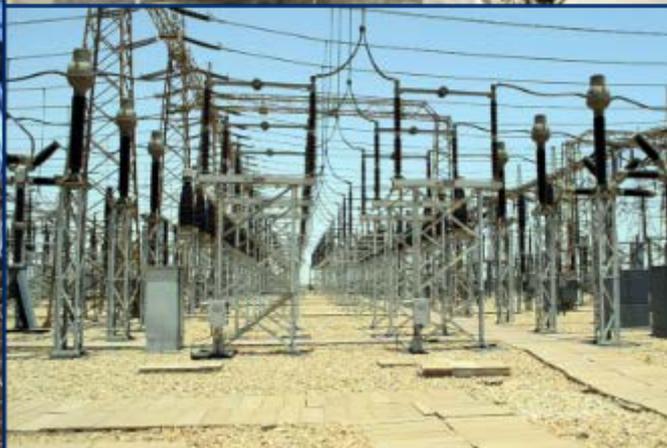




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USAID/ENERGY POLICY PROGRAM MONTHLY PROGRESS REPORT September 2014



October 2014

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USAID/ENERGY POLICY PROGRAM

MONTHLY PROGRESS REPORT

September 2014

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Cover Photos: Jamshoro Thermal Power Station Heat Rate and Grid Station, Power Transformer at DI Khan
Credit: Muhammad Zafar Taj

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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
EMMP	Environmental Mitigation and Monitoring Plan
EPP	Energy Policy Program
FARA	Fixed Amount Reimbursable Agreement
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
KPK	Khyber Pakhtunkhwa
kV	Kilovolts, 1000 volts, unit of electric potential (voltage)
LNG	Liquefied Natural Gas
LSA	LNG Services Agreement
MOF	Ministry of Finance
MPNR	Ministry of Petroleum and Natural Resources
MTPS	Muzaffargarh Thermal Power Station
MW	Megawatt, unit of electrical power, 1 million watts,
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
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
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 following results during the month of September 2014.

Table I: Monthly Highlights

Component 1

- EPP met WAPDA to discuss the installation of remaining four digital governors and progress of remaining procurements (Spare winding, SCADA System, Small drainage pump) and advised WAPDA to expedite the process. However, EPP anticipated that the completion of installation of four governors and remaining procurements will go beyond the completion date.
- EPP facilitated the meeting between USAID and Muzaffargarh procurement specialist. During the meeting progress of the project was reviewed and bottlenecks were discussed.
- EPP facilitated the meeting between USAID and Guddu Chief Executive Officer (CEO) to discuss the viability of request. The total amount disbursed to the GOP as of September 2014 is US\$ 17.34 million.
- Performance Efficiency Improvement Plan is being drafted in consultation with JPCL for Jamshoro Thermal power station (JTSP) so that the 270 MW gains achieved at JTSP be sustained and also to improve the plant's operating life.

Component 2

- During the month, EPP met with Joint Secretary, Policy (MWP) to discuss areas of support. As per the request of MWP, the following activities were carried out.
- EPP advisor at the Energy Wing, Planning Commission updated the File Movement Management Information System, an Excel-based online tool. A presentation was prepared and delivered to all Energy Wing officials about the system, which was subsequently accepted for integration into the current online system.
- Work continued for preparation of an update regarding power sector payables and receivables up to 30th June 2014. This will help Corporate Finance Wing to prepare some proposals for the settlement of power sector circular debt.
- Attended the meeting of Energy Resource Rationalization Committee chaired by the Minister for Finance on 9th September 2014. In this meeting, financial position of the power sector was reviewed and the Minister advised the Corporate Finance Wing to provide him with an update regarding Power Sector Circular Debt in the upcoming meeting of the committee.
- Assistance was being provided to C.F. Wing, Ministry of Finance in preparation of views/ comments on the summary for the ECC submitted by the Ministry of Textile Industry proposing exemption from electricity and gas load shedding for the textile sector.
- Assistance was provided to the C.F. Wing, Ministry of Finance in preparation of views/comments on the summary for Council of Common Interest (CCI) submitted by the KPK Government for allocation of 100 MMCDF gas for power generation project in KPK.

Component 3

- EPP provided detailed information of project planning, project cost, schedule, development approach, and financial plan of Diamer-Basha Dam Project for the proposed Conference in Washington D.C on October 8, 2014.
- EPP held series of meeting with WAPDA USAID to get the detail cost estimates, cash flow. Milestone payment dates, bidding process and site activities of Kaitu Weir and Affiliated Structure. EPP also provided USAID with detailed information about the shortcomings in approved PC I by the Planning Commission of Pakistan.

Component 4

- Integration of intermittent renewable resources with the national grid: the approved technical evaluation report was submitted to procurement. The financial evaluation of bids is underway.
- Load flow study: Purchase Order (PO) has been sent to the consultant for signing.
- NTDC technical audits of 26 out of 41 grid stations have been completed (63% completed). Final reports on 20 grid stations have been compiled.

PROGRESS IN NUMBERS

Indicator	Unit	LOP Target	Achieved in September FY2014	Total Achieved as of September FY 2014	LOP % Achieved as of September FY2014
I.a: GWh of energy sold	GWh	TBD	0	0	0%
I.1.a: Number of beneficiaries with improved energy services due to United States Government assistance	Individuals	13,624,226	740,960	13,926,976	102%
I.1.b: GWh of energy availability	GWh	7,880	560.64	8,130	103%
I.1.c: MW available to meet power sector demand as a result of USG assistance	MW	1,303	80	1,368.1	104%
I.1.1.a: MW of electrical power added or saved as a result of USG improvements	MW	875	80	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	105	58%
I.1.1.d: Number of transmission bottlenecks resolved	No.	121	0	83	68%
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.b: Percent Change in the Gross Annual Accumulation of circular debt	%	140%	0	0	0%
I.2.1.a: Number of key policies and regulations in various stages	No.	12	1	11	91%
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	5	42%

¹ EPP recently changed the 1.1.4.a Life of Program target from USD \$48.5 million to \$193.5 million as per recommendation of MSI's data quality assessment. This consists of Gomal Zam funds (US\$ 33.5 million), Mangla funds (US\$ 15 million), and LNG fund (US\$ 145 million), which consists of the 6-month charter for tugboats (US\$ 5 million), FSRU charter (US\$ 20 million), and infrastructure of jetty and pipelines (US\$ 120 million).

Component-Wise Summary

Indicator	Unit	Component	LOP Target	Achieved in September FY2014	Total Achieved as of September FY 2014	LOP % Achieved as of September FY2014
I.I.a: Number of beneficiaries with improved energy services due to United States Government assistance	Individuals	Total	13,624,226	740,960	13,926,976	102%
		I-Generation	7,993,106	740,960	9,382,406	117%
		IV-Transmission Throughput Capacity	5,477,544	0	4,467,782	82%
		IV – Transmission Added/Saved	153,576	0	76,788	50%
I.I.b: GWh of energy availability	GWh	I & IV	7880	560.64	8,130	103%
		I-Generation	4,796	560.64	5,642.29	117%
		IV-Transmission Throughput Capacity	2999.42	0	2446.5	82%
		IV – Transmission Added/Saved	84	0	42	50%
I.I.c: MW available to meet power sector demand as a result of USG assistance	MW	I & IV	1,303	80	1,368.1	104%
		I-Generation	863	80	1,013	117%
		IV-Transmission Throughput Capacity	428	0	349.1	82%
		IV – Transmission Added/Saved	12	0	6	50%
I.I.Ia: MW of electrical power added or saved as a result of USG improvements	MW	I & IV	875	80	1,019	116%
		I-Generation	863	80	1,013	117%
		IV – Transmission Added/Saved	12	0	6	50%

PLANNED ACTIVITIES

EPP will focus on the following high-impact activities in October 2014.

Table 2: Planned Activities

- Support to USAID for visit to the Guddu Thermal Power station.
 - Inauguration ceremony of Satpara Multipurpose dam project.
 - 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&6 at Muzaffargarh thermal power station.
- **LNG:** Signing of sub-contract and delivery order for consulting services for LNG import terminals at PQA; 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; implementation of work plan for LNG procurement strategy; support to GOP in G2G negotiations for LNG procurement; capacity building of GOP stakeholders.
 - **Shale Gas:** Completion of Milestone #4 and commencement of Component – 2.
 - **Upstream Oil & Gas Support:** Finalization of Draft Model Supplemental Agreement for conversion of Policies and report on the summarization of Peer Analysis data with inferences for Pakistan.
- 2 ROR hydro Project: Finalizing Activity Schedule and PIL Agreement.
 - Kaitu Weir & Affiliated Structure: Activity Schedule and PIL for the project.
- Handover of Protection & Instrumentation mobile vans and Tools & Plants to PESCO.
 - Rehab of Capacitor Banks at Bannu, Tall and Jehangira 132kV GS.
 - Repair of damaged Transmission Line Towers (132kV & 66kV) in KPK.
 - Commissioning of 26 MVA power transformer at Chakdara GS.
 - Technical audit of NTDC grid stations.
- NTDC Grid Operations Exchange pre-training briefing to draft plan of action prior to the departure to U.S. The Grid Operation Exchange Visit will be conducted in October. Following completion of the Exchange Visit, EPP will arrange a daylong debriefing of the trip by the participants for US Government officials in Islamabad/Lahore.
 - The first of the three anticipated Hydel O&M training courses in October 2014.
 - Continue to conduct post-training evaluations for GENCOs I, II, and III related to O&M training in October 2014.
 - Monitor and evaluate PowerSIM progress at MPNR following the delivery of Power SIM model.
 - Gender assessment of key stakeholders to be drafted and shared with USAID for comments.
- Host visible and impact-oriented events that highlight key program deliverables; and provide outreach assistance across all program components.

PROGRAM OVERVIEW

EPP is a multi-year, USAID-funded initiative to increase power generation, 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 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 towards immediate energy shortages and 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 four components of the program:

Component 1 - Monitoring & 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 (3 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 secondment 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

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

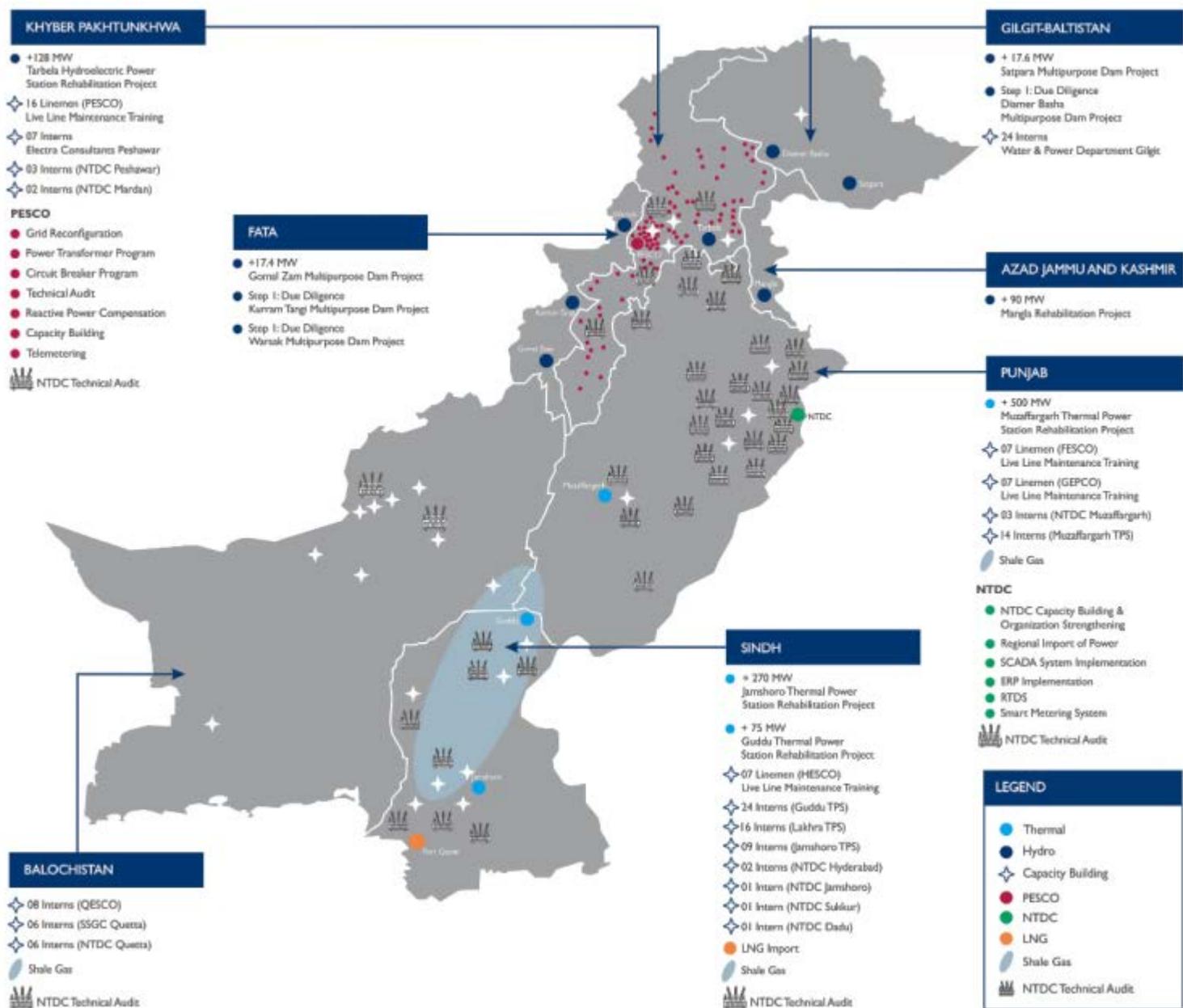
⁴ C.4.4, Component Three, pg. 12 of 46, Contract No: AID-EPP-I-00-03-00004

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); 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, Liquefied Natural Gas (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 generation companies (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 & 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 plant (Tarbela and Mangla), and construction of two new multipurpose dams (Gomal Zam Dam and Satpara Dam). Total USG funding for these projects is US\$ 291.7 million (per the revised agreements) that will result in an estimated gain of 953 MW for Pakistan's national grid.

As of September 2014, US\$ 146.82 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 the table below:

Table 3: Results Achieved through G2G Projects

Projects	USG Funding (US\$ Million)	Paid (US\$ Million)	Completion Date	MW Gains/Benefits	
				Target	Achieved (Aug 31, 2014)
Tarbela	16.50	13.95	12/31/14	128.0 MW	128.0 MW
Jamshoro	19.32	16.39	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	146.82		953 MW	1013 MW

During this reporting period, the cumulative number of people who have directly benefited from EPP's efforts stands at US\$ 13.90 million or 7.8% of population.

As of this reporting period, EPP's efforts have improved the financial performance of energy sector entities by US\$ 586 million. This represents approximately 6.7% of 2012's circular debt.

80 megawatt gains were achieved during this reporting period as a result of Component I activities, EPP's efforts in support of U.S. Government energy infrastructure projects have resulted in 1013 MW restored or added to Pakistan's grid.

Rehabilitation of Tarbela Hydropower Plant

During the reporting month, WAPDA signed the Activity Agreement for Tarbela Repair and Maintenance Phase II Project and now the Agreement is in process of signing with the Economic Affairs Division (EAD). USAID is funding US\$ 25 million for Tarbela Repair and Maintenance Phase II Project out of which US\$10 million is sub-obligated under this 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 megawatts about 60 GWh of energy per annum and oil savings of US\$ 12 million per annum is also expected with this replacement. EPP facilitated WAPDA throughout the process and had several meetings on

it. The phase II project will be implemented after the signing of a separate project implementation letter (PIL).

The rehabilitation work (Phase I) thus far has resulted in the restoration of 128 MW at the Tarbela hydropower plant. Replacement of the generator windings at units 1, 3 and 4, and the installation of relief valve seals, guides and pumps is now complete. Digital governors installed and commissioned at units 3, 4, 5, 6, 7 and 9. Further, shutdown for the installations of the remaining four digital governors will take place during the “lean flow period” in November this year. The digital governors will aid in the smooth operation of the power station and the remaining replacement/repair work (Spare winding, SCADA System, Small drainage pump) will increase the reliability and sustainability of the power plant, but not support restoration of additional megawatts.

EPP met with WAPDA to discuss the installation of the remaining four digital governors and progress of remaining procurements (Spare winding, SCADA System, Small drainage pump) and advised WAPDA to expedite the process. However, EPP anticipated that the completion of installation of four governors and remaining procurements will go beyond the completion date.

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

Gomal Zam Multipurpose Dam Project (Project Completed)

With US\$ 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 is now complete, and was inaugurated by U.S. Ambassador Olson in September 2013.



Figure 3: 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 US\$ 26 million in committed funding has been disbursed to the GOP.

The dam has added 17.6 MW to the Skardu grid, and 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. 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 inclement weather.



Figure 4: Satpara Multipurpose Dam Project

Muzaffargarh Thermal Power Station Rehabilitation Project

USAID funded rehabilitation at 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. Major equipment has been installed and rehabilitated at MTPS, and procurement of the remaining equipment is in process.



Figure 5: Muzaffargarh Thermal Power Station

During the reporting month, equipment under PIL Item#25: Repair of winding and stator of Generators and testing of units 5&6 reached at the power plant site. EPP

expert will inspect the arrived equipment to ensure that the equipment is in compliance with the specifications mentioned in the project implementation letter (PIL).

EPP facilitated the meeting between USAID and Muzaffargarh procurement specialist. During the meeting progress of the project was reviewed and bottlenecks were discussed. Muzaffargarh procurement specialist was advised to expedite the procurement of remaining equipment to complete the project by December 2014. However, EPP anticipated that the completion of the outstanding procurements will go beyond the project completion date mentioned in the Activity Agreement.

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

Jamshoro Thermal Power Station Rehabilitation Project

USAID funded rehabilitation at 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 MTPS, and procurement of the remaining equipment is in process.

On 26th September, Senior Energy Engineering Specialist from USAID energy office visited the Jamshoro power station. The visit was critical to expedite the procurement of remaining equipment and to complete the rehabilitation by December 2014. However, EPP anticipated that the completion of the outstanding procurements will go beyond the project completion date mentioned in Agreement.

EPP received a claim of US\$ 958,500 against PIL item#11: Purchasing of fuel oil additives to prevent slag formation and cooling water treatment chemicals to prevent scale buildup for Units 1, 2, 3, & 4. EPP is scrutinizing the claim to ensure that the technical specification of equipment is as per the PIL.

As of September 2014, out of the obligated amount of US\$ 19.32 million, the total amount disbursed to the GOP stands at US\$ 16.39 million for JTPS.

Rehabilitation of Guddu Thermal Power Station

In September, EPP added 80 MW to the national grid after ensuring the sustainability of the three rehabilitated turbines (GT-7, GT-8 & ST-5). The added 80 MW exceeds the project objective of 75 MW given in the Agreement and sufficient to supply electricity to 740,960 individuals. EPP also coordinated with Guddu & General Electric (GE) to complete the punch list items. Furthermore, EPP supported in processing tax exemption from USAID for equipment worth US\$ 18,095.1



Figure 6: Guddu Thermal Power Station

CPGCL's requested USAID for the additional funding of US\$ 9.64 million for rehabilitation of other one turbine (GT-9), which will add 150 MW to the national grid. EPP facilitated the meeting between USAID and Guddu Chief Executive Officer (CEO) to discuss the viability of request. The total amount disbursed to the GOP as of September 2014 is US\$ 17.34 million.

Mangla Dam Rehabilitation Project

USAID is providing US\$ 150 million to GOP for the Mangla Dam Rehabilitation Project, out of which US\$ 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.



Figure 7: Generators of Mangla Power Station

In September, EPP met with WAPDA to discuss the bottlenecks and to expedite the progress. WAPDA completed the evaluation report for the procurement of major equipment's (Turbine and Generators for Unit 5 & 6) and the contract may be awarded by November 2014, while model testing is to be completed by August 2015, which will trigger disbursement of US\$ 7.614 million. For procuring transformers, tenders issued to the prequalified bidders and completion of its design is expected by June 2015, which will trigger another US\$ 1.835 million. Procurement of other equipment (Inlet Valves & Seals and Cranes) is also in process.

As per Activity Agreement, the project completion date is December 31, 2017 and the total amount disbursed to GOP as of September 2014 is US\$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 NEPRA-compliant Heat Rate tests in order to obtain a revised tariff from NEPRA, which will reflect the actual costs incurred by GENCOs in producing electricity and increase annual revenues through fuel saving of US\$70 million per annum.

In September, EPP continued working level discussions with JPCL regarding USAID support for improving the commercial and technical performance of GENCOs. Performance Efficiency Improvement Plan is being drafted in consultation with JPCL for Jamshoro Thermal power station (JTPS) so that the 270 MW 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.



Figure 8: Heat Rate Tests being Conducted at Muzaffargarh and Jamshoro Thermal Power Plants

ISSUES/CONSTRAINTS AND STEPS TAKEN TO RESOLVE THEM

- Procurement of remaining equipment's at Jamshoro & Muzaffargarh Project. EPP facilitated in meeting of USAID with plant management to review the progress and to expedite the procurement.
- Installation of punch list items at three rehabilitated turbines (GT-7, GT-8 & ST-5) of Guddu Power Station. Guddu requested NPCC for the shutdown in order to complete the punch list items.
- Tax Exemption Letter from USAID to GOP implementing partners. EPP is providing support in getting the tax exemption certificate from USAID.
- Procurement of remaining equipment at Tarbela project. EPP met with WAPDA to expedite the procurement.

ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

- Support to USAID for visit to the Guddu Thermal Power Station.
- Inauguration ceremony of Satpara Multipurpose dam project
- 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&6 at Muzaffargarh thermal power station.

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 secondment 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

During the reporting quarter, EPP continued to provide technical assistance to the GOP to support energy sector restructuring and reform, including more effective market policies, better targeting of subsidies, and capacity building of key institutions (policy makers, planners, regulators, facility managers, and project implementers). EPP's efforts are geared towards improved policy implementation that will help ensure greater efficiency and higher quality customer service, better sector and business management, increased political support for reforms, and eventually full cost recovery leading to sustainability. Proper implementation of these reforms will also provide a business environment that encourages public and private sector investment into the fuel and power supply networks, including cleaner energy technologies. Pricing reforms and the introduction of improved commercial practices in the power distribution sectors will support investment, increase self-financing for the sector to maintain and expand services (and reduce over-dependence on the GOP budget), and mitigate future growth in demand for more energy services.

Improved Policy Implementation

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

More Autonomous Energy Sector Entities

NTDC Performance Contract: The Ministry of Water and Power has requested EPP to initiate the process of developing a Performance Contract between GOP and NTDC. The objective of this Contract is to allow NTDC adequate managerial and operational autonomy to ensure that the Company can achieve the agreed performance targets set forth. The major areas of focus will include:

- Defining the Company's vision, mission and objectives
- Responsibilities and Commitments of the Company
- Performance Evaluation parameters and targets
- GOP Support and Obligation
- Monitoring Process
- Duration of the Contract

EPP will be working with NTDC and liaise with MWP to finalize the preparation of the Contract. Meetings will be held with relevant stakeholders shortly.

Business Transfer Agreement (BTA): EPP team held a meeting with PDP to discuss the concerns/issues on BTA between NTDC and CPPA, and prepared and circulated the minutes of the meeting. 'PP's viewpoint about CPPA being the financial clearing house has been documented in the MOMs which will address the main concerns regarding the risk management and cash flows.

Improved Capacity of USAID-Supported Energy Public Sector Entities

- The latest version of PowerSIM is being updated with the most recent data available from publicly available sources. The model is also being validated and tested for accuracy.
- The model and the User Manual will be available for circulation to stakeholders shortly.
- Further hands-on training at Ministry of Petroleum and Natural Resources is scheduled.
- Training on PowerSIM at the Planning Commission is scheduled.
- Introductory meetings to present PowerSIM to other stakeholders in the Power Sector have been scheduled.

SUPPORT TO MINISTRY OF FINANCE

In the reporting quarter EPP's ongoing support to the Ministry of Finance provided impartial and transparent advice and support that promotes the GOP's and USG's shared vision for sector reform. During this quarter, EPP's embedded advisor provided the following assistance:

- EPP provided assistance to the Corporate Finance Wing of the Ministry of Finance (MOF) by reviewing the TDS claims submitted by the Distribution Companies through the Ministry of Water and Power for the month of April, 2014.
- Work continued on the Diagnostic Analysis of the Regulatory Framework for NEPRA. The comments received from various stakeholders are being examined by the committee constituted by the Ministry of Finance.
- EPP lent support to the Corporate Finance Wing of MOF as they prepared their comments on the draft summary for ECC that was submitted by the Ministry of Petroleum and Natural Resources regarding the revision of the Mari Wellhead Gas Pricing Agreement. The proposal provides changing the present gas pricing formula (cost plus) with a crude oil pricing formula. In support of this effort, EPP held a meeting on June 11 with the Ministry of Petroleum and Natural Resources to obtain more details. In this meeting, MPNR was asked to analyze the impact of this proposal on GOP fertilizer subsidies. Mari Gas is the major supplier of gas to fertilizer the sector. MPNR was also asked to provide information to MOF on the impact of their proposals related to the Gas Development Surcharge (GDS).
- The updated Draft Policy Framework for Private Sector Transmission Line Projects is undergoing a review in consultation with MOF's Corporate Finance Wing. These comments will be included in a summary that will be submitted by the Ministry of Water and Power to ECC.
- EPP helped prepare the Draft Security Documents for investment in Solar Power Generation Projects that were submitted by the Alternative Energy Development Board (AEDB). The draft documents are being examined in consultation with MOF's Corporate Finance Wing to help prepare their comments on these documents. These documents will ultimately be submitted by the Ministry of Water and Power to ECC for their approval.
- EPP supported MOF's Corporate Finance Wing in preparing a brief regarding payment of net hydel profits to KPK.
- EPP reviewed the power sector's additional revenue requirements in consultation with MOF's Corporate Finance Wing to ensure better power supply during the month of Ramadan.

Impact

- Assistance provided by the EPP Advisor helped Ministry of Finance to formulate their views/comments on various policy issues.

Issues Constraints

- No constraints were faced during the reporting period.

More Autonomous Energy Sector Entities

Work continued on the Diagnostic Review of NEPRA, which is being done by the Ministry of Finance in pursuance of the direction of Council of Common Interest (CCI). The replies sent by the

provincial governments, the committee constituted by the Ministry of Finance in this regard is reviewing distribution companies, and power generators on the prescribed questionnaires.

Support to Ministry of Petroleum & 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, Liquefied Natural Gas (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 GP'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

- Request for Consent, umbrella Sub-Contract, and Delivery Order for the selected bidder for providing consulting services for LNG import terminals to PQA was sent to USAID for approval. A Brief regarding selected port consultant was also sent to USAID.
- Legal review and discussions among WFW, SSGC, EETPL, and their respective legal counsels to finalize the draft Option and Direct Agreements, and other LSA open items continued.
- FGE prepared a report for SSGC in conjunction with WFW on LSA open items related to FSRU Option Agreement for Fair Market Value assessment.
- The following documents submitted by FGE as part of its deliverables were circulated to GOP and other stakeholders:
 - Market Study Part 1&2
 - Comments on Qatar Gas HOA/SPA
 - LNG Procurement Strategy and Work Plan (Road Map)
- Discussions with PQA continued during the month regarding the future course of action on Full Mission Bridge Simulation Study.
- A Skype call was held with FGE and ISGS on September 16 to discuss the program and way forward for meeting potential G2G and other LNG suppliers. Another Skype call was held with FGE on September 23 to discuss and finalize the travel plan for meeting potential G2G and other LNG suppliers in Malaysia and Singapore during the last week of September 2014. Meetings between the GOP delegation with potential G2G and other suppliers took place from September 29-30 in Malaysia and Singapore. FGE and WFW assisted the GOP delegation.
- A draft Indemnity Agreement between USAID and relevant GOP stakeholders was prepared for USAID consideration. This Indemnity Agreement provides for the exclusion of any and all liabilities of USAID, its contractors, and sub-contractors implementing the USAID Technical Assistance programs related to LNG imports, shale gas, and other upstream oil & gas sector activities for benefit of the GOP Clients.

Shale Gas

- Work on Milestone-4 is in progress. After discussion of LMKR with DGPC, NuTech is evaluating the proposal for inclusion of additional confidential wells, along with the time involved and additional cost to be incurred. Upon receiving NuTech's response, necessary recommendations would be made to USAID in line with the discussions held on September 12, 2014.
- Report on the technical visit of DGPC/MPNR to NuTech Labs in Houston was received from LMKR.
- Upon review of the Basin Study Report, LMKR had requested OGDCL through DGPC for release of the copies of the relevant extracts from the report to which OGDCL did not

respond. The matter was also raised with DGPC in a meeting held on September 11, 2014. However the matter remains unresolved.

- DGPC has made certain observations on Milestone-3 report, which are being evaluated in consultation with LMKR and NuTech. Response to DGPC would be sent in due course.

Upstream Oil and Gas

- **The proposed amendment in the E&P Rules to process the pending lease extension cases has been cleared by Law Division and is being published in the Gazette of Pakistan. This regulatory reform is a major achievement of EPP.**
- Advisory work on day-to-day issues of DGPC continued during the month.
- Work progress on outstanding cases was reviewed in the weekly review meetings held with PTS throughout the month.
- RQ-2 amendment with PTS was executed with effect from July 1, 2014.
- Draft framework for utilization of stranded gas fields for power generation prepared upon the request of Advisor MPNR/Chairman OGDCL was handed over to DGPC for consideration.
- Model Supplemental Agreement for PSA (Offshore) was finalized and handed over to DGPC for seeking the input of the industry. DGPC was also requested to process the GOP approval of the Onshore Model Supplemental Agreement.
- Upon USAID request, DGPC Manpower Plan was prepared by EPP and shared with USAID, which is now under consideration. The comments of EPP on USAID proposal regarding the Implementation Unit in DGPC were also submitted.
- The short-term PTS legal consultant visited Pakistan for discussions with the stakeholders in the context of review of E&P Rules and policies.
- EPP team provided necessary input to Additional Secretary MPNR on three cases regarding policy implementation on which the advice was sought.
- The matter of provision of additional information by PPL on the financial model regarding Sui Mining Lease extension was discussed with DGPC and PPL. The company agreed to send its experts for discussion on the subject soon.
- After obtaining industry inputs, summary on the proposed Flare Gas guidelines was prepared by DGPC and submitted to MPNR for further processing and approval of the Council of Common Interest (CCI).

SUPPORT TO MINISTRY OF PLANNING AND DEVELOPMENT

Policy Analysis and Planning: PowerSIM has been adopted at the Planning Commission (PC) and is now becoming an accepted GOP tool. PC will be using it for forecasting and analyzing the impact of policy decisions and for the five-year plans. EPP team has incorporated Pakistan's Generation Plan into the model and is helping PC to run different scenarios on PowerSIM for the 11th five-year plan. This includes providing accurate energy forecasts, as well as providing technical expertise in projected power sector key statistics. Hands-on training continued during the month at the PC for designated officials.

EPP advisor prepared presentation for Member (Energy) to present to the Secretary, Ministry of Planning, Development and Reform on transportation of fuel for upcoming power generation projects from Karachi Port and inland sources to project site. Presentation covers selected sites for projects, available facilities at the sites and additional requirement of infrastructure to deliver fuel on site through rail network.

At the request of Member (Energy), EPP Transmission team gave a presentation on NTDC and other transmission related projects currently being carried out.

Technical Assistance: EPP advisor at the Energy Wing, Planning Commission updated the File Movement Management Information System, an Excel-based online tool. A presentation was prepared and delivered to all Energy Wing officials about the system, which was subsequently accepted for integration into the current online system.

EPP provided general technical assistance and system administration to Member (Energy) office to carry out routine tasks smoothly. Scheduled backup was taken from Member (Energy) office of official data on separate drive for robust availability of data.

Planning Commission

Assistance on development of the Five-Year Plan is an urgent priority for Planning Commission. EPP Policy team has deployed resources at the PC 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

MWP

Due to the ongoing political situation, access to the Ministry of Water and Power has been difficult. As the EID holidays approach, key meetings and action items pertaining to MWP will now be completed after the holidays.

MPD

Assistance on development of the Five-Year Plan is an urgent priority for the Planning Commission and needs to be completed in the upcoming days. EPP Policy team is in regular contact with the Member Energy and has deployed resources at the PC to ensure constant interaction with the PC Energy Wing team. However, the training schedule has been affected due the power outages/political situation.

MOF

No constraints were faced during the reporting period.

MPNR

LNG

Full mission bridge simulation study for PQA had to be put on hold upon finding out that EETPL had sponsored a similar study. A decision on whether to undertake the study or not would be made following review of the report of simulation study sponsored by EETPL, once available.

Discussions had to be opened with the bidder ranked four for providing consulting services for LNG import terminals at PQA upon refusal of top three ranked bidders to send their foreign consultants to Pakistan due to security concerns. A rationalized manpower plan was negotiated with the bidder ranked 4 and Request for Consent, umbrella Sub-Contract and Delivery Order sent to USAID for approval.

Shale Gas

OGDCL has invoiced LMKR for the well cores it provided which were shipped to NuTech Labs for assessment. The invoiced amount is excessive, prompting LMKR to raise the issue with DGPC. DGPC assured LMKR that this data would not be charged as proposed by OGDCL and should be included in the study. The matter has been taken up with OGDCL, however the matter is still pending.

DGPC recommended including additional Confidential Wells data in the ongoing resource assessment study (6-9 cuttings/cores). This would lead to additional time and cost for resource assessment. LMKR has provided a map plotting the additional wells with the existing Wells to highlight the coverage area. LMKR would indicate the value addition by the inclusion of such data along with estimates for additional time and cost required to complete the Shale Gas resource assessment. Based on that information, EPP would recommend to USAID whether to include the

additional assessment as part of the ongoing study or to conclude the study in progress, and issue an Addendum to the Shale Gas Resource Assessment report at a later stage to cover additional wells.

Upstream Oil & Gas Support

There is a serious constraint of manpower in DGPC. The issue was discussed with DGPC, Secretary and the Advisor MPNR as it is impeding the progress of work under Work Area #4 (advisory support on day to day issues). Four professionals (2 Engineers, 1 Finance, and 1 IT professional) from ISGS have been deputed to work in DGPC. However, these professionals will require on the job training to perform their respective duties to be assigned by DGPC. EPP has submitted a DGPC manpower plan to USAID for providing the services of a professional team on the request of USAID to clear the backlog of the pending cases.

ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

MWP

- Stakeholder meeting to finalize PPA for Jamshoro.
- Preparation of Performance Contract with NTDC, after consultation with relevant stakeholders.
- Completion of Fuel Supply Agreement Template.
- Power SIM training of Section Officers.

MPD

- Assistance to the Member Energy on a variety of issues in the Power Sector including transmission, generation, circular debt analysis
- Continued application of PowerSIM through the Five-Year Plan

MOF

- The assistance will be provided to examine and formulate views on the policy proposals to be submitted by the energy sector ministries / entities to the Ministry of Finance.
- Monitoring of Power Sector Circular Debt.

MPNR

- **LNG:** Signing of sub-contract and delivery order for consulting services for LNG import terminals at PQA; 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; implementation of work plan for LNG procurement strategy; support to GOP in G2G negotiations for LNG procurement; capacity building of GOP stakeholders.
- **Shale Gas:** Completion of Milestone #4 and commencement of Component – 2.
- **Upstream Oil & Gas Support:** Finalization of Draft Model Supplemental Agreement for conversion of Policies and report on the summarization of Peer Analysis data with inferences for Pakistan.

COMPONENT 3: NEW PROJECTS, PLANNING AND DEVELOPMENT

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

Run-of-River (RoR) Projects

EPP continued providing information on Cost Validation of two ROR (Dubair & Allai Khawr) for Activity schedule. EPP provided detailed information of both projects including EPP first site visit to establish construction status of both the projects.

Kurram Tangi/Kaitu Weir Project

EPP held series of meeting with WAPDA USAID to get the detail cost estimates, cash flow. Milestone payment dates, bidding process and site activities of Kaitu Weir and Affiliated Structure. EPP also provided USAID detailed information to USAID about shortcomings in the approved PC I by the Planning Commission of Pakistan.

ADDITIONAL SUPPORT TO USAID

EPP provided detailed information of project planning, project cost, schedule, development approach, and financial plan of Diamer-Basha Dam Project for the proposed Conference in Washington D.C on October 8, 2014.

ISSUES/CONSTRAINTS AND STEPS TAKEN TO RESOLVE THEM

- ROR Hydro Projects: Dongfong and Sino Hydro are two Chinese Contractor in both of the ROR projects. USAID regulation restriction for payment to Chinese State Own Companies.
- Kaitu Weir & Affiliated Structure: Security Issues for mobilizing EPC contractors in Kaitu being located in North Waziristan.

ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

- 2 ROR hydro Project: Finalizing Activity Schedule and PIL Agreement.
- Kaitu Weir & Affiliated Structure: Activity Schedule and PIL for the project.

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, and with a bias toward utilizing the personnel of the generation companies and transmission system, including DISCOs and transmission operation and the maintenance staff to perform this work.

TRANSMISSION

PESCO

To date, 355.1 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 – 54 out of 84 (~64%) reports have been compiled to-date. All substations have been audited. The reports highlight shortcomings/bottlenecks found and recommend preventive & corrective measures.

Power Transformer Program

Seven oil sample results were received and analyzed this month, making 196 of 211 (~93%) completed. The results determine potential transformer damage and the consequence of an outage, which can cause unscheduled load shedding.

Capacitor Bank Rehabilitation

All material and equipment i.e. (Current Transformer, Circuit Breakers with all accessories and Capacitor Cells) for capacitor bank rehabilitation was delivered to PESCO warehouses last month. The procurement action for the installation and commissioning of the equipment is underway.

P&I Vans and Test Equipment

The registration of three vans for Protection & Instrumentation department of PESCO was completed. Modifications of the vans, for housing the tools and equipment, are underway. The equipment and vans will be handed over to PESCO in an official event.

NTDC Technical Audits

To-date, 25 audit reports have been compiled. The reports propose steps necessary for carrying out both preventive and corrective maintenances and also recommend infrastructure upgrade/augmentation where necessary. A total of 30 out of 41 substations have been audited (~73%) till now.

IT Support for Secured Metering System (SMS)

The assembly, installation and commissioning of Seven of the NTDC IT personnel received training on maintaining the system. The system will help NTDC on commercial and operational fronts.

NTTDC System Studies

- Integration of intermittent renewable resources with national grid: the approved technical evaluation report was submitted to procurement. The financial evaluation of bids is in process.
- Load flow study: Purchase Order (PO) has been sent to the consultant for signing.

Real Time Digital Simulator

The approved technical evaluation report was submitted to procurement. The financial evaluation of bids is in progress.

Hardware and Software for NTDC Design

- Technical evaluation of proposals for “Hardware for NTDC’s Design Department” was completed. The financial evaluation of bids is in progress.
- Technical evaluation of proposals for “Software and Training for NTDC’s Design Department” was completed. The financial evaluation of bids is in progress.

Live Line

- Stage inspection of 3 live line logistic trailers was conducted this month.
- Interviews for live line trainees of Sukkur Electric Power Company (SEPCO) were conducted.
- Interviews for live line trainees of Multan Electric Power Company (MEPCO) were conducted.

Issues/Constraints and Steps Taken to Resolve Them

No issues and constraints faced during the reporting period.

ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

- Handover of P&I mobile vans and T&P to PESCO
- Rehab of Capacitor Banks at Bannu, Tall and Jehangira 132kV GS
- Repair of damaged Transmission Line Towers (132kV & 66kV) in KPK
- Commissioning of 26 MVA power transformer at Chakdara GS
- Technical audit of NTDC grid stations

CROSS-CUTTING ACTIVITIES

CAPACITY BUILDING

Best Practices in Thermal Operations and Maintenance Training

Following the delivery of Operations & Maintenance training to GENCO's staff to increase efficiency and management of thermal power plants, EPP continues to follow up with participants from the training to review course assignments and measure the effect of training on O&M improvements.

Best Practices in Hydro Operations & Maintenance Training

EPP selected the final participants for the upcoming Hydel O&M training. 60 participants were selected from 75 nominations from WAPDA to participate in one of three sessions. Each session will consist of 20 WAPDA engineers and 5 female students/alums from local universities.

The first training will start on October 20 through October 31. The O&M training will include operational excellence, instrumentation protection and controls, SCADA system, generator protection, digital governors, as well as improving plant culture.

NTDC and CPPA Support

EPP secured U.S. visas for 7 of the 9 participants and remaining visas are still in process. EPP is securing logistics for the U.S. exchange visit for grid operations, anticipated to start on October 19.

EPP conducted participant interviews with NTDC Managing Director nominated participants from NPCC, CPPA and WPPO for the second exchange visit to the United States, focused on market operations. Following shortlisting, EPP will seek USAID approval of 9 participants and 2 alternates before commencing the J-1 Visa process.

EPP delivered the Storage Area Network (SAN) training for staff from CPPA. A total of 7 managers (6 male and 1 female) attended the one-week training, which enables CPPA executives to carry out routine operational and maintenance activities in a timely manner.



Figure 9: SAN training at EPP office Lahore

One NTDC participant remarked, *“Following the training course, I can help in troubleshooting as well as in installation and configuration of the systems. The newly installed equipment can now be used in maintain the backup of routine work. Overall, the course is beneficial for the organization as we can securely save real time data and critical information and the network can further be utilized on how to plan the projects, track status and **perform efficient future planning** by using such pattern of data.”*

EPP reviewed bids for the development of NTDC's Design Department Rehabilitation that will increase NTDC's design capacity ability to better deliver transmission improvements.

LNG

EPP completed the technical evaluation of the bids for the LNG Business and Management Intensive Training. The training aims to support EPP's LNG stakeholders' understanding of port and commercial operations with site visits and classroom training. EPP anticipates training to be delivered in December 2014 with nominations.

GENDER ACTIVITIES

Gender Equality Assessment

EPP met with Samar Ihsan Beg Joint Secretary (Development), Ministry of Water and Power (MWP) regarding MWP gender assessment data. EPP anticipates receiving all remaining gender employment data in early October.

EPP interviewed four short-term Gender Specialists and selected one to draft a strategy for enhanced gender integration in Pakistan's energy sector. Strategy development will start once data is received from MPNR and MWP.

Female Participation in Training Activities

EPP is reaching out to Islamabad-based engineering universities to obtain female nominations to participate in the best practices in hydel O&M training. This is an effort to increase female participation in the energy sector and enhance student capabilities with practical knowledge.

MONITORING & EVALUATION

Interim Performance Evaluation and M&E Plan Update

- EPP submitted quarterly data to PakInfo for FY2014 Quarter 3 for USAID review.
- EPP submitted the revised M&E plan to the Energy Office and continues to update the logical framework and plan document per USAID recommendations.

Site Visits

EPP conducted post-training evaluations at Jamshoro Thermal Power Station (GENCOs I). The purpose of the site visit is to review O&M training outcomes, as well as verify installations of equipment that resulted in MW gains. EPP plans to conduct post-training evaluations at the Muzaffargarh and Guddu Thermal Power Stations in October 2014.

ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

- NTDC Grid Operations Exchange pre-training briefing to draft plan of action prior to the departure to U.S. The Grid Operation Exchange Visit will be conducted in October. Following the completion of the Exchange Visit, EPP will arrange a daylong debriefing of the trip by the participants for US Government officials in Islamabad/Lahore.
- EPP will deliver the first of the three anticipated Hydel O&M training course in October 2014.
- EPP will continue to conduct post-training evaluations for GENCOs I, II, and III related to O&M training in October 2014.
- EPP will monitor and evaluate PowerSIM progress at MPNR following delivery of the PowerSIM model.
- Gender assessment of key stakeholders to be drafted and shared with USAID for comments.
- EPP will reach out to identification and selection of the service providers for the LNG Business and Management Intensive Training.
- Participants selected for NTDC Market Operations Exchange will begin the J-1 Visa process once approved by USAID.
- EPP will conduct one-on-one interviews with NTDC's nominated participants for the "Commercial Operations Exchange" visit to the United States.

COMMUNICATIONS

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

OUTREACH MATERIAL

In order 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. Communications unit is extending support towards publication of several procurements and job advertisements in local and international newspapers. Other promotional material such as banners and standees were designed and produced catering for programmatic events.

REPORTS

Ensured appropriate USAID branding and marking for the following EPP-generated reports and other dissemination material:

- Interim Report - NTDC Technical Audit
- Location Report - Upstream Oil and Gas Support Program, Islamabad
- Prepared training badges, nameplates and certificates for 20 trainees of "best practices in Hydro O&M" training.
- During the reporting period, EPP's Communications & Outreach EPP covered the Storage Area Network (SAN) training for staff from CPPA. A total of 7 managers.
- Designed and printed backdrop and standees for Storage Area Network training.
- Branded Storage Area Network (SAN), Servers, UPS and other associated equipment at WAPDA House, Lahore.
- Displayed USAID/Energy Policy Program Poster at EPP office Lahore.
- Designed and printed backdrop and standees for Storage Area Network training.
- Coordinated with the vendor and assisted in finalizing the procurement of bags for the trainees of Hydro O&M training.
- Finalized bags and branding for 76 training participants of Hydro O&M training course in October 2014.
- Coordinated with the DOC office for approval of certificates, backdrop and standees of Hydro O&M training course in October 2014.

ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

The Communications Team, in coordination with EPP Transmissions team and DISCOs, will help organize the Live Line Tools Handover Ceremony, which shall include handing over of the P&I vans to PESCO. This will be a media event.

ADMINISTRATION/MANAGEMENT SUPPORT TO EPP

EPP's Administration and Finance Department is structured to support on-going and planned program activities, while ensuring contractual compliance. This department is responsible for the following functions: Accounting and Finance; Human Resources; Procurement and Contracts; Logistics; and IT. In implementing these functions, processes and policies are developed to ensure efficiency, compliance and delivery of quality support.

ACCOUNTING AND FINANCE

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

Table 4: Accruals Table

Description	As At Aug 30, 2014 TOTAL	Sep 2014, Accruals	As At Sep 30, 2014
	Amount in USD		
Sub Obligation	25,493,410	25,493,410	25,493,410
Additional sub-obligations/ incremental funding	19,500,000	19,500,000	19,500,000
	44,993,410	44,993,410	44,993,410
Previously reported Expenditure		30,432,125	30,432,125
Salary	6,651,315	314,000	6,965,315
Fringe Benefits	1,802,219	86,570	1,888,789
Allowances	1,484,027	40,000	1,524,027
Travel	1,187,125	40,000	1,227,125
ODC	3,273,044	232,000	3,505,044
Overheads	1,269,674	55,107	1,324,781
G & A	1,858,982	79,685	1,938,667
Training	397,798	100,417	498,215
Sub-Awards	3,586,811	473,750	4,060,561
Procurements	6,983,627	336,769	7,320,396
Material OH	214,962	15,759	230,721
FEE	1,722,542	106,443	1,828,985
NICRA Adjustment	-	-	-
Projected expenditure	30,432,125	1,880,500	32,312,625
Cumulative expenditure	30,432,125	32,312,625	32,312,625
Pipeline	14,561,285	12,680,785	12,680,785

Finance

Payroll maintenance and reconciliations with previous payroll and financial reconciliations were completed; miscellaneous technical payments were made to vendors during the month.

- a) Time Sheets (Islamabad, Lahore and Peshawar)
- b) Per Diem Calculations (Islamabad, Lahore)
- c) Overtime Calculations (Islamabad, Lahore and Peshawar)
- d) Deductions (Mobile and Others) (Islamabad, Lahore and Peshawar)
- e) Transfer advice preparations (Islamabad, Lahore and Peshawar)
- f) Pay Slips for the month of Sep 2014 (Islamabad, Lahore and Peshawar)
- g) Technical Payments (Foreign Wires)

Logistics

Logistical support was provided for 62 trips made by project staff. International travel for expats was arranged.

Human Resources

During the reporting month, recruitment for the staff was completed:

- A) Inductions during Sep 2014:
 - 1) Aniat Anthony Gill (Cook) Islamabad Office
- B) Deductions during Sep 2014
 - 1) Zakria Khurram (Driver) Islamabad Office
- C) Leave Record (Islamabad, Peshawar and Lahore)
- D) Health Insurance and Card Issuance (Islamabad, Peshawar and Lahore)
- E) Monitoring of Mobile and OPD/IP Ceilings (Islamabad, Peshawar and Lahore)
- F) Interviews conducted for the positions advertised.
- G) Life Insurance of AEAI employees.

IT PROCUREMENT

EPP procured following hardware/software items for Islamabad, Peshawar and Lahore offices.

1. CCTC Camera setup at Lahore office.
2. 1 HP Color LaserJet MFP Printer for DGPC office
3. 4 Laptop adaptors purchased for Peshawar office
4. 1 Cartridge/toner set for CP2025dn Printer
5. 2 Samsung Galaxy Grand II Cellular Phone purchased for new induction
6. Miscellaneous IT Accessories like USB Optical Mouse, Cables, Power Adapters, Laptop bags, etc.

IT SUPPORT & SERVICES

1. Installation, Configuration and e-mail setup on 5 Laptops
2. 1 Network point installation on House 6
3. Bio-metric time and attendance machine troubleshooting and centralized network management
4. QuickBooks Accounting and Point of Sale software support for Islamabad and Peshawar office.
5. Tracking of 19 official eVo Internet devices monthly recharges
6. LaserJet MFP Wireless Printer Installation at DGPC office
7. CCTV Cameras Installation at Lahore office
8. CCTV System Management for Peshawar, Islamabad and Expatriates' residences.
9. Troubleshooting of (AEAI, ISB office, M/o Finance, NPCC, Lahore office and Peshawar office) Network Printers and complete track of cartridges/toner replacement.
10. Monthly attendant backup activity for outlook e-mails communication.
11. IT support to all program staff including seconded staff and third party contractors working at Ministries, NPCC and DGPC.
12. 24/7 Internet, Telephone and Video Services Support on Expatriates' residences in Islamabad and Peshawar.
13. E-mail Server management of **ep-ep.com.pk** domain and BlackBerry Services Administration and support for all Program Staff.

14. Complete monthly payroll and large official documents scanning
15. Assisting Administration & Finance department to keep well-run database record for Travel Authorization and Leave Application Forms
16. Daily routine hardware, software, systems and network support to all EPP staff
17. Request for proposals and groundwork for all IT related procurements.

PROCUREMENT

Table 5: Completed Procurement

Item	Achieved or Completed	Targets LOP	% Completion
Procurement contracts (US\$ million)	21.01	39.24	53.53

Table 6: Purchase Orders Issued during the Month

Progress/ Activities	Impacts	Issues/ Constraints	Resolving Issues
Supply, Delivery and onsite supervision of installation and commissioning of (02) 220/132kV, 250MVA three-phase autotransformers: Purchase order issued for Supply, Delivery and onsite supervision of installation and commissioning of (02) 220/132kV, 250MVA three-phase autotransformers with associated parts and fire protection system. Amount US\$ 2,719,500.	N/A	N/A	N/A
Replacement of 20/26 MVA PTF at 132kV Chakdara: Purchase order issued for Replacement of 20/26 MVA PTF at 132kV Chakdara. Amount US\$ 22,549.	N/A	N/A	N/A
Accommodation and Event management Hydro O&M Trainings: Purchase order issued for accommodation and event management for 03 Hydro O&M Trainings. Amount US\$ 137,358.	N/A	N/A	N/A

Work Continued

- 1) **Tool & Equipment for PESCO T&G Department:** Consent request sent to USAID for approval. Approx. Amount **US\$ 761,472.**
- 2) **Repair of damaged Towers:** Consent request sent to USAID for approval. Approx. Amount **US\$ 302,000.**
- 3) **Port Qasim Authority Consultancy Service:** Consent request sent to USAID for approval. Approx. **US\$ 1,500,000.**
- 4) **Study for Enhancement of Transmission Capacity of NTDC:** Consent request sent to USAID for approval. Approx. Amount **US\$ 359,000.**
- 5) **Real Time Digital Simulator for NTDC:** Financial bid evaluation and request for consent in process for RTDS. Amount **US\$ 1,708,200.**
- 6) **Bus Dis-connector, Current Transformer and Surge Arrestors:** Technical review completed. Financial bid evaluation in process for supply of Bus Disconnector, Current Transformers and Surge Arrestors for Mardan and Nishatabad GS to be delivered at NTDC Warehouse Gatti. Amount **US\$ 328,775.**

- 7) **Hardware and Software for NTDC Design Department:** Technical review completed and financial evaluation in process for Hardware and Software with Training for NTDC Design Department. Amount **US\$ 700,000.**
- 8) **Modification of 03 P&I Testing Vans:** Bids received and opened. Bid evaluation in process for Modification of three P&I Testing Vans for PESCO. Amount **US\$ 4,500.**
- 9) **Power Transformer Oil:** Bids received and financial evaluation in process for Supply of 4200 Litre Power Transformer Oil for Chakdara-PESCO. Amount **US\$ 6,000.**
- 10) **4 Sets of 220kV & 27 Sets of 132 kV Circuit Breakers:** Technical review completed. Financial bidding in process for supply of 4 sets of 220kV & 27 sets of 132 kV Circuit Breakers for NTDC & PESCO respectively. Amount **US\$ 700,000.**
- 11) **LNG Business Management Intensive Training Program:** Bids received and Technical bids opened. Technical committee nominated and Technical review in process. Amount **US\$ 265,975.**
- 12) **Consultancy for Study to determine the limit of Integrating Intermittent Renewable (Wind & Solar) Resources onto Pakistan National Grids.** Bids received and Technical bids opened. Technical committee nominated and Technical review in process. Amount **US\$ 332,000.**
- 13) **Technical Assistance for Monitoring and Auditing:** Bids received and Technical bids opened. Technical committee nominated and Technical review in process for Technical Assistance for Monitoring and Auditing Implementation Compliance of EDF and EMMP for Hydroelectric Power Plants, Transmission and LNG Activities. Amount **US\$ 25,000.**
- 14) **Simulation Study Service:** Financial Evaluations in Process. Approx. Amount **US\$ 250,000.**
- 15) **Supply of Hardware Connectors and Conductors for NTDC Mardan & Nishatabad GS:** Request for Proposal uploaded at EPP Website with closing date September 30, 2014 for Supply of Hardware Connectors and Conductors for NTDC Mardan and Nishatabad Grid Stations. Amount **US\$ 300,000.**
- 16) **Personal Protective Equipment (PPE):** Request for Proposal in process for Supply of Personal Protective Equipment (PPE) for Live Line Trainers with closing date September 29, 2014. Amount **US\$ 48,000.**
- 17) **Oil Purification Plant:** Request for Proposal uploaded at EPP website with closing date October 13, 2014 for Supply of two Oil Purification Plants for PESCO. Amount **US\$ 150,000.**
- 18) **Damaged Auto-Transformers:** Request for Proposal sent to pre-qualified bidders with closing date September 26, 2014 for repair of damaged auto-transformer-PESCO. Amount **US\$ 500,000.**
- 19) **Supply & installation of Cooling Fans & MCBs:** Request for Proposal in process for Supply & installation of 129 cooling fans and 50 MCBs-PESCO. Amount **US\$ 65,770.**

Planned Activities for the Next Month

1. Purchase order for Repair of Damaged Towers.
2. Purchase order for Tool & Equipment for PESCO T&G Department.
3. Purchase order for supply of 4 sets of 220kV & 27 sets of 132 kV Circuit Breakers for NTDC & PESCO.
4. Purchase order for Real Time Digital Simulator for NTDC.
5. Purchase order for supply of Bus Disconnecter, Current Transformers and Surge Arrestors for Mardan and Nishatabad GS to be delivered at NTDC Warehouse Gatti.
6. Purchase order for Hardware and Software with Training for NTDC Design Department.
7. Purchase order for Supply of Personal Protective Equipment (PPE) for Live Line Trainers.
8. Purchase order for Supply of Hardware Connectors and Conductors for NTDC Mardan and Nishatabad Grid Stations.
9. Bid evaluation process for Supply of two Oil Purification Plants for PESCO and issuance of Purchase order for Supply of two Oil Purification Plants for PESCO.
10. Purchase order for Modification of three P&I Testing Vans for PESCO.
11. Purchase order for Repair of Damaged Towers.
12. Purchase order for Supply & installation of 129 cooling fans and 50 MCBs-PESCO.

13. Purchase order/Sub Contract for consultancy for Study for enhancement of transmission capacity of NTDC's 500kV Transmission System by the application of Series Compensation.
14. Purchase order Supply of 4200 Litre Power Transformer Oil for Chakdara-PESCO.
15. Sub Contract for LNG Business Management Intensive Training Program.
16. Sub Contract for Consultancy for Study to determine the limit of Integrating Intermittent Renewable (Wind & Solar) Resources onto Pakistan National Grids.
17. Sub Contract for Technical Assistance for Monitoring and Auditing Implementation Compliance of EDF and EMMP for Hydroelectric Power Plants, Transmission and LNG Activities.
18. Bid evaluation process for Supply of Personal Protective Equipment (PPE) for Live Line Trainers.
19. Bid evaluation process for Supply of Hardware Connectors and Conductors for NTDC Mardan and Nishatabad Grid Stations.
20. Follow-up for delivery of SAN & Equipment for NTDC.
21. Follow-up for delivery of SAN & Equipment and Training for NTDC.
22. Inventory Tagging and arranging Material Receiving Report (MRR) for delivered goods.
23. Duty free custom clearance of partial delivery of Live Line Tool Trailers for DISCOs.

LIST OF KEY MEETINGS

Table 7: List of Key Meetings Conducted in September 2014

Meeting with	Date	Location	Purpose	Outcome/Result
USAID project Manager	September 9	EPP office	To discuss the status of GENCOs	Remaining equipment's status and bottlenecks was discussed
USAID Project Manager, Muzaffargarh Procurement Manager	September 18	EPP office	To discuss the status of Muzaffargarh	Procurement of remaining equipment's was discussed and advised to expedite the procurement
GM (hydel)	September 24	WAPDA house	To discuss the status of Tarbela & Mangla	Progress of Tarbela & Mangla was discussed and required documents were collected
RE (Mech) of Jamshoro	September 24	Jamshoro Thermal Power Station	To discuss the performance efficiency measures	EPP proposed advisory services for investigation in certain technical areas. JTPS agreed on them.
CEO Guddu, USAID Project Manager	September 24	EPP Office	To discuss the additional funding request received from Guddu	Benefits of additional funding and status of the ongoing rehab work was discussed.
USAID Project Manager	September 29	EPP Office	To discuss the upcoming USAID visit to Guddu and paper work required for extension	Guddu CEO to confirm his availability on Oct 24 An extension letter along-with schedule is required from GENCOs
USAID, EPP	September 03	AEAI	To discuss the framework on utilization of gas from stranded discoveries/fields for power generation and EPP's proposal on DGPC manpower plan – Implementation Unit.	EPP team/PTS long term consultants to share the framework for utilization of stranded gas fields for power generation document with USAID once finalized. EPP's proposal on DGPC manpower plan will be reviewed by USAID and follow up discussions will be held later.
DGPC, EPP	September 04	DGPC	To discuss the inclusion of additional confidential wells data in the ongoing Shale Gas Resource Assessment.	DGPC will convene a meeting with LMKR to shortlist the additional wells to be included in the ongoing Shale Gas Resource Assessment. In case of additional time and cost required to complete the study, MPNR will request USAID for approval before proceeding.

Meeting with	Date	Location	Purpose	Outcome/Result
Minister MPNR, Chairman BOI, Secretary MPNR, MD ISGS, MD PSO, MD SSGC, MD SNGPL, MPNR officials, MOF officials, EPP, FGE, WFW	September 04	PPL Office, Islamabad	Inaugural meeting of the GOP LNG Negotiation Committee.	Further follow-up on meetings with LNG suppliers was agreed upon.

Meeting with	Date	Location	Purpose	Outcome/Result
USAID, LMKR, EPP	September 05, 2014		<p>To discuss:</p> <p>Delay in the final report for Shale Gas Assessment due to inclusion of additional confidential wells data requested by DGPC.</p> <p>Review the Progress of Upstream Oil and Gas Support Program.</p> <p>Contribution of EPP team.</p>	<p>Regarding inclusion of additional Confidential Wells data, LMKR will plot the wells requested by DGPC and analyze the value addition by the inclusion of such data along with estimates for additional time and cost.</p> <p>Based on the information given by LMKR, EPP will recommend to USAID whether to include the additional assessment as part of the ongoing study or to conclude the study in progress.</p> <p>Component – 2 of the Shale Gas Program will commence in parallel to the ongoing resource assessment to save time.</p> <p>EPP has reduced the scope of two work areas (comparison of Pakistan with peer countries and DGPC organizational review) due to non-performance of one PTS foreign consultant and the international partners, ARI. Therefore, EPP will open dialogue with PTS to seek further clarity on ARI's final position on formulation of Shale Gas Policy Framework. After discussions with PTS regarding ARI's final position, and assessment of actual and projected expenses, EPP will provide a proposal to USAID regarding the way forward.</p> <p>EPP to provide the work products/services delivered by EPP team working on Upstream Oil and Gas Programs.</p> <p>EPP will continue to work with GOP and other stakeholders and circulate/exchange documents as necessary as part of ongoing day-to-day coordination. However, all major deliverables will be presented to GOP through USAID.</p> <p>USAID will call for periodic review meetings to get briefing on oil and gas programs. This will be in addition to the current practice of routine and specific progress reports sent by EPP to USAID.</p>
USAID, PQA, EPP	September 25, 2014	Avari Hotel, Karachi	Review of USAID-EPP support to PQA to facilitate implementation of Fast Track LNG Program	PQA requested USAID-EPP to expedite the appointment of port consultants.

Meeting with	Date	Location	Purpose	Outcome/Result
WAPDA- USAID- EPP	11.9.2014	EPP Energy House Islamabad	Kaitu Weir & Affiliated Structure	Validation of cost and milestone dates for Activity Schedule
WAPDA - EPP	19.9.2014	WAPDA Rest House Islamabad	Kaitu Weir & Affiliated Structure	Status of Selection of Contractor. WAPDA considering FWO time being. Information about WAPDA basis of Project Cost Estimates
MD NTDC	Sep 24, 2014	WAPDA House, LHR	To discuss progress on EPP's interventions	Briefed MD NTDC on status of all projects underway for NTDC.

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