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ENERGY POLICY PROJECT - II MONTHLY PROGRESS REPORT

DECEMBER 2012



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USAID/PAKISTAN: ENERGY POLICY PROJECT (EPP)

Monthly Report: December 2012

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ACRONYMS

AEAI	Advanced Engineering Associates International
CAR	Central Asian Republic
CDWP	Central Development Working Party
CEO	Chief Executive Officer
CPGCL	Central Power Generation Company, Ltd
CPPA	Central Power Purchasing Agency
DISCO	Distribution Company
ECC	Economic Coordination Committee
EPP	Energy Policy Project
FARA	Fixed Amount Reimbursable Agreement
GENCO	Generation Company
GOP	Government of Pakistan
GTPS	Guddu Thermal Power Station
GZDP	Gomal Zam Dam Project
JTPS	Jamshoro Thermal Power Station
LESCO	Lahore Electricity Supply Company
LNG	Liquefied Natural Gas
MOF	Ministry of Finance
MPNR	Ministry of Petroleum and Natural Resources
MTPS	Muzaffargarh Thermal Power Station
MW	Megawatt, unit of electrical power, 1 million watts,
MWH	Montgomery Watson Harza
MWP	Ministry of Water and Power
NPCC	National Power Control Center
NTDC	National Transmission and Despatch Company
NWA	North Waziristan Agency
PA	Political Agent
PC	Planning Commission
PDP	Power Distribution Program
PESCO	Peshawar Electricity Supply Company
PIRS	Performance Indicator Reference Sheets
PO	Purchase Order
PSDP	Public Sector Development Programme
PSRP	Power Sector Reform Program
SBP	State Bank of Pakistan

TOR	Terms of Reference
ToU	Time of Use
USAID	United States Agency for International Development
WAPDA	Water and Power Development Authority

PROGRAM OVERVIEW

USAID's Energy Policy Project (EPP) supports the jointly agreed upon interests of USAID and the Government of Pakistan in power generation and transmission and related policy reform activities. Current key activities include providing monitoring and implementation support to the following six signature energy projects, announced by Secretary of State, Hillary Clinton:

- Four repair and maintenance projects (3 GENCOs and Tarbela) with total funding of \$70.73 million.
- Two multipurpose dam completion projects (Gomal Zam and Satpara) with total funding of \$66 million.

When completed, these projects, will add more than 863MW to Pakistan's generating capacity. As of December 2012, a total of 559MW have been added to Pakistan's electricity grid through USAID funding as shown in the following table.

Table I: Planned Capacity Additions for Signature Energy Projects

Project	Planned MW Gains per FARA	Expected Gains	MW added (as of 31 December 2012)
Muzaffargarh	165	475	330
Jamshoro	95	150	95
Guddu	55	75	-
Tarbela	80	128	128
Gomal Zam	17.4	17.4	-
Satpara	17.66	17.66	6
Total	430.06	863.06	559

EPP also is providing technical support to the Ministry of Water and Power (MWP) to identify and select new generation and transmission projects. Examples include potential imports of electricity from the Central Asian Republics to Pakistan through Afghanistan; and providing analytical support for projects such as Step I & II Due Diligence for the Kurram Tangi Project.

In addition, EPP is supporting generation & transmission related studies and policy reform activities assigned by USAID. These include developing GENCO and NTDC business plans; developing policies/procedures for the National Power Control Center; and advisory services at MWP and the Planning Commission (Energy Wing), Ministry of Finance (MOF), and Ministry of Petroleum and Natural Resources (MPNR).

Staffing: Contractor's level of effort is comprised of 85% Pakistani and 15% international staff.

Location: All Provinces and Federally Administered Tribal Areas

Total USAID Funding: \$ 136.731 million for six signature energy projects
\$ 14.893 million EPP Phase II

PROJECT ACTIVITIES

COMPONENT I: PROJECT MONITORING & IMPLEMENTATION

The Energy Policy Project is providing monitoring and implementation support for the six signature projects announced by Secretary of State Hillary Clinton. These projects include rehabilitation of three thermal power plants (Muzaffargarh, Guddu and Jamshoro), and one hydropower plant (Tarbela Dam); and construction of two new multipurpose dams (Gomal Zam Dam and Satpara Dam). Total USG funding for these projects is \$136.731 million (per revised agreements), with estimated gains in available generating capacity up to 863MW. As of December 2012, 559 MW have been added to Pakistan's national grid.

HYDROPOWER PLANTS

With a total funding of \$82.5 million, as much as 163MW of generation is estimated to be added through the rehabilitation of Tarbela hydropower plant and completion of two multipurpose dams, Satpara and Gomal Zam.

A baseline condition of the dams is tabulated below. For Satpara and Gomal Zam, the baseline available generating capacity at the time of signing of the agreement was zero.

Table 2: Baseline Generation for Tarbela

Tarbela Units under Rehabilitation	Baseline at the time of FARA signing		Baseline at shut down for replacement	
	Capacity (MW)	MW gains	Capacity (MW)	MW gains
Unit 1	185	10	185	10
Unit 3	185	10	185	10
Unit 4	135	60	87	108
	505	80	457	128

Rehabilitation of Tarbela Hydropower Plant under FARA:

During a visit to the Tarbela Power Plant on 8 December 2012, EPP inspected the digital governors procured under the FARA. EPP coordinated and supported WAPDA in the preparation of accrual reports and submitted the same to USAID for review and procession.

Of the \$16.5 million USG funding committed for Tarbela, total disbursement as of December 2012 is \$13,949,917. The current status of the Tarbela FARA is tabulated below:

Table 3: Status of Tarbela FARA

LINE ITEM #	UNIT #	WORK ITEM DESCRIPTION	AMOUNT (USD)	CLAIMS SUBMITTED (USD)	PRESENT STATUS
I	4	Replacement of Damaged Generator Stator Windings with Class F Insulation Windings, Unit#4	3,700,000	3,700,000	Work completed and 100% amount reimbursed

¹ EPP certified claims of \$13,949,917; out of which \$2,700,000 is in process with USAID

LINE ITEM #	UNIT #	WORK ITEM DESCRIPTION	AMOUNT (USD)	CLAIMS SUBMITTED (USD)	PRESENT STATUS
2	3	Replacement of Damaged Generator Stator Windings with Class F Insulation Windings, Unit#3	3,700,000	2,849,917	Installation of windings completed on May 25, 2012. 100% amount-less spares-has been reimbursed. WAPDA has placed PO for the spares.
3	1	Replacement of Damaged Generator Stator Windings with Class F Insulation Windings, Unit#1	3,700,000	3,700,000	Work completed and 100% amount reimbursed
4	1-14	Upgrading of the SCADA System, Units 1-14	1,000,000		SCADA System award is in final stages with a completion period of 14 months. Therefore, the testing and commissioning of this activity is anticipated to go beyond the agreement completion date of Dec 31, 2012.
5	1-10	Spare Seals & Guides for Relief & Bypass Valves on Turbine Side, Units 1-10	500,000	500,000	Installation completed on all units. 100% amount has been disbursed to WAPDA
6	1-10	Replacement of Electromechanical Governors by Digital Ones, Unit 1-10	3,000,000	2,700,000*	The equipment arrived at site on 30 November. The installation and commissioning of the Digital Governors on Units 1 – 10 is anticipated to be completed in June 2013.90% amount reimbursed.
7	1-10	Replacement of Worn out Station Drainage & Dewatering Pumps, Units 1-10	400,000		Installation completed on all units. However, reimbursement is on hold as one small pump (required under FARA) is being procured by WAPDA to comply the specifications of FARA.
8		Training	500,000	500,000	20 engineers from Tarbela power station have completed training on O&M in Switzerland. 100% amount disbursed to WAPDA.
Total			16,500,000	13,949,917	

Gomal Zam Multipurpose Dam under Activity Agreement:

Progress of work has been slowed down at the Gomal Zam Dam due to security issues and WAPDA's inability to make outstanding payments of \$10 million to the contractors. WAPDA has made a payment of \$6 million to partially settle outstanding payments. The commissioning of the project is anticipated in Mar-Apr 2013.

Amendment No. 1 to the Activity Agreement revised the completion date of the project (including the irrigation component) to September 30, 2013. Of the \$40 million USG funding committed for Gomal Zam (energy component), total disbursement as of December 2012 is \$36,589,000. The status of the Gomal Zam Activity Agreement is tabulated below:

Table 4: Status of Gomal Zam Activity Agreement

LINE ITEM #	WORK ITEM DESCRIPTION	COMPLETION STATUS	AGREEMENT AMOUNT (USD- Million)	CLAIMS SUBMITTED (USD Million)	PRESENT STATUS
1.	Main Dam, Spillways Concrete & Related Works	88%	19.171	19.171	Work Completed. 100% Claim reimbursed
2.	Hydropower &	90%	0.757	0.757	Work Completed. Claim of 0.757

	Switchgear Component				million reimbursed
3	Main Dam and Spillways Concrete & Related Works	91%	5.125	5.125	Work Completed. Claim of 5.125 million reimbursed
4.	Main Dam & Spillways, Concrete & Related Works	100%	5.125	5.125	Work Completed. Claim of 5.125 million reimbursed
5.	Hydropower & Switchgear Component	50% of remaining 10% works by Dec 9, 2011	0.920	0.920	Work Completed. Claim of 0.920 million reimbursed
5a.	Hydropower & Switchgear Component	100% by Jun 30, 2012	0.920		98% completed
6.	132kV Transmission Line & related works	50%	1.0	1.0	Work Completed. Claim of 1.0 million reimbursed
7.	132kV Transmission Line and related works	100%	0.5	0.5	Work Completed. Claim of 0.5 million reimbursed
7a.	132kV Transmission Line and related works	100% by Apr 30, 2012	0.5		95% Completed
8a.	Completion of Mechanical testing of Dam fixture	100%	2.0	2.0	Work Completed. Claim of 2.0 million reimbursed.
8b.	Completion of Project - Filling of Reservoir, Testing, & Placement in Commercial Operation	50% by Dec 9, 2011	1.991	1.991	Work Completed. Claim of 1.991 million reimbursed
8c.	Completion of Project - Filling of Reservoir, Testing, & Placement in Commercial Operation	100% by Aug 30, 2012	1.991		Final testing depends upon completion of transmission line, switchyard and availability of water
Total			\$40	\$36.589	

Satpara Multipurpose Dam under Activity Agreement:

EPP facilitated a meeting between USAID and WAPDA on December 13 to discuss the land acquisition issues on the left bank at Satpara Dam project. USAID is working in collaboration with WAPDA to explore all possible solutions which will provide the maximum benefits.

Of the \$26 million USG funding committed for Satpara, total disbursement as of December 2012 is \$21,485,700. The status of Satpara Activity Agreement is tabulated below:

Table 5: Status of Satpara Activity Agreement

LINE ITEM #	WORK ITEM DESCRIPTION	COMPLETION STATUS	AGREEMENT AMOUNT (USD - Million)	CLAIMS SUBMITTED (USD- Million)	PRESENT STATUS
1.	Civil Works for Dam & Power House 1 & 2	94%	4.500	4.500	Work Completed. 100% Claim reimbursed.
2.	Civil Works for Dam and Power House 1 & 2	100%	1.877	1.877	Work Completed. 100% Claim reimbursed
3.	Civil, Electrical & Mechanical Work for Power Houses 3 & 4	50%	5.846	5.846	Work Completed. 100% reimbursed
4.	Civil, Electrical & Mechanical Work for Power Houses 3 & 4	100% by Apr 30, 2013	3.681		87% work completed and on schedule
5.	Irrigation System	78 %	2.530	2.530	Work Completed. 100% Claim reimbursed

LINE ITEM #	WORK ITEM DESCRIPTION	COMPLETION STATUS	AGREEMENT AMOUNT (USD - Million)	CLAIMS SUBMITTED (USD- Million)	PRESENT STATUS
6.	Irrigation System	89 %	2.282	2.282	Work Completed. 100% Claim reimbursed
7.	Irrigation System	90 % by Dec 09, 2011	2.0538	2.0538	Work Completed. 100% claim reimbursed
7a.	Irrigation System	100% by Jun 30, 2012	0.2282		99.9% work completed
8.	Consultancy Services	81%	0.0853	0.0853	Work Completed. 100% Claim reimbursed
9.	Consultancy Services	90%	0.400	0.400	Work Completed. 100% Claim reimbursed
10.	Consultancy Services	100% by Apr 30, 2013	0.390		Ongoing till project end
11.	Project completion with Testing & Placement in Commercial Operation	90% by Dec 09, 2011	1.9116	1.9116	Work Completed. 100% Claim reimbursed
11a.	Completion of Project, with Testing & Placement in Commercial Operation	100% by Jun 30, 2012	0.2124		Milestone 99.9% complete
Total (million)			\$26.00	\$21.4857	

THERMAL POWER PLANTS

With total funding of \$54.231 million, as much as 700MW are estimated to be restored through the rehabilitation of three thermal power plants. The baseline condition of these plants at the time of signing of the FARA was 315MW; however due to further deration of the plants' operating capacity, estimated gains were increased to 700MW as shown in the following table.

Table 6: Baseline Capacity at the Thermal Power Plants

Thermal Plants under Rehabilitation	Baseline at the time of FARA signing		Present Operational Baseline	
	Capacity (MW)	MW gains	Capacity (MW)	MW gains
Muzaffargarh TPS	835	165	690	475
Jamshoro TPS	560	95	500	150
Guddu TPS	225	55	200	75
	1620	315	1390	700

Rehabilitation of Muzaffargarh TPS under Activity Agreement:

During the reporting month, with the replacement of air preheater elements 50 MW were added to the plant's generation capacity. The rehabilitation work to date has resulted in 330 MW of capacity restoration at the power plant.

EPP visited MTPS in December and provided support to the GECNO in preparing a revision the PIL. EPP will facilitate a meeting with USAID and MTPS early next month to finalize the PIL modifications.

The modification will help expedite payment of reimbursement claims held up due to deviations from the agreement's technical specifications.

The total amount disbursed to the GOP as of December 2012 is \$ 10,133,001².

The status of the MTPS Activity Agreement is tabulated on the next page:

² EPP certified claims of \$10,133,001; out of which \$337,605 is in process with USAID

Table 7: Status of MTPS Activity Agreement

Line Item No.	Unit No.	Work Item Description	Agreement Amount	Claims Submitted under FARA	Claims submitted under new PIL	Status
1	1,2&3	Rehabilitation of Boiler super heater tubes to overcome failure of tubes	\$4,080,000	\$4,080,000		Material received and installed at site. 100% Claim reimbursed
2	1- 4	Special Cooling Water Treatment.	\$187,440			Tender opened for the 4 th time on 26.06.2012 but no firm participated. Tender was again opened on 11.09.2012 and bids are under evaluation process.
3	1-6	Use of Fuel Oil Additive as done on Unit-4 (450 Tons).	\$921,225			PO issued on 23.11.2012
4	1,2&3	Replacement of Cold layer element for RAH (2 sets)	\$170,000	\$170,000		Material received and installed at site. 100% Claim reimbursed
5	1,2&3	Modification of Excitation system (3 set)	\$191,700			Tender opened in April 2012 and Bid Evaluation is in process
6	1,2&3	Electric motors for C.T. Fan (02 No) and for GRC fan. (01 No).	\$184,245		\$184,245	PO was issued on 23.09. 2011 for electric motors while LC opened on 02.02 2012 for GRC fan. Material received at site on 18.10.2012. Claim for 100% Payment reimbursed
7	3	D.C. Storage batteries (01 Set).	\$60,000	\$60,000		Material received and installed at site. 100% Claim reimbursed
8	1,2&3	220Kv circuit breaker SF6 type (06 No).	\$337,605		\$337,605*	LC established on 03.08.2012. Claim for 100% payment received and forward to USAID/ENR for approval on September 25, 2012
9	4	Re-blading of LP. Rotor (LP Turbine Rotor blades of row (6&7), pins & locking device).	\$787,035		\$787,035	Claim for 100% reimbursed
10	4	Air Pre-Heater Elements (Intermediate and Cold) 02 sets	\$255,000		\$255,000	Material received and installed at site. Claim for 100% Payment reimbursed
11	4	Up-grading of AVR System (01 set).	\$249,210		\$249,210	PO issued on 20.07.2012. LC opened on 12.10.2012. Claim for 100% Payment reimbursed
12	4	Replacing UPS 1&2. (01 set).	\$62,835		\$62,835	Claim for 100% reimbursed
13	4	DEH (01 set).	\$319,500			Tender again opened on 18.10.2012 and is under evaluation
14	4	Up-grading of FSSS System (01 set).	\$138,450			Tender again opened on 18.10.2012 and is under evaluation
15	4	Up-grading of TSI system BNC 3300 or equivalent (Turbine Supervisory Instrument) (01 set).	\$266,250			Tender again opened on 18.10.2012 and is under evaluation
16	1-6	Training and software/hardware cost	\$1,000,000			Technical offer opened in Feb 2012 but it is now be retendered

		for CMMS and off-line efficiency monitoring system. All Units				and it will open on 13.11.2012.
17	5&6	I.D. Fan Rotor/Impeller along with Housing and Dampers (04 Set).	\$625,000	\$562,500		Consignment received on 26.02.2011 and installed partially at unit 5. 90% claim reimbursed
18	5&6	Air Pre heater Elements Hot end, intermediate & cold end layers along with seals for both units (04 Set).	\$639,000			PO issued on 20.07.2012. LC established on 12.10.2012. LC established on 12.10.2012. Claim for 100% Payment (\$639,000) received but not forwarded to USAID/ENR due to specifications problem.
19	5&6	Procurement of G.R.C. Fan Impeller/Rotor (01 Set).	\$33,548		\$33,548	Po issued and LC opened on 27.01.2012. Material received at site on 16.07.2012. Claim for 100% payment reimbursed
20	5&6	Procurement of Cooling Tower Fan Gear Box & its parts. (06 No. gear box).	\$236,963		\$236,963	PO issued and LC opened on 27.01.2012. Material received on site on 27.08.2012. Claim for 100% payment reimbursed
21	5&6	Economizer Tubes for both Units (02 Sets)	\$2,130,000		\$2,130,000	Po issued and LC opened on 05.04.2012. Received at site on 24.10.2012. Claim for 100% Payment reimbursed
22	5&6	IP Turbine Rotor (01 No).	\$641,130		\$641,130	PO issued on 14.06.2012. LC established on 12.10.2012. Claim for 100% Payment reimbursed
23	5&6	Replacement of Damaged Exhaust flue gas ducts of material Russian Grade Steel sheets (50 M.T), Plate Type Heat Exchanger for Inner Water Cooling System of Generator and Motor for Starting Oil Pump (Vertical) Units 5-6	\$287,550			LC established for one PO while LC is awaited for the second PO. Request for foreign exchange allocation for the second PO was submitted on 15.10.2012.
24	5&6	Conversion of Boiler Ignition System from Natural Gas to HSD/Furnace Oil	\$277,965			Tenders opened and evaluation completed. LOI to be issued
25	5&6	Repair of winding and stator of Generators and testing	\$319,500			Draft tender documents sent to GM office on 06.08.2012. Tender to be opened on 28.11.2012.
26	5&6	Hydraulic coupling of Boiler Feed Water Pumps (01 No).	\$63,900			Tender opened but only one firm participated and rate quoted by the firm is ten times higher than the estimated cost
27	5&6	Modification of Excitation System	\$166,140			Tender opened and is under evaluation
28	5&6	Procurement of 0.4KV Motors for Cooling Towers Fan and APH 02	\$10,650		\$10,650	PO issued and LC opened in April 2012. Material received at site on 15.10.2012. Claim for 100% payment reimbursed
29	5&6	Procurement of 6.6KV Motor for C.W. Pumps, CP, ID Fan, FD Fan & BF Pumps (05 No).	\$162,945		\$162,945	Po issued and LC opened in April 2012. Claim for 100% payment reimbursed
30	5&6	Procurement of 6.6/0.4KV Breaker (5 No. 6KV breaker, 18Nos. 0.4Kv Breakers).	\$295,005			PO issued and LC of second PO was also opened but specifications were not as per PIL therefore NPGCL issued an amended PO for the short items.

31	5&6	Protection Relay for Generators.	\$29,820			Tenders opened and LOI issued on 24.02.2012. PO issued on 31.05.2012. LC established on 12.10.2012. Claim for 100% Payment received but not forwarded to USAID/ENR due to specifications problem.
32	5&6	MK Breakers, Seal Oil Coolers, PMG	\$169,335		\$169,335	Consignment received at site. Claim for 100% payment reimbursed
33	5&6	Supply, Installation, Commissioning & Testing of complete distributed control system including field equipment such as sensors, transmitter & actuators etc. for turbine governing system DEH-III and Boiler Turbine Auto regulation system YEWPACK-II	\$213,000			Retendered and bid evaluation in process.
34	5&6	Rehabilitation of Furnace safety Supervisory System including Furnace camera, flame monitoring & ignition system	\$266,250			Tender opened and bid evaluation in process
Total			\$15,778,195	\$4,872,500	\$5,260,501	

Claims Processed and Submitted to USAID = **\$10,133,001** (including * \$337,605 that are under process with USAID)

Table 8: Summary of Status of Muzaffargarh TPS as of December 31, 2012

Description	Number	PIL Item #	Amount
Material Received at Site	11	1,4,6,7,10,17,19,20,21,28,32	\$7,954,741
LC opened and material is awaited	9	8,9,11,12,18,22,29,30,31	\$3,204,585
PO issued and LC is awaited	2	3, 23	\$1,208,775
Performance Bond received and PO is awaited	-	-	-
LOI Issued and Performance Bond is awaited	-	-	-
Tender/Re-Tender opened and in process	10	2,5,13,14,15,16,24,25,26,27	\$2,930,845
Tender/Re-Tender Awaited	2	33,34	\$479,250
Total PIL Line Items	34		\$15,778,195

LC opened for PIL Item # 18, 30, 31 but their specifications are not as per PIL therefore claim will be processed on procurement of remaining items

Rehabilitation of Jamshoro TPS under Activity Agreement:



A plant supervisor at the start-up of Unit 2 at Jamshoro Thermal Power Station

At Jamshoro the installation of Economizer at unit#2 boosted output from 100MW to 170MW. The rehabilitation work to date has resulted in 95 MW of capacity being restored at JTPS. Installation of the economizers at Unit-3 and 4 is in progress.

A joint visit of USAID and EPP was made to Jamshoro to discuss the work progress, issues in implementation of the activity agreement and the PIL revision.

Three major equipment (Air Pre heater Rotor for Unit 1, Super Heater Tube Elements for Unit 1 and Economizer for Unit 4) were delivered to the power station during the month.

The total amount disbursed to the GOP as of December 2012 is \$13,327,275³.

³ EPP has processed and submitted to USAID \$13,327,275; out of which \$2,630,550 is in process with USAID

Table 8: Status of JTPS Activity Agreement

LINE ITEM NO.	UNIT NO.	WORK ITEM DESCRIPTION	AGREEMENT AMOUNT	CLAIMS SUBMITTED ON THE BASIS OF OLD FARA	CLAIMS SUBMITTED ON THE BASIS OF NEW PIL	PRESENT STATUS
1	1	Rehabilitation of Air Pre-heater Side A&B Rotor.	\$1,672,050		\$1,672,050*	LC established on 18.10.2012. Claim for 100% payment received and forwarded to USAID for approval on November 21, 2012
2	1	Replacement of Final Super Heater Coils.	\$958,500		\$958,500	Material received on 16/12/12. 100% claim reimbursed
3	1	Complete replacement of Flue Gas Duct & Air Pre-heater Bottom hoppers and F.D Fan duct up to steam coil Air Heater.	\$720,000	\$720,000		The consignment received at JPCL on 16.01.2012. Installation completed. 100% Claims reimbursed
4	1	Complete Rehabilitation of Cooling Towers.	\$500,000	\$450,000	\$50,000	Material received at Jamshoro. Installation completed. 100% claim reimbursed
5	1	Up gradation / replacement of Auto Burner control system and Data Acquisition System.	\$300,000	\$300,000		Material received and installed at site. 100% Claim reimbursed
6	1	Hiring of services for major overhauling.	\$810,000			The tender opened on 20.02.2012. Only one firm M/s IED Ukraine through their local agent M/s Istil Karachi participated in the tender. The case will be finalized soon
7	1	Soot Blower Spare Parts.	\$117,150			LC opened on 28.12.2011. Material received at site on 12.05.2012 but specifications mentioned in PO are different from PIL specifications. EPP observations sent to USAID for decision
8	1	Tube Bundles of Steam Converter, unit#1	\$250,000	\$225,000	\$25,000	Material received at site on 21.11.2011 and installed. 100% Claim reimbursed
9	1	Spares for Oil & HSD Burners & Igniters.	\$213,000			LC Established on 28.12.2011 and material received at site but specifications mentioned in PO differs from PIL specifications. EPP Observations sent to USAID for decision
10	1	Air Pre-heater Elements & Seal,	\$670,000	\$670,000		Material Installed at site amount reimbursed. 100% Claim reimbursed.
11	1-4	Use of fuel oil additives to prevent slag formation and cooling water treatment chemicals to prevent scale buildup.	\$958,500			Tender was opened on: 17.02.2012. The case was sent to GM (Th.) for their expert opinion. It has been decided that fresh tender will be invited and opened by the office of GM Thermal Lahore

12	2-4	Replacement of H.P Heaters along with the valve and controllers including Rehabilitation of Instrument Control & Protection System.	\$3,306,825		\$3,306,825	LC Established on 30.09.2011. The material reached at site on 07.08.2012. New H.P heaters on unit 2 & 3 are completed and now new instrumentation & control is in progress. 100% Claim reimbursed
13	2-4	Complete Rehabilitation of Cooling Towers.	\$718,875			LC established on 27.06.2012, but it was not as per PIL specifications. Claim will be submitted after procuring the remaining items. Material reached at site on 26.09.2012
14	2-4	Complete Rehabilitation of drain valves.	\$351,450			LC Established on 28.12.2011. The material reached at site on 26.06.2012 but specifications mentioned in PO differ from PIL specifications. EPP observations sent to USAID for decision
15	2-4	Rehabilitation of soot blowing system.	\$702,900			Foreign Exchange Allocation received on 31.07.2012. LC established on 17.09.2012. Claim received but not forwarded due to specifications problem.
16	2-4	Supply, installation and commissioning of complete economizers of three units	\$3,195,000		\$3,195,000	LC has been established on 28.06.2012. First shipment consist of two economizers is received on 23.10.2012, installation on unit 2&3 is in progress. Claim for 100% Payment reimbursed by USAID
17	2	<p>a. Modification / Rehabilitation of Electro Hydraulic and Mechanical Hydraulic Governing system.</p> <p>b. Replacement of Data Acquisition System (DAS-100), Auto Regulation System (MZ-III) and Temperature Scanners for Generator Winding Temperature, Super Heater/Re- Heater Temperature, Boiler Drum Metal Temperature, F.D, I.D Fan motor Temperature, Boiler Feed Pump Temperatures with latest Distributed Control System (DCS)</p> <p>c. Replacement of existing FSSS along with Furnace Flame Monitoring on one unit. replacement of Data Acquisition System (DAS-100), Auto Regulation System (MZ-III) and Temperature Scanners for Generator Winding Temperature, Super Heater/Re- Heater Temperature, Boiler Drum Metal Temperature, F.D, I.D Fan motor Temperature, Boiler Feed Pump Temperatures with latest Distributed Control System</p> <p>d. Replacement of Turbine Vibration system with Vibro-Control-4000 Schenk or equivalent</p>	\$1,171,500			Tender opened on 17.07.2012 and technical bids are under evaluation

18	2	Procurement of Boiler Feed Pump Motor Complete.	\$117,150		\$117,150	LC was opened on 28.12.2011 and the equipment reached site and is installed. Claim for 100% Payment reimbursed
19	3	Replacement of Final Super Heater Coils.	\$958,500		\$958,500*	Foreign Exchange Allocation received on 31.07.2012. LC established on 11.09.2012. Claim for 100% payment received and submitted to USAID for approval.
20	3	Three-Way valve of Oil burner.	\$200,000	\$180,000	\$20,000	Material received at JPCL on 23.11.2011 and is installed. 100% Claim reimbursed
21	3	Spares for Overhauling of Turbine.	\$532,500			Consignment reached Jamshoro but specifications mentioned in PO are different from PIL specifications. EPP observations sent to USAID for decision.
22	4	I.D Fan Impellers.	\$479,250		\$479,250	Purchase Order issued on 16.03.2012. LC established on 28.06.2012. Claim for 100% Payment reimbursed
23	1-4	Off-line Efficiency Monitoring system and training.	\$426,000			Tender opened on 29.05.2012 and bids are under evaluation.
		Total	\$19,329,150	\$2,545,000	\$10,782,275	

Claims Processed and Submitted to USAID = \$13,327,275 (including *\$2,630,550 that are under process with USAID)

* Claims processed by EPP and under process with USAID

Table 9: Summary of Status of Jamshoro TPS as of December 31, 2012

Description	Number	PIL Item #	Amount
Material Received at Site	13	1,2,3,4,5,7,8,9,10,12,13,14,16, 18,20,21	\$13,822,500
LC opened and material is awaited	6	15, 19,22	%2,140,650
PO issued and LC is awaited	-	-	-
Performance Bond received and PO is awaited	-	-	-
LOI Issued and Performance Bond is awaited	-	-	-
Tender/Re-Tender opened and in process	4	6,11,17,23	\$3,366,000
Tender/Re-Tender Awaited	-	-	-
Total PIL Line Items	23		\$19,329,150

LC opened for PIL Item # 7,9,13,14,15,21 but their specifications are not as per PIL therefore claim will be processed once the procurement of remaining items is complete

Rehabilitation of Guddu TPS under Activity Agreement:

A new Activity Agreement and implementation letter were signed in April 2012 with a total funding of \$19,123,730 and the completion date was revised to June 30, 2013. Work under the Guddu Activity Agreement is steadily picking up pace after the opening of a letter of credit through joint efforts of EPP, USAID and GOP.

The total amount disbursed as of December 2012 is \$15,512,790. The status of the Guddu TPS Activity Agreement is tabulated below:

Table 10: Status of GTPS Activity Agreement

LINE ITEM #	WORK ITEM DESCRIPTION	AGREEMENT AMOUNT	CLAIMS SUBMITTED	PRESENT STATUS
1.	Purchasing the supply of Spares / Equipment for reliability assurance (up-rating and upgrading) including MK VIe Control System for GT-7&8 and ST-05	\$8,889,555	\$8,889,555	LC opened on 28.09.2012. Claim for 100% Payment reimbursed by USAID.
2.	Replacement of existing DCS with new Mk VIe Single Platform DCS for ST-5, GTs 7 & 8	\$692,250	\$692,250	LC opened on 28.09.2012. Claim for 100% Payment reimbursed by USAID.
3.	Purchasing the Supply of 1 & 2 stage buckets and nozzles for GT-7&8	\$3,621,000	\$3,621,000	LC opened on 28.09.2012. Claim for 100% Payment reimbursed by USAID.
4.	Rehabilitation of HRSGs, Replacement of Modified Bypass Dampers, all existing expansion joints of HRSGs and Replacement of Economizer tubes and bends of HRSG for GTs 7 & 8	\$1,571,940		Two PO have been placed and one tender is recalled
5.	Rehabilitation / Replacement of Evaporative Coolers and Cooling Media of GT-7&8	\$213,000		One tender under evaluation and other is recalled due to no bid participation
6.	Inspection, testing and repair of Generators of GT-7, GT-8, ST-5 along with supply of essential spares and testing kits	\$2,212,005	\$2,212,005	LC opened on 28.09.2012. Claim for 100% Payment reimbursed by USAID.
7.	Purchasing of Control Cables, Monitoring Instruments, Motorized and pneumatic Actuators and Turbine Supervisory Instruments / Equipment for ST-5	\$97,980	\$97,980	LC opened on 28.09.2012. Claim for 100% Payment reimbursed by USAID.
8.	Application of Service Charges for complete up-rate and upgrade package of GTs and replacement of controls etc. for block consisting of GT-7&8 and ST-5 on turnkey basis	\$1,826,000		Service order opened and LC will be opened soon.
Total		\$19,123,730	\$15,512,790	

Table 11: Summary of Status of Guddu TPS as of December 31, 2012

Description	Number	PIL Item #	Amount
Material Received at Site	-	-	-
LC opened and material is awaited	5	1,2,3,6,7	\$15,512,790
PO issued and LC is awaited	1	8	\$1,826,000
Performance Bond received and PO is awaited	-	-	-
LOI Issued and Performance Bond is awaited	-	-	-
Tender/Re-Tender opened and in process	2	4,5	\$1,784,940
Tender/Re-Tender Awaited	-	-	-
Total PIL Line Items	8		\$19,123,730

Heat Rates Testing and Equipment:

During the reporting month, EPP briefed the Joint Secretary MWP on the additional support being provided to GECNOs under EPP's modified SOW. EPP's heat rate and calibration were discussed in detail.

In a meeting held on 12 December 2012, EPP and GHCL discussed the testing procedures for Heat Rate and calibration of meter with NEPRA and gained NEPRA's approval for the implementation of the activities.

Phase I - Conduct heat rate tests which would require calibration of existing equipment

- Calibration of meters

EPP received proposal from various consulting firms to calibrate the equipment at the GENCOs before the heat rate tests could be carried out. Review of the proposals is underway. EPP also supported site assessments of meters at the three GENCOs.

- Heat rate and dependable capacity testing

Proposals received from vendors are under review.

Phase II - Installation of new equipment (flow meters)

Expression of Interests (EOIs) were received from two reputed firms for the procurement of flow meters

Placement of Performance Monitoring Advisors at the GENCOs:

The performance monitoring expert at Guddu Thermal Power Station undertook a needs assessment of the GENCO staff. Based on the results, an on-site training program is being developed for the staff on heat rate testing.

COMPONENT 2: POLICY AND REFORM

SUPPORT TO GOVERNANCE AND REFORM TEAM (GRT), MWP

EPP is supporting the Ministry of Water and Power in implementing the GOP's Power Sector Reform Program (PSRP) in generation, transmission, fuels, policy and finance.

Hydropower Projects Fund

EPP conducted meetings with various private sector and government entity Fund managers; including, Muslim Commercial Bank (MCB), BMA Capital, United Bank Limited (UBL) and National Investment Trust (NIT), to obtain input regarding creation of a Hydropower Development Fund and discuss their interest in managing of the Fund. A meeting was also held with IFC representative for Infrastructure sector to discuss fund structure and potential interest from IF

Smart Metering Systems

As a follow-up to Secretary, MWP's interest in bringing all Common Delivery Points onto Smart metering, USAID's involvement in the project was identified at CDPs of 16 IPPs under 1994 policy that were not included in NTDC's metering plan. MWP has requested for financial assistance in the procurement of 36 meters and 4-8 monitoring panels for these CDPs.

In this regard, EPP held a meeting with MD Planning and Chief Engineer, NTDC and discussed the specifications of the metering requirements. The specifications and costing of the requirements was established.

SUPPORT TO MINISTRY OF FINANCE

Tasks undertaken by EPP seconded staff at the Ministry of Finance include the following:

- a) Supported the Ministry in drafting comments on MWP's proposal to reduce the time period from 120 – 150 days to 45 days for tariff determination by NEPRA for Hydro Projects.
- b) Assisted Ministry of Finance in reviewing the proposal submitted by Ministry of Water and Power on the reduction in line losses of distribution companies, improvement in their revenue collection and mechanism for payment of subsidy on monthly basis.
- c) Facilitated Ministry of Finance in preparing comments on an ECC summary for development of Thar Coal.
- d) Assisted Ministry of Finance (Corporate Finance Wing) in finalization of their comments on the proposal of Ministry of Water and Power to allow IPPs to sell the power to the bulk purchaser (i.e. industry and commercial consumers) by utilizing their idle capacity which is available with them due to non-availability of fuel.
- e) Assisted Ministry of Finance in preparation of their comments on TESCOs application to NEPRA for grant of a distribution license.

SUPPORT TO PLANNING COMMISSION & MINISTRY OF PETROLEUM & NATURAL RESOURCES

LNG Imports:

Diversification from dependence on imported fuel oil for thermal generation, can address policy issues of mounting circular debt and insufficient supply of affordable electricity. In December, the Energy Policy Project's efforts for developing the governance framework and supply chain for LNG import were formalized. Carlos Pascual, US Special Envoy for International Energy Affairs signed an MOU with Dr. Asim Hussain, Advisor to the Prime Minister on Petroleum and Natural Resources on the funding of LNG consultancy services.

During the reporting month, the LNG consulting contract with QED Gas was executed. EPP held a meeting with SSGCL and QED to discuss the delivery orders for priority of work items. The consultant's level of effort and input was finalized and two draft delivery orders were shared with QED.



Carlos Pascual, US Special Envoy for International Energy Affairs signing an MOU with Dr. Asim Hussain, Advisor to the Prime Minister on Petroleum and Natural Resources on funding for LNG consultancy services

Oil Refining & Marketing policy:

EPP continued with a detailed review of the draft refining and marketing policy and held discussions with the oil refineries on their comments and input on the policy during the month. Meetings were held in Karachi with the management of National Refinery Ltd. (NRL), Pak Arab Refinery Ltd. (PARCO), Pakistan Refinery Ltd. (PRL) and BYCO, and with Attock Refinery Ltd. (ARL) in Islamabad.

A revised draft of the policy was prepared by incorporating the comments of the refineries and shared with MPNR for its review.

E & P and Shale Gas:

EPP reviewed and approved LMKR's request for an extension in the proposal submission against the RFP issued by EPP in November for provision of consultancy services in shale gas.

General Support to Planning Commission

EPP staff seconded at the Planning Commission provided support to the Commission as follows:

- a) Updated and finalized Summary for ECC on Restructuring of Gas transmission and distribution companies in Pakistan in which unbundling of gas companies is proposed.
- b) Updated and finalized comments of Planning Commission for Summaries to ECC on Prioritize Gas Supply to Power Sector, Approval for Corporate Purchase of Tullow Pakistan Developments Limited And Tullow Bangladesh Limited, Allocation of gas to Fertilizer plants from dedicated sources.

- c) Created briefs for Deputy Chairman Planning Commission and Secretary Planning and Development Division for the CDWP Meeting on Allocation of Gas to Fertilizer Plants from Dedicated Resources, Allocation of Gas for ENGRO Fertilizer Limited from Alternate Sources- Short Term Plan, Prioritize Gas Supply to Power Sector, Qadirpur Gas Pricing, Approval For Corporate Purchase Of Tullow Pakistan Developments Limited And Tullow Bangladesh Limited.
- d) Prepared brief comparison on Production and Purchase of Electricity by PEPCO in summer months of FY 2011 and FY 2012.
- e) Finalized presentation on Proposed Tariff Regime for Natural Gas Transmission and Distribution Companies.
- f) Finalized and circulated Minutes of the meeting, on Neelum Jhelum Hydroelectric Project, held in Planning Commission. Drafted note for Finance Minister on Neelum Jhelum Hydro Power Project covering all the major hurdles for arranging finances for the completing of the project and requesting to convene meeting on the same on urgent basis.
- g) Prepared recommendations from Planning Commission for the Secretary Finance on improvement in Power Sector Reforms Agenda.
- h) Created a brief on Direct Supply of Bulk Power to Large Scale Consumers by Private Sector Producers (IPPs).
- i) Prepared a note on Signing of Term Sheet on Import of LNG in Pakistan. Drafted comments of Planning Commission on RFP of Import of LNG and sent to Ministry of Petroleum and Natural Resources as well as circulated to all relevant ministries and departments i.e. Ministry of Finance, Board of Investment, and SSGCL.
- j) Provided IT Support to Deputy Chairman and Member Energy office in the Planning Commission and took routine back-up of data from office of Member Energy.

SUPPORT TO NTDC/NPCC UNDER POWER SECTOR REFORM PROGRAM

The EPP staff member seconded to NPCC undertook the following assignments during the month:

- a) Developed a Power Point presentation with estimates of power demand and supply (estimated generation) for each week of December, and for the next five months to be presented to the Prime Minister.
- b) Prepared an analysis of daily data on generation and demand and dispatch patterns of generators for the GENCOs and IPPs and for hydropower plants for any possible improvement and advice to the NPCC on the subject.
- c) Held two meetings of the Energy Committee, on steps required for better Load Management and discussed with the GM SO NPCC.
- d) Held a meeting with the new Joint Secretary power, regarding power position and Energy management Issues in DISCOs and other problems of power Sector.

POWER TRANSMISSION ACTIVITIES

EPP is focusing on strengthening the power transmission network and on capacity building for power sector entities involved in transmission.

Model DISCO

In a meeting held among USAID, PDP and EPP on December 6, 2012 the criteria for the selection of Model DISCO was discussed. A follow-up meeting will be held in January.

Live Line Training

To build the capacity of DISCOs in live line maintenance techniques on voltages of 132/66 kV, EPP has designed a live line training program for the 9 DISCOs. The training course will span over a period of 14 weeks and encompass both classroom and on-the-job training. Under first phase of the training, live line crew from PESCO would be provided training and subsequently staff from other DISCOs will be trained as well.

During the reporting month EPP continued with the selection of trainees from PESCO for the live line training. A total of 50 PESCO nominated personnel were interviewed at Bannu, D.I.Khan, Mardan, Abbottabad, and Chakdarra and shortlisting is in process.

EPP visited the training facility at Gatti, Faisalabad and held discussions with FESCO officials on the live line training.

Power Import from Regional Countries

A meeting was held between EPP and NTDC officials regarding the import of power from CAR countries and Afghanistan. Discussions were held on the concept paper on import of power.

EPP drafted the Scope of Work (SOW) for the concept paper on import of power and submitted to USAID for review.

PESCO Turn Around DISCO

EPP transmission team led by Manzoor Shaikh, Chief of Party EPP held a meeting with Tariq Saddozai, CEO PESCO and discussed in detail EPP's assistance to PESCO. During the reporting month, progress on the various projects being implemented at PESCO is as follows:

- **Transformer Program**

Under the transformer rehabilitation program, EPP developed the Scope of Work for:

- Overhaul and testing of power transformer of Shabqadar Grid Station.
- Repair of damaged power transformers at Jamrud Industrial Grid Station and Battal Grid Station.

- **Circuit breaker Program**

Prepared Terms of Reference for the procurement of 132kV circuit breakers.

- **Transmission Technical Audit**

EPP initiated the technical audit of Shahi Bagh grid station to identify the transmission bottlenecks.

- **Transmission Maintenance Workshop**

In a meeting held with PESCO on 3 December, 2012 EPP reviewed the layout of the transmission maintenance workshop to be constructed at Rehman Baba Grid Station. The SOW for procurement of PESCO relay protection test tools and equipment was drafted.

- **Telemetry on all CDPs including all transmission feeders**

A meeting was held with PESCO officials to discuss and finalize points for the installation of energy meters.

ENERGY SECTOR INTERSHIP PROGRAM

A placement ceremony was held at Guddu Thermal Power Station on 12 December 2012 to mark the commencement of the Energy Sector Internship Program for fifteen interns (including one female). Internship of 8 interns under KPK Chapter commenced from 24 December, 2012 with Electra Consultants, Peshawar. Each graduate will intern for six months and gain valuable practical experience in the energy sector.



Energy Policy Project, Deputy Chief of Party, Daniel Vincent giving an internship kit to an intern during a ceremony held at Guddu Thermal Power Station

COMPONENT 3: NEW PROJECTS, PLANNING & DEVELOPMENT

EPP continued its support to USAID in its efforts to determine funding levels and schedules for various hydroelectric power projects.

Mangla

During the reporting month, Director Component 3 visited Lahore and held meetings with WAPDA officials regarding activities on the Mangla Refurbishment and Upgrade Project (MRUP)⁴. Discussions were held with:

- Mr. Wajid Hameed, General Manager, Hydropower Operations
- Mr. Mohammad Ashraf, General Manager, Hydropower Planning
- Mr. Anwarul Haq, General Manager, Finance (Power), Mr. Badarul Islam, Chief Engineer, Hydropower Planning and
- Mr. Krohn, lead of the MWH consulting team for the project.

WAPDA is also in discussion with JICA for provision of funding for MRUP. In this regard, EPP along with USAID held a meeting with WAPDA and JICA to discuss the funding mechanisms and how to proceed with the procurement of machinery for the refurbishment of the power plant.

Following the meeting, WAPDA shared a “Draft advertisement to Pre-qualify bidders for supply of equipment” to USAID and JICA for their clearance. USAID is in agreement to proceed with work on the project, however JICA does not want WAPDA to take any action until its loan of \$140 million for the project is approved by their head office in Japan. This could cause at least a three months delay for WAPDA to start their pre-qualification exercise. Discussions are underway to resolve the issue and initiate work on MRUP.

WAPDA shared a draft Project Implementation Letter (PIL) and Activity Agreement for the Mangla project with EPP. The same has been forwarded to USAID for its review and feedback.

Kurram Tangi

A project kick off meeting was held at EPP office, Islamabad to facilitate USAID in conducting an environmental evaluation of the Kurram Tangi project. Representatives from USAID, WAPDA and FWO were present at the meeting

Support to USAID on requests for new projects

EPP responded to various queries, clarifications and explanations sought by USAID to determine its funding requirements for new projects in the coming year. This could lead to USAID helping WAPDA overcome its ongoing financial shortcoming in fully funding the 96MW Jinnah, 121MW Alai Khwar and the 131MW Dubair Khwar run-of-river hydroelectric power projects that are all expected to be completed and commissioned in 2013.

⁴ The Mangla Refurbishment and Upgrade Project (MRUP) is budgeted at \$ 397 million. Under the project, the machines at the power station will be replaced raising the generation capacity from current 970 MW at the 1,000MW rate power station to 1,310MW. USAID has allocated \$150 million for the MRUP.

Mr. Ghulam Abbas, Senior Advisor, EPP, attended 2 day training workshop “International best practices on Resettlement” in Islamabad organized by the Asian Development Bank (ADB). The workshop highlighted issues faced in acquisition of land and resettlement in different International financial institutions (IFI) funded projects.

ADMINISTRATION/MANAGEMENT: SUPPORT TO EPP

Administration is structured to support on-going and planned project activities while ensuring contractual compliance. Administration encompasses the following functions: Accounting/Finance, Human Resources, Procurement & Contracts, Logistics and IT. In implementing these functions, processes and policies are developed to ensure uniformity of efforts.

Accounting/Finance

Miscellaneous payments were made to vendors during the month. Payroll and financial reconciliations were completed.

EPP continued with the variance analysis of utility cost incurred in the main office and the guest house during the year, as compared to the previous year. The reasons for the variations were identified and cost reduction techniques were suggested.

Procurement

Office equipment/supplies and services were procured to support EPP operations. EPP continued monitoring project support activities at the office and guesthouse. Equipment procured for Peshawar office includes:

- 20 Users Kaspersky Anti-virus Licenses,
- LaserJet Printer,
- Scanjet Scanner & Multifunction Fax ,
- 2 Sony Digital Cameras ,
- 10 Nokia Asha
- 200 Cellular Phones
- 10, Dell Vostro 3550 Laptops and
- Dell T420 Server for Peshawar office

The following RFPs were issued during the reporting month:

- Procurement of Services for calibration RFO and Gas Flow Meters at the Thermal Power Plants was made and issued to SGS Pakistan Private Ltd and we received proposal and still working on it before issuance of purchase order.
- Technical Assistance for Heat Rate and Dependable Capacity Tests at the Thermal Power Plants.
- Rehabilitation of Damaged Power transformer at Jamrud Grid Station and Thermal Power Plants;
- Power Transformer Rewinding at Shahi Bagh Transformer

Logistics

Logistical support was provided for 31 trips made by project staff. International travel for expats was arranged, and regular follow up was maintained with the Ministry of Foreign Affairs for obtaining longer term visas for the expats.

Human Resources

During the reporting month, HR & Admin team drafted a Staff Orientation Manual and a Guest House Manual, providing an overview of guidelines, policies, and programs of EPP. These manuals will serve as a guide to the new staff hired

An Operational Checklist outlining the strategic, financial and operational tasks to be accomplished during the year was also prepared.

During the reporting month, Five new staff members were added to the project, including:

- A Human Resources assistant.
- A Security Specialist
- Three staff members were hired for Admin and IT as follows:
 - Assistant IT Specialist.
 - Admin Assistant.
 - Driver.
- An intern to provide operational support to the Energy Sector Internship Program.

IT

EPP staff performed trouble shooting for IT equipment in the EPP office and guesthouse and for operations at the ministries; all related matters were resolved during the month. Additional IT activities include:

- Installation and configuration of six new laptops.
- Daily routine network and systems (hardware/software) support to all project staff.