

Environment Monitoring Report

Bi-annual Environment Monitoring Report
August 2016

PAK: MFF – Power Transmission Enhancement Investment Program (Tranche 3)

Prepared by Gujranwala Electric Power Company, Punjab 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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L2972 PDEIP: BAEMRs (Jan-Jun 2016) of GEPCO, HESCO, IESCO, LESCO approved for disclosure
Safia Shafiq

to:

Liaqat Ali

01/09/2016 12:44 PM

Cc:

Zhang Lei, Ehtesham Z. Khattak, Zehra Abbas, "Jeffrey Bowyer"

Hide Details

From: Safia Shafiq/Consultants/ADB

To: Liaqat Ali/PRM/ADB@ADB

Cc: Zhang Lei/CWRD/ADB@ADB, Ehtesham Z. Khattak/PRM/ADB@ADB, Zehra Abbas/CWRD/ADB, "Jeffrey Bowyer" <jeffreybowyer@outlook.com>

6 Attachments



L2972 LESCO BAEMR (Jan-Jun 2016).doc



L2972 IESCO BAEMR (Jan-Jun 2016).pdf



ATT49EOR.pdf



L2972 HESCO BAEMR (Jan-Jun 2016).pdf



L2972 PESCO BAEMR (Jan-Jun 2016).doc



L2972 MEPCO BAEMR (Jan-Jun 2016).docx

Dear Liaqat Sb.,

The attached BAEMRs (Jan-Jun 2016) of GEPCO, HESCO, IESCO and LESCO under L2972 PDEIP are approved for disclosure. Please have them uploaded on ADB website and share the weblinks with me.

Thanks and regards,

Safia Shafiq
Environment Specialist (Consultant)
Pakistan Resident Mission
Asian Development Bank

Level 8, North Wing, Serena Office Complex,
Khayaban-e-Suhrawardy G-5, Islamabad, Pakistan.
Tel: +92-51-2087300, Ext: 344
Fax: +92-51-2087397-8 & 2600365-6
Cell: +92-333-2154462



Bi-annual Environmental Monitoring Report

Project Number: 2972-PAK

January-June -2016

***Pakistan(PowerDistribution Enhancement Investment Program-Multi-Tranche
Financing Facility-Tranche-3)***

For period:January-June-2016

(Financed by the Asian Development Bank)

Prepared By: Assistant Manager (Environment) PMU, GEPCO

Gujranwala Electric Power Company (GEPCO)

PMU Section 565-A Model Town G.T Road Gujranwala, Pakistan.

Executing Agency (EA) Pakistan Electric Power Company (PEPCO)

Implementing Agency (IA)GEPCO

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

Asian Development Bank

ABBREVIATIONS

ADB	Asian Development Bank
AHs	Affected Households
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
GRC	Grievance Redress Committee
GS	Grid Substation
IA	Implementing Agency
IEE	Initial Environmental Examination
GEPCO	Gujranwala Electric Power Company
LARP	Land Acquisition and Resettlement Plan
MOW&P	Ministry of Water and Power
MFF	Multi – Tranche Financing Facility
NOC	No Objection certificate
PAPs	Project Affected Persons
PDEIP	Power Distribution Enhancement Investment Program
PEPCO	Pakistan Electric Power Company
PMU	Project Management Unit
ROW	Right of Way
TL	Transmission Line

DEFINITION OF TERMS

Due diligence Report	Projects which do not have any significant social impacts hence do not involve/ require any land acquisition therefore; a brief due diligence report (DDR) is prepared for the documentary requirements.
Environment	Surroundings in which an organization operates, Including air, water, land, natural resources, flora (Plants), fauna (Animals), humans, and their Interactions.
Environmental Aspect	Element of an organization's activities or products or services that can interact with the environment; environmental aspects can be significant or non-significant based on environment risk Assessment and a significant aspect can have.
EIA	Detailed study based on environmental assessment (EA) to determine the type and level of effects an existing facility is having, or a proposed project would have, on its natural environment
Encroachers	Those people who move into project area after the cut-off date and are therefore not eligible for compensation or other rehabilitation measures provided by the project.
IEE	A Preliminary attempt to evaluate environmental impacts in order to determine whether a full-scale environmental impact assessment is needed.
Land acquisition	The process whereby a person is compelled by a public agency to alienate all or part of the land s/he owns or possesses, to the ownership and possession of that agency, for public purposes, in return for fair compensation.
LARP	Projects which do have significant socio-economic impacts hence involve/ require land acquisition therefore; a detail land acquisition and resettlement plan (LARP document) is prepared for the documentary requirements.
Non-Titled	Those who have no recognizable rights or claims to the land that they are occupying and includes people using private or state land without permission, permit or grant i.e. those people without legal title to land and/or structures occupied or used by them. ADB's policy explicitly states that such people cannot be denied compensation.
Replacement Cost	The method of valuing assets to replace the loss at current market value, or its nearest equivalent, and is the amount of cash or kind needed to replace an asset in its existing condition, without deduction of transaction costs or for any material salvaged.

Resettlement Field Survey	The detailed inventory of losses that is completed after detailed design and marking of project boundaries on the ground, socioeconomic data on the affected households/families, and stakeholder consultations.
Sharecropper	The same as tenant cultivator or tenant farmer, and is a person who cultivates land they do not own for an agreed proportion of the crop or harvest.
Significant Impact	200 People or more will experience major impacts, which are defined as; (i) being physically displaced from housing, or (ii) losing ten per cent or more of their productive assets (income generating).
Vulnerable	Any people who might suffer excessively or face the risk of being marginalized from the effects of resettlement and includes; (i) female-headed households with dependents; (ii) disabled household heads; (iii) poor households (within the meaning given previously); (iv) landless; (v) elderly households with no means of support; (vi) households without security of tenure; (vii) ethnic minorities; and (viii) marginal farmers (with landholdings of five acres or less).
Resettlement Field Survey	The detailed inventory of losses that is completed after detailed design and marking of project boundaries on the ground, socioeconomic data on the affected households /families, and stakeholder consultations.

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1-INTRODUCTION

1.1- GEPCO

Gujranwala Electric Power Company Ltd. GEPCO is a Public Limited Utility Company, established in 1998 under Companies Ordinance 1984 and is responsible for distribution of Electric Power within its territorial jurisdiction and presently serving approximately 2.5 Million Customers (Domestic, Commercial, Agricultural, Industrial and others) in the six districts of Province Punjab (Gujranwala, Narowal, Gujrat, Hafizabad, Sialkot and Mandi-Bahawal-din). Area of jurisdiction of GEPCO is attached at *Annexure-A*.

1.2 Power Distribution Enhancement Investment Program

Government of the Islamic Republic of Pakistan (GoP) through Ministry of Water and Power (MOW&P) with assistance of Asian Development Bank (ADB) is implementing the Power Distribution Enhancement Investment Program (PDEIP) under Multi Tranche Financing Facility (MFF). This Program is part of the GoP long term energy security strategy. Pakistan Electric Power Company (PEPCO) has been nominated by Ministry of Water and Power (MOW&P) to act as the Executing Agency (EA) while Gujranwala Electric Power Company (GEPCO) is the Implementing Agency (IA) for execution work in its service area.

1.3 Power Distribution Enhancement Investment Project (PDEIP)-Tranche-III

The Power Distribution Enhancement Investment Project (PDEIP) Tranche-III is designed to provide grid-connected customers with adequate and reliable supply of electricity. The rehabilitation, augmentation, and expansion of power distribution infrastructure will increase the reliability of supply to residential, agricultural, commercial, and industrial customers across Pakistan. A reliable electricity supply will lead to social and economic benefits and improved conditions for schools, hospitals, and social services, among others. The main component of the program is given as under:

- Conversion of 04 No. existing 66kV Grid Stations (Daska, Head-Marala, Siranwali& Malikwal) to 132kV along with T/Lines as an allied component.
- The projects 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).
Sub-projects	Tranche –IIIsub-projects
Location of the Project	06 No. of Districts in the serving territory of GEPCO i.e. Gujranwala, Sialkot, Narowal, Gujrat, Hafizabad and Mandi-Bahawal-din
Sponsoring Agency	Government of Pakistan. Ministry of Water & Power (MoW&P).
Executing Agency	Pakistan Electric Power Company (PEPCO).
Implement Agency	Gujranwala Electric Power Company (GEPCO).
Type of Financing	Loan Amount 8.88 Million US\$ Loan No.ADB 2972 – PAK; Tranche –III Subproject.
Loan Signing Date	November 28, 2012
Loan Effectiveness Date	29-03-2013 (After 60 days of Signing the Agreement)
Closing Date	December 31, 2016
Date of Last ADB Review Mission	26 May, 2016
Focal Person	Chief Engineer (Development), Project Management Unit , GEPCO Electric Power Company (GEPCO).
Focal Person for Environment & Social Safeguards	Post of Dy. Manager (E&SS) is lying vacant, AM (Environment)& AM (Social) are working in PMU Project Management Unit, GEPCO

1.4 Objective of the Project – PDEIP (Tranche-III)

The main objectives of this investment program are;

- (i) Improve power distribution infrastructure through system rehabilitation, augmentation, and expansion; and relieve the power system from distribution bottlenecks and constraints;
- (ii) Enable continued operation and maintenance in accordance with best international practices; and
- (iii) The system will be capable of meeting peak demand, with electricity outages significantly reduced.

1.5 Scope of Work

There are 04 No. of GEPCO proposed projects under ADB Tranche-2. Its detail is here as under:

- 1. Conversion of 04 No. existing 66kV Grid Stations (Daska, Head-Marala, Siranwali & Malikwal) to 132kV along with 132kV Tr./Lines as an allied component (*Annexure - B*).
- 2. Transmission line component will be executed by GEPCO own sources (*Table: 2*).

Overall the proposed MFF has been designed to address both investment and institutional aspects in electric power sector. Development Objectives/ Project Purpose will be fully achieved after completion of the proposed Sub-projects.

Table: 2

Grid Stations Under Tranche-III								
	Grid Stations		Feeding Line					Total Cost (Rs. Million)
Sr. No	Name	Cost (Rs. Million)	Name	Type	Length (Km)	Conductor	Cost (Rs. Million)	
1	Daska	250	In & Out of New Daska-Sahowala T/Line at Daska 132 kV G/S	SDT	3.5	Lynx	35	285
2	Siranwali	207	Kot Agha- Siranwali (Feed for 132kV Siranwali G/S)	SDT	16	Lynx	112	319
3	Head Marala	207	Kotly Loharan-Head Marala (Feed for 132 kV Head Marala G/S)	SDT	6.5	Lynx	45.5	252.5
4	Malikwal	207	In & Out of Bhalwal-Kuthiala Shiekhan at Malakwal G/S	D/C	19	Rail	171	378
Total								1234.5

To carry out and handle the investment projects GEPCO has established Project Management under the administrative control of Chief Engineer (Development). The PMU comprises of 4 sections.

- i. Planning Scheduling & Coordination:** To take the responsibilities for (i) identifying and proposing the subprojects to PEPCO / Donor Agency for approval and financing, (ii) Scheduling and Monitoring (iii) preparing the necessary documentation in line with the statutory, corporate and Donor policies including quarterly reports (iv) coordinate with the consultant.
- ii. Procurement:** To take care of all responsibilities and tasks related to procurement (goods, works and services) and for the activities related to material planning, preparation of bidding documents according to the requirement of the Donors, getting the evaluation done and for placing the orders after approval of the Donors, inspection and then transportation to the site. Arrange release of material thru CRR Karachi and final delivery to the site.
- iii. Project Finance:** They are responsible for taking care of counterpart financing, funds flow arrangements, payments, recording and monitoring of both ADB & Korean funds. Also, will establish, monitor and manage the imprest account and statement of expenditure (SOE) procedures. Furthermore ensure timely preparation of the annual audited project accounts.
- iv. Environment & Social Safeguard:** To take care of all the responsibilities and tasks related to environment, land, and social (including involuntary resettlement and indigenous people) and provide oversight on occupational health, safety and environment safeguards in the working environment. The Environmental & Social Safeguard (E&SS) Section of PMU, GEPCO provides an overall supervision and advisory services during the Pre-Construction phase, Construction phase & Post-Construction phase of the project. The E&SS also assists and advises GSC Directorate, Construction Directorate and other GEPCO departments on environmental and social matters. 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). The organizational structure/ Organogram is attached at (*Annexure-B*).

2-Construction activities and project progress during previous 6 months

7. Contractor is executing the civil work activities at all 04. No grid stations for the conversion of Daska, Head- Marala, Malikwal&Siranwali grid stations.

There is 01ContractorM/s Sinosteel Equipment &Engg. Manufacturing Co. engaged by GEPCO to execute civil work activities at sub-project sites.Following civil work activities have been carried out (**Photographs of civil works attached at Annexure-C**)

3-Changes in Project Organization and Environmental Management Team

8. Mr. Arshad Munir has takenoverthecharge of post Manager(Procurement)while the post of Manager (P.S&C) is lying vacant. Mr. Saleem Raza is working as acting Manager (Finance).Now, theposts of Managers (P.S&C) & Finance arelyingvacantinGEPCO.

Relationship with Contractors, owner and lender etc.

GEPCO PMU team has excellent relationship with the Contractors, Owner, lender etc.

(Part II)-Environmental Monitoring

9. PMU, GEPCO conducted environment and safeguard inspections at sub-project sites in Sialkot and M.B.Din.(GEPCO-draft notice on Non-compliances, Observations raised, recorded and reported to concerned Project Manager (Constructions) (**Copies attached at Annexure-D**)

Environmental Measurement/ Testing of Noise and Vibration, Water Quality, Air Quality and Flora/ Fauna Monitoring

10. M/s Sinosteel China submitted laboratory test results of soil investigation, noise, water and air quality for 3rd quarter after civil works execution. GEPCO sent draft to concern project manager construction (M/s Sinosteel, China) to conduct and submit laboratory test results of soil investigation, noise, water and air quality for the second quarter.

(Laboratory test results/ reports of noise, water and air quality attached at **Annexure-E**)

Recommendations required showing how any exceedences will be prevented in the future

12. The Environmental Monitoring and Management Plan (EMMP) enlisted in EIA Reports have been made part of the bidding documents of civil works (Turnkey Project) and the contractors are made bound to quote specified amount (0.1 million US\$) has been reserved) in the BOQs for implementation of EMMP.

Part-III Environmental Management

13. The Environmental Monitoring & Management Plan (EM&MP) along with respective EIA/ IEE Reports of sub-projects have been made part of the bidding documents of civil works (turnkey projects). The Environment Management Plan (EMP) has been translated, typed/ edited into Urdu; approval received from the C.E.O (GEPCO) for its implementation at all sub-project sites as well as uploaded/ posted on GEPCO official website (www.GEPCO.Com.Pk/PMU). Assist. Manager (PMU) GEPCO conducted training program on EMP at all GEPCO sub-project sites.

14. The contractors have been made bound to quote specified amount (0.1M US\$ that has been allocated) in the BOQs for the implementation of EM&MP.

Site Inspections at Sub-project sites

15. PMU, GEPCO conducted environment and safeguard inspections at sub-project sites in Sialkot and M.B.Din.

Non-Compliance Notices–Summaries the details on the number of notices given out and the issues covered Summaries the ranking of issues

16. The Detail of raised Non-compliance, Observations with corrective actions request were sent to all Project Manager (Construction) for compliance. **(Copy attached Annexure-D)**

Corrective Action Plans-Report on timeliness of preparation and Completion

17. The pointed Non-Conformities/ Observations have been recorded and reported to all concern Project Manager's Construction for compliance. All corrective actions have been taken as desired. **(Corrective actions taken enclosed at Annexure-F)**

Consultation and Complaints – Report on any consultation undertaken and list any complaints received

18. Environmental & Social Complaint Register both in English and Urdu versions have already been communicated and implemented by the Project Director (GSC), XENs TLC/ T&G at respective project sites. So far, No affected person/ household has logged/ filed any Complaint in PMU/ GSC Office.

Implementation Report on IEE Mitigation Requirements

Reference	Requirement	Action to date	Action Required/ Comment
Compliance of EIA/ IEE Report during Execution of Project Civil Work	Inclusion of EIA/ IEE Report in Bidding DOC's	EIA/ IEE Reports along with EM&MP have been included/ made part of the Bidding DOC's	DONE
Compliance of Environment Monitoring & Management Plan during execution of Project Civil Work	Inclusion of EM&MP in Bidding DOC's	EM&MP draft Docs have been included/ made part of the Bidding DOC's	DONE
Urdu translation, typing /editing of EMP into Urdu and its posting/ uploading at GEPCO official website	Inclusion of EMP in EIA/IEE Reports as well as in Bidding DOC's	NOC's/ Environmental Approval received by GEPCO from EPA, Lahore	DONE
0.1 Million Budget for EM&MP Implementation	Allocation of budget by Contractor	Rs. 0.1 Million US\$ has been allocated for implementation of aforesaid plan	DONE
Implementation/ Internal Monitoring of EM&MP at all sub-project sites	Capacity building programs on EM&MP at all sub-project sites	Capacity building/ training conducted by GEPCO at Daska, H/Marala sub-project sites	DONE (ongoing)

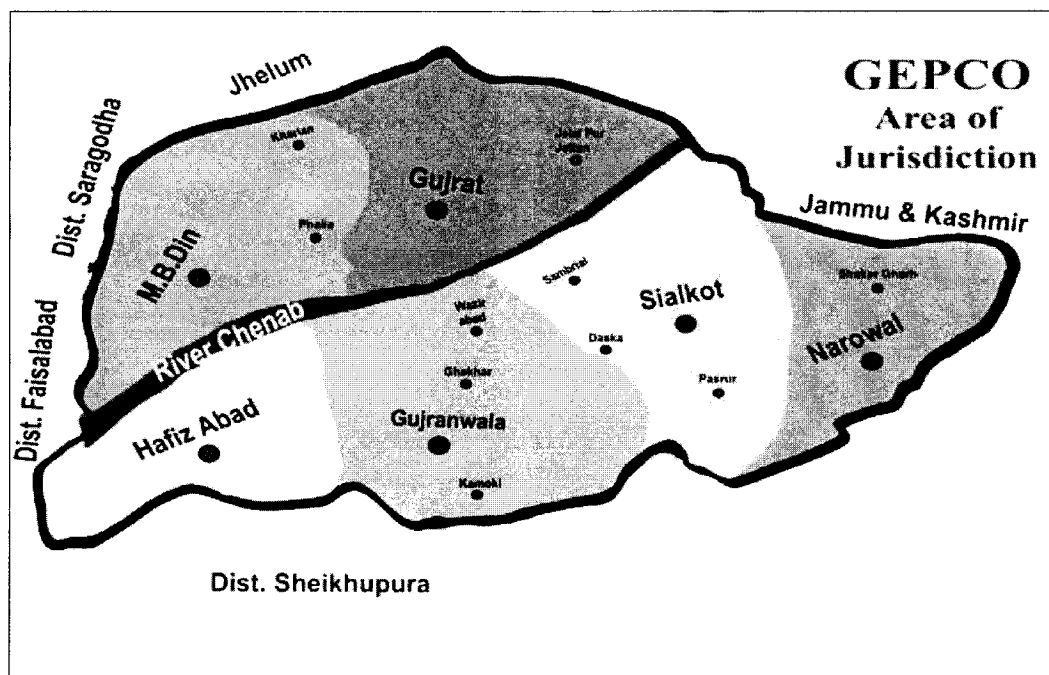
GEPCO Tranche 3 Projects ADB PDEIP MFF

Table: 3a

<u>Project Number</u>	<u>Project Name</u>	<u>Type of Project</u>	<u>Voltage</u>	<u>Estimated Cost (Millions PKR)</u>	<u>Short Land Acquisition & Resettlement Plan Reports</u>	<u>Initial Environmental Examination Reports</u>	<u>Remarks</u>
G1	Malikwal	Conversion of Gr.St. from 66kV to 132kV and associated 132kV Tr./Line	66kV to 132kV	250	Working Draft submitted to SMEC (PEPCO Consultant)	Working Draft submitted to SMEC (PEPCO Consultant)	Associated 132kV T/Line Component is being executed by GEPCO own sources
G2	Head Marala	Conversion of Gr.St. from 66kV to 132kV and associated 132kV Tr./Line	66kV to 132kV	250	Working Draft submitted to SMEC (PEPCO Consultant)	Working Draft submitted to SMEC (PEPCO Consultant)	
G3	Siranwali	Conversion of Gr.St. from 66kV to 132kV and associated 132kV Tr./Line	66kV to 132kV	250	Working Draft submitted to SMEC (PEPCO Consultant)	Working Draft submitted to SMEC (PEPCO Consultant)	
G4	Daska	Conversion of Gr.St. from 66kV to 132kV and associated 132kV Tr./Line	66kV to 132kV	325	Working Draft submitted to SMEC (PEPCO Consultant)	Working Draft submitted to SMEC (PEPCO Consultant)	
		Total Conversion from 66kV to 132kV		1,075			
		Total Projects	Total Cost (Millions PKR)	1,075			

Annexure- A

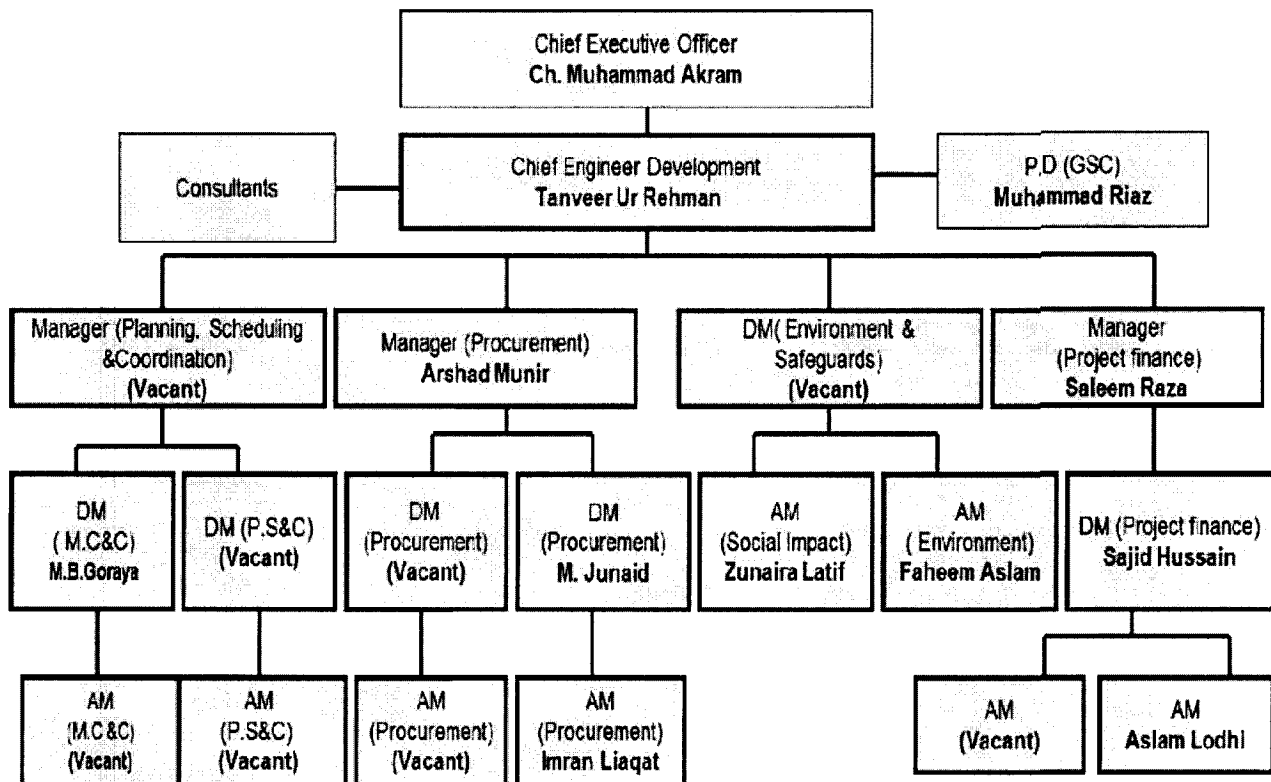
GEPCO REGION



GEPCO Tranche 3 Projects. (18 October 2012)

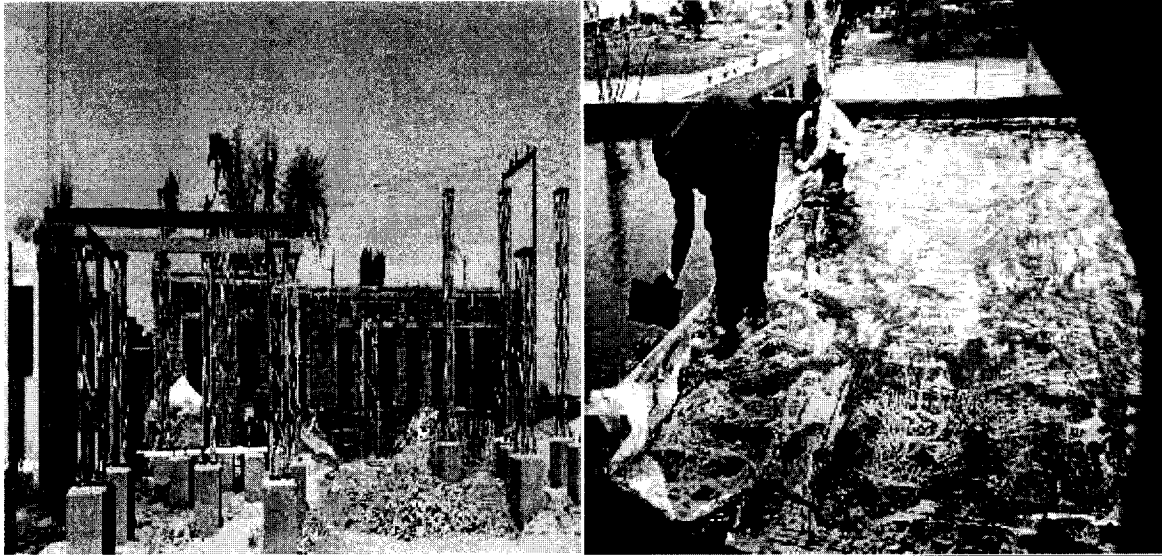
<u>Project Number</u>	<u>Associated Project</u>	<u>Project Name</u>	<u>Type of Project</u>	<u>Quantity of Projects</u>	<u>DISCO Estimated Cost (Millions PKR)</u>	<u>SMEC Estimated Costs Excluding Administrative Costs</u>	<u>Transformers</u>
G1	Kothiala Shaikan S/C	Malikwal	Conversion from 66kV to 132kV	1	250	207	2 X 26MVA
G2	Kotli Loharan	Head Marala	Conversion from 66kV to 132kV	1	250	207	2 X 26MVA
G3	Kot Agha	Siranwali	Conversion from 66kV to 132kV	1	250	207	2 X 26MVA
G4	Saho Wala / Daska Industrial	Daska	Conversion from 66kV to 132kV	1	325	287	3 X 26MVA
			Total Conversion from 66kV to 132kV	4	1,075	908	
			Total Projects	4	1,075	908	
					PKR Million	PKR Million	

Annexure- B



Annexure- C

Civil Works at Tr. # 3 Substations



Head Marala G/S (Yard and Control House building)



Malikwal G/S (Yard and Control House Building)

Annexure-C-1**STATUS OF CIVIL WORKS PROGRESS**

Project No.	Project Name	Funded Head/ Contractor	Civil & Electrical Work	Target Date
G1	Malikwal	ADB Loan-2972/ SINOSTEEL	90 % of Civil works and 25 % of electrical works has been completed at all projects sites.	Expected Completion date for all four Sub-projects is 30 th November, 2016.
G2	Head Marala	-do-		
G3	Siranwali	-do-		
G4	Daska	-do-		

Progress of 132 kV T/Lines Under ADB Funded Tranche # 3					
Name of Tr./Lines	Length (Km)	No. of Towers	No. of Foundations Completed	No. of Erected Towers	Remarks
132 kV KothialaShaikhhan - Malakwal Transmission Line	29.025	106	Water logging problem, GEPCO design committee redesigning the foundation structure considering possible alternatives		
132 kV KotliLoharan - Head Marala transmission Line	6.443	29	25	Work order for Towers Erection in progress	
132 kV Kot Agha - Siranwali Transmission Line	14.874	52	48	Work order for Towers Erection in progress	
132 kV New Daska - Daska Transmission Line	2.706	19	Work order for Pile foundation has been awarded		

ANNEXURE-D**LABORATORY TEST REPORTS****PGL** EPA Certified

PAK GREEN LABORATORIES

(ENVIRONMENTAL DIVISION)

A Project of PAK GREEN ENVIRO-ENGINEERING (Pvt.) Ltd.

NOISE LEVEL MONITORING REPORTReference No. PGL/01/CM/NL/16Issue date: 06-April-16

Name of 1st Client: CM Engineering
Name of 2nd Client: Sinsolvel Equipment & Engineering Company
Address of Industry: Head Marala Grid Station, Marala
Nature of Monitoring: Boundary Wall Noise Level
Monitoring By: Pak Green Laboratories
Monitoring Time: Real Time
Monitoring Instrument: TENMARS TM-107
Monitoring Date: 19-Mar-16

Results:

Sr. No.	Locations	Noise Range dB(A)	Average Noise dB (A)
1	West	57.4-66.8	63.8
2	North	62.2-74.6	68.7
3	South	58.4-69.8	64.6
4	East (Back)	52.6-57.8	55.6
NEQS (Day time Commercial Area)			65 dB(A)

NEQS: National Environmental Quality Standards

Remarks: Noise level at north boundary wall exceeds the PAK NEQS for Commercial Area

Note:

- Analysis was conducted on the request of project proponent for his own use/ NEQS Compliance.
- Report cannot be used regarding compliance of any complaint, EPC or any other court case.
- This report should be reproduced as a whole and not in parts.
- The responsibility of the ethical use of the results reported in this report lies with the client. Consequently, the laboratory is absolved of its responsibility for any claim that may result through the use by the client or others of the results appearing in this report.
- The report is not valid for any negotiations.
- Dually calibrated instruments were used during monitoring.

Monitoring by

Deputy Analyst

Chemist

Laboratory In-charge

UMAIR RASHID

MADEHA ASLAM

DANISH JAVEED

IFTIKHAR AHMED

**Lahore Office**Suite # 314, Eden Centre, 43, Jail Road, Lahore, Pakistan Tel: +92-42-37500464
Cell: 0300-4462976 E-mail: pakgreen@hotmail.com www.pakgreen.pk**Islamabad Office**

Suite # 14, Shaikat Plaza, I-10, Markaz, Islamabad, Pakistan Tel: 051-4447978



PAK GREEN LABORATORIES

(ENVIRONMENTAL DIVISION)

A Project of PAK GREEN ENVIRO-ENGINEERING (Pvt.) Ltd.

PGL EPA Certified

AMBIENT AIR MONITORING REPORT

Reference No. PGL/Env/AA/17

Issue date: 05 April 19

Name of 1st Client: CM Engineering
 Name of 2nd Client: Sarsheed Equipment & Engineering Company
 Address of Industry: Road Marla Canal Station, Marla
 Nature of Monitoring: Ambient Air
 Monitoring By: Paks Green Laboratories
 Monitoring Instrument: Ambient Air Analyzer
 Monitoring Date: 19-Mar-19

Results:

Parameters	CO	NO	NO ₂	NO _x	SO ₂	PM ₁₀
	mg/m ³	mg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³
Methodology	Non-Dispersive Infrared Absorption (NDIR)	Reduced Pressure Chemiluminescence (CLD)		Reduced Pressure Chemiluminescence (CLD)	UV Fluorescence (UVF)	Integrated Sampling Technique
Result (Average)	0.942	3.959	20.035	31.993	17.234	121
NEQS for Ambient Air	10 (1 hour)	40 (24 hour)	80 (24 hour)	NCVS	120 (24 hour)	150 (24 hour)

NEQS: No Guideline Value Set

Remark: All the ambient air quality parameters are in compliance with NEQS

Note:

- Analysis was conducted on the request of project proponent not his own use/NEQS Compliance.
- Report should be used regarding compliance of any complaint, EPC or any other court case.
- This report should be reproduced as a whole and not in parts.
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- This report is not valid for any negotiations.
- Dual calibrated instruments were used during monitoring.

Monitoring by: Deputy Analyst: Chemist: Laboratory In-charge:

UNQIR BLANFIED

MAHDI RA ANSARI

DANISH JAVIED

UTTIKHAH AHMED



Lahore Office

Suite # 314, Eden Centre 40, Jinnah Road, Lahore, Pakistan Tel: +92-42-37500484
 Cell: 3360-4482978 E-mail: pakgreen@hotmail.com www.pakgreen.pk

Islamabad Office

Suite # 14, Shoukat Plaza, 1/10, Minar, Islamabad, Pakistan Tel: 051-4447376



PAK GREEN LABORATORIES

(ENVIRONMENTAL DIVISION)

A Project of PAK GREEN ENVIRO-ENGINEERING (Pvt.) Ltd

PGL EPA Certified

DRINKING WATER ANALYSIS REPORT

Reference No: PG/ENV/2019/12

Issue date: 09-April-19

Name of 1 st Client:	CM Engineering
Name of 2 nd Client:	Sinaceet Equipment & Engineering Company
Address of Industry:	Malikwal Road Station Malikwal, Mianwali Bahawalpur
Nature of Sample:	Drinking water
Sampling By:	Pak Green Laboratories
Sample source:	Ground Water
Sampling type if Grab/Composite:	Grab
Date of sampling:	26-March-19

Results:

Sr. No.	Parameters	Unit	WHO	Pak-NEQS	Results
1	pH		-	6.5-8.5	7.31
2	Electrical Conductivity	uS/cm	-	-	1042
3	TDS	mg/l	1000	<1000	628
4	Turbidity	NTU	5	5	1
5	Taste	-	-	Non-Objectionable	Non-Objectionable
6	Odor	-	-	Non-Objectionable	Non-Objectionable
7	Total Hardness	mg/l	-	<500	267.1
8	Arsenic	mg/l	0.010	0.05	Nil
9	Cadmium	mg/l	0.05	0.01	Nil
10	Chloride (Cl ⁻)	mg/l	250	<250	96
11	Copper (Cu)	mg/l	2	2	Nil
12	Sulphate (SO ₄ ²⁻)	mg/l	250	-	188
13	Nickel	mg/l	0.02	<0.02	Nil
14	Sodium (Na ⁺)	mg/l	200	-	26
15	Lead (pb)	mg/l	0.01	<0.05	0.005
16	Calcium (Ca)	mg/l	-	-	56
17	Magnesium	mg/l	-	-	31
18	Potassium	mg/l	-	-	4.1
19	Selenium	mg/l	0.05	0.01	Nil
20	Carbonate	mg/l	-	-	Nil
21	Bicarbonate	mg/l	-	-	186
22	Zinc (Zn ²⁺)	mg/l	3.0	5.0	0.5
23	E.Coli		Must not be detected in 100 ml sample	Must not be detected in 100 ml sample	Nil



More Office
Islamabad Office

Suite # 314, Eden Centre 43, Jail Road, Lahore, Pakistan Tel: +92-42-37500464
 Cell: 0300-4462975 E-mail: pakgreen@hotmail.com www.pakgreen.pk
 Suite # 14, Shaukat Plaza 110, Markaz, Islamabad, Pakistan Tel: 051-4447978



PAK GREEN LABORATORIES

(ENVIRONMENTAL DIVISION)

A Project of PAK GREEN ENVIRO-ENGINEERING (Pvt.) Ltd

PGL EPA Certified

Reference No. PGL/17/13/M/L/W/15

Issue date: 06 April 19

SIQS: National Environmental Quality Standards

WHO: World Health Organization

Remarks: All drinking water quality analysis parameters are in compliance with SIQS.

Terms & Conditions:

- This report should be reproduced as a whole and not in parts.
- Analysis was conducted on the request of proprietor.
- Report cannot be used regarding compliance or non-compliance, DO or any other court case.
- Sample provided by proprietor so the authenticity of sample not lies on the laboratory.
- The responsibility of the ethical use of the results reported at this report lies with the client. Consequently, the laboratory is absolved of its responsibility for any claim that may result through the use by this client or others of the results appearing in this report.
- The left over sample (if so available) shall be retained for fifteen days after the issuance of the report unless otherwise negotiated between the client and the laboratory.
- The report is not valid for any re-statement.

Sample analyzed by

Deputy Analyst

Chemist

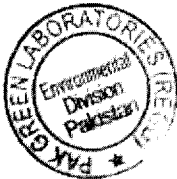
Laboratory In-charge

UNAIR KASHALI

MATHEENA ASLANI

DANISH JAVEED

AFI KHAN AHMED



Lahore Office

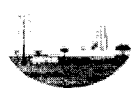
Suite # 314, Eden Centre, 43, Jail Road, Lahore, Pakistan Tel: +92-42-37500404
Cell: 9900-4462975 E-mail: pakgreen@hotmail.com www.pakgreen.pk

Islamabad Office

Suite # 14, Shaukat Plaza, I-10, Markaz, Islamabad, Pakistan Tel: (91-4447978

ANNEXURE-E

Non-Compliance/Observations Noted at sub-project sites



GUJRANWALA ELECTRIC POWER COMPANY LIMITED
565-A MODEL TOWN G.T ROAD GUJRANWALA

Phone # 055-9200836
FAX # 055-9200519-20
PAX # 055-9200594

OFFICE OF THE
CHIEF EXECUTIVE OFFICER
GEPCO, GUJRANWALA

Memo No. 455-57

Dated: 18/03/2016

**Project Director (GSC)
GEPCO, Gujranwala**

Sub: Environmental & Safeguard Inspection of Conversions of Grid Stations from 66kv TO 132kv, Sranwala, Head Marala and Matkwal under ADB Funded PDEIP Tranche 3 Sub Projects Loan No. 2972

Ref: Joint visit carried out by M/s SMEC (PEPCO Consultant) along with Environmental & Social Officers (PMU) from 09 to 11 of March, 2016.

With ref. to above, some observations were noted at subjected work sites. Its detail is here as under:-

1. The existing boundary wall of Sranwala GS found broken at one site along the main passage which is a potential risk of theft of grid station.
2. The existing boundary walls of Head Marala and Matkwal GS found feeble/lacking physical strength. The boundary wall may collapse especially as zero level is high and due to ongoing earth filling, leveling of earth in the void area.

It is therefore requested that necessary directions along with appropriate corrective actions be initiated at subjected sites by repairing/rebuild the existing boundary wall to avoid any potential accidents in future.

(Tanzeer-ur-Rehman)
**Chief Engineer (Development)
GEPCO HQ Gujranwala**

CC:

- 1- Ms. Safia Shafiq (Environmental Specialist ADB), for his kind information please.
- 2- Mr. Munazzam Makharia (IFMC Consultant) PEPCO, for kind information please.



GUJRANWALA ELECTRIC POWER COMPANY LIMITED
565-A MODEL TOWN G.T. ROAD GUJRANWALA

Phone # 055-9200835
PBX # 055-9200519-20
FAX # 055-9200594

OFFICE OF THE
CHIEF EXECUTIVE OFFICER
GEPCO, GUJRANWALA

Memo No:

426-28

Dated 24/02/2016

The Project Chief (Construction)
M/s Sinosteel Eq. & Engg. Manufacturing Co. China

Sub: **ENVIRONMENTAL & SAFEGUARD INSPECTION AT CONVERSION OF
SIRENWALEE GS FROM 66kV TO 132kV-SIALKOT Under ADB Funded
PDIP TRANCHE-3**

Ref: Inspection carried out by Chief Engineer (Dev) on dated: 17-02-2016;

With ref. to above, some observations on environmental safeguard were raised at subjected work site. Its detail is here as under:


1. Stacking of construction materials (crush, cement bags, sand) found everywhere at work site. Need to identify & mark proper area/space for it.
2. Ensure proper housekeeping at work site, there is dire need to collect, segregate & proper stacking of empty cement bags, metal parts in waste/scrap yard.
3. Oil leakage/spillage observed from concrete mixing machines.
4. The laboratory test reports of drinking water, ambient air quality and noise level are due for the 2nd quarter (Jan-Mar 2016). Please do submit lab test reports.
5. Overgrown herbs & shrubs found at work site. Its trimming is required to avoid any potential fire hazard.

It is therefore requested that necessary directions be issued to all concerned quarters along with appropriate corrective actions be initiated at subjected site and furnished compliance report to PMU at your earliest convenience please.

Matter is on top priority

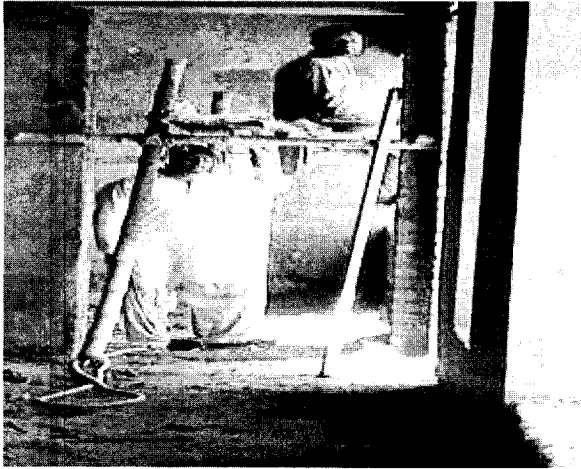
D/A as above

Snapshots taken at work site

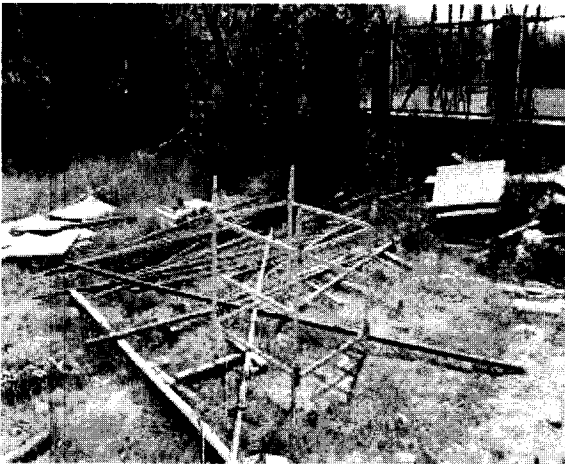

(Farveer-ur-Rehman)
Chief Engineer (Development)
GEPCO HQ Gujranwala

CC:

1. S.E. (GSO) Circle GEPCO, for his kind information and necessary action to issue directions to concern quarter on cutting of overgrown herbs & shrubs around existing 66kV sub-station.
2. Ms. Safia Sadiq (Environmental Specialist ADB), for his kind information please.
3. D.D. (GSO) GEPCO, for his kind information and necessary action please.



Labor found without PPE's



Poor housekeeping Observed

ANNEXURE-F

Corrective Actions Taken Against Issued Non-Compliance Notices



To: Mr. Tanveer-UR-Rahman Chief Engineer (Dev.) PMU Gujranwala Electric Power Company GEPCO 565-A Model town, G.T. Road Gujranwala, Pakistan Fax: +92-55-9200594 Phone: +92-55-9200519-26 Dated: 01/03/2016	From: Mr. Gao Hailu Project Chief Engineer Sino Steel Equipment & Engineering Co. Ltd No. 8 Haidian St. Beijing, P.R. China Fax (Local): +92-42-35746633 Email: pmsinosteel_pak@163.com Ref. No. SinoSteel/GEPCO-01r (NCEP) Pages: 01
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SUBJECT ADB-TRANCHE-III-GEPCO-01 CONVERSION FROM 66KV TO 132KV GRID STATIONS AT SIRANWALI, HEAD MARALA, MALIKWAL AND DASKA (Environmental & Safeguard Inspection at Siranwali and Head Marala)

Reference

- [1] GEPCO letter No. 426-29/PMU/TRANCHE-III dated 24/02/2016
- [2] GEPCO letter No. 430-33/PMU/TRANCHE-III dated 24/02/2016

Dear Sir,

With reference to letter above, we make our compliance as below:

1. Make good housekeeping at every site. Find proper area/place for stacking of construction materials as well as waste and scrap.
2. Trim off the overgrown herbs/shrubs at working site.
3. Marking smoking area at every site.
4. Take steps to avoid oil leakage/spilling from concrete mixing machine.
5. As to the dangerous area, we will make complete cordon to avoid potential risk of major accident.
6. Supply of light during night hours, especially for the excavated area, and the workers will not be allowed to work during late in the evening and night hours.
7. Provision of earth leakage circuit breakers at three points at work site.
8. Find proper way to deal with the waste water and other waste materials.
9. Provision of 02 No. wash rooms with proper soak pits at work site.
10. We will contact the qualified lab to carry out the tests of drinking water, air and noise at second quarter and furnish the test reports to your office as soon as possible.

Thanking you, we remain

Best regards,

Gao Hailu

In the capacity of Project Chief Engineer
Cc:

1. Rabat Engineers, Lahore
2. Sagheer Ahmed Construction Manager of SinoSteel