

Environmental Monitoring Report

Project Number: 48078-003
Loan Number: 3419-PAK
Semi-Annual Report: July-December 2022
April 2023

Pakistan: Second Power Transmission Enhancement Investment Program – Tranche 1

Prepared by National Transmission & Despatch Company Limited for the Asian Development
Bank

NOTES

- (i) The fiscal year (FY) of the Government of the Islamic Republic of Pakistan and its agencies ends on 30 June.
- (ii) In this report "\$" refer to US dollars.

This Environmental Monitoring Report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

Environmental Monitoring Report

Semi-annual Environmental Monitoring Report
July-December 2022

PAK: Second Power Transmission Enhancement Investment Program Tranche 1

Prepared by AF Mercados Aries EMI (Facility Management Cell) for National Transmission & Despatch Company Limited and the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of 31 Dec 2022)

Currency unit	–	Pakistani rupees (PKR)
PKR 1.00	=	\$0.0044
\$1.00	=	PKR 226.24

ABBREVIATIONS

ADB	Asian Development Bank
CC	Construction Contractor
CPPA-G	Central Power Purchasing Agency Guaranteed
dB (A)	A-weighted Decibels
DC	Double Circuit
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPA	Environment Protection Agency
EPD	Environment Protection Department
ESIC	Environment and Social Impact Cell
FMC	Facility Management Consultant
GoP	Government of Pakistan
GS	Grid Station
HSE	Health, Safety and Environment
HV	High Voltage
IEE	Initial Environmental Examination
LCC	Local Currency Components
MFF	Multi-tranche Financing Facility
NOC	No Objection Certificate
NTDC	National Transmission and Despatch Company
PAK	Pakistan
PEPA	Punjab Environmental Protection Act
PEQS	Punjab Environmental Quality Standards
PMU	Project Management Unit
PPE	Personal Protective Equipment
PTEIP	Power Transmission Enhancement Investment Program
RoW	Right of Way
SAEMR	Semi-annual Environmental Monitoring Report
SC	Single Circuit
SSEMP	Site-Specific Environment Management Plan
WAPDA	Water & Power Development Authority

WEIGHTS AND MEASURES

mg/Nm ³	mg per normal meter cube
MW	Megawatt
mg/l	Milligram per liter
kg	kilogram
kV	kilovolt
m/s	meters per second
mg/kg	milligram per kilogram
mg/Nm ³	milligram per normal cubic meter
km	kilometers
m	meter
°C	Degree Celsius
µg/m ³	Microgram per cubic meter

GLOSSARY

EIA	Environmental Impact Assessment is a process of evaluating the likely environmental impacts of a proposed project or development, taking into account inter-related socio-economic, cultural, and human-health impacts, both beneficial and adverse.
IEE	Initial Environmental Examination is a preliminary small study to see project impacts, both beneficial and adverse to the environment while the EIA is a full assessment of the effects.
NOC	No Objection Certificate is the clearance or certificate given by the authority (EPA) for the specific project after evaluation of IEE/EIA. NOC is granted with or without conditions.
EMP	Environmental Management Plan can be defined as an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation, and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced.
SSEMP	The Site-specific Environmental Management Plan is applied to the actual site where construction activities will occur.

NOTE{S}

- (i) The fiscal year (FY) 2022 of the Government of Pakistan ends on 30 June.
- (ii) In this report, "\$" refers to United States dollars unless otherwise stated.

This environmental monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

Table of Contents

1.	INTRODUCTION.....	1
1.1	Preamble	1
1.2	Headline Information.....	1
2.	PROJECT DESCRIPTION AND CURRENT ACTIVITIES	1
2.1	Project Description.....	1
2.2	Project Contracts and Management.....	4
2.3	Project Activities During the Current Reporting Period	9
2.4	Description of Any Changes to Project Design	9
2.5	Description of Any Changes to Agreed Construction methods	9
3.	ENVIRONMENTAL SAFEGUARD ACTIVITIES	9
3.1	General Description of Environmental Safeguard Activities.....	9
3.2	Site Audits.....	9
3.3	Unanticipated Environmental Impacts or Risks	10
4.	STATUS OF COMPLIANCE WITH COVENANTS	10
5.	RESULTS OF ENVIRONMENTAL MONITORING	12
5.1	Overview of Monitoring Conducted during the Current Period.....	12
5.2	Summary of Monitoring Outcomes	12
5.3	Training.....	12
5.4	Complaints.....	12
6.	RESTORATION AND REHABILITATION.....	12
7.	SUMMARY AND RECOMMENDATIONS	23
7.1	Summary	23
7.2	Recommendations	23

List of Tables

Table 2-1: Personnel relevant to Environmental Safeguards.....	6
Table 2-2: Projects and Construction Contractor.....	7
Table 3-1. Site Visits Conducted during the Monitoring Period.....	9
Table 4-1: Status of Compliance with Covenants	10

List of Figures

Figure 2-1: Project Location	3
Figure 2-2: Organization of PMU.....	4

Figure 2-3: Organization of FMC 5

1. INTRODUCTION

1.1 Preamble

1. This is the 10th Semi-annual Environmental Monitoring Report (SAEMR) for the Second Power Transmission Enhancement Investment Program (PTEIP), Multi-tranche Financing Facility (MFF-II) – Tranche 1, Project Number 48078 (the project) covering the duration of July to December 2022.

1.2 Headline Information

2. A summary of significant outcomes of this SAEMR and specific areas of concern are provided hereunder:

3. This report addresses findings of environmental monitoring and the status of regulatory compliance of subprojects ADB-100, ADB-106 (Lot-I), ADB-108 (Lot-I & Lot-II), ADB-105 (Lot-I), and ADB-105 (Lot-II) of Tranche 1.

4. All the above subprojects are physically completed and commissioned.

5. There is no change in the status and progress of the project since the previous report as all of the Tranche 1 subprojects are already completed.

6. There is no pending non-compliance from the past period (Jan-June 2022) since all the Tranche-1 Subprojects.

2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

7. National Transmission & Despatch Company (NTDC) Limited was incorporated on 6th November 1998 and took over all the properties, rights, and assets as well as the obligations and liabilities of the 220 kV and 500 kV Grid Stations and Transmission Lines/Network owned by Pakistan Water and Power Development Authority (WAPDA)¹.

8. The Government of Pakistan (GoP) signed a loan agreement with the ADB for financial support under the multi-tranche financing facility for the construction of the Power Enhancement Projects in Pakistan.

9. The multi-tranche financing facility for the Second Power Transmission Enhancement Investment Program (MFF II) will expand and reinforce Pakistan's power transmission system, enabling the system to provide a reliable and quality service capable of meeting increasing customer demand and supporting economic growth. The physical investments will increase transmission capacity to meet growing demand, improve transmission efficiency and security, and evacuate additional sources of power. The capacity development component will focus on further improving the financial management, regulatory relations, planning, project management, and procurement capacities of both the transmission system owner and operator, the NTDC, and the sector's newly established commercial operator, the Central Power Purchasing Agency (Guarantee) Limited (CPPA-G). These investments will increase institutional efficiency, cost recovery, competition, transparency, and good governance within the sector.

10. The MFF II comprises of four tranches. Tranche 1 focuses on the rehabilitation and augmentation of 500-kilovolt (kV) transmission systems in Punjab and Sindh provinces.

¹ <http://www.ntdc.com.pk>

Through its concessional loan from the ADB, Tranche 1 provides capacity development to support the NTDC's organizational restructuring and to enhance its capacity to plan, design, operate, and manage assets throughout the second MFF. Tranche 2 will expand the 220 kV transmission systems in the provinces of Sindh and Baluchistan. It will also upgrade the supervisory control and data acquisition system across the national grid to enable the NTDC to monitor and control the grid in real-time, and to prevent network outages or reduce their duration, thereby increasing grid stability, reliability, and resilience to accommodate more intermittent renewable energy. Tranche 3 will expand the 500 kV and 220 kV transmission systems to meet demand at load centers in Punjab province. Tranche 4 will help evacuate hydropower to load centers in Islamabad and the provinces of Punjab and Khyber Pakhtunkhwa.

11. The overall objective of the project is to increase the power transmission capacity, efficiency, and coverage in Pakistan. It is also meant to increase the confidence of commercial financiers in financing long-term transmission and distribution assets in Pakistan.

12. The specific objectives are:

- Improvement in transmission infrastructure and management.
- Improvement in energy market transparency and efficiency.

13. MFF Tranche 1 projects are located in different areas of the country, as can be seen in **Figure 2-1**.

14. The purpose of this report is to review the monitoring approach of the construction contractor and implementing agency, and; assess the compliance with ADB environment safeguards requirements and see if the construction activities are being carried out as per the conditions of environmental approval or No-Objection Certificate (NOC) and the requirements of initial environmental examination (IEE) and environmental impact assessment (EIA) by satisfying the provincial and national environmental regulatory requirements of Pakistan.

Semi-annual Environmental Monitoring Report

Second Power Transmission Enhancement Investment Program (Tranche 1)



Figure 2-1: Project Location

2.2 Project Contracts and Management

15. NTDC has established a Project Management Unit (PMU) to manage the implementation of current tranches and the preparation and implementation of future tranches. The PMU is headed by the Chief Engineer, PMU, and responsible for day-to-day project implementation for the physical outputs relating to the transmission system and operation (as defined under their transmission license) under each tranche. The facility management consultant (FMC) supports the PMU in project implementation of Tranche 1 including social and environmental safeguards implementation.

16. PMU is responsible for complying with the safeguard's requirements and design and monitoring framework and loan covenants.

17. The organization of PMU is shown in **Figure 2-2**. FMC organization is shown in **Figure 2-3**

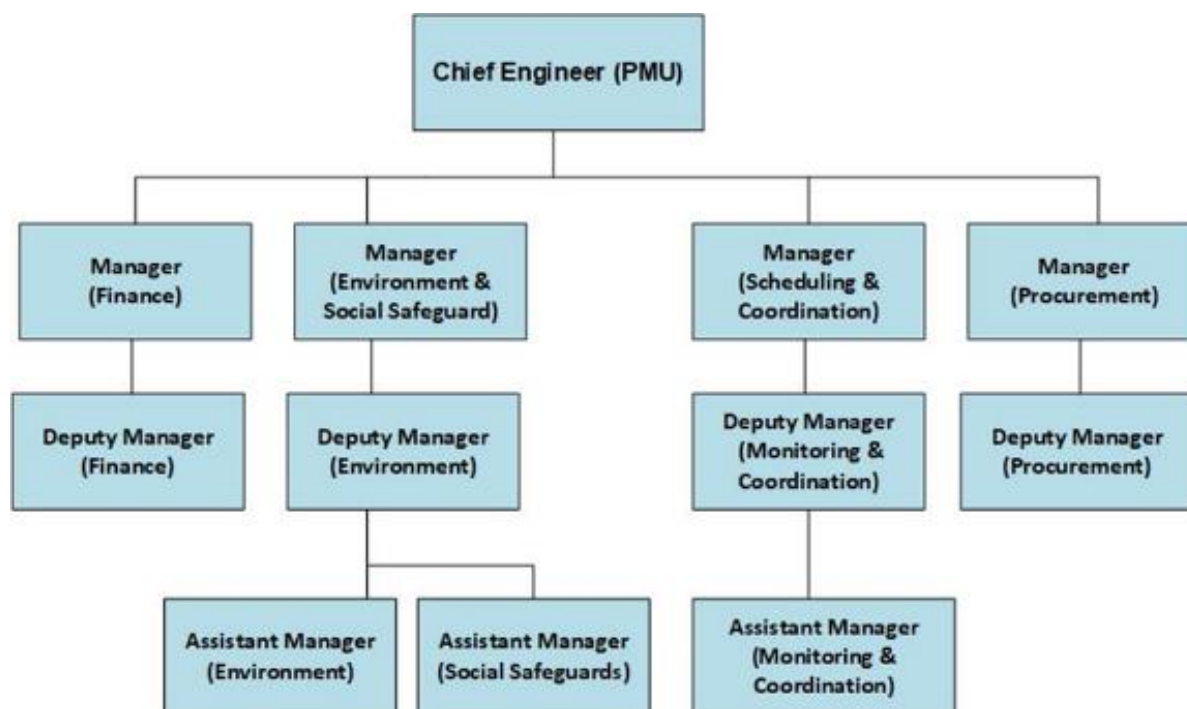


Figure 2-2: Organization of PMU

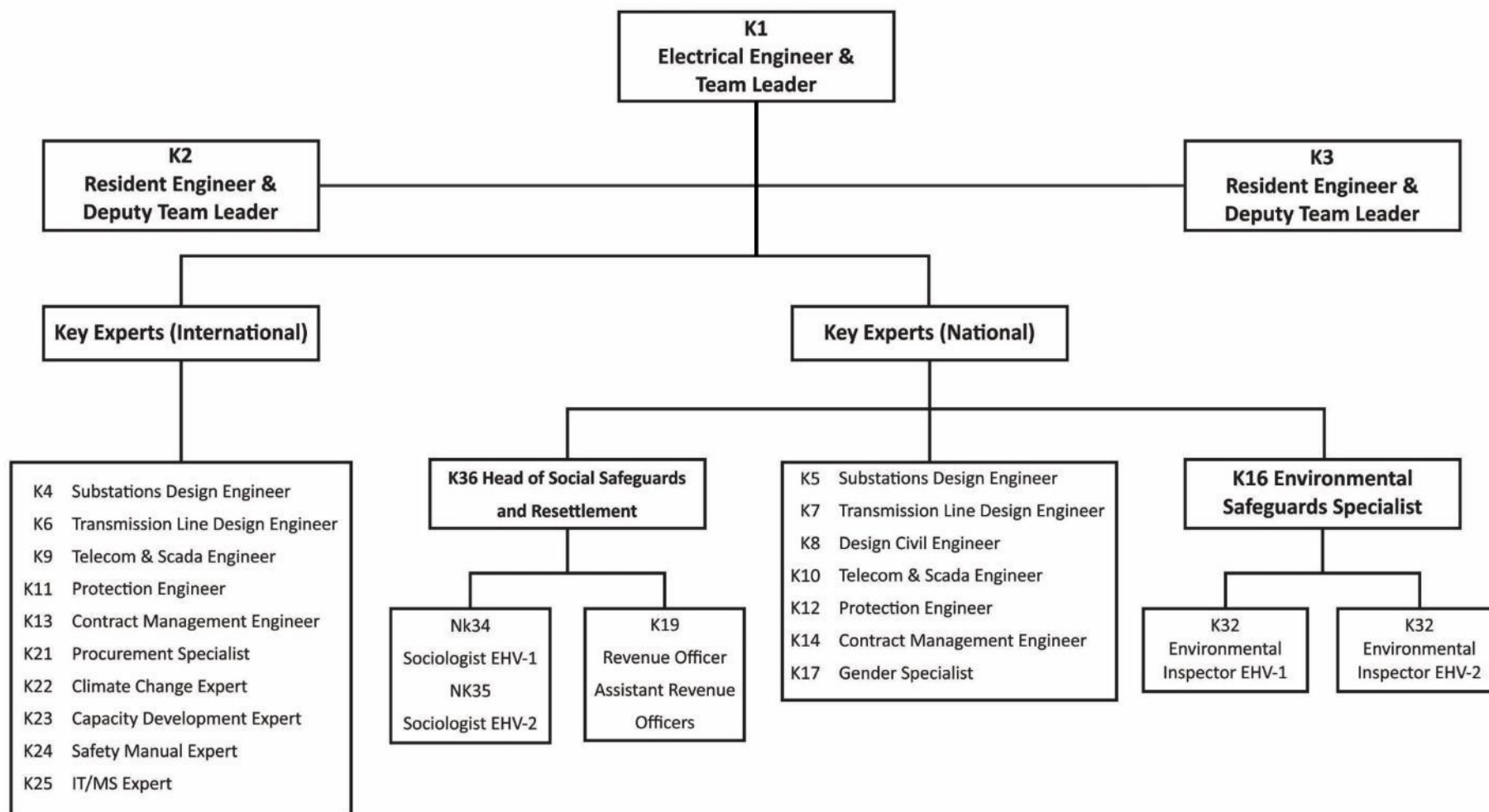


Figure 2-3: Organization of FMC

18. The names and contact details of main organizations in the project and relating to Environmental Safeguards are provided in **Table 2-1**.

Table 2-1: Personnel relevant to Environmental Safeguards

	Organization's Name	Job Title	Name
Executing Agency	National Transmission and Despatch Company	Additional Director General Environment and Social Impact Cell	Mahr Khalid Mehmood Landline: +9242 99202211 Cell: +92335 740 2302 Email: esic@ntdc.com.pk
		Deputy Director Environment	Muhammad Irfan Landline: +9242 99202211 Cell: +92335 740 2306 Email: esic@ntdc.com.pk
Implementing Agency	Energy Department, Government of Pakistan		
Facility Management Consultant	AF Mercados Aries EMI	Team Leader	Rafael Suarez Landline: +3491 5795242 Cell: +92311 104 3498 Email: rafael.suarez@mercadosaries.com
		National Environmental Safeguards Specialist	Aziz Karim Landline: +9251 2857200-6 Cell: +92345 502 9000 Email: akarim@haglerbailly.com.pk
		Environmental Inspector (EHV-1)	Muhammad Tahir Landline: +9251 2857200-6 Cell: +923248474108 Email: mtahir@haglerbailly.com.pk
		Environmental Inspector (EHV-2)	Qaiser Imran Landline: +9251 2857200-6 Cell: +923346605767 Email: Qimran@haglerbailly.com.pk

19. **Table 2-2** provide the summary of civil works contracts and their progress for projects covered in this SAEMR.

Table 2-2: Projects and Construction Contractor

Package	Scope	Contractor	Signed Date	Approval Date			Name of personnel		Civil Work		Progress as of	
				SSEMP	COVID-19 HSMP	ERP	Environmental officer	Health and Safety Officer	Start Date	End Date	30 Jun 2022	31 Dec 2022
ADB-100	Procurement of plant, design, supply, installation, testing & commissioning of 500/220kV autotransformer bay at 500kV Sahiwal substation	Siemens Pakistan Sub-contractor: NETRACON Technologies	12 th Dec 2018	NA	NA	NA	NA	M Yasir (+92 320 961 4061)	NA	25 th Jul 2020	100%	100%
ADB-105 (Lot-I)	500 kV Faisalabad West (Phase II): 500 kV D/C T/L in/out of 500 kV Multan – Gatti at 500 kV Faisalabad West (30 km)	NETRACON - SEPCC/ CWTWC JV	17 th Sep 2018	July 2019	NA	NA	NA	Akasha (+92 323 749 8954)	29 th Oct 2018	30 th Jul 2020	100%	100%
ADB-106 Lot-I	Civil works, erection, testing & commissioning of 500kV transmission line Guddu - Muzaffargarh (74KM) from Location No.1 – 199	NEIE-AHT JV	20 th Jan 2017	Dec 2018	NA	NA	NA	Mr. Azam Bhatti (+92 334 201 9102)	NA	24 th Mar 2020	100%	100%

Semi-annual Environmental Monitoring Report
Second Power Transmission Enhancement Investment Program (Tranche 1)

Package	Scope	Contractor	Signed Date	Approval Date			Name of personnel		Civil Work		Progress as of	
				SSEMP	COVID-19 HSMP	ERP	Environmental officer	Health and Safety Officer	Start Date	End Date	30 Jun 2022	31 Dec 2022
ADB-108 Lot-I	500 kV S/C T/L Guddu - Muzaffargarh from Location No. 597 to Location No. 664 (22.7km)	NPCC JV	14 th Dec 2017	Dec 2018	NA	NA	NA	Mr. Iftikhar Ali (+92 301 387 3556)	NA	24 th Mar 2020	100%	100%
ADB-108 Lot-II	500 kV D/C T/L In-Out of DG Khan, Multan T/L (7.6+7.6 km) and Interfacing of 500 kV circuit at Muzaffargarh	NPCC JV	14 th Dec 2017	Dec 2018	NA	NA	NA	Mr. Iftikhar Ali (+92 301 387 3556)	NA	24 th Mar 2020	100%	100%

Note: The Month/Years in brackets are planned schedule.

COVID-19 HSMP = COVID-19 Health and Safety Management Plan, ERP = Emergency Response Plan, SSEMP = site-specific environmental management plan

NA = Not Available

2.3 Project Activities During the Current Reporting Period

20. Tranche 1 subprojects include the construction of new transmission lines, extension and augmentation of existing substations, and installation of shunt reactor, and replacement of protection equipment at 11 grid stations.

21. All the subprojects of Tranche 1 are physically completed and commissioned.

2.4 Description of Any Changes to Project Design

22. No changes.

2.5 Description of Any Changes to Agreed Construction methods

23. No changes.

3. ENVIRONMENTAL SAFEGUARD ACTIVITIES

3.1 General Description of Environmental Safeguard Activities

24. The under-construction projects of Tranche 1 were commissioned during the reporting period of July-December 2022. There is no change in the status and progress of the project since then.

25. No residual non-conformances were observed and reported in the reporting period of July-December 2022.

3.2 Site Audits

26. A site visit was conducted by Environmental Inspector to check the restoration and rehabilitation status on all the subprojects of Tranche 1 during this reporting period.

Table 3-1. Site Visits Conducted during the Monitoring Period

Subproject	Date of visit	Auditor (Title and name)	Purpose of Audit	Summary of Findings
ADB-100	25 th Nov 2022	Muhammad Tahir (Environmental Inspector EHV-1)	To check the restoration and rehabilitation status of tower foundations, temporary camp sites and workers accommodation sites	<ul style="list-style-type: none"> All the tower foundations were restored and rehabilitated. No refuse or waste was left behind on each project site. Natural drainage of the areas was restored. All pitches, holes and sumps were backfilled at each project site. Fences and gates were restored especially in grid stations.
ADB-105 (Lot-I)	24 th Nov 2022			
ADB-106 (Lot-I)	2 nd Dec 2022			
ADB-108 (Lot-I & Lot-II)	3 rd Dec 2022			

3.3 Unanticipated Environmental Impacts or Risks

27. Not applicable as no construction activities are underway at Tranche 1 subprojects during the reporting period of July-December 2022.

4. STATUS OF COMPLIANCE WITH COVENANTS

28. **Table 4-1** provides a list of environmental loan/grant covenants and their status of compliance.

29. The environmental assessment reports of each subproject of Tranche 1 were submitted to Environmental Protection Department/Agency for obtaining the requisite environmental clearance/approval before the commencement of construction works. The No Objection Certificate (NOC) for each subproject of Tranche 1 was obtained from respective Environmental Protection Department/Agency after addressing the comments of respective environmental agency. All Project scopes were covered in these approvals.

30. Applicable conditions of each national EIA/IEE clearances/approvals were included in all the contracts include and applicable conditions of national EIA/IEE clearances. All the “applicable conditions” of EIA/IEE clearances provided by the local agency are listed in **Annexure I**.

Table 4-1: Status of Compliance with Covenants²

Covenant	Reference in Loan/Grant agreement	Status of compliance
The Borrower shall ensure and cause NTDC to ensure that the PMU is adequately staffed and equipped in accordance with and as contemplated by the FAM, and that the PMU is fully functioning, until the completion of the Project. The Borrower shall further ensure and cause NTDC to ensure that, at all times during the implementation of the Project, the PMU shall be staffed with personnel, each of whom is fully qualified to carry out his assigned functions and responsibilities and familiar with and knowledgeable about the details of the Subprojects for which he is responsible, and all of whom together are familiar with and knowledgeable about the requirements of the applicable policies, rules and regulations of ADB including, but not limited to, the Procurement Guidelines, Consulting Guidelines, Safeguard Policy Statement and Loan Disbursement Handbook of ADB.	Schedule 5, Paragraph 2	A PMU at NTDC has been established and is consisting of Chief Engineer (PMU), 2 Additional DG/Additional Chief Engineer (for Safeguards and Scheduling/Coordination), 2 Managers (for Finance and Procurement), 4 Deputy Managers (for Finance, Environment, Monitoring / Coordination and Procurement), and 3 Assistant Managers (for Environment, Social, and Monitoring/Coordination).
The Borrower shall ensure and cause NTDC to ensure that the preparation, design, construction, implementation, operation and decommissioning of each	Schedule 5, Paragraph 3	All bidding documents included sections pertaining to

² The information related to covenants is taken from Monthly Progress Report prepared by facility management consultant for NTDC.

Semi-annual Environmental Monitoring Report
Second Power Transmission Enhancement Investment Program (Tranche 1)

Covenant	Reference in Loan/ Grant agreement	Status of compliance
<p>Subproject comply with (a) all applicable laws and regulations of the Borrower relating to environment, health, and safety; (b) the Environmental Safeguards; (c) the EARF; and (d) all measures and requirements set forth in the IEE and EMP of such Subproject, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.</p>		<p>compliance with applicable laws on environmental safeguards, IEE requirements and EMP.</p>
<p>The Borrower shall ensure and cause NTDC to ensure that all bidding documents and contracts for the Works for a Subproject contain provisions that require the contractor for such Subproject to: (a) comply with the measures and requirements relevant to the contractor set forth in the IEE and EMP for such Subproject, and in the RP for such Subproject (if any), to the extent they concern impacts on affected people during construction, and any corrective or preventative actions set out in a Safeguards Monitoring Report; (b) make available a budget for all such environmental and social measures; (c) provide the Borrower with a written notice of any unanticipated environmental or resettlement risks or impacts that arise during construction, implementation or operation of such Subproject that were not considered in the IEE or EMP for such Subproject, or in the RP for such Subproject (if any); (d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and I fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.</p>	<p>Schedule 5, Paragraph 8</p>	<p>All bidding documents included sections pertaining to compliance with applicable laws on environmental safeguards, IEE requirements and SSEMP.</p>
<p>The Borrower shall do the following or cause NTDC to do the following: (a) submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission; (b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEEs, the EMPs or the RPs, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the</p>	<p>Schedule 5, Paragraph 9</p>	<p>Semi-annual Environment Monitoring Report have been submitted.</p>

Covenant	Reference in Loan/ Grant agreement	Status of compliance
event and proposed corrective action plan; and (c) report any actual or potential breach of compliance with the measures and requirements set forth in an EMP or RP promptly after becoming aware of the breach		

5. RESULTS OF ENVIRONMENTAL MONITORING

5.1 Overview of Monitoring Conducted during the Current Period

31. Not applicable as no construction activities are underway at Tranche 1 subprojects during the reporting period of July-December 2022.

5.2 Summary of Monitoring Outcomes

32. Not applicable as no construction activities are underway at Tranche 1 subprojects during the reporting period of July-December 2022.

5.3 Training

33. Not applicable as no construction activities are underway at Tranche 1 subprojects during the reporting period of July-December 2022.

5.4 Complaints

34. Not applicable as no construction activities are underway at Tranche 1 subprojects during the reporting period of July-December 2022.

6. RESTORATION AND REHABILITATION

35. Using the photographs taken prior to site/camp establishment, Construction Contractor (CC) to ensure that the RoW, camping area, access tracks and other construction sites are restored as far as possible after abandoning the site.

36. CC has ensured that no refuse or waste is left behind. Pick up all pin flags, signs, and refuse.

37. CC has ensured that natural drainage of the area is restored.

38. CC has installed cross drainage ditches on steep slopes to divert run-off into the adjacent vegetation.

39. CC has ensured that erosion control and revegetation measures using native species are taken where required.

40. CC has ensured that all pits, holes, and sumps are backfilled. An extra cap of soil should be put on top to account for compaction.

41. CC has removed all temporary stream/canal crossings. Stabilize banks at the crossings.

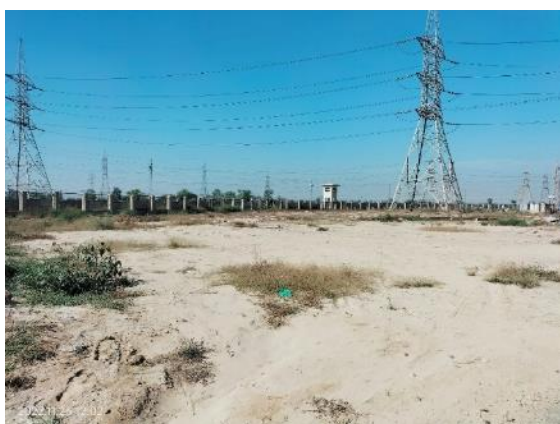
42. CC has removed contaminated soil for appropriate disposal (e.g., incineration).

43. CC has implemented active revegetation measures if natural growth is not considered sufficient.

44. CC has taken appropriate action to discourage access to the area after completion of the construction.
45. CC has ensured that fences and gates are restored.
46. Photographs taken after completion of work shows that sites are restored and rehabilitated after completion of work.

ADB – 100





ADB-105 (Lot-I)







ADB-106 (Lot-I)

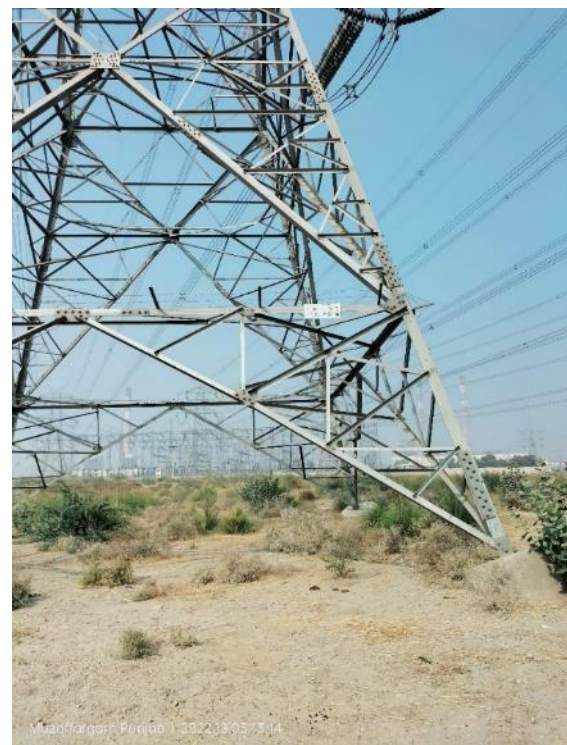








ADB-108 (Lot-I & Lot-II)



Semi-annual Environmental Monitoring Report Second Power Transmission Enhancement Investment Program (Tranche 1)









7. SUMMARY AND RECOMMENDATIONS

7.1 Summary

47. The under-construction projects of Tranche 1 were commissioned during the reporting period of July-December 2021 and therefore no E&S activity was carried out during this reporting period.

7.2 Recommendations

48. As a general practice, a copy of the approved latest SAEMR should be shared with CC of all active ADB-funded projects, so the CC is be informed on the non-compliance issues at the construction site.

49. Lessons learned in Tranche 1 should be used in improvements in future ADB financed projects. The EMP requirements should be ensured in BOQs and contract agreements.

50. Though there was a GRM provided to the CC and the CC kept a register at construction sites for record grievances. However, communities and other stakeholders did not appear during construction period for registering grievances. This indicates that there are weaknesses in disclosure of information to the stakeholders and will be improved in subsequent tranches.

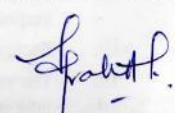
Annexure I: EIA Applicable Conditions by EPA

5. EPA, Punjab accords Environmental Approval under Section 12 of Punjab Environmental Protection Act 1997 for construction of aforesaid project subject to the following conditions:

- i. The proponent shall ensure compliance of Punjab Environmental Quality Standards (PEQS) during construction and operational phase w.r.t noise, waste water and gaseous emissions.
- ii. Mitigation Measures suggested in the Environmental report and Environmental Management Plan (EMP) shall be strictly adhered to minimize any negative impacts on soil, ground water, air and biological resources of the project area. The proponent will depute staff to monitor the compliance of EMP.
- iii. The proponent shall maintain the record of auditable measures taken for implementation of Environmental Management Plan for verification by EPA, Punjab.
- iv. Monitoring shall be carried out during the entire period of the project activities. Monitoring reports shall be submitted to EPA Field office on quarterly basis.
- v. The design of the buildings shall be environment friendly and the proponent will use techniques to make the building environment friendly and energy efficient.
- vi. The proponent shall take measures to conserve water resources by incorporating rain water harvesting in the building design and ensuring provision of ground water recharge galleries. Furthermore proponent must not pollute or over use any surface water body in the vicinity of the project.
- vii. The proponent shall ensure that strict and efficient health and safety measures are in place for protection of workers backed by a comprehensive emergency response system.
- viii. Energy consumption shall be reduced by incorporating green energy sources along with regular power supply.
- ix. The proponent shall provide a copy of Environmental report and copy of this letter to the contractor also for his information and compliance of conditions / measures suggested in these documents.
- x. The proponent shall redress the objections / concerns of neighbours / stakeholder on priority basis (if any at any stage).
- xi. The proponent shall obtain NOCs/ clearance of all other concerned departments before commencement of work.
- xii. The proponent shall plant 5,000 trees of 6-7 feet height of indigenous species in consultation with EPA Field office within six months. The proponent shall also take measures for protection and maintenance of these trees and maintain their proper record for verification by EPA.
- xiii. The proponent shall follow building by laws and the construction plan approved by the competent authority including seismic, structural and geotechnical analysis.
- xiv. The proponent shall avoid the disturbance of the traffic flow due to heavy traffic during construction and operation phase
- xv. The proponent shall make proper parking arrangements as per approved plan and shall not convert the parking area to other use.
- xvi. Camping sites by the contractor shall be located at suitable distance away from any settlement to avoid disturbance to the local people and he will ensure restoration of camping site to its original condition as well.
- xvii. The proponent shall not place the construction material openly.

Semi-annual Environmental Monitoring Report
Second Power Transmission Enhancement Investment Program (Tranche 1)

xviii.	The construction material shall be piled / stored in such a way that it shall not destroy the flora / environment of the locality.
xix.	The proponent shall do landscaping and restore the environment after completion of the construction work.
xx.	The proponent will install standby power generator (if required) adopting sound proofing techniques and it shall be equipped with chimney with proper height to discharge the hot gases / smoke and the proponent will not install the generator on residential area side.
xxi.	Proponent shall submit undertaking that no interim injunction has been issued by any court of law against said project as of date of issuance and receiving of this approval and in case any such injunction this approval shall stand cancelled.
xxii.	Arrangements shall be made for safe disposal of sanitary and solid waste. The solid waste shall be retained within the unit boundary/premises and will be disposed off in an environment friendly way at a suitable disposal facility. Toilet/washrooms will be maintained in an orderly and hygienic manner for public use.
xxiii.	Compensation shall be provided to the inhabitants in case of loss of agricultural land, crop, property, etc. in accordance with the rates that are agreed upon. All conflicting issues regarding compensation, etc. should be settled amicably before the start of the project activities.
xxiv.	The proponent shall ensure that all transmission lines and transformers be installed at a suitable distance from human settlements to protect them from cancer causing impacts due to electromagnetic radiations in accordance with the applicable laws.
xxv.	The proponent shall install latest technology transformers and shall not use transformers containing POPs oil.
xxvi.	The proponent shall take all necessary measures to safeguard the social and economic conditions affecting the community life.
xxvii.	This approval is for installation of 500 KV transmission line from Guddu to Muaffargarh. The proponent shall submit separate application for Environmental Approval for the project extension of grid station as per schedule I/II of Regulations ibid.
xxviii.	The proponent shall submit detailed drawings, land compensation details, crop/trees compensation details and revised tree plantation plan (with compensation ratio of 1:4) before commencement of construction in line with recommendation of Punjab Power Development Board, Government of Punjab.
xxix.	The proponent shall ensure scientific disposal of liquid effluent emanating from worker camp and during project operational activities.
xxx.	The proponent shall follow the SOPs regarding dengue larvae eradication and shall ensure removal of stagnant water on daily basis.
6.	The proponent shall, before commencing construction of the project, acknowledge acceptance of the stipulated conditions by executing an Undertaking in the form prescribed in Schedule VII of Review of IEE/EIA Regulations 2000.
7.	The proponent shall be liable for correctness, exhaustiveness and validity of information supplied to this department by the environmental consultant.
8.	The proponent shall be liable for compliance of Regulations 13, 14, 18 and 19 of IEE/EIA Regulations, 2000, regarding approval, confirmation of compliance, entry, inspections and monitoring.
9.	This approval is accorded only for the installation / construction phase of the project. The proponent shall apply for confirmation of compliance under Regulation 14 of IEE/EIA Regulation, 2000 by submitting Environmental Management Plan for operational phase along with compliance status report of the Environmental Approval of the construction phase of the project.
10.	EPA reserves the right to impose any other condition based on its monitoring.
11.	Any change in the approved project shall be communicated to EPA, Punjab and shall be commenced after obtaining the approval.
12.	This approval shall be treated as null and void if all or any of the conditions mentioned above, is/are not complied with. This approval does not absolve the proponent of the duty to obtain any other approval or consent that may be required under any law in force and is subjudice to legal proceedings in any legal fora / court.
13.	This approval shall be valid (for commencement of construction) for a period of three years from the date of issue under Regulation 17 of IEE / EIA Regulations, 2000.
14.	This approval can be withdrawn at anytime without any prior notice if deemed necessary in the public / national interest.


ASSISTANT DIRECTOR (EIA)
for Director General, EPA, Punjab