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USAID/ENERGY POLICY PROGRAM MONTHLY PROGRESS REPORT November 2014



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USAID/ENERGY POLICY PROGRAM

MONTHLY PROGRESS REPORT November 2014

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ACRONYMS

AEAI	Advanced Engineering Associates International, Inc.
CPGCL	Central Power Generation Company Ltd.
CPPA	Central Power Purchasing Authority
DGPC	Directorate General Petroleum Concessions
DISCO	Distribution Company
ECC	Economic Coordination Committee
EMMP	Environmental Mitigation and Monitoring Plan
EPP	Energy Policy Program
ERU	Economic Reforms Unit
FARA	Fixed Amount Reimbursable Agreement
G2G	Government-to-Government
GENCO	Generation Company
GHCL	GENCO Holding Company Limited
GOP	Government of Pakistan
GTPS	Guddu Thermal Power Station
ISGS	Interstate Gas System
JTPS	Jamshoro Thermal Power Station
KPI	Key Performance Indicator
KPK	Khyber Pakhtunkhwa
kV	Kilovolts, 1000 volts, unit of electric potential (voltage)
LNG	Liquefied Natural Gas
LSA	LNG Services Agreement
M&E	Monitoring and Evaluation
MOF	Ministry of Finance
MPD	Ministry of Planning and Development
MPNR	Ministry of Petroleum and Natural Resources
MTPS	Muzaffargarh Thermal Power Station
MW	Megawatt, unit of electrical power, 1 million watts,
MWP	Ministry of Water and Power
NEPRA	National Electric Power Regulatory Authority
NPCC	National Power Control Center
NTDC	National Transmission and Dispatch Company
O & M	Operations and Maintenance
P&I	Protection and Instrumentation
PESCO	Peshawar Electricity Supply Company

PIL	Project Implementation Letter
PO	Purchase Order
PowerSIM	Power Sector Integrated Model
PPA	Power Purchase Agreement
PQA	Port Qasim Authority
PTF	Power Transformer
RFP	Request for Proposal
SAN	Storage Area Network
SCADA	Supervisory Control and Data Acquisition
SMS	Secured Metering System
SOW	Scope of Work
SSGC	Sui Southern Gas Company
USAID	United States Agency for International Development
WAPDA	Water and Power Development Authority

MONTHLY HIGHLIGHTS

The Energy Policy Program (EPP) achieved the results highlighted in Table I below during the month of November 2014.

Table I: Monthly Highlights

Component 1

- EPP provided support to United States Agency for International Development (USAID) in assessing the greenhouse gases emission reduction at all the Generation Companies (GENCOs). The reduction in greenhouse gases of about 1,166,691 tCO₂e is made possible after the improvement in heat rates due to the rehabilitation work.
- EPP submitted the Environmental Monitoring and Audit Report for G2G projects to USAID. Environmental monitoring is carried out to ensure that the rehabilitation work will be in compliance with the Government of Pakistan (GOP) and the U.S. Government (USG) regulations as recommended in the approved Environmental Mitigation and Monitoring Plan (EMMP).
- EPP provided assistance to USAID in the amendment of Activity Agreements for the three thermal GENCOs and Tarbela rehabilitation project.
- EPP met with Water and Power Development Authority (WAPDA) to expedite the equipment procurements of the G2G projects.

Component 2

- EPP continued assisting the National Transmission and Dispatch Company (NTDC) with its organizational transformation and human resource development. The team helped NTDC finalize the Request for Proposal (RFP) for an outside consultant and shared several vision and mission statements that were developed drawing on input from all groups within NTDC and from various levels. These statements will be circulated to employees to select and finalize, making this the first inclusive formulation. These will guide future work including the outside consultant's work.
- EPP team developed relevant Key Performance Indicators (KPIs) and benchmarking indicators to monitor performance over time. The team met with NTDC senior officials in Lahore on November 26-27, 2014 to begin the consultation process. A similar meeting was held with the Ministry of Water and Power (MWP) on November 27, 2014.
- USAID has conveyed its approval for inclusion of an additional 14 confidential wells in the ongoing Shale Gas Resource Assessment Study upon MPNR request.
- Directorate General Petroleum Concessions (DGPC) has issued a letter to OGDCL to waive the amount invoiced for the previous confidential well data made available by OGDCL. This letter has been issued with the approval of the appropriate authority.
- DGPC has again been requested to provide comments on the draft Model Onshore Agreement as well as Offshore Supplemental Agreement. DGPC has agreed to convene an internal meeting of DGPC officials to finalize the agreements as soon as possible; however, this meeting is yet to be convened.
- A meeting between USAID and Additional Secretary MPNR to discuss the proposal regarding establishing an Implementation Unit at DGPC was arranged. The meeting took place on November 26, 2014.

Component 3

- EPP continued assistance to USAID in securing cost information from WAPDA for the Kaitu Weir Project.
- EPP also assisted USAID in its effort to initiate a Training Needs Assessment at WAPDA.

Component 4

- Technical audits of all grid stations were completed, and final reports pertaining to 74 of 84 grid stations have been compiled (88% completed).
- At 132 kV Jehangira Grid Station, 36 MVAR capacitor bank along with 145 kV circuit breaker has been commissioned successfully.
- Retaining-wall construction and tower-repair work at location T-07 and I 10 have been completed.

PROGRESS IN NUMBERS

Indicator	Unit	LOP Target	Achieved in November FY2014	Total Achieved as of November FY2014	LOP % Achieved as of November FY2014
I.a: GWh of energy sold	GWh	7,880	0	8,225	104%
I.1.a: Number of beneficiaries with improved energy services due to United States Government (USG) assistance	Individuals	13,624,226	0	14,099,749	103%
I.1.b: GWh of energy availability	GWh	7,880	0	8,225	104%
I.1.c: MW available to meet power sector demand as a result of USG assistance	MW	1,303	0	1,381.6	106%
I.1.1.a: MW of electrical power added or saved as a result of USG improvements	MW	875	0	1,019	116%
I.1.1.b: Efficiency of thermal power plant tests completed	No.	3	0	2	67%
I.1.1.c: Number of USG supported installations and operations and maintenance improvements	No.	181	0	107	59%
I.1.1.d: Number of transmission bottlenecks resolved	No.	121	0	84	69%
I.1.4.a: Public and private funds leveraged by the USG for energy infrastructure projects	US\$	193.5 million	0	38.5 million	19% ¹
I.2.1.a: Number of key policies and regulations in various stages	No.	12	4	15	125%
I.2.2.a: Number of policies following international best practices	No.	6	0	2	33%
I.2.2.b: Number of board recommendations following international best practices	No.	4	0	0	0%
I.2.3.a: Number of best practice-driven systems created, improved, and implemented	No.	10	0	5	50%
I.2.4.b: Number of public forums resulting from USG assistance in which government officials and citizens interact	No.	12	0	7	58%

¹ EPP recently changed the I.1.4.a Life of Program target from \$48.5 million to \$193.5 million as per recommendation of Management Systems International's data quality assessment. This consists of Gomal Zam funds (\$33.5 million), Mangla funds (\$15 million), and LNG fund (\$145 million), which consists of the 6 month charter for tugboats (\$5 million), Floating Storage & Regasification Unit charter (\$20 million), and infrastructure of jetty and pipelines (\$120 million).

Component Summary

Indicator	Unit	Component	LOP Target	Achieved in November FY2014	Total Achieved as of November 2014	LOP % Achieved as of November FY2014
I.1.a: Number of beneficiaries with improved energy services due to USG assistance	Individuals	Total	13,624,226	0	14,099,749	103%
		I-Generation	7,993,106	0	9,382,406	117%
		IV-Transmission Throughput Capacity	5,477,544	0	4,640,555	85%
		IV – Transmission Added/Saved	153,576	0	76,788	50%
I.1.b: GWh of energy availability	GWh	I & IV	7880	0	8,225	104%
		I-Generation	4,796	0	5,642.29	117%
		IV-Transmission Throughput Capacity	2999.42	0	2541.10	85%
		IV – Transmission Added/Saved	84	0	42	50%
I.1.c: MW available to meet power sector demand as a result of USG assistance	MW	I & IV	1,303	0	1,381.60	106%
		I-Generation	863	0	1,013	117%
		IV-Transmission Throughput Capacity	428	0	362.6	85%
		IV – Transmission Added/Saved	12	0	6	50%
I.1.1a: MW of electrical power added or saved as a result of USG improvements	MW	I & IV	875	0	1,019	116%
		I-Generation	863	0	1,013	117%
		IV – Transmission Added/Saved	12	0	6	50%

PLANNED ACTIVITIES

EPP will focus on the high-impact activities listed in Table 2 below in December 2014.

Table 2: Planned Activities

Component 1
<ul style="list-style-type: none"> • Signing of the Project Implementation Letter (PIL) for the Phase-II of the Tarbela Repair and Maintenance Project. • Inspection of equipment under PIL Item 25: Repair of Winding and Stator of Generators and testing of Units 5 and 6 at Muzaffargarh Thermal Power Station. • EPP will certify Guddu's claim of \$1,571,940 against PIL Item 4: Rehabilitation of HRSGs, Replacement of Modified Bypass Dampers, All Existing Expansion Joints of HRSGs, and Replacement of Economizer Tubes and Bends of HRSG for GT 7 and 8. • Inspection of Digital Governor installed at units 8 and 10 to ensure its smooth operation. • EPP will certify Jamshoro claim of \$1,171,500 against PIL Item 17.
Component 2
<ul style="list-style-type: none"> • Provide assistance to MWP in moving forward on the Power Purchase Agreements (PPAs). • Continue working NTDC and liaison with MWP in preparing Performance Contract. • Provide Power Sector Integrated Model (PowerSIM) training of MWP staff. • Provide support for finalization of the RFP. • Continue providing assistance for understanding/improving the load forecasting capabilities. • Liquefied Natural Gas (LNG): Finalization of MSPA; follow-up on LNG procurement strategy and specific activities to secure commercially viable LNG cargoes by the commissioning date of the Fast Track LNG terminal; support to GOP in Government-to-Government (G2G) negotiations for LNG procurement with Qatargas and Petronas; support to Port Qasim Authority (PQA) for monitoring construction of EETPL LNG Terminal and for specific LNG services; capacity building of GOP stakeholders; decision on conducting the full bridge mission simulation study for PQA and training of PQA pilots/tug masters for maneuvering of LNGCs; continuation of provision of legal support to Sui Southern Gas Company (SSGC) for LNG Services Agreements (LSA) open items. • Shale Gas: Continuation of work on Component-2 Initiation of additional wells data testing. • Upstream Oil and Gas Support: Minimum reorganizational structure of DGPC; report on improvement of policies and regulatory framework; initiation of RFP for shale gas policy consultants.
Component 3
<ul style="list-style-type: none"> • Continue advice and assistance to further the Kaitu Weir (and affiliated structures) project. • Provide advice and assistance on any other new project that USAID wants to consider for review and/or asks EPP to exercise due diligence and make recommendations.
Component 4
<ul style="list-style-type: none"> • Repair of damaged transmission line towers (132kV and 66kV) in Khyber Pakhtunkhwa (KPK) • Installation and commissioning of 132/66kV power transformer at Chakdara Grid Station • Handover ceremony of Protection and Instrumentation (P&I) vans and Live-Line Tools and Plants • Technical audit of NTDC grid stations • Installation of displays at Peshawar Electricity Supply Company (PESCO), GEPCO, and FESCO.
Cross-Cutting Activities
<ul style="list-style-type: none"> • NTDC Grid Operations Exchange post-training brief and action plan review • EPP will deliver the second of the three hydro Operations and Maintenance (O&M) training course in November 2014. • EPP will conduct follow-up interviews with Storage Area Network (SAN) trainees to ascertain their learning outcomes. • EPP will seek nominations for LNG business and management intensive training. • EPP will conduct one-on-one interviews with NTDC's nominated participants for the Commercial Operations Exchange visit to the United States

PROGRAM OVERVIEW

EPP is a multiyear, USAID-funded initiative to increase power generation, and improve transmission capacity and reliability. EPP works with selected energy enterprises to assist the Government of Pakistan's sector reform efforts. The program supports the joint goals of the United States Government (USG) and the Government of Pakistan (GOP) in reforming the power sector, and it is designed to address Pakistan's chronic electricity shortage.

While there is a continued and ongoing focus on due diligence and successful implementation of the G2G effort, EPP has begun integrating work on technical upgrades, policy reform implementation, and transmission-related activities. All of these efforts represent a comprehensive approach to help Pakistan expand its indigenous production capacity, eliminate the need for subsidies, and mitigate pressures contributing to the country's current energy crisis. At the conclusion of this important program, EPP will have both contributed substantially toward reducing immediate energy shortages and will have helped the country build longer-term energy sufficiency.



Figure 1: EPP Phases

EPP encompasses interrelated activities and targeted interventions that meet the objectives of all of the following four components of the program:

Component 1 – Monitoring and Support of Project Implementation. EPP proactively advises and supports USAID and counterparts in the monitoring, implementation, and compliance of Fixed Amount Reimbursement Agreements (FARA) with the GOP. This includes monitoring and supporting timely counterpart compliance with all of the terms and conditions of FARAs and inspection and certification of deliverables.² Specifically, EPP provides monitoring and implementation support for seven signature energy projects: four repair and maintenance projects (three GENCOs and Tarbela); two multipurpose dam completion projects (Gomal Zam and Satpara); and one dam rehabilitation project (Mangla).

Component 2 – Advice and Support of Energy Sector Policy Reform. EPP actively supports energy sector reform by undertaking activities that are requested by one or more GOP entities and by the direct assignment of staff to work in the offices of the requesting entity as advisors and specialized support staff.³ In achieving the objectives of this component, EPP supports generation- and transmission-related studies and policy reform activities assigned by USAID with the support of the GOP.

Component 3 – New Projects, Planning, and Development. Based on frequently changing priorities and schedules of USAID and USG entities, EPP undertakes due diligence of projects and activities that are candidates for USG support.⁴ Specifically, EPP conducts and prepares due diligence reports on new projects under consideration for USG support in order to provide detailed information, reduce USG risk, and set a basis for creating Project Implementation Agreements for the selected projects.

Component 4 – New Activities. As a result of Modification Number 2 to the EPP Task Order Award, EPP supports the following efforts: a turnaround power distribution company (DISCO);

² C.4.2, Component One, pg. 8 of 46, Contract No: AID-EPP-I-00-03-00004

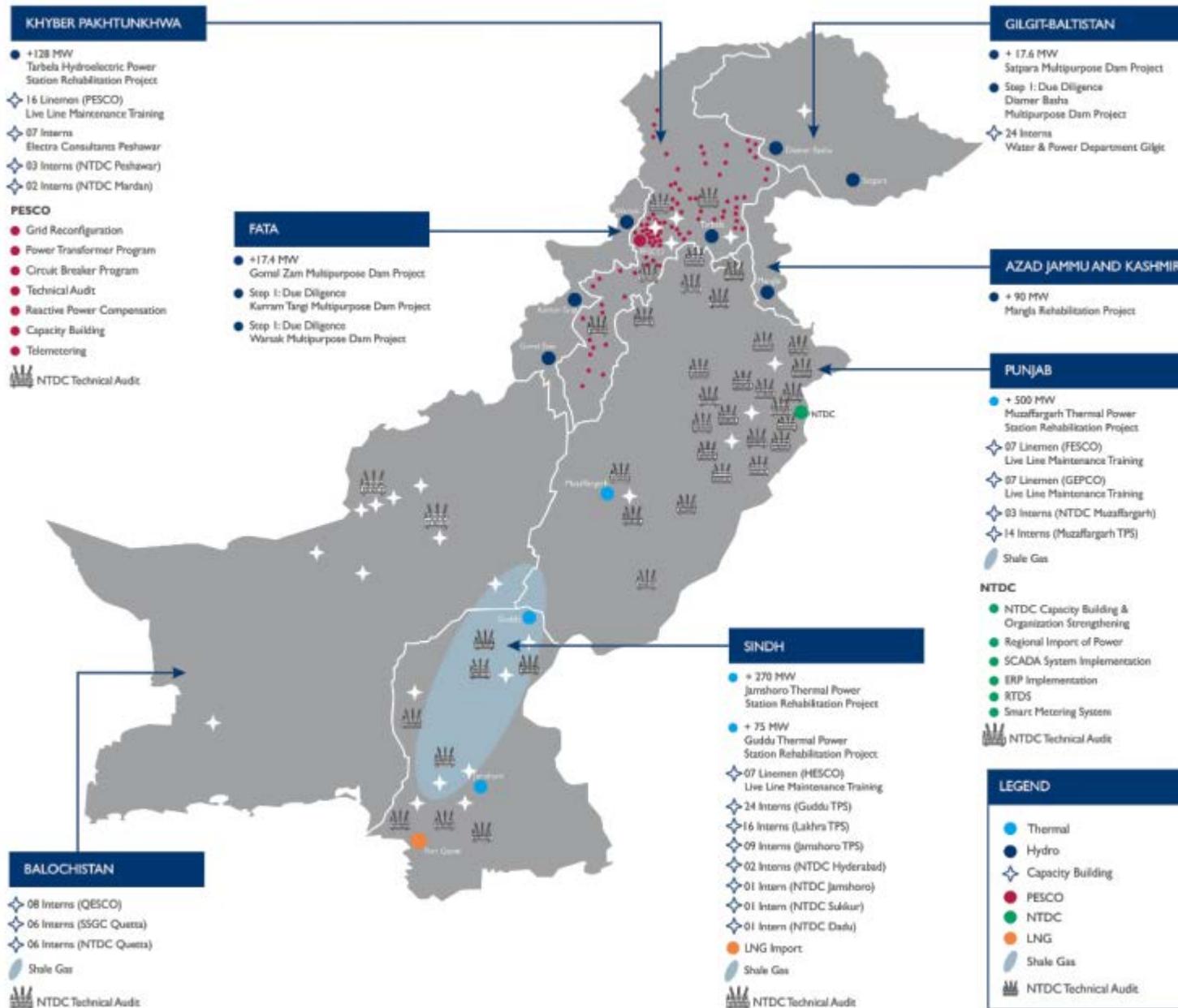
³ C.4.3, Component Two, pg. 11 of 46, Contract No: AID-EPP-I-00-03-00004

⁴ C.4.4, Component Three, pg. 12 of 46, Contract No: AID-EPP-I-00-03-00004

identification of new, high-impact opportunities that promote continued support for governance; live-line training for transmission linemen; technical assistance to the Ministry of Petroleum and Natural Resources (MPNR) (USAID pre-approved activities, including but not limited to, LNG, oil and gas (including shale gas), and advisory services to increasing natural gas supplies for power generation); targeted assistance to the National Transmission and Dispatch Company (NTDC) and the Natural Power Control Center (NPCC) to mitigate unscheduled shortages; help GENCOs to improve baseline efficiency measurements and improved operations and maintenance; and deliver technical assistance efforts in support of GOP and USAID activities that promote capacity building, increased public awareness, and targeted advisory services⁵. EPP's capacity-building program facilitates sustainability by enhancing local capability in critical areas.

⁵ C.4.5.1, Component Four, pgs. 3-9, , Amendment/Modification No. 2 of Contract No: AID-EPP-I-00-03-00004

Figure 2: Map of EPP Activity Areas



COMPONENT I: PROJECT MONITORING AND IMPLEMENTATION

EPP provides monitoring and implementation support for the seven G2G Signature Energy Projects identified in the Task Order Award. These projects include rehabilitation of three thermal power plants (Muzaffargarh, Guddu, and Jamshoro), two hydropower plants (Tarbela and Mangla), and construction of two new multipurpose dams (Gomal Zam Dam and Satpara Dam). Total USG funding for these projects is \$291.7 million (per the revised agreements) that will result in an estimated gain of 953 MW for Pakistan’s national grid.

As of November 2014, \$147.77 million has been disbursed to GOP implementing partners, and 1013 MW have been added to Pakistan’s national grid. Results achieved through the successful monitoring and implementation of G2G projects are illustrated in Table 3 below:

Table 3: Results Achieved through G2G Projects

Projects	USG Funding (\$ million)	Paid (\$ million)	Completion Date	MW Gains/Benefits	
				Target	Achieved (Nov 30, 2014)
Tarbela	\$16.50	\$13.95	12/31/14	128.0 MW	128.0 MW
Jamshoro	\$19.32	\$17.34	12/31/14	150.0 MW	270.0 MW
Guddu	\$19.12	\$17.34	12/31/14	75.0 MW	80.0 MW
Muzaffargarh	\$15.77	\$15.14	12/31/14	475.0 MW	500.0 MW
Gomal Zam	\$45.00	\$45.00	Completed	17.4 MW	17.4 MW
Satpara	\$26.00	\$26.00	Completed	17.6 MW	17.6 MW
Mangla	\$150.00	\$13.00	12/31/2017	90 MW	In Progress
Total	\$291.71	\$147.77		953 MW	1013 MW

During this reporting period, the cumulative number of people who have directly benefited from EPP’s efforts stands at 14.09 million or 7.9% of population.

As of this reporting period, EPP’s efforts have improved the financial performance of energy sector entities by \$ 593 million. This represents approximately 6.8% of 2012 circular debt.

As a result of Component I activities during this reporting period, 80 megawatt gains were achieved benefiting 740,960 individuals. EPP’s efforts in support of USG energy infrastructure projects have resulted in 1013 MW restored or added to Pakistan’s grid.

Rehabilitation of Tarbela Hydropower Plant

The rehabilitation work (Phase I) to date has resulted in restoration of 128 MW at Tarbela Hydropower Plant. Replacement of the generator windings at units 1, 3, and 4, and the installation of relief valve seals, guides, and pumps are now complete. Digital governors have been installed and commissioned at units 3, 4, 5, 6, 7, and 9, while installation at units 8 and 10 is underway and expected to be completed early next month. The remaining two governors at units 1 and 2 are expected to be installed and commissioned by January 2015. EPP engineers visited the power plant on November 10, 2014 and inspected the ongoing installation of digital governors at units 8 and 10. The digital governors will aid in the smooth operation of the power station.



Figure 3: Installation of digital governors at unit 8

Due to settlement in terms and conditions with the bidders, security concerns for the foreign experts, and availability of shutdowns in summer season, WAPDA is unable to complete the remaining four activities (installation and commissioning of digital governors at units 1, and 2; upgrading of Supervisory Control and Data Acquisition (SCADA) system; installing one dewatering pump; and adding one-third spares winding) by the project's rapidly approaching completion date of December 31, 2014. Therefore WAPDA requested USAID to extend the Activity Completion Date for one year until December 31, 2015, and also to replace the one-third spare winding with rotor poles, which are more essential and WAPDA already has one unutilized spare winding available in their inventory. These rotor poles are critical at this stage to sustain the already achieved 128 MW gains through Tarbela rehabilitation and replacement of aforementioned items is important for the reliability and sustainability of the power station. The request is with USAID and decision is awaited.

USAID is also funding \$25 million for Tarbela Repair and Maintenance Phase II Project out of which \$10 million is sub-obligated under an Activity Agreement. This funding will aid the replacement of additional equipment that will add to the reliability and sustainability, and enhance the life of Tarbela hydro power plant by at least 15-20 years. An additional 20 MW, which is about 60 GWh of energy per annum, and oil savings of \$12 million per annum is also expected with this replacement.

On Phase II of Tarbela Repair and Maintenance Project, EPP met WAPDA to expedite the progress on the conditions precedents set forth in the signed Activity Agreement as these are necessary before any disbursement. The Phase II project will be implemented after the signing of a separate PIL.

Of the \$16.5 million funding amount committed for Tarbela (Phase I), the total disbursement as of November 2014 has reached to \$13.95 million.

Gomal Zam Multipurpose Dam Project (Project Completed)

With \$45 million in funding committed, USAID supported WAPDA in the completion of the main dam, powerhouse, and switchyard and transmission line at Gomal Zam.

The dam has the capacity to generate 17.4 MW of electricity, and is capable of storing 1.14 million acre feet of water that will control flooding and irrigate 191,000 acres of land. The power generated by the dam is enough to meet the electricity consumption needs of 161,000 individuals. The project was inaugurated by U.S. Ambassador Olson in September 2013 and is now complete.



Figure 4: Gomal Zam Multipurpose Dam Project

Satpara Multipurpose Dam Project (Project Completed)

EPP successfully achieved the Satpara Multipurpose Dam project objectives ahead of the anticipated completion date of December 31, 2013. The dam, four powerhouses, and irrigation canals are complete. The entire \$26 million in committed funding has been disbursed to the GOP.

The dam has added 17.6 MW to the Skardu grid, and it is capable of storing 0.09 million acre feet of water that will control flooding and irrigate 15,500 acres of land. The power generated by the dam is enough to meet the electricity consumption needs of 163,000 individuals.



Figure 5: Satpara Multipurpose Dam Project

Severe weather conditions created challenges for work on this project, but EPP completed the project ahead of schedule. The inauguration of the dam has been delayed due to poor weather.

Muzaffargarh Thermal Power Station Rehabilitation Project

USAID funded rehabilitation at Muzaffargarh Thermal Power Station (MTPS) has restored 500 MW to the national grid which is sufficient to supply electricity to 4.63 million individuals. The restored 500 MW exceeds the project objective of 475 MW given in the Agreement.

By November, about 91% of the equipment has been procured and installed, while procurement of the remaining items is underway. The management of Muzaffargarh power plant is committed to complete the outstanding works therefore they requested USAID to extend the project completion date to June 30, 2015 as installation and testing of the remaining items will go beyond December 2014 and require another six months. In addition, Muzaffargarh Thermal Power Station has requested to allocate PIL amount for item 5: Modification



Figure 6: Muzaffargarh Thermal Power Station

of Excitation system to the much needed item 33: Distributed Control System (DCS) for Turbine Governing System and Boiler Turbine Auto Regulation System. The request is made since the bid price received by Muzaffargarh power plant for item 33 is much higher than the allocated amount in the PIL, due to price escalation in the market as the rehabilitation started back in 2010. The item 33 is critical and is essentially required for the reliability and sustainability, however due to financial constraints the procurement of the item is delayed. Therefore the plant management has requested to adjust the amount of item 5 in item 33, so that the procurement and installation of the critical item 33 could be completed by June 30, 2015. The amendment request of Muzaffargarh is with USAID and decision is awaited. EPP is providing support to USAID on the amendment request.

Equipment under PIL Item 25: Repair of winding and stator of Generators and testing of units 5 and 6 reached at site. EPP engineer will inspect the equipment early next month to ensure that it complies with the technical specification as mentioned in the PIL.

As of November 2014, out of the obligated amount of \$15.77 million, the total amount disbursed to the GOP stands at \$15.14 million for MTPS.

Jamshoro Thermal Power Station Rehabilitation Project

USAID funded rehabilitation at Jamshoro Thermal Power Station (JTPS) has resulted in the restoration of 270 MW of power generation capacity, which exceeds the project objective of 150 MW given in the Agreement. These 270 MW are sufficient to supply electricity to 2.5 million individuals. Major equipment has been installed and rehabilitated at JTPS, and procurement of the remaining equipment is in process.

As of to-date about 92% of the equipment has been procured and installed, while procurement of the remaining two items (6 and 17) is underway. The management

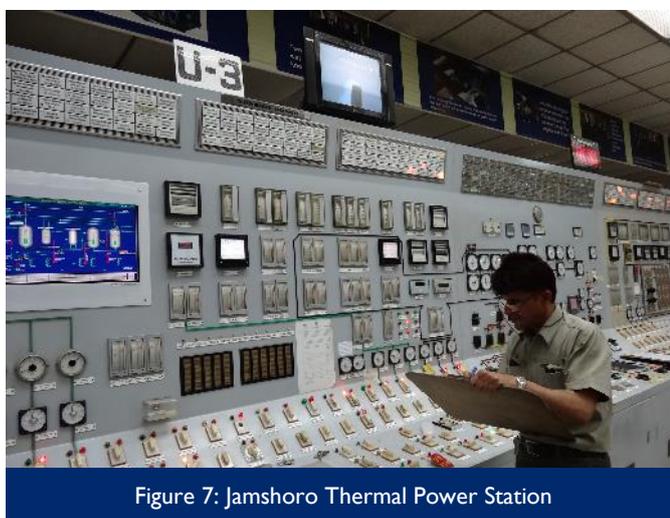


Figure 7: Jamshoro Thermal Power Station

of Jamshoro power plant is committed to complete the outstanding works. The delays are generally the result of complex negotiations with vendors. Therefore, Jamshoro requested USAID to extend the activity completion date to June 30, 2015 as installation and testing of these items will go beyond December 2014 and require another six months. The completion of the remaining two items is critical for the reliability and sustainability of the power plant operations. The amendment request of Jamshoro is with USAID and decision is awaited. EPP is providing support to USAID on the amendment request.

EPP engineer visited JTPS to monitor the on-going rehab works and to expedite the procurement of remaining equipment's. EPP also facilitated Jamshoro in getting tax exemption letter for PIL Item 11 to expedite the procurement of equipment's.

As of November 2014, out of the obligated amount of \$19.32 million, the total amount disbursed to the GOP stands at \$17.34 million for JTPS.

Rehabilitation of Guddu Thermal Power Station

USAID funded rehabilitation at Guddu Thermal Power Station (GTPS) has resulted in the restoration of 80 MW of power generation capacity, which exceeds the project objective of 75 MW given in the Agreement. These 80 MW are sufficient to supply electricity to 740,960 individuals.

As of to-date about 90% of the equipment has been procured and installed, while procurement of remaining items is underway. The management of Guddu power plant is committed to complete the outstanding works. Therefore, Guddu requested USAID to extend the activity

completion date of the rehabilitation project to June 30, 2015 as installation and testing of one item (item#4) will go beyond December 2014 and require another six months. While disbursement of other item (item#5) equivalent to \$0.213 million will not be completed by December 31, 2014 as the equipment is outdated and parts are not readily available with the vendors. The completion of the remaining item (item#4) is critical for the power plant and is required to maintain the reliability and sustainability of the generation gains that have been realized by this project. The amendment request of Guddu is with USAID and decision is awaited. EPP is providing support to USAID on the amendment request.

EPP received a claim of \$1,571,940 against PIL Item 4: Rehabilitation of HRSGs, replacement of modified bypass dampers, all existing expansion joints of HRSGs and replacement of economizer tubes and bends of HRSG for GTs 7 and 8. EPP is scrutinizing the claim to ensure that the technical specification of equipment is as per the PIL.

EPP also provided support to USAID on Guddu additional funding request of \$9.64 million for rehabilitation of another turbine GT-9, which will add 150 MW to the national grid. As of November 2014, out of the obligated amount of \$19.12 million, the total amount disbursed to the GOP stands at \$17.34 million for GTPS.

Mangla Dam Rehabilitation Project

USAID is providing \$150 million to GOP for the Mangla Dam Rehabilitation Project, out of which \$72 million was sub-obligated under an Activity Agreement signed on August 15, 2013. USAID will upgrade units 5 and 6 as the two units are in worst state of degraded condition; USAID will also fund the balance of plant that will improve efficiency and productive life of all 10 units of the Mangla Power Station. USAID is anticipating an addition of 90 MW of power generating capacity through the rehabilitation work.

In November, EPP met WAPDA and discussed the progress of the procurements under Mangla rehabilitation to expedite the progress. WAPDA completed the evaluation report for the procurement of major equipment's (Turbine and Generators for Unit 5 and 6) and contract is expected to be awarded by Jan 2015 and model testing to complete by Sep 2015 that will trigger disbursement of \$7.614 million. While for procuring the

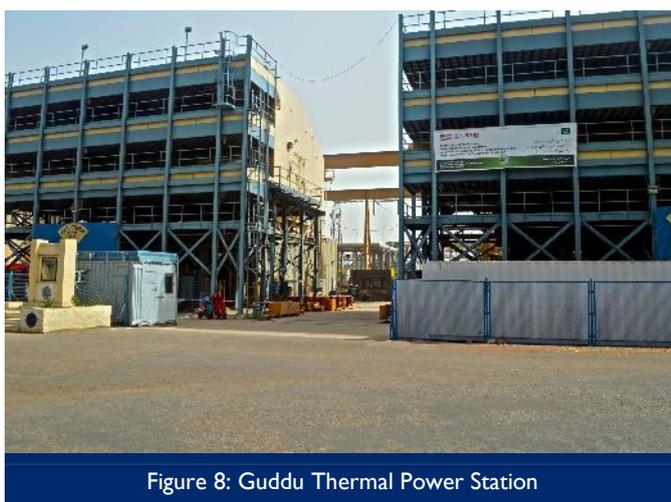


Figure 8: Guddu Thermal Power Station



Figure 9: Mangla Power Station

transformers, bids to be opened on Dec 2, 2014 and award is expected by Feb 2015. For Procurement of Inlet Valves, WAPDA has prepared two separate bids (1) supply of seals and (2) Installation of seals for Inlet Valves since OEM is not providing both services. WAPDA will negotiate with OEM for the supply; however installation will be awarded through ICB. Expected award for supply is anticipated in Feb 2015 and completion of design in Apr 2015. For rehabilitation of Crane, WAPDA initiated International Competitive Bidding (ICB). Bids to be opened date on Dec 17, 2014, and subsequently evaluation and award will take another two months. EPP is regularly meeting WAPDA in order to expedite the procurements.

To ensure that the rehab work will be in compliance with the GOP and USG regulations as recommended in the approved EMMP, EPP environmental expert conducted a visit to the power plant and subsequently submitted an environmental monitoring and audit report to USAID.

As per Activity Agreement, the project completion date is December 31, 2017 and the total amount disbursed to GOP as of November 2014 is \$13 million.

GENCOS PERFORMANCE EFFICIENCY IMPROVEMENT PROGRAM

Having achieved substantial and highly visible results through the replacement of equipment that resulted in power generation capacity and efficiency improvements, EPP is now focused on improving the commercial operations of the GENCOs. In this regard, EPP is providing support to the GENCOs to conduct National Electric Power Regulatory Authority (NEPRA)-compliant Heat Rate tests in order to obtain a revised tariff from NEPRA that will reflect the actual costs incurred by GENCOs in producing electricity and increase annual revenues through fuel saving of \$70 million per annum.

In November, EPP continued working level discussions with JPCL regarding USAID support for improving the commercial and technical performance of GENCOs. Performance Efficiency Improvement Plan is drafted in consultation with JPCL for Jamshoro Thermal power station (JTPS) so that the gains achieved at JTPS be sustained and also to improve the plant's operating life.

Procurement of Flow Meters

Procurement of the flow meters for the three GENCOs is complete. These meters were critical to ensure that accurate instruments are in place prior to NEPRA-compliant heat rate tests.

Heat-Rate and Dependable Capacity Testing

Heat rate tests completed at Muzaffargarh and Jamshoro thermal power plants. Annual fuel savings approx. \$70 million per year. EPP supported Jamshoro in filling of the tariff petition and coordinating with Jamshoro on the tariff determined by NEPRA.

EPP is coordinating with Guddu and independent engineering firm (Pakistan Engineering Services) to perform heat rate test at Guddu Thermal Power Station. The effort is been undertaken to support Guddu in revising its tariffs to facilitate sustainable operations.

ISSUES/CONSTRAINTS AND STEPS TAKEN TO RESOLVE THEM

- Procurement of remaining equipment's at Jamshoro, Muzaffargarh and Guddu Project. EPP facilitated Jamshoro, Muzaffargarh and Guddu in developing schedule for the remaining items. The amendment request to extend the completion date of Jamshoro, Muzaffargarh and Guddu is with USAID and decision is awaited.
- Procurement of remaining equipment's at Tarbela project. EPP provided support to USAID on WAPDA's request to extend the completion date and replacement of 1/3rd spare winding with much needed item, Rotor poles. The request is with USAID and decision is awaited.
- WAPDA to meet the conditions precedents set forth in the signed Activity Agreement for the Tarbela Phase II which is critical before any disbursement. EPP met several times with WAPDA to expedite the procurement.
- Procurement of equipment's at Mangla project. EPP met WAPDA to expedite the procurement.

ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

- Support to USAID on Guddu's request for additional funding of \$9.64 million for rehabilitation of GT-9; which will add 150 MW to the national grid.
- Signing of the PIL for the Phase-II of the Tarbela Repair and Maintenance Project.
- Inspection of equipment under PIL Item 25: Repair of winding and stator of Generators and testing of units 5 and 6 at Muzaffargarh thermal power station.
- EPP will certify Guddu's claim of \$1,571,940 against PIL item#4: Rehabilitation of HRSGs, Replacement of Modified Bypass Dampers, all existing expansion joints of HRSGs and Replacement of Economizer tubes and bends of HRSG for GTs 7 and 8. .
- Inspection of Digital Governor installed at units 8 and 10 to ensure its smooth operation.
- EPP will certify Jamshoro claim of \$1,171,500 against PIL Item 17.

COMPONENT 2: POLICY AND REFORM

EPP supports energy sector reform through two basic mechanisms: the direct undertaking of specific activities requested by one or more GOP energy entities; and direct institutional support through assigning staff to work in the offices of the requesting energy sector entity as advisors and specialized support staff. In both cases, the respective request for support must be made to the COR and approved by USAID.

SUPPORT TO MINISTRY OF WATER AND POWER

More Autonomous Energy Sector Entities

NTDC Performance Contract: At the request of the Ministry of Water and Power, EPP has begun developing a Performance Contract between NTDC and MWP. This is an IMF requirement which must be completed by December 25th.

The performance evaluation parameters/targets will be developed on the basis of commercial, financial, human resource and corporate management categories. Similar contracts have been developed for the DISCOs and will also be developed for the GENCOs. Through the Contract, MWP aims to ensure that NTDC is allowed adequate and reasonable managerial/operational autonomy to achieve the performance targets set out. MWP will act as a monitoring agency in the process.

EPP team is currently working on developing the relevant KPIs and benchmarking indicators to monitor performance over time. Current literature on the topic, along with international best practices and experiences in other countries is being reviewed. EPP started meetings with NTDC senior officials in Lahore next week to begin the consultation process and get feedback from their team.

NTDC Strategic Business Plan: EPP will also be meeting to discuss development of the Strategic Business Plan for NTDC. The key items in the business plan will include development of a vision, preparation of a mission statement, long-term human resource development goals, and strategic objectives moving forward.

NTDC Human Resource Management and Organizational Development Consultant: EPP is helping the NTDC Board and management to develop an RFP for consulting services to bring NTDC human capital management in line with best practices in transmission and to move toward being a commercial entity. As agreed and discussed during the meeting in October 2014, EPP continued meeting with the employees at head office and field offices for development of mission and vision statements. EPP provided the inputs and NTDC will discuss these internally and with the board to finalize these statements. EPP prepared four draft statements for NTDC to use as models.

A second version of RFP was shared with EPP for comments and suggestions. EPP provided the input and, in addition to other suggestions, recommended holding a pre-bid conference for the bidders. It is expected to be finalized by December 2014.

Business Transfer Agreement: EPP is awaiting MWP's feedback and guidance for the way forward to finalize the BTA between NTDC and CPPA.

Open Access Policy: NTDC also requested EPP's assistance for the development of an open access policy. This includes development of a tariff for ancillary services.

Improved Policy Implementation

Pakistan is moving to allow private sector participation in transmission as part of the sector reform. The EPP team will be providing continuing support to this policy as the GOP committee responsible for the policy moves forward toward its finalization.

Improved Capacity of USAID-Supported Energy Public Sector Entities

During the reporting period, EPP team met with Joint Secretary for Policy, MWP to discuss on-going and proposed activities with the Ministry. As per the request of MWP, the following activities were carried out:

Power Purchase Agreements: The Joint Secretary, MWP gave further guidance on including more clauses in the PPAs.

Performance Contracts with GENCOs: These performance contracts aim to define key performance indicators for various generation parameters and to help MWP establish a set of standards for those indicators, which the Ministry can monitor.

The EPP team is working on developing the key performance indicators based on international best practices and relevant literature. These will then be discussed with the relevant stakeholders. At the meeting of EPP and the senior management at GENCO Holding Company, Ltd., (GHCL) and the GENCOs held November 27, it was agreed that a marked-up draft of contract will be shared with EPP suggesting alternate language for some clauses.

Policy Analysis: The EPP team is working directly with the MOWP and Ministry of Finance (MOF) using PowerSIM to address the question of allocation of gas and LNG. The results of the analysis regarding what happens to prices, circular debt, and subsidy were discussed at senior cabinet levels. EPP is working on development of these scenarios and is in the process demonstrating the usefulness.

SUPPORT TO MINISTRY OF FINANCE

- Assistance was provided to Corporate Finance Wing, Ministry of Finance in preparation of their views and comments on the summary for the Economic Coordination Committee (ECC) submitted by Ministry of Petroleum and Natural Resources regarding increase in the distribution margin of oil marketing companies and dealers.
- A brief was prepared for Secretary of Finance regarding Shale Gas Policy framework to be considered by the Council of Common Interest in pursuance of the decision of the ECC.
- Assistance was provided to Corporate Finance Wing, Ministry of Finance in preparation of their views and comments on the summary for the ECC submitted by the Ministry of Water and Power to provide tube well subsidy to farmers.
- Attended a meeting chaired by Senior Joint Secretary Corporate Finance, Ministry of Finance on December 11, 2014 regarding payment of long outstanding Karachi Electric Supply Company's dues by Karachi Water and Sewerage Board, amounting to Rs.33 billion. In this meeting it was decided that both parties will have a meeting with Special Secretary, Finance Department, Government of Sindh to work out the mechanism for reconciliation of these dues.
- The request of Advanced Engineering Associates International (AEAI) for exemption of General Sales Tax and Custom duties for the purchase of four ISUZU NPR (4X2) trucks and nine Toyota Hilux Vigo Champ M/T(V) was pursued with Economic Affairs Division and Exemption Letter was obtained on December 12, 2014.
- Assistance was provided to Corporate Finance Wing, Ministry of Finance in preparation of a brief for Secretary Finance regarding the proposal for grant of tube well subsidy to those affected by floods in Punjab.
- Assistance was provided to Corporate Finance Wing, Ministry of Finance in preparation of their views and comments on the proposal of Ministry of Water and Power for grant of extension from Turn Over Tax exemption to NTDC/CPPA.
- Attended the wrap-up meeting of the Joint Mission of Asian Development Bank, JAICA, and World Bank on Pakistan Energy Sector Reform Programme held on November 19, 2014 under the chairmanship of Secretary Finance. In this meeting a draft *Aide Memoire* was finalized.
- Obtained clearance from Economic Affairs Division for approval of the exemption from general sales tax in respect of procurement being carried out by under USAID Energy Policy Program (EPP) for invoices number OOPL/2014-15/05.

Impact

- Assistance provided by the AEAI consultant helped Ministry of Finance to formulate their views and comments on various policy issues.

More Autonomous Energy Sector Entities

- Work continued on the final draft of the report regarding Diagnostic Analysis and Review of Regulatory Framework of NEPRA, being prepared by the Economic Reforms Unit (ERU) of Ministry of Finance under the instructions of the ERU Council of Common Interest.

Issues Constraints

- No constraints were faced during the reporting period.

SUPPORT TO MINISTRY OF PETROLEUM AND NATURAL RESOURCES

During the reporting period, EPP continued to provide technical assistance in support of the Ministry of Petroleum and Natural Resources (MPNR) and the GOP for USAID pre-approved activities, including but not limited to, LNG, oil and gas (including shale gas), and advisory services to increase natural gas supplies for power generation. These efforts continue to contribute to the successful formulation and implementation of the GOP's LNG import program and institutional capacity building. They also promote sustainable improvements in Pakistan's upstream policy, rules, the regulatory framework, and exploration and production (E&P) programs to expedite increased domestic production to mitigate fuel supply issues in the power sector. Specific activities during this reporting period include:

LNG Imports

- FGE and WFW consultants held meetings with the GOP from October 30 – November 01 in Islamabad to finalize procurement options, terms of agreements, and timelines to secure LNG supplies by March 2015. Federal Minister, MPNR also attended various sessions of the meeting.
- During the October 30 – November 1 meetings, comments on the Qatargas SPA were drafted by GOP with FGE/WFW support. These comments were then communicated to Qatargas by GOP.
- Follow-up to obtain stakeholders' comments on the draft MSPA continued during the month. Consultants from Granada Group of Companies also reviewed and provided expert comments on the draft MSPA; the second version of the draft MSPA was submitted by WFW/FGE after obtaining stakeholders' comments. Following another round of stakeholders' input, the MSPA is targeted to be finalized by December 2.
- FGE coordinated to organize a meeting between MPNR and Petronas to be held in Islamabad from December 1-2, 2014. LNG supply options from Malaysia under a G2G arrangement will be discussed during the meeting.
- WFW labor invoice for October 2014 was processed for payment.

LNG PQA Support

- Site visits were conducted by ECIL to monitor construction activities of the EETPL LNG Terminal. EETPL did not provide various reports, designs, and technical drawings requested by ECIL for review. Since non-provision of these documents by EETPL would not enable ECIL-Granada to provide the necessary support to PQA, the matter was brought to the notice of PQA senior management for timely resolution.
- Delay in providing the requested information to PQA by EETPL was communicated by PQA to the MOPS, MPNR, and OGRA.
- Subsequent to the meeting with EETPL representative, temporary office space was provided for ECIL-Granada team on site effective November 10. Pipeline and marine civil engineering experts are on site daily to monitor pipeline and civil works.
- EETPL has so far only provided partial documentation out of the requested set of documents and data, which is hampering consultants' output. PQA was informed of the matter and a

reminder was sent to EETPL to provide exclusive office space and required drawings to port consultants.

- The ECIL-Granada team reviewed the technical and legal aspects of the tender document prepared by PQA for the hire, purchase, or charter of four LNG tugs upon specific request of PQA. The port operations expert also reviewed the navigational aspect of the Project. PQA finalized the tender in consultation with ECIL-Granada team.
- DG Ports and Shipping PQA visited LNG project site on November 11, along with EPP LNG advisor and ECIL consultants.
- PQA provided air-conditioned and furnished office space for EPP LNG advisor and LT port consultants with telephone facility. A new copier/scanner/printer was also installed in the office.
- The weekly coordination meeting was held on November 19, 2014 at the project site attended by PQA, EETPL, EPP, and ECIL. Protocol for transmittal of documents to be submitted along with the specific documents required for consultants' review was identified. Subsequently, EETPL handed over a set of construction drawings to PQA. An improved version of Monthly Progress Reports is to be submitted to PQA by EETPL.
- Separate office space was provided by EETPL for ECIL-Granada team on site.
- USAID queries on the alternate LNG channel at PQA were responded to after consultation with PQA officials.
- Task Order 1 covering the period from October 20, 2014 to March 31, 2015 was finalized and issued.
- ECIL-Granada continued review of various risk assessment reports submitted by EETPL.

Shale Gas

- Technical work on Milestone 4 was completed. The interim report was reviewed and the invoice was processed for payment.
- Additional information regarding 14 confidential wells was received from LMKR, and the log data of these wells provided to NuTech. Based on NuTech's review, the selection of cores from these wells would be decided before necessary instructions are issued by DGPC to the companies concerned for data release.
- A meeting was held with DGPC/LMKR on November 10, 2014 in which the following topics were discussed: review of queries on the Milestone 3 report, inclusion of additional 14 wells in the shale gas resource assessment study, the Milestone 4 report, and the issue of payment to OGDCL for the confidential wells released by the company earlier.
- Inclusion of analysis of the 14 confidential wells data in the ongoing Shale Gas Study was discussed in a joint meeting (via video/telecon) of USAID, Additional Secretary MPNR, DGPC, EPP, LMKR, and NuTech on November 21, 2014. Thereafter, MPNR sent a formal request to USAID for approval of the additional cost and time required.
- USAID conveyed its approval for inclusion of the additional 14 confidential wells in the ongoing shale gas resource assessment study upon MPNR request.
- Additional Secretary MPNR was requested to resolve the matter with OGDCL regarding the excessive amount invoiced for the confidential well core data sent to Houston for analysis. Subsequently, with the approval of the appropriate authority, DGPC issued a letter to OGDCL to waive the amount invoiced for the previously available confidential well data.

Upstream Oil and Gas

- Advisory work on day-to-day issues of DGPC continued. Specific cases included extension of Sui lease; issues concerning well commencement notice in respect of two companies; pending lease cases; reference of a case to Law Division on indexing of license/lease rentals, data repository contract; comparative review of national oil and gas policies of Morocco, Vietnam, and Myanmar on Prime Minister's directives to suggest possible improvements in the national oil and gas policy framework; issue of unauthorized flaring of gas by an E&P company; revocation of license; gas price incentive as per 2012 policy for incremental production increase; and gas price agreement under the 2007 policy for a specific field.

- Weekly progress review meetings with PTS were held throughout the month. Necessary directions were given for action on different cases. Draft deliverables on improvement of the rules and policies and way forward for legal framework for policies were discussed. In addition, the proposed Request-3, DGPC data management contract, termination of an exploration license, and the outcome of discussion with the Minister of State for MPNR were discussed.
- DGPC officials, EPP, and PTS reviewed the Model Onshore Supplemental Agreement on November 6, 2014. DGPC agreed to convene another meeting to finalize the Agreement.
- The draft Offshore Model Supplemental Agreement, after incorporation of comments by EPP and the industry, was provided to DGPC for input.
- DGPC was repeatedly requested to provide comments on the draft Model Onshore Supplemental Agreement as well as Offshore Supplemental Agreement throughout the month. DGPC assured that it would convene an internal meeting of DGPC officials to finalize the Agreements as soon as possible; however, the meeting in question is yet to be convened.
- EPP provided its comments on the draft deliverables for Work Areas 1 and 2 submitted by PTS.
- A presentation on Sui mining lease extension for the Minister MPNR was prepared as desired by DGPC. Copy of the presentation was sent to USAID.
- A meeting was held on November 19, 2014 to discuss the draft deliverables submitted by PTS covering interpretation of the 18th Amendment of the Way Forward and New Rules for Tight Gas, low BTU policies, and marginal and stranded field guidelines.
- PTS comments on Request-3 are under EPP review.
- Visiting AEAI Vice President paid a courtesy call to Additional Secretary MPNR. Matters covering support to DGPC, Shale Gas Program, and LNG Import Program were discussed. In addition, the matter of support in pilot projects for CBM and shale gas resource assessment in basins other than Lower and Middle Indus River was discussed.
- A meeting between USAID and Additional Secretary MPNR to discuss the proposal regarding establishing an Implementation Unit at DGPC was arranged. The meeting was held on November 26, 2014, and USAID queries were responded to after the meeting.

SUPPORT TO MINISTRY OF PLANNING AND DEVELOPMENT

Policy Analysis and Planning: PowerSIM has been adopted at the Planning Commission and is now becoming an accepted GOP tool. During the month, EPP continued its assistance to the Member Energy on the 11th Five-Year Plan. The EPP team has been running scenarios for the Planning commission, as well as making several updates to PowerSIM based on the requests from Member Energy. The accuracy of the model was tested by comparing results produced by PowerSIM with actual data.

EPP also assisted the Energy Wing in using PowerSIM to prepare a presentation for the Minister of Planning and Development on Electricity Supply-Demand Scenario from 2014 to 2024 with extra emphasis on supply-demand situation up to 2017-18 for Member Energy to present in meeting with Minister of Planning Development and Reforms. Supply-Demand projection was mainly based on PowerSIM data.

Technical Assistance: EPP advisor at Planning Commission, Energy Wing performed the following tasks during the month:

- Worked on Energy Perspective Plan 2014-2024, which is part of the GOP's Vision 2024, modifying and updating the document as per requirements of Member Energy, Planning Commission for submission to the Minister, Ministry of Planning and Development (MPD).
- Prepared by category daily electricity generation/supply and cumulative demand of NTDC system of 2014 for Member Energy. The data was processed to share with Minister and Secretary, Ministry of Planning, Development and Reform.

Planning Commission

Assistance on development of the Five-Year Plan is an urgent priority for Planning Commission. EPP has deployed resources at the Planning Commission to ensure that support is provided in a timely manner.

Issues Constraints

No constraints were faced during the reporting period.

ISSUES/CONSTRAINTS AND STEPS TAKEN TO RESOLVE THEM

Ministry of Water and Power

- EPP earned the confidence and cooperation of the new team at MWP by working beyond usual business hours to complete the assigned urgent tasks in a timely manner.
- NTDC is in the process of finalizing the RFP for consulting services. EPP provided inputs, comments, and suggestions in the second draft shared with EPP. Vision and mission statements were development for review of NTDC.

Ministry of Planning and Development

- PowerSIM is currently being used at the Planning Commission. The analysis being done through PowerSIM requires up-to-date power sector data.
- EPP has requested the GOP stakeholders to provide the required data at the earliest possible date. A letter from the Planning Commission has been sent out to Ministry of Petroleum for relevant gas power plant data. EPP has also contacted Alternative Energy Development Board (AEDB) for relevant renewable energy generation data.

Ministry of Finance

- No constraints were faced during the reporting period.

Ministry of Petroleum and Natural Resources

LNG

The full mission bridge simulation study for PQA was put on hold upon learning that EETPL had sponsored a similar study. A decision on whether to undertake the study would be made following review of the report of simulation study sponsored by EETPL once it became available.

Technical drawings and documents related to LNG terminal construction were not made available by EETPL to ECIL-Granada to enable them to provide monitoring support to PQA. Upon highlighting of the issue by EPP, PQA wrote to EETPL to provide the necessary documents and drawings to ECIL-Granada. As a result of aggressive follow-up, some of the documents and technical drawings were provided by EETPL. However, the remaining data has still not been made available to ECIL-Granada, thus hampering consultants' output. This lack of documentation is actively being pursued with PQA.

Shale Gas

OGDCL had invoiced LMKR for the well cores it provided, which were shipped to NuTech Labs for assessment. As the invoiced amount was excessive, LMKR raised the issue with DGPC. After the approval of the appropriate authority, DGPC has issued a letter to OGDCL to withdraw the invoice.

DGPC recommended inclusion of additional confidential wells data (cores/cuttings) in the ongoing resource assessment study. LMKR has provided a map plotting the additional 14 wells with the existing wells to highlight the coverage area. The inclusion of this data will lead to additional cost and a delay of 3 to 4 months in the final resource assessment report. As this inclusion will increase the confidence level of the findings, a meeting was held with USAID on November 21, 2014 at which MPNR representative gave the rationale for inclusion of additional data in the ongoing study. USAID's approval in principle has been granted and a formal request letter to this effect has been sent by Additional Secretary, MPNR to USAID.

Upstream Oil and Gas Support

There is a serious constraint of manpower in DGPC. A proposal for DGPC manpower support, including the Implementation Unit, has been submitted to USAID for consideration. This proposal was discussed with USAID on November 21, 2014 and followed by a meeting held on the subject between Additional Secretary, MPNR and USAID on November 26, 2014. Thereafter, EPP responded to the queries raised in the context by USAID to process the request further.

ARI, the prime subcontractor under contract with PTS, has refused undertaking the Shale Gas Policy formulation work due to travel constraints to Pakistan (security advisory). Keeping in view the current situation, a proposal for re-appropriation of funds under the PTS contract to issue a fresh RFP for formulation of Shale Gas Policy framework has been submitted to USAID for approval.

The Model Supplemental Agreement for conversion from older systems to 2012 policy terms was finalized and submitted to DGPC in July 2014 after consultation with the industry for GOP approvals. The matter is still pending with DGPC, and to process this agreement, EPP, along with consultants, is following up the matter with DGPC for early consideration and approval.

ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

Ministry of Power and Water

- Providing assistance to MWP in moving forward on the PPAs.
- Continuing work with NTDC and liaison with MWP in preparing the Performance Contract.
- Training of MWP staff on use of PowerSIM.

National Transmission and Dispatch Company

- Assisting and supporting finalization of the RFP.
- Continue providing assistance for understanding and improving the load forecasting capabilities.
- Continuing support on development of Performance Contracts between MWP and NTDC.

Ministry of Planning and Development

Applying PowerSIM at Planning Commission through 11th Five-Year Plan

- Ass Member Energy on a variety of policy areas.

Ministry of Finance

- Assisting MOF to examine and formulate views on the policy proposals to be submitted by the energy sector ministries and entities to Ministry of Finance.
- Monitoring of Power Sector Circular Debt.

Ministry of Petroleum and Natural Resources

- **LNG:** Finalization of MSPA; follow-up on LNG procurement strategy and specific activities to secure commercially viable LNG cargoes by the commissioning date of the Fast Track LNG terminal; support to GOP in G2G negotiations for LNG procurement with Qatargas and Petronas; support to PQA for monitoring construction of EETPL LNG Terminal and for specific LNG services; capacity building of GOP stakeholders; decision on conducting the full bridge mission simulation study for PQA and training of PQA pilots/tug masters for maneuvering of LNGCs; continuation of provision of legal support to SSGC for LSA open items.
- **Shale Gas:** Continuation of work on Component 2, initiation of additional wells data testing.
- **Upstream Oil and Gas Support:** Minimum reorganizational structure of DGPC; report on improvement of policies and regulatory framework; initiation of RFP for Shale Gas Policy consultants.

COMPONENT 3: NEW PROJECTS, PLANNING, AND DEVELOPMENT

EPP continued updating information on cost estimates, activity schedules for PIL agreement of Kaitu River and Affiliated Structures.

RUN-OF-RIVER PROJECTS

USAID has not requested any advice or assistance on the Run-of-River projects during past couple of months. EPP had been advising and assisting USAID in their discussions and working with WAPDA to determine possible USG funding to complete the Alai Khwar and Dubair Khwar hydropower projects. On directions from USAID, EPP also conducted Rapid Environmental Analysis (REA) for both projects; however, EPP has not received any recent directives on the projects from USAID.

KURRAM TANGI/KAITU WEIR PROJECT

EPP continues to assist USAID in meetings with WAPDA to discuss progress and to advise on the next steps necessary to further the Kaitu Weir Project (part of the Kurram Tangi Dam Project). WAPDA and their consultants are to provide details and breakdown of project costs, among other information and clarifications requested by USAID. A PIL can only be signed when such pre-conditions are met by WAPDA.

ADDITIONAL SUPPORT TO USAID

EPP assisted USAID in meeting with WAPDA Staff College to initiate a Training Needs Assessment of WAPDA. The next step is to meet with WAPDA management in WAPDA House, Lahore to seek their views and identify gaps in training curricula.

ISSUES AND CONSTRAINTS AND STEPS TAKEN TO RESOLVE THEM

- The Kaitu Weir project (KWP) is a part of the Kurram Tangi multipurpose Dam Project (KTDP). On advice from EPP, the KTDP project has been divided into parts by WAPDA to accommodate and facilitate funding indicated to be available from USAID. The estimated cost of KTDP is around \$700 million whereas KWP is expected to be completed in about \$120 million per current WAPDA estimates.
- Costs and plans are being finalized between USAID and WAPDA with the active advice, assistance, and participation of the donor funded project development experience, hydropower expertise, and knowledge of WAPDA processes and procedures available in EPP.
- USAID has been advised that establishing and operating a Project Office by WAPDA at Spin Wam in North Waziristan will demonstrate access to site and signal possibility to start project activities.
- Currently, the essential next step is successful receipt of a bid at WAPDA from a contractor willing to build the Kaitu Weir and Affiliated Structures.

ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

- Continue advice and assistance to further the Kaitu Weir (and affiliated structures) project.
- Provide advice and assistance on any other new projects that USAID wants to consider for review and/or asks EPP to exercise due diligence and make recommendations.

COMPONENT 4: NEW ACTIVITIES

New Activities and an expanded scope to EPP's work were identified to respond to the Government of Pakistan's efforts to address the current energy crisis and the severe load shedding that adversely affects all sectors of Pakistan's economy. Due to the magnitude of the energy crisis in Pakistan, EPP's New Activities Component seeks to accelerate efforts that assist USAID in increasing energy supplied to the economy. EPP delivers this support in a way that builds the capacity of the GOP to ultimately continue these activities without external support. Utilizing the personnel of the generation companies and transmission system, including DISCOs, and transmission, operation, and maintenance staff to perform this work is emphasized.

TRANSMISSION

PESCO

To date, 368.6 MW of transmission throughput capacity have been added to PESCO's network as a result of EPP's assistance (capacity added in the reporting month: 0 MVA).

Technical Audits

Audit reports are being compiled, and 74 out of 84 (~88%) reports have been compiled to date. All substations have been audited. The reports highlight shortcomings and bottlenecks found and recommend preventive and corrective measures.

Power Transformer Program

Ten oil samples were sent to the lab this month, but the test results have not yet been received. To date, 201 of 211 (~95%) samples have been tested. The results determine potential transformer damage and the consequence of an outage that can cause unscheduled load-shedding. The results show that many of PESCO's transformers require oil purification. EPP is in the process of procuring two oil filtration plants for PESCO's operations and maintenance staff. EPP has asked PESCO to implement policy changes that will allow PESCO's Grid Systems Operation staff to use the Grid Systems Construction oil filtration plant when it is not in use.

Capacitor Bank Rehabilitation

At 132kV Jehangira Grid Station, a 36MVAR capacitor bank and a 145kV circuit breaker have been commissioned successfully. The rehabilitation of the capacitor bank resulted in voltage profile improvement at the bus bar. Prior to commissioning of the bank, the voltage measured was 126kV, and it now measures at 132kV (~5% improvement). The associated gains will be reported once the supporting documentation is received.

P&I Vans and Test Equipment

The vans, equipped with testing and protection instruments, were handed over to PESCO in an official event on November 13, 2014. EPP anticipates that the provision of vans and test equipment will help PESCO in carrying out their maintenance activities in a timely manner.

Tower Repair

The repair works at two tower locations, situated in Abbottabad division, have been completed. The works are in progress on the remaining locations.

Transmission and Grids (T&G) Equipment

A purchase order has been awarded to M/s. Ikram Corporation for supply of T&G equipment. The contractor is to delivery equipment by February 15, 2015.

Cooling Fans

A purchase order was awarded to M/s. Shine on November 20, 2014 for the supply and installation of fans. EPP anticipates closing this project by the end of February 15, 2015.

NTDC Technical Audits

To date, 27 audit reports have been compiled. The reports propose steps necessary for carrying out both preventive and corrective maintenances and also recommend infrastructure upgrade and augmentation where necessary. A total of 36 out of 41 substations have been audited (~87%) at this time. The seven new grid stations will be audited afterwards to have information for the MIS. The stations audited this month are: NKI 500kV grid station, Dadu 500kV grid station, and Bannu 220kV grid station.

IT Support for Secured Metering System (SMS)

Display installations at DISCOs are in progress. Eight out of ten DISCOs have received the system; the remaining two DISCOs will be covered in coming month. The assembly, installation, and commissioning of SAN Servers, UPSs, and other associated equipment completed. The system will help NTDC on both commercial and operational fronts.

NTTDC System Studies

- The purchase order has been executed and work begun on integration of intermittent renewable resources with the national grid.
- The procurement action is underway for the load flow study:

Real Time Digital Simulator

The purchase order for the Real Time Digital Simulator was awarded to M/s. OPAL-RT during November. The vendor is to deliver, install, and commission system by February 15, 2015.

Hardware and Software for NTDC Design

- The purchase order was awarded to M/s. EGS (Pvt.) Ltd. for hardware for NTDC's Design Department; the vendor is to deliver all the items by December 14, 2014.
- The procurement action is underway for software and training for NTDC's Design Department:

Live Line

- An event for the handover to PESCO and IESCO of live-line tools, trailers, and vehicles took place on November 13, 2014.
- A complete review of the report submitted by the Live-Line Consultants was conducted by Transmission Team. The corrective measures as suggested by the report are to be implemented.

Issues/Constraints and Steps Taken to Resolve Them

- Commissioning of 132/66kV power transformer at Chakdara Grid Station could not be completed in the reporting month as oil could not be delivered at site because of a tax exemption issue. EPP took brought this issue up with the Economic Affairs Division (EAD), and the issue has been resolved and commissioning of transformer will take place in the coming month.

Anticipated Activities for the Next Reporting Period

- Technical audit of NTDC grid stations;
- Installation of displays at PESCO and TESCO;
- Delivery of hardware for NTDC design department;
- Rehabilitation of capacitor banks at Bannu and Tall;
- Repair of damaged transmission line towers (132kV and 66kV) in KPK; and
- Installation and commissioning of 132/66kV power transformer at Chakdara Grid Station.

CROSS-CUTTING ACTIVITIES

CAPACITY BUILDING

Best Practices in Thermal Operations and Maintenance Training

EPP completed its focus group discussion with participants from the thermal O&M training, held between March and June of 2014. The discussion results and assignment monitoring report has been developed and is currently under review; it will be shared with USAID during December 2014.

Best Practices in Hydro Operations and Maintenance Training

EPP completed the second of the three programs focused on best practices in hydro O&M on November 21, 2014. Through training, the hydro plants will be able to identify deficiencies in their current maintenance practices and increase plant efficiency. As part of this effort, EPP recruited three female students from Center for Advanced Studies in Engineering (CASE) for the second program to increase their practical knowledge and skills regarding hydroelectricity. Hydel staff and students trained by EPP are listed in Table 4.

Table 4: Hydel Staff and Students of Hydro O&M Training

Hydel Power Stations	Batch I Participants (October 2014)		Batch II Participants (November 2014)		Total		
	Male	Female	Male	Female	Male	Female	Total
Tarbela	3		4		7		7
Ghazi Barotha	5	1	4		9	1	10
Mangla	4	1	4		8	1	9
Warsak	2		3		5		5
Chashma/Jinnah	2		2		4		4
Small Hydels	1		1		2		2
WAPDA	2	1	2		4	1	5
University Participants		5		3		8	8
Total	19	5	20	3	39	8	47

NTDC and CPPA Support

EPP completed the first of the three exchange visits to the United States focused on improving grid operations on October 29, 2014. Through these exchanges, EPP aims to improve transmission capacities in Pakistan's power sector while establishing professional relationships to draw upon after the conclusion of the program. EPP conducted a post-training presentation and debriefing with participants and their department heads to discuss lessons learned abroad and future dissemination of results.

EPP submitted all J-1 visa paper work for the NTDC Market Operations Training to be held on January 12, 2015. EPP awaits R3 approval and DS-2019 forms before scheduling visa interviews for the nine participants and one alternate. Lahore participants filled out their DS-160 forms at EPP Lahore office on November 26, 2014, and Islamabad participants did so on November 28, 2014.

EPP conducted interviews with participants nominated by NTDC's Managing Director for the third exchange visit to the United States, focused on commercial operations on November 24-25, 2014. Following final selection, EPP will seek USAID approval of nine participants and two alternates

before commencing the J-I Visa process. EPP anticipates the final exchange will take place in February 2015.

Live-Line Maintenance

EPP successfully delivered Live-Line Maintenance (LLM) tools and vehicles to PESCO and Islamabad Electric Supply Company (IESCO) on November 13, 2014 in Islamabad. EPP is currently planning to kick off Live-Line Maintenance refresher training for the five previously trained DISCOs in FY2015.

LNG

For the LNG Business Management Intensive Program, vendor negotiations are in process and nominations were received from Port Qasim Authority; EPP anticipates MPNR's nominations in early December. The program will host 15 participants in Kuala Lumpur in January/February 2015. The program will focus on improving MPNR, Interstate Gas System (ISGS), JTPS, PQA, and PSO port and commercial capacity related to LNG import.

Gender Equality Assessment

EPP is preparing to deliver a gender assessment to be followed by a gender strategic plan and a public forum for enhanced gender integration in the energy sector in Pakistan. EPP's short-term gender specialist started the energy sector gender strategy. The final report will be completed in December 2014. The assessment will determine a baseline of gender equality, and the associated gender strategic plan will provide realistic and effective recommendations and activities for promoting gender equality initiatives.

Female Participation in Training Activities

In an effort to increase female participation, EPP ensured participation of three female students or graduates from Islamabad CASE University in the hydro O&M training. In addition, nominations have been received for female candidates to participate in batch III.

MONITORING AND EVALUATION (M&E)

M&E Plan and Work Plan

EPP received USAID approval for the October 2014 M&E plan, including for four indicators and log frame. EPP revised the FY2014 Annual Report with suggestions from the USAID Energy Office and submitted it for approval.

PakInfo

The PakInfo entry for the fourth quarter has been submitted. EPP continues to collect data for FY2015; the second quarter entry will be completed in January 2015.

Site Visits

EPP conducted post-training evaluations at EPP's Lahore office with the Executive Exchange on Best Practices in Grid Operations for NTDC participants. Also, a presentation was delivered to seven of the nine participants at NTDC Grid Operations on November 25, 2014 in presence of NTDC officials and EPP transmission experts. The purpose of the site visit was to review the training outcomes. Furthermore, a Focus Group Discussion was conducted with six of the seven SAN training participants on November 24. EPP is developing a comprehensive evaluation report outlining the responses gathered through SAN training participants' focus group discussion and the NTDC Grid Operations Exchange participant's post-evaluation sessions.

ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

During the next reporting period, EPP will conduct the following activities:

- Draft and deliver NTDC Market Operations Exchange pre-training briefing and plan of action prior to the departure to the United States. The Market Operation Exchange visit will be conducted in January 2015. Following the completion of the exchange visit, EPP will arrange a

day-long debriefing of the trip by the participants for US Government officials in Islamabad and Lahore.

- Deliver the third of the three hydro O&M training course in December 2014.
- Conduct follow-up interviews and post-training evaluations with the third batch of hydro O&M trainees to identify their learning outcomes in December 2014. A focus group discussion session with all the three batches will follow one month after the training completion.
- Monitor and evaluate PowerSIM progress at MPNR following the delivery of PowerSIM model.
- Complete drafting the gender strategy for key stakeholders by December 2014 to be shared with USAID for comments.
- Seek nominations from the remaining stakeholders for LNG Business and Management Intensive Training.
- Finalize selection of the interviewed participants for the Commercial Operations Exchange visit to the United States and obtain formal approval from NTDC and USAID.

COMMUNICATIONS

EPP's Communications activities promote and develop outreach strategies that highlight the program's ongoing efforts and achievements.

OUTREACH MATERIAL

To strengthen communications and outreach efforts, the Communications Team began documenting data that will help develop in the preparation of success stories and Fact Sheets. The communications unit is providing support for the publication of several procurements and job advertisements in local and international newspapers. Similarly, a variety of material is being uploaded on the official EPP website providing information on current and past activities and programs. Other promotional materials, such as banners and standees, were designed and produced for programmatic events.

REPORTS

- Environmental Monitoring and Audit Report PQA – Visit 1
- Environmental Monitoring and Audit Report JTPS – Visit 7
- Environmental Monitoring and Audit Report MHPS–Visit 2
- Prepared name plates and badges for 25 participants in the second batch of Best Practices in Hydro Operations and Maintenance training
- Prepared certificates for 23 participants of second batch of Best Practices in Hydro Operations and Maintenance training

EPP hosted a certificate distribution ceremony on completion of second batch's training on Best Practices in Hydro Operations and Maintenance.

ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

- The Communications Team will also coordinate with Cross-Cutting Team for their third batch certificate distribution ceremony for participants in the Best Practices in Hydro Operations and Maintenance training

Confidential information redacted

Confidential information redacted

5. Network printer installation and configuration at Mr. Masood Ahmed Bhatti's office at PQA, Karachi
6. QuickBooks Accounting and purchase order applications support for Islamabad and Peshawar office
7. Tracking of 21 official eVo Internet devices monthly recharges
8. Troubleshooting of (AEAI, ISB office, M/o Finance, NPCC, Lahore office and Peshawar office) Network Printers and complete track of cartridges/toner replacement
9. Monthly attendant backup activity for outlook e-mails communication
10. IT support to all program staff including seconded staff and third-party contractors working at Ministries, NPCC, and DGPC
11. 24/7 Internet, telephone and Digital HD box video services support and troubleshooting at expatriate's residences in Islamabad and Peshawar.
12. E-mail server management of *ep-ep.com.pk* domain and BlackBerry Services Administration and support for all Program Staff.
13. Complete monthly payroll and large-scale official documents scanning
14. Assisting Administration and Finance Department to keep well-run database record for Travel Authorization and Leave Application Forms
15. Daily routine hardware, software, system, and network support to all EPP staff
16. Request for proposals and groundwork for all IT related procurements.

PROCUREMENT

Table 6: Completed Procurement

Item	Achieved or Completed	Targets LOP	% Completion
Procurement contracts (\$ million)	26.96	44.34	60.80

Purchase Orders Issued during the Month

The following Purchase Orders were issued during November:

1. Insurance for 41 Live Linemen. Amount \$2,090. (NTDC)
2. Dismantling, transportation, and pre-repair joint inspection of two damaged autotransformers. Amount \$104, 000. (PESCO)
3. Supply and delivery of multi-function printer. Amount \$ 2,600. (Admin.)
4. Live-line event management. Amount \$2,436. (Transmission)
5. Comprehensive insurance for 09 Toyota Vigo vehicles. Amount \$ 6,801. (NTDC)
6. Hiring warehouse rental space for live-line trailers and vehicles. Amount \$ 8,100. (NTDC)
7. Supply and delivery of personal protective equipment for live-line trainers. Amount \$50,649.60. (NTDC)
8. Rehabilitation of capacitor banks at Grid Station Tall, Bannu and Jahangira. Amount \$28, 600. (PESCO)
9. Supply and delivery of cooling fans and MCBs for PESCO. Amount \$71, 584. (PESCO)
10. Dedicated Internet connection for Lahore Office 10-Mbps, Internet CIR for one year. Amount \$13, 200. (Admin.)
11. Study to Determine the Limit of Integrating Intermittent Renewable (Wind and Solar) Resources onto Pakistan Grid Stations. Amount \$332,917. (NTDC)
12. Dell Server with accessories and software. Amount \$ 7,252. (Admin.)
13. Supply and delivery of four (04) sets of 245kV and twenty-seven (27) sets of 145 kV Circuit Breakers. Amount \$686,100. (NTDC and PESCO)
14. Workstations and chairs for Guest House. Amount \$1,300. (Admin)
15. Internet connection 6Mbps Package Connect 600, Monthly 600GB. Amount \$5,390. (Admin)
16. Supply and delivery of Bus Disconnecter, Current Transformer and Surge Arresters. Amount \$322,199.50. (NTDC and PESCO)
17. Technical Assistance on Rapid Environment Analysis (REA) of Transmission System for Wind Power Project and Patrind Hydro Power Project. Amount \$55,080. (NTDC)

Work Continued

1. ERP Implementation Project for NTDC: Technical bids reviewed and approval by DCOP in process. Financial evaluation and negotiation in process for ERP Implementation Project for NTDC. Approx. \$3,850,000.
2. Study for Enhancement of Transmission Capacity of NTDC: Consent letter sent to USAID for approval. Approx. Amount \$359,000.
3. LNG Business Management Intensive Training Program: Draft Delivery order and Sub contract and sent to vendor. Amount \$319,500.
4. Software for NTDC Design Department: Consent letter received from USAID and draft Purchase order sent to HO for approval. Amount \$ 456,000.
5. Supply of Hardware Connectors and Conductors for NTDC Mardan and Nishatabad Grid Station: Technical review completed and financial analysis in process for Supply of Hardware Connectors and Conductors for NTDC Mardan and Nishatabad Grid Stations. Amount USD446, 500.

6. Oil Purification Plant: Technical review completed and financial analysis in process for Supply of two Oil Purification Plants for PESCO. Amount \$ 290,845.
7. Supply of four Crane-Mounted Trucks for PESCO: Bids opened. Technical in process. Amount \$300,000.
8. Supply of Nitrogen Injection Explosion Prevention and Fire Protection System: Technical completed and financial analysis in process for supply of Nitrogen Injection Explosion Prevention and Fire Protection System. Amount \$260,000.
9. Static Security Services: Request for Proposal sent to bidder for hiring Static Security Services for AEAI offices. Amount \$130,000.
10. Servers, Laptops, Desktop Computers, UPS, Printers, Scanners, Network Switches: Request for Proposal in process for supply and delivery of Servers, Laptops, Desktops, UPS, Printers, Scanners, Network Switches and Fiber Optics Cable for NTDC. Amount \$150,000.
11. Tools for Live Line: Request for Proposal drafted and sent to limited bidders with extended closing date December 04, 2014 for supply of Tools for Live Line Trainings. Amount \$ 75,000.

Planned Activities for the Next Month

- Purchase order/Subcontract for consultancy for study for enhancement of transmission capacity of NTDC's 500kV transmission system by the application of series compensation.
- Purchase order for software with training for NTDC Design Department.
- Purchase order and bid evaluation for static security services for AEAI offices.
- Purchase order for supply of nitrogen injection explosion prevention and fire protection system.
- Subcontract/work order for LNG Business Management Intensive Training Program.
- Bid evaluation process for supply of two oil purification plants for PESCO.
- Bid evaluation process for LNG Business Management Intensive Training Program.
- Bid evaluation for live line tools & equipment.
- Bid evaluation process for hardware for NTDC IT department.
- Follow-up for delivery of SAN and equipment for NTDC.
- Inventory tagging and arranging Material Receiving Report (MRR) for delivered goods.

LIST OF KEY MEETINGS

Table 7: List of Key Meetings Conducted in November 2014

Meeting with	Date	Location	Purpose	Outcome/Result
Mangla Project Staff Mr. Abdul Wahab, Senior Engineer (Mechanical) Mr. Hasan Khalid, Sub-engineer, Project Staff Mr. Gul Rehman, Store Keeper	Nov. 07, 2014	Mangla Power Station	To brief on EMMP of Mangla Project	<ul style="list-style-type: none"> EMMP briefed to Project staff, emphasizing at different aspects of the EMMP's implementation requirements.
WAPDA, USAID, EPP	Nov. 07, 2014	EPP Energy House, Islamabad	Discuss Kaitu Weir (and affiliated structures) Project	<ul style="list-style-type: none"> WAPDA to make a new PCI to cover cost of 132kV transmission line; Provide details of security costs; Land acquisition to be completed; and Design issues to be addressed.
Mr. Sher Afzal, CE Tarbela	Nov. 10, 2014	Tarbela Power Station	To discuss the status of procurement of equipment and progress on meeting the conditions precedents set forth in Activity Agreement for Tarbela Phase II	<ul style="list-style-type: none"> Procurement of remaining equipment's was discussed and advised to expedite the procurement. WAPDA to expedite the progress on meeting the conditions precedents.
Mr. Iftikhar, CEO Jamshoro	Nov. 13, 2014	Jamshoro Thermal Power Station	To discuss the status of Jamshoro	<ul style="list-style-type: none"> Procurement of remaining equipment's was discussed and advised to expedite the procurement.
CE Telecom, NTDC	Nov. 13 - 14, 2014	WAPDA House, LHR	Discuss SCADA improvement plan	<ul style="list-style-type: none"> Making a backup path for the existing telecom network is more important. The OPGW network, NTDC currently has, is poorly designed – it's a linear design and has single point of failure. <p>A discussion focusing on rollout of radio links as a redundant communication path took place.</p>

Meeting with	Date	Location	Purpose	Outcome/Result
DG IT, CPPA, and XEN Metering, NTDC	Nov. 13, 2014	WAPDA House, LHR	DISCOs input on improving interface of Secured Metering System	<ul style="list-style-type: none"> NTDC agreed on displaying some of the parameters requested by DISCOs. <p>The developer, engaged by NTDC, for maintaining and developing the graphical user interface of the SMS is working on improving the interface.</p>
Planning Executives, NTDC	Nov. 14, 2014	WAPDA House, LHR	Inspection of room allocated for housing RTDS	<ul style="list-style-type: none"> Room is small to house equipment and staff – NTDC has been asked to arrange for bigger space! The room allocated can be extended – the two adjacent rooms are separated using a wooden wall, which can be removed to create more room. NTDC will be removing wooden wall by end of next month. <p>Cooling arrangements are not satisfactory for housing RTDS. NTDC has been requested to take care of cooling arrangements.</p>
NTDC Market Operations Exchange training participants	Nov. 14, 2014	AEAI Office, Islamabad	Conduct Security Risk and Fraud inquiry interviews and paperwork for J-I Visas	<ul style="list-style-type: none"> All 9 participants and 1 alternated successfully completed all J-I visa paperwork and SRFI interviews. Participants await R3 approval before receiving DS2019 forms. Travel scheduled for January 11.
NTDC Market Operations Exchange training participants	Nov. 14, 2014	AEAI Office, Islamabad	Conduct Security Risk and Fraud inquiry interviews and paperwork for J-I Visas	<ul style="list-style-type: none"> All 9 participants and 1 alternated successfully completed all J-I visa paperwork and SRFI interviews. Participants await R3 approval before receiving DS2019 forms. Travel scheduled for January 11.
PSO, Qatargas (QG), EPP, FGE, WFW	Nov. 16, 2014	Doha, Qatar	Opening negotiations for LNG procurement on a G2G basis with QG, discussion on QG draft SPA	<ul style="list-style-type: none"> It was agreed by both parties that PSO would send a letter to QG covering those points that PSO would want adjusted in the draft SPA. Upon receipt, QG would then redraft the SPA [to submit a more serious version to PSO]. PSO would review and prepare a red line version to the extent needed to move forward. FGE prepared and submitted a revised strategy to GOP for assistance in next round of negotiations with QG.
Member Power, Mr. Badar	Nov. 18, 2014	WAPDA house	To discuss the status Mangla & Tarbela, Phase I & II	<ul style="list-style-type: none"> Progress of Tarbela & Mangla was discussed and WAPDA was advised to expedite the progress on conditions Precedents.

Meeting with	Date	Location	Purpose	Outcome/Result
CE TSG, NTDC	Nov. 20, 2014	NKLP 220kV Grid Station, LHR	Discuss about Live-Line Training Program and Rehab. of Tarbela Training Center	<ul style="list-style-type: none"> Shared the copy of report compiled by Live-Line consultants with NTDC. EPP would like to reserve the training center at Tarbela from February 2, 2015. Provision of tools for Tarbela Training Center – EPP may procure a set of tools for Tarbela too.
USAID, MPNR Representatives, LMKR and NuTech (via telecon)	Nov. 21, 2014	AEAI office	To discuss MPNR's proposal for inclusion of 14 additional wells data in the ongoing Shale Gas Resource Assessment Study	<ul style="list-style-type: none"> The request by DGPC/MPNR will be discussed in-house at USAID. In case of USAID approval in principle, MPNR will formally request USAID for additional budget for the Shale Gas Study to incorporate data of 14 additional confidential wells. Subject to USAID approval of additional budget/time, LMKR and EPP will make necessary amendments in the contractual arrangement to implement the additional testing. Milestone 4 report will be completed but held back pending conclusion of the results of additional testing and analysis. Thereafter, a comprehensive Milestone 4 resource assessment report will be issued, which will be presented to upstream oil and gas companies in a workshop. LMKR will be paid for the LOE contribution towards Milestone 4 Interim Report. DGPC will provide NOC on urgent basis to save time for collection and export of private confidential domain data to LMKR/NuTech. This will not take more than 2 weeks keeping in view the shipping time. Part work on Component 2, which is not dependent on the final resource assessment, will continue in parallel to save time. Based on the decision of the MPNR, LMKR will request DGPC that OGDCL should issue an invoice cancellation note and provide the additional cores data along with relevant logs for the confidential wells free of cost.

Meeting with	Date	Location	Purpose	Outcome/Result
CE GSO, FESCO	Nov. 21, 2014	FESCO, FSD	Installation of the LEDs at FESCO Control Room	<ul style="list-style-type: none"> • 2x Displays were installed at FESCO HQ. • Demo of the interface and working of the system was explained to FESCO engineers. Inputs given by FESCO were noted and shared with NTDC for further refinement of the system
Hydro O&M training participants	Nov. 21, 2014	Serena Hotel, Islamabad	Conducted post-evaluations and interviews with O&M training hydro participants	<ul style="list-style-type: none"> • EPP identified O&M improvements and challenges after the completion of the second batch of participants training.
Hydro O&M training participants	Nov. 21, 2014	Serena Hotel, Islamabad	Conducted post-evaluations and interviews with O&M training hydro participants	<ul style="list-style-type: none"> • EPP identified O&M improvements and challenges after the completion of the second batch of participants training.
SAN training participants	Nov. 24, 2014	AEAI Office, Lahore	Conducted focus group discussions with NTDC Grid Operations exchange training participants	<ul style="list-style-type: none"> • EPP identified SAN improvements and challenges one month after training.
SAN training participants	Nov. 24, 2014	AEAI Office, Lahore	Conducted focus group discussions with NTDC Grid Operations Exchange training participants	<ul style="list-style-type: none"> • EPP identified SAN improvements and challenges one month after training.
NTDC Grid Operations Exchange training participants	Nov. 25, 2014	AEAI Office, Lahore	Conducted post-evaluations, interviews, and action plan review via presentation session with NTDC Grid Operations Exchange training participants, their respective officials, and EPP's transmission experts	<ul style="list-style-type: none"> • EPP identified NTDC Grid Operation improvements and challenges one month after training.
NTDC Grid Operations Exchange training participants	Nov. 25, 2014	AEAI Office, Lahore	Conducted post-evaluations, interviews and action plan review via presentation session with NTDC Grid Operations Exchange training participants, their respective officials and EPP's transmission experts	<ul style="list-style-type: none"> • EPP identified NTDC grid operation improvements and challenges one month after training.

Meeting with	Date	Location	Purpose	Outcome/Result
Member Energy	Nov. 27, 2014	Planning Commission, ISB	Presented on EPP activities and their status	<ul style="list-style-type: none"> Various studies being carried out by EPP were discussed. Member was updated on ongoing EPP Transmission activities.
NTDC Commercial Operations Exchange training participants	Nov. 24-25, 2014	WAPDA Office, Lahore	Conducted interviews with the nominated participants for NTDC Commercial Operations Exchange visit to the U.S.	<ul style="list-style-type: none"> Following shortlisting, EPP will seek USAID approval of 9 participants and 2 alternates before commencing the J-1 Visa process. Through this exchange, EPP aims to improve transmission capacities in Pakistan's power sector while establishing professional relationships to draw upon after the conclusion of the program.
NTDC Commercial Operations Exchange training participants	Nov. 24-25, 2014	WAPDA Office, Lahore	Conducted interviews with the nominated participants for NTDC Commercial Operations Exchange visit to the U.S.	<ul style="list-style-type: none"> Following shortlisting, EPP will seek USAID approval of 9 participants and 2 alternates before commencing the J-1 Visa process. Through this exchange, EPP aims to improve transmission capacities in Pakistan's power sector while establishing professional relationships to draw upon after the conclusion of the program.

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