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ENERGY POLICY PROJECT - II QUARTERLY PROGRESS REPORT

JULY – SEPTEMBER 2012



September 2012

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USAID/PAKISTAN: ENERGY POLICY PROJECT (EPP)

Quarterly Report: July - September 2012

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Acronyms

ADB	Asian Development Bank
AEAI	Advanced Engineering Associates International
AEDB	Alternate Energy Development Board
CCGT	Combined Cycle Gas Turbine
CPGCL	Central Power Generation Company, Ltd
CPPA	Central Power Purchasing Agency
DISCO	Distribution Company
ECC	Economic Coordination Committee
EMMP	Environmental Monitoring and Mitigation Plan
EPP	Energy Policy Project
FARA	Fixed Amount Reimbursable Agreement
FESCO	Faisalabad Electric Supply Company
GE	General Electric
GENCO	Generation Company
GOP	Government of Pakistan
GTPS	Guddu Thermal Power Station
GZDP	Gomal Zam Dam Project
IESCO	Islamabad Electricity Supply Company
IPP	Independent Power Producer
JTPS	Jamshoro Thermal Power Station
KESC	Karachi Electricity Supply Company
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
MWP	Ministry of Water and Power
MW	Megawatt, unit of electrical power, 1 million watts,
NEPRA	National Electric Power Regulatory Authority
NPCC	National Power Control Center
NTDC	National Transmission and Despatch Company
PC	Planning Commission
PDP	Power Distribution Program
PEPCO	Pakistan Electric Power Company
PSRP	Power Sector Reform Program
SOP	Standard Operating Procedure
T&D	Transmission and Distribution
USAID	United States Agency for International Development
WAPDA	Water and Power Development Authority

Executive Summary

The Energy Policy Project (EPP) is a multiyear USAID funded initiative to increase power generation, decrease losses and increase cost recovery in Pakistan's power sector by investing in selected energy infrastructure; and facilitating GOP reform efforts with technical assistance and new technology. EPP is designed to support the joint goals of the U.S. Government (USG) and the GOP. The general framework for the EPP work plan is guided by several documents: USG Energy Strategy for Pakistan, the GOP's Power Sector Reform Program (PSRP), the Integrated Energy Sector Recovery Report and the Friends of a Democratic Pakistan Report.

Advanced Engineering Associates Inc. (AEAI) began implementation of EPP in 2008, with a focus on strengthening the GOP's institutional framework for the energy sector. In 2009, EPP's mandate expanded beyond policy to assist USAID in financing and accelerating the completion of specific projects to help overcome power shortages, and to strengthen the power sector through structural reforms and improved corporate governance. Phase I of the Energy Policy Project was completed in Feb 2012. In March 2012, AEAJ started work on the EPP Phase II under a new contract.

EPP is structured into three interrelated sets of program activities:

Component I - Monitoring and support of Project Implementation

EPP is providing monitoring and implementation support for the following six signature energy projects, announced by Secretary of State, Hillary Clinton:

- Four repair and maintenance projects (3 GENCOs and Tarbela.)
- Two multipurpose dam completion projects (Gomal Zam and Satpara)

When completed, these projects will add more than 863 MW to Pakistan's generation capacity. As of September 2012, a total of 439 MW have been added to Pakistan's electricity grid.

Project	Planned MW Gains per FARA	Expected Gains	MW added (as of 30 June 2012)
Muzaffargarh	165	475	280
Jamshoro	95	150	25
Guddu	55	75	-
Tarbela	80	128	128
Gomal Zam	17.4	17.4	-
Satpara	17.66	17.66	6
Total	430.06	863.06	439

Component II – Advice and Support of Energy Sector Policy Reform

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 providing technical expertise on the LNG import program. Component II supports policy reform and provides advisory services at Ministry of Water and Power (MWP), Planning Commission (Energy Wing), Ministry of Finance (MOF), Ministry of Petroleum and Natural Resources (MPNR).

Component III – New Projects, Planning and Development

EPP conducts and prepares due diligence reports on new projects being considered for USG support, such as Kurram Tangi, Warsak, and the Mangla Dam Project in order to provide detailed information on the projects, reduce USG risks, and set a basis for creating Project Implementation Agreements for selected projects.

PROGRAM COMPONENT I:

Monitoring and Support of Project Implementation

EPP is providing monitoring and implementation support for the six signature projects announced by the 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 completion of two new multipurpose dams (Gomal Zam Dam and Satpara Dam). Total USG funding is \$136.731 million (per revised agreements) and the estimated gains are up to 863 MW.

EPP is working closely with the GOP implementing partners, GENCOs and WAPDA, to support implementation of a broad range of projects' activities, which include:

- Dedicated technical experts assigned to thermal and hydro projects (Jamshoro, Guddu, Muzaffargarh, Tarbela, Satpara and Gomal Zam).
- Regular monitoring visits to project sites to verify deliverables/milestones, check quality of procured equipment, and verify completed construction work.
- Verify megawatts added through rehabilitation or new construction.
- Support implementing partners in designing work schedules, adherence & compliance with agreement terms & conditions, opening of accounts, reimbursement of invoices, ensuring environmental compliance with EMMPs, and resolution of issues during implementation.
- Certify compliance with construction specifications and/or technical standards of equipment.
- Compile monitoring and tracking reports to verify financial disbursements and technical progress.

Table I below provides summary information on financial reimbursements made during this quarter (July-September, 2012); and Figure I provides information on the financial status of the six signature projects supported by EPP.

Table I: Quarterly Disbursements

As of 30-Sept-12

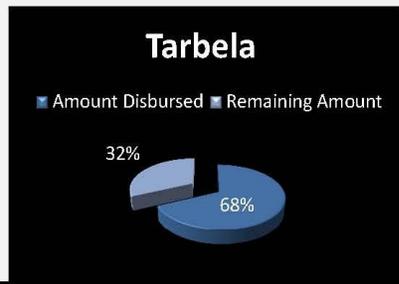
Total Obligated Amount for the six signature energy projects **\$136,731,075**

Amount Disbursed **\$89,372,633***

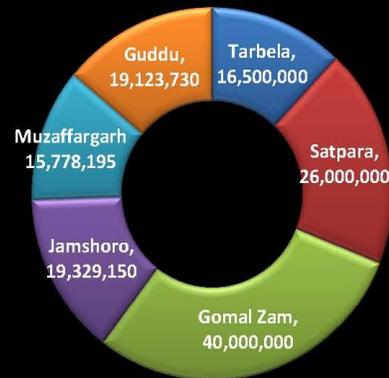
Agreement	4th Qtr. FY-2010	1st Qtr. FY-2011	2nd Qtr. FY-2011	3rd Qtr. FY-2011	4th Qtr. FY-2011	1st Qtr. FY-2012	2nd Qtr. FY-2012	3rd Qtr. FY-2012	4th Qtr. FY-2012	Amount Disbursed
	(Jul-Sep '10)	(Oct-Dec '10)	(Jan-Mar '11)	(Apr-Jun '11)	(July-Sep '11)	(Oct-Dec '11)	(Jan-Mar '12)	(Apr-Jun '12)	(July-Sep '12)	
Thermal Projects										
Muzaffargarh	\$167,616	-	\$4,296,884	-	-	\$408,000	-	\$2,776,388	\$743,903	\$8,392,791
Jamshoro	-	-	\$670,000	-	-	\$705,000	\$1,170,000	\$3,468,975	\$5,641,250	\$11,655,225
Guddu	-	-	-	-	-	-	-	-	-	-
Total Claim Submitted in Thermals	\$167,616		\$4,966,884			\$1,113,000	\$1,170,000	\$6,701,661	\$3,961,213	\$20,048,016
Hydro Projects										
Tarbela	-	-	\$9,139,917	\$370,000	-	\$700,000	\$370,000	\$670,000	-	\$11,249,917
Satpara	-	-	\$7,115,300	\$2,282,000	\$1,877,000	\$10,211,400	-	-	-	\$21,485,700
Gomal Zam	-	-	\$25,053,000	\$1,000,000	\$5,125,000	\$5,411,000	-	-	-	\$36,589,000
Total Claim Submitted in Hydros	-	-	\$41,308,217	\$3,652,000	7,002,000	16,322,400	\$370,000	\$670,000	-	\$69,324,617

* As of Sept 30, EPP has processed and submitted to USAID \$89,372,633; out of which \$2,423,940 is under process with USAID

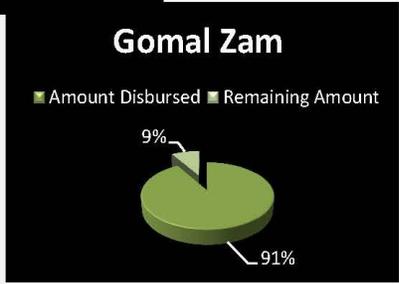
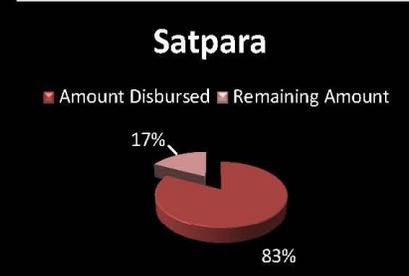
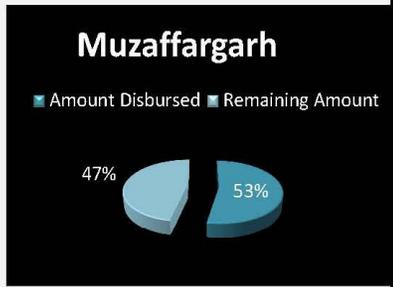
FINANCIAL STATUS OF THE SIX SIGNATURE PROJECTS



OBLIGATED AMOUNT FOR SIX SIGNATURE PROJECTS



OBLIGATED AMOUNT FOR SIX SIGNATURE PROJECTS



HYDROPOWER PLANTS

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

The baseline condition of Tarbela is tabulated below. For Satpara and Gomal Zam the baseline at the time of signing of the agreements was zero.

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

Achievements in the Quarter

A. Rehabilitation of Tarbela Hydropower Plant under FARA:

During the reporting period two monitoring visits were made by EPP to verify the ongoing repair and rehabilitation work.



Under the Tarbela rehabilitation, the installation of six drainage and dewatering pumps was completed during the reporting quarter. EPP experts inspected the six high capacity drainage and dewatering pumps installed for units 1-10 and reviewed their shipping documents. It was observed that one low capacity tank dewatering pump was not procured, which was reported to WAPDA/Tarbela. A meeting was held on September 12, 2012 with USAID and WAPDA and it was agreed that WAPDA will procure the remaining pump before invoicing for \$400,000 as per the FARA.

The rehabilitation/repair work to date has resulted in the restoration of 128 MW at Tarbela Hydropower plant. Replacement of generator windings has been completed at units 1, 3 & 4, and spare seals & guides and pumps installed. The remaining replacement/repair work, which will increase the reliability and sustainability of the power plant, but not support restoration of additional megawatts, includes:

- Replacing the electromechanical governors with digital governors
- Up grading the SCADA system;
- Spare parts for unit-3 winding; and
- Replacing one dewatering pump.

The above mentioned rehabilitation work is anticipated to go beyond the completion date of December 2012 due to the delay in the procurement of digital governors and the SCADA system.

(1)The digital governors were shop tested by WAPDA engineers at the GE Works, USA and are scheduled for shipment in October 2012. The installation and commissioning of the digital governors on units 1 – 10 is scheduled to be commenced in the lean water period between Oct 2012 to April 2013. Therefore, this activity is expected to be completed in June 2013;

(2)The SCADA system was awarded to ABB Sweden in early August 2012 with a completion period of 14 months. Therefore, the testing and commissioning of this activity is scheduled to be completed in October 2013. The delay in procurement is due to the extensive correspondence with the bidders/manufacturer for various clarifications necessary to finalize the contract and because of delays in securing visas and permissions from the Ministry of Interior for experts to visit the power plant.

A follow up visit to was conducted by an EPP subcontracted firm to carry out a compliance audit to ensure implementation of EMMPs. Observations made by the environmental expert were shared with plant management to take necessary corrective action, and a report was submitted to USAID to review.

Total disbursement made to WAPDA as of September 30, 2012 is \$11,249,917 out of the total obligated amount of \$16,500,000. The current status of the Tarbela FARA is tabulated below:

LINE ITEM #	UNIT #	WORK ITEM DESCRIPTION	AMOUNT (USD)	CLAIMS SUBMITTED (USD)	PRESENT STATUS
1	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
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 was awarded in early August 2012 with a completion period of 14 months. Therefore, the testing and commissioning of this activity is scheduled to be completed in October 2013
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

LINE ITEM #	UNIT #	WORK ITEM DESCRIPTION	AMOUNT (USD)	CLAIMS SUBMITTED (USD)	PRESENT STATUS
6	I-10	Replacement of Electromechanical Governors by Digital Ones, Unit I-10	3,000,000		Digital Governors were inspected by WAPDA Engineers at GE, USA and are scheduled for shipment in October 2012. The installation and commissioning of the Digital Governors on Units I – 10 is anticipated to be completed in June 2013
7	I-10	Replacement of Worn out Station Drainage & Dewatering Pumps, Units I -10	400,000		Installation completed on all units.
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	11,249,917	

B. Satpara Multipurpose Dam under Activity Agreement



Work under the Satpara Activity Agreement is progressing steadily. The dam and powerhouse I & 2 are 100% complete and the irrigation system is 99.9% complete

WAPDA has requested USAID to approve a reduction in the length of right distributory-I canal¹ due to land acquisition issues. EPP conducted an assessment on the implications of curtailing the length of the canal system, which was submitted to USAID. The assessment concludes that the proposed reduction will reduce the project cost by USD

0.379 million²; however it will also reduce the irrigated land by at least 6% subsequently reducing the number of beneficiaries. A decision from USAID is awaited, which would also require an amendment in the agreement to make remaining payments for the irrigation system.

The overall civil, electrical and mechanical work at power house 3 & 4 is 77% complete. The expected completion date for units 3 & 4 is April 30, 2013 as per the agreement completion date.

¹Total length of the canal is 56 km and WAPDA is requesting a reduction of 11,291 feet in length (6% of the total length of the canal).

² The amount is based on the cost of land at the time of signing of the contract in 2004 and is not a reflection of the current price of the land (which might be higher or lower than this).

To ensure sustainability of the project as mentioned in the Activity Agreement of Satpara Dam Project, WAPDA will enter into a power purchase agreement (PPA) with Gilgit-Baltistan PWD that would recover WAPDA's costs, including O&M.

The total amount disbursed as of September 30, 2012 is \$21,485,700. The project progress is tabulated on the next page.

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. Claim of 4.5 million reimbursed
2.	Civil Works for Dam and Power House 1 & 2	100%	1.877	1.877	Work Completed. Claim of 1.877 million reimbursed
3.	Civil, Electrical and Mechanical Work for Power Houses 3 & 4	50%	5.846	5.846	Work Completed. Claim of 5.846 million reimbursed
4.	Civil, Electrical and Mechanical Work for Power Houses 3 & 4	100% by Apr 30, 2013	3.681		77% work completed and on schedule
5.	Irrigation System	78 %	2.530	2.530	Work Completed. Claim of 2.53 million reimbursed
6.	Irrigation System	89 %	2.282	2.282	Work Completed. Claim of 2.282 million reimbursed
7.	Irrigation System	90 % by Dec 09, 2011	2.0538	2.0538	Work Completed. Claim of 2.0538 million reimbursed
7a.	Irrigation System	100% by Jun 30, 2012	0.2282		99.9% work completed
8.	Consultancy Services for Satpara Dam	81%	0.0853	0.0853	Work Completed. Claim of 0.0853 million reimbursed
9.	Consultancy Services for Satpara Dam	90%	0.400	0.400	Work Completed. Claim of 0.4 million reimbursed
10.	Consultancy Services for Satpara Dam	100% by Apr 30, 2013	0.390		Ongoing till end of project
11.	Completion of Project, with Testing & Placement in Commercial Operation (less PH 3 & 4)	90% by Dec 09, 2011	1.9116	1.9116	Work Completed. Claim of 1.9116 million reimbursed by USAID
11a.	Completion of Project, with Testing & Placement in Commercial Operation (less PH 3 & 4)	100% by Jun 30, 2012	0.2124		Milestone 99.9% complete
Total (million)			\$26.00	\$21.4857	

C. Gomal Zam Multipurpose Dam under Activity Agreement

During the reporting quarter, work on the Gomal Zam Dam was slowed down due to the abduction of eight WAPDA employees assigned to the project on Aug 15, 2012, and high security risk in the area. WAPDA is making efforts for the release of the abductees and EPP is keeping USAID apprised of the situation on a regular basis.

The main dam and spillway concrete and related works, along with mechanical testing of dam fixtures are 100 % complete. Hydropower and switchyard components are 98 % complete and stringing of the transmission line is in progress.



Filling of the reservoir started with the closure of the diversion tunnel, and the water level has increased to 722 meters. Final testing and commissioning of the project is dependent on the completion of the switchyard, transmission line, and filling of the reservoir to a normal operating level of 743 meters. However, the completion of the Gomal Zam Dam powerhouse and switchyard may be delayed due to WAPDA's inability to make payments to its own contractors and also due to high security risk in FATA. EPP is monitoring the completion of works and working closely with WAPDA to expedite work on the project.

Total amount disbursed as of September 30, 2012 is \$36,589,000. The project progress is tabulated on the next page.

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. Claim of 19.171 million reimbursed
2.	Hydropower & Switchgear Component	90%	0.757	0.757	Work Completed. Claim of 0.757 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	50% of remaining 10% works by Dec 9, 2011	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	

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, which will benefit more than 10.8 million individuals. The estimated MW gain for the plants at the time of signing of the FARA was 315 MW; however due to further deration in the plants' operational capacity, estimated gain has increased to 700 MW.

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

Achievements in the Quarter

D. Rehabilitation of Muzaffargarh Thermal Power Station (MTPS) under Activity Agreement:

During the reporting period, three monitoring visits were made by EPP to verify progress of the rehabilitation work. EPP certified the received equipment (impeller/rotor, gear boxes, and motors) to ensure it is in accordance with the PIL (items 19, 20, and 28 were verified, and a claim of \$337,605 was made for PIL Item 8):. The purchase of a 220KV circuit breaker SF-6 type for units 1,2,3 was verified and forwarded to USAID/ENR for approval. EPP experts also visited the fuel oil testing facilities at the plant and analyzed the plant's fuel measurement mechanism.



On Sept. 27, a meeting was held with USAID to discuss the expected megawatt gain at the plants. An update version of the MW gain sheet was submitted to USAID. EPP also informed USAID that NPGCL intends to purchase a computerized maintenance management system (CMMS) through opening a local letter of credit. USAID, after discussing with OFM, gave written approval for proceeding with opening of the local letter of credit. EPP communicated the decision to Muzaffargarh to expedite procurement.

A follow up visit was conducted by an EPP subcontracted firm to carry out a compliance audit to ensure implementation of EMMPs. Observations made by the environmental expert were shared with plant management to take necessary corrective action, and a report was submitted to USAID for review.

\$743,903 has been processed and submitted to USAID for approval during the quarter Jul-Sep 2012. The total amount disbursed as of September 30, 2012 is \$8,392,791³. Project progress is tabulated on the next page.

³ EPP processed and submitted to USAID \$8,392,791. Out of which \$ 506,940 is under process with USAID.

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 from USAID
2	1- 4	Special Cooling Water Treatment.	\$187,440			Tender opened for the fourth time on 26.06.2012 but no firm participated. It will be tendered again on 11.09.2012
3	1-6	Use of Fuel Oil Additive as done on Unit-4 (450 Tons).	\$921,225			Re-Tendered and opened in March 2012. Evaluation completed and file is under process for CEO approval
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 from USAID
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 is expected to reach at site in October 2012. Claim for 100% Payment (\$184,245) reimbursed by USAID
7	3	D.C. Storage batteries (01 Set).	\$60,000	\$60,000		Material received and installed at site. 100% Claim reimbursed from USAID
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 (\$337,605) 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			PO issued and LC opened on 02.02.2012. Claim for 100% Payment (\$787,035) received but the claim was turned down because one item in PO was not included in the PIL. NPGCL will retender the dropped item and then file the claim again
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 (\$255,000) reimbursed by USAID
11	4	Up-grading of AVR System (01 set).	\$249,210			PO issued on 20.07.2012. Cash foreign budget allocated on 06.09.2012. CRRK office requested for establishment of LC
12	4	Replacing UPS I&2. (01 set).	\$62,835			PO issued. Cash foreign budget allocated on 06.09.2012. CRRK office requested for establishment of LC
13	4	DEH (01 set).	\$319,500			Approved for Retendering due to high rate. Retender is expected to be opened on 18.09.2012
14	4	Up-grading of FSSS System (01 set).	\$138,450			Approved for Retendering due to high rate. Retender is expected to be opened on 18.09.201.

15	4	Up-grading of TSI system BNC 3300 or equivalent (Turbine Supervisory Instrument) (01 set).	\$266,250			Approved for Retendering due to high rate. Retender is expected to be opened on 18.09.2012
16	1-6	Training and software/hardware cost for CMMS and off-line efficiency monitoring system. All Units	\$1,000,000			Technical offer opened in Feb 2012 but it is now be retendered
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 (\$562,500) reimbursed by USAID
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. Cash foreign budget allocated on 06.09.2012. CRRK office requested for establishment of LC
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 (\$33,548) reimbursed by USAID
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 (\$236,963) reimbursed by USAID
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. Material is expected to reach at site in October 2012. Claim for 100% Payment (\$2,130,000) reimbursed by USAID
22	5&6	IP Turbine Rotor (01 No).	\$641,130			PO issued on 14.06.2012. Cash foreign budget allocated on 06.09.2012. CRRK office requested for establishment of LC.
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			Tender opened and LOI issued on 28.05.2012. PO issued on 29.06.2012. Cash foreign budget allocated on 06.09.2012. CRRK office requested for establishment of LC
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
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 10.08.2012 Claim for 100% payment reimbursed
29	5&6	Procurement of 6.6KV Motor for C.W. Pumps, CP, ID Fan, FD Fan & BF	\$162,945		\$162,945	Po issued and LC opened in April 2012 Claim for 100% payment (\$162,945) reimbursed

Pumps (05 No).						
30	5&6	Procurement of 6.6/0.4KV Breaker (5 No. 6KV breaker, 18Nos. 0.4Kv Breakers).	\$295,005			PO issued and request to establish LC of second PO has been made. Claim for 100% payment (\$295,005) rejected because LC of second PO was missing and was not opened
31	5&6	Protection Relay for Generators.	\$29,820			Tenders opened and LOI issued on 24.02.2012. PO issued on 31.05.2012. Cash foreign budget allocated on 06.09.2012. CRRK office requested for establishment of LC
32	5&6	MK Breakers, Seal Oil Coolers, PMG	\$169,335		\$169,335	Consignment received at site. Claim for 100% payment (\$169,335) received and forwarded to USAID/ENR for approval on May 29, 2012
33	5&6	Supply, Installation, Commissioning & Testing of complete distributed control system (DCS) 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 (FSSS) including Furnace camera, flame monitoring & ignition system	\$266,250			Tender opened and is under process.
Total			\$15,778,195	\$ 4,872,500	\$ 3,520,291	

Summary by Status as of September 30, 2012

Description	Number	Amount
Material Received at Site	9	\$ 5,640,496
LC opened and material is awaited	5	\$ 3,601,830
PO issued and LC is awaited	6	\$ 2,204,550
Performance Bond received and PO is awaited	-	-
LOI Issued and Performance Bond is awaited	-	-
Tender/Re-Tender opened and in process	7	\$ 2,100,180
Tender/Re-Tender Awaited	6	\$ 2,231,140
Total PIL Line Items	34	\$ 15,778,195

E. Rehabilitation of Jamshoro Thermal Power Station (JTPS) under Activity Agreement:

During the reporting period, three monitoring visits were made by EPP to assess the condition of related plant items, the status of megawatts gained, verify receipt of parts, and to discuss issues related to FARA procurement and reimbursement.



In August, a joint monitoring visit was made by EPP and USAID to Jamshoro TPS to verify progress of the rehabilitation work and to inspect the equipment delivered to the plant. Nine high pressure (HP) heaters (for units 2, 3 and 4) were delivered to the power station on August 6. EPP

experts also visited the fuel oil testing facilities at the plant and analyzed the plant's fuel measurement mechanism.

Procurement of the remaining items is progressing, and letters of credit for three PIL items 2, 15, 19 were opened by Jamshoro TPS at 0% cash margin.

A follow up visit was conducted by an EPP subcontracted firm to carry out a compliance audit to ensure implementation of EMMPs. Observations made by the environmental expert were shared with plant management to take necessary corrective action, and a report was submitted to USAID for review.

\$5,641,250 was processed and submitted to USAID for approval during the quarter Jul-Sep 2012. The total amount disbursed as of September 30, 2012 is \$11,655,225⁴. The status of the JTPS Activity Agreement is tabulated on the next page:

⁴ EPP processed and submitted to USAID \$11,655,225. Out of which \$ 1,917,000 is under process with USAID

The status of the JTPS Activity Agreement is tabulated below:

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	I	Rehabilitation of Air Pre-heater Side A&B Rotor.	\$1,672,050			PO has been issued to M/S Howden Spain on 23.08.2012. Allocation of foreign exchange received from DG (B & C) WAPDA on 06-09-2012. RRK is requested to establish the L/C at the earliest.
2	I	Replacement of Final Super Heater Coils.	\$958,500		\$958,500	Foreign Exchange allocation received on 9.08.2012. L/C established. Claim for 100% payment received and forwarded to USAID for approval on September 26, 2012
3	I	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	I	Complete Rehabilitation of Cooling Towers.	\$500,000	\$450,000	\$50,000	Material received at Jamshoro. Installation completed. 100% claim reimbursed
5	I	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 by USAID.
6	I	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	I	Soot Blower Spare Parts.	\$117,150			L/C 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/recommendations sent to USAID for decision
8	I	Tube Bundles of Steam Converter, unit#1	\$250,000	\$225,000	\$25,000	Material received at site on 21.11.2011 and installed. 100% Amount reimbursed by USAID
9	I	Spares for Oil & HSD Burners & Igniters.	\$213,000			L/C Established on 28.12.2011 and material received at site but specifications mentioned in PO differs from PIL specifications. EPP Observations/recommendations sent to USAID for decision
10	I	Air Pre-heater Elements & Seal,	\$670,000	\$670,000		Material Installed at site amount reimbursed. 100% Claim reimbursed by USAID.

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	L/C Established on 30.09.2011. The material reached at site on 07.08.2012. Claim reimbursed by USAID
13	2-4	Complete Rehabilitation of Cooling Towers.	\$718,875			L/C established on 27.06.2012, but it was not as per PIL specifications. Claim will be submitted after procuring the remaining items
14	2-4	Complete Rehabilitation of drain valves.	\$351,450			L/C 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/recommendations sent to USAID for decision
15	2-4	Rehabilitation of soot blowing system.	\$702,900			Foreign Exchange Allocation received on 31.07.2012. L/C has been established
16	2-4	Supply, installation and commissioning of complete economizers of three units	\$3,195,000		\$3,195,000	L/C has been established on 28.06.2012. Material is expected to reach site in September 2012. 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 (DCS)</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	L/C was opened on 28.12.2011 and the equipment reached site. Claim for 100% Payment reimbursed by USAID
19	3	Replacement of Final Super Heater Coils.	\$958,500		\$958,500	Foreign Exchange Allocation received on 31.07.2012. L/C has been established. 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% Amount has been reimbursed by USAID
21	3	Spares for Overhauling of Turbine.	\$532,500			Consignment reached Jamshoro but specifications mentioned in PO are different from PIL specifications. EPP observations/recommendations 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 by USAID
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	\$9,110,225	

Summary by Status as of September 30, 2012

Description	Number	Amount
Material Received at Site	12	\$7,278,075
LC opened and material is awaited	6	\$7,013,025
PO issued and LC is awaited	1	\$1,672,050
Performance Bond received and PO is awaited	-	-
LOI Issued and Performance Bond is awaited		-
Tender/Re-Tender opened and in process	3	\$2,407,500
Re-Tender Awaited	1	958,500
Total PIL Line Items	23	\$19,329,150

F. Rehabilitation of Guddu Thermal Power Station (GTPS) under Activity Agreement:



The reporting period proved to be productive for GTPS. Following the agreement between GE and Guddu management regarding the upgrade/uprate of block-I (one of the two General Electric combined cycle plants), GE shared an itemized price list with Guddu TPS.

With EPP's facilitation, Guddu management opened an L/C of USD 14,566,000 on September 30, 2012. EPP team provided support to Guddu at MWP and MOF for opening of the LC. Guddu intends to submit a reimbursement claim of \$15.5 million in the first week of October 2012.

In September, EPP staff held meetings with the senior management of GTPS regarding the planned rehabilitation work. Discussions were also held on the fuel oil handling systems and the related SOPs. The team also visited the fuel oil testing facilities at the chemical lab of the plant. . During the reporting period, one monitoring visit was made by EPP to GTPS:

PROGRAM COMPONENT 2:

Advice and Support of Energy Sector Reform

EPP is supporting Energy Sector Reform through two basic mechanisms:

- a) Direct undertaking of specific activities requested by GOP energy entities, including the Ministry of Water and Power, Planning Commission, Ministry of Finance, Ministry of Petroleum and Natural Resources, NTDC, NPCC, ENERCON, and AEDB.
- b) Direct institutional support through the secondment of EPP staff in the offices of the energy sector entities as advisors and specialized support staff.

SUPPORT TO MINISTRY OF WATER AND POWER

Activities in the Quarter

Regional Experiences in Energy

Upon MWP's request, EPP collected and analyzed the generation mix, energy policy, renewable energy and other key information related to the energy sectors of other countries in the region. The information was compiled into Energy Country Profiles of the various countries in the region and a presentation was made to the Additional Secretary.

Smart Metering

EPP developed a financial model to calculate the long-term benefits resulting from the introduction of smart meters on the Pakistan power system and to analyze related key financial statistics. The model includes information on industrial and domestic consumers and a detailed discounted cash flow analysis. The information was shared with MWP for its review.

Energy Efficiency Financing Mechanisms

Upon MWP's request, EPP prepared a memo on energy financing mechanisms, including barriers, and the role of energy service companies (ESCOs) in promoting energy efficiency mechanisms.

Performance Indicators Report

Upon the Special Secretary, MWP's request, EPP developed an analysis on key performance indicators for DISCOS and identified areas that could be improved to reduce losses. Data on bill collection, defaulters, and pending billing cases were collected and analyzed. Based on the analysis, a case study was prepared on LESCO and submitted to MWP.

Payables Report

EPP prepared an overview of the updated payables for the entities within the power sector, which was submitted to MWP.

Power Holding Company

A report highlighting the different financing facilities used by the power sector through the Power Holding Company was prepared and submitted to MWP.

Financial Analysis of Power Sector

Upon the request of Special Secretary MWP, EPP initiated work to develop a financial model to estimate the revenue shortfall of the power sector for the next fiscal year. The model includes an analysis of revenues, payables, subsidies, etc.

EPP held a meeting with PEPCO officials to discuss the designs of the financial model.

Power Sector Analysis – Generation & Distribution

Upon the Joint Secretary's (Power) request, a report analyzing the past five years data on generation and distribution in the power sector was prepared and submitted to MWP.

SUPPORT TO MINISTRY OF FINANCE

Activities in the Quarter

Tariff Differential Subsidy Audit

To support the Ministry of Finance (MOF) in improving the fiscal discipline and rationalization of the energy sector, EPP held a series of meetings with officials of MOF and the Chief Engineer Subsidy Cell and collected information on the subsidy to the power sector. Based on a detailed analysis of the tariff differential subsidy and its impact on the sector, EPP developed a proposal for improving the targeting of the subsidy to lower income households.

The proposal was shared with the Additional Secretary (Budget) and Joint Secretary (MOF) for review and approval.

Upon the request of the Ministry of Finance, EPP assisted the Corporate Finance Wing (CFW) in preparing the Terms of Reference (TOR) for the planned Tariff Differential Subsidy. EPP continued providing assistance to the Corporate Finance wing in developing TORs for the Tariff Differential Subsidy Audit⁵. EPP and USAID Power Distribution Program staff held a joint meeting with MOF and reviewed the draft TORs.

Private Sector Hydel Power Generation Package

Upon the Ministry of Finance's (MOF) request, EPP experts provided technical expertise in preparing a policy framework and a package of incentives to encourage private sector hydel power generation.

⁵In August, Ministry of Finance requested assistance from EPP in developing preparing the Terms of Reference (TOR) for the planned Tariff Differential Subsidy.

EPP provided assistance to the Ministry of Finance on the following policy issues:

- **Policy for power generation based on bio waste and bagasse of sugar mills**

Upon review of the policy summary, EPP made a recommendation to map the mills' surplus generating capacity, efficiency and distance to the grid station, which would help in determining the economic viability of power purchase agreements for these entities.

- **Time of use meter policy (TOU)**

EPP briefed the Corporate Finance Wing about TOU meter policy and its implementation by the distribution companies. The TOU meter policy is a positive step in improving the image of the distribution companies among consumers due to its impact on ensuring correct billing. It is also can help reduce electricity consumption during the peak hours, which could be used by the distribution companies to reduce unscheduled outages.

EPP participated in the following meetings during the reporting period:

- The EPP expert seconded at the Ministry of Finance attended a meeting chaired by the Secretary Finance regarding PEPCO's business plan. Discussions involved collection mechanisms and tariff differential subsidies and their impact on the business plan.
- EPP held a meeting with the newly appointed Additional Corporate Finance Secretary and briefed her about the financial issues burdening the power sector and the assistance being provided by EPP to the Ministry of Finance. Issues discussed include: circular debt; tariff differential subsidy; and recovery of revenue by power sector companies from the Federal government, provincial governments, KESC and FATA, and AJK.
- EPP participated in a meeting chaired by the Additional Finance Secretary Water and Power to formulate a draft policy for power generation based on bio waste and bagasse from sugar mills.
- EPP held a meeting with the Secretary Finance to provide an update on the work being carried out by EPP on various assignments. Discussions were also held on payables and receivables of the CPPA.

SUPPORT TO MINISTRY OF PETROLEUM & NATURAL RESOURCES and PLANNING COMMISSION

Activities in the Quarter

Circular Debt

During the reporting period, EPP provided support to finalize the paper on power sector circular debt. The paper, which is being drafted in collaboration with the USAID Power Distribution Program, includes a comprehensive study of circular debt – including the primary and secondary causes for the rising amount of circular debt and recommendations for its reduction and eventual elimination.

Shale Gas

EPP continued to review options to expand the scope/funding of the shale gas and E&P programs. EPP held a meeting with the Secretary, MPNR in which he expressed renewed interest in USAID support for shale gas and overall support in exploration and production (E&P), which had been on hold. A follow-up meeting led by the EPP Chief of Party was held at the Energy House with the Director General, Petroleum Concessions, MPNR. Discussions were held on potential USAID support and the future course of action.

EPP drafted a working paper on the terms of reference (TORs) for overall support for the shale gas and E&P programs. The draft was shared with the Director General Petroleum Concessions for his review.

Downstream Oil Policy

Upon MPNR's nomination, an EPP expert was made a member of a committee to draft an oil refining and marketing policy. Tasks undertaken are as follows:

- a) EPP participated in a meeting with the Minister and Secretary MPNR and held discussions with the Director General, Oil (DG Oil) regarding the scope of the oil refining and marketing policy. A follow up meeting was held with DG Oil in which the initial draft policy was reviewed. A revised draft was prepared after incorporating comments.
- b) EPP participated in a meeting with the Director General Refineries, Financial Advisor MRNR, and refinery professionals regarding amendments in the draft refining and marketing policy. Issues discussed include, quantification of the impact of incentives on the refinery's profitability.
- c) A revised draft of the policy was developed after incorporating the proposed amendments, which was shared with MPNR and stakeholders. Further work is in progress.

LNG Imports

Following USAID's approval to acquire LNG consulting services for the Ministry of Petroleum, the procurement process for hiring LNG consulting services was initiated. EPP invited expressions of interest (EOI) from various companies and issued the RFP to 4 interested parties.

EPP carried out pre-bid follow up with four LNG companies and received bids from two companies. The bids were evaluated, based on the technical and financial proposals submitted. EPP is regularly following up with MPNR and the two bidders.

The EPP expert seconded to MNPR provided technical support for the LNG Import Program to the Secretary and Additional Secretary MPNR and Directorate General (DG) Gas:

- a) Participated in a series of internal group meetings at MPNR and provided input relating to the analysis of issues, follow-up and recommendations.
- b) Conducted a meeting with Sui Sothern Gas Company Limited (SSGCL) and explored various options for the LNG import program. Supported the DG Gas office in developing a revised project structure for LNG imports for the short- and long-term.

- c) Supported MPNR in drafting correspondence and responses regarding queries on the LNG import program by various stakeholders.
- d) Participated in meetings with the newly appointed LNG Committee and in follow-up meetings with the Additional Secretary and Secretary MPNR regarding the revised project structure for LNG imports.

- **General Support to Planning Commission**

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

- a) Drafted comments on release of funds Rs. 900 million for 2X50 MW Power Plant from SYNGAS (IGCC-2009).
- b) Prepared brief notes for the Finance Minister on Karachi Coastal Nuclear Power Plants.
- c) Prepared a brief for Deputy Chairman Planning Commission on the Natural Gas Efficiency Project.
- d) Drafted minutes of the meeting on the automated billing system held on 2nd July, 2012 at the Planning Commission.
- e) Prepared comments on a summary to ECC on delayed payments to IPPs by power purchasers.
- f) Finalized the comments and criteria for the installation of solar tubewells systems throughout Pakistan.
- g) Compiled an analysis of the tariff differential subsidy given to the power sector by the Government of Pakistan.
- h) Compiled a brief for the Prime Minister on the Neelum Jhelum Hydroelectric Project covering all aspects of the project, such as updated cost of the project, source of financing, funds allocation from PSDP (Public Sector Development Programme), current status, and considerations by the CDWP(Central Development Working Party) and ECNEC (Executive Committee of the National Economic Council).
- i) Updated and modified a summary for the ECC on the time of use (ToU) tariff metering system.
- j) Developed comments of the Planning Commission on the following summaries:
 - Adjustment of petroleum prices on a weekly basis;
 - Delayed payments to IPPs;
 - Import of furnace oil by PSO under a term contract;
 - Allocation of gas to fertilizer plants from alternate sources; and
 - Marketing of LPG in the country
- k) Prepared a presentation focusing on the import of LNG into country mainly for power generation.
- l) Finalized the summary to the Economic Coordination Committee of the Cabinet on time of use (ToU) tariff metering.
- m) Created and finalized a brief on criteria for the distribution of solar systems to farmers. The brief covers essentials for the process of solar system distribution e.g. criteria for selecting vendors, application process, and the benefits that the Government of Pakistan would achieve from the project.
- n) Communicated with the Director General (Liquefied Gases), Ministry of Petroleum and Natural Resources (Policy Wing) regarding the meeting held on importing LNG into country.

- o) Formulated a brief for the Secretary Planning and Development Division on the status of hydro power projects in Gilgit Baltistan and Azad Kashmir areas.
- p) Prepared a brief for the Secretary Planning and Development Division on delay in payments to the IPPs by the power purchaser under the 2002 power policy.
- q) Additional IT support was provided in resolving issues arising in IT equipment provided in the Member Energy's office. Routine updating of software and troubleshooting was also carried out as required.

SUPPORT TO NTDC/NPCC

Activities in the Quarter

Upon Ministry of Water and Power's request, the EPP senior energy expert, Salahuddin Rifai was seconded to work as an advisor to NTDC/NPCC (National Transmission and Despatch Company/ National Power Control Centre).

Since joining the NPCC office on July 15, Mr. Rifai has provided assistance to NPCC on improving load management through developing an efficient power system operation and despatch function and moving towards better economic despatch; and has recommended improvement in management of the National Power Control Center.

The following assignments were undertaken during the quarter:

- a. Presented a briefing to the Federal Minister on a restoration package for the power sector. Participants of the meeting included Secretary, Special Secretary and Additional Secretary, MWP.
- b. Developed a Power Point presentation with estimates of power demand and supply (estimated generation) for each week of August and September, and for the next six months (September, October, November and December) to be presented to the Prime Minister.
- c. Prepared an analysis of daily data on generation, demand and dispatch patterns of GENCOs and IPPs and for hydropower plants.
- d. As convener of the Energy Management Committee, held a series of meetings with the Federal Minister, Water and Power regarding power position and overall performance of the power sector, and held discussions on necessary improvements.
- e. Participated in two meetings of National Assembly and Senate committees, where discussions were held on load management and power position. Also apprised the committees of the efforts being undertaken to improve the position.
- f. Developed an action plan for MWP on the reduction of line losses.

DISCOs Transmission Coordination / Model DISCO Task Team

Upon USAID's directive to focus on the transmission network of the DISCOs, staff from EPP and the Power Distribution Program formed a team of technical experts to jointly work on reviewing the 132/66 and 33 KV related transmission activities of the distribution companies. EPP and PDP staff discussed modalities for selecting and evaluating distribution companies suffering high transmission system technical losses.

In this regard, EPP transmission experts visited the distribution companies at Hyderabad (HESCO), Lahore (LESCO) and Faisalabad (FESCO) to collect 132kv data to analyze system performance. Technical discussions were held on the transmission systems of these DISCOs to obtain a better understanding of the transmission related issues faced by them. The team also visited GEPCO, during the reporting period.

EPP transmission experts visited the Peshawar Electricity Distribution Company (PESCO) on August 31, along with the USAID Power Distribution Program's transmission team to discuss transmission and operational issues and problems being faced by PESCO. Meetings were held with PESCO Board, Chief Executive Office and senior management.

Senior USAID Energy Office staff and EPP management held a meeting with MD NTDC to discuss the transmission and operational issues and problems being faced by PESCO. EPP transmission experts highlighted the constraints of the 132 KV system being used by PESCO and presented an action plan to overcome these constraints.

Discussions were held on developing a roadmap for making PESCO a 'Turnaround DISCO' by minimizing system losses to enhance system efficiency.

Import of Power:

Upon USAID's directive, EPP transmission experts visited Kabul, Afghanistan during July to explore the possibility of exporting power from CAR countries to Pakistan, using Afghanistan's transmission network. During the visit, meetings were conducted with the Asian Development Bank; various departments of the local power utility; DABS; and the Afghan Ministry of Energy and Water (MEW); staff of CASA 1000; and a representative of the USAID funded Sheberrghan Gas Field Power Project stationed in Kabul.

The EPP transmission expert along with Director USAID Energy Office attended the CAREC energy sector donor meeting in Istanbul held on August 27 to 28, 2012. During the meeting, discussions were held on CASA-1000 and imports of other powers from CAR countries to Afghanistan and Pakistan.

EPP Transmission experts held a series of meetings with senior NTDC officials in Lahore regarding the Regional Power Import Program from the Central Asian Region through Afghanistan. Discussions took place on the possible entry points of the proposed Kabul-Peshawar transmission line and its interconnection with the existing network in Peshawar. Meetings were held with the Advisor (Planning), Chief Engineer (Planning), General Manager (Design) and Technical Director, NTDC.

CAPACITY BUILDING

Energy Sector Internship Program

EPP worked on finalizing the operational details of the internship program. In this regard, the EPP team held several meetings with various power sector entities and academic institutes and discussed the modalities of the EPP internship program, as detailed below:

- Director General HR, NTDC, Lahore

- CEO Lakhra Thermal Power Station, Lakhra
 - CEO Jamshoro Thermal Power Station, Jamshoro
 - Vice Chancellor Sindh University, Jamshoro
 - Dean, Mehran University of Engineering & Technology
 - Electra Consultants, Peshawar
 - Iqra National University, Peshawar
 - University of Engineering & Technology, Peshawar
 - Institute of Management Sciences, Peshawar
- During the reporting period the recruitment process of interns was initiated. In the first round of the process, applications were solicited for placement in Sindh and KPK. More than 400 candidates applied for the positions. Applicants were screened and shortlisted on a selection criterion based on academic qualifications, geographical location, and gender. Written tests and interview of the shortlisted candidates are planned to be held in October.

Energy Sector Seminar:

- EPP organized an interactive seminar on the energy crisis in Pakistan and effective energy saving habits at the Roots International School in Islamabad. The seminar was attended by 70 students as well as by faculty members.
- The students were given an overview of the energy sector, including the sources of electricity generation in Pakistan, demand and supply statistics, and electricity consumption patterns. The students were also given an orientation about the EPP project and its initiatives as well as the contributions made to Pakistan's energy sector by USAID.



COMPONENT 3:

New Projects, Planning and Development

EPP continued its support to USAID in its efforts to determine funding levels and schedules for new projects. In addition to projects being developed with WAPDA, on USAID's request, EPP secured a list of twenty six dam and hydropower candidate projects in AJK and shared the list with USAID. A trip is planned in the near future to AJK where USAID proposes to discuss these projects with the AJK Government.

EPP submitted an illustrative budget to USAID for undertaking Step II Due Diligence⁶ for two candidate projects. USAID has selected the Mangla Upgrade and Kurram Tangi projects for possible funding. Following USAID's approval, EPP initiated work on Step II Due Diligence⁷ for the two projects. A series of meetings were held with WAPDA and related stakeholders for the Mangla and Kurram Tangi projects.

EPP focused on securing information, clarifying issues and verifying data to more accurately determine the status of the projects and to answer USAID queries and concerns. EPP provided advice to WAPDA managers on how to package the project and described information that would be required by USAID to facilitate the disbursement of funds for the Mangla and Kurram Tangi Projects.

EPP worked with WAPDA to break the above large projects as far as possible into distinct components to satisfy the time and funding constraints associated with USAID funding. WAPDA's proposal for the Mangla Upgrade project would take 10 years to complete, and the Kurram Tangi project would require \$700 million in funding. EPP worked with WAPDA to structure distinct components for both projects to meet the two key USAID objectives of disbursing the available level of funding and adding MW to the grid within the next couple of years, without compromising WAPDA's objectives. EPP also provided advice to WAPDA in developing documentation for the two projects to identify the specific goods and services proposed to be procured with USAID funds and their implementation and disbursement schedules.

Mangla

EPP assisted USAID in finalizing the Initial Environmental Examination (IEE) Report of the Mangla Upgrade Project.

⁶ Due diligence of USAID identified projects is carried out to reduce USG risks and develop project implementation agreements. Due diligence is carried out in 2 steps. Step I focuses on gathering and analyzing existing project documents to develop a basic understanding of the project and its status, including cost estimates and schedules. Step I serves as a basis for a tentative USG decision to support or not support the respective project.

Step II involves gathering and analysis of additional information regarding a project, including validation of cost estimates from Step I. It recommends the type and level of USG support, identifies when the support is required and recommends the mechanism through which the support should be provided.

Discussions and meetings were held with WAPDA and their consultant Montgomery Watson Harza (MWH) to explain and discuss the Step II Due Diligence for the Mangla Upgrade projects. EPP explained the requirements of USAID with reference to the procurement and implementation plans for the Mangla Upgrade Project. The procurement documents are being prepared by MWH/WAPDA and EPP will provide support and guidance needed in the process.

The Mangla Upgrade Project is budgeted at \$ 397 million, divided now into three parts:

- Part One addresses units 5 and 6, common services and balance of plant works.
- Part Two applies to units 1 to 4 and the switchyard.
- Part Three applies to units 7 to 10.

In keeping with USAID guidance on possible level of funds currently available, the expected cost of Part One is about \$150 million and completion date is early 2017. Project completion of Part Three, is expected by early 2023. In consultation with WAPDA project consultants, MWH, and with USAID's approval, a funding plan for Part One was proposed. It would be structured with appropriate payments in advance to principal suppliers against requisite guarantees, to reduce project costs and ensure completion on time and within budget.

EPP has provided guidance to WAPDA to prepare a matrix⁸ showing implementation schedule and funds required for Part One as a separate document for USAID consideration. The information was expected before end September but receipt is still pending. EPP continues to work with WAPDA to finalize their submission

Kurram Tangi

The \$700 million project has been divided into three parts to accommodate and facilitate up to about \$100 million expected USAID funding:

- Part One is the Kaitu Weir plant and related structures,
- Part Two is the main dam and related structures, and
- Part Three is construction of new canals and existing canal rehabilitation.

EPP identified various issues related to the construction of Kaitu Weir and related structures. The most critical issue was the apparent lack of credible information on hydrology of the Kaitu River. This was a key requirement and justification for the investment and construction of these facilities, specifically, Power house No 4 located on the tunnel fed by the Kaitu Weir. EPP had requested WAPDA to provide more complete information on the Kaitu Weir and related works in July and since then WAPDA consultants for the project – Mott MacDonald (MMP) – have provided detailed information and data and modified the text of their report to satisfy EPP observations.

⁸ The schedules and budgets with explanatory and back up documentation prepared by WAPDA for the PC I encompass the entire project and it is not possible to isolate and clearly identify the works proposed to be funded by USAID.

EPP has had meetings with senior WAPDA officials and their consultant, MMP, in Lahore and Islamabad to seek an update on project progress and to discuss issues pertaining to the potential funding of the project by USAID. Participants from WAPDA included General Manager (Planning & Development), General Manager (North), Member Water, General Manager (Hydel) Operations, and General Manager (Hydel) Development.

During the meetings, technical and operational issues related to construction of the Kurram Tangi Dam were discussed and issues highlighted. The over-riding issue is lack of security, which denies access to the site and makes it impossible to gain credible information. Other issues identified were the apparent lack of information related to hydrology of the Kaitu River, questions raised regarding the Main Dam design review reported by MMP, and the results of the rapid environmental assessment commissioned by USAID, which indicates a need to undertake serious investigative studies at the site. USAID is planning to task an environmental study of the project; however, the volatile security situation in North Waziristan Agency (NWA) has prevented the study from being commissioned at this time.

Keeping in mind the limitations on access to sites for Parts One and Two of the project, and the need to quickly start work on Part One, waivers to USAID requirement for complete environmental reports may be required. WAPDA and USAID will be in a better position to resolve the issue when funding decisions are made and implementation agreement is finalized.

EPP also held a meeting at the FATA Secretariat, Peshawar with the Secretary Law and Order (Security), Secretary Planning and Development and the Political Agent (PA) North Waziristan Agency to gather information needed as part of ongoing Step II Due Diligence for the Kurram Tangi Project.

Coordination & General Support Services to USAID

Results Framework and Performance Indicator Reference Sheets

During the reporting period, EPP held meetings with USAID and discussed the Results Framework of the Performance Management Plan for the USAID Pakistan Energy Portfolio. In collaboration with the USAID Power Distribution Program, the strategic objectives and performance indicators were defined and agreed upon, and a Performance Indicator Reference Sheet (PIRS) was developed, and submitted to USAID for review. Specific tasks undertaken are listed below:

- Redrafted PIRS for EPP for future reporting to PAKINFO.
- Developed new PIRs in consultation with project team leads.
- Developed a framework for ongoing tracking of the indicators.
- Prepared a draft Performance Monitoring Plan to align with the new results framework.

Policy Matrix for mitigating the Energy Crisis

Upon USAID's directive, EPP collaborated with the USAID Power Distribution Program to prepare a policy paper/policy matrix for short term actions to be undertaken by USAID to mitigate the energy crisis.

EPP held meetings with USAID and discussed the project activities matrix and possible amendments to the existing EPP contract.

Administration/Management Support to EPP

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 the vendors during this quarter. Payroll and financial reconciliations were completed.

For better financial recording purpose, the chart of account was finalized in the month of June. From July 2012 all transactions will be recorded in the ledger according to a finalized classification of accounting codes.

Procurement

During the reporting period, office equipment/supplies, security equipment, and services were procured to support operations.

The health insurance policy for the EPP staff was renewed for the next year and necessary documentation regarding life insurance for the staff was completed.

The lease agreement for residential accommodations for the expatriate staff was finalized. During the reporting period, the administration team was engaged in planning, organizing and initiating the operational activities for the new staff house. Tasks were scheduled and assigned to supporting staff to perform their duties both at the Energy House and the staff house. Procurement of various items such as bedroom furniture, kitchen utensils, electrical appliances, security arrangements and other household items, as well as different services for the staff house were completed.

A consultancy contract was awarded to the Institute of Public Policy for 'Assessing the Impact of Power Shortages/Interruptions for Various Economic Sectors in Pakistan'.

Logistics

Provided logistical support for 31 trips made by project staff. Arranged international travel for expats.

IT

Trouble shooting undertaken for IT equipment in the office and for operations at ministries; all related matters initiated have been resolved during this quarter:

- Internet Services Setup (Data/Video) @F-7/2 Guest House.
- Daily routine network and systems support for all project staff.
- Installation and configuration of a network color laser jet printer and fax machine at the Ministry of Water and Power.
- Complete hardware inventory inspection by USAID official.
- Relocated 1 CCTV camera.
- Set-up group e-mail account on *ep-ep.com.pk* domain.

Confidential information redacted

Confidential information redacted

Confidential information redacted

Confidential information redacted

USAID ENERGY POLICY PROJECT

ADVACNED ENGINEERING ASSOCIATES INTERNATIONAL (USAID CONTRACTOR)