

Environment Monitoring Report

Bi-annual Environment Monitoring Report
January 2016

PAK: MFF – Power Distribution Enhancement Investment Program (Tranche 2)

Prepared by Islamabad Electric Supply Company, Federal 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.

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L-2727, 2972 PDEIP: IESCO BAEMRs (Jul-Dec 2015) approved for disclosure

Safia Shafiq

to:

Liaquat Ali

05/02/2016 04:38 PM

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4 Attachments



L-2972 PDEIP BAEMR IESCO (Jul-Dec 2015)..pdf L-2727 PDEIP BAEMR IESCO (Jul-Dec 2015).pdf



L-2727 PDEIP BAEMR IESCO (Jul-Dec 2015).pdf ATT0A0N9.pdf

Dear Liaquat Sb.,

The BAEMRs (Jul-Dec 2015) of IESCO for L-2727 and L-2972 PDEIP are approved for disclosure. Kindly have them uploaded on ADB website and share the weblink with me.

Thanks and regards,

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BI – ANNUAL ENVIRONMENTAL MONITORING REPORT (BAEMR)



Project Number: 2727 – PK, Tranche – II
{July – December, 2015}

Islamic Republic of Pakistan

Power Distribution Enhancement Investment
Project (PDEIP) – Tranche – II
Multi – Tranche Financing Facility (MFF)

Financed by the ASIAN DEVELOPMENT BANK

Prepared By:

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For

Islamabad Electric Supply Company (IESCO).
Pakistan Electric Power Company (PEPCO).

This report does not necessarily reflect the views of ADB or the Government concerned, and ADB and the Government cannot be held liable for its contents.

Asian Development Bank

ABBREVIATIONS

ADB	Asian Development Bank
AJ&K	Azad Jammu & Kashmir
BPI	British Power International
CED	Chief Engineer Development
E&SS	Environmental and Social Safeguard
EA	Executing Agency
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
EPD	Environmental Protection Department
GOP	Government of Pakistan
GS	Grid Substation
IA	Implementing Agency
IEE	Initial Environmental Examination
IESCO	Islamabad Electric Supply Company
kV	Kilo – Volt
MOW&P	Ministry of Water and Power
MFF	Multi – Tranche Financing Facility
NEQs	National Environmental Quality Standards
NOC	No Objection Certificate
PDEIP	Power Distribution Enhancement Investment Program / Project
PEPA	Pakistan Environmental Protection Act
PEPCO	Pakistan Electric Power Company
MU	Management Unit
TL	Transmission Line

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Part I INTRODUCTION

1.1 IESCO

1. Islamabad Electric Supply Company Ltd. (IESCO) is a public utility company, having more than 02 Million consumers and provides service to 04 Nos. Northern Districts of the Punjab Province (Rawalpindi, Attock, Jhelum and Chakwal); Capital Territory (Islamabad); and Southern parts of Azad Jammu & Kashmir (AJK). IESCO jurisdiction map is placed at **Annex – A**.

1.2 Directorate of CE (Development) / Management Unit (MU)

2. To carry out and handle investment projects IESCO has established Management Unit (MU) under the supervision of Chief Engineer (Development). The MU comprises of four sections.

- i) Planning Scheduling & Coordination
- ii) Procurement
- iii) Project Finance
- iv) Environment & Social Safeguard

3. The organizational structure of MU – IESCO and main responsibilities of each section are given in **Annex – B**.

1.3 Environmental & Social Safeguard Section – Management Unit

4. The Environmental & Social Safeguard (E&SS) Section of MU, IESCO provides an overall supervision and advisory services during the Pre - Construction phase, Construction phase & Post – Construction phase of the project. The unit also assists and advises GSC Directorate, Construction Directorate and other IESCO departments on environmental and social matters overall. Presently, the E&SS Section has one Environmental and one Social Impact expert under the supervision of a Deputy Manager Environmental and Social Safeguard (E&SS). Organizational structure of E&SS – MU IESCO is attached as below.

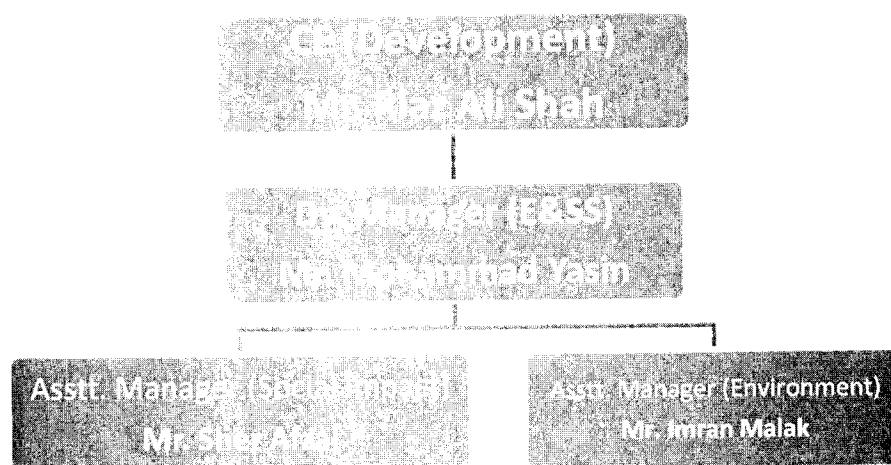


Figure 01: Management Structure of E&SS – MU – IESCO.

1.4 Power Distribution Enhancement Investment Program (PDEIP) – Tranche – II.

5. Program basic information is provided in Table 1.

Table 1: Program Basic Information.

The Program:	Power Distribution Enhancement Investment Program (PDEIP). Multi – Tranche Financing Facility (MFF).
Subproject:	Tranche – II subproject.
Sponsoring Agency:	Government of Pakistan, Ministry of Water & Power (MoW&P).
Executing Agency:	Pakistan Electric Power Company (PEPCO).
Implement Agency:	Islamabad Electric Supply Company (IESCO).
Type of Financing:	Loan amount US \$ 18.95 Million. Loan No. 2727 – PK; Tranche – II Subproject.
Loan Signing Date:	January 28, 2011.
Loan Effectiveness Date:	October 05, 2011.
Closing Date:	Revised as December 31, 2016.
Last ADB Review Mission Date:	December 01 – 15, 2015.

1.5 Scope of the Work – Tranche-II Sub-projects

6. IESCO Tranche – II subproject includes 01 No. Conversion of existing grid station (66 to 132 kV), 04 Nos. Extensions / Augmentations of Grid stations, 02 Nos. Transmission Lines (New), 01 No. Transmission Line (Remodelling) & Capacitors & Miscellaneous Electrical Equipment. The detail scope of work of Tranche - II subproject is attached as **Annex – C**.

1.6 Present Status of the Project:

7. The civil works of Tranche – II Subprojects have been awarded, the detail of work awarded is as below; (The physical progress charts of contractors is attached as **Annex – D**):

No.	Pack age	Lot No	Description of Work	Length of T/L (KM)	Nos. of Loca tions	Awarded to	Contract Signed Date	Commenc ement Date Notified.	Civil Work (% age)	Status
132 / 11.5 kV Grid Station.										
01.	ICB-11/ TR-II/ ADB	I	Noor Pur Sethi (AIS) Grid Station District Chakwal on Turn Key Basis.	-	1	M/s Siemens (Pakistan) Engineering Co. Ltd. Islamabad.	May 15, 2012.	July 16, 2012.	100%	Completed.
132 kV Transmission Line.										
02.	ICB-11/ TR-II/ ADB	II	Hattian to Bagh (AJ&K) For Bagh Grid Station.	25.23	103	M/s Pingao - Potential (JV), Lahore.	April 16, 2012.	October 10, 2012.	100%	Completed
03.		III	Mangla Power House to Rajjar Grid Station on ACSR Rail Conductor.	49.2	231		May 24, 2012.	October 10, 2012.	91%	Under completion
04.		IV	Noor Pur Sethi to Choa Saiden Shah for Noor Pur Sethi Grid Station.	47.65	189		April 16, 2012.	October 10, 2012.	100%	Completed.

1.7 Relationships with Contractors

8. Orientation / pre – construction meeting were arranged by E&SS section for the contractors and they have been made aware of their responsibilities as per the EMP.

The contractors were also informed that monitoring will be an integral part of the project and will consist of;

- Monitoring by contractor (Analysis of environmental parameters, checklist filling) and reporting to GSC IESCO with a copy to MU.
- Supervision / Monitoring by GSC and reporting to MU.
- Random field visit by MU (E&SS staff) and reporting.

9. The detail of meetings held and the nomination of Environmental & Social Monitors (ESM) is tabulated below;

No.	Package	Lot No.	Name of Contractor.	Name of Person.	Designation.
132 / 11.5 kV Grid Station-Noor Pur Sethi (19 June, 2012)					
01.	ICB-11/ TR-II/ ADB	I	M/s Siemens (Pakistan) Engineering Co. Ltd. Islamabad.	Syed Sajid Rizni (Mr.)	Project Manager
				Mr. Saadat Shah	Project Coordinator
				Mr. Muhammad Zaman Ul Haq.	Environmental & Social Manager
				Mr. Muhammad Zohaib.	ESM / Site Incharge
132 kV Transmission Lines. (12 July, 2012)					
02.	ICB-11/ TR-II/ ADB	II	M/s Pingao - Potential (JV), Lahore.	Engr. Shokat Ali Hassan.	General Manager Turnkey Projects.
03.	ICB-11/ TR-II/ ADB	III		Engr. Fasih Islam Khan	G M (Construction) / Manager QEHS
04.	ICB-11/ TR-II/ ADB	IV		Rashid Nawaz.	Project Manager
				Bagh - Hattian T/L.	Engr. Khalid Abbas.
			Mangla LB - Rajjar T/L.	Engr. Shafiq ur Rehman	ESM / Site Incharge
			Choa Saiden Shah - Noor Pur Sethi T/L.	Engr. Ghulam Sarwar	ESM / Site Incharge

Part II ENVIRONMENTAL MONITORING

2.1 Monitoring.

10. Environmental Monitoring of the projects is being carried out by the contractors under the supervision of Environmental and Social Safeguard (E&SS) section MU, IESCO during the execution phase. Field visits are carried out by E&SS Section, MU IESCO for the smooth and effective implantation of EMMP & Monitoring plan as prescribed in approved Environmental Assessment Report.

2.2 Monitoring Status:

Description of Indicator.	Remarks.
Summarizes the previous six months monitoring data and provide explanations of any instances where environmental standards or guidelines are exceeded.	The reports submitted by the contractor's indicate that environmental parameters meet the NEQs. Summary of Monitoring is attached at Annex – E . Monitoring of Environmental parameters is attached at Annex – F .
<ul style="list-style-type: none">Noise and Vibration.Water Quality.Air Quality.Flora and Fauna Monitoring.	

Part III ENVIRONMENTAL MANAGEMENT

3.1 Compliance Status with Statuary Requirements

11. The detail of environmental & social compliance regarding statutory / regulatory requirements in accordance to ADB & National Law is tabulated below.

No.	Regulatory Requirements.	Status of Compliance.
01.	Preparation of Environmental Assessment Reports.	EIA Prepared.
02.	Clearance from ADB.	Clearance given by ADB.
03.	Uploaded on IESCO Website.	Yes, available.
04.	Clearance / Obtaining of No Objection Certificate (NOC) from the Environmental Protection Agency (EPA).	No Objection Certificate (NOC) / Clearance for execution of the project has been issued by Pakistan Environmental Protection Agency (Pak – EPA) on 26 th December, 2013.

3.2 EMP as a part of Bid Documents.

12. Environmental Management & Mitigation Plan (EMMP) & Monitoring Plan of the approved EIA Reports have been made part of all the bidding documents of civil works of Tranche – II sub projects.

3.3 Clauses in the Bid Documents.

13. Sufficient clauses have been included in the bid documents and the Contractor is bound to comply with and carry out all the monitoring and mitigation measures as set in the Environmental and Social Assessment reports and EMP. Detail of all the clauses included in the bid documents are given at **Annex – G**.

3.4 Awareness & Trainings.

14. To develop the in-house capacity, IESCO arranged a numbers of training for different cadres / staff of GSC Directorate, who are responsible for supervision of development projects. On site / on job trainings were also arranged during the site visits regarding environmental issues, social issues, housekeeping, record keeping, communicable diseases especially HIV/AIDS, Hepatitis, Tuberculosis (TB) & Drugs,

defensive driving, site restoration after the work and overall implementation of the Environmental Management Plan (EMP) of Tranche – II subproject.

3.5 External Monitoring / Visits.

15. M/s SMEC, Lahore (The Project Facility Consultant) hired by PEPCO for all DISCOs paid visit to the project sites. In addition to, the Environment and Social Safeguard Members of Asian Development Bank also visited the project sites and found the implementation status as satisfactory and appreciated the commitments of IESCO and the contractors toward the compliance. The detail of M/S SMEC and ADB's officials visits in this time period is as below;

No.	Name of Work Site Visited.	Visited W	Dated.
01.	132 kV Mangla to Rajjar Transmission Line.	M/s SMEC	16.12.2015.

16. M/s SMEC, Lahore has also forwarded the Six Month External Environmental Monitoring Report on 16.10.2015, and the contractor has been informed to address the gaps identified by Environmental team of consultant.

3.6 Environmental Audit.

17. ADB hired the services of M/s Hagler Bailly, Islamabad for Environmental Audit of the subprojects under Tranche – II. In this regard, the two personnel team of M/s Hagler Bailly, Islamabad visited all the project sites.

18. The Environmental Audit Report on the subproject has been shared with IESCO for comments on 13.06.2014. The report was forwarded to M/s Hagler Bailly, Islamabad, PEPCO & ADB with comments and gaps identified by IESCO on 19.06.2014.

3.7 Other Monitoring Indicators.

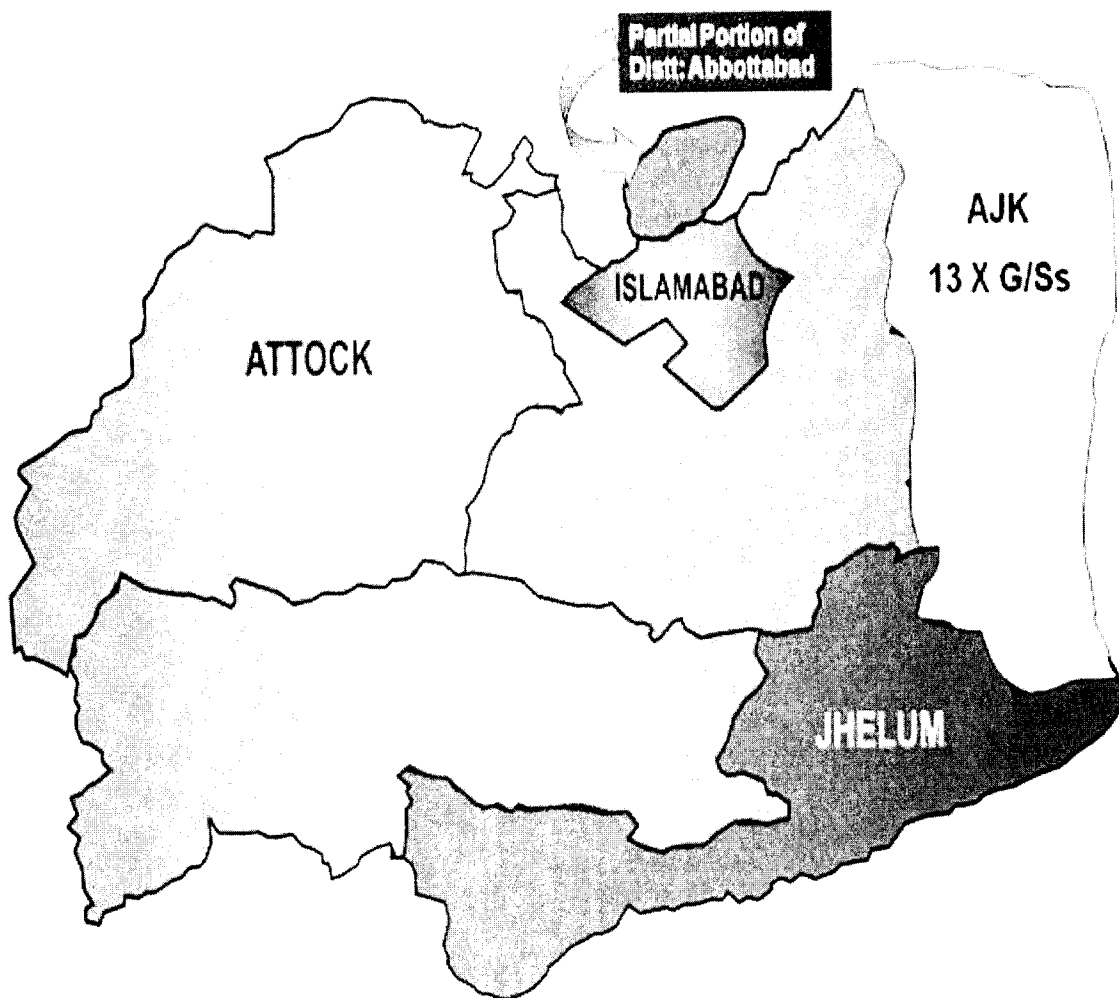
Description of Indicator.	Remarks.
EMS, SSEMP and work plans. Report on delivery of documents, required amendments etc.	EMP prepared. No amendments are required. Internal monitoring is being carried out on regular basis to check the Implementation of EMP, status of implementation of EMP is attached as Annex – H.
Non-compliance notices – summarizes the details on the number of notices given out and the issues covered. Summaries the ranking of issues.	Nil.
Corrective action plans - report on timeliness of preparation and completion	Nil.
Consultation and complaints – report on any consultation undertaken and list any complaints received.	<ul style="list-style-type: none"> • Consultation carried out during preparation of Environmental Assessment reports. • Complaint Registers have been placed all work site / camp site, PMU & SDO concerned.

Part IV PROJECT PICTURES

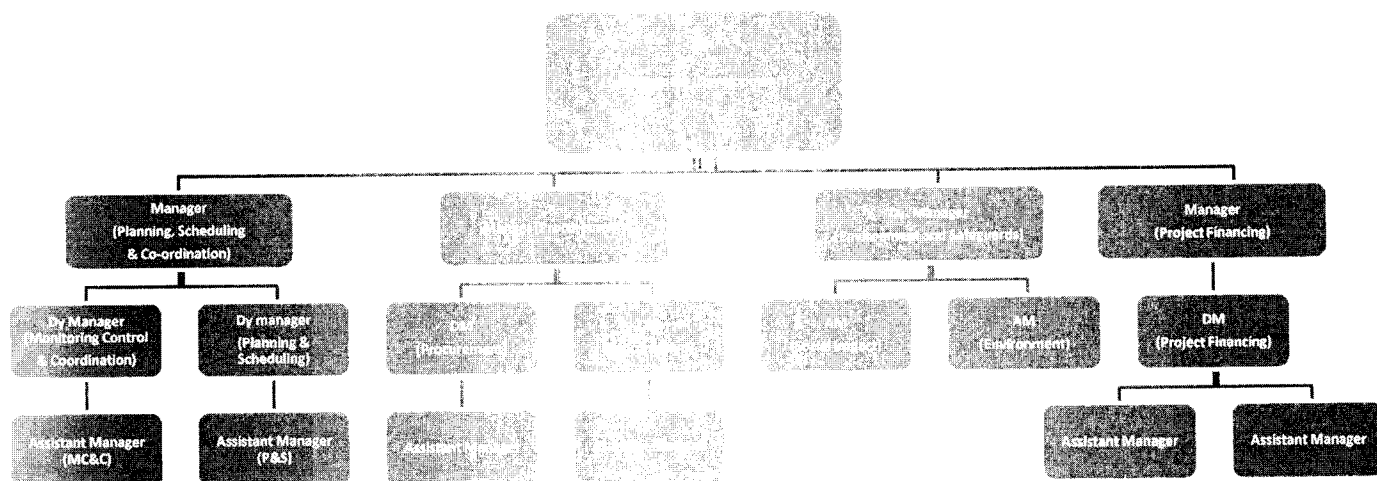
19. Project pictures are attached as **Annex – I.**

Annex - A.

IESCO JURISDICTION MAP



ORGANIZATIONAL STRUCTURE OF MU - IESCO



Annex - C.**DETAIL SCOPE OF WORK OF TRANCHE - II SUBPROJECT**

No.	Project Component	
01.	Conversions	01 No.
	i. Conversion of NPS Grid Station on Turnkey Basis	
02.	Extension of Power Transformers	02 Nos.
	i. 132 kV E - 8 Grid Station, Islamabad.	
	ii. 132 kV Satellite Town Grid Station, Rawalpindi.	
03.	Augmentation of Power Transformers	02 Nos.
	i. 132 kV H-11 Grid Station, Islamabad	
	ii. 132 kV Mangla Right Bank (Mangla R. B.) Grid Station.	
04.	Transmission Lines (New)	02 No.
	i. 132 kV Hattian to Bagh Transmission Line.	
	ii. 132 kV Choa Saiden Shah - Noorpur Sethi Transmission Line.	
05.	Transmission Lines (Remodelling)	01 No.
	i. 132 kV Mangla Left Bank - Rajjar Transmission Line.	
06.	Capacitors & Miscellaneous Equipment	

PROJECT PROGRESSIVE PROGRESS STATUS▪ **132 kV Noor Pur Sethi Grid Station.**

01.	Survey.	Progress till Previous Period	Progress during the Period under Report	Total
		Percentage	Percentage	Percentage
		100%	0%	100%
02.	Soil Investigation.	Progress till Previous Period	Progress during the Period under report	Total
		Percentage	Percentage	Percentage
		100%	0%	100%
03.	Excavation of Work.	Progress till Previous Period	Progress during the Period under report	Total
		Percentage	Percentage	Percentage
		100%	0%	100%
04.	Concrete of Work.	Progress till Previous Period	Progress during the Period under report	Total
		Percentage	Percentage	Percentage
		100%	0%	100%
05.	Erection / Installation of Equipment (Work).	Progress till Previous Period	Progress during the Period under report	Total
		Percentage	Percentage	Percentage
		100%	0%	100%
06.	Commissioning / Testing of Work.	Progress till Previous Period	Progress during the Period under report	Total
		Percentage	Percentage	Percentage
		100%	0%	100%



▪ **132 kV Bagh – Hattian Transmission Line.**

01.	Survey	Progress till Previous Period		Progress during the Period under Report		Total	
		Percentage		Percentage		Percentage	
		100%		0%		100%	
02.	Soil Investigation	Progress till Previous Period		Progress during the Period under report		Total	
		Percentage		Percentage		Percentage	
		100%		0%		100%	
03.	Foundations Total No. of Towers = 97	Progress till Previous Period		Concreted during the Period under Report		Total	
		Physical	Percentage	Physical	Percentage	Physical	Percentage
		Nos.	%	Nos.	%	Nos.	%
		96	93.20%	01	06.80%	97	100 %
04.	Erection Total No. of Tower =97	Progress till Previous Period		Erected during the Period under Report		Total	
		Physical	Percentage	Physical	Percentage	Physical	Percentage
		Nos.	%	Nos.	%	Nos.	%
		90	87.38%	07	12.62%	97	100%
05.	Stringing Total Length of Line = 27.25 Km	Progress till previous Period		Stringing during the Period under Report		Total	
		Physical	Percentage	Physical	Percentage	Physical	Percentage
		Km.	%	Km	%	Km	%
		18	66.05%	09.25	33.95%	27.25	100%



▪ **132 kV Mangla Left Bank –Rajjar Transmission Line.**

01.	Survey	Progress till Previous Period		Progress during the Period under Report		Total	
		Percentage		Percentage		Percentage	
		100%		0%		100%	
02.	Soil Investigation	Progress till Previous Period		Progress during the Period under Report		Total	
		Percentage		Percentage		Percentage	
		100%		0%		100%	
03.	Foundations Total No. of Towers = 249	Progress till Previous Period		Concreted during the Period under Report		Total	
		Physical	Percentage	Physical	Percentage	Physical	Percentage
		Nos.	%	Nos.	%	Nos.	%
		201	87.01%	45	11.79%	246	98.80%
04.	Erection Total No. of Tower = 249	Progress till Previous Period		Erected during the Period under Report		Total	
		Physical	Percentage	Physical	Percentage	Physical	Percentage
		Nos.	%	Nos.	%	Nos.	%
		108	46.75%	132	49.64%	240	96.39%
05.	Stringing Total Length of Line = 49.47 Km	Progress till previous Period		Stringing during the Period under Report		Total	
		Physical	Percentage	Physical	Percentage	Physical	Percentage
		Km.	%	Km.	%	Km.	%
		0	0%	46.635	94.27%	46.635	94.27%



▪ **132 kV Choa Sadian Shah – Noor Pur Sethi Transmission Line.**

01.	Survey.	Progress till Previous Period		Progress during the Period under Report		Total	
		Percentage		Percentage		Percentage	
		100%		0%		100%	
02.	Soil Investigation.	Progress till Previous Period		Progress during the Period under Report		Total	
		Percentage		Percentage		Percentage	
		100%		0%		100%	
03.	Foundations Total No. of Towers = 189	Progress till Previous Period		Concreted during the Period under Report		Total	
		Physical	Percentage	Physical	Percentage	Physical	Percentage
		Nos.	%	Nos.	%	Nos.	%
		189	100%	0	0%	189	100%
04.	Erection Total No. of Tower = 189	Progress till Previous Period		Erected during the Period under Report		Total	
		Physical	Percentage	Physical	Percentage	Physical	Percentage
		Nos.	%	Nos.	%	Nos.	%
		189	100%	0	0%	189	100%
05.	Stringing Total Length of Line = 47.92 Km	Progress till previous Period		Stringing during the Period under Report		Total	
		Physical	Percentage	Physical	Percentage	Physical	Percentage
		Km.	%	Km.	%	Km.	%
		47.92	100%	0	0%	47.92	100%

Annex – E.**MONITORING STATUS / CHART**

No.	Description.	Status of Compliance
01.	Establishment of PMU in IESCO.	Yes.
02.	Induction of E&SS Section and Staff in PMU.	Yes.
03.	Preparation of Environmental Assessment Reports (EIA Reports).	Yes.
04.	Clearance & approval of IEE / EIA Reports from ADB.	Yes.
05.	Approval of IEE / EIA Reports from CEO, IESCO.	Yes.
06.	Uploading of EIA Reports on IESCO website.	Yes.
07.	Provision of the reports in the Office of C.E (Dev) / XEN / SDO & Camp Site.	Yes.
08.	Submission to Concerned EPA / EPD.	Yes.
09.	Public Hearing Session.	1 st Public Hearing Session held on April 30, 2012 at 132 KV Noor Pur Sethi G/S.
		2 nd Public Hearing Session held on October 15, 2012 at New Sangam Hotel, Muzaffarabad, AJ&K.
10.	Clearance / Obtaining No Objection Certificate (NOC) from the EPA / EPD.	No Objection Certificate (NOC) / Clearance for execution of the project has been issued by Pak – EPA on December 26, 2013.
11.	Training on Environment Issues.	Yes.
12.	Internal Monitoring & Field Visit.	Ongoing.
13.	External Monitoring & Field Visit.	Carried out by M/s SMEC, Lahore.
14.	EMMP is made part of Bidding Documents	Yes.
15.	Provision made in BOQ of Bidding Documents for Environmental & Social	Yes.

No.	Description.	Status of Compliance
	Issues.	
15.	Status of implementation of EMMP & Monitoring Parameters.	Ongoing.
16.	Environmental Audit.	Carried out by M/s Hagler Bailly, Islamabad.
17.	Project Present Status.	Attached at Annex – C.

Annex - E_ Cont.**1. TESTING / REPORTING TABLE**

No.	Description of Work.	Contractor's Name.	Reporting Period. (Month)	Status of Compliance by the Contractors.	Remarks.
A.	132 kV NOOR PUR SETHI GRID STATION.				
01.	Environmental & Social Checklist.	M/s Siemens Pakistan.	July 2012 To January 2014.	Submitted on monthly basis.	Satisfactory. Work completed on 09.06.2014.
02.	Environmental & Social Compliance Report.	-do-	-do-	Submitted on quarterly basis.	Satisfactory.
03.	Water Test Reports.	-do-	November 2012 To October 2013.	Carried out.	In line with NEQS.
04.	Air Test Reports.	-do-		-do-	-do-
05.	Noise Measurements.	-do-		-do-	-do-
B.	132 kV BAGH – HATTIAN TRANSMISSION LINE.				
06.	Environmental & Social Checklist.	M/s PINGGAO – Potential (JV), Lahore.	September 2012 To December 2014.	Submitted on monthly basis.	Satisfactory. Work completed on 01-10-2015
07.	Environmental & Social Compliance Report.	-do-	-do-	Submitted on quarterly basis.	-do-
08.	Water Test Reports.	-do-	October 2012 To November 2013.	Carried out.	In line with NEQS. *
09.	Air Test Reports.	-do-		-do-	-do-
10.	Noise Measurements.	-do-		-do-	-do-

No.	Description of Work.	Contractor's Name.	Reporting Period. (Month)	Status of Compliance by the Contractors.	Remarks.
C.	132 kV MANGLA – RAJJAR TRANSMISSION LINE.				
11.	Environmental & Social Checklist.	M/s PINGGAO – Potential (JV), Lahore.	September 2012 To December 2014.	Submitted on monthly basis.	Satisfactory. Work in Progress.
12.	Environmental & Social Compliance Report.	-do-	-do-	Submitted on quarterly basis.	-do-
13.	Water Test Reports.	-do-	October 2012 To August 2013.	Carried out.	In line with NEQS. *
14.	Air Test Reports.	-do-		-do-	-do-
15.	Noise Measurements.	-do-		-do-	-do-
D.	132 kV CHOA SADIAN SHAH – NOOR PUR SETHI TRANSMISSION LINE.				
16.	Environmental & Social Checklist.	M/s PINGGAO – Potential (JV), Lahore.	September 2012 To May 2014.	Submitted on monthly basis.	Satisfactory. Work completed on 09.06.2014.
17.	Environmental & Social Compliance Report.	-do-	-do-	Submitted on quarterly basis.	-do-
18.	Water Test Reports.	-do-	October 2012 To August 2013.	Carried out.	In line with NEQS.
19.	Air Test Reports.	-do-		-do-	-do-
20.	Noise Measurements.	-do-		-do-	-do-

* No test has been carried out in the current period (July-December 2014) as the contractor has completed the quantitative measurements given in BOQ. The previous results were satisfactory & in line with NEQs.

Annex - F.***ENVIRONMENTAL MONITORING PARAMETERS / DATA***

The contractors have carried out drinking water tests, air quality tests and noise level measurements as per requirements laid down in contract agreements. The Monitoring Data / reports were made part of previous Bi - Annual reports. The results were satisfactory over all & in line with National Environmental Quality Standards (NEQS). No test has been carried out in the current period (July-December 2014) as the contractor has completed the quantitative measurements given in BOQ. However, the contractor of Mangla-Rajjar T/line has been requested to carry out drinking water test for the relocated campsite.

Annex – G.**CLAUSES IN THE BIDDING DOCUMENTS**

The Clauses included in the bidding documents are;

- i. **Required Personnel:** The Bidder shall provide details of the proposed personnel and their experience records in the relevant Information Forms included in Section 4 (Bidding Forms).
- ii. The Bidder must demonstrate that it has the personnel for the key positions that meet the following requirements:

No.	Position.	Total Work Experience (Year).	Experience in Similar Work (Years).
01.	Project Manager.	15	10
02.	Lead Design Engineer (Civil).	10	05
03.	Lead Design Engineer (Electrical).	10	05
04.	Construction Manager	10	05
05.	Environmentalist / HSE Officer.	05	03
06.	Social / Resettlement Officer.	05	03

- iii. **Employer's Requirement / Supplementary Information:**

SI-03. Environmental Issues:

The Contractor shall comply and carry out all the monitoring and mitigation measures as set forth in the Environmental & Social Management Plan (EMP). The EMP & Environmental Monitoring Plan are attached as Annexure with bidding document.

- iv. **General Condition of Contract:**

Protection of Environment

46. Protection of Environment	46.1 The Contractor shall observe the environment mitigation measures that are set out in the Environmental Management
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	<p>Plan (EMP) that has been prepared for the Project.</p> <p>46.2 The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of operations as set forth in the EMP.</p> <p>46.3 The Contractor shall ensure that emissions, surface discharges and effluent from its activities shall not exceed the values stated in the Specifications, or as prescribed by the applicable laws.</p> <p>46.4 The contractor shall Comply with all applicable environmental laws and regulations of Pakistan.</p> <p>46.5 The contractor shall</p> <ol style="list-style-type: none"> Establish an operational system for managing environmental impacts. Carry out all of the monitoring and mitigating measures set forth in the EIA and the EMP. Allocate the budget required to ensure that such measures are carried out, and the actual costs for the implementation of such measures shall be reimbursed by the employer to the contractor from provisional sums. The contractor shall submit to the employer quarterly reports on the carrying out of such measures. <p>46.6 The Contractor shall submit monthly & quarterly reports on carrying out such measures to the Employer.</p>
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v. Special Condition of Contract:

9.	Contractor's Responsibilities.
9.8.	The Contractor shall comply with all applicable national, provincial, and local Environmental laws and regulations.

	<p>The Contractor shall;</p> <ul style="list-style-type: none"> a) Establish an operational system for managing environmental impacts. b) Carry out all of the monitoring and mitigation measures set forth in the Initial Environmental Examination (“IEE”) and the Environmental Management Plan (EMP) attached hereto as Appendix 8 / Annexure – C c) Allocate the budget required to ensure that such measures are carried out. d) The Contractor shall submit to the Employer quarterly report on the carrying out of such measures and the actual costs for the implementation of such measures shall be reimbursed by the Employer to the Contractor from Provisional Sums”.
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vi. ***Contract Forms / Contract Agreement:***

The following documents shall constitute the Contract between the Employer and the Contractor, and each shall be read and construed as an integral part of the Contract (Reference GCC Clause 2):

- a) This Contract Agreement and the Appendices hereto
- b) Letter of Bid and Price Schedules submitted by the Contractor,
- c) Special Conditions,
- d) General Conditions,
- e) Specification,
- f) Drawings,
- g) ***Environmental & Social Mitigation Plan,***
- h) ***Environmental Monitoring Plan,***
- i) Other completed Bidding Forms submitted with the Letter of Bid,
- j) Any other documents part of the Employer’s Requirements.

Annex – H.

IMPLEMENTATION REPORT ON EIA / IEE MITIGATION REQUIREMENTS

Environmental Concern	Objectives	Mitigation Measures Recommended	Implementation Responsibility	Remarks
DESIGN / PRE – CONSTRUCTION STAGE				
Review of EMP.	Ensure EMP sufficient to control impacts and compliance with statutory requirement of EPA.	<ul style="list-style-type: none"> ▪ Ensure proposed live diversions are agreed and included in contract. ▪ Ensure final route to be built by contractor is as described in RRP with same land acquisition. ▪ Review EIA and EMP & submit revised REA & environmental assessment in line with ADB Guidelines. Resubmit to Pak-EPA, If required. 	Contractor	<ul style="list-style-type: none"> ▪ Complied. ▪ Complied. No land acquisition involved. ▪ Not Required.
Social Impacts and Resettlement.	To ensure that the adverse impacts due to the property acquisition and resettlement are mitigated according to the LARP.	<ul style="list-style-type: none"> ▪ To be completed prior to commencement of construction; ▪ Social preparation of the APs to be completed prior to commencement of construction. ▪ Acquisition of lands completed to minimize the uncertainty of people. ▪ Completed implementation of LARP to provide compensation and assistance to the APs. ▪ All the payments/entitlements are paid according to the entitlement matrix, which was prepared according to the LARP. 	IESCO	<ul style="list-style-type: none"> ▪ Complied. ▪ No land acquisition involved. ▪ Being complied / ongoing as per the rule. ▪ Being complied. Entitlement matrix is being revised as per the ground situation.
Project Disclosure.	Ensure compliance with statutory requirement of EPA.	<ul style="list-style-type: none"> ▪ Design all changes to alignment disclosed to EPA. ▪ Ensure all changes to alignment are included in the revised EMP. 	IESCO	<ul style="list-style-type: none"> ▪ Complied. ▪ N.A.
Environmentally Responsible Procurement.	Ensure environmentally responsible procurement.	<ul style="list-style-type: none"> ▪ Require in procurement specifications that transformers, transformer oil and other equipment are to be free from PCB and other petroleum fractions that may 	E&SS section.	<ul style="list-style-type: none"> ▪ Complied.

Environmental Concern	Objectives	Mitigation Measures Recommended	Implementation Responsibility.	Remarks.
	Look for opportunities to enhance design Avoid environmental pollution.	be injurious to environment or equipment.		
		▪ Require new switchgear to be free from CFCs in procurement specifications. SF6 gas insulated equipment to be effectively leak free with nominal SF6 top up less than 1% per year.		▪ Complied.
		▪ Choose non-polluting or enhancing methods. Contractor to submit Method Statement and schedule of environmental mitigation measures in response to EMP with tender. Include enhancements, techniques to reduce impacts.		▪ Complied.
		▪ Contractual clauses included to tie the implementation of environmental mitigation measures to a performance bond.		▪ Complied.
Waste Disposal.	Ensure adequate disposal options for all waste including transformer oil, residually contaminated soils, and scrap metal.	▪ Create waste management policy and plan to identify sufficient locations for, storage and reuse of transformers and recycling of breaker oils and disposal of transformer oil, residually contaminated soils and scrap metal "cradle to grave".	E&SS section with the design consultant	▪ Complied. ▪ Considered in the design / drawing of the grid station). ▪ IESCO has the policy of re-use of transformers and recycling of oils.
		▪ Include in contracts for unit rates for re-measurement for disposal.		▪ Not Applicable.
		▪ After agreement with local authority, designate disposal sites in the contract and cost unit disposal rates accordingly.		▪ Not required.
Hazardous Waste Disposal.	To ensure responsible disposal of hazardous waste in line with best practice.	▪ Waste management plan to identify any remaining PCB containing equipment to be replaced and appropriate method for disposal.	E&SS section with the Design Consultant	▪ Complied.
Noise and Air Quality Mitigation in Design.	Plan and design to ensure noise impacts are acceptable in	▪ Plan to prevent noise from GS in the operational phase and conduct consultation with affected communities	E&SS section	▪ Complied.

Environmental Concern	Objectives	Mitigation Measures Recommended	Implementation Responsibility.	Remarks.
	operational phase.	<ul style="list-style-type: none"> to determine acceptability criteria for noise. ▪ Follow up with detailed acoustic assessment for all residential, school, temple (other sensitive structures) within 50m of GS. Base on measurement of existing equipment noise. ▪ If noise at sensitive receiver exceeds specific criterion [e.g. Leq55db (A)] include design and installation of acoustic insulation measures to control noise at SRs. ▪ Consider solid barrier to attenuate noise at schools and hospitals to below accepted criterion. ▪ Prepare Air Quality and Noise Control plan for construction stage 		<ul style="list-style-type: none"> ▪ Operation phase requirement. ▪ Noise level with in NEQS limit. ▪ Not required. ▪ Not required. ▪ Complied.
Hydrological Impacts.	To minimize hydrological and drainage impacts during constructions.	<ul style="list-style-type: none"> ▪ Assess expected hydrologic flow in all areas where it is sensitive, such as for irrigated lands taking into account changes due to climate change as predicted by accredited sources such as OECD. ▪ Ensure surface flows are controlled and facilitated through early re-provision of irrigation with appropriate drainage structures in the road base including bridges and culverts. ▪ Prepare Drainage Management Plan, to be completed and approved by IESCO in the Detailed Design at least one month prior to construction. 	Contractor	<ul style="list-style-type: none"> ▪ Complied. Considered in the design / drawing of the grid station). ▪ Complied. Considered in the design / drawing of the grid station). ▪ Complied. Considered in the design / drawing of the grid station).
Temporary Drainage and Erosion Control.	<ol style="list-style-type: none"> 1. Prevent runoff and control erosion. 2. Include preliminary designs for Erosion Control in 	<ul style="list-style-type: none"> ▪ Identify locations for Erosion Control and Temporary Drainage along all of the line and around GS. ▪ Include designs for EC and TD in contract (s) 	Contractor.	<ul style="list-style-type: none"> ▪ Complied. Considered in the design / drawing of the grid station). ▪ Complied. Considered in the design / drawing of the grid

Environmental Concern	Objectives	Mitigation Measures Recommended	Implementation Responsibility	Remarks
	IESCO contract.	<ul style="list-style-type: none"> Agree detailed EC and TD plan with IESCO / E&SS section at least one month prior to construction. 		<ul style="list-style-type: none"> station). Complied.
Planning Construction Camps and Materials Management.	To plan to minimize the effect of the work camps on the surrounding environment and residents in the area.	<ul style="list-style-type: none"> Plan sites for worker camps and back up areas for stockpiling materials and equipment in advance. Consult local community and locate to use waste/barren land and non-agricultural plots. Agree use of land before construction commences reconfirmed by the Contractor and agreed IESCO / E&SS section at least one month prior to construction. 	Contractor.	<ul style="list-style-type: none"> Complied. Worker Camps are established with-in the existing grid stations of IESCO Material is also stocked in the available space within the grid stations and properly fenced.
Traffic Condition.	Plan to minimize disturbance of traffic.	<ul style="list-style-type: none"> Avoiding blocking existing roads and other access near the works route during construction. 	E&SS section.	<ul style="list-style-type: none"> Properly ensured.
Institutional Strengthening and Capacity Building.	Prepare E&SS section for implementation of EMP.	<ul style="list-style-type: none"> Develop strengthening plan for the environmental management by E&SS section the Project rolls out. Increase staffing of IESCO PMU. Train E&SS section officials to apply the EMP and to evaluate the environmental requirements and contractors' mitigation measures. 	IESCO	<ul style="list-style-type: none"> IESO is committed to be environment and customer friendly. Necessary trainings are provided to E&SS section PMU.
Prepare Contractors for Implementation of EMP.	Full and effective implementation of environmental mitigation measures.	<ul style="list-style-type: none"> Prepare contractors to co-operate with the executing agency, project management, supervising consultants and local population in the mitigation of impacts. Include the approved EIA and the EMP in the contract documentation. Contracts must require implementation of the EMP Contractor to engage capable and trained environmental management staff to audit the effectiveness and 	E&SS section.	<ul style="list-style-type: none"> Ongoing. Included and being ensured. Ongoing. Carried out by M/s Hagler Bailly, Islamabad.

Environmental Concern	Objectives	Mitigation Measures Recommended	Implementation Responsibility.	Remarks.
		review mitigation measures as project proceeds.		
		▪ The effective implementation of the EMP audited as part of the loan.		▪ Ongoing. ▪ Carried out by M/s Hagler Bailly, Islamabad.
		▪ IESCO to prepare resources to fulfill the requirements of the EMP and EPA guidance on the environmental aspects.		▪ Ensured
CONSTRUCTION STAGE				
Orientation for Contractor, and Workers.	To ensure that the Contractor, subcontractors and workers understand and have the capacity to ensure that the environmental requirements for mitigation measures are implemented.	▪ Conducting special briefing and / or on-site training for the contractors and workers on the environmental requirement of the project. Record attendance and achievement.	E&SS section and Contractor and record details	▪ Complied and ongoing.
		▪ Conducting special briefing and training for Contractor on the environmental requirement of the project. Record attendance and achievement.		▪ Ongoing
		▪ Agreement on critical areas to be considered and necessary mitigation measures, among all parties who are involved in project activities.		▪ Being ensured.
		▪ Periodic progress review sessions to be conducted every six months		▪ Ongoing.
Plans to Control Environmental and Associated Impacts.	Avoid impacts from unplanned activities by penalizing contractors for not committing to properly planning works.	▪ Drainage Management Plan.	Contractor	▪ Included in drawings
		▪ Temporary Pedestrian and Traffic Management Plan.		▪ Adopted where required.
		▪ Erosion Control and Temporary Drainage Plan.		▪ Ongoing.
		▪ Materials Management Plan.		▪ Ongoing.
		▪ Waste Management Plan.		▪ Ongoing.
		▪ Noise and Dust Control Plan.		▪ Ongoing.
		▪ Safety Plan.		▪ Ongoing.
		▪ Agreed schedule of costs for environmental mitigation measures (including maintenance where applicable).		▪ Agreed in BOQ of Bidding Document.

Environmental Concern	Objectives	Mitigation Measures Recommended	Implementation Responsibility.	Remarks.
Water Quality.	To prevent adverse water quality impacts due to negligence and ensure unavoidable impacts are managed effectively.	<ul style="list-style-type: none"> Proper construction of TD and EC measures, maintenance and management including training of operators and other workers to avoid pollution of water bodies by the considerate operation of construction machinery and equipment and reporting and feedback by E&SS section. 	Contractor	<ul style="list-style-type: none"> Ongoing.
		<ul style="list-style-type: none"> Storage of lubricants, fuels and other hydrocarbons in self-contained dedicated enclosures >50m away from water bodies. 		<ul style="list-style-type: none"> Properly ensured.
		<ul style="list-style-type: none"> No stockpiles next to water bodies. 		<ul style="list-style-type: none"> Ensured.
		<ul style="list-style-type: none"> Proper disposal of solid waste from construction activities & worker camps. 		<ul style="list-style-type: none"> Ensured. Solid waste is disposed through Municipal administration.
		<ul style="list-style-type: none"> Borrow sites should not be close to sources of drinking water. 		<ul style="list-style-type: none"> Ensured.
Water Resources.	To minimize impacts on local water supply caused by construction activities are minimized.	<ul style="list-style-type: none"> Availability of water will be assessed to evaluate the impact on community resources. 	Contractor	<ul style="list-style-type: none"> Being ensured. Till now there has been no issue regarding un-availability of water due to the project activities.
		<ul style="list-style-type: none"> Project water will be obtained without depleting local village supplies 		<ul style="list-style-type: none"> Properly ensured.
		<ul style="list-style-type: none"> Camps will be located at least 100m away from the nearest local settlement. 		<ul style="list-style-type: none"> Camps are located within the existing grid stations of IESCO having separate boundary walls and away from settlements.
		<ul style="list-style-type: none"> The contractors will be required to maintain close liaison with local communities to ensure that any potential conflicts related to common resource utilization for project purposes are resolved quickly. 		<ul style="list-style-type: none"> Ensured both by the contractor and IESCO engineers.
		<ul style="list-style-type: none"> Guidelines will be established to minimize the wastage of water during construction operations and at campsites. 		<ul style="list-style-type: none"> Care is done to minimize water wastage.
Spoil disposal and construction	To minimize the environmental	<ul style="list-style-type: none"> Implement Waste Management Plan. Confirm conditions and safety of 	Contractor.	<ul style="list-style-type: none"> Implementation ensured. Ensured.

Environmental Concern	Objectives	Mitigation Measures Recommended	Implementation Responsibility.	Remarks.
waste disposal	impacts arising from generation of spoil waste, reuse where possible and provide adequate disposal options for unsuitable soils.	<ul style="list-style-type: none"> proposed disposal sites. Confirm amounts of surplus rock based materials that can be reused in the project or by other interested parties for public projects. Used oil and lubricants shall be recovered and reused or removed from the site in full compliance with the national and local regulations. Waste oil must not be burned. – Oil and solid waste disposal location to be agreed with IESCO and local authority. Open burning is contrary to good environmental practice and will not be allowed. 		<ul style="list-style-type: none"> Ongoing. Being ensured and complied. Waste oil is not burned, stored in drums and recycled. Open burning is prohibited.
Noise	To minimize noise level increases and ground vibrations during construction operations.	<ul style="list-style-type: none"> Install, maintain and monitor all requisite mitigation as per contract all transformers and machinery shall be fitted with acoustic insulation. Hammer-type pile driving operations shall be avoided during night-time. Well-maintained haulage trucks will be used with speed controls. 	Contractor.	<ul style="list-style-type: none"> Ongoing and insured. No night time activities allowed. Ongoing.
Air quality	To minimize effectively and avoid complaints due to the airborne particulate matter released to the atmosphere.	<ul style="list-style-type: none"> Control all dusty materials at source. Stockpiled soil and sand shall be slightly wetted before loading, particularly in windy conditions. Fuel-efficient and well-maintained haulage trucks shall be employed to minimize exhaust emissions. Vehicles transporting soil, sand and other construction materials shall be covered. Limitations to speeds of such vehicles necessary. Transport through densely populated area should be avoided. 	Contractor.	<ul style="list-style-type: none"> Properly ensured. Ensured wherever and whenever required. Care is taken. All measures are properly ensured. Transportation vehicles are covered and settlements are avoided where possible..

Environmental Concern	Objectives	Mitigation Measures Recommended	Implementation Responsibility.	Remarks.
		<ul style="list-style-type: none"> Spray bare ground areas with water. 		<ul style="list-style-type: none"> Dust generating bare grounds is sprayed with water.
Soil Contamination	Avoid soil contamination	<ul style="list-style-type: none"> Contractors to instruct and train workforce in the storage and handling of materials and chemicals that can potentially cause soil contamination. 	Contractor	<ul style="list-style-type: none"> Necessary trainings to the workforce is given.
		<ul style="list-style-type: none"> Accidentally spills on open ground including the top 2cm of any contaminated soil shall be disposed of as chemical waste to a disposal site acceptable to the local authority / community. 		<ul style="list-style-type: none"> To be insured in case of accidental spills.
Work Camp Location and Operation	To ensure that the operation of work camps does not adversely affect the surrounding environment and residents in the area.	<ul style="list-style-type: none"> Confirm location of work camps in consultation with IESCO and local authorities. Location subject to approval by the IESCO. If possible, camps shall not be located near settlements or near drinking water supply intakes. 	Contractor	<ul style="list-style-type: none"> Properly ensured and complied as per requirement.
		<ul style="list-style-type: none"> Water and sanitary facilities shall be provided for workers and employees. 		<ul style="list-style-type: none"> Water is ensured to be available to workers as well as sanitation facilities.
		<ul style="list-style-type: none"> Solid waste and sewage shall be managed according to the national and local regulations. As a rule, solid waste must not be dumped, buried or burned at or near the project site, but shall be disposed of to the nearest site approved by the local authority. 		<ul style="list-style-type: none"> Solid waste is collected in drums and given to municipal administrations for disposal. Sewage is carried through the available system within the grid stations, otherwise, soakage pits and septic tanks have been provided.
		<ul style="list-style-type: none"> Portable lavatories or at least pit latrines will be installed and IESCO and open defecation shall be discouraged and prevented by keeping lavatory facilities clean at all times. 		<ul style="list-style-type: none"> Ensured as elaborated above.
		<ul style="list-style-type: none"> The Contractor shall document that all liquid and solid hazardous and non-hazardous waste are separated, collected and disposed of according to the given requirements and regulations. 		<ul style="list-style-type: none"> Being ensured.

Environmental Concern	Objectives	Mitigation Measures Recommended	Implementation Responsibility.	Remarks.
		<ul style="list-style-type: none"> At the conclusion of the project, all debris and waste shall be removed. All temporary structures, including shelters and toilets shall be removed. Exposed areas shall be planted with suitable vegetation. The E&SS section shall inspect and report that the camp has been vacated and restored to pre-project conditions as far as is reasonably practicable. 		<ul style="list-style-type: none"> Agreed and will be insured. Agreed and will be insured. Agreed and will be insured.
Safety Precautions for Workers	To ensure physical safety of workers.	<ul style="list-style-type: none"> Establish all relevant safety measures as required by law and good engineering practices. Providing adequate warning signs. Providing every worker with skull guard or hard hat and safety shoes. The Contractor shall instruct his workers in health and safety matters, and require the workers to use the provided safety equipment. 	Contractor	<ul style="list-style-type: none"> Contractors are bound to ensure safety of workers as per bid clauses and IESCO's safety policy. Warning signs are provided. Ensured and ongoing Being ensured on routine basis.
Social Impacts	<p>To engage local workforce and community in the IESCO Project.</p> <p>To encourage local support for the project.</p> <p>To ensure minimum impacts to people living close to the ROW.</p>	<ul style="list-style-type: none"> Use local labour as far as possible for manual work. Use local educated people for clerical and office work where possible. Encourage monitoring of the project by local village groups. Claims/complaints of the people on construction nuisance/damages close to ROW to be considered and responded to promptly by the Contractor and monitored by IESCO. Quarterly meetings with local VDC for liaison purposes to monitor complaints. Set up or maintain local communication lines via landline or satellite phone. 	Contractor	<ul style="list-style-type: none"> The contractors have their own labour, however, when opportunity arises, local labour will be utilized. Same as above. To be encouraged. Compliant registers have been placed at project sites and also liaison is maintained with locals. Liaison is maintained with locals, especially elders. No VDC's established. Properly maintained.

Environmental Concern	Objectives	Mitigation Measures Recommended	Implementation Responsibility.	Remarks.
Enhancements	To make environmental enhancements and improve appearance close to the ROW.	<ul style="list-style-type: none">▪ Include planting of trees in addition to those removed such as under lines in detailed design for visual interest and amenity.	Contractor	<ul style="list-style-type: none">▪ Included in the bid documents.

Annex - I.

PHOTOGRAPHS



Power Distribution Enhancement Investment Program



Asian Development Bank

Loan Number: PK-2727



موجودہ کام کی نوعیت سے متعلق کسی قسم کی شکایات کے لیے رجسٹر شکایات موجود ہے

SIEMENS Siemens (Pakistan) Engineering
Company Limited Islamabad

