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**PAKISTAN**

# ENERGY POLICY PROJECT - II MONTHLY PROGRESS REPORT

SEPTEMBER 2012



September 2012

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# USAID/PAKISTAN: ENERGY POLICY PROJECT (EPP)

Monthly Report: September 2012

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## ACRONYMS

AEAI	Advanced Engineering Associates International
AGPR	Accountant General of Pakistan
CAREC	Central Asia Regional Economic Cooperation
CAR	Central Asian Republic
CCGT	Combined Cycle Gas Turbine
CDWP	Central Development Working Party
CEO	Chief Executive Officer
CPGCL	Central Power Generation Company, Ltd
CPPA	Central Power Purchasing Agency
DISCO	Distribution Company
ECC	Economic Coordination Committee
ECNEC	Executive Committee of the National Economic Council
EPP	Energy Policy Project
FARA	Fixed Amount Reimbursable Agreement
GE	General Electric
GENCO	Generation Company
GOP	Government of Pakistan
GTPS	Guddu Thermal Power Station
GZDP	Gomal Zam Dam Project
IPP	Independent Power Producer
JTPS	Jamshoro Thermal Power Station
KESC	Karachi Electricity Supply Company
LESCO	Lahore Electricity Supply Company
LNG	Liquefied Natural Gas
LPF	Liquefied Petroleum Gas
MOF	Ministry of Finance
MPNR	Ministry of Petroleum and Natural Resources
MTPS	Muzaffargarh Thermal Power Station
MW	Megawatt, unit of electrical power, 1 million watts,
MWH	Montgomery Watson Harza
MWP	Ministry of Water and Power
NPCC	National Power Control Center
NTDC	National Transmission and Despatch Company
NWA	North Waziristan Agency
PA	Political Agent

PC	Planning Commission
PDP	Power Distribution Program
PESCO	Peshawar Electricity Supply Company
PIRS	Performance Indicator Reference Sheets
PO	Purchase Order
PSDP	Public Sector Development Programme
PSO	Pakistan State Oil
PSRP	Power Sector Reform Program
SBP	State Bank of Pakistan
TOR	Terms of Reference
ToU	Time of Use
USAID	United States Agency for International Development
WAPDA	Water and Power Development Authority

# PROGRAM OVERVIEW

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

- Four repair and maintenance projects (3 GENCOs and Tarbela. 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 September 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
<b>Total</b>	<b>430.06</b>	<b>863.06</b>	<b>439</b>

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

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

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

**Location:** All Provinces and Federally Administered Tribal Areas

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

# PROJECT ACTIVITIES

# COMPONENT I: PROJECT MONITORING & IMPLEMENTATION

The Energy Policy Project is providing monitoring and implementation support for the six signature projects announced by Secretary of State Hillary Clinton. These projects include rehabilitation of three thermal power plants (Muzaffargarh, Guddu and Jamshoro), and one hydropower plant (Tarbela dam); and construction of two new multipurpose dams (Gomal Zam Dam and Satpara Dam). Total USG funding for these projects is \$136.731 million (per revised agreements), with estimated gains in available generating capacity up to 863 MW. As of September 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 to verify the 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.
- Compile 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
	<b>505</b>	<b>80</b>	<b>457</b>	<b>128</b>

### *Rehabilitation of Tarbela Hydropower Plant under FARA:*

During the month of September, the installation of six drainage and dewatering pumps was completed. EPP experts physically inspected the installed six high capacity station drainage and dewatering pumps 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. In this regard, 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.



Drainage and dewatering pump installed at Unit 1

The rehabilitation/repair work to date has resulted in the restoration of 128 MWs 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 that the completion date of December 2012 due to the delay in the procurement of Digital Governors and SCADA System.

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 September 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

LINE ITEM #	UNIT #	WORK ITEM DESCRIPTION	AMOUNT (USD)	CLAIMS SUBMITTED (USD)	PRESENT STATUS
4	I-14	Upgrading of the SCADA System, Units I-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	I-10	Spare Seals & Guides for Relief & Bypass Valves on Turbine Side, Units I-10	500,000	500,000	Installation completed on all units. 100% amount has been disbursed to WAPDA
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 initial delivery date was August 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.
<b>Total</b>			<b>16,500,000</b>	<b>11,249,917</b>	

### *Gomal Zam Multipurpose Dam under Activity Agreement:*



Erected transmission tower at Gomal Zam

Work on the Gomal Zam Dam was slowed down due to the abduction of eight WAPDA employees assigned to the project and high security risk in the area. The stringing of transmission towers could not progress beyond 95% completion status due to the prevalent security situation.

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.

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 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 Gomal Zam Dam Powerhouse and switchyard may be delayed due to WAPDA's inability

to make payments to its own contractors<sup>1</sup> and also due to high security risk in FATA. EPP is monitoring the completion of works and working closely with WAPDA to expedite the progress.

<sup>1</sup> These are different payments to be made by WAPDA to its contractors and not related with payments under the Activity Agreement/FARA

Amendment No. 1 to the Activity Agreement revised the completion date of the project (including the irrigation component) to September 30, 2013. Of the \$40 million USG funding committed for Gomal Zam (energy component), total disbursement as of September 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
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
<b>Total</b>			<b>\$40</b>	<b>\$36.589</b>	

***Satpara Multipurpose Dam under Activity Agreement:***

Work under the Satpara Activity Agreement is progressing steadily. The dam and power house 1 & 2 are 100% complete and the irrigation system is 99.9% complete. The overall civil, electrical and mechanical works 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.

WAPDA has requested USAID to approve reduction in the length of the Right Distributory-I canal<sup>2</sup> due to land acquisition issues. EPP conducted a financial and technical assessment on the implications of curtailing the length of the canal system and submitted it to USAID. A decision in this regard is awaited from USAID.

Of the \$26 million USG funding committed for Satpara, total disbursement as of August 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
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
<b>Total (million)</b>			<b>\$26.00</b>	<b>\$21.4857</b>	

<sup>2</sup> Total 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)

## THERMAL POWER PLANTS

With total funding of \$54.231 million, as much as 700MW are estimated to be restored through the rehabilitation of three thermal power plants. The baseline condition of these plants at the time of signing of the FARA was 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
	<b>1620</b>	<b>315</b>	<b>1390</b>	<b>700</b>

### *Rehabilitation of Muzaffargarh TPS under Activity Agreement:*



During the reporting month, a monitoring visit was made by EPP to Muzaffargarh TPS to verify progress of the rehabilitation work and certify that the received equipment (impeller, gear boxes, and motors) is in accordance with the PIL (items number 19, 20, and 28 were verified). EPP experts also visited the fuel oil testing facilities at the plant and analyzed the plant's fuel measurement mechanism.



Equipment received at MTPS

The rehabilitation/replacement work to date has resulted in 280MW of capacity being restored 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 implementation of the EMMP, a follow up visit to MTPS was conducted by Hagler Bailey<sup>3</sup>. The observations made by the visiting team were shared with the plant

management to take necessary corrective action.

During the reporting month, a claim of \$ 337,605 was verified and submitted to the USAID Energy Office for approval. As of September 2012, a total of \$ 7,648,888 has been disbursed to the GENCO. Status of the MTPS Activity Agreement is tabulated on the next page:

<sup>3</sup> Hagler Bailey is an engineering firm contracted by EPP to ensure the environmental compliance and implementation of the Environmental Mitigation and Monitoring Plan (EMMP) of the projects FARAs and Activity Agreements

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. <b>100% Claim reimbursed from USAID</b>
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. <b>100% Claim reimbursed from USAID</b>
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. <b>Claim for 100% Payment (\$184,245) reimbursed by USAID</b>
7	3	D.C. Storage batteries (01 Set).	\$60,000	\$60,000		Material received and installed at site. <b>100% Claim reimbursed from USAID</b>
8	1,2&3	220Kv circuit breaker SF6 type (06 No).	\$337,605		\$337,605*	LC established on 03.08.2012. <b>Claim for 100% payment (\$337,605) received and forward to USAID/ENR for approval on September 25, 2012</b>
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. <b>Claim for 100% Payment (\$255,000) reimbursed by USAID</b>
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. <b>90% claim (\$562,500) reimbursed by USAID</b>
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. <b>Claim for 100% payment (\$33,548) reimbursed by USAID</b>
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. <b>Claim for 100% payment (\$236,963) with justification from NPGCL forwarded to USAID/ ENR for approval on June 15, 2012</b>
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. <b>Claim for 100% Payment (\$2,130,000) reimbursed by USAID</b>
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 <b>Claim for 100% payment reimbursed</b>

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 <b>Claim for 100% payment (\$162,945) reimbursed</b>
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. <b>Claim for 100% payment (\$169,335) received and forwarded to USAID/ENR for approval on May 29, 2012</b>
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.
<b>Total</b>			<b>\$15,778,195</b>	<b>\$ 4,872,500</b>	<b>\$ 3,520,291</b>	

Amount Reimbursed = **US\$ 7,648,888**

\* EPP forwarded claims to USAID/ENR for approval against PIL item 8, 20 & 32 for \$743,903

**Summary by Status as of September 30, 2012**

<b>Description</b>	<b>Number</b>	<b>Amount</b>
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
<b>Total PIL Line Items</b>	<b>34</b>	<b>\$ 15,778,195</b>

### *Rehabilitation of Jamshoro TPS under Activity Agreement:*

EPP Experts visited Jamshoro Thermal Power Station during the reporting month to monitor the progress of rehabilitation work and analyze the fuel measurement mechanism at the plant. EPP Expert also inspected the arrived equipment (PIL item # 12 – HP heaters for units # 2, 3 and 4); however their instrumentation, controls and protection system are scheduled to be shipped later.

A letter of credit for three PIL items 2, 15, 19 was opened by Jamshoro TPS at 0% cash margin.



Fuel Oil Supply Pumping Station

To ensure environmental compliance and implementation of EMMP, EPP contracted with an engineering firm, which carried out a site visit in the reporting month. During the audit, observations were made and issues were shared with plant management to take necessary corrective actions.

During the reporting month a claim of \$1,917,225 was verified and forwarded to the USAID Energy Office for approval. As of September 2012, a total of \$9,738,225 has been disbursed to the GENCO.

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	1	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. RRR is requested to establish the L/C at the earliest.
2	1	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	1	Complete replacement of Flue Gas Duct & Air Pre-heater Bottom hoppers and F.D Fan duct up to steam coil Air Heater.	\$720,000	\$720,000		The consignment received at JPCL on 16.01.2012. Installation completed. <b>100% Claims reimbursed</b>
4	1	Complete Rehabilitation of Cooling Towers.	\$500,000	\$450,000	\$50,000	Material received at Jamshoro. Installation completed. <b>100% claim reimbursed</b>
5	1	Up gradation / replacement of Auto Burner control system and Data Acquisition System.	\$300,000	\$300,000		Material received and installed at site. <b>100% Claim reimbursed by USAID.</b>
6	1	Hiring of services for major overhauling.	\$810,000			The tender opened on 20.02.2012. Only one firm M/s IED Ukraine through their local agent M/s Istil Karachi participated in the tender. The case will be finalized soon
7	1	Soot Blower Spare Parts.	\$117,150			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	1	Tube Bundles of Steam Converter, unit#1	\$250,000	\$225,000	\$25,000	Material received at site on 21.11.2011 and installed. <b>100% Amount reimbursed by USAID</b>
9	1	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	1	Air Pre-heater Elements & Seal,	\$670,000	\$670,000		Material Installed at site amount reimbursed. <b>100%</b>

						<b>Claim reimbursed by USAID.</b>
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. <b>Claim reimbursed by USAID</b>
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. <b>Claim for 100% Payment reimbursed by USAID</b>
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>	\$1,171,500			Tender opened on 17.07.2012 and technical bids are under evaluation

		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. <b>Claim for 100% Payment reimbursed by USAID</b>
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. <b>Claim for 100% payment received and submitted to USAID for approval.</b>
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. <b>100% Amount has been reimbursed by USAID</b>
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. <b>Claim for 100% Payment reimbursed by USAID</b>
23	1-4	Off-line Efficiency Monitoring system and training.	\$426,000			Tender opened on 29.05.2012 and bids are under evaluation.
		<b>Total</b>	<b>\$19,329,150</b>	<b>\$ 2,545,000</b>	<b>\$7,193,225</b>	

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

\* EPP forwarded claims for \$ 1,917,225 to USAID for approval

**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
<b>Total PIL Line Items</b>	<b>23</b>	<b>\$19,329,150</b>

***Rehabilitation of Guddu TPS under Activity Agreement:***

A new Activity Agreement and implementation letter were signed in April 2012 with a total funding of USD 19,123,730. The completion date was revised to June 30, 2013.

During the reporting month, the efforts of EPP were focused on facilitating the Guddu management in opening of a letter of credit to make timely payments to General Electric for the upgrade/uprate of Block-I (Steam Turbine 5, Gas Turbine 7 & 8). In this regard, EPP held a meeting with USAID and CEO GENCO Holding Company and discussed ways to expedite completion of the work.

With EPP's facilitation, Guddu management opened an L/C of USD 14,566,000 on September 30, 2012. Efforts are underway by Guddu to open another L/C for the remaining amount. A reimbursement of \$ 17 million is expected in October 2012.

EPP experts visited GTPS during the reporting month. Meetings were held 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.



Fuel Oil Preheater Station at GTPS



Fuel Oil Decanting Station at GTPS

# 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.

### Performance Indicators Report

EPP continued providing support to MWP in conducting an analysis of key performance indicators for DISCOS and identifying areas that could be addressed to reduce losses. Data on bill collection, defaulters, and pending billing cases were collected and analyzed.

### Financial Analysis of Power Sector

Upon the request of Special Secretary MWP, EPP initiated work on developing a financial model to estimate the revenue shortfall for the next fiscal year. The model will measure the key components of the financial sector and include an analysis of revenues, payables, and subsidies, etc.

EPP held a meeting with PEPCO officials and discussed the designs of the financial model.

### Power Sector Analysis

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

## SUPPORT TO MINISTRY OF FINANCE

### Tariff Differential Subsidy Audit

EPP continued providing assistance to the Corporate Finance wing in developing TORs for the Tariff Differential Subsidy Audit<sup>4</sup>. EPP and USAID Power Distribution Program staff held a joint meeting with MOF and reviewed the draft TORs.

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 amongst the consumers due to correct billing. Moreover, it is also inculcating the habit of minimizing the use of electricity during the peak hours which could be used by the distribution companies to supply power to industry and commercial consumers.

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<sup>4</sup> In August, Ministry of Finance requested assistance from EPP in developing preparing the Terms of Reference (TOR) for the planned Tariff Differential Subsidy.

The EPP expert seconded at the Ministry of Finance attended a meeting chaired by the Secretary Finance regarding PEPCO's Business Plan. Discussions involved the plan on collection mechanism and tariff differential subsidies and its 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.

## SUPPORT TO PLANNING COMMISSION & MINISTRY OF PETROLEUM & NATURAL RESOURCES

### 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 meetings of the LNG Committee regarding the revised project structure for LNG imports.
- b. Participated in other internal group discussions with the Directorate General (DG) Gas on LNG imports, and provided input on options to analyze issues, options and follow-up.

Following USAID's approval to acquire LNG consulting services for the Ministry of Petroleum and Natural Resources, EPP held a meeting with the Additional Secretary, Ministry of Petroleum and Natural Resources and shared the TORs of the consulting services to be included in the Request for Proposal (RFP) document.

During the month, the procurement process for hiring LNG consulting services was ongoing. EPP carried out pre-bid follow up with four LNG companies (An RFP to these companies was issued last month) and received bids from two companies.

An evaluation of the bids was developed based on the technical and financial proposals submitted and selection of a provisional consultant was finalized. EPP is regularly following up with MPNR and the provisional consultant.

### Oil Refining & Marketing policy:

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. A revised draft of the policy was developed after incorporating the proposed amendments.

### Shale Gas

With MPNR's renewed interest in USAID support for shale gas (which had been on hold for a considerable time), EPP drafted a working paper on the terms of reference (TORs) for a shale gas consultant based on the overall E&P support USAID is willing to extend. The draft was shared with the Director General Petroleum Concessions for his review.

- **General Support to Planning Commission**

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

- a) Finalizing the summary to the Economic Coordination Committee of the Cabinet on time of use (ToU) tariff metering.
- b) Creating and finalizing 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 will achieve out of the project.
- c) Communicating with the Director General (Liquefied Gases), Ministry of Petroleum and Natural Resources (Policy Wing) regarding the meeting held on Importing LNG into country.
- d) Formulating a brief for the Secretary Planning and Development Division on the status of hydro power projects in Gilgit Baltistan and Azad Kashmir areas.
- e) Preparing 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.
- f) 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 UNDER POWER SECTOR REFORM PROGRAM

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

- a. Presented a briefing to the Federal Minister Water and Power, on steps required for restoration of the power sector. Discussions were also held with the Special Secretary Water and Power and the Additional Secretary Power on this issue.
- b. Developed a Power Point presentation with estimates of power demand and supply (estimated generation) for each week of September, and for the next six months to be presented to the Prime Minister.
- c. Prepared an analysis of daily data on generation and demand and dispatch patterns of generators for GENCOs and IPPs and for hydropower plants, for any possible improvement and advice to the MWP on the subject.
- d. As convener of the Energy Management Committee, held four 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. Developed an action plan for MWP on the Reduction of line Losses.

### Import of Power:

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.

### DISCOs Transmission Coordination / Model DISCO Task Team

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

### Planning for Live Line Training

To make its transmission efforts more sustainable and effective, EPP is working on developing capacity building program for the staff of various DISCOs. In this regard, EPP Transmission experts met with the Chief Engineer, NTDC to gain insight into their ongoing live line training and discussed the potential of NTDC to work in collaboration with EPP to impart similar training to the staff of various DISCOs. Also, EPP along with USAID Energy office staff met with staff of the USAID Power Distribution Program and discussed their linemen training program and the lessons learned.

## COMMUNICATIONS, COORDINATION AND GENERAL SUPPORT TO USAID

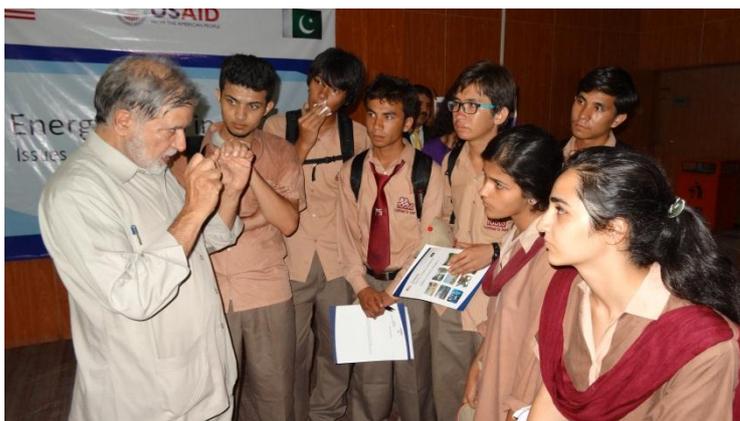
### Energy Sector Internship Program:

During the reporting month, the recruitment process of interns was initiated. In the first round of the process, more than 400 applications were solicited from the KPK and Sindh provinces. 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.



Students engaged in an interactive discussion with Dr. Rifai

### Results Framework and Performance Indicator Reference Sheets

EPP worked on the finalization of the Performance Indicator Reference Sheets (PIRS) regarding the indicators for the PMP results framework for EPP. The framework and indicators were developed in conjunction with USAID and the Power Distribution Program. 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

# COMPONENT 3: NEW PROJECTS, PLANNING & DEVELOPMENT

During the month of September, EPP continued its support to USAID in its efforts to determine funding levels and schedules for the Mangla Upgrade and the Kurram Tangi Dam Projects

EPP worked with and advised WAPDA staff on the information that would be required by USAID to facilitate decisions regarding the amounts and method of disbursement of funds for the Mangla and Kurram Tangi Projects.

With EPP's guidance, WAPDA is developing a matrix showing items of goods and services to be procured, and an implementation schedule and a funding plan for the two projects.

## Mangla

WAPDA is finalizing the PCI<sup>5</sup> for the Mangla Upgrade project. Once finalized, the document will be shared with the Ministry of Water and Power for review and submitted to the Planning Commission to seek funding approval from the Ministry of Finance. The Mangla Upgrade Project is budgeted for \$ 397 million.

The Draft PC I highlights a \$150 million contribution from USAID for the project. To facilitate USAID funding, the project has been structured into parts/phases. Part One addresses Unit 5 and 6, common services and balance of plant works. Part Two applies to Unit 1 to 4 and the switchyard. Part Three applies to Unit 7 to 10. The expected completion date of Part One is late 2017; while total project completion is expected by early 2023.

On USAID's request, WAPDA was advised to prepare a matrix<sup>6</sup> showing implementation schedule and funds required for Part One as a separate document.

## Kurram Tangi

EPP maintained regular contact with concerned WAPDA officials and the FATA Secretariat of Provincial Government of KPK to keep current on progress and issues of the project. The \$700 million project has been divided three parts to accommodate and facilitate up to about \$100 million USAID funding. Part One is the Kaitu Weir plant and related structures, Part Two is main dam and related structures, and Part Three is canal rehabilitation.

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<sup>5</sup> primary project approval document of the GoP that describes the work and funds

<sup>6</sup> 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.

# 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 utility cost being incurred in the main office and the guest house during the year, as compared to the previous year, was carried out. The reasons for the variations were identified and cost reduction techniques were suggested.

Work was initiated on USAID's PAKINFO Program with respect to the 3rd quarter, 2012 (i.e. Apr-June, 2012) to allocate costs of the EPP Project to various districts within Pakistan and a decision on a cost allocation methodology was made.

## *Procurement*

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

EPP continued monitoring project support activities at the office and guesthouses.

## *Logistics*

Logistical support was provided for 7 trips made by project staff. International travel for expats was arranged, and regular follow up was maintained with the Ministry of Foreign Affairs for obtaining longer term visas for the expats.

## *Human Resources*

Two Interns were recruited during this month for providing operational support for the Energy Sector Internship program.

The hiring process for an Assistant Communications Specialist was initiated.

## *IT*

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

- Procurement, installation and configuration of desktop computers.
- E-mail account management of USAID intern project and printing of all incoming e-mail attachments
- Daily routine network and systems support to all Project staff