FUNCTIONS**

As per License, NTDC performs two major functions i.e. Wire Business as well as System Operation and Despatch Services. The roles and responsibilities for each function include:

### **2.1.1. WIRE BUSINESS**

The Wire Business of NTDC includes the following roles and responsibilities:

- a) Operation and Maintenance of Transmission Assets
- b) Project Development and Execution
- c) Design and Engineering
- d) Transmission and Generation Planning
- e) Metering Service Provider

### **2.1.2. SYSTEM OPERATION BUSINESS**

NTDCs' System Operation and Despatch function comprises the following:

- a) Economic Generation & Despatch
- b) Power System Operation and Control

Amid latest power market developments and reforms, NTDC license modification has been approved by NEPRA in Mar-23, bifurcating NTDC license into separate TNO & SO licenses. These changes shall manifest as per approved regulatory processes in due course of time.

## **2.2.NTDC NETWORK STATISTICS AND FUTURE OUTLOOK**

NTDC operates and maintains, as shown in table below, 18 Nos. 500 kV grid stations with total capacity of 27,260 MVA and 49 Nos. 220 kV grid stations with total capacity of 33,900 MVA, 8,388 km of 500 kV transmission line and 11,645 km of 220 kV transmission lines in Pakistan to evacuate power from an installed generation capacity of over 40,156 MW.

Further, by 2026, NTDC expects to expand its transmission system length by upto 30% and total transformation capacity of its system by upto 58% with respect to statistics of June-23.

Category	Grid Stations (Nos.)	Transmission Lines (km)	Transformation Capacity (MVA)
<b>Existing System (June 2023)</b>			
500 kV	19	8,825	25,950
220 kV	50	11,672	37,190
±660 kV	-	2 x 886	-
<b>Total</b>	<b>69</b>	<b>22,269</b>	<b>63,140</b>
<b>Future System (June 2026)</b>			
765 kV	2	508	3,600
500 kV	26	11,121	41,050
220 kV	68	15,295	54,880
±660 kV	-	2 x 886	-
±500 kV	-	2 x 113	-
<b>Total</b>	<b>96</b>	<b>28,922</b>	<b>99,530</b>



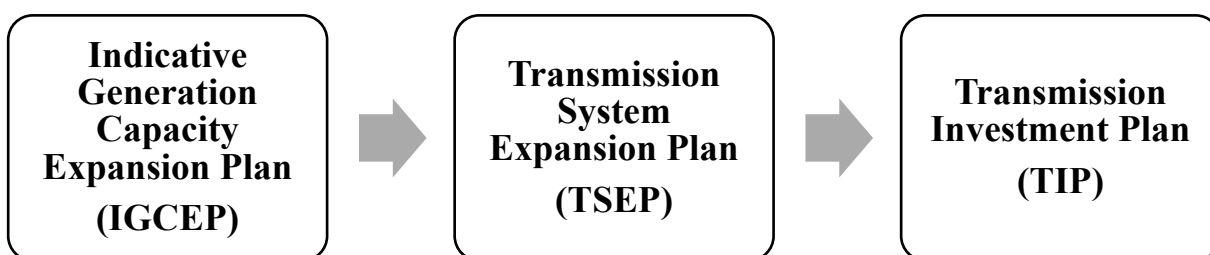


### 3. NTDC TRANSMISSION INVESTMENT PLAN PROCESS

Pursuant to the regulatory framework, NTDC is mandated to produce the Transmission Investment Plan (TIP) as per the following criteria provided in the Grid Code:

*“A Detailed “Transmission Investment Plan” shall be prepared that is based on the “NTDC Twenty-Year Load Forecast”, “Indicative Generation Capacity Expansion Plan (IGCEP or NTDC Plan)”, and the Transmission System Expansion Plan (TSEP)” based on Annual System Reliability Assessment and Improvement Report (ASRAIR). The Plan shall be broken into several time periods. The Transmission Plan may be prepared for next one, three, five and ten years into the future.”*

For preparing the NTDC Transmission Investment Plan, NTDC is required to study the financial, and security implications of a baseline scenario developed under NTDC TSEP to evacuate power from generation facilities proposed in the NTDC IGCEP. The general best practice process is as follows:



### 4. STATUS OF IGCEP AND NTDC TSEP

With the use of state-of-the-art generation planning and optimization tools, adherence to global best practices, IGCEP 2022-31 was submitted to NEPRA on 20<sup>th</sup> September 2022. The revised IGCEP, after incorporation of comments received during NEPRA hearing, was submitted to NEPRA on 2<sup>nd</sup> December 2022. Subsequently, IGCEP 2022-31 was approved by NEPRA on 1<sup>st</sup> February 2023.

Subsequently, TSEP 2022 Phase-1 was submitted to NEPRA on 30<sup>th</sup> November 2022. NEPRA, in the approval of IGCEP on 1<sup>st</sup> February 2023, directed to submit the TSEP for the next ten years in line with next iteration of IGCEP.



## 5. NTDC REVISED INVESTMENT PLAN (FY 2023 – FY 2025)

NTDC is undertaking a huge amount (in surplus of 510 billion rupees) as investment in the coming years upto FY 2025 as per Board of Directors approved Development Budgets and Projects.

These investments are categorized in the following project types:

1. Constraints Removal Projects (CRPs) / System Expansion Projects (SEPs)
2. Power Evacuation Projects (PEPs)
3. Projects for Special Economic Zones (SEZs)
4. Other Development Projects (Other)

Alternatively, the categorization viz a viz source of funding is as follows:

### A. PSDP Projects

- PSDP Grants & CDL Projects
  - PSDP Grant & CDL - Special Economic Zones (SEZs) Projects
  - PSDP CDL - Land Acquisition Projects
- PSDP Foreign Funded Projects
  - PSDP Foreign Funded - Ongoing Projects
  - PSDP Foreign Funded - New Projects

### B. NTDC Own Sources Projects

- NTDC Own Sources - Ongoing Projects
- NTDC Own Sources - Completed Projects

The category-wise tabular detail along with Summary of NTDC Transmission Investment Projects as per NEPRA's requirement is mentioned at Annexures-A, B & C respectively.

However the list of projects is also enumerated as follows:

List of NTDC Projects in Revised Transmission Investment Plan FY23-25		Project Category
<b>PSDP Grant &amp; CDL - Special Economic Zones (SEZs) Projects</b>		
<input type="checkbox"/>	1. 220/132 kV GIS Substation Dhabeji	SEZ
<input type="checkbox"/>	2. 220kV Haripur Substation	SEZ
<input type="checkbox"/>	3. 220kV Swabi Substation	SEZ
<input type="checkbox"/>	4. 220kV Quaid-e-Azam Apparel & Business Park (QABP) G/S for Provision of Electricity to PIEDMC SEZ	SEZ
<input type="checkbox"/>	5. 500kV Allama Iqbal Industrial City for 600MW Demand of Special Economic Zone in the FIEDMC area	SEZ
<b>PSDP CDL - Land Acquisition Projects</b>		
<input type="checkbox"/>	6. Land Acquisition for Installation of 600MW Solar Power Plant at Disstt: Muzaffargarh	PEP
<input type="checkbox"/>	7. Land Acquisition for Installation of 600MW Solar Power Plant at Tehsil Athara Hazari Disstt: Jhang	PEP
<input type="checkbox"/>	8. Land Acquisition for Installation of 1200MW Solar Power Plant at Sher Garh Tehsill Chubara Disstt: Layyah	PEP

List of NTDC Projects in Revised Transmission Investment Plan FY23-25		Project Category
<b>PSDP Foreign Funded - Ongoing Projects</b>		
<input type="checkbox"/>	9. 500kV HVDC Transmission System b/w Tajikstan & Pakistan for Central Asia-South Asia Interconnection (CASA-1000)	PEP
<input type="checkbox"/>	10. Evacuation of power from 2160MW Dasu HPP Stage-I	PEP
<input type="checkbox"/>	11. 500-kV Lahore, North.	SEP/CRP
<input type="checkbox"/>	12. Evacuation of Power from Suki Kinari, Kohala, Mahal HPPs. (New Name "Evacuation of Power from Suki Kinari")	PEP
<input type="checkbox"/>	13. Enhancement in Transformation Capacity of NTDC System by Extension and Augmentation of Existing G/S	SEP/CRP
<input type="checkbox"/>	14. 500kV Islamabad West	PEP
<input type="checkbox"/>	15. 220-kV Dera Ismail Khan - Zhob Transmission Line alongwith 220-kV Zhob Sub-Station.	SEP/CRP
<input type="checkbox"/>	16. 220-kV Jauharabad G/S alongwith allied T/Ls.	SEP/CRP
<input type="checkbox"/>	17. 220kV Mirpur Khas G/S alongwith allied T/Ls	SEP/CRP
<input type="checkbox"/>	18. Now 220kV Transmission System Network Reinforcement in Islamabad & Burhan	SEP/CRP
<input type="checkbox"/>	19. Conversion from 220kV Substations at Bund Road, Kala Shah Kaku, Ravi and Nishatabad to GIS Technology	SEP/CRP
<input type="checkbox"/>	20. Enterprise Resource Planning (ERP). (Now Implementation of Integrated Solution to improve Productivity and Control in NTDC by ERP System)	Other
<input type="checkbox"/>	21. Evacuation of Power from Tarbela 5th Extension.	PEP
<input type="checkbox"/>	22. Evacuation of power from wind power projects at Jhimpir and Ghara Wind Clusters (Revised)	PEP
<input type="checkbox"/>	23. Installation of Pilot Battery Energy Storage System (BESS) at 220kV Jhampir G/Station	Other
<input type="checkbox"/>	24. Evacuation of Power from 1224MW Wind Power Plants at Jhampir Clusters	PEP
<input type="checkbox"/>	25. Upgradation/ Extension of NTDC's Telecommunication & SCADA System at NPCC	Other
<b>PSDP Foreign Funded - New Projects</b>		
<input type="checkbox"/>	26. 220kV Dharki - Rahim Yar Khan - Bahawalpur D/C T/L	SEP/CRP
<input type="checkbox"/>	27. 220-kV Jamrud G/S alongwith allied T/Ls.	SEP/CRP
<input type="checkbox"/>	28. 500kV Chakwal G/S alongwith allied T/Ls	SEP/CRP
<input type="checkbox"/>	29. Extension and Augmentation of existing 500kV and 220kV G/S (New). Now: Addition & Augmentation of 500kV and 220kV T/Fs at the Existing G/S for Removal of NTDC System Constraints	SEP/CRP
<input type="checkbox"/>	30. 220kV Arifwala Substation	SEP/CRP
<input type="checkbox"/>	31. 500/220kV Sialkot Substation	SEP/CRP
<input type="checkbox"/>	32. Upgradation of Existing 220kV Vehari G/S to 500 kV Vehari G/S	SEP/CRP
<input type="checkbox"/>	33. 220kV Larkana Substation	SEP/CRP
<input type="checkbox"/>	34. 220-kV Mastung G/S alongwith allied T/Ls.	SEP/CRP
<input type="checkbox"/>	35. 220-kV Kohat G/S alongwith allied T/Ls.	SEP/CRP
<input type="checkbox"/>	36. 220kV Gujranwala-II Substation	SEP/CRP
<input type="checkbox"/>	37. 220kV Nag Shah G/S	SEP/CRP
<input type="checkbox"/>	38. Installation of SVCs at 220kV Quetta Industrial (Revised Name "250 MVAR SVS at 132 kV Quetta Industrial")	Other

List of NTDC Projects in Revised Transmission Investment Plan FY23-25		Project Category
<input type="checkbox"/>	39. Interlinking of 765kV Mansehra with 220kV Mansehra	SEP/CRP
<input type="checkbox"/>	40. 220kV Punjab University G/S	SEP/CRP
<input type="checkbox"/>	41. 500kV Ghazi Brotha-Faisalabad West T/L (Revised Name In/Out of Islamabad West to Ghazi Brotha T/L at -Faisalabad West)	SEP/CRP
<input type="checkbox"/>	42. 220kV Head Faqiran G/S alongwith allied T/Ls.	SEP/CRP
<input type="checkbox"/>	43. Evacuation of power from 816MW Mohmand Dam	PEP
<input type="checkbox"/>	44. 220-kV Kamra G/S alongwith allied T/Ls.	SEP/CRP
<input type="checkbox"/>	45. 500kV Ludewala G/S along with 500kV Nowshera-Ludewala-Faisalabad West D/C T/L	SEP/CRP
<input type="checkbox"/>	46. Re-conducting/Underground cabling of existing 220 kV Bund Road - NKLP D/C T/L (17 km)	Other
<input type="checkbox"/>	47. Gwadar-Pak Iran Border T/L	PEP
<input type="checkbox"/>	48. Re-enforcement of Sahiwal along with 2x500kV Line Bay	SEP/CRP
<input type="checkbox"/>	49. 2nd Source of supply to 500 kV Sheikh Muhammadi	SEP/CRP
<input type="checkbox"/>	50. 600MW Solar Power Plant near Muzaffargarh	PEP
<input type="checkbox"/>	51. 600MW Solar Power Plant near Trimmu Jhang	PEP
<input type="checkbox"/>	52. 1200MW Solar Power Plant near Havelli Bahadur Shah	PEP
<input type="checkbox"/>	53. 220/132kV Zero Point G/S Islamabad and allied T/L	SEP/CRP
<input type="checkbox"/>	54. 220 MVAR SVS AT 132 kV Khuzdar	Other
<input type="checkbox"/>	55. Reactive Power Composition 220 & 132 kV G/Ss	Other
<input type="checkbox"/>	56. Mitigation of High Fault level at 132 kV Burhan	Other
<input type="checkbox"/>	57. Augmentation of 2x160 MVA T/Fs with 2x250 MVA Yousaf Wala	SEP/CRP
<input type="checkbox"/>	58. Extension of 3rd Transformer Guddu	SEP/CRP
<input type="checkbox"/>	59. Augmentation of remaining 2x160 MVAT/Fs with 2x250 MVA Yousaf Wala	SEP/CRP
<input type="checkbox"/>	60. Extension of 3rd Transformer Allai Khwar	SEP/CRP
<b>NTDC Own Sources - Ongoing Projects</b>		
<input type="checkbox"/>	61. Feasibility study for enhancing the transmission capacity of NTDCs 500-kV Transmission System by applying series compensation	Other
<input type="checkbox"/>	62. 2nd source of supply to 220kV Jaranwala Road Substation	SEP/CRP
<input type="checkbox"/>	63. Evacuation of Power from K2/K3 Nuclear Power near Karachi (In/Out of 500-kV Port Qasim to Matiari S/C and 500-kV Hub to Matiari S/C at K2/K3).	PEP
<input type="checkbox"/>	64. Evacuation of Power from 2x660 MW Thar Coal Based SSRL/SECL Power Plant at Thar	PEP
<input type="checkbox"/>	65. Evacuation of Power from 330 MW Siddiquesons Ltd.	PEP
<b>NTDC Own Sources - Completed Projects</b>		
<input type="checkbox"/>	66. 220 kV G/Station at Kassowal with 132 kV Expansion System (World Bank Loan No. 7565-Pk, Credit No. 4463-PK & 4464-PK)	SEP/CRP
<input type="checkbox"/>	67. 220kV G/S Mansehra Tranch-III	SEP/CRP
<input type="checkbox"/>	68. 3rd 500kV Jamshoro-Moro- R.Y Khan Single Circuit T/Line.Tranch-III	SEP/CRP
<input type="checkbox"/>	69. Inter-Connection- Ther Coal Based , 1200MW (Power Dispersal from 1200MW Thar Coal Power Plant - 500kV Thar - Matiari T/L & Matiari 500kV S/station)	PEP

List of NTDC Projects in Revised Transmission Investment Plan FY23-25		Project Category
<input type="checkbox"/>	70. New 220 kV G/Station at Khuzdar/220 kV Dadu - Khuzdar D/C T/Line JICA Loan No. PK-56	SEP/CRP
<input type="checkbox"/>	71. Power Transmission Enhancement Project (Tranch-II) (SET)10 Sub projects (i) 9 Sub Projects of 500kV & 220kV S/S& T/Lines ADB Loan No. 2396-PAK	SEP/CRP
<input type="checkbox"/>	72. Provision of Secured Metering System at Delivery Point. (Local Bank)	Other
<input type="checkbox"/>	73. Quaid-e-Azam Solar Park at Lal-Suhanra (Phase-II) Evacuation of 600 MW Solar (Proposed to be carried out by NTDC)	PEP
<input type="checkbox"/>	74. Transmission Scheme for Dispersal of power from Neelam-Jehlum, Karot and Azad Patan Hydro Power Project	PEP
<input type="checkbox"/>	75. Transmission Interconnection for Dispersal of Power From UCH-II Tranch-III	PEP
<input type="checkbox"/>	76. Construction of 600 kV HVDC Transmission Line From Matiari to Lahore (Land Acquisition for Converter and Grounding Station - Both Ends) (CPEC)	SEP/CRP
<input type="checkbox"/>	77. Evacuation of Power from 1200MW RLNG Based Power Projects at Jhang (Haveli Bahadur Shah)	PEP
<input type="checkbox"/>	78. Evacuation of Power from 1320 MW RLNG Power Plant at Trimmu Jhang	PEP
<input type="checkbox"/>	79. Evacuation of power from 1320MW Power Plant at Bin Qasim	PEP
<input type="checkbox"/>	80. Evacuation of power from 147MW Patrind HPP	PEP
<input type="checkbox"/>	81. Power Transmission Enhancement Project Tranch-I (19 Sub Projects of 500/220 kV Sub Stations and T/ Lines) ADB Loan No. 2289 & 2290-PAK	SEP/CRP
<input type="checkbox"/>	82. Evacuation of Power from 1320 MW Hub Power Company Ltd.	PEP
<input type="checkbox"/>	83. Evacuation of Power from 660 MW from Lucky Electric Power Company Ltd.	PEP
<input type="checkbox"/>	84. 220kV G/S & Allied T/L D.I Khan	SEP/CRP
<input type="checkbox"/>	85. 220kV G/S at Ghazi Road, Lahore with 220 kV D/C T/Line 132 kV Expansion System EDCF Loan No.PAK-2 & KFW	SEP/CRP
<input type="checkbox"/>	86. 220kV Nowshera S/S	SEP/CRP
<input type="checkbox"/>	87. 220kV Chakdara S/S	SEP/CRP
<input type="checkbox"/>	88. 220kV Sub Station Lalian	SEP/CRP
<input type="checkbox"/>	89. 4 Nos New Projects to be financed by JBIC (i) 500kV RY Khan G/S & T/L (ii) 220kV Chishtian T/L (iii) 220kV Gujrat G/S & 220kV T/L (iv) 220kV Shalimar G/S & 220kV T/L (4 Projects - JBIC Loan) (JICA Loan No. PK-58)	SEP/CRP
<input type="checkbox"/>	90. 500kV Faisalabad New (2x750) Phase-II (Now 500kV Faisalabad West along with allied T/Ls)	SEP/CRP
<input type="checkbox"/>	91. Addition of 500/220kV Sub Station T/L for Strengthening the existing NTDC system i) 500kV Lahore New ii) 500kV Shikarpur iii) 220kV D.I.Khan (JICA-PK-61)	SEP/CRP
<input type="checkbox"/>	92. Construction of New 220kV Guddu-Uch-Sibbi Single Circuit Transmission Line for Improvement of Power Supply System in South Areas	SEP/CRP
<input type="checkbox"/>	93. Evacuation of power from 1320MW Power Plant at Sahiwal	PEP
<input type="checkbox"/>	94. Extension/Augmentation at 500/220 kV Rewat Substation	SEP/CRP
<input type="checkbox"/>	95. Improvement & Upgradation of Protection System to Avoid the Frequent Trippings in South Areas	Other
<input type="checkbox"/>	96. Strengthening of TSG Centre for Grid System Operations and Maintenance.	Other
<input type="checkbox"/>	97. 500kV HVAC T/Line for inter connection of HVDC Converter Station at Lahore with existing HVAC System.	SEP/CRP
<input type="checkbox"/>	98. Load Despatch System Upgradation Project (Phase-II)	Other
<input type="checkbox"/>	99. Evacuation of Power from 747 MW Guddu Power Project	PEP

## 6. NTDC INVESTMENT PLAN PROJECT PROFILES/BRIEFS

The Project Profiles/Briefs of all 99 Nos. projects in Section 5 are attached as Annexure-D.

## 7. NTDC HUMAN RESOURCE IMPROVEMENT PLAN

NTDC team comprises over 10,000 professionals stationed across the country and functioning in 39 departments, 20 job levels, 30 cadres (skill group) and 165 unique designations. Geographically, 129 locations are grouped in five regions. The Lahore region containing the head office constitute largest number of employees around 47%, whereas human resource in other regions include Islamabad 19%, Multan 13%, Hyderabad 16% and Quetta 5%.

Management to staff ratio is 11:89, and more than 76% are professional engineers at management level. Others include professionals from HR, Finance, audit, IT, Law, Environment, Media & PR and security streams

At present, NTDC HR is delivering on the following major functions:

- a) Recruitment and selection of employees with the appropriate skills and competency profiles.
- b) Posting job advertisements, sourcing candidates, screening applicants, conducting interviews and coordinating with user departments for final selection.
- c) Ensure compliance with applicable labor laws and policies of the Company.
- d) Managing compensation and benefits, terminal benefits and annual performance evaluation.
- e) Property management.
- f) Career development and succession planning.
- g) Managing staff relations, employee welfare initiatives and disciplinary proceedings.

The budgeted amount on HR Training related functions over the period FY 2023 – 2025 are mentioned below:

Amounts in million Rs.				
Sr. No.	Description	FY 2022-2023	FY 2023-2024	FY 2024-2025
1	Budgeted Training Costs	148.2	163.02	179.322
2	Consultancy Costs for Capacity Building Trainings	25	30	36

A brief detail on Learning and Development initiatives of NTDC HR for the period FY 2023 – 2025 is as follows:

Component	2022-2023	2023-2024	2024-2025
<b>Mandatory Promotional Training</b>	<p>In-House Technical Mandatory Promotional Training (17 and Above)</p> <p>In-House all Mandatory Promotional Training (1 to 16)</p> <p>Clearing all backlog hindering promotions/ upgradation of officers and officials.</p> <p>Initiatives for developing Course Contents as per requirement</p> <p>Leadership Trainings for Senior Management</p>	<p>In-House Technical Training for officers on revised/updated curriculum</p> <p>In-House Junior Management Course</p> <p>Technical Mandatory Trainings for other power sector entities</p> <p>Introduce competency based Mandatory trainings.</p> <p>Improvement of Mandatory Trainings Based on Feedback Analysis</p>	<p>Learning Management System for Mandatory Trainings</p> <p>Trainings through Gamification/Animation and Simulation</p> <p>Training Evaluation at Behavioral Level</p> <p>Linking TNA with ROTI</p> <p>MMC and SMC at State-of-the-Art best in the market training institute</p>
<b>Capacity Building Trainings, Seminars, Workshop etc.</b>	<p>Training Plan for Capacity Building of all officers</p> <p>Nominations of officers in different recognized Institutions (Local or Abroad)</p> <p>Starting Train the Trainer concept Induction Training of all employees (Officers and Officials)</p> <p>Specialized Trainings on HVDC, CTBCM, ERP etc.</p>	<p>Framework for On-the- Job training</p> <p>Formulating a pool of Internal Trainers.</p> <p>Specialized Trainings on HVDC, CTBCM, ERP etc.</p> <p>Initiatives for developing Course Contents as per requirement</p>	<p>Functionalization of NTDC own Academy</p> <p>Structured and customized Professional Development Program</p> <p>Continuous Development Programs for professionals Advance development programs for professionals</p>



		<p>Train Internal Trainers from Recognized institutions (Local or Abroad)</p> <p>Starting Capacity Building Program Through LMS</p>	
<b>Certification, Membership Etc.</b>	<p>Nominating officers for Certification from different institution.</p> <p>Sign MOU with Institutions like LUMS, NUST, IBA etc).</p>	<p>10 percent professionals will be certified from different Institutions.</p> <p>Membership of Training Institutes with International Libraries</p>	<p>20 percent professionals will be certified from different Institutions.</p> <p>Affiliation with Professional Bodies i.e HEC, IEEE, PEC UETs etc.</p> <p>Research Grants to the Professionals for Publications / Presentation of research paper</p>
<b>Training Infrastructure</b>	<p>Functionalization Of Regional Training Center</p> <p>Upgradation of existing Training Center</p> <p>Enhancing IT related Capabilities</p> <p>Dedicated Vehicles to Training Directorate Up-gradation of testing labs for research and educational purposes</p>	<p>Establishment of New Training Center (Rawat, Multan etc.)</p> <p>Additional Classrooms in existing training Centers.</p> <p>Fully Functional Libraries.</p> <p>Technical Arts tool and testing sets &amp; equipment</p>	<p>Sate of the art Auditorium in all Training Centers</p> <p>Establishment of experimental and research Labs</p> <p>Establishment of Live line and Dead line infrastructure to be used as simulators for trainings.</p> <p>Fully Functional E-Training Module linked with LMS of ERP-HCM SAP Module</p>

## **8. LOSSES IMPROVEMENT PLAN**

NTDC has already submitted a detailed T&T Losses Assessment Plan for FY 2023 – FY 2025 separately along with the initial submission of Investment Plan, wherein the progress and timeline for a comprehensive Independent Consultant Study on T&T Losses has been proposed.

Upon the completion of study, NTDC shall submit a comprehensive and focused Losses Improvement Plan for quantifiable and definitive reduction in NTDC T&T Losses for the approval of Authority.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 1**

1.	Name of Project	220/132kV GIS Substation Dhabeji
2.	Location	Sindh
3.	Scope in Brief / Objectives	<input type="checkbox"/> 220kV GIS Dhabeji Grid Station (2x160MVA, 220/132kV Auto Transformer) <input type="checkbox"/> 220kV Double Circuit Twin Bundled Transmission Line for Looping In/Out of 220kV Gharo –Jhampir S/C at 220kV Dhabeji SEZ Substation (12.4km)  The main objective of the project is provision of electricity at the doorstep of Dhabeji Special Economic Zone (DSEZ) as per decision of the Federal Government.
4.	a) Category	<input type="radio"/> <b>System Reliability/ Expansion</b> <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> <b>Development</b>
6.	Funding:	Government of Pakistan Grant
7.	Approval Forum	CDWP(16.12.2020)
8.	Commencement Date	<b>G/S:</b> 31-03-2023 <b>T/L:</b> 12-05-2022
9.	Expected Completion date	<b>G/S:</b> 21-09-2024 <b>T/L:</b> 31.12.2023
10.	Physical progress:	
	a) Physical progress (major works done):	<b><u>Grid Station:</u></b> <ul style="list-style-type: none"> <li>• Soil Investigation Works Completed and Soil Investigation Report approved.</li> <li>• Material procurement is under process.</li> <li>• Engineering/Design: 62%</li> <li>• Material Procurement : 40%</li> <li>• Civil Work: 3.3%</li> </ul> <b><u>Transmission Line:</u></b> <ul style="list-style-type: none"> <li>• Tower Staking: 44/44 No.</li> <li>• Excavation: 32/ 44 No.</li> <li>• Foundation: 32/44 No.</li> </ul>
	b) Physical completion (in %age terms):	Grid Station: 23.2% Transmission Line: 47.3%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Provision of reliable supply of electricity to consumers. <input type="checkbox"/> Socio economic uplifts of the community such as improved production, incomes and market activities. <input type="checkbox"/> Development of industries in the area will create gainful employment to the increasing work force. <input type="checkbox"/> Additional revenues to government exchequer from the levy of taxes on finished goods, electricity duty due to additional sale of power & GST, etc.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 2**

1.	Name of Project	<b>220 kV Haripur Grid Station and associated 220kV T/Line</b>
2.	Location	Punjab/KPK
3.	Scope in Brief / Objectives	<input type="checkbox"/> 3 x 250MVA Auto Transformers <input type="checkbox"/> 220kV Double Circuit Twin Bundle Transmission Line In/out at existing 220kV Mansehra – ISPR Transmission Line (12 km approx.) The main objective of the project is provision of electricity at the doorstep of Hattar Special Economic Zone (DSEZ) as per decision of the Federal Government.
4.	a) Category	<input type="radio"/> <b>System Reliability/ Expansion</b>
	b) Type	<input type="radio"/> <b>Development</b>
6.	Funding:	Government of Pakistan Through CDL
7.	Approval Forum	CDWP
8.	Commencement Date	<b>G/S: 30/08/2022      T/L: 09/07/2023</b>
9.	Expected Completion date	May-2024
10.	Physical progress:	
	a) Physical progress (major works done):	<b><u>Grid Station</u></b> <input type="checkbox"/> Foundation work of Major Equipment has been completed, Construction of CHB is 93% <input type="checkbox"/> The Material/steel supporting structure available with NTDC has been allocated and erected, <input type="checkbox"/> Procurement of material for Grid Station is under process, which is delayed due to LC opening issues. <input type="checkbox"/> Total Physical Progress = 71 % <b><u>Transmission Line</u></b> <input type="checkbox"/> Foundation activities are in progress and 21/39 foundations have been completed.
	b) Physical completion (in %age terms):	61%
11.	Outcomes / Benefits of the project after completion	To meet the additional load demand of Hattar special economic zone region which falls under CPEC. The proposed project will also improve power supply system & voltage profile around Haripur, Hattar and Wah area.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 3**

1.	Name of Project	<b>220 kV Swabi Grid Station along with associated 220kV T/Lines.</b>
2.	Location	KPK
3.	Scope in Brief / Objectives	<input type="checkbox"/> 220kV Grid Station with 3 x 250 MVA 220/132kV Auto Transformer. <input type="checkbox"/> 220kV D/Ct Twin Bundled T/Line from 500kV Nowshehra Grid Station to 220kV Swabi G/Station (55km approx.)  Project objective is to meet the upcoming power demand of industrial estate Rashakai SEZ.
4.	a) Category	<input type="radio"/> <b>System Reliability/ Expansion</b>
	b) Type	<input type="radio"/> <b>Development</b>
6.	Funding:	Government of Pakistan through CDL
7.	Approval Forum	CDWP
8.	Commencement Date	26-07-2022
9.	Expected Completion date	July-2024
	a) Physical progress (major works done):	<b><u>Grid Station:</u></b> <input type="checkbox"/> Foundation work of Major Equipment has been completed, Construction of CHB is 93% <input type="checkbox"/> The Material/steel supporting structure available with NTDC has been allocated and erected. <input type="checkbox"/> Procurement of material for Grid Station is under process which is delayed due to LC opening issue. <input type="checkbox"/> Total Physical Progress = 73 %  <b><u>Transmission Line:</u></b> <input type="checkbox"/> Foundation activities are in progress and 18/225 foundations have been completed.
	b) Physical completion (in %age terms):	46%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> To meet the additional load demand & voltage profile Improvement of industrial estate Rashakai SEZ and Swabi.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 4**

1.	Name of Project	<b>220/132 kV QABP G/S along with Associated T/L</b>
2.	Location	Sheikhupura, Punjab
3.	Scope in Brief / Objectives	220 kV G/Station with 2x250 MVA, 220/132 kV T/Fs 2x220 kV Line Bays for IN/OUT of 220 kV KSK-Bandala Ccts-I & II T/Line. 220 kV D/C T/L (2+2 km) for IN/OUT of existing 220 kV KSK-Bandala Ccts-I & II T/L (completed on 30/11/2020 on cost deposit basis and energized on no-load).
4.	a) Category	○ <b>System Reliability/ Expansion</b>
	b) Type	○ <b>Development</b>
6.	Funding:	Federal Govt. PSDP as CDL
7.	Approval Forum	CDWP
8.	Commencement Date	01.11.2022
9.	Expected Completion date	Primary Work: 31-01-2024      Secondary Work : 30.03.2024
10.	Physical progress:	
	a) Physical progress (major works done):	<p><b><u>Grid Station:</u></b></p> <ul style="list-style-type: none"> <li>Civil work of T/Fs &amp; equipment foundations have been completed</li> <li>85.15% of civil work of CHB is completed. Civil work of Metering room 89.30 % and generator room 89.1 % completed.</li> <li>Civil works of switchyard trenches and paths/ ways is in progress.</li> <li>The erection work of 220 kV &amp; 132 kV switchyards with available/allocated equipment/material and allied hardware is in progress.</li> <li>Civil works: 69.17%</li> <li>Erection works: 19.27%</li> </ul> <p><b><u>Transmission Line:</u></b></p> <ul style="list-style-type: none"> <li>completed &amp; energized on 30.04.2019</li> </ul>
	b) Physical completion (in %age terms):	<p>Design Drawing: 7.5 / 10%</p> <p>Material Procurement : 19 / 30%</p> <p>Civil Work : 24.21 / 35%</p> <p>Electrical Work : 4.81 / 20%</p> <p>Testing &amp; Commissioning : 0 / 5 %</p> <p><b>Overall Progress: 55.6 %</b></p>
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> This project provide power supply to “Quied-a-Azam” Special Economic Zone Sheikhupura.



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 5**

1.	Name of Project	500/132 kV FIEDMC / AIIC G/S along with Associated T/L															
2.	Location	Faisalabad, Punjab															
3.	Scope in Brief / Objectives	<ul style="list-style-type: none"><li>500kV Grid Station having 3 x 250 = 750 MVA , 500 /220/132 kV Auto transformer.</li><li>500 kV D/C T/L on three bundle Greely conductor, from 500 kV AIIC Grid Station for In/Out on the existing Gatti- Ghazi Barotha Circuit-II (Chakwal) 500 kV single circuit T/L</li></ul>															
4.	a) Category	<ul style="list-style-type: none"><li>System Reliability/ Expansion</li></ul>															
	b) Type	<ul style="list-style-type: none"><li>Development</li></ul>															
6.	Funding:	Federal Govt. PSDP as grant from Govt. of Pakistan															
7.	Approval Forum	CDWP															
8.	Commencement Date	N/A															
9.	Expected Completion date	16/08/2024															
10.	Physical progress:																
	a) Physical progress (major works done):	<p><b><u>Grid Station:</u></b></p> <ul style="list-style-type: none"><li>Procurement of material in progress. Purchase order of T/F, CBs, Disconnections, CVT, CCVT, and surge arrester has been placed.</li><li>Clearing Grubbing in progress and soil investigation completed.</li></ul> <p><b><u>Transmission Line:</u></b></p> <ul style="list-style-type: none"><li>Survey finalized and report approved.</li><li>Bidding documents are under preparation.</li></ul>															
	b) Physical completion (in %age terms):	<table><tr><td>a) Award of Contract</td><td>5 / 5 %</td></tr><tr><td>b) Mobilization</td><td>3 / 3 %</td></tr><tr><td>c) Design Drawing:</td><td>1.50/ 10 %</td></tr><tr><td>d) Material Procurement:</td><td>1.35/ 30%</td></tr><tr><td>e) Civil Work:</td><td>1.3/ 34%</td></tr><tr><td>f) Electrical Work :</td><td>0 / 14%</td></tr><tr><td>g) Testing &amp; Commissioning:</td><td>0 / 5%</td></tr><tr><td>h) Overall Progress:</td><td>12.15/100 %</td></tr></table>	a) Award of Contract	5 / 5 %	b) Mobilization	3 / 3 %	c) Design Drawing:	1.50/ 10 %	d) Material Procurement:	1.35/ 30%	e) Civil Work:	1.3/ 34%	f) Electrical Work :	0 / 14%	g) Testing & Commissioning:	0 / 5%	h) Overall Progress:
a) Award of Contract	5 / 5 %																
b) Mobilization	3 / 3 %																
c) Design Drawing:	1.50/ 10 %																
d) Material Procurement:	1.35/ 30%																
e) Civil Work:	1.3/ 34%																
f) Electrical Work :	0 / 14%																
g) Testing & Commissioning:	0 / 5%																
h) Overall Progress:	12.15/100 %																
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> This project provide power supply to “Alama Iqbal” Special Economic Zone Faisalabad.															

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 6**

1.	Name of Project	Land Acquisition for installation of 600 MW Solar Power Plant at Distt. Muzaffargarh
2.	Location	Taunsa Cannal Rd, 1.8 km from Main Muzaffargarh-Garh-Mor Road
3.	Scope in Brief / Objectives	Land acquisition of 2400 Acres (Actual as per Section-IV: 2627 Acres).
4.	a) Category	<b>System Reliability/ Expansion</b>
	b) Type	<b>Development</b>
6.	Funding:	Own Recourses
7.	Approval Forum	
8.	Commencement Date	January 2023
9.	Expected Completion date	-
10.	Physical progress:	
	a) Physical progress (major works done):	<input type="checkbox"/> The Section-17 (4) 6 has been issued on 12.07.2023. The case has been forwarded to BOR office on 05.09.2023 and the case is under the process of approval. <input type="checkbox"/> Profile of Transmission line has been prepared and submitted to the Office of Chief Engineer (T/Line Design) NTDC for approval.
	(b) Physical completion (in %age terms):	16 %
11.	Outcomes / Benefits of the project after completion	Land is acquiring for construction of Solar park for generation of 600 MW electric power.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 7**

1.	Name of Project	Land Acquisition for installation of 600 MW Solar Power Plant at Tehsil Athara Hazari Distt. Jhang
2.	Location	Athara Hazari, Jhang
3.	Scope in Brief / Objectives	Land acquisition of 2400 Acres (Actual as per Section-IV: 2500 Acres).
4.	a) Category	<b>System Reliability</b>
	b) Type	<b>Development</b>
6.	Funding:	Own Recourses
7.	Approval Forum	
8.	Commencement Date	January 2023
9.	Expected Completion date	-
10.	Physical progress:	
	a) Physical progress (major works done):	<p><b><u>Private Land (1737.5 Acre):</u></b></p> <ul style="list-style-type: none"> <li>Notification for Section-4 for Acquisition of Land issued and DPAC meeting held on 18.01.2023.</li> <li>Allocation of funds awaited from Government.</li> </ul> <p><b><u>Government Land (762.5 Acre):</u></b></p> <p><input type="checkbox"/> The case is under approval.</p>
	b) Physical completion (in %age terms):	14 %
11.	Outcomes / Benefits of the project after completion	Land is acquiring for construction of Solar park for generation of 600 MW electric power.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 8**

1.	Name of Project	Land Acquisition for Installation of 1200MW Solar Power Plant at Sher Garh Tehsil Chubara Disstt: Layyah
2.	Location	Located at 67 km from Layyah city, Shah wali, Shergarh, Tehsil Chaubara.
3.	Scope in Brief / Objectives	Land acquisition of 4800 Acres.
4.	a) Category	<b>System Reliability</b>
	b) Type	<b>Development</b>
6.	Funding:	Own Recourses
7.	Approval Forum	
8.	Commencement Date	January 2023
9.	Expected Completion date	-
10.	Physical progress:	
	a) Physical progress (major works done):	<input type="checkbox"/> Notification of Section-4 has been issued on 03.03.2023. <input type="checkbox"/> The DPAC meeting is awaited.
	b) Physical completion (in %age terms):	16.5 %
11.	Outcomes / Benefits of the project after completion	Land is acquiring for construction of Solar park for generation of 1200 MW electric power.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 9**

1.	Name of Project	500kV HVDC Transmission System between Tajikistan and Pakistan for Central Asia - South Asia Transmission Interconnection (CASA-1000) (NTDC)
2.	Location	Pak-Afghan Torkham Border to Aza Khel Nowshera, District Nowshera of KPK and Electrode Station in Charsadda along with Electrode Line from Nowshera to Charsadda.
3.	Scope in Brief / Objectives	<p><b>TW-01:</b> ±500kV Converter Station at Nowshera Electrode Station at Charsadda</p> <p><b>TW-02:</b> 500kV HVDC Transmission Line from Torkham to Nowshera (113Km) Electrode line from Nowshera to Charsadda (24Km)</p> <p><b>HVAC GS:</b> 500 kV HVAC Grid Station (Azakhel) Nowshera</p> <p><b>HVAC TL:</b> 500 kV HVAC T/L Through In/Out of Tarbela Peshawar at 500kV Nowshera</p> <p><b>Objectives:</b> Transmission project is designed to transmit 1300 MW of surplus electricity from existing Hydel power resources in the Central Asian countries, Tajikistan and Kyrgyz Republic through Afghanistan to Pakistan.</p>
4.	Category	Power Evacuation
	Type	Development
5.	Cost	PKR 46,804.31 Million
6.	Funding:	<p><b>World Bank:</b> 185 Million USD (for Converter &amp; Electrode Station) and 43MUSD for 500kV HVAC Nowshera</p> <p><b>Islamic Development Bank IsDB:</b> 35 Million USD (for HVDC T/L)</p>
7.	Approval Forum	Ministry of Energy (Power Division)
8.	Commencement Date	<p><b>TW01- Converter Station:</b> 28.08.2018</p> <p><b>TW02- Transmission Line:</b> 06.11.2020</p> <p><b>HVAC Grid Station:</b> 28.02.2022</p> <p><b>HVAC T/Line:</b> 30.05.2022</p>
9.	Expected Completion date	<p><b>TW01- Converter Station:</b> 04.04.2024 (Sub system test of both Converter station and Electrode station will be completed, however, full system test will remain pending till resumption and completion of TL in Afghanistan)</p> <p><b>TW02- Transmission Line:</b> 04.04.2024 (Stringing activity will be started on resolution of Afghanistan issue)</p> <p><b>HVAC Grid Station:</b> 28.08.2024</p> <p><b>HVAC T/Line:</b> 17.05.2024</p>
10.	Physical progress:	
	Physical progress (major works done):	<p><b>Converter Station (TW01):</b></p> <p>Engineering &amp; Design: 91.5%</p> <p>Procurement of Material: 99.96%</p> <p>Civil Works: 95.7%</p> <p>Installation: 61.8%</p> <p><b>Transmission Line (TW02):</b></p> <p>Engineering &amp; Design: 100%</p> <p>Procurement: 100%</p>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

		Foundation Works: 97.9% Erection of Towers: 97.6% <b>HVAC Grid Station Nowshera:</b> Engineering & Design: 86% Procurement of Material: 68% Civil Works: 72% <b>HVAC Transmission Line Nowshera:</b> Foundation Works: 29/36 (81%)
	Physical completion (in %age terms):	<b>TW01- Converter Station:</b> 85.2% <b>TW02- Transmission Line:</b> 73.8% <b>HVAC G/Station Nowshera:</b> 56.4% <b>HVAC T/Line Nowshera:</b> 51%
11.	Outcomes / Benefits of the project after completion	i) Inclusion of 1300MW power to the National Grid thereby greatly improving the supply/deficit ratio in summer season. ii) Increase in the available system capacity to meet future load growth at/around proposed project. iii) Serve as a 2nd 500kV source of power to feed PESCO load centers. iv) Improvement in the power supply position of PESCO. v) Community development program.



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

<b>Project Sr. No. 10</b>		
1.	Name of Project	Evacuation of Power from 2160MW Dasu HPP (Stage-I)
2.	Location	KPK & Punjab
3.	Scope in Brief / Objectives	Evacuation of Power from 2160 MW Dasu HPP (Stage-I) through construction of: <b>i). LOT-I:</b> 765KV Double Circuit T/Line from Dasu to 765/220kV Mansehra Grid Station (157 km) <b>ii). LOT-II:</b> 765KV Double Circuit T/Line from 765/220KV Mansehra G/S to 765/500/220/132KV Islamabad West G/S (97.6 km) <b>iii). LOT-III:</b> 765/220 kV Mansehra Grid Station
4.	a) Category	○ <b>Power Evacuation</b>
	b) Type	○ <b>Development</b>
6.	Funding:	World Bank (WB)
7.	Approval Forum	ECNEC (01.10.2020)
8.	Commencement Date	T/L ( <b>LOT-I &amp; LOT-II</b> ): 10.02.2023 G/S (LOT-III): 20.02.2023
9.	Expected Completion date	T/L ( <b>LOT-I &amp; LOT-II</b> ): 09.06.2026 G/S (LOT-III): 19.08.2025
10.	Physical progress:	
	a) Physical progress (major works done):	<u>Grid Station</u> <input type="checkbox"/> Survey & Soil Investigation completed. <input type="checkbox"/> Access Road & Zero Level Fixing under review/approval. <input type="checkbox"/> Engineering & Design under review/approval. <u>Transmission Line LOT-I &amp; LOT-II</u> <input type="checkbox"/> Detail Survey Completed for LOT-II and is in progress for LOT-I. <input type="checkbox"/> Plan & Profile under review/approval <input type="checkbox"/> Engineering & Design under review/approval.
	b) Physical completion (in %age terms):	Grid Station (LOT-III): 5% Transmission Line: 2.53% (LOT-I) and 3.87% (LOT-II)
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Dispersal of 2160 MW clean environment friendly energy from Dasu HPP WAPDA (Stage-I) in a reliable way. <input type="checkbox"/> Additions of power in National Grid which will help eliminate load shedding. <input type="checkbox"/> Improvement in voltage profile, stability & reliability of NTDC Grid System. <input type="checkbox"/> Enhancement in transmission capacity and improvement in power supply system in North Region

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 11**

1.	Name of Project	<b>500/220/132 kV Lahore North G/S</b>
	Name of Contracts	<input type="checkbox"/> <b>500/220/132 kV Lahore North G/S</b> <input type="checkbox"/> <b>500 kV D/C T/L Balloki-Lahore North-Nokhar</b> <input type="checkbox"/> <b>220 kV T/L for Lahore North G/S</b>
2.	Location	Punjab
3.	Scope in Brief / Objectives	<p><b><u>Grid Station:</u></b></p> <ul style="list-style-type: none"> <li>500/220/132 kV Lahore North G/S with <b>3X750 MVA</b>, 500kV and <b>3X250 MVA</b>, 220/132 kV T/Fs</li> <li>Extension at 500 kV Lahore Converter station &amp; 500 kV Nokhar for construction of 02 No. 500 kV Line Bays at each substation</li> </ul> <p><b><u>500kV T/L:</u></b></p> <p><input type="checkbox"/> T/L from HVDC Converter Station at Balloki to Nokhar via Lahore North (113 km).</p> <p><b><u>220kV T/L</u></b></p> <ul style="list-style-type: none"> <li>220 kV D/C T/Line for IN/OUT of KSK-Ghazi Road S/C T/Line (15 km) – (Package-I)</li> <li>220 kV D/C T/Line for IN/OUT of KSK-Ravi S/C T/Line (15 km) – (Package-II)</li> <li>220 kV D/C T/Line for IN/OUT of Lahore-Ravi S/C T/Line (9 km) – (Package-III)</li> </ul>
4.	a) Category	<input type="radio"/> System Reliability
	b) Type	<input type="radio"/> Development
6.	Funding:	ADB (MFF-II, Tranche-III)
7.	Approval Forum	ECNEC
8.	Commencement Date	G/S: 01/07/2022      500kV T/L: 04/02/2022      220kV T/L: 01/11/2019
9.	Expected Completion date	G/S: 22/03/2024      500kV T/L: 03/02/2024      220kV T/L: 30/12/2023
10.	Physical progress:	
	a) Physical progress (major works done):	<p><b>A. <u>Grid Station:</u></b></p> <ul style="list-style-type: none"> <li>Steel fixing of CHB mat foundation and footing is in progress.</li> <li>500 KV gantries excavation and engineered fill concrete is in progress.</li> <li>132kV Relay Building: Brickwork for external wall under plinth is completed. Backfilling is in progress.</li> </ul>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

		<p><b>B. <u>500kV Transmission Line</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> RoW issue at tower No. 35 and court case is under progress. Court has advised to compensate the other party and get approval from DC office. In this regard on 16/10/2023 case has been submitted to DC office for approval.</li> <li><input type="checkbox"/> The stringing work will be started after harvesting of paddy crop.</li> </ul> <p><b>C. <u>220kV Transmission Line</u></b></p> <ul style="list-style-type: none"> <li>• FAT of hardware material is almost completed. Equipment will reach Site by Air till mid of November 2023.</li> <li>• Land acquisition process initiated for tower Nos. 01 &amp; 02. Section IV is published on 31/07/2023. The arrangement of funds for purchase of land is in process._</li> </ul>
	b) Physical completion (in %age terms):	<p><b><u>Grid Station:</u></b></p> <p>Engineering &amp; Design = 53 %  Material Procurement = 63 %  Civil Work = 34.77 %  Overall Progress = 39.52 %</p> <p><b><u>500 kV T/L:</u></b></p> <p>Foundation Concreted = 335 / 335 Nos.  Erection = 335 / 335 Nos.  Stringing = 86.90 / 113 km  Overall Progress = 90.19 %</p> <p><b><u>220 kV T/L:</u></b></p> <p>Design &amp; Engineering = 100 %  Material = 88 %  Civil Work = 98.4%  Erection = 94.4 %  Overall = 78.10%</p>
11.	Outcomes / Benefits of the project after completion	<ul style="list-style-type: none"> <li><input type="checkbox"/> Fulfillment of future demand of load.</li> <li><input type="checkbox"/> Reduce voltage dip of Lesco region.</li> <li><input type="checkbox"/> Improvement in power supply position.</li> <li><input type="checkbox"/> Improvement in voltage profile of existing grid network.</li> <li><input type="checkbox"/> Reduction in transmission system losses.</li> <li><input type="checkbox"/> Improvement in reliability of NTDC and Discos system networks</li> </ul>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 12**

1.	Name of Project	<b>500 kV Double-Circuit Quad-Bundle Transmission Line from 870MW Suki Kinari HPP to Neelum Jhelum Interconnection Point using ACSR Bunting Conductor (Approx. 75 km).</b>
2.	Location	KPK, AJK
3.	Scope in Brief / Objectives	<input type="checkbox"/> 500 kV Double-Circuit Quad-Bundle Transmission Line from 870MW Suki Kinari HPP to Neelum Jhelum Interconnection Point using ACSR Bunting Conductor (Approx. 75 km) <input type="checkbox"/> 500kV Maira Switching Station (8x500 kV Line Bays along with Shunt Reactor Banks) <input type="checkbox"/> 500kV D/C T/Line from Sangal to Maira Switching Station (Approx. 83 km) <input type="checkbox"/> 500kV D/C T/Line from Maira Switching Station to Islamabad West (131 km) <input type="checkbox"/> 500kV D/C T/Line from Maira Switching Station to Karot (20 km)  The main objective of the project is to provide interconnection facility for evacuation of bulk amount of power from the upcoming power plant, which are falling in the KPK/AJK region under China Pakistan Economic Corridor projects.
4.	a. Category	<input type="radio"/> <b>Power Evacuation</b> <input type="radio"/> <b>System Reliability</b> <input type="radio"/> <b>System Constraints</b>
	b. Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <input type="radio"/> <b>Development</b>
6.	Funding:	ADB + NTDC Own Resources
7.	Approval Forum	ECNEC
8.	Commencement Date	02-06-2022 (ADB-401A), 19-11-2021 (ADB-300B)
9.	Expected Completion date	04-04-2024 (ADB-401A), April-2024 (ADB-300B)
10.	Physical progress: a) Physical progress (major works done):	<p><b><u>A. 500kV Suki Kinari – Interconnection of Neelum Jhelum Transmission Line</u></b></p> <input type="checkbox"/> Towers released = 199/199, <input type="checkbox"/> Towers stacked = 199/199, <input type="checkbox"/> Tower Excavation = 181.50/199, <input type="checkbox"/> Towers concreted = 179.75/199 <input type="checkbox"/> Access road for 195 No. towers has been completed. <p><b><u>B. 500kV Maira Switching Station Grid Station</u></b></p>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

		<ul style="list-style-type: none"> <li><input type="checkbox"/> Design Engineering mostly completed while Procurement of Material is in progress.</li> <li><input type="checkbox"/> Earth Work and Construction of Project site office completed.</li> <li><input type="checkbox"/> Construction Works for Control House Building (22%), Mechanical Workshop Building (48%), Shunt Reactor Foundation is in progress</li> </ul> <p>Civil Work Progress = 22%.</p> <p><b>C. <u>500kV D/C T/Line from Sangal to Maira Switching Station (Approx. 83 km)</u></b> Tender for procurement of material has been opened and evaluated, however, the award is pending due to non-signing of Loan Agreement with ADB.</p> <p><b>D. <u>500kV D/C T/Line from Maira Switching Station to Islamabad West (131 km)</u></b> Tenders for Material procurement are published. Tender for Civil Works is under preparation.</p> <p><b>E. <u>500kV D/C T/Line from Maira Switching Station to Karot (20 km)</u></b> Tenders for Material procurement are published. Tender for Civil Works is under preparation.</p>
	b) Physical completion (in %age terms):	<ul style="list-style-type: none"> <li><input type="checkbox"/> 69% (500kV T/Line from Suki Kinari to Interconnection of Neelum Jhelum T/L),</li> <li><input type="checkbox"/> 33% (500kV Maira S/S),</li> <li><input type="checkbox"/> 3 % (500kV D/C T/Line from Sangal to Maira Switching Station),</li> <li><input type="checkbox"/> 2 % (500kV D/C T/Line from Maira Switching Station to Islamabad West (131 km) &amp; Karot HPP (20 km))</li> </ul>
11.	Outcomes / Benefits of the project after completion	<ul style="list-style-type: none"> <li><input type="checkbox"/> Evacuation of bulk amount of power From Upcoming HPP in KPK/AJK area.</li> <li><input type="checkbox"/> Improvement of Power Supply Position in the country</li> <li><input type="checkbox"/> Improvement in reduction of load shedding in the country.</li> <li><input type="checkbox"/> Improvement in the reliability of NTDC network</li> <li><input type="checkbox"/> Improvement in voltage profile of existing system</li> </ul>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 13**

1.	Name of Project	Enhancement in Transformation Capacity of NTDC System by Extension and Augmentation of Existing Grid Stations
2.	Location	Sindh, Balochistan & Southern Punjab
3.	Scope in Brief / Objectives	<ul style="list-style-type: none"> <li><input type="checkbox"/> Augmentation at 500 kV Multan New G/S (03x160 MVA to 03x250 MVA autotransformers)</li> <li><input type="checkbox"/> 220 kV Vehari G/S (02x160 MVA to 02x250 MVA autotransformers)</li> <li><input type="checkbox"/> Augmentation at 220 kV Shikarpur G/S (02x160 MVA to 02x250 MVA autotransformers)</li> <li><input type="checkbox"/> Augmentation at 220 kV Quetta Industrial G/S (2x160 MVA to 2x250 MVA auto-transformers)</li> <li><input type="checkbox"/> Extension at 220 kV Rohri G/S (1x250 MVA)</li> <li><input type="checkbox"/> Augmentation at 220 kV Daharki G/S (1x160 MVA to 1x250 MVA)</li> <li><input type="checkbox"/> Augmentation at 220 kV Bahawalpur G/S (1x160 MVA to 1x250 MVA)</li> <li><input type="checkbox"/> Extension works at 220 kV Sibbi G/S (1x160 MVA)</li> <li><input type="checkbox"/> Extension works at 220 kV Loralai G/S (1x250 MVA)</li> <li><input type="checkbox"/> Augmentation works at 220 kV T.M Khan Road G/S (2x160 MVA to 2x250 MVA)</li> <li><input type="checkbox"/> Augmentation works at 220 kV Hala Road G/S (2x160 MVA to 2x250 MVA)</li> <li><input type="checkbox"/> Extension works at 500 kV Jamshoro G/S (1x160 MVA)</li> <li><input type="checkbox"/> Augmentation of 1x160 MVA with 1x250 MVA T/F at 220 kV Ludewala G/S</li> <li><input type="checkbox"/> Extension of 1x250 MVA T/F at 220 kV Bara Kahu / University G/S</li> <li><input type="checkbox"/> Extension of 1x250 MVA T/F at 220 kV New Kot Lakhpat G/S</li> <li><input type="checkbox"/> Augmentation of 2x160 MVA with 2x250 MVA T/Fs At 220 kV Summandri Road G/S</li> <li><input type="checkbox"/> Augmentation of 2x160 MVA with 2x250 MVA T/Fs At 220 kV Ghakkar G/S</li> <li><input type="checkbox"/> Augmentation of 4x160 MVA with 4x250 MVA T/Fs at 500 kV Sheikhpura G/S</li> <li><input type="checkbox"/> Augmentation of 3x160 MVA with 2x250 MVA T/Fs at 220 kV WAPDA Town G/S</li> <li><input type="checkbox"/> Augmentation works at 500 kV Nokhar G/S (220/132 kV, 3x160 MVA to 3x250 MVA)</li> <li><input type="checkbox"/> Extension works at 500 kV Nokhar G/S (500/220 kV, 1x600 MVA)</li> <li><input type="checkbox"/> Extension works at 500 kV Sheikh Muhammadi G/S (500/220 kV, 1x450 MVA)</li> <li><input type="checkbox"/> Addition of 1 x 160 MVA transformer at 220 kV Daudkhel G/S</li> </ul>



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

		<input type="checkbox"/> Augmentation of 2 x 160 MVA with 2x250 MVA T/Fs at 220 kV Bannu G/S  As a result of this project, about 1,050 MVA (500/200 kV) & 6,096 MVA (220/132 kV) capacity will be added in the system at 28 existing 500 kV & 220 kV Grid Stations of NTDC system which will help to meet the power demand of the country in minimum possible time period as well as the system losses will also be reduced 37.6 MW.
4.	a) Category	<input type="radio"/> <b>System Constraints</b>
	b) Type	<input type="radio"/> <b>Extension</b> <input type="radio"/> <b>Augmentation</b>
6.	Funding:	World Bank
7.	Approval Forum	ECNEC (12.04.2017)
8.	Commencement Date	Multan & Vehari: 31-03-2021 Shikarpur: 04-08-2021 Quetta Industrial: 30-07-2021 Rohri, Daharki & Bahawalpur: 13-08-2021 Sibbi & Loralai: 20-09-2021 T.M.Khan, Hala Road & Jamshoro: 27-09-2021 Ludewala, Isd. University & NKLP: 09-06-2022 Sammundri Rd. & Ghakkar: 27-08-2021 WAPDA Town & Sheikhpura: 27-09-2021 Nokhar: 15-03-2023 Sheikh Muhammadi: Yet to be awarded Daud Khel & Bannu: 12-08-2021
9.	Expected/Actual Completion date	Multan & Vehari: 01-01-2023 Shikarpur: 04-02-2023 (completed) Quetta Industrial: 18-03-2024 Rohri, Daharki & Bahawalpur: 31-03-2024 Sibbi & Loralai: 29-03-2024 T.M.Khan, Hala Road & Jamshoro: 13-07-2024 Ludewala: 28-02-2024 Isd. University: 09-02-2024 NKLP: 28-02-2024 Sammundri Rd. & Ghakkar: 30-11-2023 WAPDA Town & Sheikhpura: 30-11-2023 Nokhar: 14-11-2024 Sheikh Muhammadi: Yet to be awarded Daud Khel & Bannu: November - 2023
10.	Physical progress:	
	a) Physical progress (major works done):	<u>Multan &amp; Vehari</u> <ul style="list-style-type: none"> <li>All 05 Nos. 250MVA Transformers have successfully been energized.</li> </ul>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

		<p><u>Shikarpur</u></p> <ul style="list-style-type: none"> <li>02 Nos. Newly installed 220/132kV, 250MVA Auto Transformer (T-3) &amp; (T-1) have been energized on Load respectively.</li> </ul> <p><u>Quetta Industrial</u></p> <ul style="list-style-type: none"> <li>(Transformer T-1 energized on load on 14/02/2023)</li> <li>Commissioning of 2<sup>nd</sup> Auto-transformer pending due to the replacement of the damaged red-phase Tap Changer and its delivery due to LC opening issue.</li> <li>Engineering &amp; Design = 95%</li> <li>Civil Works = 100%.</li> </ul> <p><u>Rohri, Daharki &amp; Bahawalpur</u></p> <p>Engineering &amp; Design: 98%</p> <p>Procurement: 90%</p> <p>Civil Works: 100%</p> <p>Auto Transformers (ATRs) has arrived at Port on 20th August 2023 now in process of custom clearance</p> <p><u>Sibbi &amp; Loralai</u></p> <p>Civil Works = 95%      Engineering &amp; Design = 98%</p> <p>T/F for Sibi G/S has been allocated and shifted to site. Whereas, the delivery of T/F for Loralai G/S is expected by end of November, 2023.</p> <p><u>T.M.Khan, Hala Road &amp; Jamshoro</u></p> <ul style="list-style-type: none"> <li>Engineering Design = 90%</li> <li>The Transformer for Jamshoro has been allocated and shifted to site.</li> </ul> <p><u>220kV Islamabad University Grid Station</u></p> <ul style="list-style-type: none"> <li>Design &amp; Engineering = 93.86%.</li> <li>Procurement = 59%.</li> <li>Purchase Order has been placed for majority of equipment. Manufacturing of the material is in progress.</li> <li>Construction activities at site are in progress.</li> <li>Overall progress is 49%.</li> </ul> <p><u>Ghakkar Grid Station:</u></p> <ul style="list-style-type: none"> <li>One (01) Transformer energized on load on 11.04.2023.</li> <li>The shutdown at Ghakkar underway.</li> </ul>
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**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

		<ul style="list-style-type: none"> <li>Balance material is expected to reach in November 2023.</li> <li>After augmentation of 220 kV bus bars, second T/F at G/S will be commissioned and energized in coming winter season.</li> </ul> <p><u>Summandri Grid Station:</u></p> <ul style="list-style-type: none"> <li>Civil works of both TFs completed.</li> <li>First 250MVA TF energized on load dated 02.06.2023.</li> <li>Shutdown at Sammundari Road G/S is underway from 26/09/2023 to 08/11/2023.</li> <li>Electrical &amp; Mechanical Works, Testing and Commissioning is in progress (12.97 %).</li> <li>Material is expected to reach in November 2023.</li> <li>After augmentation of 220 kV bus bars, second T/F at G/S will be commissioned and energized in coming winter season.</li> </ul> <p><u>WAPDA Town &amp; Sheikhpura</u></p> <ul style="list-style-type: none"> <li>Soil Investigation completed.</li> <li>Manufacturing of transformer is completed, FAT will start in Nov 2023 and delivery of T/F is expected at the end of Dec 2023.</li> </ul> <p><u>Nokhar:</u></p> <ul style="list-style-type: none"> <li>Soil Investigation has been done at site.</li> <li>Finalization of Scope of work is in progress which may result in a change order due to variation in original scope of work. The actual scope of work to be executed in future.</li> </ul> <p><u>Sheikh Muhammadi:</u> Need assessment being done for the works.</p> <p><u>Daud Khel:</u></p> <ul style="list-style-type: none"> <li>Allocated Transformer at site.</li> <li>Shipment of material is delayed due to non-opening of L/C, which has now been resolved However, L/C for Hardware have been opened except SCADA.</li> <li>Daudkhel Overall Progress = 82%.</li> </ul> <p><u>Bannu:</u></p> <ul style="list-style-type: none"> <li>Both transformers energized.</li> </ul> <p><u>NKLP:</u></p> <ul style="list-style-type: none"> <li>Civil Works at NKLP is expected to be completed by end of November 2023.</li> <li>Auto T/F, 220kV &amp; 132kV DS and ITRs manufacturing complete and inspection is in progress.</li> </ul> <p><u>Ludewala:</u></p> <ul style="list-style-type: none"> <li>Civil work at Ludewala is expected to be completed by end November 2023.</li> </ul>
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**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

		<ul style="list-style-type: none"> <li>Auto T/F, 220kV &amp; 132kV DS and ITRs manufacturing complete and inspection is in progress.</li> </ul>
	b) Physical completion (in %age terms):	<p>Multan &amp; Vehari: 90%  Shikarpur: 96.1%  Quetta Industrial: 84.8%  Rohri, Daharki &amp; Bahawalpur: 75.8%  Sibbi &amp; Loralai: 74.8%  T.M.Khan, Hala Road &amp; Jamshoro: 17.2%  Isd. University : 49 %  Ghakkar: 62.75 %  Sammundri Rd.: 73.25 %  WAPDA Town &amp; Sheikhpura: 57%  NKLP: 61.55%  Ludewala: 66.22%  Nokhar: 5%  Sheikh Muhammadi: 0%  Daud Khel: 82 %  Bannu: 91%</p>
11.	Outcomes / Benefits of the project after completion	<p>The enhancement of transformation capacity of NTDC system by installation of additional transformers &amp; augmentation of transformers at various grid stations has been prepared for optimal utilization of existing grid stations to provide relief to overloaded transformers and to enhance the transformation capacity of NTDC system to meet the growing power demand of DISCOs.</p>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 14**

1.	Name of Project	500kV Islamabad West Grid Station
2.	Location	Punjab
3.	Scope in Brief / Objectives	Construction of 765/500/220/132KV Grid Station Islamabad West
4.	a) Category	<ul style="list-style-type: none"> <li>○ <b>Power Evacuation</b></li> <li>○ <b>System Reliability</b></li> <li>○ System Constraints</li> </ul>
	b) Type	<ul style="list-style-type: none"> <li>○ Extension</li> <li>○ Augmentation</li> <li>○ <b>Development</b></li> </ul>
6.	Funding:	World Bank (WB)
7.	Approval Forum	ECNEC (20.07.2016)
8.	Commencement Date	December 2023
9.	Expected Completion date	June 2026
10.	Physical progress:	
	a) Physical progress (major works done):	<u>Procurement</u> <input type="checkbox"/> Technical Evaluation completed. <input type="checkbox"/> Financial Bids evaluation is in progress.
	b) Physical completion (in %age terms):	Contract in Award Stage
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Dispersal of 2160 MW clean environment friendly energy from Dasu HPP WAPDA (Stage-I) in a reliable way. <input type="checkbox"/> Additions of power in National Grid which will help eliminate load shedding. <input type="checkbox"/> Improvement in voltage profile, stability & reliability of NTDC Grid System. <input type="checkbox"/> Enhancement in transmission capacity and improvement in power supply system in North Region

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 15**

1.	Name of Project	220-KV Dera Ismail Khan - Zhob Transmission Line alongwith 220-KV Zhob Sub-Station.
2.	Location	KPK & Balochistan
3.	Scope in Brief / Objectives	<input type="checkbox"/> 220kV substation at Zhob consisting of two 220 kV transformer bays for 220/132kV, 2x160 MVA transformers, two 220 kV line bays and six 132 kV line bays along with allied equipment and accessories. <input type="checkbox"/> 220 kV single conductor double circuit transmission on Rail conductor from Dera Ismail Khan to Zhob (220 km) <input type="checkbox"/> Extension at 220 kV D.I Khan Grid Station (Two Line Bays) This project aims the installation of new 220 kV Substation at Zhob along with 220 kV Dera Ismail Khan – Zhob Transmission Lines to meet the growing power requirements of the areas including Qilla Saifullah, G.H. Zai, MusafirPur, Zhob, Mekhtar and Duki under the jurisdiction of Quetta Electric Supply Company (QESCO).
4.	a) Category	<input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> <b>Development</b>
6.	Funding:	Asian Development Bank (ADB)
7.	Approval Forum	ECNEC (07.11.2016)
8.	Commencement Date	Grid Station: 15.03.2021 Transmission Line: 31.05.2019
9.	Expected/Actual Completion date	Grid Station: 31.12.2023 Transmission Line: 08.04.2023
10.	Physical progress:	
	a) Physical progress (major works done):	<b><u>Grid Station:</u></b> <input type="checkbox"/> Engineering & Design: 95% <input type="checkbox"/> Procurement/FAT/Shipment: 80% <input type="checkbox"/> Civil Works: 82.52%  <b><u>T/L:</u></b> <ul style="list-style-type: none"> <li>• Concrete: 642/642 No</li> <li>• Erection: 642/642 No.</li> <li>• Stringing: 210.75/210.7 km</li> </ul>
	b) Physical completion (in %age terms):	Grid Station: 67.76% Transmission Line: 100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement in power supply position at/around 220 kV Zhob. <input type="checkbox"/> Increase in the system capacity to meet future load demand of the area. <input type="checkbox"/> Improvement in voltage profile of existing 132 kV grid station in the vicinity of Zhob. <input type="checkbox"/> Reduction in transmission system losses. <input type="checkbox"/> Improvement in reliability of NTDC and QESCO system networks.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 16**

1.	Name of Project	<b>220 kV Jauharabad Grid Station</b>
2.	Location	Jauharabad , Punjab
3.	Scope in Brief / Objectives	3x160 MVA autotransformers along with allied equipment and accessories.
4.	a) Category	○ System Reliability
	b) Type	○ Development
6.	Funding:	Asian Development Bank (MFF-II, Tranche-II)
7.	Approval Forum	CDWP
8.	Commencement Date	07/07/2022
9.	Expected Completion date	06/03/2024
10.	Physical progress:	
	a) Physical progress (major works done):	<b><u>Grid Station:</u></b> <ul style="list-style-type: none"> <li>After soil investigation and Plate Load test, foundation design has been changed from conventional foundations to Pile foundations.</li> <li>Contractor has been asked to start work and submit financial impact of change in parallel for negotiation (change from conventional foundation to pile foundation).</li> </ul>
	b) Physical completion (in %age terms):	19 %
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Enhance of MVA capacity of NTDC system. <input type="checkbox"/> Improvement in power supply position. <input type="checkbox"/> Increase in the system capacity to meet future load demand of Jauharabad and nearby area. <input type="checkbox"/> Improvement in voltage profile of existing grid network. <input type="checkbox"/> Reduction in transmission system losses. <input type="checkbox"/> Improvement in reliability of NTDC and FESCO system networks

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 17**

1.	Name of Project	220kV Mirpur Khas G/S alongwith allied T/Ls
2.	Location	Sindh
3.	Scope in Brief / Objectives	<input type="checkbox"/> 220kV substation at Mirpurkhas with two 220/132kV, 250MVA transformers. <input type="checkbox"/> 220kV D/C transmission line for looping In/Out of proposed Hala Road - Jamshoro 220kV S/C transmission line as Mirpurkhas (Lot-I: 70km) <input type="checkbox"/> 220kV D/C transmission line for looping In/Out of one circuit of the existing Jamshoro – T.M.Khan Road 220kV D/C T/L at Hala Road (Lot-II: 10 km) <input type="checkbox"/> Extension at 220kV Hala Road Grid Station (Two Line Bays)  This project aims the installation of new 220kV Substation at Mirpur Khas alongwith associated transmission lines & a 2 <sup>nd</sup> source of supply to 220kV Hala Road Grid Station to meet the growing power requirements of the areas including Mirpur Khas, Mir Wah Gorchani, Sultanabad, Kandiyari, Sanghar, Shah Pur Chakar, Jam Nawaz, Tando Jam, Samaro & T.A Yar under the jurisdiction of Hyderabad Electric Supply Company (HESCO).
4.	a) Category	<input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> <b>Development</b>
6.	Funding:	Asian Development Bank (ADB)
7.	Approval Forum	ECNEC (07.11.2016)
8.	Commencement Date	Grid Station: 17.01.2020 Transmission Line: Yet to commence
9.	Expected Completion date	Grid Station: 31.12.2023 Transmission Line: Lot-I: 18 months from the date of commencement Lot-II: 24 months from the date of commencement
10.	Physical progress:	
	a) Physical progress (major works done):	<u><b>Mirpurkhas G/S:</b></u> <input type="checkbox"/> Engineering/Design: 95% <input type="checkbox"/> Procurement: 65% <input type="checkbox"/> Civil Works: 50.14% <input type="checkbox"/> Overall progress: <b>53.54%</b>  <u><b>Extension works at Hala Road G/S:</b></u> <input type="checkbox"/> Engineering/Design: 100% <input type="checkbox"/> Procurement: 65% <input type="checkbox"/> Civil Works: 80%



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

		<p>Overall Progress: <b>63.50%</b></p> <p><b><u>Transmission Line</u></b></p> <p><b><u>Lot-I:</u></b></p> <p>Work not yet commenced.</p> <p><b><u>Lot-II:</u></b></p> <p><input type="checkbox"/> Retendering is in process</p>
	b) Physical completion (in %age terms):	<p>Grid Station: 63.50%</p> <p>Transmission Line: --</p>
11.	Outcomes / Benefits of the project after completion	<ul style="list-style-type: none"> <li><input type="checkbox"/> Improvement in power supply position at/around 220kV Mirpurkhas.</li> <li><input type="checkbox"/> Increase in the system capacity to meet future load demand of the area.</li> <li><input type="checkbox"/> Improvement in voltage profile of existing 132kV grid station in the vicinity of Mirpurkhas.</li> <li><input type="checkbox"/> Reduction in transmission system losses.</li> <li><input type="checkbox"/> Reduction in the loading of 220/132kV transformers at T.M.Khan Road, Hala Road &amp; Jamshoro.</li> <li><input type="checkbox"/> Elimination of overloading of 132kV T/Lines from Tando Jam to T.A Yar &amp; from hala Road to Matiari.</li> <li><input type="checkbox"/> Improvement in reliability of NTDC and HESCO system networks.</li> </ul>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 18**

1.	Name of Project	Now 220kV Transmission System Network Reinforcement in Islamabad & Burhan
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> Re-conductoring work for Tarbela - Burhan Circuit-I&II (Phase-I). <input type="checkbox"/> Replacement of existing 220 kV Tarbela - burhan D/C Transmission line Circuit III & IV on LL-ACSR conductor (35 km) (Phase-II)  The main objective of the project is to help ease the stress on the Tarbela-Burhan-ISPR transmission line and will help create sufficient margin to meet future load growth. It will also help in evacuation of power from Tarbela 4 <sup>th</sup> (1410 MW) and will help in voltage Profile improvement of IESCO region
4.	a) Category	<input type="checkbox"/> <b>Power Evacuation</b> <input type="checkbox"/> <b>System Reliability</b>
	b) Type	<input type="checkbox"/> <b>Development</b>
6.	Funding:	JICA+NTDC Own Resources
7.	Approval Forum	ECNEC
8.	Commencement Date	Phase-I: 01/03/2017, Phase-II: Yet to be awarded
9.	Expected Completion date	Phase-I: 28/02/2019: Phase-II: 2024-25
10.	Physical progress:	
	a) Physical progress (major works done):	<u>Transmission Line (Phase-I)</u> Re-conductoring work for Tarbela - Burhan Circuit-I&II completed and line energized 28-02-2019. <u>Transmission Line (Phase-II):</u> <b><u>Package-I (Procurement of transmission line material)</u></b> <input type="checkbox"/> IFB published on 08-07-2023 and Bids opened on 13-09-2023. <input type="checkbox"/> Evaluation of bids is in process. <b><u>Package-II (construction of transmission line)</u></b> <input type="checkbox"/> Bidding documents reviewed and approved by JICA. <input type="checkbox"/> Tender document has been floated with bids opening date of 08-11-2023
	b) Physical completion (in %age terms):	55%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> The stress on the Tarbela-Burhan-ISPR transmission line will reduce which will help create sufficient margin to meet future load growth. <input type="checkbox"/> It will also help in evacuation of power from Tarbela 4 <sup>th</sup> (1410 MW). <input type="checkbox"/> Improvement in reliability of NTDC 220 kv network around IESCO. <input type="checkbox"/> Reduction transmission line losses <input type="checkbox"/> The project will help in voltage Profile improvement of IESCO region.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 19**

1.	Name of Project	Conversion of Existing 220 kV Substations at Bund Road, Kala Shah Kaku, Ravi and Nishatabad to GIS Technology (NTDC)
2.	Location	Bund Road Lahore, Kala Shah Kaku, Ravi Road Lahore and Nishatabad
3.	Scope in Brief / Objectives	Project scope is the conversion of four 220/132 kV Air Insulated Substations to Gas Insulated Substation (GIS). The objective of the proposed project is conversion of four 220/132 kV Air Insulated Substations to Gas Insulated Substation (GIS) which become deteriorated due to aging factor as well as due to extraordinary pollution from nearby running drain and Chemical Industries causing erosion of all metal parts and differential settlement of the equipment foundations.
4.	a) Category	a) Power Evacuation <b>b) System Reliability</b> c) System Constraints
	b) Type	a) Extension b) Augmentation <b>c) Development</b>
6.	Funding:	World Bank Loan No. 8814-PK
7.	Approval Forum	ECNEC: 17-03-2017
8.	Commencement Date	07-05-2018 (Hiring of Project Design and Procurement Consultant)
9.	Expected Completion date	31-01-2024
10.	Physical progress:	
	a) Physical progress (major works done):	Re-assessment of need for the project is being done at NTDC management level.
	b) Physical completion (in %age terms):	-
11.	Outcomes / Benefits of the project after completion	Re-assessment of need for the project is being done at NTDC management level.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 20**

1.	Name of Project	Enterprise Resource Planning (ERP). (Now Implementation of Integrated Solution to improve Productivity and Control in NTDC by ERP System)
2.	Location	Lahore, Punjab
3.	Scope in Brief / Objectives	<p>Salient features of the project activities and sub-activities are: -</p> <ol style="list-style-type: none"> <li>1. Owner Agent-Project Management &amp; Quality Assurance (PMQA) to provide facilitation to NTDC in all aspects of procurement, project management, quality assurance of outputs, record keeping, issue management and risk management</li> <li>2. Tier-3 Data Center involving Primary &amp; Secondary Data centers, Structured Cabling Outlets and Conditioned Power Supply Outlets</li> <li>3. Networking of all +130 sites</li> <li>4. ICT-Office automation (OA)</li> <li>5. End User Equipment <ul style="list-style-type: none"> <li><input type="checkbox"/> Laptops</li> <li><input type="checkbox"/> Desktops</li> <li><input type="checkbox"/> Printers / Scanners etc.</li> </ul> </li> <li>6. ICT-ENTERPRISE RESOURCE PLANNING (ERP) Implementation <ul style="list-style-type: none"> <li><input type="checkbox"/> Human Resource and Administration</li> <li><input type="checkbox"/> Financial Management</li> <li><input type="checkbox"/> Procurement/Inventory Management/Warehouse Management</li> <li><input type="checkbox"/> Enterprise Asset Management</li> <li><input type="checkbox"/> Extension of existing help desk services</li> <li><input type="checkbox"/> Sales &amp; Services</li> <li><input type="checkbox"/> Supply Chain</li> <li><input type="checkbox"/> Projects Management</li> <li><input type="checkbox"/> Business Intelligence</li> </ul> </li> </ol>
4.	a) Category	NTDC's ICT Modernization & ERP Program
	b) Type	IT
6.	Funding:	World Bank
7.	Approval Forum	CDWP (19.03.2018)
8.	Commencement Date	31 <sup>st</sup> of March 2024
9.	Expected Completion date	31 <sup>st</sup> of March 2024
10.	Physical progress:	
	a) Physical progress (major works done):	<ol style="list-style-type: none"> <li>I. The NTDC Data Center has been inaugurated on 23rd of June 2023</li> <li>II. The Siemens H/W has been delivered</li> <li>III. The 15 Major Networking sites has been completed</li> <li>IV. PTCL Low Level Design (LLD) Complete</li> </ol>
	b) Physical completion (in %age terms):	<b>Overall Project Progress 64%</b>
11.	Outcomes / Benefits of the project after completion	NTDC's ICT Modernization & ERP Program will help to enter into a new era of digital transformation while implementing SAP S4/HANA as our ERP system. As a result, we are enhancing strategic and organizational capabilities by implementing a state-of-the-art suite of software along with ICT enhancement; which ensures transparency, efficiency and effectiveness of day-to-day business operations & activities.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 21**

1.	Name of Project	500 kV Tarbela-Islamabad West Transmission Line for Evacuation of Power from Tarbela 5th Extension HPP (1410 MW)
2.	Location	KPK
3.	Scope in Brief / Objectives	<input type="checkbox"/> 500kV D/C Transmission Line for Evacuation of Power from Tarbela 5th Extension Switchyard to Islamabad West Substation (50km Approx.). <input type="checkbox"/> 500kV S/C Interconnector from Tarbela-T5 Switchyard to Tarbela 1-4 Switchyards(Approx. 2km)  This project will helps evacuation of 1410 Mw power from Tarbela 5th extension which will help in improvement of overall power supply position in the country.
4.	a) Category	<input type="radio"/> Power Evacuation <input type="radio"/> System Reliability
	b) Type	<input type="radio"/> Development
6.	Funding:	World Bank
7.	Approval Forum	ECNEC
8.	Commencement Date	04-11-2022
9.	Expected Completion date	03-11-2024
10.	Physical progress:	
	a) Physical progress (major works done):	<input type="checkbox"/> Engineering & Design = 88%. <input type="checkbox"/> LC for Steel Tower & insulator has been established. <input type="checkbox"/> FATs of Conductor are under process while FATs of Steel Tower will start shortly. <input type="checkbox"/> Plan and Profile Drawings along with Structure list of interconnector and main transmission Line has been approved. <input type="checkbox"/> Foundation activities have been started. <input type="checkbox"/> NOC from Pakistan Ordinance Factory (POF) has been received.
	b) Physical completion (in %age terms):	34 %
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> The project will help in evacuation of power from 1410 Mw Tarbela 5 <sup>th</sup> extension <input type="checkbox"/> It will help improve overall power supply position in the country and will help eliminate the load shedding in the country. <input type="checkbox"/> Improvement in the reliability of the NTDC system. <input type="checkbox"/> Addition of cheap energy into the system.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 22**

1.	Name of Project	<u>Evacuation of Power from Wind Power Projects Jhimpir and Gharo Wind Cluster</u>
2.	Location	Sindh
3.	Scope in Brief / Objectives	<p><b><u>220kV Jhimpir Substation:</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Four 220/132 kV, 250MVA transformers with transformer bays at both ends.</li> <li><input type="checkbox"/> Four 220 kV line bays for 220 kV D/C T/L toward 220 kV Gharo and T.M.Khan Road substations.</li> <li><input type="checkbox"/> Fourteen 132 kV line bays for interconnection of WPPs.</li> </ul> <p><b><u>220kV GIS Gharo Substation:</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Two 220/132 kV, 250MVA transformers with transformer bays at both ends.</li> <li><input type="checkbox"/> Two 220 kV line bays for double circuit T/L towards 220 kV Jhimpir.</li> <li><input type="checkbox"/> Four 132 kV line bays for interconnection of WPPs at Gharo cluster.</li> </ul> <p>The main objective of the project is evacuation of Power from the WPPs envisaged to be installed at Jhimpir &amp; Gharo wind clusters.</p>
4.	a) Category	<ul style="list-style-type: none"> <li>○ <b>Power Evacuation</b></li> <li>○ <b>System Reliability</b></li> <li>○ <b>System Constraints</b></li> </ul>
	b) Type	<ul style="list-style-type: none"> <li>○ <b>Development</b></li> </ul>
6.	Funding:	KFW
7.	Approval Forum	ECNEC (03.07.2014)
8.	Commencement Date	12.01.2022 ( <b>Consultancy</b> )
9.	Expected Completion date	<p><b>46 Months</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 10 months (procurement phase)</li> <li><input type="checkbox"/> 24 months (construction phase)</li> <li>12 months (DLP)</li> </ul>
10.	Physical progress:	
	a) Physical progress (major works done):	<p><b><u>Gharo GS:</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Pre-qualification of the prospective bidders completed..</li> <li><input type="checkbox"/> Preparation of Bidding Document is under finalization stage.</li> </ul>
	b) Physical completion (in %age terms):	Jhimpir GS: 100% completed
11.	Outcomes / Benefits of the project after completion	<ul style="list-style-type: none"> <li><input type="checkbox"/> Dispersal of power from WPPs reliably.</li> <li><input type="checkbox"/> Improvement in voltage profile of HESCO &amp; NTDC Grid System.</li> <li><input type="checkbox"/> Reduction in T/Line Losses of HESCO &amp; NTDC Grid System.</li> <li><input type="checkbox"/> Improvement in reliability of NTDC &amp; HESCO networks at/around Jhimpir &amp; Gharo.</li> <li><input type="checkbox"/> Reduction in the loading of 220/132 kV transformers at T.M Khan Road 220 kV Substation.</li> <li><input type="checkbox"/> Provision of more reliable supply of electricity to the consumers.</li> <li><input type="checkbox"/> Creation of small business services.</li> <li><input type="checkbox"/> Creation of new job opportunities for local communities.</li> </ul>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 23**

1.	Name of Project	Installation of Pilot Battery Energy Storage System (BESS) at 220kV Jhampir G/Station
2.	Location	Sindh
3.	Scope in Brief / Objectives	<input type="checkbox"/> Installation of Battery Energy Storage System at Jhampir-I <input type="checkbox"/> Capacity Buildings in various stakeholders The main objectives of project are: <input type="checkbox"/> Develop a Pilot BESS to improve the frequency regulation capability of NPCC <input type="checkbox"/> Voltage support for the southern part of the NTDC grid, especially during contingencies. <input type="checkbox"/> Capacity building in energy storage systems which will form an essential part of future energy systems
4.	a) Category	○ <b>System Reliability</b>
	b) Type	○ <b>Development</b>
6.	Funding:	ADB
7.	Approval Forum	CDWP (25.05.2018)
8.	Commencement Date	05-07-2022
9.	Expected Completion date	11-02-2024
10.	Physical progress:	
	a) Physical progress (major works done):	<input type="checkbox"/> Geotechnical Investigation completed and accordingly Soil Investigation Report approved by Civil-NTDC.
	b) Physical completion (in %age terms):	BESS Part: <b>3.49%</b> Substation Part: <b>11.72%</b>
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Develop a Pilot BESS to improve frequency regulation capability <input type="checkbox"/> Voltage support for the southern part of the NTDC grid <input type="checkbox"/> Capacity Building for NTDC staff

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 24**

1.	Name of Project	Evacuation of Power from 1224MW Wind Power Plants at Jhimpir Clusters
2.	Location	Sindh
3.	Scope in Brief / Objectives	<p><u>Grid Station</u></p> <p>□ 220/132kV Jhimpir-II Substation with 4x250MVA 220/132kV transformers alongwith associated equipment including 6x220kV Line Bays and 4x132kV Line Bays.</p> <p><u>132kV Transmission Lines</u></p> <p>□ <b>Lot-I:</b> 132 kV D/C T/L for connection of five (05) Wind Power Plants with 220 kV Jhimpir-II Grid Station (34 km)</p> <p>□ <b>Lot-II:</b> 132 kV D/C T/L for connection of the Six (06) Wind Power Plants with 220 kV Jhimpir-II Grid Station (47 km)</p> <p><u>220kV Transmission Lines</u></p> <p>□ <b>Line-I:</b> 220 kV D/C T/B T/Line for looping In/Out both Circuits of existing 220 kV Jamshoro-KDA 33 D/C T/Line at 220 kV Jhampir-II Grid Station (220kV Jamshoro-Jhampir-II T/L - 19km)</p> <p>□ <b>Line-II:</b> 220 kV D/C T/B T/Line for looping In/Out both Circuits of existing 220 kV Jamshoro-KDA 33 D/C T/Line at 220 kV Jhampir-II Grid Station (220 kV KDA 33-Jhampir-II T/L - 20km)</p> <p>□ <b>Line-III:</b> 220kV D/C T/B T/Line for looping In/Out of 220kV Gharo-Jhampir-I T/Line at 220kV Jhampir-II G/Station (2.2km)</p> <p>The main objective of the project is evacuation of 1224MW Power from the WPPs envisaged to be installed at Jhimpir wind cluster.</p>
4.	a) Category	<ul style="list-style-type: none"> <li>○ <b>Power Evacuation</b></li> <li>○ <b>System Reliability</b></li> <li>○ System Constraints</li> </ul>
	b) Type	<ul style="list-style-type: none"> <li>○ <b>Development</b></li> </ul>
6.	Funding:	NOR
7.	Approval Forum	ECNEC 24.11.2017
8.	Commencement Date	Grid Station: 11.03.2020 220KV T/L: 08-02-2021 132KV T/L: 28-08-2020
9.	Actual Completion date	Grid Station: 20-02-2022 220KV T/L: 31-03-2022 132KV T/L: 28-12-2021
10.	Physical progress:	
	a) Physical progress (major works done):	Completed & Energized
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<ul style="list-style-type: none"> <li>□ Environment friendly power will be available for the country.</li> <li>□ Dispersal of power from upcoming WPPs reliably.</li> <li>□ Improvement in voltage profile of HESCO and NTDC Grid System.</li> <li>□ Improvement in reliability of NTDC &amp; HESCO networks at/around Jhimpir-I and Gharo New.</li> </ul>



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 25**

1.	Name of Project	Upgradation/Extension of NTDC's Telecommunication & SCADA System at NPCC
2.	Location	All over the country
3.	Scope in Brief / Objectives	i) Upgradation of existing SCADA System at NPCC. ii) Integration of 116 RTUs with new SCADA System at NPCC. iii) Field wiring works of existing 49 RTUs from LDS-II. iv) Microwave System (64 sites) as a backup. v) OPGW Live Line Installation of 4085 kms. vi) SMS Meters (246 sites) data transportation over NTDC Telecom network. vii) Telecom network revamping.
4.	Category	System Reliability Enhancement
	Type	Development
5.	Cost	USD 110 Million (Equivalent to PKR 17,097 Million)
6.	Funding:	ADB under Multi-Tranche Financing Facility-II (MTFF-II)
7.	Approval Forum	ECNEC
8.	Actual Commencement Date	25/06/2021
9.	Expected Completion date	24/06/2024
10.	Physical progress:	
	Physical progress (major works done):	I. Survey for OPGW lines completed. (4000KMs) II. FAT for OPGW Completed. <input type="checkbox"/> (1729.1/4000 KMs). III. FAT for SDH/PLC Telecom Completed. <input type="checkbox"/> SDH (131 units). <input type="checkbox"/> PLC (56 units). IV. FAT for PABX is completed. IC issued on 03-08-2023. V. EDS (Early Delivery System) has been installed in NPCC. VI. OJT for SCADA FAT at NPCC has been completed. VII. SCADA FAT at Sweden is completed. VIII. All Microwave sites survey has been completed. <input type="checkbox"/> Existing microwave system has been dismantled. <input type="checkbox"/> All application related documents for frequency license have been submitted with FAB. Provisional license from FAB is awaited. IX. FAT for PLC outdoor equipment is completed. X. SDH-Training of Batch-I at Switzerland has been completed. SDH-Training of Batch-II is undergoing in Switzerland. XI. SCADA System Training is ongoing in Sweden. XII. FAT for Video Projection System (VPS) at China has been completed. Shipment is in-progress. XIII. SDH Installation is completed on 10 stations. XIV. PLC Outdoor Foundation works is completed on 6 stations. XV. 501 KMs OPGW installation is completed.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

	Physical completion (in %age terms):	<b>37.02%</b>
11.	Outcomes / Benefits of the project after completion	<p>The benefits associated with the project include:</p> <ul style="list-style-type: none"> <li>i) Improved efficiency in power supply from NPCC</li> <li>ii) Improved quality of Supply</li> <li>iii) Ensuring reliability of supply</li> <li>iv) Fuel saving through optimized unit commitment.</li> <li>v) Reduction in Transmission losses through proper VAR scheduling</li> <li>vi) Reduction in loss of load due to transmission fault / system collapse</li> <li>vii) Timely and accurate data for most economical despatch of power.</li> <li>viii) Complete visibility of power network.</li> </ul>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 26**

1.	Name of Project	220kV Dharki - Rahim Yar Khan - Bhawalpur D/C T/L
2.	Location	Sindh & Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> 220kV D/C T/Line from 220kV Daharki to R.Y Khan G/S (105km) <input type="checkbox"/> 220kV D/C T/Line from 220kV R.Y Khan to Bahawalpur G/S (150km) <input type="checkbox"/> 220kV D/C T/Line for In/Out of Vehari – Chishtian S/C T/L at Lal Suhanra G/S (80km) <input type="checkbox"/> Extension at 220kV Daharki G/S (2x220kV L/Bays) <input type="checkbox"/> Extension at 220kV R.Y Khan G/S (4x220kV L/Bays) <input type="checkbox"/> Extension at 220kV Bahawalpur G/S (2x220kV L/Bays) <input type="checkbox"/> Extension at 220kV Lal Suhanra G/S (2x220kV L/Bays) The main objective of the project is interlinking of 220 kV Dharki, Rahim Yar Khan, Bahawalpur and Chishtian Grid Stations by construction of 220 kV Transmission lines for improvement of power supply system in southern areas.
4.	a) Category	<input type="radio"/> Power Evacuation <input type="radio"/> <b>System Reliability</b> <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <input type="radio"/> <b>Development</b>
6.	Funding:	-
7.	Approval Forum	ECNEC (02.10.2019)
8.	Commencement Date	-
9.	Expected Completion date	2024-25
10.	Physical progress:	
	a) Physical progress (major works done):	<input type="checkbox"/> Work for survey & soil investigation work has been awarded. <input type="checkbox"/> Detailed Survey and Soil Investigation has been completed. <input type="checkbox"/> Plan & Profile and Sub-Soil Investigation Report have been approved.
	b) Physical completion (in %age terms):	-
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement of Power Supply System in southern areas. <input type="checkbox"/> Alternate source of supply during contingency conditions. <input type="checkbox"/> Improvement in reliability & un-interrupted power supply.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 27**

1.	Name of Project	220-kV Jamrud G/S alongwith allied T/Ls
2.	Location	KPK
3.	Scope in Brief / Objectives	<input type="checkbox"/> A 220/132 kV Jamrud New Substation with 2x250 MVA, 220/132 kV auto transformers along with allied equipment and accessories. <input type="checkbox"/> A 220 kV D/C transmission line approx. 45 km long on twin bundled Rail conductor from 220/132 kV Jamrud New to 500 kV Sheikh Muhammadi (Peshawar). <input type="checkbox"/> Extension at 500 kV Sheikh Muhammadi (Peshawar) substation for construction of two 220 kV line bays. This project aims the installation of new 220 kV substation at Jamrud to meet the upcoming load demand & voltage Profile improvement of PESCO region. Moreover, the power from Mohmand Dam will be evacuated through Jamrud Grid Station.
4.	a) Category	<input type="radio"/> <b>Power Evacuation</b> <input type="radio"/> <b>System Reliability</b>
	b) Type	<b>Development</b>
6.	Funding:	ADB
7.	Approval Forum	CDWP
8.	Commencement Date	---
9.	Expected Completion date	2024-2025
10.	Physical progress:	
	a) Physical progress (major works done):	<u><b>Grid Station</b></u> a. Acquisition of land is under process. b. The revision of PC-I is under process and finalized draft has been submitted to BOD NTDC for approval so that the same could be forwarded to Planning Commission through Ministry of Energy.  <u><b>Transmission Line:</b></u> <input type="checkbox"/> Detailed Survey and Soil Investigation of associated transmission line has been completed by M/s NESPAK. Plan & Profile and Sub-Soil Investigation Report approved by NTDC.
	b) Physical completion (in %age terms):	3%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> The project will help in evacuation of power from Mohmand Dam HPP <input type="checkbox"/> Increase in the system capacity to meet future load demand of the area. <input type="checkbox"/> Improvement in voltage profile of existing 132 kV grid station in the vicinity of Jamrud <input type="checkbox"/> Reduction in transmission system losses. <input type="checkbox"/> Improvement in reliability of NTDC and PESCO system networks. <input type="checkbox"/> Addition of cheap energy into the system.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 28**

1.	Name of Project	<b>500/220kV Chakwal G/S alongwith allied T/Ls.</b>
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> A new 500/132 kV substation (Chakwal New) with 2 x 500 MVA, 500/132 kV transformers complete with allied equipment and accessories <input type="checkbox"/> A 500 kV double circuit transmission line on three-bundled Drake conductor for looping in/out of the existing 500 kV Ghazi Barotha – Gatti circuit at 500 kV Chakwal Substation (3 km). <input type="checkbox"/> A 500 kV double circuit transmission line on quad-bundled Drake conductor for looping in/out of the existing 500 kV Ghakkar – Rawat circuit at 500 kV Chakwal Substation (30 km). This project aims the installation of new 220 kV substation at Chakwal to meet the upcoming load demand & voltage Profile improvement of IESCO region.
4.	a) Category	<input type="radio"/> <b>Power Evacuation</b> <input type="radio"/> <b>System Reliability</b> <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <input type="radio"/> <b>Development</b>
6.	Funding:	KfW Germany
7.	Approval Forum	ECNEC
8.	Commencement Date	---
9.	Expected Completion date	2024-2025
10.	Physical progress:	
	b) Physical progress (major works done):	<b><u>Grid Station:</u></b> a. The loan agreement amounting to EURO 43.76 million has been signed with KfW on 16-12-2022. b. PC-I revision under process. <b><u>Transmission Line:</u></b> <input type="checkbox"/> Detailed Survey and Soil Investigation of associated transmission line completed. <input type="checkbox"/> Plan & Profile and Sub-Soil Investigation Report approved
	c) Physical completion (in %age terms):	7%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement of Power Supply Position At/Around 220 kV Chakwal G/S. <input type="checkbox"/> Increase in the system capacity to meet future load demand of the area. <input type="checkbox"/> Improvement in voltage profile of existing 132 kV grid station in the vicinity of Chakwal <input type="checkbox"/> Reduction in transmission system losses. <input type="checkbox"/> Improvement in reliability of NTDC and IESCO system networks.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 29**

1.	Name of Project	<b>Exentension and Augmentation of existing 500kV and 220kV G/S (New). Now: Additon &amp; Augmentation of 500kV and 220kV T/Fs at the Existing G/S for Removal of NTDC System Constraints</b>
2.	Location	Punjab & Sindh
3.	Scope in Brief / Objectives	<input type="checkbox"/> Extension of 1x450 MVA 500/220 kV Transformer along with allied equipment & accessories for extension of transformer bay at 500 kV Dadu Substation. <input type="checkbox"/> Extension of 1x750 MVA 500/220 kV Transformer along with allied equipment & accessories for extension of transformer bay at 500 kV Faisalabad West Substation. <input type="checkbox"/> Extension of 1x600 MVA 500/220 kV Transformer along with allied equipment & accessories for extension of transformer bay at 500 kV Lahore (Sheikhpura) Substation. <input type="checkbox"/> Extension of 1x450 MVA 500/220 kV Transformer along with allied equipment & accessories for extension of transformer bay at 500 kV New Multan Substation. <input type="checkbox"/> Extension of 1x250 MVA, 220/132 kV Transformer at 220 kV along with allied equipment and accessories for extension of transformer bay at 500 kV Rahim Yar Khan Substation. <input type="checkbox"/> Augmentation of 220/132 kV Transformers from 2x160 MVA to 2x250 MVA capacity at 220 kV Guddu Substation.
4.	a) Category	<input type="radio"/> System Reliability <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation
6.	Funding:	ADB + NTDC Own Resources
7.	Approval Forum	ECNEC ( 15.11.2022)
8.	Commencement Date	---
9.	Expected Completion date	2024-2025 (as per PC-I)
10.	Physical progress:	
	a) Physical progress (major works done):	<input type="checkbox"/> One tender for Material procurement is under evaluation. <input type="checkbox"/> Three tenders for Material procurement are under preparation.
	b) Physical completion (in %age terms):	5 %
11.	<b>Outcomes / Benefits of the project after completion</b>	

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 30**

1.	Name of Project	<b>220kV Arifwala Substation</b>
2.	Location	Arifwala, Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> 2x250 MVA, 220/132 kV transformers along with allied equipment & accessories. <input type="checkbox"/> Two (02) 220 kV D/C T/L on twin bundled Rail conductor for looping In/Out of existing 220 kV Yousafwala - Kassowal D/C T/L at 220/132 kV Arifwala substation (25+25 km).
4.	a) Category	<input type="radio"/> System Reliability
	b) Type	<input type="radio"/> Development
6.	Funding:	AFD, France
7.	Approval Forum	CDWP
8.	Commencement Date	Tender for procurement of transformers has been published on 24-10-2023.
9.	Expected Completion date	2025-26 (as per PC-I)
10.	Physical progress:	
	a) Physical progress (major works done):	<u>Land (34 Acres)</u> <input type="checkbox"/> Section 4 has been published in Punjab gazette. <input type="checkbox"/> DPAC meeting was held in June, 26 2023 <input type="checkbox"/> Draft of section 5 has been prepared and its proceeding is expected in next month. <u>Transmission Line:</u> Route survey is completed and its report is under review. <u>Grid Station:</u> Tentative GLO issued by design section of NTDC. Soil investigation points has been finalized by civil department. Contract award is under progress.
	b) Physical completion (in %age terms):	5.5 %
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Tis grid will fulfill the future demand of region along with strengthening the NTDC system.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 31**

1.	Name of Project	<b>500kV Sialkot G/S alongwith allied T/Ls.</b>
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> 2x750MVA, 500/220kV transformers and 3x250MVA, 220/132kV transformers along-with allied transformer bays and line bays. <input type="checkbox"/> 500kV D/C T/Line on quad bundle drake conductor from 500kV Sialkot Substation to 500kV Lahore North Substation (55km). <input type="checkbox"/> 220kV D/C T/Line, on twin bundle rail conductor from 500/220kV Sialkot to 220kV Gujranwala-II Substation (36km). <input type="checkbox"/> 220kV D/C T/Line, on twin bundle rail conductor from 500/220kV Sialkot to existing 220kV Sialkot (Sahuwala) Substation (12km).  The main objective of the project is the installation of new 500 kV substation Sialkot to remove transmission constraint of Sialkot and its surrounding and meet the growing demand of GEPCO.
4.	a) Category	<input type="radio"/> <b>Power Evacuation</b> <input type="radio"/> <b>System Reliability</b> <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <input type="radio"/> <b>Development</b>
6.	Funding:	AFD France
7.	Approval Forum	ECNEC- 07-10-2022
8.	Commencement Date	-
9.	Expected Completion date	2025-26 (as per PC-I)
10.	Physical progress:	
	a) Physical progress (major works done):	<b><u>Land</u></b> <input type="checkbox"/> Section-11 of LAA has been issued on 10-07-2023. <input type="checkbox"/> Codal formalities for payments to the land owner are being fulfilled. <b><u>Transmission Lines:</u></b> <input type="checkbox"/> Detailed survey and soil investigation activities for associated 500kV and 220kV transmission lines are in progress. <input type="checkbox"/> The routes for 220kV T/lines have been approved on 27.09.2023
	b) Physical completion (in %age terms):	5%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement & enhancement in overall power system efficiency and reliability.



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 32**

1.	Name of Project	<b>Upgradation of Existing 220kV Vehari G/S to 500 kV Vehari G/S</b>
2.	Location	Vehari, Punjab
3.	Scope in Brief / Objectives	<ul style="list-style-type: none"> <li>➤ Two 500/220 kV, 750 MVA Auto Transformer Banks with two 500 kV transformer bays, two 220 kV transformer bays, two 500 kV line bays along with allied equipment and accessories.</li> <li>➤ 500 kV quad bundled double circuit transmission line on Drake Conductor for in/out of 500 kV Multan – Yousafwala (Sahiwal) single circuit transmission line at 500 kV Vehari substation (35 km).</li> </ul> <p>To meet with the additional load demand &amp; voltage profile improvement of the areas which fall under the jurisdiction of Multan Electric Supply Company (MEPCO).</p>
4.	a) Category	<ul style="list-style-type: none"> <li>○ <b>Power Evacuation</b></li> <li>○ <b>System Reliability</b></li> </ul>
	b) Type	<ul style="list-style-type: none"> <li>○ <b>Development</b></li> </ul>
6.	Funding:	AFD, France
7.	Approval Forum	Approved by ECNEC on 07-10-2022
8.	Commencement Date	Tender for procurement of transformers are under evaluation.
9.	Expected Completion date	2025-26 (as per PC-I)
10.	Physical progress:	
	a) Physical progress (major works done):	<p><u>Line:</u> Route survey in progress.</p> <p><u>Grid:</u> Tentative GLO issued by design section of NTDC. Procurement of material has been initiated.</p>
	b) Physical completion (in %age terms):	5%
11.	Outcomes / Benefits of the project after completion	The additional load demand & voltage profile improvement of the areas which fall under the jurisdiction of Multan Electric Supply Company (MEPCO).

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 33**

1.	Name of Project	220kV Larkana Substation
2.	Location	Sindh
3.	Scope in Brief / Objectives	<input type="checkbox"/> 3x250MVA 220/132kV Transformers <input type="checkbox"/> 220kV D/C T/L from 220kV Larkana to Shikarpur Substation (65km) <input type="checkbox"/> Extension works at Shikarpur Substation (2x220kV L/Bays) The main objective of the project is installation of Larkana New Grid Station at 220kV level along with associated transmission lines to meet with the additional load demand & voltage profile improvement of SEPCO area.
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	-
7.	Approval Forum	CDWP (17.10.2019)
8.	Commencement Date	-
9.	Expected Completion date	2024-25
10.	Physical progress:	
	a) Physical progress (major works done):	<u>Land</u> <input type="checkbox"/> Notification under Section 04 of Land Acquisition Act, 1894 (36 Acres) published. <input type="checkbox"/> Further proceedings are under process. <u>Transmission Line</u> <input type="checkbox"/> Route alignment, Detailed Survey and Soil Investigation has been carried out. <input type="checkbox"/> Plan & Profile and Sub-Soil Investigation Report have been approved.
	b) Physical completion (in %age terms):	-
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement in voltage profile at/around Larkana <input type="checkbox"/> Reduction in transmission system losses <input type="checkbox"/> Reduction in loading of 500/220kV and 220/132kV transformers at Shikarpur, Dadu & Rohri G/S <input type="checkbox"/> Improvement in reliability of NTDC and SEPCO system networks <input type="checkbox"/> Provision of N-1 contingency <input type="checkbox"/> Increase in available system capacity to meet future load growth at/around proposed project

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 34**

1.	Name of Project	220-KV Mastung G/S slongwtih allied T/Ls.
2.	Location	Balochistan
3.	Scope in Brief / Objectives	<input type="checkbox"/> 220kV substation at Mastung with 3x250MVA 220/132kV transformers with allied equipment and accessories. <input type="checkbox"/> 220kV D/C T/Lines from Mastung to Sibbi (120km) <input type="checkbox"/> 220kV D/C T/Lines from Mastung to Quetta (50km) <input type="checkbox"/> 220kV D/C T/Lines from Quetta to Loralai (170km) <input type="checkbox"/> Extension of 220kV Sibbi & Loralai for construction of 2x220kV Line Bays at each substation <input type="checkbox"/> Extension at 220kV Quetta for construction of 4x220kV Line Bays.  The main objective of the project is upgradation of existing 132kV Mastung Grid Station to 220kV level along with associated transmission line to meet with the additional load demand & voltage profile improvement of QESCO area.
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> <b>Development</b>
6.	Funding:	Funding yet to be arranged.
7.	Approval Forum	ECNEC (22.05.2018)
8.	Commencement Date	-
9.	Expected Completion date	2024-25
10.	Physical progress:	
	a) Physical progress (major works done):	<b>G/S:</b> <input type="checkbox"/> Land Acquisition in process & Section-4 has been issued. <input type="checkbox"/> Approval of funds is pending due to approval of revision of PC-I. <b>T/L:</b> <input type="checkbox"/> Soil Investigation & Survey have been completed by M/s NESPAK. <input type="checkbox"/> Plan & Profile and Soil Investigation Report have been approved.
	b) Physical completion (in %age terms):	-
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement in power supply position at/around 220kV Mastung G/Station. <input type="checkbox"/> Improvement in voltage profile of existing 132kV Grid Station in the vicinity of 220kV Mastung Grid Station. <input type="checkbox"/> Increase in the system capacity to meet future load demand of QESCO. <input type="checkbox"/> Reduction in transmission line losses.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 35**

1.	Name of Project	<b>220kV Kohat G/S along with allied T/Lines.</b>
2.	Location	KPK
3.	Scope in Brief / Objectives	<input type="checkbox"/> 2 x 250 MVA 220/132kV Auto Transformer. <input type="checkbox"/> 220kV T/Line from 500kV Nowshera to Kohat. The main objective of the project is the installation of new 220 kV substation Kohat to remove transmission constraint will also help in improvement of power supply and loss reduction in PESCO region.
4.	a. Category	<input type="radio"/> <b>System Reliability</b> <input type="radio"/> <b>System Constraints</b>
	b. Type	<input type="radio"/> <b>Development</b>
6.	Funding:	To be sought
7.	Approval Forum	Submitted to PC on 22.11.2019 and under approval
8.	Commencement Date	Project yet to be awarded
9.	Expected Completion date	2024-2025
10.	Physical progress:	
	a) Physical progress (major works done):	<b><u>Land</u></b> <input type="checkbox"/> Land acquisition is under progress.
	b) Physical completion (in %age terms):	1%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement & enhancement in overall power system efficiency and reliability.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 36**

1.	Name of Project	<b>220kV Gujranwala II G/S alongwith allied T/Ls.</b>
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> 2 x 250 MVA 220/132kV Auto Transformer, <input type="checkbox"/> 220kV T/Line In/Out from Mangla - KSK at Gujranwala-II <input type="checkbox"/> 220kV D/C T/L from Nokhar - Gujranwala-II The main objective of the project is the installation of new 220 kv substation Gujranwala-II to remove transmission constraint of Gujranwala and its surrounding and meet the growing demand of GEPCO.
4.	a) Category	<input type="radio"/> <b>Power Evacuation</b> <input type="radio"/> <b>System Reliability</b> <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <input type="radio"/> <b>Development</b>
6.	Funding:	To be sought
7.	Approval Forum	Under approval
8.	Commencement Date	-
9.	Expected Completion date	2024-2025
10.	Physical progress:	
	a) Physical progress (major works done):	<u>Land</u> <input type="checkbox"/> Proceeding under Section-11 (Award of land) are under process and announcement of award is expected by end of October-2023.
	b) Physical completion (in %age terms):	4%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement & enhancement in overall power system efficiency and reliability.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 37**

1.	Name of Project	<b>220kV Nag Shah G/S</b>
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> In/Out of Multan – M.garh New S/C at Nagshah (5 km) <input type="checkbox"/> In/Out of Multan – M.garh-II at S/C Nagshah (5 km) <input type="checkbox"/> 220kV substation with three 220/132kV, 250 MVA transformers along with allied equipment and accessories. This project will relieve the overloading in the neighboring grid stations of Multan and Muzaffargarh and improve the voltage profile in MEPCO. The project will reduce the loading on the 132kV transmission lines of MEPCO as well, which otherwise get overloaded under N-1 contingency.
4.	a) Category	<b><u>System Constraints</u></b>
	b) Type	<b><u>Development</u></b>
6.	Funding:	Yet to be arranged
7.	Approval Forum	-
8.	Commencement Date	-
9.	Expected Completion date	2025-26
10.	Physical progress:	
	a) Physical progress (major works done):	<input type="checkbox"/> Selection of land for construction of grid station is in progress. <input type="checkbox"/> Five (05) No. sites have been identified/proposed for the grid station and intimated to the Substation Design NTDC for arranging visit of preliminary committee of Siting & Layout Board NTDC.
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Reduction in loading of T/Fs at 220kV Muzaffargarh and 500kV Multan, which are otherwise overloaded under N-1 contingency <input type="checkbox"/> Improvement in voltage profile in the MEPCO The project will reduce the loading on the 132kV transmission lines of MEPCO as well, which otherwise get overloaded under N-1 contingency.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 38**

1.	Name of Project	<b>Installation of SVCs at 220kV Quetta Industrial (Revised Name "250 MVAR SVS at 132 kV Quetta Industrial)"</b>
2.	Location	Quetta, Balochistan
3.	Scope in Brief / Objectives	<input type="checkbox"/> 100 MVAR Switched shunt <input type="checkbox"/> $\pm 150$ MVAR STATECOM
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Funding yet to be arranged
7.	Approval Forum	CDWP
8.	Commencement Date	-
9.	Expected Completion date	-
10.	Physical progress:	-
	a) Physical progress (major works done):	-
	b) Physical completion (in %age terms):	-
11.	Outcomes / Benefits of the project after completion	Installation of this dynamic reactive compensation device (SVS) will improve voltage stability in QESCO region.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 39**

1.	Name of Project	<b>Interlinking of 765kV Mansehra with 220kV Mansehra</b>
2.	Location	Mansehra, KPK
3.	Scope in Brief / Objectives	<input type="checkbox"/> 220kV double circuit line from 765kV Mansehra to 220kV Mansehra. (10km) <input type="checkbox"/> 2*1200 MVA, 765/220kV Transformers <input type="checkbox"/> This project will help to evacuate power from Dasu and other plants in this vicinity.
4.	a) Category	<input type="checkbox"/> <b>Power Evacuation</b> <input type="checkbox"/> System Reliability <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Funding yet to be arranged
7.	Approval Forum	CDWP
8.	Commencement Date	-
9.	Expected Completion date	-
10.	Physical progress:	-
	a) Physical progress (major works done):	-
	b) Physical completion (in %age terms):	-
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> This project will help to evacuate power from Dasu and other power plants in this vicinity.



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 40**

1.	Name of Project	<b>220kV Punjab University G/S</b>
2.	Location	Lahore, Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> 220kV Punjab University Grid Station (3*250MVA, 220/132kV Auto Transformer) <input type="checkbox"/> In-out of 220kV Band Road- New Kotlak-path double circuit at Punjab University The main object of this project is construction of 220kV Punjab University G/S with associated T/Ls which will help in removal of System Constraints.
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Funding yet to be arranged
7.	Approval Forum	CDWP
8.	Commencement Date	-
9.	Expected Completion date	-
10.	Physical progress:	-
	a) Physical progress (major works done):	Land could not be acquired due to non-availability.
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Removal of System Constraints. <input type="checkbox"/> Provision of reliable supply of electricity to consumers <input type="checkbox"/> Improvement of voltage profile in the vicinity of 220kV Punjab University G/S to increase the system capacity to meet future load demand of LESCO <input type="checkbox"/> To reduce transmission losses.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 41**

1.	Name of Project	<b>500kV Ghazi Barotha-Faisalabad West T/L (Revised Name In/Out of Islamabad West to Ghazi Barotha T/L at -Faisalabad West)</b>
2.	Location	Punjab and KPK
3.	Scope in Brief / Objectives	<input type="checkbox"/> This project is required for the power disposal of hydro-power projects in North. The project provides improved system reliability under N-1 contingency <input type="checkbox"/> In/Out of one of the 500Kv Ghazi Barotha-Islamabad west proposed S/C at Faisalabad West. (300km)
4.	a) Category	<input type="checkbox"/> <b>Power Evacuation</b> <input type="checkbox"/> System Reliability <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Funding yet to be arranged
7.	Approval Forum	-
8.	Commencement Date	
9.	Expected Completion date	-
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> This project is required for the power disposal of hydro-power projects in North. The project provides improved system reliability under N-1 contingency

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 42**

1.	Name of Project	<b>220kV Head Faqiran G/S alongwith allied T/Ls.</b>
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> 2 x 160 MVA 220/132kV Auto Transformer. <input type="checkbox"/> 62 km (approx.) 220kV D/C transmission line from existing 220kV Ludewala to Head Faqirian. This project aims the installation of new 220 kV substation at Head Faqirian to meet the upcoming load demand & voltage Profile improvement of FESCO area.
4.	a) Category	<input type="radio"/> <b>Power Evacuation</b> <input type="radio"/> <b>System Reliability</b> <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <input type="radio"/> <b>Development</b>
6.	Funding:	KfW
7.	Approval Forum	ECNEC
8.	Commencement Date	-
9.	Expected Completion date	2024-2025
10.	Physical progress:	
	a) Physical progress (major works done):	<b><u>Land</u></b> <input type="checkbox"/> Proceeding under Section-11 (Award of land) are under process. <b><u>Transmission Lines:</u></b> <input type="checkbox"/> Detailed survey and soil investigation activities for associated 220kV transmission has been completed.
	b) Physical completion (in %age terms):	4%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement of Power Supply Position At/Around 220 kV Head Faqirian. <input type="checkbox"/> Increase in the system capacity to meet future load demand of the area. <input type="checkbox"/> Improvement in voltage profile of existing 132 kV grid station in the vicinity of Head Faqirian. <input type="checkbox"/> Reduction in transmission system losses. <input type="checkbox"/> Improvement in reliability of NTDC and FESCO system networks.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 43**

1.	Name of Project	Evacuation of Power from Mohmand Hydro Power Plant
2.	Location	KPK
3.	Scope in Brief / Objectives	<input type="checkbox"/> 220 kV T/Line from 884 MW Mohmand HPP to 220/132 kV Jamrud Grid Station (Approx. 52 km). <input type="checkbox"/> 20kV T/Line from 884 MW Mohmand HPP to 220/132 kV Nowshera Grid Station (Approx. 60km)
4.	a) Category	<input type="radio"/> <b>Power Evacuation</b> <input type="radio"/> <b>System Reliability</b> <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <input type="radio"/> <b>Development</b>
6.	Funding:	-
7.	Approval Forum	CDWP (approved on 01.06.2023)
8.	Commencement Date	-
9.	Expected Completion date	2025-26
	a) Physical progress (major works done):	<input type="checkbox"/> Detailed Survey and soil investigation activities for transmission line emanating from Mohmand dam completed and approved by NTDC.
	b) Physical completion (in %age terms):	2%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Evacuation of Power from 816MW Mohmand Hydro Power Plant. <input type="checkbox"/> Smooth supply of power to the national grid to eliminate severe load shedding condition in the country. <input type="checkbox"/> Improvement & enhancement in overall power system efficiency and reliability.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 44**

1.	Name of Project	220kV KAMRA Grid Station
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> 2 x 250 MVA 220/132kV Auto Transformers.  220kV Transmission Line for In/Out of 220kV Tarbela – ISPR T/Line at 220kV Kamra Grid Station.
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> System Reliability <input type="checkbox"/> <b>System Constraints</b>
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Funding to be Sought
7.	Approval Forum	CDWP
8.	Commencement Date	---
9.	Expected Completion date	2026-27
10.	Physical progress:	---
	a) Physical progress (major works done):	<b><u>Land Acquisition:</u></b> <input type="checkbox"/> Acquisition of land is under process.
	b) Physical completion (in %age terms):	--
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement of Power Supply and meeting the increasing load demand of the Region. <input type="checkbox"/> Removal of System Constraints. <input type="checkbox"/> Provision of reliable supply of electricity to consumers <input type="checkbox"/> Improvement of voltage profile in the vicinity of 220kV Kamra G/S to increase the system capacity to meet future load demand of IESCO. <input type="checkbox"/> To reduce transmission losses

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 45**

1.	Name of Project	500kV Ludewala G/S along with 500kV Nowshera-Ludewala-Faisalabad West D/C T/L
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> 500kV Ludewala Substation with 2 x 600MVA, 500/220kv Transformers with allied equipment and accessories. <input type="checkbox"/> 500kV Nowshera-Ludewala-Faisalabad West D/C T/L (100km) <input type="checkbox"/> This Project is required to meet the future demand. The project also helps in evacuation of power from C-5. The project also reduces the loading of Faisalabad-West G/S in future.
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> System Reliability <input type="checkbox"/> <b>System Constraints</b>
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Funding to be sought.
7.	Approval Forum	ECNEC
8.	Commencement Date	
9.	Expected Completion date	
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	This Project is required to meet the future demand. The project also helps in evacuation of power from C-5. The project also reduces the loading of Faisalabad-West G/S in future

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 46**

1.	Name of Project	Re-conducting/Underground cabling of existing 220 kV Bund Road - NKLP D/C T/L (17 km)
2.	Location	Lahore
3.	Scope in Brief / Objectives	<input type="checkbox"/> Re-conducting of existing overhead line (12.6 km) <input type="checkbox"/> Underground 220kV cabling ( 5.3)
4.	a) Category	<input type="radio"/> <b>Power Evacuation</b> <input type="radio"/> <b>System Reliability</b> System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <input type="radio"/> Development
6.	Funding:	Asian Development Bank
7.	Approval Forum	-
8.	Commencement Date	-
9.	Expected Completion date	-
10.	Physical progress:	
	a) Physical progress (major works done):	<input type="checkbox"/> First tender process scrapped. <input type="checkbox"/> Tender documents shared with ADB for NOL for re-tendering purposes
	b) Physical completion (in %age terms):	5%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Increase of ampacity of line <input type="checkbox"/> Improvement in reliability of NTDC system.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 47**

1.	Name of Project	Import for 100 MW Power from Iran (220 KV Grid Station Gwadar & Allied T/L from Iran to Gawadar
2.	Location	Balochistan
3.	Scope in Brief / Objectives	<input type="checkbox"/> 2x160 MVA, 220/132 kV Auto-Transformers <input type="checkbox"/> 220 KV double circuit Twin Bundle Transmission Line from Iran Border to Gwadar GIS (75 km).  The main objective of the project is supply of Power to Gwadar from Iran to meet the growing power demand of Gwadar and other areas in Makran Division of Balochistan by Construction of 220 KV double circuit transmission line from Pak – Iran border to Gwadar and 220 GIS substation at Gwadar.
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Export Development Bank of Iran (EDBI)
7.	Approval Forum	ECNEC (05.09.2007)
8.	Commencement Date	13-07-2022
9.	Expected Completion date	Priority Phase: 08-02-2023 (30km of T/Line Completed) 220KV GS and Balance Transmission Line held up due to restrictions on transections with Iranian Companies.
10.	Physical progress:	100%
	a) Physical progress (major works done):	<u>Land</u> <input type="checkbox"/> 22 Acres of land for construction of grid station has been acquired. <u>Transmission Line</u> <u>Phase-I: Part-I: 220KV T/B, D/C T/Line (30km) from Pak Iran Border to I/C point of existing QESCO 132kV T/L Gawadar-Jiwani</u> <input type="checkbox"/> Tower Staking: 91/91 No. <input type="checkbox"/> Excavation: 91/91 No. <input type="checkbox"/> Concrete: 91/91 No. <input type="checkbox"/> Erection: 91/91 No. <input type="checkbox"/> Stringing: 30.450/30.450 Km  <u>Phase-I, Part-II &amp; Phase-II</u> The Project has subsequently been held up due non-availability of banking channels for transections with Iranian Firms. However, the priority phase of 30km Transmission Line (Gwader -Jiwani) was completed by NTDC on deposit work basis under QESCO's project.



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

		<u>Phase-I: Part-I: 220KV T/B, D/C T/Line (30km) from Pak Iran Border to I/C point of existing QESCO 132kV T/L Gawadar-Jiwani</u> <input type="checkbox"/> 100% Complete.
	b) Physical completion (in %age terms):	Phase-I (Part-I): 100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement in reliability of NTDC system. <input type="checkbox"/> Improvement in voltage profile at/around Gawadar. <input type="checkbox"/> Power requirement of Gawadar and surrounding areas will be met. <input type="checkbox"/> Strengthening of NTDC system

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 48**

1.	Name of Project	Re-enforcement of Sahiwal along with 2x500kV Line Bay
2.	Location	Sahiwal, Punjab
3.	Scope in Brief / Objectives	500kV double Circuit Sahiwal-Sahiwal Power Plant (11.6km)
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Funding yet to be arranged
7.	Approval Forum	CDWP
8.	Commencement Date	
9.	Expected Completion date	
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	This will increase System Reliability and Voltage Stability.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 49**

1.	Name of Project	2nd Source of supply to 500 kV Sheikh Muhammadi
2.	Location	KPK
3.	Scope in Brief / Objectives	<input type="checkbox"/> 500kV Overhead line from Peshawar to in-out point of Nowshera using the same ROW (29km). <input type="checkbox"/> 500kV Line bay at Sheikh Muhammadi. <input type="checkbox"/> 500kV Nowshera – Ghazi Barotha (By Passing of 500 kV of Tarbela- Ghazi Barotha – Chakwal S/C from Ghazi Barotha)(52km).
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation  <b>Development</b>
6.	Funding:	Funding yet to be arranged
7.	Approval Forum	ECNEC
8.	Commencement Date	
9.	Expected Completion date	
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	Peshawar (Sheikh Muhammadi) 500kV Circuit is fed from Tarbela power plant. This second circuit shall reinforce the network in Peshawar region and improve system reliability.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 50**

1.	Name of Project	600MW Solar Power Plant near Muzaffargarh
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> In-out of 220kV KAPCO - Multan S/C at 600MW Muzzaffargarh solar PV project. (4km) <input type="checkbox"/> This project is required for evacuation of power from 600MW Muzaffargarh solar PV project.
4.	a) Category	<input type="checkbox"/> <b>Power Evacuation</b> <input type="checkbox"/> System Reliability <b>System Constraints</b>
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Funding yet to be arranged
7.	Approval Forum	CDWP
8.	Commencement Date	
9.	Expected Completion date	
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	This project is required for evacuation of power from 600MW Muzaffargarh solar PV project.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 51**

1.	Name of Project	600MW Solar Power Plant near Trimmu Jhang
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> In-out of 220kV TT Singh – Trimmu RLNG PP S/C at Trimmu Jhang solar PV project. (23km)  This project is required for evacuation of power from 600MW Trimmu Jhang solar PV project
4.	a) Category	<input type="checkbox"/> <b>Power Evacuation</b> <input type="checkbox"/> System Reliability <b>System Constraints</b>
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation  <b>Development</b>
6.	Funding:	Funding yet to be arranged
7.	Approval Forum	CDWP
8.	Commencement Date	
9.	Expected Completion date	
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	This project is required for evacuation of power from 600MW Trimmu Jhang solar PV project

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 52**

1.	Name of Project	1200MW Solar Power Plant near Havelli Bahadur Shah
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> In-out of 500Kv Haveli Bhadur Shah – Muzaffargarh S/C at Havelli Bahadur Shah solar PV project. (4.5km)  This project is required for evacuation of power from 1200MW Havelli Bahadur Shah solar PV project
4.	a) Category	<input type="checkbox"/> <b>Power Evacuation</b> <input type="checkbox"/> System Reliability <b>System Constraints</b>
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Funding yet to be arranged
7.	Approval Forum	CDWP
8.	Commencement Date	
9.	Expected Completion date	
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	This project is required for evacuation of power from 1200MW Havelli Bahadur Shah solar PV project

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 53**

1.	Name of Project	220 kV Zero Point Grid Station at Islamabad
2.	Location	Federal
3.	Scope in Brief / Objectives	<input type="checkbox"/> 3 x 250 MVA 220/132kV Auto Transformer, <input type="checkbox"/> 04 km 220kV Double Circuit Transmission line In/out of Rewat - ISB University S/C at Zero Point Grid station <input type="checkbox"/> 23 km 220kV Double Circuit Transmission line In/out of ISPR - Mansehra S/C at Zero Point Grid station The main objective of the project is upgradation of existing 132 kV Zero point grid station to 220 kV Level along with associated transmission line to meet the upcoming load demand & voltage Profile improvement of IESCO in federal region.
4.	a) Category	<input type="radio"/> Power Evacuation <input type="radio"/> System Reliability <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <input type="radio"/> Development
6.	Funding:	Funding to be Sought
7.	Approval Forum	ECNEC
8.	Commencement Date	---
9.	Expected Completion date	2024-25
10.	Physical progress:	
	a) Physical progress (major works done):	<p><b><u>Land/Grid Station:</u></b></p> <ul style="list-style-type: none"> <li>Dispute between IESCO and NTDC on land</li> <li>As per Joint System Studies carried out by Power System Planning (NTDC) &amp; IESCO, the requirement of 220 kV Zero Point Grid is not established up to summer 2024. However, to justify the said grid beyond 2023-24, IESCO is carrying out system studies, which will then be reviewed by NTDC accordingly.</li> <li>A new site proposed by Federal Govt. Employees Housing Authority (FGEHA) in Sector G-12, Islamabad. Comments of NTDC regarding the possession of site with FGEHA have been sent.</li> </ul> <p><b><u>Transmission Line</u></b></p> <input type="checkbox"/> Tentative routes with respect to proposed sites were worked out. <input type="checkbox"/> However, the routes are subject to confirmation of land and NOC from concerned authority i.e., CDA.
	b) Physical completion (in %age terms):	--
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement of Power Supply and meeting the increasing load demand of Federal Region.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 54**

1.	Name of Project	220 MVAR SVS AT 132 kV Khuzdar
2.	Location	Balochistan
3.	Scope in Brief / Objectives	<input type="checkbox"/> 100 MVAR switch shunt +,- 100 MVAR STATECOM This project will improve voltage stability in QESCO Region.
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Funding to be arranged
7.	Approval Forum	CDWP
8.	Commencement Date	
9.	Expected Completion date	
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	This project will improve voltage stability in QESCO Region.



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 55**

1.	Name of Project	Reactive Power Composition 220 & 132 kV G/Ss
2.	Location	Punjab and Balochistan
3.	Scope in Brief / Objectives	100 MVAR Switched Shunt each at 132 kV Ravi, Ghazi Road, Wapda Town, Punjab University, Lahore North, Lalian New, Nishatabad, Nokhar, KAPCO, Piranghaib, Bahawalpur, Sahuwala, Jaranwala Road, Yousafwala, Vehari, Mastung and 220 kV Kala ShahKaku
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Funding to be arranged
7.	Approval Forum	ECNEC
8.	Commencement Date	
9.	Expected Completion date	
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	This shall improve system voltage stability of the G/Ss

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 56**

1.	Name of Project	Mitigation of High Fault level at 132 kV Burhan
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> 16 Ohm inter-bus Current Limiting Reactor (CLR) between 132kV busbars of Burhan 220/132kV G/S  The Current Limiting Reactor shall improve system stability by reducing short circuit currents at the said G/S.
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Funding to be arranged
7.	Approval Forum	CDWP
8.	Commencement Date	
9.	Expected Completion date	
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	The Current Limiting Reactor shall improve system stability by reducing short circuit currents at the said G/S.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 57**

1.	Name of Project	Augmentation of 2x160 MVA T/Fs with 2x250 MVA Yousaf Wala
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> Augmentation of 2x160 MVA T/Fs with 2x250 MVA Yousaf Wala <input type="checkbox"/> Removal of system constraints
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> System Reliability <input type="checkbox"/> <b>System Constraints</b>
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> <b>Augmentation</b> <input type="checkbox"/> Development
6.	Funding:	Funding to be arranged
7.	Approval Forum	CDWP
8.	Commencement Date	
9.	Expected Completion date	
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	Removal of system constraints

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 58**

1.	Name of Project	Extension of 3rd Transformer Guddu
2.	Location	Sindh
3.	Scope in Brief / Objectives	<input type="checkbox"/> Extension of 3rd Transformer Guddu <input type="checkbox"/> Removal of system constraints
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> System Reliability <input type="checkbox"/> <b>System Constraints</b>
	b) Type	<input type="checkbox"/> <b>Extension</b> <input type="checkbox"/> Augmentation <input type="checkbox"/> Development
6.	Funding:	Funding to be arranged
7.	Approval Forum	CDWP
8.	Commencement Date	
9.	Expected Completion date	
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	Removal of system constraints

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 59**

1.	Name of Project	Augmentation of remaining 2x160 MVAT/Fs with 2x250 MVA Yousaf Wala
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> Augmentation of 2x160 MVA T/Fs with 2x250 MVA Yousaf Wala <input type="checkbox"/> Removal of system constraints
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> System Reliability <input type="checkbox"/> <b>System Constraints</b>
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> <b>Augmentation</b> <input type="checkbox"/> Development
6.	Funding:	Funding to be arranged
7.	Approval Forum	CDWP
8.	Commencement Date	
9.	Expected Completion date	
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	Removal of system constraints

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 60**

1.	Name of Project	Extension of 3rd Transformer Allai Khwar
2.	Location	KPK
3.	Scope in Brief / Objectives	<input type="checkbox"/> Extension of 3rd Transformer Allai Khwar for Evacuation of power from power houses in vicinity
4.	a) Category	<input type="checkbox"/> <b>Power Evacuation</b> <input type="checkbox"/> System Reliability <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> <b>Extension</b> <input type="checkbox"/> Augmentation <input type="checkbox"/> Development
6.	Funding:	Funding to be arranged
7.	Approval Forum	CDWP
8.	Commencement Date	
9.	Expected Completion date	
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	For Evacuation of power from power houses in vicinity

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 61**

1.	Name of Project	Feasibility study for enhancing the transmission capacity of NTDCs 500-kV Transmission System by applying series compensation
2.	Location	NTDC 500kV network (Southern Part)
3.	Scope in Brief / Objectives	<input type="checkbox"/> Consultancy services for carrying out Feasibility study for enhancing transmission capacity of NTDC's 500 kV transmission system by applying series compensation To enhance the transmission capacity of NTDC's 500kV transmission system by exploring the impacts of introducing advanced technology such as Flexible AC Transmission System (FACTS) including series/shunt compensation and Power System Stabilizers (PSSs)
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> <b>System Constraints</b>
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> Development <b>Feasibility consulting services</b>
6.	Funding:	NOR
7.	Approval Forum	CDWP
8.	Commencement Date	May 2019
9.	Expected Completion date	Study in progress
10.	Physical progress:	
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Consultancy services for carrying out Feasibility study for enhancing transmission capacity of NTDC's 500 kV transmission system by applying series compensation <input type="checkbox"/> To enhance the transmission capacity of NTDC's 500kV transmission system by exploring the impacts of introducing advanced technology such as Flexible AC Transmission System (FACTS) including series/shunt compensation and Power System Stabilizers (PSSs)

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 62**

1.	Name of Project	2nd source of supply to 220kV Jaranwala Road Substation
2.	Location	Faisalabad, Punjab
3.	Scope in Brief / Objectives	220 kV Jaranwala-Sammundari Road T/L (Including U/G Cable Portion) – approx. 40 km
4.	a) Category	<b><u>System Reliability</u></b>
	b) Type	<b><u>Development</u></b>
6.	Funding:	NTDC's Own Resources
7.	Approval Forum	CDWP
8.	Commencement Date	N/A
9.	Expected Completion date	N/A
10.	Physical progress:	
	a) Physical progress (major works done):	<u>Extension of Line Bays at Jaranwala Road &amp; Sammundri Road.</u> <input type="checkbox"/> Tender for civil works under preparation. <input type="checkbox"/> Contracts for major material have been awarded.  <u>Transmission Line</u> <input type="checkbox"/> Tender for civil works under preparation.
	b) Physical completion (in %age terms):	1%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Enhance transmission capacity of NTDC system.



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 63**

1.	Name of Project	Evacuation of Power from K2/K3 Nuclear Power near Karachi
2.	Location	Sindh
3.	Scope in Brief / Objectives	<input type="checkbox"/> 500kV D/C Quad Bundle Transmission Line for Interconnection of K2/K3 Power Plant with 500kV Port Qasim – Matiari Circuit (102 km) The main objective is evacuation of power from 2x1100MW K2/K3 Nuclear Power Plants.
4.	a) Category	<input type="checkbox"/> <b>Power Evacuation</b> <input type="checkbox"/> System Reliability <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	NTDC Own Resources
7.	Approval Forum	ECNEC (12.04.2017)
8.	Commencement Date	28-10-2020
9.	Expected Completion date	30.04.2023
10.	Physical progress:	
	a) Physical progress (major works done):	<input type="checkbox"/> Foundation: 185/317 No. <input type="checkbox"/> Erection: 161/317 No. <input type="checkbox"/> Stringing: 17.02/102 km <b>500kV D/C Transmission Line (17.03km) has been energized through existing 500kV S/C T/L Hub-Jamshoro Circuit-II (Interim Arrangement) on 23/03/2022 &amp; 25/03/2022 respectively.</b>
	b) Physical completion (in %age terms):	58.4%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Addition of 2200 MW Power in National Grid which will help to eliminate the severe load shedding in the Country. <input type="checkbox"/> Improvement in overall power supply position in NTDC system. <input type="checkbox"/> Additional source of income for NTDC as a result of use of system charges. <input type="checkbox"/> Additional revenues to Government exchequer from the levy of taxes on finished goods, electricity duty due to additional sale of power & GST etc. <input type="checkbox"/> Creation of new jobs during construction & afterwards. <input type="checkbox"/> Overall uplift of the area.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 64 & 65**

1.	Name of Project	Evacuation of Power from 2x660 MW Thar Coal Based SSRL/SECL Power Plant at Thar & Evacuation of Power from 330 MW Siddiquesons Ltd.
2.	Location	Sindh
3.	Scope in Brief / Objectives	<input type="checkbox"/> <b>Lot-I:</b> 500 kV D/C T/L from SECL plant up to 86 <sup>th</sup> km <b>(86 km)</b> <input type="checkbox"/> <b>Lot-II:</b> 500 kV D/C T/L from 86 <sup>th</sup> km up to 157 <sup>th</sup> km <b>(71 km)</b> <input type="checkbox"/> <b>Lot-III:</b> 500 kV D/C T/L from 157 <sup>th</sup> km up to Matiari Converter Station <b>(64 km)</b> <p>The main objective of the project is evacuation of 2x660 MW power from Shanghai Electric Power Plant (SSRL/SECL) to be installed in Thar area of Sindh Province to National Grid for transfer of power to upcountry load centers.</p>
4.	a) Category	<input type="radio"/> <b>Power Evacuation</b> <input type="radio"/> System Reliability <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> <b>Development</b>
6.	Funding:	NTDC Own Resources
7.	Approval Forum	ECNEC (12.04.2017)
8.	Commencement Date	05-07-2021
9.	Expected Completion date	Lot-I: 05-05-2023, Lot-II: 08-05-2023, Lot-III: 30-04-2023 (Revised Completion by BoD-NTDC as 30-04-2023)
10.	Physical progress:	
	a) Physical progress (major works done):	<input type="checkbox"/> The Works of all three lots completed and Transmission Line energized on 09-05-2023.  <input type="checkbox"/> 500kV Transmission Line Interconnection (0.8km approx.) to Siddique Sons Coal Power Plants completed on 09.12.2020 under Contract No. TLC-09-2019, but could not be energized due to non-availability of power plant.
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Addition of 1320 MW Power in National Grid which will help to bridge the demand supply gap and to eliminate the severe load-shedding of the country. <input type="checkbox"/> Improvement in power supply position resulting improvement in overall economic condition of the country. <input type="checkbox"/> Additional source of income for NTDC in the shape of Use of System Charges. <input type="checkbox"/> Additional Income for National Exchequer in the shape of duties and taxes. <input type="checkbox"/> Improvement in reliability of NTDC system.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 66**

1.	Name of Project	220 KV G/Station at Kassowal with 132 KV Expension System (World Bank Loan No. 7565-Pk, Credit No. 4463-PK & 4464-PK)
2.	Location	Punjab
3.	Scope in Brief	<b><u>Grid Station</u></b> <input type="checkbox"/> 3x200MVA, 500/220kV Auto Transformer <b><u>Transmission Line</u></b> 02 x 220k Double Circuit T/Lines for in & out of existing 220kV Vehari-Yousafwala D/C T/line. (approx. 70 km)
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	<b>WORLD BANK</b>
7.	Approval Forum	ECNEC <b>PKR. 2067 MILLION ( 02.02.2005)</b>
8.	Commencement Date	G/Station: <b>01.06.2011</b> T/Line: <b>12.09.2009</b>
9.	Actual Completion date	G/Station: 17.04.2015 T/Line: <b>06.08.2012</b>
10.	Physical progress:	
	a) Physical progress (major works done):	Completed & Energized
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Reduction in the loading of 500/220kV transformers at sahiwal and vehari regions. <input type="checkbox"/> Reduction in transmission line losses. <input type="checkbox"/> Improvement in overall system reliability of NTDC network with respect to export of southern generation to the northern load centers.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 67**

1.	Name of Project	<b>220 kV Mansehra Grid Station</b>
2.	Location	KPK
3.	Scope in Brief / Objectives	<input type="checkbox"/> 3 x 250 MVA 220/132kV Auto Transformer, <input type="checkbox"/> 220kV Line Bays 02 Nos. This project aims the installation of new 220 kV substation at Nowshera to meet the upcoming load demand & voltage Profile improvement of Nowshera area in PESCO.
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Asian Development Bank (ADB) Trench-III
7.	Approval Forum	CDWP 07.04.2011
8.	Commencement Date	
9.	Expected Completion date	G/S 02.05.2018 T/L 16.11.2017
10.	Physical progress:	Completed
	a) Physical progress (major works done):	<input type="checkbox"/> Project completed and T1 and T2 commissioned on 10.04.2018 and 02.05.2018. <input type="checkbox"/> Residential colony work commenced on 15.03.2022. <input type="checkbox"/> Present progress of Colony works: 67%
	b) Physical completion (in %age terms):	Grid Station: 100% Transmission Line: 100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement of Power Supply Position At/Around 220 kV Mansehra G/S. <input type="checkbox"/> Increase in the system capacity to meet future load demand of the area. <input type="checkbox"/> Improvement in voltage profile of existing 132 kV grid station in the vicinity of Mansehra G/S. <input type="checkbox"/> Reduction in transmission system losses. <input type="checkbox"/> Improvement in reliability of NTDC and PESCO <input type="checkbox"/> Networks

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 68**

1.	Name of Project	<b>3rd 500kV Jamshoro-Moro- R.Y Khan Single Circuit T/Line.Tranch-III</b>
2.	Location	Sindh
3.	Scope in Brief / Objectives	<p>The main objective of 500kV Transmission line in association of substations is to transfer of power to be generated from power generation plants in south areas to enhance the capacity of transmission line, and provide the transmission link between South &amp; North in order to facilitate transfer of bid blocks of power to either side under different generation scenarios, which contributes to increase the electrification, development of industries and alleviate poverty of the area.</p> <p><input type="checkbox"/> Package-I: Transmission Line (600km)</p> <p><input type="checkbox"/> Package-II: 500kV Moro Switching Station &amp; Extension works at 500kV Jamshoro, 500kV Dadu and 500kV R.Y.Khan Grid Stations</p>
4.	a) Category	<p><input type="radio"/> Power Evacuation</p> <p><input checked="" type="radio"/> <b>System Reliability</b></p>
	b) Type	<b>Development</b>
6.	Funding:	Asian Development Bank (ADB)
7.	Approval Forum	ECNEC 26.08.2013
8.	Commencement Date	<p><u>Package-I</u></p> <p>Lot-I: 20.01.2015</p> <p>Lot-II: 07.01.2015</p> <p>Lot-III: 28.01.2015</p> <p><u>Package-II: 28.01.2015</u></p>
9.	Expected Completion date	<p><u>Package-I</u></p> <p>Lot-I: 24.01.2019</p> <p>Lot-II: 06.09.2022</p> <p>Lot-III: 22.05.2019</p> <p><u>Package-II 02.05.2019</u></p>
10.	Physical progress:	
	a) Physical progress (major works done):	Completed & Energized
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	Dispersal of power in Southern part of the country from Coal Power Plants and system stability (N-1) criterion.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 69**

1.	Name of Project	<b>Interconnection- Thar Coal Based , 1200MW (Power Dispersal from 1200MW Thar Coal Power Plant - 500kV Thar - Matiari T/L &amp; Matiari 500kV S/station)</b>
2.	Location	Sindh
3.	Scope in Brief / Objectives	<p>The primary objective of making effective use of the ample coal reserves in the Thar Desert to meet Pakistan's power generation needs, spur economic development, and bring energy security to the country, the benefits of the project is to enhance the capacity of transmission line, and to provide the transmission link between various Sub-Station in order to facilitate transfer bid block of power to either side under different generation scenarios, which contributes to increase the electrification, to fulfill energy demands, development of industries, reduce load shedding and to alleviate poverty of the area.</p> <p>500kV D/C T/Line Thar – Matiari (250 km)</p>
4.	a) Category	○ <b>Power Evacuation</b>
	b) Type	<b>Development</b>
6.	Funding:	NOR
7.	Approval Forum	ECNEC 16.08.2012
8.	Commencement Date	<p>Lot-I: 25.01.2016</p> <p>Lot-II: 03.06.2016</p>
9.	Expected Completion date	31.07.2018
10.	Physical progress:	
	a) Physical progress (major works done):	Completed
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<p><input type="checkbox"/> Improvement in transmission system reliability.</p> <p>Smooth transmission of power to the National Grid which will help bridge the demand-supply gap for elimination of load shedding in country.</p>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 70**

1.	Name of Project	<b>New 220 kV G/Station at Khuzdar/220 kVDadu - Khuzdar D/C T/Line JICA Loan No. PK-56</b>
2.	Location	Sindh-Baluchistan
3.	Scope in Brief / Objectives	<p>The project is envisaged to meet power demand of remote areas of Baluchistan and various development activities in Khuzdar and surrounding areas. According to the load flow simulation of the existing QESCO system network, voltage profile of the system at Khuzdar and in its vicinity is extremely low. The completion of this project will strengthen the power supply situation which is presently through 132 kV line from Quetta.</p> <p> <input type="checkbox"/> 2x220/132kV, 160 MVA Auto-Transformer  <input type="checkbox"/> 2x18 MVAR Shunt Reactor  <input type="checkbox"/> 220kV Transmission Line Dadu-Khuzdar (274km) </p>
4.	a) Category	<p> <input type="radio"/> Power Evacuation  <input checked="" type="radio"/> <b>System Reliability</b> </p> <p>System Constraints</p>
	b) Type	<b>Development</b>
6.	Funding:	JICA
7.	Approval Forum	ECNEC 04.08.2006
8.	Commencement Date	<p><u>Transmission Line</u>: Lot-I: 01-07-2008 , Lot-II: 30-06-2008</p> <p><u>Grid Station</u>: 30-06-2008</p>
9.	Expected Completion date	09.06.2014
10.	Physical progress:	
	a) Physical progress (major works done):	Completed
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<p> <input type="checkbox"/> Increase in reliability of power supply to QESCO load center.  <input type="checkbox"/> Alternate source of supply to QESCO network.            Improvement in voltage profile &amp; stabilization of power supply. </p>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 71**

1.	Name of Project	Power Transmission Enhancement Project, Tranche-II (Ten Sub Projects of 500 & 220 KV T/Line)
2.	Location	Balochistan & Punjab
3.	Scope in Brief / Objectives	<p><b><u>220kV Loralai G/S &amp; T/Lines</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 220/132kV, 2x250MVA Auto-transformer</li> <li><input type="checkbox"/> 220 kV D/C Twin Bundle D.G Khan - Loralai Transmission Line (227km)</li> </ul> <p><b><u>500kV D.G.khan G/Station &amp; T/Lines</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 500/220 kV, 2x600MVA ATB</li> <li><input type="checkbox"/> 220/132 kV, 2x250MVA ATF</li> <li><input type="checkbox"/> In &amp; Out arrangement of 500kV Guddu-Multan 1st Circuit at 500kV D.G Khan Substation (26km)</li> </ul> <p><b><u>220 kV Okara Grid Station</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 220/132kV, 3x250MV ATFs</li> <li><input type="checkbox"/> In and out of existing Yousafwala Sarfraz Nagar 220 kV D/C T/L (10.8 KM).</li> </ul> <p><b><u>220 kV Toba Tek Singh Grid Station</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 220/132kV, 3x250MV ATFs</li> <li><input type="checkbox"/> In and out of existing Nishatabad Multan 220 kV D/C T/L at T.T. Singh (1.2 km).</li> </ul> <p>The main objective of the project is enhancement in the Power Transmission system by extension, augmentation and expansion of existing 500kV and 220kV transmission system of NTDC to meet the requirements of growth of power demand in the country. It is not only to strengthen the existing transmission system but also to help evacuate additional power from IPPs.</p>
4.	a) Category	<ul style="list-style-type: none"> <li>○ Power Evacuation</li> <li>○ <b>System Reliability</b></li> </ul>
	b) Type	<ul style="list-style-type: none"> <li>○ <b>Development</b></li> </ul>
6.	Funding:	Asian Development Bank
7.	Approval Forum	ECNEC 30.06.2012
8.	Commencement Date	<p><u>220kV Loralai G/S &amp; T/L</u> G/S: 14.03.2011 , T/L: 17.09.2010</p> <p><u>500kV D.G.Khan G/S &amp; T/L</u> G/S: 19.03.2012 , T/L: 16.08.2011</p> <p><u>220 kV Okara G/S:</u> G/S: 26.08.2010 T/L : 30/05/2011</p> <p><u>220 kV T.T.Singh G/S &amp; T/L:</u> G/S: 26.08.2010 T/L : 19/05/2011</p>
9.	Actual Completion date	<p><u>220kV Loralai G/S &amp; T/L:</u> 03.08.2014</p> <p><u>500kV D.G.Khan G/S &amp; T/L:</u></p>



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		G/S: 26.07.2014 ; T/L: 25.04.2014 <u>220 kV Okara G/S:</u> G/S: 09.06.2016      T/L : 26/05/2012 <u>220 kV T.T.Singh G/S &amp; T/L:</u> G/S: 18.11.2014      T/L : 05/10/2013
10.	Physical progress:	
	a) Physical progress (major works done):	Completed & Energized
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<u>220kV Loralai G/S &amp; T/L</u> <input type="checkbox"/> Reduction in the loading of 220/132kV transformers feeding QESCO load center. <input type="checkbox"/> Reduction in transmission line losses. <input type="checkbox"/> Better voltage control. <input type="checkbox"/> Improvement in system reliability of NTDC network feeding QESCO load center. <u>500kV D.G.Khan G/S &amp; T/L</u> <input type="checkbox"/> Enhancement of 500/220kV transmission network. <input type="checkbox"/> Reduction in transmission line losses. <input type="checkbox"/> Better voltage control. <input type="checkbox"/> Improvement in reliability of NTDC system.  <u>Okara G/S:</u> <input type="checkbox"/> Reduction in the loading of 220/132kV transformers feeding FESCO load center. <input type="checkbox"/> Reduction in transmission line losses. <input type="checkbox"/> Better voltage control. <input type="checkbox"/> Improvement in system reliability of NTDC network feeding FESCO load center.  <u>T T Singh G/S:</u> <input type="checkbox"/> Reduction in the loading of 220/132kV transformers feeding FESCO load center. <input type="checkbox"/> Reduction in transmission line losses. <input type="checkbox"/> Better voltage control. <input type="checkbox"/> Improvement in system reliability of NTDC network feeding FESCO load center.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 72**

1.	Name of Project	Provision of Secured Metering System at Delivery Point (Local Bank)
2.	Location	All over country
3.	Scope in Brief / Objectives	The main objective of the project is to install accurate and secured metering system with dedicated CTs/PTs of 0.2 accuracy class at all. Metering Delivery Point located at various grid stations and power stations in separate air conditioned rooms, with provision for remote meter reading / data collection through the Public Switched Telephone Network (PSTN) and/or SCADA.
4.	a) Category	○ System Reliability
	b) Type	○ <b>Development</b>
6.	Funding:	NOR
7.	Approval Forum	ECNEC 04.08.2005
8.	Commencement Date	July-2009
9.	Actual Completion date	-
10.	Physical progress:	
	a) Physical progress (major works done):	Already installed at existing points. Project is on-going upon identification of new CDPs.
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	Accurate recording of the energy flow and the power demand at the points of the energy exchange between two companies.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 73**

1.	Name of Project	Quaid-e-Azam Solar Park at Lal-Suhanra (Phase-II) Evacuation of 600 MW Solar (Proposed to be carried out by NTDC)
2.	Location	Bahawalpur , Punjab
3.	Scope in Brief / Objectives	220 kV AIS Grid Station at Lal Suhara, Bahawalpur (1x250 MVA) 220 kV T/Line from Quaid-e-Azam Solar Park to Bahawalpur G/S (38 km)
4.	a) Category	Power Evacuation
	b) Type	<b>Development</b>
6.	Funding:	NTDC Own Resources
7.	Approval Forum	ECNEC
8.	Commencement Date	G/S: 30.11.2015 T/L: 31.02.2015
9.	Actual Completion date	G/S: 15/02/2018 T/L: 20/10/2017
10.	Physical progress:	
	a) Physical progress (major works done):	Both G/S and T/L completed and energized.
	b) Physical completion (in %age terms):	100 %
11.	Outcomes / Benefits of the project after completion	Evacuation of power from Quaid-A-Azam solar park.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 74**

1.	Name of Project	<b>Transmission Scheme for dispersal of Power from Neelum – Jehlum, Karot and Azad Patan Hydro Power Project</b>
2.	Location	AJK/Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> 500 kV D/C transmission line on Quad Bundled from Neelum Jhelum HP to Gujranwala. <input type="checkbox"/> Two 500 kV Line bays along with 3 x 37 MVA shunt reactors at 500 kV grid station Gujranwala. <input type="checkbox"/> In/out of one circuit of Neelum Jhelum to Gujranwala T/L at karot. <input type="checkbox"/> In/out of One circuit of Neelum – Jehlum Gujranwala T/L at Azad Pattan.  This project aims to help evacuate more than 2000 MW of power from upcoming HPPSs, which will help in reduction of severe load shedding in the country.
4.	a) Category	<input type="radio"/> <b>Power Evacuation</b> <input type="radio"/> <b>System Reliability</b> <input type="radio"/> <b>System Constraints</b>
	b) Type	<input type="radio"/> <b>Development</b>
6.	Funding:	NTDC Own Resources
7.	Approval Forum	ECNEC 02.03.2015
8.	Commencement Date	
9.	Actual Completion date	Ph-I: 02.04.2018 Ph-II: 13.01.2022 Karot:13.01.2022
10.	Physical progress:	Phase-I Completed Phase-II Completed Karot TL: completed
	a) Physical progress (major works done):	Project completed.
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Evacuation of Power from Neelum Jhelum, Karot and Azad Pattan HPP. <input type="checkbox"/> Smooth supply of power to the national grid to eliminate severe load shedding condition in the country. <input type="checkbox"/> Improvement & enhancement in overall power system efficiency and reliability.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 75**

1.	Name of Project	Transmission Interconnection for Dispersal of Power from UCH-II Trench-III
2.	Location	Baluchistan
3.	Scope in Brief / Objectives	<ul style="list-style-type: none"> <li>● 220kV D/C T/Line Uch-II to Sibbi (113.4km)</li> </ul> <p>The main objective of 220kV Transmission Line is to transmit power generating from Uch-II Power Plant to Sibbi G/station and thereby strengthening the existing NTDC integrated system.</p>
4.	a) Category	<ul style="list-style-type: none"> <li>○ <b>Power Evacuation</b></li> <li>○</li> </ul>
	b) Type	<ul style="list-style-type: none"> <li>○ <b>Development</b></li> </ul>
6.	Funding:	ADB
7.	Approval Forum	ECNEC 29.07.2011
8.	Commencement Date	01.01.2015
9.	Actual Completion date	05.05.2018
10.	Physical progress:	
	a) Physical progress (major works done):	Completed & Energized
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Dispersal of power from UCH-II power plant and stability for N-1 criterion.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 76**

1.	Name of Project	Construction of 600 kV HVDC Transmission Line From Matiari to Lahore (Land Acquisition for Converter and Grounding Station - Both Ends) (CPEC)
2.	Location	Matiari in Sindh Province. Lahore in Punjab Province.
3.	Scope in Brief / Objectives	Land acquisition for HVDC Converter Stations, Lahore & Matiari; Grounding Electrode Station at Syedwala, Punjab and Khipro, Sindh; 03 No Repeater Stations and Central Warehouse Feroza along with boundary walls at all stations.
4.	a) Category	
	b) Type	
6.	Funding:	CDL + Own Resources.
7.	Approval Forum	EEC of the Cabinet GOP (Decision dated: 25.07.2017)
8.	Commencement Date	2017
9.	Actual Completion date	2024-25 (expected)
10.	Physical progress:	
	a) Physical progress (major works done):	Land acquired for HVDC Converter Stations, Lahore & Matiari; Grounding Electrode Station at Syedwala, Punjab and Khipro, Sindh; 03 No Repeater Stations and Central Warehouse Feroza.  Boundary Walls construction completed at HVDC Converter Station Lahore and Matiari (at both ends), at Grounding Electrode Station Khipro and Central Ware House, Feroza.
	b) Physical completion (in %age terms):	Land Acquisition: 93.63 % Boundary Walls: 78.63%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> The transmission capacity of NTDC system will be enhanced. Transfer of 4000 MW power from the power plants in southern part of the country to upcountry load centers.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 77**

1.	Name of Project	Evacuation of Power from 1200MW RLNG Based Power Projects at Jhang (Haveli Bahadur Shah)
2.	Location	Jhang, Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> 500 kV D/C T/Line on for in/out of Existing Multan – Gatti 500 kV S/C T/Line at Haveli Bahadar Shah Power Plant (53 Km) <input type="checkbox"/> 500 kV D/C T/Line for In & out of Existing Muzaffargarh-Gatti 500 kV S/C T/Line at Haveli Bahadar Shah Power Plant (1.77 Km)
4.	a) Category	<b>Power Evacuation</b>
	b) Type	<b>Development</b>
6.	Funding:	NTDC Own Resources
7.	Approval Forum	ECNEC
8.	Commencement Date	17.07.2016
9.	Actual Completion date	08.03.2018
10.	Physical progress:	
	a) Physical progress (major works done):	Both Lines have been energized. <input type="checkbox"/> Line-1: - T/Line Energized on 21.02.2017 <input type="checkbox"/> Line-2: - T/Line Energized on 08.03.2018
	b) Physical completion (in %age terms):	100 %
11.	Outcomes / Benefits of the project after completion	Evacuation of power from RLNG power plant.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 78**

1.	Name of Project	Evacuation of Power from 1320 MW RLNG Power Plant at Trimmu Jhang
2.	Location	Trimmu , Jhang , Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> Lot-I Construction of 220 kV D/C T/L (Circuit-I&II) from RLNG Power Plant Near Trimmu Head Work To Mid Point Location (Approx: 25 Km).  <input type="checkbox"/> Lot-II Construction of 220 kV D/C T/L (Circuit I &II) from Mid Point Location To 220kV G/S Toba Tek Singh (Approx: 25 Km)
4.	a) Category	Power Evacuation
	b) Type	Development
6.	Funding:	NTDC Own Resources
7.	Approval Forum	ECNEC
8.	Commencement Date	15.02.2018
9.	Actual Completion date	13.08.2018
10.	Physical progress:	
	a) Physical progress (major works done):	Line has been energized.
	b) Physical completion (in %age terms):	100 %
11.	Outcomes / Benefits of the project after completion	Evacuation of power from RLNG Trimmu.



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 79**

1.	Name of Project	Evacuation of power from 1320MW Power Plant at Bin Qasim
2.	Location	Sindh
3.	Scope in Brief / Objectives	For dispersal of Power from Port Qasim Power Plant. <u>Phase-I:</u> 500kV T/L Port Qasim-Hub Jamshoro T/L CCT-I (54.5km) <u>Phase-II:</u> 500kV Hub Jamshoro T/L CCT-I – 500kV Matiari (118 km)
4.	a) Category	○ <b>Power Evacuation</b>
	b) Type	○ <b>Development</b>
6.	Funding:	NOR
7.	Approval Forum	ECNEC 13.05.2015
8.	Commencement Date	<b>Phase-I:</b> 28.07.2016  <b>Phase-II:</b> <b>Lot-I:</b> 19.09.2017, <b>Lot-II:</b> 03.04.2017, <b>Lot-III:</b> 06.04.2017
9.	Actual Completion date	<b>Phase-I:</b> 31.10.2017  <b>Phase-II:</b> <b>Lot-I:</b> 20.04.2019 <b>Lot-II:</b> 24.06.2019 <b>Lot-III:</b> 02-11-2020
10.	Physical progress:	
	a) Physical progress (major works done):	Completed & Energized
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Addition of 1,320 MW Power in National Grid which will help to bridge the demand supply gap and to eliminate the severe load shedding of the country. <input type="checkbox"/> Improvement in power supply position resulting improvement in overall economic condition of the country. <input type="checkbox"/> Additional source of income for NTDCCL in the shape of Use of System Charges. <input type="checkbox"/> Additional Income for National Ex-chequer in the shape of duties and taxes. <input type="checkbox"/> Improvement in reliability of NTDCCL system.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 80**

1.	Name of Project	<b>Evacuation of power from 147MW Patrind HPP</b>
2.	Location	KPK, AJK
3.	Scope in Brief / Objectives	<input type="checkbox"/> Phase-I: 132kV T/Line for Evacuation of Power from Patrind HPP to Mansehra New Grid Station (40km approx) <input type="checkbox"/> Phase-II: Construction of 132kV T/Line for Evacuation of Power from Patrind HPP to Muzaffarabad-II Rampura G/S (6km approx)
4.	a) Category	<input type="radio"/> Power Evacuation <input type="radio"/> System Reliability <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <input checked="" type="radio"/> <b>Development</b>
6.	Funding:	NTDC OWN Resources + USAID Grant
7.	Approval Forum	CDWP 27/01/2015
8.	Commencement Date	Phase-I: 07/06/2016 Phase-II: 23/04/2016
9.	Expected Completion date	Phase-I: 25/09/2020 Phase-II: 28/04/2017
10.	Physical progress:	100 % completed
	a) Physical progress (major works done):	<input type="checkbox"/> Project completed and commissioned.
	b) Physical completion (in %age terms):	Transmission Line: 100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Evacuation of Power from 147MW Patrind HPP. <input type="checkbox"/> Smooth supply of power to the national grid to eliminate severe load shedding condition in the country. <input type="checkbox"/> Improvement & enhancement in overall power system efficiency and reliability.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 81**

1.	Name of Project	Power Transmission Enhancement Project Tranch-I (19 Sub Projects of 500/220 KV Sub Stations and T/ Lines) ADB Loan No. 2289 & 2290-PAK <input type="checkbox"/> Augmentation Work At 220kv New Kot Lakhpat Lahore <input type="checkbox"/> Extension Work At 220kv Bhawalpur Grid Station <input type="checkbox"/> Extension Work At 220kv Yousufwala Grid Station <input type="checkbox"/> Extension Work At 220kv Hala Road Grid Station <input type="checkbox"/> Extension Work At 500kv Multan Grid Station
2.	Location	Sindh & Punjab
3.	Scope in Brief / Objectives	Kotlakhpat: Augmentation of 3x160 MVA with 3x250 MVA 'ATF' Bahawalpur: Addition of 1x160 MVA 'ATF' Yousufwala: Addition of 1x160 MVA 'ATF' Hala Road: Addition of 1x160 MVA 'ATF' Multan: Addition of 3x160 MVA 'ATF' The main objective of the project is to enhance the transformation capacity at different NTDC Grid Stations which will help to meet the power demand of the country as well as the system losses will also be reduced.
4.	a) Category	<input type="radio"/> <b>System Constraints</b>
	b) Type	<input type="radio"/> <b>Extension</b> <input type="radio"/> <b>Augmentation</b>
6.	Funding:	ADB
7.	Approval Forum	ECNEC 27.11.2006
8.	Commencement Date	Extension at Bahawalpur: 20-05-2008 Extension at Yousufwala: 01-07-2008 Extension at Hala Road: 20-05-2008 Augmentation at Kotlakhpat: June-2008 Extension at Multan: 09-05-2009
9.	Actual Completion date	Extension at Bahawalpur: 06-09-2009 Extension at Yousufwala: 15-12-2009 Extension at Hala Road: 05-10-2009 Augmentation at Kotlakhpat: 27-04-2011 Extension at Multan: 18-06-2010
10.	Physical progress:	
	a) Physical progress (major works done):	Completed & Energized
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	The enhancement of transformation capacity of NTDC system by installation of additional transformers & augmentation of transformers at various grid stations prepared for optimal utilization of existing grid stations to provide relief to overloaded transformers and to enhance the transformation capacity of NTDC system to meet the growing power demand of DISCOs.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 82**

1.	Name of Project	Evacuation of Power from 1320 MW Hub Power Company Ltd.
2.	Location	Sindh
3.	Scope in Brief / Objectives	The main objective of the project is evacuation of 1320 MW power from the proposed Hub Power Plant envisaged to be installed near existing 1292 MW Thermal Power Station at Hub. i) 500 kV double circuit quad bundle transmission line on Greeley conductor from Hub Power Plant to 500 kV Matiari switching station (220 km). ii) Extension at 500 kV Matiari switching station (Two Line Bays with Shunt Reactors)
4.	a) Category	<ul style="list-style-type: none"> <li>○ <b>Power Evacuation</b></li> <li>○ System Reliability</li> <li>○ System Constraints</li> </ul>
	b) Type	<ul style="list-style-type: none"> <li>○ Extension</li> <li>○ Augmentation</li> <li>○ <b>Development</b></li> </ul>
6.	Funding:	NOR
7.	Approval Forum	ECNEC 17.11.2016
8.	Commencement Date	20.08.2018
9.	Actual Completion date	<b>Lot-I:</b> 17-09-2020 <b>Lot-II:</b> 29-03-2020 <b>Lot-III:</b> 19-03-2020 <b>Lot-IV:</b> 28-06-2020
10.	Physical progress:	
	a) Physical progress (major works done):	Completed & Energized
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Addition of 1,320 MW Power in National Grid which will help to eliminate the severe load shedding in the Country. <input type="checkbox"/> Improvement in overall power supply position in NTDC system. <input type="checkbox"/> Additional source of income for NTDC as a result of use of system charges. <input type="checkbox"/> Additional revenues to Government exchequer from the levy of taxes on finished goods, electricity duty due to additional sale of power & GST etc. <input type="checkbox"/> Creation of new jobs during construction & afterwards. <input type="checkbox"/> Overall uplift of the area.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 83**

1.	Name of Project	Evacuation of Power from 660MW Lucky Electric Coal Power Plant (12.36km)
2.	Location	Sindh
3.	Scope in Brief / Objectives	Tower Locations: 39 No. Length of T/Line: 12.36 km The main objective of the project is the evacuation of power from 660MW Lucky Electric Coal Power Plant.
4.	a) Category	<ul style="list-style-type: none"> <li>○ <b>Power Evacuation</b></li> <li>○ System Reliability</li> <li>○ System Constraints</li> </ul>
	b) Type	<ul style="list-style-type: none"> <li>○ Extension</li> <li>○ Augmentation</li> <li>○ <b>Development</b></li> </ul>
6.	Funding:	NTDC Own Resources
7.	Approval Forum	CDWP 03.03.2020
8.	Commencement Date	18.11.2020
9.	Actual Completion date	05-11-2021 (T/Line commissioned/energized on 09-11-2021)
10.	Physical progress:	
	a) Physical progress (major works done):	Completed & Energized
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<ul style="list-style-type: none"> <li><input type="checkbox"/> Addition of 660 MW Power in National Grid which will help to improve the power supply system in the Country.</li> <li><input type="checkbox"/> Additional source of income for NTDC as a result of use of system charges.</li> <li><input type="checkbox"/> Additional revenues to Government exchequer from the levy of taxes on finished goods, electricity duty due to additional sale of power &amp; GST etc.</li> <li><input type="checkbox"/> Creation of new jobs during construction &amp; afterwards.</li> <li><input type="checkbox"/> Overall uplift of the area</li> </ul>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 84**

1.	Name of Project	<b>220 kV D.I Khan Grid Station &amp; allied T/Lines</b>
2.	Location	KPK
3.	Scope in Brief / Objectives	<input type="checkbox"/> 2 x 250 MVA 220/132kV Auto Transformer, <input type="checkbox"/> 220kV Line Bays 02 Nos <input type="checkbox"/> 132kV Line Bays 06 Nos. This project aims the installation of new 220 kV substation at D.I Khan to meet the upcoming load demand & voltage Profile improvement of PESCO Region
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Asian Development Bank (ADB)
7.	Approval Forum	ECNEC (24.11.2017)
8.	Commencement Date	06.11.2016
9.	Expected Completion date	Grid Station: 18-02-2019 T/Lines: 18-02-2019
10.	Physical progress:	
	a) Physical progress (major works done):	<input type="checkbox"/> Project completed and commissioned. <input type="checkbox"/> Residential Colony works also completed.
	b) Physical completion (in %age terms):	Grid Station: 100% Transmission Line: 100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement of Power Supply Position at/around 220 kV D.I Khan G/S. <input type="checkbox"/> Increase in the system capacity to meet future load demand of the area. <input type="checkbox"/> Improvement in voltage profile of existing 132 kV grid station in the vicinity of D.I Khan. <input type="checkbox"/> Reduction in transmission system losses. <input type="checkbox"/> Improvement in reliability of NTDC and PESCO system networks.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 85**

1.	Name of Project	<b>220kV G/S at Ghazi Road, Lahore with 220 kV D/C T/Line 132 kV Expansion System EDCF Loan No.PAK 2 &amp; KFW</b>
2.	Location	Lahore
3.	Scope in Brief / Objectives	2 X 250 MVA, 220/132KV AUTO TRANSFORMERS - 4 x 220KV LINE BAYS - 3 x 220KV TRANSFORMER BAYS - 4 x 132KV TRANSFORMER BAYS - 8 x 132KV LINE BAYS
4.	a) Category	<b>System Reliability</b>
	b) Type	<b>Development</b>
6.	Funding:	KFW
7.	Approval Forum	ECNEC
8.	Commencement Date	01.07.2015
9.	Expected Completion date	18.04.2019
10.	Physical progress:	
	a) Physical progress (major works done):	Project has been completed and Energized.
	b) Physical completion (in %age terms):	100 %
11.	Outcomes / Benefits of the project after completion	After completion of subject Grid Station voltage profile has been improved system stability strength, reduction in line losses of 132 kV LESCO Network.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 86**

1.	Name of Project	<b>220 kV Nowshera Grid Station</b>
2.	Location	KPK
3.	Scope in Brief / Objectives	<input type="checkbox"/> 3 x 250 MVA 220/132kV Auto Transformer, <input type="checkbox"/> 220kV Line Bays 02 Nos. <input type="checkbox"/> 132kV Line Bays 06 Nos. This project aims the installation of new 220 kV substation at Nowshera to meet the upcoming load demand & voltage Profile improvement of Nowshera area in PESCO.
4.	a) Category	<input type="checkbox"/> Power Evacuation <input type="checkbox"/> <b>System Reliability</b> <input type="checkbox"/> System Constraints
	b) Type	<input type="checkbox"/> Extension <input type="checkbox"/> Augmentation <input type="checkbox"/> <b>Development</b>
6.	Funding:	Asian Development Bank (ADB)
7.	Approval Forum	ECNEC (07.11.2016)
8.	Commencement Date	220 kV Grid Station: 26.11.2016 220 kV T/L: 12.07.2016
9.	Expected Completion date	220 kV Grid Station: 19.04.2019 220 T/L: 18.12.2018
10.	Physical progress:	100%
	a) Physical progress (major works done):	<input type="checkbox"/> Project completed and commissioned. <input type="checkbox"/> NOA for construction of residential colony issued on 18-03-2022. Works commenced on 06-05-2022." <input type="checkbox"/> Percentage progress of colony works: 31%
	b) Physical completion (in %age terms):	Grid Station: 100% Transmission Line: 100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement of Power Supply Position near Nowshera G/S. <input type="checkbox"/> Increase in the system capacity to meet future load demand of the area. <input type="checkbox"/> Improvement in voltage profile of existing 132 kV grid station in the vicinity of Nowshera G/S. <input type="checkbox"/> Reduction in transmission system losses. <input type="checkbox"/> Improvement in reliability of NTDC and PESCO networks



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 87**

1.	Name of Project	<b>220 kV Chakdara Grid Station</b>
2.	Location	KPK
3.	Scope in Brief / Objectives	2 x 250 MVA 220/132kV Auto Transformer, 220kV Line Bays 02 Nos. 132kV Line Bays 06 Nos. This project aims the installation of new 220 kV substation at Chakdara to meet the upcoming load demand & voltage Profile improvement of Chakdara area in PESCO region.
4.	a) Category	<ul style="list-style-type: none"> <li>○ Power Evacuation</li> <li>○ <b>System Reliability</b></li> <li>○ System Constraints</li> </ul>
	b) Type	<ul style="list-style-type: none"> <li>○ Extension</li> <li>○ Augmentation</li> <li>○ <b>Development</b></li> </ul>
6.	Funding:	Asian Development Bank (ADB)
7.	Approval Forum	ECNEC
8.	Commencement Date	Grid Station: 06.11.2016 Transmission Line: 12.07.2016
9.	Actual Completion date	Grid Station: 16.09.2018 Transmission Line: 16.09.2018
10.	Physical progress:	
	a) Physical progress (major works done):	<input type="checkbox"/> Project completed and commissioned. <input type="checkbox"/> NOA for construction of Residential Colony issued on 15-02-2022 (18 months completion period). <input type="checkbox"/> Percentage progress of colony works: 88%
	b) Physical completion (in %age terms):	Grid Station: 100% Transmission Line: 100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Improvement of Power Supply Position At/Around 220 kV Chakdara G/S. <input type="checkbox"/> Increase in system capacity to meet future load demand. <input type="checkbox"/> Improvement in voltage profile of existing 132 kV grid station in the vicinity of Chakdara G/S. <input type="checkbox"/> Reduction in transmission system losses. <input type="checkbox"/> Improvement in reliability of NTDC and PESCO networks.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 88**

1.	Name of Project	<b>220/132 kV Lalian G/S &amp; Allied T/L</b>
2.	Location	Chiniot District, Punjab
3.	Scope in Brief / Objectives	<ul style="list-style-type: none"> <li>• 2×250 MVA, 220/132 kV T/Fs</li> <li>• 220 kV Gatti-Ludewala D/C T/L (4+4km) feed from Lalian</li> </ul>
4.	a) Category	<ul style="list-style-type: none"> <li>○ System Constraints</li> <li>○ System Reliability</li> </ul>
	b) Type	<ul style="list-style-type: none"> <li>○ Development</li> </ul>
6.	Funding:	Loan No. ADB-3203-PAK (MFF-I, Tranche-IV) Now on NTDC Own Resources
7.	Approval Forum	ECNEC
8.	Commencement Date	<b>17/05/2021</b>
9.	Expected Completion date	28.11.2022 (Actual completion date)
10.	Physical progress:	
	a) Physical progress (major works done):	<p><u>Grid Station</u></p> <ul style="list-style-type: none"> <li>a) In / Out arrangement of 220kV Gatti-ludewala cct - I &amp; II at 220kV Grid Station Lalian successfully completed in all respect.</li> <li>b) 220kV Gatti- Lalian cct-II energized on load at 21:22 AM dated 29.10.22</li> <li>c) 220kV Lalian-Ludewala cct-I energized on load at 22:05 AM dated 29.10.22</li> <li>d) 220kV Gatti-Lalian cct-I energized on load at 03:25 AM dated 30.10.22</li> <li>e) 220kV Lalian-Ludewala cct-II energized on load at 03:30 AM dated 30/10/22</li> <li>f) 250MVA 220/132kV Auto Transformer T-1 at 220kV Grid Station Lalian successfully put "On Load" at 05:50 PM dated 28 -11-2022.</li> <li>g) All the transformers of this project have been energized and work effectively on loading condition.</li> </ul> <p><u>Transmission Line</u></p> <ul style="list-style-type: none"> <li>□ 220 kV Gatti-Ludewala circuit 2 will be energized through 220 kV Dia No. 3, will be energized by 15.08.2022.</li> </ul>
	b) Physical completion (in %age terms):	100 %
11.	Outcomes / Benefits of the project after completion	<ul style="list-style-type: none"> <li>□ It is system constraint project, necessary to fulfil load demand of chiniot region.</li> <li>□ Improvement in power supply position.</li> <li>□ Improvement in voltage profile of existing FESCO grid network.</li> <li>□ Reduction in transmission system losses.</li> <li>□ Improvement in reliability of NTDC and Discos system networks</li> </ul>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 89**

1.	Name of Project	4 Nos. New Projects to be Financed by JBIC (i) 500 KV Rahim Yar Khan Grid Station & Transmission Line (ii) 220 KV Chistian Grid Station & 220 KV Vehari –Chistian Transmission Line (iii) 220 KV Gujrat Grid Station & 220 KV Transmission Line (iv) 220 KV Shamamar Grid Station & 200 KV Transmission Line (Japan)
2.	Location	Punjab
3.	Sponsoring agency	JICA
4.	Executing agency	NTDC
5.	Scope in Brief/Objectives	<p><b><u>500 KV Sub-station R.Y Khan.</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 2x600 MVA, 500/220 KV T/F with controlling switch gear on both side.</li> <li><input type="checkbox"/> 500KV S/C T/L with line controlling equipment for In/Out of 500KV Guddu to Multan 3<sup>rd</sup> Circuit at R.Y Khan (30+30km).</li> <li><input type="checkbox"/> 2X250 MVA 220/132KV T/Fs with controlling switch gear on both sides.</li> <li><input type="checkbox"/> 6.3 MVA 132/11 KV T/Fs with controlling switch gear for auxiliary services.</li> <li><input type="checkbox"/> Six 132KV line bays for interconnection of 132KV T/Ls.</li> </ul> <p><b><u>220KV Substation Gujrat.</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 3x250MVA, 220/132KV T/Fs with controlling switch gear on both sides.</li> <li><input type="checkbox"/> 220KV D/C T/L with line controlling equipment for In/Out of existing 220 KV Mangla-Ghakkar D/C at Gujrat New (2+2km).</li> <li><input type="checkbox"/> 6.3 MVA 132/11 KV T/Fs with controlling switch gear for auxiliary services.</li> <li><input type="checkbox"/> Eight 132KV line bays for interconnection of 132KV T/Ls.</li> </ul> <p><b><u>220KV GIS Substation Shalamar Lahore.</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 3x160MVA, 220/132KV T/Fs with controlling switch gear on both sides.</li> <li><input type="checkbox"/> 220KV D/C T/L with line controlling equipment for In/Out of one circuit of Ravi K.S.K T/L at Shalamr (9km long overhauled T/L and 3+3km underground cable).</li> <li><input type="checkbox"/> 6.3 MVA 132/11 KV T/Fs with controlling switch gear for auxiliary services.</li> <li><input type="checkbox"/> Six 132KV line bays for interconnection of 132KV T/Ls.</li> </ul> <p><b><u>220KV Substation Chistian.</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 3x250MVA, 220/132KV T/Fs with controlling switch gear on both sides.</li> <li><input type="checkbox"/> 220KV Chistian-Vehari D/C T/L with line controlling equipment (65km) on both sides.</li> </ul>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

		<input type="checkbox"/> 6.3 MVA 132/11 KV T/Fs with controlling switch gear for auxiliary services. <input type="checkbox"/> Eight 132KV line bays for interconnection of 132KV T/Ls.
9.	Date of Approval with Forum	
	Original date	Revised date
	ECNEC 27.10.2007	
10.	Actual date of commencement:	Chishtian : 12.03.2012 Gujrat: 27.09.2013 Shalamar : 22.12.2010 500kV R.Y.Khan: G/Station: 09.11.2010 ; T/Line: 08.10.2016
11.	Completion date (As per PC-I):	June, 2011
12.	Likely completion date: (Actual)	Chishtian: 24.10.2016 Gujrat: 27.04.2017 Shalamar: 07.03.2014 500kV R.Y.Khan GS & TL: 03.02.2018
15.	Financial Progress:	
	a) Actual total expenditure upto 31 Dec 2021	13362.5
	b) %age financial progress to-date:	99 %
16.	Physical progress:	
	a) Physical progress (major works done):	220kV G/S Gujrat, 220 kV G/S Shalamar and 220kV G/S Chistian completed and in operation 500kV Rahim Yar Khan Completed and in operation Transmission Line completed and in operation
	b) Physical completion (in %age terms):	100%
20.	Benefits on completion of project / employment generation during and after completion of project:	<input type="checkbox"/> Improvement of voltage profile of Lesco, Mepco and Gepco regions. <input type="checkbox"/> To fulfilment of future load demand. <input type="checkbox"/> Reduction in the loading of 220/132kV transformers at Guddu and Bahawalpur substations feeding R.Y.Khan and its surrounding network. <input type="checkbox"/> Removal of 132kV transmission bottlenecks in MEPCO network feeding R.Y.Khan and its surrounding network. <input type="checkbox"/> Reduction in transmission line losses. <input type="checkbox"/> Improvement in voltage profile. <input type="checkbox"/> Improvement in system reliability especially at/around R.Y.Khan.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 90**

1.	Name of Project	<b>500 kV Substation Faisalabad West Grid Station (Phase-I)</b>
2.	Location	Faisalabad, Punjab
3.	Scope in Brief / Objectives	2x500/220 kV, 750 MVA T/Fs 3x220/132 kV, 250 MVA T/Fs
4.	a) Category	<input type="radio"/> System Constraints <input type="radio"/> System Reliability
	b) Type	<input type="radio"/> Development
6.	Funding:	JICA (PK-P58)
7.	Approval Forum	ECNEC
8.	Commencement Date	24-Oct-2019
9.	Expected Completion date	08.03.2023
10.	Physical progress:	
	a) Physical progress (major works done):	<input type="checkbox"/> 750MVA, 500/220 kV Auto Transformer <b>Bank - 2</b> of 500 kV G/S Faisalabad West successfully energized on no-load at 11:15 pm dated <b>25-01-2022</b> . <input type="checkbox"/> 750 MVA, 500/220 kV Auto Transformer <b>Bank - 3</b> of 500 kV G/S Faisalabad West successfully energized on no-load at 06:50 pm dated <b>31-03-2022</b> . <input type="checkbox"/> First 250 MVA 220/132KV T/F put ON LOAD on <b>01-02-2022</b> . <input type="checkbox"/> Second 250 MVA, 220/132 kV transformer energized on <b>12-04-2022</b> . <input type="checkbox"/> Third T/F of 250 MVA, 220/ 132 kV has been energized on <b>08.03.2023</b> .
	b) Physical completion (in %age terms):	99.73 %
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> The project fulfil the load demand of FESCO region. <input type="checkbox"/> Reduce voltage dip of FESCO region. <input type="checkbox"/> Remove constraint of system (over loading of respective region T/Fs). <input type="checkbox"/> Improvement in power supply position. <input type="checkbox"/> Improvement in voltage profile of existing grid network. <input type="checkbox"/> Improvement in reliability of NTDC and FESCO system networks

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 91**

1.	Name of Project	Addition of 500/220KV Sub Station T/L for Strengthening the existing NTDC system i) <b>500KV Shikarpur</b> ii) Lahore South (JICA Loan No. PK-P61)
2.	Location	Punjab & Sindh
3.	Scope in Brief / Objectives	<p><b><u>500kV Shikarpur Grid Station</u></b></p> <p><input type="checkbox"/> 3x200MVA, 500/220kV Auto Transformer</p> <p><b><u>Transmission Line</u></b></p> <p><input type="checkbox"/> 500kV D/C T/Lines for In &amp; Out of 500kV Dadu-Guddu T/Line Circuits I &amp; II (32.3km) and 220kV D/C T/Line for In &amp; Out of 220kV Guddu-Sibbi T/Line at 500kV Shikarpur G/Station (52.8km)</p> <p>The project aims at enhancing the capacity of the transmission system by upgradation of existing 220kV Shikarpur substation to 500kV new Substation alongwith associated T/Line to meet the growing power requirement of Shikarpur District and adjoining areas for industrial, agricultural and economic development, and to improve the overall efficiency of the power distribution network of SEPCO. Also it will increase its capacity to meet the economic growth target and to evacuate power from new IPPs including Uch-II, Engro and Fauji Fertilizer Power Plants. Implementation of the project will also help to meet power demand of the SEPCO area.</p> <p><b><u>Lahore South G/S :</u></b></p> <p><input type="checkbox"/> 2X750MVA, 500/220 kV Auto Transformers.</p> <p><input type="checkbox"/> 500 kV Line bays: 04 Nos.</p> <p><input type="checkbox"/> 220 kV Line bays: 04 Nos.</p> <p><input type="checkbox"/> One 750 MVA 500/220 Auto Transformer Bank</p> <p><input type="checkbox"/> 1+2/3rd 500 kV bays</p> <p><input type="checkbox"/> 2/3rd 220 kV bays</p> <p><b><u>Lahore South associated T/L:</u></b></p> <p><input type="checkbox"/> <b>Lot- IA</b> In &amp; Out arrangement of 500 kV Sahiwal - Lahore T/Line at New Lahore 500 kV Substation (15 KM)</p> <p><input type="checkbox"/> <b>Lot- IB</b> In &amp; Out arrangement of 500 kV Ghakhar - Lahore T/Line at New Lahore 500 kV Substation (50 KM)</p> <p><input type="checkbox"/> <b>Lot- IIA</b> In &amp; Out arrangement of 220 kV New Kot Lakhpat -Ghazi Road T/Line at New Lahore 500 kV Substation (50 KM)</p> <p><input type="checkbox"/> <b>Lot-IIB</b> In &amp; Out arrangement of 220 kV Wapda Town – New Kot Lakhpat T/Line at New Lahore 500 kV Substation (36 KM)</p> <p><input type="checkbox"/> <b>Lot-IIC</b> In &amp; Out arrangement of 220 kV Mangla – Ghakhar T/Line at Gujrat 220 kV Substation (2 KM)</p>
4.	a) Category	<p><input type="radio"/> Power Evacuation</p> <p><input type="radio"/> <b>System Reliability</b></p> <p><input type="radio"/> System Constraints</p>

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

	b) Type	<ul style="list-style-type: none"> <li>○ Extension</li> <li>○ Augmentation</li> <li>○ <b>Development</b></li> </ul>
6.	Funding:	JICA
7.	Approval Forum	ECNEC 09.12.2010
8.	Commencement Date	<u><b>Shikarpur G/S</b></u> G/Station: 03.08.2012 T/Line: 27.06.2013 <u><b>Lahore New G/S:</b></u> G/S: 16.11.2012 T/L : 12.03.2013
9.	Actual Completion date	<u><b>Shikarpur G/S</b></u> G/Station: 23.05.2016 T/Line: 15.05.2016 <u><b>Lahore New G/S:</b></u> G/S: 07.12.2017 T/L : 26.04.2019
10.	Physical progress:	
	a) Physical progress (major works done):	Completed & Energized
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<ul style="list-style-type: none"> <li><input type="checkbox"/> Reduction in the loading of 500/220kV transformers at Guddu Power House.</li> <li><input type="checkbox"/> Reduction in transmission line losses.</li> <li><input type="checkbox"/> Improvement in overall system reliability of NTDC network with respect to export of southern generation to the northern load centres.</li> </ul> <u><b>Lahore South G/S:</b></u> <ul style="list-style-type: none"> <li><input type="checkbox"/> The project fulfil the load demand of LESCO region.</li> <li><input type="checkbox"/> Reduce voltage dip of LESCO region.</li> <li><input type="checkbox"/> Remove constraint of system (over loading of respective region T/Fs).</li> </ul> Improvement in power supply position.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 92**

1.	Name of Project	Construction of New 220kV Guddu-Uch-Sibbi Single Circuit Transmission Line for Improvement of Power Supply System in South Areas
2.	Location	Sindh & Balochistan
3.	Scope in Brief / Objectives	<input type="checkbox"/> 220kV Guddu to Interconnection point of 220kV Shikapur (108.4 km) <input type="checkbox"/> 220kV Shikarpur Interconnection point to Uch Power House (92.6km) <input type="checkbox"/> Uch Power House to 220kV Sibbi Substation (115 km) The main objective of this project is to strengthen the transmission line network in Balochistan, the least electrified province in Pakistan, in order to meet the demand for electric power which has been rapidly increasing in that province and to enhance the reliability of power facilities thus contributing to the development of the local economy and the stabilization of the people's livelihood.
4.	a) Category	<input type="radio"/> Power Evacuation <input type="radio"/> <b>System Reliability</b> <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <input type="radio"/> <b>Development</b>
6.	Funding:	Asian Development Bank (ADB)
7.	Approval Forum	ECNEC (24.11.2017)
8.	Commencement Date	Lot-II: 09-07-2019 Lot-III: 26-06-2019 Lot-IV: 26-06-2019
9.	Expected Completion date	Lot-II: 14.04.2022, Lot-III: 10.11.2021, Lot-IV: 28.02.2022
10.	Physical progress:	
	a) Physical progress (major works done):	<b>LOT-II (Guddu-Shikarpur section):</b> 220kV T/Line Guddu-Shikarpur has been successfully energized on dated: 03.06.2023 @ 22:52 Hrs.  <b>LOT-III (Shikarpur-Uch section):</b> Completed & successfully energized on Load dated 23.03.2022. <b>LOT-IV (Uch-Sibbi section):</b> 108 km of 220kV T/L UCH-II-Sibbi Circuit-I & II has been completed & successfully energized on Load dated 28/02/2022. Remaining 07 km portion energized on 18/06/2022 & 25/06/2022.
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Stable and un-interrupted power supply to Balochistan & Sindh province. <input type="checkbox"/> Reduction in operational problems & system constraints. <input type="checkbox"/> Enhancement in transmission line capacity by installation of twin bundled configuration enabling utilization of full capacity of Uch Power Plants.



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 93**

1.	Name of Project	Evacuation of power from 1320MW Power Plant at Sahiwal
2.	Location	Sahiwal, Punjab
3.	Scope in Brief / Objectives	0.5 km , 500 kV T/Line from Yousafwala to Lahore in/ out at sahiwal power plant.  Addition of 600 MVA, 500/ 20 kV T/F at 500 kV yousafwala G/S.  Replacement of 3 220 kV CB at 500 kV Yousafwala G/S.
4.	a) Category	Power Evacuation
	b) Type	<b>Extension</b>
6.	Funding:	ADB
7.	Approval Forum	ECNEC
8.	Commencement Date	21.02.2019
9.	Actual Completion date	22.07.2020.
10.	Physical progress:	
	a) Physical progress (major works done):	Completed and Energized.
	b) Physical completion (in %age terms):	<b>100 %</b>
11.	Outcomes / Benefits of the project after completion	Power evacuation from Sahiwal thermal power plant.  Up gradation of 500 kV Yousafwala G/S.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 94**

1.	Name of Project	<b>Extension/Augmentation at 500/220 kV Rawat Substation</b>
2.	Location	Punjab
3.	Scope in Brief / Objectives	<input type="checkbox"/> 1 x 750 MVA T/F at Rawat 500/220 kV substation The project will help in reduction of overall loading of transformers and will help increasing of overall power transfer capability of 500/220 kV Rawat Grid station.
4.	a) Category	<input type="radio"/> Power Evacuation <input type="radio"/> <b>System Reliability</b> <input type="radio"/> <b>System Constraints</b>
	b) Type	<input type="radio"/> <b>Extension</b> <input type="radio"/> <b>Augmentation</b> <input type="radio"/> Development
6.	Funding:	Asian Development Bank (ADB)
7.	Approval Forum	CDWP
8.	Commencement Date	23-06-2018
9.	Actual Completion date	05-04-2019
10.	Physical progress:	100%
	a) Physical progress (major works done):	Project completed.
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> The project will help in reduction of overall loading of transformers at 500/220 kV Grid Station Rawat. <input type="checkbox"/> The project will help increasing of overall power transfer capability of 500/220 kV Rawat grid station. <input type="checkbox"/> It will also help in improvement of overall voltage profile at/around Rawat grid station and grid station in adjacent areas.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 95**

1.	Name of Project	<b>Improvement &amp; Upgradation of Protection System to Avoid the Frequent Trippings in South Areas</b>
2.	Location	Southern areas of the country in Sindh and Baluchistan Province.
3.	Scope in Brief / Objectives	Main objective of the proposed project is improvement in reliability of Protection System in Southern areas of NTDC network by installation of Shunt Reactors, Protection Relays, Event Recorder, Fault Locator & Fault Recorder etc. at various 500kV & 220kV Grid stations
4.	a) Category	a) Power Evacuation <b>b) System Reliability</b> c) System Constraints
	d) Type	a) Extension <b>b) Augmentation (of Secondary System)</b> c) Development
6.	Funding:	Asian Development Bank under Loan No. 3419-PAK (MFF-II, Tranch-I)
7.	Approval Forum	CDWP 08.06.2016
8.	Commencement Date	14-03-2019
9.	Actual Completion date	31-03-2022
10.	Physical progress:	100% (Completed)
	a) Physical progress (major works done):	Protection Systems (Even/Fault recorders) installed at 11 Nos. 500kV & 220kV Grid Stations in South Areas
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	Avoiding frequent trippings occurred due to underrated & outdated equipment and provide stable power supply to the respective DISCO's.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 96**

1.	Name of Project	<b>Strengthening of TSG Centre for Grid System Operations and Maintenance.</b>
2.	Location	Lahore
3.	Scope in Brief / Objectives	<input type="checkbox"/> Up gradation of GSO operation Training Simulator to include 765kV, 500kV, $\pm 660$ kV HVDC, Solar Power System and wind Power System <input type="checkbox"/> Preparation of Scenarios for Simulator Trainings <input type="checkbox"/> Additional Scope of the Project: Study, Investigate and Recommend Countermeasure to prevent Blackout on Guddu Power Station incident on 09.01.2021 <input type="checkbox"/> Training of Trainers at Japan of 10 Nos. TSG/GSO Training Instructors/ Experts <input type="checkbox"/> Provision of 32 Nos. PC Type GSO Simulators Provided at different Grid Stations of NTDC Pakistan
4.	a) Category	Other
	b) Type	Other
6.	Funding:	JICA Japan Grant Aid
7.	Approval Forum	MD NTDC/ JICA Japan
8.	Commencement Date	11.06.2021
9.	Actual Completion date	December 2023
10.	Physical progress:	<p>The Following activities has been completed as per scope of work within stipulated period:</p> <input type="checkbox"/> Up gradation of GSO operation Training Simulator to include 765kV, 500kV, $\pm 660$ kV HVDC, Solar Power System and wind Power System <input type="checkbox"/> Preparation of Scenarios for Simulator Trainings <input type="checkbox"/> Additional Scope of the Project: Study, Investigate and Recommend Countermeasure to prevent Blackout on Guddu Power Station incident on 09.01.2021 <input type="checkbox"/> Training of Trainers at Japan of 10 Nos. TSG/GSO Training Instructors/ Experts Provision of 32 Nos. PC Type GSO Simulators Provided at different Grid Stations of NTDC Pakistan (handed over to concerned Grid Stations).
	a) Physical progress (major works done):	99%
	b) Physical completion (in %age terms):	<input type="checkbox"/> Improvements in skills of trainees <input type="checkbox"/> Practical Knowledge through GSO and P&I Simulators <input type="checkbox"/> Practical Knowledge through Training Purpose Model Grid Station <input type="checkbox"/> GSO Simulators are the part of Training Courses that are being imparted at TSG Training Centre i.e. Technical Induction Training Program, Technical Refresher Courses, Sector Specific Courses, Promotion Criteria Courses of Grid Operation and Maintenance, Protection and Instrumentation, Transmission lines, Skill Enhancement courses of P&I and Grid Maintenance and Operation Staff and other Short Courses. <input type="checkbox"/> TSG training Capacity enhanced. <input type="checkbox"/> 32Nos. of PC Type GSO Simulator are handed over to different grid stations for improvement of O&M on job training practices. Last AEC/JICA team visit is expected to be scheduled in November 2023

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 97 (Part-I)**

1.	Name of Project	<b><u>500kV HVAC T/L for Interconnection of HVDC Converter Station at Lahore with HVAC System (2.587 KM)</u></b>
2.	Location	Punjab
3.	Scope in Brief	<input type="checkbox"/> 500kV Double Circuit Quad Bundled Transmission Line SKP-Lahore (South) CCT-II In & OUT at HVDC Converter Station. <input type="checkbox"/> NO. of Towers = 11 Nos. <input type="checkbox"/> Length of T/Line= 2.587 KM
4.	a) Category	<input type="radio"/> Power Evacuation <input type="radio"/> <b>System Reliability</b> <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <input type="radio"/> <b>Development</b>
6.	Funding:	NTDC own Resources.
7.	Approval Forum	ECNEC
8.	Commencement Date	22.08.2019
9.	Actual Completion date	28.05.2020
10.	Physical progress:	
	a) Physical progress (major works done):	Completed & Energized
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Enhance transmission capacity of system. <input type="checkbox"/> Reduce line losses of system. <input type="checkbox"/> Interconnection of HVDC and HVAC system.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 97 (Part-II)**

1.	Name of Project	<b><u>500kV HVAC T/L for Interconnection of HVDC Converter Station at Lahore with HVAC System (10KM)</u></b>
2.	Location	Punjab
3.	Scope in Brief	<input type="checkbox"/> 500kV Double Circuit Quad Bundled Transmission Line SKP-Lahore (South) CCT-I In & OUT at HVDC Converter Station. <input type="checkbox"/> Length of T/Line: 10 KM
4.	a) Category	<input type="radio"/> Power Evacuation <input type="radio"/> <b>System Reliability</b> <input type="radio"/> System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <input type="radio"/> <b>Development</b>
6.	Funding:	NTDC own Resources.
7.	Approval Forum	ECNEC
8.	Commencement Date	15.11.2019
9.	Actual Completion date	24.09.2020.
10.	Physical progress:	
	a) Physical progress (major works done):	Completed & Energized
	b) Physical completion (in %age terms):	100%
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Enhance transmission capacity of system. <input type="checkbox"/> Reduce line losses of system. <input type="checkbox"/> Interconnection of HVDC and HVAC system.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 98**

1.	Name of Project	LOAD Dispatch Upgradation Project LDSUP									
2.	Location	NPCC Islamabad									
3.	Scope in Brief / Objectives	Up-gradation/extension of old Telecom System with new state of the art system including laying of Optical Ground Wire (OPGW) on existing transmission lines and integrated Telephone System.  <ul style="list-style-type: none"><li>• Installation &amp; Commissioning of new Remote Terminal Units (RTUs) at NTDC/WAPDA GENCO stations.</li><li>• Interfacing of existing RTUs at IPPs through Protocol Converters (Software)</li><li>• Replacement of old Supervisory Control and Data Acquisition (SCADA) System at NPCC, Islamabad.</li><li>• Construction of residential accommodation for NPCC staff</li></ul>									
4.	c) Category	<ul style="list-style-type: none"><li>○ Power Evacuation</li><li>○ <b>System Reliability</b></li><li>○ System Constraints</li></ul>									
	d) Type	<ul style="list-style-type: none"><li>○ <b>Extension</b></li><li>○ Augmentation</li><li>○ Development</li></ul>									
6.	Funding:	JICA Funded as Loan No. PK P-54,									
7.	Approval Forum	Approval by ECNEC: 07-01-2004									
8.	Commencement Date	Contract date 31-03-2010 Substantial TOC Issued 14-09-2014									
9.	Expected Completion date	Settlement agreement signed for the closure of the said project on 15-06-2023 after the approval of BOD NTDC now the expected completion date September 2024.									
10	Physical progress:										
	c) Physical progress (major works done):										
		<table><tr><th>Sr. No.</th><th>Equipment</th><th>Quantity as per Contract</th><th>Total Working</th><th>% of Working</th></tr><tr><td>1</td><td>Control</td><td>1</td><td>1</td><td>100%</td></tr></table>	Sr. No.	Equipment	Quantity as per Contract	Total Working	% of Working	1	Control	1	1
Sr. No.	Equipment	Quantity as per Contract	Total Working	% of Working							
1	Control	1	1	100%							

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

				Centre				
			2	SDH/PDH	20	17	85%	
			3	BATTERY CHARGER	90	79	88%	
			4	OPGW	586 km	586 km	100%	
			5	EXCHANGES/PABX	41	28	70%	
			6	DPLC	71	54	76%	
			7	RTU	56	43	77%	
			Total Average %				85.14%	
d) Physical completion (in %age terms):	Total Average in percentage=85.14%							
11.	Outcomes / Benefits of the project after completion	<div><input type="checkbox"/> Provision of reliable supply of electricity to consumers.</div> <div><input type="checkbox"/> GE will deploy one (01) software resource to NPCC for one (01) Year from the signature date of the final closure agreement. GE will support NPCC team during any fault/maintenance activity.</div> <div><input type="checkbox"/> Training on SCADA integration for NPCC Engineers.</div> <div><input type="checkbox"/> Improvement of SCADA SYTEM of NPCC, NTDC Control Center.</div> <div><input type="checkbox"/> Rectification of SCADA EMS Fault which helps till take over of SCADA PAHASE 3 project.</div>						



**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25****Project Sr. No. 99**

1.	Name of Project	Evacuation of Power from 747 MW Guddu Power Project
2.	Location	Sindh, Punjab
3.	Scope in Brief	<input type="checkbox"/> 500 kV Guddu New-Muzaffargarh T/Line on 04 Bundle Drake Conductor (256 Km). <input type="checkbox"/> 500 kV T/Lines on 04 Bundle Drake Conductor for looping In/Out of D.G Khan-Multan 500 kV T/Line at 500 kV Muzaffargarh Substation (10+10 Km). <input type="checkbox"/> Three 500 kV Line Bays at Muzaffargarh Substation. The main objective of the project is power dispersal arrangements from 747 MW additional Combined Cycle Power Plant at Guddu by construction of 500kV Transmission Lines from Guddu to Muzaffargarh along with extension at 500 kV Muzaffargarh Substation.
4.	a) Category	<input type="radio"/> <b>Power Evacuation</b> <input type="radio"/> System Reliability System Constraints
	b) Type	<input type="radio"/> Extension <input type="radio"/> Augmentation <b>Development</b>
6.	Funding:	ADB
7.	Approval Forum	ECNEC 29.07.2011
8.	Commencement Date	<b>Lot-I:</b> 22-12-2017 <b>Lot-II:</b> 15-10-2018 <b>Lot-III:</b> 12-10-2018 <b>Lot-IV:</b> 29-12-2017
9.	Actual Completion date	04-03-2020
10.	Physical progress:	<b>Lot-I:</b> Concrete: 204/204 No. ; Erection: 204/204 No. Stringing: 74.01/74.01 km <b>Lot-II:</b> Concrete: 206/206 No. ; Erection: 206/206 No. Stringing: 72/72km <b>Lot-III:</b> Concrete: 189/189 No. ; Erection: 188/189 No.

**NTDC PROJECT PROFILES/BRIEFS - REVISED TRANSMISSION INVESTMENT PLAN FY23 – 25**

		Stringing: 44.93/69km <b>Lot-IV:</b> <u>Single Circuit</u> Concrete: 132/132 Nos. ; Erection: 131/132 Nos. Stringing: 45.4/45.4 km <u>Double Circuit</u> Concrete = 27/27 Nos. ; Erection: 27/27 Nos. Stringing: 8.46/8.46 km
	a) Physical progress (major works done):	
	b) Physical completion (in %age terms):	<b>100%</b>
11.	Outcomes / Benefits of the project after completion	<input type="checkbox"/> Smooth transmission of power to National Grid which will help bridge the demand-supply gap for elimination of severe load shedding in country. <input type="checkbox"/> Improvement & enhancement in overall power system efficiency, reliability and power supply position in MEPCO areas. Improvement in voltage profile of 220kV and 132kV Grid Stations in MEPCO areas.

## (Rs. in million)

Sr. No.	Name of Project	Approval Status	PC-1/Estimates Cost			Actual Expenditure upto May, 2023			Budget 2022-23 (Revised)			Estimates 2023-24			Projection 2024-25		
			Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
A1. PSDP - Through PSDP Budget SEZs																	
1	220/132 Kv GIS Substation Dhabiji	CDWP 16.12.2020	2,953.3	3,220.9	6,174.2	553.1	-	553.1	600.0	-	600.0	4,500.0	-	4,500.0	880.0	-	880.0
2	220kV Haripur Substation	CDWP 30.01.2020	1,378.0	2,428.0	3,806.0	366.9	-	366.9	451.0	-	451.0	4,250.0	-	4,250.0	100.0	-	100.0
3	220kV Swabi Substation	CDWP 17.10.2019	2,581.8	3,818.0	6,399.8	696.1	-	696.1	588.0	-	588.0	4,450.0	-	4,450.0	500.0	-	500.0
4	220 kV Quaid-e-Azam Apparel and Business Park (QABP) Grid Station for Provision of Electricity to PIEDMC SEZ	CDWP 19.04.2021	1,216.3	1,837.9	3,054.1	202.9	-	202.9	300.0	-	300.0	3,200.0	-	3,200.0	200.0	-	200.0
5	500kV Allama Iqbal Industrial City for 600MW Demand of the Special Economic Zone in the FIEDMC area	CDWP 25.05.2021	2,049.7	3,926.1	5,975.8	209.1	-	209.1	350.0	-	350.0	4,500.0	-	4,500.0	5,500.0	-	5,500.0
A2. PSDP New - Through PSDP Budget Land Acquisition																	
6	Land Acquisition for Installation of 600MW Solar Power Plant at Disstt: Muzaffargarh	CDWP 28.10.2022	1,400.0	-	1,400.0	930.0	-	930.0	930.0	-	930.0	470.0	-	470.0	-	-	-
7	Land Acquisition for Installation of 600MW Solar Power Plant at Tehsil Athara Hazari Disstt: Jhang	CDWP 28.10.2022	2,558.0	-	2,558.0	-	-	-	1,500.0	-	1,500.0	1,058.0	-	1,058.0	-	-	-
8	Land Acquisition for Installation of 1200MW Solar Power Plant at Sher Garh Tehsil Chubara Disstt: Layyah	CDWP 28.10.2022	2,658.0	-	2,658.0	-	-	-	-	-	-	2,658.0	-	2,658.0	-	-	-
A3. PSDP - Ongoing Schemes																	
9	500kV HVDC Transmission System between Tajikstan and Pakistan for Central Asia-South Asia Transmission Interconnection (CASA-1000)	ECNEC 29.08.2019	16,053.0	30,751.0	46,804.0	8,249.2	28,723.7	36,972.9	5,400.0	14,186.5	19,586.5	12,586.2	15,130.6	27,716.8	2,000.0	5,000.0	7,000.0
10	Evacuation of power from 2160MW DASU HPP Stage-I	ECNEC 01.10.2020	20,021.0	112,228.7	132,249.8	2,046.3	26,665.6	28,712.0	539.8	25,854.0	26,393.8	3,250.7	14,443.5	17,694.2	13,088.0	39,056.1	52,144.2
11	500-KV Lahore, North.	ECNEC 24.11.2017	9,224.0	11,508.0	20,732.0	6,162.8	15,194.8	21,357.7	5,600.0	14,500.0	20,100.0	2,945.0	9,595.0	12,540.0	150.0	2,000.0	2,150.0
12	Evacuation of Power from Suki Kinari, Kohala, Mahal HPPs (Revised Name "Evacuation of Power from Suki Kinari")	ECNEC 14.11.2018	35,815.0	44,115.0	79,930.0	14,762.3	812.7	15,574.9	13,762.1	500.0	14,262.1	11,000.0	15,000.0	26,000.0	100.0	341.0	441.0
13	Enhancement in Transformation Capacity of NTDC System by Extension and Augmentation of Existing Grid Stations	ECNEC 12.04.2017	4,539.0	11,987.0	16,526.0	1,275.9	9,745.8	11,021.7	1,416.0	6,643.4	8,059.5	3,050.0	9,150.0	12,200.0	500.0	1,300.0	1,800.0
14	500KV Islamabad West	ECNEC 20.07.2016	3,621.0	4,667.0	8,288.0	-	-	-	-	-	-	1,200.0	7,000.0	8,200.0	10,410.4	23,509.2	33,919.6
15	220-KV Dera Ismail Khan - Zhob Transmission Line alongwith 220-KV Zhob Sub-Station.	ECNEC 07.11.2016	3,784.5	3,094.0	6,878.5	5,454.0	7,918.5	13,372.5	411.0	1,461.8	1,872.8	175.0	900.0	1,075.0	-	-	-
16	220-KV Jauharabad G/S alongwith allied T/Ls.	CDWP 02.05.2018	1,203.0	1,758.0	2,961.0	333.3	363.4	696.7	145.0	133.0	278.0	587.5	1,500.0	2,087.5	1,000.0	2,200.0	3,200.0
17	220kV Mirpur Khas G/S alongwith allied T/Ls	ECNEC 07.11.2016	2,002.0	1,855.0	3,857.0	312.4	292.1	604.5	260.0	1,100.0	1,360.0	545.0	1,530.0	2,075.0	300.0	1,000.0	1,300.0
18	Now 220KV Transmission System Network Reinforcement in Islamabad & Burhan	ECNEC 09.01.2016	1,817.4	1,802.0	3,619.4	530.0	65.4	595.4	34.0	5.0	39.0	100.0	100.0	200.0	-	-	-
19	Conversion from 220kV Substations at Bund Road, Kala Shah Kaku, Ravi and Nishatabad to GIS Technology	ECNEC 07.03.2017	2,525.0	3,159.0	5,684.0	-	70.3	70.3	-	-	-	-	-	-	-	-	-

Sr. No.	Name of Project	Approval Status	PC-I/Estimates Cost			Actual Expenditure upto May, 2023			Budget 2022-23 (Revised)			Estimates 2023-24			Projection 2024-25		
			Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
20	Enterprise Resource planning (ERP) (Now Implementation of Integrated Solution to improve Productivity and Control in NTDC by ERP System)	CDWP 19.03.2018	1,192.5	1,390.6	2,583.1	18.4	569.2	587.6	25.0	400.0	425.0	380.5	2,156.4	2,536.9	200.0	300.0	500.0
21	Evacuation of Power from Tarbela 5th Extension.	ECNEC 24.11.2017	2,048.9	2,091.4	4,140.3	48.9	653.8	702.7	90.0	654.0	744.0	653.0	450.0	1,103.0	200.0	300.0	500.0
22	Evacuation of power from wind power projects at Jhimpir and Gharo Wind Clusters (Revised)	ECNEC 06.01.2020	6,543.0	6,863.0	13,406.0	12,138.4	49.6	12,188.1	100.0	125.0	225.0	700.0	650.0	1,350.0	100.0	-	100.0
23	Installation of Pilot Battery Energy Storage System (BESS) at 220kV Jhampir G/Station	CDWP 25.05.2018	113.1	827.4	940.4	2.2	275.6	277.7	10.0	290.0	300.0	250.0	2,000.0	2,250.0	50.0	230.0	280.0
24	Evacuation of Power from 1224MW Wind Power Plants at Jhampir Clusters	ECNEC 24.11.2017	6,047.2	4,705.5	10,752.6	11,114.1	-	11,114.1	7,889.0	-	7,889.0	950.0	-	950.0	-	-	-
25	Upgradation/ Extension of NTDC's Telecommunication & SCADA System at NPCC	ECNEC 07.03.2018	3,172.0	8,466.0	11,638.0	399.1	6,658.7	7,057.8	750.0	3,050.0	3,800.0	1,660.0	6,640.0	8,300.0	50.0	100.0	150.0
A4. PSDP - New Schemes																	
26	220kV Arifwala Substation	CDWP 04.06.2022	4,209.0	4,534.0	8,743.0	-	-	-	50.0	-	50.0	205.0	100.0	305.0	2,500.0	5,500.0	8,000.0
27	220kV Dharki - Rahim Yar Khan - Bhawalpur D/C T/L	ECNEC 02.10.2019	5,995.0	9,800.0	15,795.0	55.2	-	55.2	810.0	-	810.0	117.5	100.0	217.5	140.0	275.0	415.0
28	220KV Head Faqiran G/S alongwith allied T/Ls.	ECNEC 15.07.2019	2,821.0	2,991.0	5,812.0	284.8	-	284.8	300.0	10.0	310.0	160.0	100.0	260.0	2,000.0	2,900.0	4,900.0
29	220-KV Jamrud G/S alongwith allied T/Ls.	CDWP 19.10.2017	1,029.0	1,369.0	2,398.0	32.6	-	32.6	25.0	-	25.0	3,000.0	9,000.0	12,000.0	200.0	1,000.0	1,200.0
30	220kV Larkana Substation	CDWP 17.10.2019	2,443.0	4,006.0	6,449.0	10.0	-	10.0	5.0	5.0	10.0	230.0	100.0	330.0	1,000.0	200.0	1,200.0
31	220-KV Mastung G/S slongwth allied T/Ls.	ECNEC 22.05.2018	1,997.0	2,903.0	4,900.0	105.3	-	105.3	10.0	-	10.0	280.0	100.0	380.0	2,200.0	5,000.0	7,200.0
32	500/220kV Sialkot Substation	ECNEC 07-10-2022	14,618.4	17,202.0	31,820.4	-	-	-	10.0	-	10.0	700.0	1,000.0	1,700.0	2,500.0	6,000.0	8,500.0
33	500kV Chakwal G/S alongwith allied T/Ls	CDWP 18.11.2019	3,323.9	5,602.5	8,926.4	762.2	-	762.2	10.0	-	10.0	240.0	100.0	340.0	800.0	1,600.0	2,400.0
34	Upgradation of Existing 220kV Vehari Sub-Station to 500 kV Vehari Sub-Station	ECNEC 07-10-2022	7,590.9	9,515.6	17,106.5	-	-	-	170.0	-	170.0	120.0	100.0	220.0	800.0	1,600.0	2,400.0
35	220kV Gujranwala-II Substation	PC-I Under preparation	2,838.9	6,624.1	9,463.0	105.8	-	105.8	10.0	-	10.0	400.0	100.0	500.0	1,500.0	1,000.0	2,500.0
36	220-KV Kamra G/s alongwith allied T/Ls.	Submitted to PC on 22.11.2019	1,182.0	2,050.0	3,232.0	151.2	-	151.2	5.0	-	5.0	400.0	100.0	500.0	1,500.0	3,000.0	4,500.0
37	220-KV Kohat G/s alongwith allied T/Ls.	PC-I Under preparation	5,280.0	7,920.0	13,200.0	-	-	-	5.0	-	5.0	500.0	100.0	600.0	700.0	1,200.0	1,900.0
38	220kV Nag Shah Grid Station	PC-I under preparation	4,120.6	5,955.4	10,076.0	-	-	-	10.0	10.0	20.0	167.8	300.0	467.8	374.0	1,397.2	1,771.2
39	220kV Punjab University Grid Station	CDWP 19-09-2017	1,555.2	1,392.9	2,948.1	-	-	-	5.0	-	5.0	50.0	-	50.0	100.0	300.0	400.0
40	500kV Ghazi Brotha-Faisalabad West T/L (Revised Nmae In/Out of Islamabad West to Ghazi Brotha T/L at - Faisalabad West)	PC-I under preparation	33,660.0	32,340.0	66,000.0	-	-	-	5.0	-	5.0	100.0	100.0	200.0	300.0	500.0	800.0
41	500kV Ludewala G/S along with 500kV Nowshera-Ludewala-Faisalabad West D/C T/L	PC-I under preparation	20,192.9	47,116.7	67,309.6	-	-	-	5.0	-	5.0	200.0	100.0	300.0	1,000.0	2,000.0	3,000.0
42	Evacuation of power from 816MW Mohmand Dam	PC-I under preparation	6,807.0	4,539.0	11,346.0	-	-	-	10.0	-	10.0	192.5	100.0	292.5	1,500.0	1,000.0	2,500.0
43	Exentension and Augmentation of existing 500kV and 220kV Grid Stations (New) Now: Additon & Augmentation of 500kV and 220kV Transformers at the Existing Grid Station for Removal of NTDC System Constraints	ECNEC 07-10-2022	6,185.8	8,926.3	15,112.1	12.2	-	12.2	5.0	-	5.0	112.5	337.5	450.0	1,000.0	3,000.0	4,000.0
44	Installation of SVCs at 220kV Quetta Industrial (Revised Name "250 MVAR SVS at 132 kV Quetta Industrial)"	PC-I under preparation	1,485.0	3,465.0	4,950.0	-	-	-	5.0	-	5.0	5.0	-	5.0	-	-	-
45	Interlinking of 765kV Mansehra with 220kV Mansehra	PC-I under preparation	2,308.5	5,386.5	7,695.0	-	-	-	5.0	-	5.0	400.0	10.0	410.0	200.0	800.0	1,000.0
46	Re-conducting/Underground cabling of existing 220 kV Bund Road - NKLP D/C T/L (17 km)	Studies under process	1,426.0	2,139.0	3,565.0	-	158.3	158.3	5.0	-	5.0	25.0	75.0	100.0	100.0	-	100.0
A5. PSDP - New Projects Added																	
47	Gwadar-Pak Iran Border T/L	-	4,807.0	5,857.0	10,664.0	-	-	-	-	-	-	-	-	-	-	-	-

Sr. No.	Name of Project	Approval Status	PC-I/Estimates Cost			Actual Expenditure upto May, 2023			Budget 2022-23 (Revised)			Estimates 2023-24			Projection 2024-25		
			Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
47	Re-enforcement of Sahiwal along with 2x500KV Line Bay	-	1,643.4	2,250.6	3,894.0	-	-	-	-	-	-	10.0	10.0	20.0	700.0	1,000.0	1,700.0
48	2nd Source of supply to 500 KV Sheikh Muhammadi	-	9,075.0	9,130.0	18,205.0	-	-	-	-	-	-	50.0	10.0	60.0	3,500.0	4,000.0	7,500.0
49	600MW Solar Power Plant near Muzaffargarh	-	1,540.0	1,738.0	3,278.0	-	-	-	5.0	-	5.0	110.8	166.2	277.0	88.6	133.0	221.6
50	600MW Solar Power Plant near Trimmu Jhang	-	1,405.8	1,586.2	2,992.0	-	-	-	5.0	-	5.0	210.9	50.0	260.9	562.5	834.3	1,396.8
51	1200MW Solar Power Plant near Haveli Bahadur Shah	-	475.2	536.8	1,012.0	-	-	-	5.0	-	5.0	71.3	80.5	151.8	190.3	214.5	404.8
52	220/132KV Zero Point G/S Islamabad and allied T/L	-	4,611.2	5,544.0	10,155.2	-	-	-	-	-	-	300.0	50.0	350.0	2,542.4	3,474.0	6,016.4
53	220 MVAR SVS AT 132 KV Khuzdar	-	1,045.0	2,541.0	3,586.0	-	-	-	5.0	-	5.0	50.0	10.0	60.0	541.2	1,296.2	1,837.4
54	Reactive Power Composition 220 & 132 KV G/Ss	-	3,141.6	7,330.4	10,472.0	-	-	-	5.0	5.0	10.0	10.0	10.0	20.0	1,756.6	4,182.2	5,938.8
55	Mitigation of High Fault level at 132 KV Burhan	-	44.0	176.0	220.0	-	-	-	-	-	-	8.8	35.2	44.0	13.2	52.8	66.0
56	Augmentation of 2x160 MVA Transformers with 2x250 MVA Yousaf Wala	-	541.2	1,262.8	1,804.0	-	-	-	5.0	-	5.0	1,300.0	10.0	1,310.0	200.0	100.0	300.0
57	Extension of 3rd Transformer Guddu	-	624.8	1,159.4	1,784.2	-	-	-	-	-	-	10.0	10.0	20.0	287.1	497.5	784.6
58	Augmentation of remaining 2x160 MVA Transformers with 2x250 MVA Yousaf Wala	-	631.4	1,172.6	1,804.0	-	-	-	-	-	-	10.0	10.0	20.0	289.4	551.8	841.2
59	Extension of 3rd Transformer Allai Khwar	-	563.2	1,045.0	1,608.2	-	-	-	-	-	-	10.0	10.0	20.0	268.6	503.2	771.8
<b>B. Self-Financed (On-going Schemes)</b>																	
60	Feasibility study for enhancing the transmission capacity of NTDCs 500-KV Transmission System by applying series compensation	CDWP 14.01.2016	26.4	106.8	133.2	67.6	-	67.6	-	-	-	125.0	-	125.0	-	-	-
61	2nd source of supply to 220kV Jaranwala Road Substation	CDWP 09.06.2020	1,551.0	2,267.0	3,818.0	213.4	-	213.4	190.0	-	190.0	200.0	-	200.0	200.0	-	200.0
62	Evacuation of Power from K2/K3 Nuclear Power near Karachi(In/Out of 500-KV Port Qasid to Matiari S/C and 500-KV Hub to Matiari S/C at K2/K3).	ECNEC 12.04.2017	3,719.0	3,782.0	7,501.0	13,147.6	-	13,147.6	1,073.8	-	1,073.8	1,398.0	-	1,398.0	-	-	-
63	Evacuation of Power from 2x660 MW Thar Coal Based SSRL/SECL Power Plant at Thar	ECNEC 12.04.2017	10,303.0	11,480.0	21,783.0	13,975.2	-	13,975.2	7,843.0	-	7,843.0	3,800.0	-	3,800.0	500.0	-	500.0
64	Evacuation of Power from 330 MW Siddiquesons Ltd.	CDWP 30.01.2020	817.0	1,537.0	2,354.0	35.6	-	35.6	10.0	-	10.0	-	-	-	-	-	-
<b>B2. PSDP - Completed through - Own Sources</b>																	
65	220 KV G/Station at Kassowal with 132 KV Expension System (World Bank Loan No. 7565-Pk, Credit No. 4463-PK & 4464-PK)	ECNEC 25.02.2005	1,206.0	811.0	2,017.0	1,364.2	1,395.8	2,760.0	-	-	-	270.0	-	270.0	-	-	-
66	220Kv G/S Manshra Tranch-III	CDWP 07.04.2011	359.0	546.0	905.0	641.9	1,009.0	1,650.9	110.0	-	110.0	410.0	-	410.0	-	-	-
67	3rd 500KV Jamshoro-Moro- R.Y Khan Single Circuit T/Line.Tranch-III	ECNEC 28.08.2013	10,612.0	26,245.0	36,857.0	10,507.4	11,841.8	22,349.2	214.2	-	214.2	25.0	-	25.0	-	-	-
68	Iter-Connection- Ther Coal Based , 1200MW (Power Dispersal from 1200MW Thar Coal Power Plant - 500kV Thar - Matiari T/L & Matiari 500kV S/station)	ECNEC 16.08.2012	7,250.0	15,056.0	22,306.0	17,131.2	-	17,131.2	100.0	-	100.0	-	-	-	-	-	-
69	New 220 KV G/Station at Khuzdar/220 KVDadu - Khuzdar D/C T/Line JICA Loan No. PK-56	ECNEC 27.07.2004	1,648.0	1,253.0	2,901.0	9,237.7	2,939.2	12,176.9	40.0	-	40.0	240.0	-	240.0	-	-	-
70	Power Transmission Enhancement Project (Tranch-II) (SET)10 Sub projects (I) 9 Sub Projects of 500KV & 220KV S/S& T/Lines ADB Loan No. 2396-PAK	ECNEC 30.06.2012	9,275.0	10,918.0	20,193.0	8,891.1	14,604.7	23,495.8	175.0	-	175.0	50.0	-	50.0	-	-	-
71	Provision of Secured Metering System at Delivery Point. (Local Bank)	ECNEC 04.08.2005	496.0	513.0	1,009.0	1,064.4	-	1,064.4	110.0	-	110.0	35.0	-	35.0	-	-	-
72	Quaid-e-Azam Solar Park at Lal-Suhanra (Phase-II) Evacuation of 600 MW Solar (Proposed to be carried out by NTDC)	ECNEC 12.02.2014	2,161.8	1,905.2	4,067.0	2,498.5	-	2,498.5	100.1	-	100.1	-	-	-	-	-	-
73	Traansmission Scheme for Dispersal of power from Neelam-Jehlum, Karot and Azad Patan Hydro Power Project	ECNEC 02.03.2015	10,425.0	11,272.0	21,697.0	21,650.4	-	21,650.4	450.0	-	450.0	120.0	-	120.0	-	-	-
74	Transmission Interconnection for Dispersal of Power From UCH-II Tranch-III	ECNEC 29.07.2011	1,219.0	1,289.0	2,508.0	324.7	2,024.8	2,349.5	-	-	-	425.0	-	425.0	-	-	-
75	Construction of 600 KV HVDC Transmission Line From Matiari to Lahore (Land Acquisition for Converter and Grounding Station - Both Ends) (CPEC)	CDWP 31.08.2015	1,568.0	-	1,568.0	4,359.4	-	4,359.4	250.0	-	250.0	-	-	-	-	-	-
76	Evacuation of Power from 1200MW RLNG Based Power Projects at Jhang (Haveli Bahadur Shah)	CDWP 28.04.2015	828.0	788.0	1,616.0	12.8	-	12.8	14.0	-	14.0	-	-	-	-	-	-

Sr. No.	Name of Project	Approval Status	PC-I/Estimates Cost			Actual Expenditure upto May, 2023			Budget 2022-23 (Revised)			Estimates 2023-24			Projection 2024-25		
			Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
77	Evacuation of Power from 1320 MW RLNG Power Plant at Trimmu Jhang	ECNEC 17.04.2018	2,184.8	2,047.0	4,231.8	2,266.9	-	2,266.9	5.0	-	5.0	5.0	-	5.0	-	-	-
78	Evacuation of power from 1320MW Power Plant at Bin Qasim	ECNEC 13.05.2015	5,957.0	7,022.0	12,979.0	9,980.5	-	9,980.5	197.0	-	197.0	20.0	-	20.0	-	-	-
79	Evacuation of power from 147MW Patrind HPP	CDWP 27.01.2015	616.0	350.0	966.0	671.1	-	671.1	130.0	-	130.0	50.0	-	50.0	-	-	-
80	Power Transmission Enhancement Project Tranch-I (19 Sub Projects of 500/220 KV Sub Stations and T/ Lines) ADB Loan No. 2289 & 2290-PAK	ECNEC 27.11.2006	4,503.0	8,114.0	12,617.0	7,485.0	9,861.7	17,346.7	50.0	-	50.0	50.0	-	50.0	-	-	-
81	Evacuation of Power from 1320 MW Hub Power Company Ltd.	ECNEC 07.11.2016	8,540.0	7,875.0	16,415.0	22,325.0	-	22,325.0	350.0	-	350.0	150.0	-	150.0	-	-	-
82	Evacuation of Power from 660 MW from Lucky Electric Power Company Ltd.	CDWP 03.03.2020	564.0	751.0	1,315.0	1,112.9	-	1,112.9	100.0	-	100.0	10.0	-	10.0	-	-	-

### B3. Completed Projects through - Foreign Funded

83	220 Kv G/S & Allied T/L D.I Khan	ECNEC 09.12.2010	2,350.0	1,429.0	3,779.0	1,313.5	2,147.1	3,460.6	315.0	-	315.0	85.0	-	85.0	-	-	-
84	220 KV G/S at Ghazi Road, Lahore with 220 KV D/C T/Line 132 KV Expansion System EDCF Loan No.PAK-2 & KFW	ECNEC 25.02.2005	1,325.0	1,267.0	2,592.0	2,523.6	3,328.4	5,852.0	10.0	5.0	15.0	2.0	-	2.0	-	-	-
85	220 Kv Nowshera S/S	ECNEC 06.02.2008	960.0	916.0	1,876.0	849.6	1,957.1	2,806.6	50.0	-	50.0	317.0	-	317.0	-	-	-
86	220KV Chakdara S/S	ECNEC 02.10.2014	2,480.0	1,917.0	4,397.0	2,099.2	2,273.1	4,372.3	300.0	-	300.0	167.0	-	167.0	-	-	-
87	220Kv Sub Station Lalian	ECNEC 11.11.2011	646.0	935.0	1,581.0	1,615.6	2,298.5	3,914.1	330.0	-	330.0	100.0	-	100.0	-	-	-
88	4 Nos New Projects to be financed by JBIC (I) 500 KV RY Khan G/S & T/L (ii)220 KV Chishtian T/L (iii) 220 KV Gujrat G/S & 220 KV T/L (iv) 220 KV Shalimar G/S & 220 KV T/L (4 Projects - JBIC Loan) (JICA Loan No. PK-58)	ECNEC 22.10.2007	5,365.0	7,787.0	13,152.0	6,236.6	7,755.0	13,991.6	200.0	-	200.0	200.0	-	200.0	200.0	-	200.0
89	500KV Faisalabad New (2x750) Phase-II (Now 500KV Faisalabad West alongwith allied T/Ls)	ECNEC 12.01.2015	3,688.7	5,690.8	9,379.5	4,661.3	10,530.4	15,191.6	1,200.0	1,200.0	2,400.0	250.0	400.0	650.0	-	-	-
90	Addition of 500/220KV Sub Station T/L for Strengthening the existing NTDC system i) 500KV Lahore New ii) 500KV Shikarpur iii) 220KV D.I.Khan (JICA-PK-61)	ECNEC 09.12.2010	11,078.0	13,450.0	24,528.0	8,450.2	15,982.9	24,433.1	150.0	-	150.0	400.0	-	400.0	-	-	-
91	Construction of New 220kV Guddu-Uch-Sibbi Single Circuit Transmission Line for Improvement of Power Supply System in South Areas	ECNEC 24.11.2017	5,455.6	2,911.1	8,366.6	1,595.5	7,199.2	8,794.8	200.0	250.0	450.0	100.0	600.0	700.0	-	-	-
92	Evacuation of power from 1320MW Power Plant at Sahiwal	ECNEC 31.08.2015	289.4	826.0	1,115.4	473.5	1,557.5	2,031.0	50.0	440.0	490.0	50.0	-	50.0	-	-	-
93	Extension/Augmentation at 500/220 kV Rewat Substation	CDWP 23.09.2014	243.3	600.3	843.5	792.1	6.1	798.3	10.0	-	10.0	-	-	-	-	-	-
94	Improvement & Upgradation of Protection System to Avoid the Frequent Trippings in South Areas	CDWP 08.06.2016	232.0	655.0	887.0	36.9	1,053.8	1,090.7	50.0	210.0	260.0	50.0	-	50.0	-	-	-
95	Strengthening of TSG Centre for Grid System Operations and Maintenance.	CDWP 21.12.2015	290.0	651.0	941.0	104.0	821.6	925.7	20.0	-	20.0	2.0	-	2.0	-	-	-
96	500kV HVAC T/Line for inter connection of HVDC Converter Station at Lahore with existing HVAC System.	ECNEC 07.11.2016	2,185.0	2,621.0	4,806.0	6,831.6	-	6,831.6	200.0	-	200.0	25.0	-	25.0	-	-	-
97	Load Despatch System Upgradation Project (Phase-II)	ECNEC 07-01-2004	1,015.0	1,880.0	2,895.0	1,760.9	2,865.5	4,626.4	16.0	-	16.0	16.0	-	16.0	-	-	-
98	Evacuation of Power from 747 MW Guddu Power Project								25.0	-	25.0	-	-	-	-	-	-

Totals	PC-I/Estimates Cost			Actual Expenditure upto May, 2023			Budget 2022-23 (Revised)			Estimates 2023-24			Projection 2024-25		
	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
Total ( A - PSDP )	297,734.4	493,607.3	791,341.7	67,324.9	98,217.4	165,542.3	42,646.0	68,932.7	111,578.7	74,876.0	98,729.8	173,605.9	66,682.4	130,447.9	197,130.4
Total ( B - Self Financed )	123,432.0	159,464.1	282,896.1	188,308.7	103,453.1	291,761.8	14,638.1	2,105.0	16,743.1	9,147.0	1,000.0	10,147.0	900.0	-	900.0
Grand Total (PSDP + Self Financed)	421,166.4	653,071.4	1,074,237.8	255,633.5	201,670.5	457,304.0	57,284.1	71,037.7	128,321.8	84,023.0	99,729.8	183,752.9	67,582.4	130,447.9	198,030.4

# NATIONAL TRANSMISSION & DESPATCH COMPANY LIMITED

## Transmission Investment Plan FY 2023-2025 (Revised)

### Summary by Source of Funding

(Rs. in million)

S.No.	Particulars	No. of Projects	PC-I/Estimates Cost			Revised Budget Allocation 2022-23			Estimates 2023-24			Projection 2024-25			NTDC Transmission Investment Plan FY 2023-25		
			Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
A	PSDP Projects																
PSDP Grant & CDL Projects																	
A1	PSDP Grant & CDL - Special Economic Zones (SEZs) Projects	5	10,179	15,231	25,410	2,289	-	2,289	20,900	-	20,900	7,180	-	7,180	30,369	-	30,369
A2	PSDP CDL - Land Acquisition Projects	3	6,616	-	6,616	2,430	-	2,430	4,186	-	4,186	-	-	-	6,616	-	6,616
Sub-Total (PSDP Grant & CDL Projects)		8	16,795	15,231	32,026	4,719	-	4,719	25,086	-	25,086	7,180	-	7,180	36,985	-	36,985
PSDP Foreign Funded Projects																	
A3	PSDP Foreign Funded - Ongoing Projects	17	119,722	251,269	370,990	36,432	68,903	105,335	40,033	86,245	126,278	28,148	75,336	103,485	104,613	230,484	335,098
A4	PSDP Foreign Funded - New Projects	35	159,905	225,696	385,602	1,495	30	1,525	9,757	12,484	22,241	31,354	55,112	86,466	42,606	67,626	110,232
Sub-Total (PSDP Foreign Funded Projects)		52	279,627	476,965	756,592	37,927	68,933	106,860	49,790	98,730	148,520	59,502	130,448	189,950	147,219	298,110	445,330
Total (PSDP Projects)		60	296,422	492,196	788,618	42,646	68,933	111,579	74,876	98,730	173,606	66,682	130,448	197,130	184,204	298,110	482,315
B.	NTDC Own Sources Projects																
B1	NTDC Own Sources - Ongoing Projects	5	16,416	19,173	35,589	9,117	-	9,117	5,523	-	5,523	700	-	700	15,340	-	15,340
B2	NTDC Own Sources - Completed Projects	34	107,016	140,291	247,307	5,521	2,105	7,626	3,624	1,000	4,624	200	-	200	9,345	3,105	12,450
Total (NTDC Own Source Projects)		39	123,432	159,464	282,896	14,638	2,105	16,743	9,147	1,000	10,147	900	-	900	24,685	3,105	27,790
Grand Total		99	419,854	651,660	1,071,514	57,284	71,038	128,322	84,023	99,730	183,753	67,582	130,448	198,030	208,890	301,215	510,105

# NATIONAL TRANSMISSION & DESPATCH COMPANY LIMITED

## Transmission Investment Plan FY 2023-2025 (Revised)

### Summary by Project Type

*(Rs. in million)*

S.No.	Particulars	No. of Projects	PC-I/ Estimates Cost			Revised Budget Allocation 2022-23			Estimates 2023-24			Projection 2024-25			NTDC Transmission Investment Plan FY 2023-25		
			Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
1	Constraints Removal Projects (CRPs) / System Expansion Projects (SEPs)	51	230,635	322,041	552,675	13,310	25,313	38,623	19,284	35,195	54,479	29,078	50,501	79,579	61,671	111,010	172,681
2	Power Evacuation Projects (PEPs)	30	165,362	284,247	449,609	40,679	41,759	82,438	41,059	53,308	94,368	28,240	72,388	100,628	109,978	167,456	277,434
3	Projects for Special Economic Zones (SEZs)	5	10,179	15,231	25,410	2,289	-	2,289	20,900	-	20,900	7,180	-	7,180	30,369	-	30,369
4	Other Development Projects (Other)	13	13,678	30,141	43,820	1,006	3,965	4,971	2,780	11,227	14,007	3,085	7,558	10,643	6,871	22,750	29,621
Grand Total		99	419,854	651,660	1,071,514	57,284	71,038	128,322	84,023	99,730	183,753	67,582	130,448	198,030	208,890	301,215	510,105



National Transmission & Despatch Company Limited

Transmission Investment Plan FY 2023-2025 (Revised)

			(Rs. in million)			(Rs. in million)			(Rs. in million)			(Rs. in million)			(Rs. in million)			
Sr. No.	Name of Project	Approval Status	PC-I/Estimates Cost			Financing Agency	Budget 2022-23 (Revised)			Estimates 2023-24			Projection 2024-25			NTDC Transmission Investment Plan FY 2023-25		
			Local	Foreign	Total		Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total

A. PSDP Projects
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A1. PSDP Grant & CDL - Special Economic Zones (SEZs) Projects																		
1	220/132 kV GIS Substation Dhabeji	CDWP 28.10.2022	2,953.33	3,220.90	6,174.23	GoP Grant	600.000	-	600.000	4,500.000	-	4,500.000	880.000	-	880.000	5,980.000	-	5,980.000
2	220kV Haripur Substation	CDWP 30.01.2020	1,378.00	2,428.00	3,806.00	GoP CDL	451.000	-	451.000	4,250.000	-	4,250.000	100.000	-	100.000	4,801.000	-	4,801.000
3	220kV Swabi Substation	CDWP 17.10.2019	2,581.80	3,818.04	6,399.84	GoP CDL	588.000	-	588.000	4,450.000	-	4,450.000	500.000	-	500.000	5,538.000	-	5,538.000
4	220 kV Quaid-e-Azam Apparel and Business Park (QABP) G/S for Provision of Electricity to PIEDMC SEZ	CDWP 19.04.2021	1,216.28	1,837.85	3,054.13	GoP CDL	300.000	-	300.000	3,200.000	-	3,200.000	200.000	-	200.000	3,700.000	-	3,700.000
5	500kV Allama Iqbal Industrial City for 600MW Demand of the Special Economic Zone in the FIEDMC area	CDWP 25.05.2021	2,049.68	3,926.13	5,975.81	GoP CDL	350.000	-	350.000	4,500.000	-	4,500.000	5,500.000	-	5,500.000	10,350.000	-	10,350.000
Total (A1. PSDP Grant & CDL - Special Economic Zones (SEZs) Projects)			10,179.090	15,230.920	25,410.010		2,289.000	-	2,289.000	20,900.000	-	20,900.000	7,180.000	-	7,180.000	30,369.000	-	30,369.000

A2. PSDP CDL - Land Acquisition Projects																		
6	Land Acquisition for Installation of 600MW Solar Power Plant at Disstt: Muzaffargarh	CDWP 28.10.2022	1,400.00	-	1,400.00	GoP CDL	930.000	-	930.000	470.000	-	470.000	-	-	-	1,400.000	-	1,400.000
7	Land Acquisition for Installation of 600MW Solar Power Plant at Tehsil Athara Hazari Disstt: Jhang	CDWP 28.10.2022	2,558.00	-	2,558.00	GoP CDL	1,500.000	-	1,500.000	1,058.000	-	1,058.000	-	-	-	2,558.000	-	2,558.000
8	Land Acquisition for Installation of 1200MW Solar Power Plant at Sher Garh Tehsil Chubara Disstt: Layyah	CDWP 28.10.2022	2,658.00	-	2,658.00	GoP CDL	-	-	-	2,658.000	-	2,658.000	-	-	-	2,658.000	-	2,658.000
Total (A2. PSDP CDL - Land Acquisition Projects)			6,616.000	-	6,616.000		2,430.000	-	2,430.000	4,186.000	-	4,186.000	-	-	-	6,616.000	-	6,616.000

Total (PSDP Grant & CDL Projects ; A1 + A2)			16,795.090	15,230.920	32,026.010		4,719.000	-	4,719.000	25,086.000	-	25,086.000	7,180.000	-	7,180.000	36,985.000	-	36,985.000
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A3. PSDP Foreign Funded - Ongoing Projects																		
9	500kV HVDC Transmission System between Tajikstan and Pakistan for Central Asia-South Asia Transmission Interconnection (CASA-1000)	ECNEC 29.08.2019	16,053.00	30,751.00	46,804.00	World Bank IDA-5409 24.01.18	5,400.000	14,186.451	19,586.451	12,586.200	15,130.550	27,716.750	2,000.000	5,000.000	7,000.000	19,986.200	34,317.001	54,303.201
10	Evacuation of power from 2160MW Dasu HPP Stage-I	ECNEC 01.10.2020	20,021.02	112,228.74	132,249.76	World Bank 9076-PK	539.816	25,853.990	26,393.806	3,250.674	14,443.539	17,694.213	13,088.015	39,056.137	52,144.152	16,878.505	79,353.666	96,232.171
11	500-kV Lahore, North.	ECNEC 24.11.2017	9,224.00	11,508.00	20,732.00	ADB MFF-II T-III 25.02.19	5,600.000	14,500.000	20,100.000	2,945.000	9,595.000	12,540.000	150.000	2,000.000	2,150.000	8,695.000	26,095.000	34,790.000

Sr. No.	Name of Project	Approval Status	PC-I/Estimates Cost			Financing Agency	Budget 2022-23 (Revised)			Estimates 2023-24			Projection 2024-25			NTDC Transmission Investment Plan FY 2023-25		
			Local	Foreign	Total		Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
12	Evacuation of Power from Suki Kinari, Kohala, Mahal HPPs (Revised Name "Evacuation of Power from Suki Kinari")	ECNEC 14.11.2018	35,815.00	44,115.00	79,930.00	Local HBL+ ADB MFF-II T-IV To be signed	13,762.120	500.000	14,262.120	11,000.000	15,000.000	26,000.000	100.000	341.000	441.000	24,862.120	15,841.000	40,703.120
13	Enhancement in Transformation Capacity of NTDC System by Extension and Augmentation of Existing G/Ss	ECNEC 12.04.2017	4,539.00	11,987.00	16,526.00	World Bank NTMP-I 11.12.18	1,416.036	6,643.420	8,059.456	3,050.000	9,150.000	12,200.000	500.000	1,300.000	1,800.000	4,966.036	17,093.420	22,059.456
14	500kV Islamabad West	ECNEC 20.07.2016	3,621.00	4,667.00	8,288.00	World Bank	-	-	-	1,200.000	7,000.000	8,200.000	10,410.400	23,509.200	33,919.600	11,610.400	30,509.200	42,119.600
15	220-kV Dera Ismail Khan - Zhob Transmission Line alongwith 220-kV Zhob Sub-Station.	ECNEC 07.11.2016	3,784.51	3,094.00	6,878.51	ADB MFF-II T-II 04.04.18	411.040	1,461.790	1,872.830	175.000	900.000	1,075.000	-	-	-	586.040	2,361.790	2,947.830
16	220-kV Jauharabad G/S alongwith allied T/Ls.	CDWP 02.05.2018	1,203.00	1,758.00	2,961.00	ADB MFF-II Tranche-III 25.02.19	145.000	133.000	278.000	587.500	1,500.000	2,087.500	1,000.000	2,200.000	3,200.000	1,732.500	3,833.000	5,565.500
17	220kV Mirpur Khas G/S alongwith allied T/Ls	ECNEC 07.11.2016	2,002.00	1,855.00	3,857.00	ADB MFF-II T-II & IV 04.04.18	260.000	1,100.000	1,360.000	545.000	1,530.000	2,075.000	300.000	1,000.000	1,300.000	1,105.000	3,630.000	4,735.000
18	Now 220kV Transmission System Network Reinforcement in Islamabad & Burhan	ECNEC 09.01.2016	1,817.42	1,802.01	3,619.43	JICA PK-65 07.08.17	34.000	5.000	39.000	100.000	100.000	200.000	-	-	-	134.000	105.000	239.000
19	Conversion from 220kV Substations at Bund Road, Kala Shah Kaku, Ravi and Nishatabad to GIS Technology	ECNEC 07.03.2017	2,525.00	3,159.00	5,684.00	World Bank NTMP-I 11.12.18	-	-	-	-	-	-	-	-	-	-	-	-
20	Enterprise Resource Planning (ERP) (Now Implementation of Integrated Solution to improve Productivity and Control in NTDC by ERP System)	CDWP 19.03.2018	1,192.47	1,390.61	2,583.08	World Bank NTMP-I 11.12.18	25.000	400.000	425.000	380.538	2,156.382	2,536.920	200.000	300.000	500.000	605.538	2,856.382	3,461.920
21	Evacuation of Power from Tarbela 5th Extension.	ECNEC 24.11.2017	2,048.94	2,091.39	4,140.33	World Bank 11.08.17	90.000	654.000	744.000	653.000	450.000	1,103.000	200.000	300.000	500.000	943.000	1,404.000	2,347.000
22	Evacuation of power from wind power projects at Jhimpir and Gharo Wind Clusters (Revised)	ECNEC 06.01.2020	6,543.00	6,863.00	13,406.00	KFW for Gharo + Own Resources + USAID for Jhimpir	100.000	125.000	225.000	700.000	650.000	1,350.000	100.000	-	100.000	900.000	775.000	1,675.000
23	Installation of Pilot Battery Energy Storage System (BESS) at 220kV Jhampir G/Station	CDWP 25.05.2018	113.06	827.38	940.44	ADB MFF-II T-III 25.02.19	10.000	290.000	300.000	250.000	2,000.000	2,250.000	50.000	230.000	280.000	310.000	2,520.000	2,830.000
24	Evacuation of Power from 1224MW Wind Power Plants at Jhampir Clusters	ECNEC 24.11.2017	6,047.16	4,705.45	10,752.61	Local Loan HBL	7,889.000	-	7,889.000	950.000	-	950.000	-	-	-	8,839.000	-	8,839.000
25	Upgradation/ Extension of NTDC's Telecommunication & SCADA System at NPCC	ECNEC 07.03.2018	3,172.00	8,466.00	11,638.00	ADB MFF-II T-II 04.04.18	750.000	3,050.000	3,800.000	1,660.000	6,640.000	8,300.000	50.000	100.000	150.000	2,460.000	9,790.000	12,250.000
Total (A3. PSDP Foreign Funded - Ongoing Projects)			119,721.580	251,268.580	370,990.160		36,432.012	68,902.651	105,334.663	40,032.912	86,245.471	126,278.383	28,148.415	75,336.337	103,484.752	104,613.339	230,484.458	335,097.797

A4. PSDP Foreign Funded - New Projects)																		
26	220kV Daharki - Rahim Yar Khan - Bhawalpur D/C T/L	ECNEC 02.10.2019	5,995.00	9,800.00	15,795.00	ADB T-IV	50.000	-	50.000	205.000	100.000	305.000	2,500.000	5,500.000	8,000.000	2,755.000	5,600.000	8,355.000
27	220-kV Jamrud G/S alongwith allied T/Ls.	CDWP 19.10.2017	1,029.00	1,369.00	2,398.00	ADB T-IV	810.000	-	810.000	117.500	100.000	217.500	140.000	275.000	415.000	1,067.500	375.000	1,442.500
28	500kV Chakwal G/S alongwith allied T/Ls	CDWP 18.11.2019	3,323.85	5,602.54	8,926.39	KFW	300.000	10.000	310.000	160.000	100.000	260.000	2,000.000	2,900.000	4,900.000	2,460.000	3,010.000	5,470.000
29	Extension and Augmentation of existing 500kV and 220kV G/S (New) Now: Addition & Augmentation of 500kV and 220kV T/Fs at the Existing G/S for Removal of NTDC System Constraints	ECNEC 07-10-2022	6,185.75	8,926.30	15,112.05	ADB	25.000	-	25.000	3,000.000	9,000.000	12,000.000	200.000	1,000.000	1,200.000	3,225.000	10,000.000	13,225.000
30	220kV Arifwala Substation	CDWP 04.06.2022	4,209.00	4,534.00	8,743.00	AFD	5.000	5.000	10.000	230.000	100.000	330.000	1,000.000	200.000	1,200.000	1,235.000	305.000	1,540.000
31	500/220kV Sialkot Substation	ECNEC 07-10-2022	14,618.35	17,202.00	31,820.35	AFD	10.000	-	10.000	280.000	100.000	380.000	2,200.000	5,000.000	7,200.000	2,490.000	5,100.000	7,590.000

Sr. No.	Name of Project	Approval Status	PC-I/Estimates Cost			Financing Agency	Budget 2022-23 (Revised)			Estimates 2023-24			Projection 2024-25			NTDC Transmission Investment Plan FY 2023-25		
			Local	Foreign	Total		Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
32	Upgradation of Existing 220kV Vehari G/S to 500 kV Vehari G/S	ECNEC 07-10-2022	7,590.92	9,515.60	17,106.52	AFD	10.000	-	10.000	700.000	1,000.000	1,700.000	2,500.000	6,000.000	8,500.000	3,210.000	7,000.000	10,210.000
33	220kV Larkana Substation	CDWP 17.10.2019	2,443.00	4,006.00	6,449.00	ADB Proposed	10.000	-	10.000	240.000	100.000	340.000	800.000	1,600.000	2,400.000	1,050.000	1,700.000	2,750.000
34	220-kV Mastung G/S alongwith allied T/Ls.	ECNEC 22.05.2018	1,997.00	2,903.00	4,900.00	ADB Proposed	170.000	-	170.000	120.000	100.000	220.000	800.000	1,600.000	2,400.000	1,090.000	1,700.000	2,790.000
35	220-kV Kohat G/S alongwith allied T/Ls.	PC-1 Under preparation	5,280.00	7,920.00	13,200.00	ADB Additional Proposed	10.000	-	10.000	400.000	100.000	500.000	1,500.000	1,000.000	2,500.000	1,910.000	1,100.000	3,010.000
36	220kV Gujranwala-II Substation	PC-1 Under preparation	2,838.90	6,624.10	9,463.00	Un Approved With ADB Proposed	5.000	-	5.000	400.000	100.000	500.000	1,500.000	3,000.000	4,500.000	1,905.000	3,100.000	5,005.000
37	220kV Nag Shah G/S	PC-I under preparation	4,120.60	5,955.40	10,076.00	Un Approved With ADB Proposed	5.000	-	5.000	500.000	100.000	600.000	700.000	1,200.000	1,900.000	1,205.000	1,300.000	2,505.000
38	Installation of SVCs at 220kV Quetta Industrial (Revised Name "250 MVAR SVS at 132 kV Quetta Industrial")	PC-I under preparation	1,485.00	3,465.00	4,950.00	Un Approved With ADB Proposed	10.000	10.000	20.000	167.750	300.000	467.750	374.000	1,397.200	1,771.200	551.750	1,707.200	2,258.950
39	Interlinking of 765kV Mansehra with 220kV Mansehra	PC-I under preparation	2,308.50	5,386.50	7,695.00	Un Approved With ADB Proposed	5.000	-	5.000	50.000	-	50.000	100.000	300.000	400.000	155.000	300.000	455.000
40	220kV Punjab University G/S	CDWP 19-09-2017	1,555.18	1,392.92	2,948.10	ADB Proposed	5.000	-	5.000	100.000	100.000	200.000	300.000	500.000	800.000	405.000	600.000	1,005.000
41	500kV Ghazi Brotha-Faisalabad West T/L (Revised Name In/Out of Islamabad West to Ghazi Brotha T/L at -Faisalabad West)	PC-I under preparation	33,660.00	32,340.00	66,000.00	Un Approved With Financing ADB Proposed	5.000	-	5.000	200.000	100.000	300.000	1,000.000	2,000.000	3,000.000	1,205.000	2,100.000	3,305.000
42	220kV Head Faqiran G/S alongwith allied T/Ls.	ECNEC 15.07.2019	2,821.00	2,991.00	5,812.00	Approved W/O Financing	10.000	-	10.000	192.500	100.000	292.500	1,500.000	1,000.000	2,500.000	1,702.500	1,100.000	2,802.500
43	Evacuation of power from 816MW Mohmand Dam	PC-I under preparation	6,807.00	4,539.00	11,346.00	Un Approved W/O Financing	5.000	-	5.000	112.500	337.500	450.000	1,000.000	3,000.000	4,000.000	1,117.500	3,337.500	4,455.000
44	220-kV Kamra G/S alongwith allied T/Ls.	Submitted to PC on 22.11.2019	1,182.00	2,050.00	3,232.00	Un Approved W/O Financing New Loan	5.000	-	5.000	5.000	-	5.000	-	-	-	10.000	-	10.000
45	500kV Ludewala G/S along with 500kV Nowshera-Ludewala-Faisalabad West D/C T/L	PC-I under preparation	20,192.87	47,116.69	67,309.55	Un Approved W/O Financing To be identified	5.000	-	5.000	400.000	10.000	410.000	200.000	800.000	1,000.000	605.000	810.000	1,415.000
46	Re-conducting/Underground cabling of existing 220 kV Bund Road - NKLP D/C T/L (17 km)	Studies under process	1,426.00	2,139.00	3,565.00	Un Approved W/O Financing New Loan	5.000	-	5.000	25.000	75.000	100.000	100.000	-	100.000	130.000	75.000	205.000
47	Gwadar-Pak Iran Border T/L	-	4,807.00	5,857.00	10,664.00	Newly Proposed	-	-	-	-	-	-	-	-	-	-	-	-
48	Re-enforcement of Sahiwal along with 2x500kV Line Bay	-	1,643.40	2,250.60	3,894.00	Newly Proposed	-	-	-	10.000	10.000	20.000	700.000	1,000.000	1,700.000	710.000	1,010.000	1,720.000
49	2nd Source of supply to 500 kV Sheikh Muhammadi	-	9,075.00	9,130.00	18,205.00	Newly Proposed	-	-	-	50.000	10.000	60.000	3,500.000	4,000.000	7,500.000	3,550.000	4,010.000	7,560.000
50	600MW Solar Power Plant near Muzaffargarh	-	227.60	326.40	554.00	Newly Proposed	5.000	-	5.000	110.800	166.200	277.000	88.640	132.960	221.600	204.440	299.160	503.600
51	600MW Solar Power Plant near Trimmu Jhang	-	1,405.80	1,586.20	2,992.00	Newly Proposed	5.000	-	5.000	210.936	50.000	260.936	562.496	834.304	1,396.800	778.432	884.304	1,662.736
52	1200MW Solar Power Plant near Havelli Bahadur Shah	-	475.20	536.80	1,012.00	Newly Proposed	5.000	-	5.000	71.346	80.454	151.800	190.256	214.544	404.800	266.602	294.998	561.600
53	220/132kV Zero Point G/S Islamabad and allied T/L	-	4,611.20	5,544.00	10,155.20	Newly Proposed	-	-	-	300.000	50.000	350.000	2,542.380	3,474.020	6,016.400	2,842.380	3,524.020	6,366.400
54	220 MVAR SVS AT 132 kV Khuzdar	-	1,045.00	2,541.00	3,586.00	Newly Proposed	5.000	-	5.000	50.000	10.000	60.000	541.220	1,296.180	1,837.400	596.220	1,306.180	1,902.400

Sr. No.	Name of Project	Approval Status	PC-I/Estimates Cost			Financing Agency	Budget 2022-23 (Revised)			Estimates 2023-24			Projection 2024-25			NTDC Transmission Investment Plan FY 2023-25		
			Local	Foreign	Total		Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
55	Reactive Power Composition 220 &132 kV G/Ss	-	3,141.60	7,330.40	10,472.00	Newly Proposed	5.000	5.000	10.000	10.000	10.000	20.000	1,756.640	4,182.160	5,938.800	1,771.640	4,197.160	5,968.800
56	Mitigation of High Fault level at 132 kV Burhan	-	44.00	176.00	220.00	Newly Proposed	-	-	-	8.800	35.200	44.000	13.200	52.800	66.000	22.000	88.000	110.000
57	Augmentation of 2x160 MVA T/Fs with 2x250 MVA Yousaf Wala	-	541.20	1,262.80	1,804.00	Newly Proposed	5.000	-	5.000	1,300.000	10.000	1,310.000	200.000	100.000	300.000	1,505.000	110.000	1,615.000
58	Extension of 3rd Transformer Guddu	-	624.80	1,159.40	1,784.20	Newly Proposed	-	-	-	10.000	10.000	20.000	287.110	497.490	784.600	297.110	507.490	804.600
59	Augmentation of remaining 2x160 MVA T/Fs with 2x250 MVA Yousaf Wala	-	631.40	1,172.60	1,804.00	Newly Proposed	-	-	-	10.000	10.000	20.000	289.420	551.780	841.200	299.420	561.780	861.200
60	Extension of 3rd Transformer Allai Khwar	-	563.20	1,045.00	1,608.20	Newly Proposed	-	-	-	10.000	10.000	20.000	268.630	503.170	771.800	278.630	513.170	791.800
Total (A4. PSDP Foreign Funded - New Projects)			159,905.315	225,696.245	385,601.560		1,495.000	30.000	1,525.000	9,757.132	12,484.354	22,241.486	31,353.992	55,111.608	86,465.600	42,606.124	67,625.962	110,232.086

Total (PSDP Foreign Funded Projects ; A3 + A4)		279,626.895	476,964.825	756,591.720		37,927.012	68,932.651	106,859.663	49,790.044	98,729.825	148,519.869	59,502.407	130,447.945	189,950.352	147,219.463	298,110.420	445,329.883
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Total (PSDP Projects ; A = A1 + A2 + A3 + A4)		296,421.985	492,195.745	788,617.730		42,646.012	68,932.651	111,578.663	74,876.044	98,729.825	173,605.869	66,682.407	130,447.945	197,130.352	184,204.463	298,110.420	482,314.883
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B. NTDC Own Sources Projects																		
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B1. NTDC Own Sources - Ongoing Projects																		
61	Feasibility study for enhancing the transmission capacity of NTDCs 500-kV Transmission System by applying series compensation	CDWP 14.01.2016	26.35	106.83	133.18	Own Resources	-	-	-	125.000	-	125.000	-	-	-	125.000	-	125.000
62	2nd source of supply to 220kV Jaranwala Road Substation	CDWP 09.06.2020	1,551.00	2,267.00	3,818.00	Own Resources	190.000	-	190.000	200.000	-	200.000	200.000	-	200.000	590.000	-	590.000
63	Evacuation of Power from K2/K3 Nuclear Power near Karachi (In/Out of 500-kV Port Qasim to Matiari S/C and 500-kV Hub to Matiari S/C at K2/K3).	ECNEC 12.04.2017	3,719.00	3,782.00	7,501.00	Local Bank ABL	1,073.847	-	1,073.847	1,398.000	-	1,398.000	-	-	-	2,471.847	-	2,471.847
64	Evacuation of Power from 2x660 MW Thar Coal Based SSRL/SECL Power Plant at Thar	ECNEC 12.04.2017	10,303.00	11,480.00	21,783.00	Local Bank ABL	7,843.000	-	7,843.000	3,800.000	-	3,800.000	500.000	-	500.000	12,143.000	-	12,143.000
65	Evacuation of Power from 330 MW Siddiquesons Ltd.	CDWP 30.01.2020	817.00	1,537.00	2,354.00	Own Resources	10.000	-	10.000	-	-	-	-	-	-	10.000	-	10.000
Total (B1. NTDC Own Sources - Ongoing Projects)		-	16,416.350	19,172.830	35,589.180	-	9,116.847	-	9,116.847	5,523.000	-	5,523.000	700.000	-	700.000	15,339.847	-	15,339.847

B2. NTDC Own Sources - Completed Projects through Self-Finance																		
66	220 kV G/Station at Kassowal with 132 kV Expansion System (World Bank Loan No. 7565-Pk, Credit No. 4463-PK & 4464-PK)	ECNEC 25.02.2005	1,206.00	811.00	2,017.00	World Bank Completed	-	-	-	270.000	-	270.000	-	-	-	270.000	-	270.000
67	220Kv G/S Mansehra Tranch-III	CDWP 07.04.2011	359.00	546.00	905.00	ADB MFF-I T-III Completed	110.000	-	110.000	410.000	-	410.000	-	-	-	520.000	-	520.000

Sr. No.	Name of Project	Approval Status	PC-I/Estimates Cost			Financing Agency	Budget 2022-23 (Revised)			Estimates 2023-24			Projection 2024-25			NTDC Transmission Investment Plan FY 2023-25		
			Local	Foreign	Total		Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
68	3rd 500kV Jamshoro-Moro- R.Y Khan Single Circuit T/Line.Tranch-III	ECNEC 28.08.2013	10,612.00	26,245.00	36,857.00	ADB MFF-I T-III Completed	214.178	-	214.178	25.000	-	25.000	-	-	-	239.178	-	239.178
69	Inter-Connection- Ther Coal Based , 1200MW (Power Dispersal from 1200MW Thar Coal Power Plant - 500kV Thar - Matiari T/L & Matiari 500kV S/station)	ECNEC 16.08.2012	7,250.00	15,056.00	22,306.00	Local Bank Completed	100.000	-	100.000	-	-	-	-	-	-	100.000	-	100.000
70	New 220 kV G/Station at Khuzdar/220 kV Dadu - Khuzdar D/C T/Line JICA Loan No. PK-56	ECNEC 27.07.2004	1,648.00	1,253.00	2,901.00	JICA PK-56 Completed	40.000	-	40.000	240.000	-	240.000	-	-	-	280.000	-	280.000
71	Power Transmission Enhancement Project (Tranch-II) (SET)10 Sub projects (i) 9 Sub Projects of 500kV & 220kV S/S& T/Lines ADB Loan No. 2396-PAK	ECNEC 30.06.2012	9,275.00	10,918.00	20,193.00	ADB MFF-I T-II Completed	175.000	-	175.000	50.000	-	50.000	-	-	-	225.000	-	225.000
72	Provision of Secured Metering System at Delivery Point. (Local Bank)	ECNEC 04.08.2005	496.00	513.00	1,009.00	Own Resources Completed	109.998	-	109.998	35.000	-	35.000	-	-	-	144.998	-	144.998
73	Quaid-e-Azam Solar Park at Lal-Suhanra (Phase-II) Evacuation of 600 MW Solar (Proposed to be carried out by NTDC)	ECNEC 12.02.2014	2,161.80	1,905.20	4,067.00	Own Resource Completed	100.090	-	100.090	-	-	-	-	-	-	100.090	-	100.090
74	Transmission Scheme for Dispersal of power from Neelam-Jehlum, Karot and Azad Patan Hydro Power Project	ECNEC 02.03.2015	10,425.00	11,272.00	21,697.00	Local Bank Completed	450.000	-	450.000	120.000	-	120.000	-	-	-	570.000	-	570.000
75	Transmission Interconnection for Dispersal of Power From UCH-II Tranch-III	ECNEC 29.07.2011	1,219.00	1,289.00	2,508.00	ADB MFF-I T-III Completed	-	-	-	425.000	-	425.000	-	-	-	425.000	-	425.000
76	Construction of 600 kV HVDC Transmission Line From Matiari to Lahore (Land Acquisition for Converter and Grounding Station - Both Ends) (CPEC)	CDWP 31.08.2015	1,568.00	-	1,568.00	CDL Completed	250.000	-	250.000	-	-	-	-	-	-	250.000	-	250.000
77	Evacuation of Power from 1200MW RLNG Based Power Projects at Jhang (Haveli Bahadur Shah)	CDWP 28.04.2015	828.00	788.00	1,616.00	Completed	14.000	-	14.000	-	-	-	-	-	-	14.000	-	14.000
78	Evacuation of Power from 1320 MW RLNG Power Plant at Trimmu Jhang	ECNEC 17.04.2018	2,184.84	2,046.99	4,231.83	Own Resources Completed	5.000	-	5.000	5.000	-	5.000	-	-	-	10.000	-	10.000
79	Evacuation of power from 1320MW Power Plant at Bin Qasim	ECNEC 13.05.2015	5,957.00	7,022.00	12,979.00	Local Bank HBL Completed	197.000	-	197.000	20.000	-	20.000	-	-	-	217.000	-	217.000
80	Evacuation of power from 147MW Patrind HPP	CDWP 27.01.2015	616.00	350.00	966.00	USAID Grant Completed	130.000	-	130.000	50.000	-	50.000	-	-	-	180.000	-	180.000
81	Power Transmission Enhancement Project Tranch-I (19 Sub Projects of 500/220 kV Sub Stations and T/ Lines) ADB Loan No. 2289 & 2290-PAK	ECNEC 27.11.2006	4,503.00	8,114.00	12,617.00	ADB MFF-I T-I Completed	50.000	-	50.000	50.000	-	50.000	-	-	-	100.000	-	100.000
82	Evacuation of Power from 1320 MW Hub Power Company Ltd.	ECNEC 07.11.2016	8,540.00	7,875.00	16,415.00	Local Bank Completed	350.000	-	350.000	150.000	-	150.000	-	-	-	500.000	-	500.000
83	Evacuation of Power from 660 MW from Lucky Electric Power Company Ltd.	CDWP 03.03.2020	564.00	751.00	1,315.00	Own Resources Completed	100.000	-	100.000	10.000	-	10.000	-	-	-	110.000	-	110.000
84	220 Kv G/S & Allied T/L D.I Khan	ECNEC 09.12.2010	2,350.00	1,429.00	3,779.00	ADB MFF-I T-IV 06.03.15 Completed	315.000	-	315.000	85.000	-	85.000	-	-	-	400.000	-	400.000
85	220 kV G/S at Ghazi Road, Lahore with 220 kV D/C T/Line 132 kV Expansion System EDCF Loan No.PAK-2 & KFW	ECNEC 25.02.2005	1,325.00	1,267.00	2,592.00	KFW 11.12.08 Completed	10.000	5.000	15.000	2.000	-	2.000	-	-	-	12.000	5.000	17.000
86	220 Kv Nowshera S/S	ECNEC 06.02.2008	960.00	916.00	1,876.00	ADB MFF-I T-IV 06.03.15 Completed	50.000	-	50.000	317.000	-	317.000	-	-	-	367.000	-	367.000
87	220kV Chakdara S/S	ECNEC 02.10.2014	2,480.00	1,917.00	4,397.00	ADB MFF-I T-IV 06.03.15 Completed	300.000	-	300.000	167.000	-	167.000	-	-	-	467.000	-	467.000
88	220Kv Sub Station Lalian	ECNEC 11.11.2011	646.00	935.00	1,581.00	ADB MFF-I T-IV Completed	330.000	-	330.000	100.000	-	100.000	-	-	-	430.000	-	430.000
89	4 Nos New Projects to be financed by JBIC (I) 500kV RY Khan G/S & T/L (ii) 220kV Chishtian T/L (iii) 220kV Gujrat G/S & 220kV T/L (iv) 220kV Shalimar G/S & 220kV T/L (4 Projects - JBIC Loan) (JICA Loan No. PK-58)	ECNEC 22.10.2007	5,365.00	7,787.00	13,152.00	JICA PK-58 24.10.08 Completed	200.000	-	200.000	200.000	-	200.000	200.000	-	200.000	600.000	-	600.000
90	500kV Faisalabad New (2x750) Phase-II (Now 500kV Faisalabad West along with allied T/Ls)	ECNEC 12.01.2015	3,688.73	5,690.77	9,379.51	JICA-PK 58 + MFF-II T-I 24.02.17 Completed	1,200.000	1,200.000	2,400.000	250.000	400.000	650.000	-	-	-	1,450.000	1,600.000	3,050.000

Sr. No.	Name of Project	Approval Status	PC-I/Estimates Cost			Financing Agency	Budget 2022-23 (Revised)			Estimates 2023-24			Projection 2024-25			NTDC Transmission Investment Plan FY 2023-25		
			Local	Foreign	Total		Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
91	Addition of 500/220kV Sub Station T/L for Strengthening the existing NTDC system i) 500kV Lahore New ii) 500kV Shikarpur	ECNEC 09.12.2010	11,078.00	13,450.00	24,528.00	JICA PK-61 07.10.20 Completed	150.000	-	150.000	400.000	-	400.000	-	-	-	550.000	-	550.000
92	Construction of New 220kV Guddu-Uch-Sibbi Single Circuit Transmission Line for Improvement of Power Supply System in South Areas	ECNEC 24.11.2017	5,455.58	2,911.07	8,366.65	ADB MFF-II T-II 04.04.18 Completed	200.000	250.000	450.000	100.000	600.000	700.000	-	-	-	300.000	850.000	1,150.000
93	Evacuation of power from 1320MW Power Plant at Sahiwal	ECNEC 31.08.2015	289.42	825.95	1,115.37	ADB MFF-II T-I 24.02.17 Completed	50.000	440.000	490.000	50.000	-	50.000	-	-	-	100.000	440.000	540.000
94	Extension/Augmentation at 500/220 kV Rewat Substation	CDWP 23.09.2014	243.26	600.28	843.54	ADB MFF-II T-I 24.02.17 Completed	10.000	-	10.000	-	-	-	-	-	-	10.000	-	10.000
95	Improvement & Upgradation of Protection System to Avoid the Frequent Trippings in South Areas	CDWP 08.06.2016	232.00	655.00	887.00	ADB MFF-II T-I 24.02.17 Completed	50.000	210.000	260.000	50.000	-	50.000	-	-	-	100.000	210.000	310.000
96	Strengthening of TSG Centre for Grid System Operations and Maintenance.	CDWP 21.12.2015	290.00	651.00	941.00	JICA Grant Completed	20.000	-	20.000	2.000	-	2.000	-	-	-	22.000	-	22.000
97	500kV HVAC T/Line for inter connection of HVDC Converter Station at Lahore with existing HVAC System.	ECNEC 07.11.2016	2,185.00	2,621.00	4,806.00	ABL Local Bank Completed	200.000	-	200.000	25.000	-	25.000	-	-	-	225.000	-	225.000
98	Load Despatch System Upgradation Project (Phase-II)	ECNEC 07-01-2004	1,015.00	1,880.00	2,895.00	JICA Completed	16.000	-	16.000	16.000	-	16.000	-	-	-	32.000	-	32.000
99	Evacuation of Power from 747 MW Guddu Power Project	-	-	-	-	-	25.000	-	25.000	-	-	-	-	-	-	25.000	-	25.000
Total (B3. NTDC Own Sources - Completed Projects)			107,015.634	140,291.256	247,306.890		5,521.266	2,105.000	7,626.266	3,624.000	1,000.000	4,624.000	200.000	-	200.000	9,345.266	3,105.000	12,450.266
Total NTDC Own Sources Projects (B = B1 + B2)			123,431.984	159,464.086	282,896.070		14,638.113	2,105.000	16,743.113	9,147.000	1,000.000	10,147.000	900.000	-	900.000	24,685.113	3,105.000	27,790.113
Grand Total (PSDP Projects + NTDC Own Sources Projects) A + B			419,853.969	651,659.831	1,071,513.800	-	57,284.125	71,037.651	128,321.776	84,023.044	99,729.825	183,752.869	67,582.407	130,447.945	198,030.352	208,889.576	301,215.420	510,104.996