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ENERGY POLICY PROJECT - II MONTHLY PROGRESS REPORT

JULY 2012



July 2012

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USAID/PAKISTAN: ENERGY POLICY PROJECT (EPP)

Monthly Report: July 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
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

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. Total Funding \$70.73 million)
- Two multipurpose dam completion projects (Gomal Zam and Satpara, Total funding \$66 million)

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

Project	Planned MW Gains per FARA	Expected Gains	MW added (as of 31 July 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

EPP 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; providing analytical support for projects such as Step I Due Diligence for Diamer Basha, Kurram Tangi, Warsak and Mangla Dam Projects; and issues related to these candidate projects.

EPP is also 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.

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 generation capacity up to 863 MW. As of July 2012, 439 MW have been added to Pakistan’s national grid.

EPP is also coordinating with GOP implementing partners, GENCOs and WAPDA, in designing and continuously supporting the implementation of a broad range of project activities. These 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, and checking quality of procured equipment & completed construction work.
- Verifying megawatts added through rehabilitation or new construction.
- Provide support to implementing partners in designing work schedules, adherence & compliance with agreement terms & conditions, opening of accounts, reimbursement of invoices, ensuring environmental compliance with EMMPs, and supporting resolution of issues during implementation.
- Certify compliance with construction specifications and/or technical standards of equipment as per the agreement.
- Compiling monitoring & tracking reports (financial disbursements and technical progress).

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.

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

During the reporting month, a meeting was held between EPP, USAID and ASP-AiD to review the progress of the three GENCOs and discuss the issues faced during implementation. The discussions focused on:

- Procurement of Computerized Maintenance Management System (CMMS) for the GENCOs. CMMS is part of the ERP (Enterprise Resource Planning Solution) required by the GENCOs for streamlining the business processes and increasing efficiency in the operational areas. CMMS software will be provided to the GENCOs through USAID ASP-AiD, and the hardware component will be purchased by the GENCOs.
- Specifications for, and quantities of, machinery and items to be procured as agreed upon in the FARAs.
- Facilitation provided to Guddu Thermal Power Station by USAID/EPP and WAPDA in establishing an L/C (letter of credit).
- Submission of weekly status report by the GENCOs summarizing progress updates along with bottlenecks, if any.

Rehabilitation of Tarbela Hydropower Plant under FARA:



Drainage and dewatering pump installed at Unit 1

During the reporting month, a monitoring visit was conducted at the Tarbela Power Plant to inspect progress of ongoing repair and rehabilitation work, and to verify the WAPDA reimbursement claim.

The Replacement of generator windings was completed at units 1, 3 & 4, which added a capacity of 128 MW to the national grid. Spare seals & guides for relief and bypass valves on turbine side at units 1-10 have already been installed. Procurement of digital governors and a SCADA system is under way.

The installation of drainage and unwatering pumps was completed in July. EPP experts physically inspected the installed six high capacity station drainage and dewatering pumps for Units 1-10 and verified their shipping documents.

During the inspection, it was determined that one low capacity tank dewatering pump was not procured, which was reported to WAPDA/Tarbela. In response to the report, WAPDA/Tarbela clarified that a low capacity tank dewatering pump¹ is not required presently as the existing pump is in good condition and has an estimated useful life of at least 10 years. The invoice for dewatering pumps in the amount of \$ 400,000, along with EPP recommendation, has been submitted to USAID Energy Office (USAID/ENR) for consideration for amendment/approval.

¹ The sole purpose of the low capacity tank dewatering pump is to drain water resulting from leakage/seepage. Leakages/seepages are infrequent at Tarbela Power Station and the existing pump has rarely been used.

During July, a payment of \$ 370,000 for installation of windings at unit 3 was disbursed to WAPDA/Tarbela.

Amendment-I of the Tarbela FARA has revised the completion date of the project to December 31, 2012. Of the \$16.5 million USG funding committed for Tarbela, total disbursement as of July 2012 is \$11,249,917.

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		New SCADA system is under manufacture at ABB and shipment is expected in October 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		Inspection of digital governors was completed by WAPDA engineers at GE USA. The governors are ready for shipment; and the delivery is expected in Aug 2012.
7	1-10	Replacement of Worn out Station Drainage & Dewatering Pumps, Units 1-10	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	

Gomal Zam Multipurpose Dam under Activity Agreement:

The installation of transmission line towers is complete and stringing of conductors is in progress; towers have been installed over a distance of 54 km (95% completion achieved,) starting from the Tank grid station to the powerhouse.

Main dam and spillway concrete and related works along with mechanical testing of dam



View of Gomal Zam reservoir

fixtures are 100 % complete. Hydropower and switchyard components are 98 % complete.

Filling of the reservoir started with the closure of the diversion tunnel, and the water level has increased to 716 meters. Final testing and commissioning is dependent on the completion of the switchyard, transmission line, and filling of reservoir to a normal operating level of 743 meters, which is expected in Sep - Oct 2012. However, the completion of Gomal Zam Dam Powerhouse and switchyard may be delayed due to WAPDA's inability to make payments to its contractors.

Amendment No. 1 to the Activity Agreement revised the completion date of this project to September 30, 2012. Of the \$40 million USG funding committed for Gomal Zam, total disbursement as of July 2012 is \$36,589,000.

The status of the Gomal Zam Activity Agreement is tabulated below:

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. Expected to complete in Aug 2012
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:



Irrigation Weir at Satpara

Work under the Satpara Activity Agreement is progressing steadily. The dam and powerhouse 1 & 2 are 100% complete and the irrigation system is 99.9% complete. The length of DR-I canal has been reduced due to land acquisition issues. EPP has requested WAPDA to submit authorization for the reduction in the scope of DR-I in order to process the final invoice for phase I of the project.

The overall civil, electrical and mechanical works at power house 3 & 4 is 70% complete. The expected completion date for units 3 & 4 is April 30, 2013 as per the agreement completion date.

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.

Of the \$26 million USG funding committed for Satpara, total disbursement as of July 2012 is \$21,485,700.

The status of Satpara Activity Agreement is tabulated below:

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		70% 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

LINE ITEM #	WORK ITEM DESCRIPTION	COMPLETION STATUS	AGREEMENT AMOUNT (USD - Million)	CLAIMS SUBMITTED (USD- Million)	PRESENT STATUS
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	

THERMAL POWER PLANTS

With a total funding of \$54.231 million, a total of up to 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 315 MW; however due to further deration of the plants' operating capacity, estimated gains were 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

Rehabilitation of Muzaffargarh TPS under Activity Agreement:

A total of 280MW of capacity has been restored due to the rehabilitation/replacement work out of total estimated gains of 475 MW. After rehabilitation of the boiler super heater tubes at units 1, 2 & 3, 230 MW of capacity has been restored and with the replacement of air pre-heater elements (intermediate and cold end) at unit 4, another 50MW was added.

For the remaining equipment, delays were anticipated in the procurement process due to the GENCO's weak financial standing and inability to pay on time through a letter of credit. EPP staff worked with USAID and the GENCO to redefine the reimbursement process and revise the FARA to facilitate the GENCO in making timely payments. A new Activity Agreement and implementation letter were signed in April providing the GENCO with sufficient funds to make timely payments to the vendors. The completion date per the revised activity agreement is June 30, 2013.

As of July 2012, a total of \$ 7,648,888 has been disbursed to the GENCO. The status of MTPS Activity Agreement is tabulated on the next page:

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	1,2&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.
3	1-6	Use of Fuel Oil Additive as done on Unit-4 (450 Tons).	\$921,225			Re-Tendered and opened in March 2012. Bid Evaluation is in process
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 August 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			PO issued and LC is in process
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. Request to release cash for foreign exchange.
12	4	Replacing UPS I&2. (01 set).	\$62,835			LOI issued on 25.05.2012.
13	4	DEH (01 set).	\$319,500			Approved for Retendering due to high rate.
14	4	Up-grading of FSSS System (01 set).	\$138,450			Approved for Retendering due to high rate.
15	4	Up-grading of TSI system BNC 3300 or equivalent (Turbine Supervisory Instrument) (01 set).	\$266,250			Tender opened in May 2012 and is under evaluation

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
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 in re-tender and will open on 31.7.2012.
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 (\$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.
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 Claim for 100% payment (\$236,963) with justification from NPGCL submitted to USAID ENR.
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 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. Request to release foreign exchange.
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. Request to release foreign exchange.
24	5&6	Conversion of Boiler Ignition System from Natural Gas to HSD/Furnace Oil	\$277,965			Tenders opened and evaluation is in process.
25	5&6	Repair of winding and stator of Generators and testing	\$319,500			Tender documents are under process and will be open after it.
26	5&6	Hydraulic coupling of Boiler Feed Water Pumps (01 No).	\$63,900			Tender opened and file sent for re-evaluation on 1.2.2012.
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 Claim for 100% payment (\$10,650) reimbursed by USAID.

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
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 (\$162,945) reimbursed by USAID.
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 has been made. Claim for 100% payment (\$295,005) received but LC of second PO was missing and has not been opened yet.
31	5&6	Protection Relay for Generators.	\$29,820			Tenders opened and LOI issued on 24.02.2012. PO issued on 31.05.2012.
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 submitted to USAID 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			Demand sent to GM Thermal for administration approval of MD.
Total			\$15,778,195	\$ 4,872,500	\$ 3,182,686	Total Claim of US\$ 8,055,186 received, out of which US\$ 7,648,888 reimbursed by USAID, and US\$ 406,298 in process of reimbursement.

Amount Reimbursed = US\$ 7,648,888

*Claims submitted to USAID/ENR and reimbursement in process = US\$ 406,298

Summary by Status as of July 31, 2012

Description	Number	Amount
Material Received at Site	7	\$ 5,392,883
LC opened and material is awaited	6	\$ 3,551,838
PO issued and LC is awaited	7	\$ 2,479,320
Performance Bond received and PO is awaited	-	-
LOI Issued and Performance Bond is awaited	1	\$ 62,835
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

Rehabilitation of Jamshoro TPS under Activity Agreement:

Two FARA items (air pre-heater elements and seals at unit-I and autoburner control system) have been replaced, which added a total of 25 MW capacity to the unit.

For the remaining equipment, delays were encountered in the procurement process due to the GENCO's weak financial standing and inability to pay on time through a letter of credit. EPP staff worked with USAID and the GENCO to redefine the reimbursement process and revise the FARA to facilitate the GENCO in making timely payments. A new Activity Agreement and implementation letter were signed in April allowing GENCOs to have sufficient funds available for making timely payments to the vendors. The completion date per the revised activity agreement is June 30, 2013.

During the reporting month, a visit was made by EPP to JTPS to assess the present condition of related plant items, the megawatt gained status, verify receipt of parts, and to discuss issues related to FARA procurement and reimbursement.

In July, \$3,841,400 for the project was reimbursed by USAID. A total of \$9,738,225 has been reimbursed to the GENCO's account as of July 2012.



Drain valves and parts received at JTPS under the Activity Agreement

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			LOI has been issued to M/s Howden Spain on 23.07.2012. PO will be issued after the submission of performance bond.
2	I	Replacement of Final Super Heater Coils.	\$958,500			LOI Issued on 19.04.2012 and Performance Bond received on 23.05.2012. PO issued on 30.05.2012, request has been made for allocation of foreign exchange.
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 is in process. 100% Claims reimbursed
4	I	Complete Rehabilitation of Cooling Towers.	\$500,000	\$450,000	50,000*	Material received at Jamshoro. Installation is completed. 90% claim (\$450,000) reimbursed. 10% Claim (\$50,000) was forwarded to USAID/ENR on June 26, 2012.
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, their offer is under evaluation and their reply is awaited.
7	I	Soot Blower Spare Parts.	\$117,150		\$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. Claim for 100% Payment (\$117,150) submitted to USAID with observations as specifications mentioned in PO are different from PIL specifications.
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 (\$250,000) reimbursed by USAID.
9	I	Spares for Oil & HSD Burners & Igniters.	\$213,000		\$213,000**	L/C Established on 28.12.2011 and material received at site but specifications mentioned in PO differs from PIL specifications. Claim for 100% Payment (\$213,000)

						submitted to USAID with observations as specifications mentioned in PO are different from PIL specifications.
10	I	Air Pre-heater Elements & Seal,	\$670,000	\$670,000		Material Installed at site amount reimbursed. 100% Claim (\$670,000) 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 is expected to reach TPS up to July 2012. Claim for 100% Payment (\$3,306,825) 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	\$351,450**		L.C Established on 28.12.2011. The material reached at site on 26.06.2012 Claim for 100% Payment (\$351,450) submitted to USAID with observations as specifications mentioned in PO are different from PIL specifications.
15	2-4	Rehabilitation of soot blowing system.	\$702,900			LOI issued and Performance Bond received on 22.05.2012. PO issued on 30.05.2012 and request has been made after allocation of foreign exchange. Reminder is also issued.
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. Material is expected to be shipped in August 2012. Claim for 100% Payment (\$3,195,000) reimbursed by USAID.
17	2	a. Modification / Rehabilitation of Electro Hydraulic and Mechanical Hydraulic Governing system. 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) c. Replacement of existing FSSS along with Furnace Flame Monitoring on one unit. Replacement of	\$1,171,500			Tender opened on 17.07.2012 and technical bids are under evaluation.

		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) d. Replacement of Turbine Vibration system with Vibro-Control-4000 Schenk or equivalent				
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 (\$117,150) reimbursed by USAID.
19	3	Replacement of Final Super Heater Coils.	\$958,500			PO issued on 24.05.2012 and now foreign exchange allocation is awaited.
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		\$526,802**	Consignment reached Jamshoro but specifications mentioned in PO are different from PIL specifications. Claim for (\$526,802) submitted to USAID with observations as specifications mentioned in PO are different from PIL specifications.
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 (\$479,250) 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	\$8,407,325	Total claim of US\$ 10,952,325 received, out of which US\$ 9,738,225 reimbursed by USAID and US\$ 1,208,402 was sent to USAID/ENR with observations.

Amount Reimbursed= **US\$ 9,738,225**

**Claims submitted to USAID/ENR with observations = US\$ 1,208,402

Summary by Status as of July 31, 2012

Description	Number	Amount
Material Received at Site	11	\$3,971,250
LC opened and material is awaited	4	\$7,699,950
PO issued and LC is awaited	3	\$2,619,900
Performance Bond received and PO is awaited	-	-
LOI Issued and Performance Bond is awaited	1	1,672,500
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

Rehabilitation of Guddu TPS under Activity Agreement:

After a series of negotiations between GE and Guddu management regarding the upgrade/uprate of Block-I, one of the two General Electric combined cycle plants (CCP), an agreement was reached in June 2012.

Guddu management is facing difficulties in opening the letter of credit since the credit limit provided by the local bank (UBL) has been exhausted. Guddu is trying to establish a credit line with other banks in order to open the letter of credit. GE will provide an itemized price list within eight weeks from the issuance date of the purchase order (PO). Upon the finalization of the price list between GTPS and GE, a letter of credit will be established. EPP staff discussed the matter with USAID/ENR and OFM, and informed them of the options through which USAID may expedite the process.

The uprate, upgrade and overhaul activity will increase the capacity of the plant by about 75 MW (higher than the earlier expected increase of 55 MW), improve its efficiency by about 3.4%, and improve the reliability of the system by upgrading the obsolete gas turbine and steam turbine control systems.

A new Activity Agreement and implementation letter were signed in April 2012 with a total funding of USD 19,242,420. The completion date was revised to June 30, 2013.

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. GRT support is jointly performed with the USAID funded Power Distribution Program (PDP).

During the reporting month, EPP senior management held a meeting with the newly appointed Secretary Ministry of Water and Power. The agenda of the meeting was to provide orientation to the new Secretary MWP on EPP and USAID initiatives in the energy sector. A presentation was made to the Secretary MWP, encompassing the EPP scope of work, facilitation being provided to GOP power sector entities, and the project successes achievements.

Policy:

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 of the introduction of smart meters on the Pakistan power system and to analyze related key financial statistics. The model included 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).

USAID Energy Policy Project Providing Technical Expertise and Institutional Support to Ministry Of Water and Power

Upon Ministry of Water and Power's request, USAID Energy Policy Project seconded its senior energy expert, Salahuddin Rifai to work as an advisor to NTDC/NPCC (National Transmission and Despatch Company/ National Power Control Centre) for guiding, coordinating and strengthening the activities of these MWP owned entities

Since joining the NPCC office on July 15, Mr. Rifai has been assisting in monitoring the Generation, Transmission and distribution of electricity. He is also working with NPCC for load management through developing an efficient power system operation and despatch moving towards better Economic Despatch; and has recommended improvement in management of National Power Control Center.

SUPPORT TO MINISTRY OF FINANCE

Private Sector Hydel Power Generation Package

Upon 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.

SUPPORT TO PLANNING COMMISSION & MINISTRY OF PETROLEUM & NATURAL RESOURCES

Circular Debt

During the reporting month, EPP provided support to finalize the paper on 'Power Sector Circular Debt- History and Current Situation'. The paper, which is being drafted in collaboration with the USAID Power Distribution Program, comprises of a comprehensive study of circular debt – including the primary and secondary causes for the rising amount of circular debt and a circular debt calculation work book.

LNG Imports:

The EPP expert seconded at MPNR was fully dedicated to providing technical support to the LNG Import Program. Activities undertaken during the reporting period are as follows:

- 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 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 of the 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.

- **Downstream Oil Policy:**

Upon MPNR's nomination, an EPP expert was made a member of a committee to draft a refining policy and ex-refinery pricing mechanism. Tasks undertaken are as follows:

- a) Developed an initial draft policy and shared it with MPNR for review.
- b) Conducted discussions with the Financial Advisor, MPNR on the scope and conceptualization of the draft policy.

- **General Support to MPNR**

EPP drafted an Expression of Interest (EOI) for hiring an LNG Consulting Company. (Note: in view of MPNR's time constraint and urgency, it is proceeding with the process to recruit the services of an international LNG Consulting Company to provide immediate support in preparation of a Request for Proposal, bid evaluations and activities related to the competitive bidding process for LNG imports).

- **General Support to Planning Commission**

EPP staff seconded at the Planning Commission provided support to the Planning 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 Natural Gas Efficiency Project.

- d) Drafted minutes of the meeting on 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.

SUPPORT TO NTDC/NPCC UNDER POWER SECTOR REFORM PROGRAM

Transmission:

Upon USAID's directive, EPP transmission experts visited Kabul, Afghanistan during the report month 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.

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. In relation to this effort, the team also visited GEPCO, during the month.

COMMUNICATIONS, COORDINATION AND GENERAL SUPPORT TO USAID

- During the reporting month, 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. The document has been submitted to USAID for review.
- EPP worked on finalizing the operational details of the internship program. The application forms for the interns and performance evaluations reports to be filled by the sponsors were drafted.

- 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 hosted the USAID Communications Working Group at its office in July. The communications staff from all USAID projects and the USAID Development Outreach and Communications (DOC) team participated in the meeting and discussed the public communications campaigns by various projects.

COMPONENT 3: NEW PROJECTS, PLANNING & DEVELOPMENT

During the month of June, EPP continued its support to USAID in its efforts to determine funding levels and schedules for new projects.

The list of projects under investigation and review by EPP include:

- | | |
|--------------------------------------|---|
| 1) 4,500 MW Diamer Basha | expected to cost around \$12 Billion |
| 2) 84 MW Kurram Tangi | expected to cost around \$700 Million |
| 3) Rehabilitation of 1,000 MW Mangla | expected to cost around \$400 Million |
| 4) Rehabilitation of 240 MW Warsak | expected to cost around \$300 Million |
| 5) 96 MW Jinnah | \$225 Million project has requested \$20 Million from USAID |
| 6) 121 MW Alai Khwar | \$208 Million project has requested \$17 Million from USAID |
| 7) 72 MW Khan Khwar | not currently under consideration |
| 8) 130 MW Duber Khwar | \$290 Million project has requested \$24 Million from USAID |
| 9) 106 MW Golan Go | \$268 Million project needs \$107 Million |
| 10) 4,320 MW Dassu | not currently under consideration |

In 2011, Step I Due Diligence was completed by EPP for the first four (4) projects listed above and reports were submitted to USAID. In July, EPP submitted an illustrative budget to USAID for undertaking Step II Due Diligence² for the Kurram Tangi and Mangla projects.

Component 3 supported USAID in finalizing plans for possible funding of the Mangla Upgrade and Kurram Tangi projects by provided information, clarifying issues and verifying data as and when required by USAID.

During the reporting month, EPP assisted USAID to finalize the Initial Environmental Examination (IEE) Report for Mangla.

On USAID's request, EPP secured a list of twenty six dams and hydropower projects in AJK and shared the same with USAID.

Kurram Tangi

EPP is waiting for the report on Rapid Environmental Assessment of the Kurram Tangi Dam Project that USAID assigned to ELAN. EPP review of this report is essential to accommodating the issues

² Due Diligence of USAID identified projects is carried 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 strong 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 and identifies when the support is required and recommends the mechanism through which the support should be provided.

identified in the report as part of the work to be addressed during Step II Due Diligence of the project.

On USAID's request, EPP identified possible issues related to the construction of Kaitu Weir and related structures that are part of the larger Kurram Tangi Dam Project. EPP identified the lack of credible information on hydrology of the Kaitu River as the key issue regarding construction of these facilities.

During July, EPP met with WAPDA in Lahore to discuss the Kaitu Weir project and related works, which include an 18.4 MW power house and the Spire and Sheratala Canals. WAPDA and its consultant Mott MacDonald were requested to provide justification for the investment in the Kaitu Weir project, as the current information was not clear, especially the hydrology component. WAPDA will share a comprehensive report on the Kaitu Weir and related works with EPP in August.

A request has been made to WAPDA to arrange a site visit for EPP to the Kaitu Weir on the Kaitu River in North Waziristan.

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.

A variance analysis of the operating expense during the month as compared to the previous months was carried out and cost reduction techniques were suggested.

Procurement

During the reporting month office equipment/supplies and services were procured to support EPP operations.

Continuous monitoring of last month's scheduled tasks in the EPP office as well as at the new guest house.

Logistics

Logistical support was provided for 16 trips made by project staff. International travel for expats was arranged, and a process to obtain longer term visas for the expats was initiated.

Human Resources

Employee profiles were prepared for HR records. Records include personal data, years of experience and area of expertise.

IT

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

- Daily routine Network and Systems support to all Project Staff.