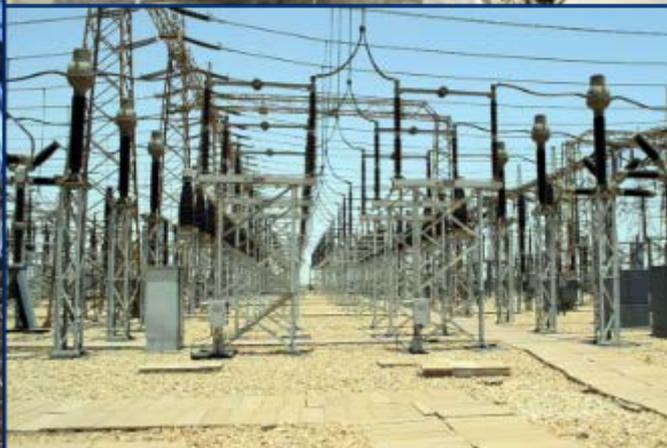




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# USAID/ENERGY POLICY PROGRAM MONTHLY PROGRESS REPORT August 2014



September 2014

*This program is made possible by the support of the American people through the United States Agency for International Development (USAID).*

# USAID/ENERGY POLICY PROGRAM

## MONTHLY PROGRESS REPORT

### August 2014

Contract No: AID-EPP-I-00-03-00004  
Order No: AID-391-TO-12-00002

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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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# CONTENTS

Acronyms .....	iii
Monthly Highlights.....	1
Progress in Numbers.....	2
Planned Activities.....	4
Program Overview .....	5
Component 1: Project Monitoring & Implementation .....	8
GENCOs Performance Efficiency Improvement Program .....	11
Issues/Constraints and Steps Taken To Resolve Them.....	12
Anticipated Activities for the Next Reporting Period.....	12
Component 2: Policy and Reform .....	13
Support to Ministry of Water and Power .....	13
Support to Ministry of Finance.....	14
Support to Ministry of Petroleum & Natural Resources .....	14
Support to Ministry of Planning and Development .....	16
Issues/Constraints and Steps Taken To Resolve Them.....	17
Anticipated Activities for the Next Reporting Period.....	18
Component 3: New Projects, Planning and Development .....	19
Additional Support to USAID.....	19
Issues/Constraints and Steps Taken to Resolve Them.....	19
Anticipated Activities for the Next Reporting Period.....	19
Component 4: New Activities .....	20
Transmission.....	20
Anticipated Activities for the Next Reporting Period.....	21
Cross-Cutting Activities .....	22
Capacity Building.....	22
Gender Activities.....	22
Monitoring & Evaluation.....	23
Anticipated Activities for the Next Reporting Period.....	23
Communications .....	24
Outreach Material .....	24
Reports.....	24
Anticipated Activities for the Next Reporting Period.....	24
Administration/Management Support to EPP.....	25
Accounting and Finance.....	25
IT Procurement.....	26
IT Support & Services.....	26
Procurement .....	28
List of Key Meetings .....	31

## TABLES

Table 1: Monthly Highlights.....	1
Table 2: Planned Activities.....	4
Table 3: Results Achieved through G2G Projects.....	8
Table 4: Accruals Table.....	25
Table 5: Completed Procurement.....	28
Table 6: Purchase Orders Issued during the Month .....	28
Table 7: List of Key Meetings Conducted in August 2014 .....	31

## FIGURES

Figure 1: EPP Phases.....	5
Figure 2: Map of EPP Activity Areas.....	7
Figure 3: Gomal Zam Multipurpose Dam Project .....	9
Figure 4: Satpara Multipurpose Dam Project.....	9
Figure 5: Muzaffargarh Thermal Power Station.....	10
Figure 6: Guddu Thermal Power Station .....	10
Figure 7: Generators of Mangla Power Station .....	11
Figure 8: Heat Rate Tests being Conducted at Muzaffargarh and Jamshoro Thermal Power Plants ...	12

# 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 August 2014.

Table 1: Monthly Highlights

## Component 1

- EPP assisted worked with WAPDA to gather necessary information for finalizing the Agreement for the Tarbela Rehabilitation Phase-II Project. This project will add 20 MW to the national grid, and increase the reliability and sustainability of the plant.
- WAPDA continues to evaluate bids to provide major equipment (turbines and generators for Units 5 and 6) for the plant. A contract will be awarded once the evaluations have been completed.
- EPP finalized the work plan for the Performance Efficiency Improvement Program. This targeted intervention will focus on sustaining the 270 MW gains achieved with USAID funding, and will improve the plant's operating life.
- EPP met with Pakistan Engineering Services, an Independent Engineer, to schedule the Heat Rate and Current Dependable Capacity Tests for Guddu. EPP has successfully completed the Heat Rate Test at Jamshoro and Muzaffargarh.

## Component 2

- EPP will assist in developing policy papers and conducting analysis through PowerSIM with MWP and the Planning Commission. This work will be undertaken as part of the implementation phase next month. One area of focus is to evaluate oil price increases, and how this affects financial performance of the sector.
- EPP held a review meeting on July 21, 2014 for the Shale Gas Program with USG and USAID officials. Necessary action is being taken in accordance with the decisions taken during the meeting.
- EPP continued to lend targeted day-to-day advisory support to DGPC on various legal and regulatory issues.
- Pre-award discussions continued during the week with the fourth-ranked bidder for providing Consulting Services for LNG Import Terminals at PQA. Discussions concluded after the bidders expressed their inability to provide foreign consultants that could work in Karachi (second ranked bidder had also demanded a mobilization advance).
- EPP staff prepared a consolidated sheet of year-wise capacity additions in power generation from 2012-13 to 2024-25. The sheet includes thermal and renewable projects, as well as imported energy from different sources except K-Electric.
- EPP staff updated and finalized the Oil and Gas Exploration Section of the 11<sup>th</sup> 5 Year Plan under Vision 2025 of the Government of Pakistan.

## Component 3

- EPP secured contract documents from WAPDA related to the transmission line connecting Allai Khwar to Duber Khwar for onward submission to USAID. These were requested by experts from the U.S. Army Corps of Engineers, who are reviewing project costs for the two Run-of-River (RoR) projects.
- EPP also provided details of all project costs requested by USAID for the RoR Projects.
- EPP provided answers to questions raised by USAID related to budgets, revenues and staffing of the proposed Kaitu Weir Project as well as the two RoR Projects.

## Component 4

- PESCO technical audits of all grid stations have been completed. Final reports of 38 out of 84 grid stations have been compiled (45% completed).
- EPP's Technical Team completed the evaluation for circuit breakers for NTDC and PESCO, and submitted their recommendation to the Procurement Department.
- 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 August 2014	Total Achieved as of August 2014	LOP % Achieved as of August 2014
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	0	13,186,016	97%
I.1.b: GWh of energy availability	GWh	7880	0	7569	96%
I.1.c: MW available to meet power sector demand as a result of USG assistance	MW	1,303	0	1,288.1	101.9%
I.1.1.a: MW of electrical power added or saved as a result of USG improvements	MW	875	0	939	107%
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	79% <sup>1</sup>
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.	10	0	10	100%
I.2.2.a: Number of policies following international best practices	No.	5	0	2	40%
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%
4.4-8: Number of beneficiaries receiving improved infrastructure services due to USG assistance	Persons	13,624,226	0	13,186,016	97%

<sup>1</sup> EPP recently changed the I.1.4.a Life of Program target from US\$ 48.5 million to US\$ 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 as in August 2014	Total Achieved as of August 2014	LOP % Achieved as of August 2014
I.1.a: Number of beneficiaries with improved energy services due to United States Government assistance	Individuals	Total	13,624,226	0	13,186,016	97%
		I-Generation	7,993,106	0	8,641,446	108%
		4-Transmission Throughput Capacity	5,477,544	0	4,467,782	82%
		4-Transmission Added/Saved	153,576	0	76,788	50%
I.1.b: GWh of energy availability	GWh	I & 4	7880	0	7569	96%
		I-Generation	4,796	0	5,081.65	105%
		4-Transmission Throughput Capacity	2999.42		2446.5	82%
		4-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 & 4	1,303	0	1,288.1	99%
		I-Generation	863	0	933	108%
		4-Transmission Throughput Capacity	428	0	349.1	82%
		4-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 & 4	875	0	939	107%
		I-Generation	863	0	933	108%
		4-Transmission Added/Saved	12	0	6	50%
4.4-8: Number of beneficiaries receiving improved infrastructure services due to USG assistance	Persons	Total	13,624,226	0	13,186,016	97%
		I-Generation	7,993,106	0	8,641,446	108%
		4-Transmission Throughput Capacity	5,477,544	0	4,467,782	82%
		4-Transmission Added/Saved	153,576	0	76,788	50%

# PLANNED ACTIVITIES

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

Table 2: Planned Activities

- Inauguration ceremony of Satpara Multipurpose dam project
- Signing of the Activity Agreement and PIL for Phase-II of the Tarbela Repair and Maintenance Project
- USAID Project Manager's visit to Jamshoro and Guddu Thermal Power Stations
- At Muzaffargarh, equipment under PIL Item #25: Repair of winding and stator of Generators and testing of units 5&6 will reach at site and inspection of equipment will be made.

- 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; continuation of provision of legal support to SSGC for LSA open items; development and implementation of work plan for LNG procurement strategy and initiation of procurement activities; capacity building of GoP stakeholders.
- Shale Gas: Completion of Milestone #4 and commencement.
- Upstream Oil & Gas Support: Finalization of Draft Model Supplemental Agreement for conversion of Policies.
- Assistance will be provided to examine and formulate views on policy proposals to be submitted by the energy sector ministries / entities to Ministry of Finance.

- USAID and WAPDA are in discussions for establishing pending liabilities of two RoR projects, and EPP is facilitating this task.
- EPP continued support to USAID and WAPDA to prepare activity schedule for funding of US\$ 81 million for Kaitu River and Affiliated Structure. WAPDA need to establish a Kaitu Weir Project Office in Spinwam, North Waziristan to demonstrate its ability to start the project. WAPDA also need to finalize the timeline for the bidding process of the project. EPP will continue to work with WAPDA and keep USAID informed of progress.

- 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
- Training of CPPA IT personnel on deployment and O&M of Storage Area Network (SAN)

- Identification and selection of the service providers for the LNG Business and Management Intensive Training Program.
- NTDC Grid Operations Exchange pre-training briefing to draft plan of action prior to departure to U.S.
- Interviews to select nominees for two of the three Exchange visits focusing on commercial and market operations.

- 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.<sup>2</sup> 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.<sup>3</sup> 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.<sup>4</sup> Specifically, EPP conducts and prepares due diligence reports on new projects under consideration for USG support in order to provide detailed

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

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

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

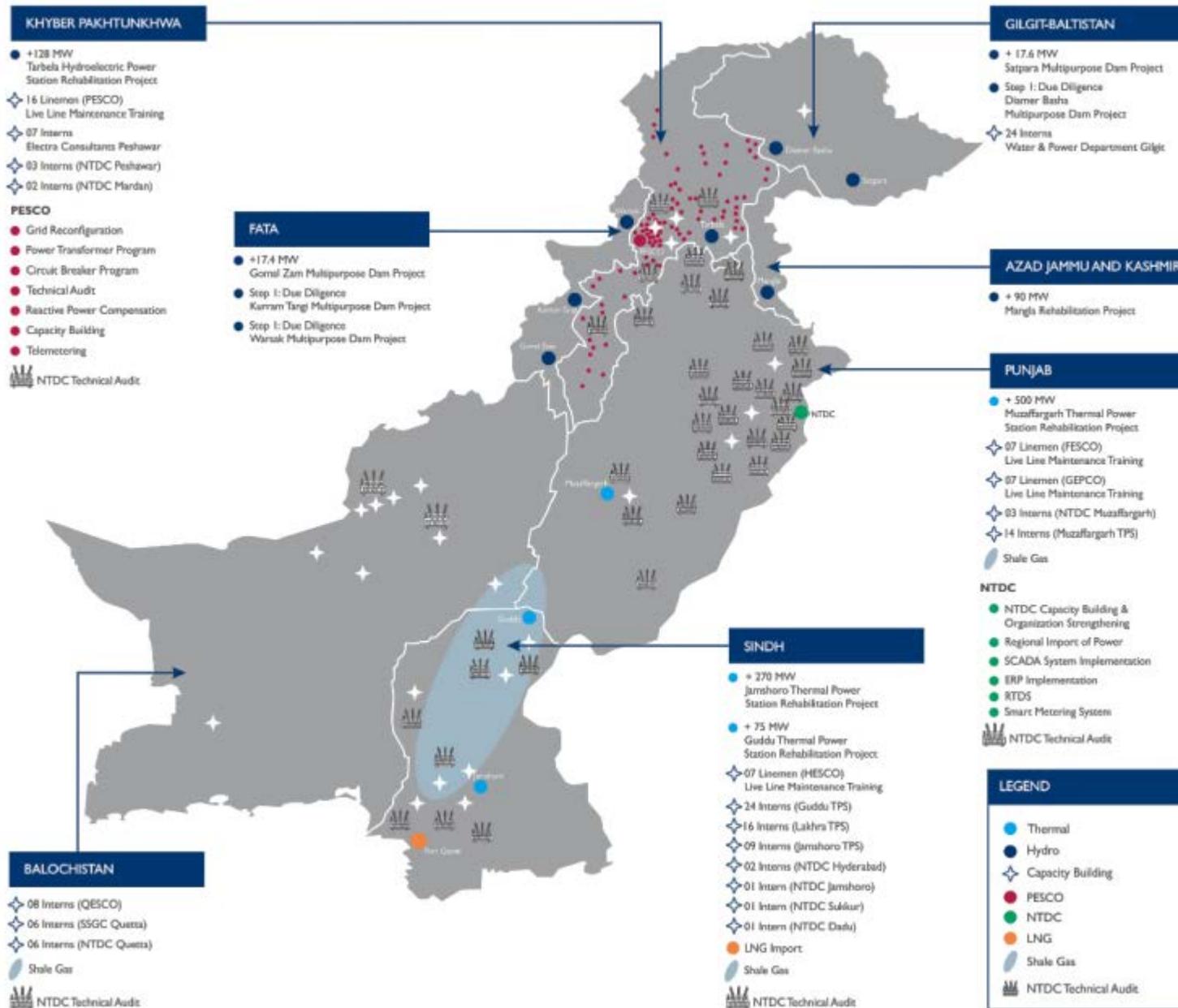
information, reduce USG risk, and set a basis for creating Project Implementation Agreements for the selected projects.

**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 services<sup>5</sup>. EPP's capacity building program facilitates sustainability by enhancing local capability in critical areas.

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<sup>5</sup> 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 revised agreements) that will result in an estimated gain of 933 MW for Pakistan’s national grid.

As of August 2014, US\$ 146.82 million has been disbursed to GoP implementing partners, and 933 MW have been added to Pakistan’s national grid. Results achieved through 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	In progress
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
<b>Total</b>	<b>291.71</b>	<b>146.82</b>		<b>953 MW</b>	<b>933 MW</b>

During this reporting period, the cumulative number of people who have directly benefited from EPP’s efforts stands at 12.75 million or 7.1% of population.

As of this reporting period, EPP’s efforts have improved the financial performance of energy sector entities by US\$ 526 Million. This represents approximately 6.0% of 2012’s circular debt.

While no 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 933 MW restored or added to Pakistan’s grid.

## Rehabilitation of Tarbela Hydropower Plant

During the reporting month, EPP worked with WAPDA to consolidate information for the Tarbela Repair and Maintenance Phase II Project. USAID is considering funding US\$ 25 million for the Phase-II of Tarbela Repair and Maintenance Project, out of which US\$ 10 million will be sub-obligated under an Activity Agreement while the remaining amount will be provided under separate Activity Agreement or relevant PILs. The funding will aid the replacement of additional equipment that will add to the reliability and sustainability of the plants, 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 as a result of this replacement.

The rehabilitation work (Phase I) to-date 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 are 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 October this year. The digital governors will aid in the smooth operation of the power station.

The procurement process of remaining items SCADA System, and small drainage pump is underway. The remaining replacement/repair work will increase the reliability and sustainability of the power plant, but shall not support restoration of additional megawatts.

Of the US\$ 16.5 million funding amount obligated for Tarbela, the total disbursement as of August 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 committed funds have 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 poor weather.



Figure 4: Satpara Multipurpose Dam Project

## Muzaffargarh Thermal Power Station Rehabilitation Project

USAID-funded rehabilitation at MTPS has added 500 MW to the national grid, which is sufficient to supply electricity to 4.63 million individuals. Major equipment has been installed and rehabilitated at MTPS, and procurement of the remaining equipment required is in process. EPP discussed the status with plant management in order to expedite the procurement of remaining equipment.

In August, equipment under PIL Item #25: Repair of winding and stator of Generators and testing of units 5 & 6

reached at the Karachi port and will reach at the power plant site within the next month. EPP expert/s will inspect the equipment once it reaches the site. With an amendment to the Activity Agreement, the project completion date has been extended to December 31, 2014. EPP also supported in processing tax exemption from USAID for equipment worth US\$ 948,145. As of August 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.



Figure 5: Muzaffargarh Thermal Power Station

## Jamshoro Thermal Power Station Rehabilitation Project

USAID-funded rehabilitation at JTPS resulted in the restoration of 270 MW of power generation capacity, which exceeds the project objective of 150 MW as per the Agreement. These 270 MW are sufficient to supply electricity to 2.5 million individuals.

During the reporting period, EPP facilitated a meeting of USAID with Jamshoro management to review the progress. Issues were discussed to expedite the procurement of the remaining equipment, and to minimize delays in rehabilitation work. Purchase Order placed by JPCL for procuring the Distributed Control System (DCS) on Aug 5, 2014 and its LC is expected to be opened in next month. Another major item which is the hiring of services for major overhauling of unit#1 is in process.

With EPP's support, USAID revised the Activity Agreement and extended the project completion date to December 31, 2014. As of August 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 August, EPP continuously monitored operations of the three rehabilitated turbines (GT-7, GT-8 & ST-5) to ensure sustainability. After ensuring sustainability, the turbines will be capable to run at the maximum capacity and will add more than 75 MW to the national grid; enough to supply electricity to 0.6 million individuals.

EPP also supported in the processing of tax exemption from USAID for equipment worth US\$ 22,731.

CPGCL requested USAID for additional funding of US\$ 11 million. This will add 150 MW to the national grid. With EPP's support, USAID revised the Activity



Figure 6: Guddu Thermal Power Station

Agreement and extended the project completion date to December 31, 2014. The total amount disbursed to the GoP as of August 2014 is US\$ 17.34 million.

## Mangla Dam Rehabilitation Project

EPP supported USAID in finalizing and signing of the Project Implementation Letter (PIL), which was signed in March this year. Subsequently, EPP supported WAPDA to regularize the Mangla Assignment Account through the State Bank of Pakistan and first payment of US\$ 13 million transferred to Mangla Account.

USAID is providing US\$ 150 million to GoP for the Mangla Dam Rehabilitation Project, 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 both units are in

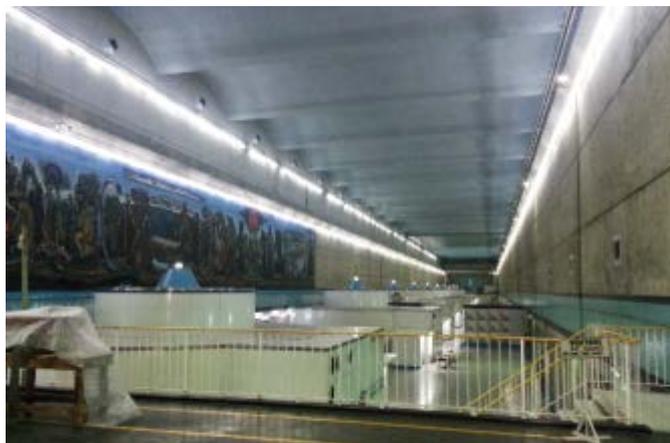


Figure 7: Generators of Mangla Power Station

a worst degraded condition; USAID will also fund the remaining plant, which 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.

Negotiations with the lowest bidder regarding evaluation of bids completed by consultants for procurement of major equipment (Turbine and Generators for Unit 5 & 6) to conclude soon. Contract award is expected by Nov 2014, and model testing to complete by Aug 2015, which will trigger disbursement of US\$ 7.614 million. Completion of Design is expected by June 2015, which will trigger another US\$ 1.835 million. Procurement of other equipment (Inlet Valves & Seals and Cranes) is underway.

As per Activity Agreement, the project completion date is December 31, 2017 and the total amount disbursed to GoP as of August 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 August, 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 finalized in consultation with JPCL as part of rapid assessment of the functional areas wherein support could be provided. EPP finalized a work plan for the Performance Efficiency Improvement Program at Jamshoro power plant which focused on sustaining the 270 MW gains achieved with USAID funding, and 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 are approximately US\$ 70 million per year. Revised tariff petition has been filed with NEPRA for Jamshoro. EPP is providing support to Jamshoro in filling of the tariff petition.



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 at Jamshoro Project: EPP facilitated a meeting between USAID and the plant management to review the progress and to expedite procurement.
- Sustainability of the newly installed three turbines (GT-7, GT-8 & ST-5) at Guddu Power Station: EPP is continuously monitoring the operation of new turbines.
- Tax Exemption Letter from USAID to GoP implementing partners: EPP is providing support in obtaining the tax exemption certificate from USAID.

### ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

- Addition of more than 75 MW to the national grid at Guddu Thermal Power station.
- Inauguration ceremony of Satpara Multipurpose dam project.
- Signing of the Activity Agreement and PIL for Phase-II of the Tarbela Repair and Maintenance Project
- USAID Project Manager's visit to Jamshoro and Guddu Thermal Power Station.
- At Muzaffargarh, equipment under PIL Item #25: Repair of winding and stator of Generators and testing of units 5 & 6 will reach the site and inspection of equipment will be carried out.

## 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 this reporting period, 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 inclined allow private sector participation in transmission as part of sector reform.

The EPP team will be providing continued support to this policy as the GoP Committee responsible for the policy moves ahead to its finalization.

#### More Autonomous Energy Sector Entities

EPP is working with Government owned and operated power sector entities (NTDC and the GENCOs) to improve efficiency, improve operational and management functions, and to strengthen them to perform more autonomously from the Ministry of Water and Power and to operate more efficiently.

- PPA: The team has completed its draft of the Power Purchase Agreement template for GENCOs but this could not be shared with our key stakeholder (MWP) owing to the current political turmoil in the Capital Territory. In spite of that, further reflection on the evolving structure of the power sector coupled with the current PPA template, has uncovered certain areas that need enhancement in new IPP PPAs to reduce costs and provide for competition in the power market. Subsequent to findings from our end, the team will prepare a paper for the MOWP, MOF and PPIB.
- The EPP team will be discussing the NTDC/CPPA-G Business Transfer Agreement with PDP encompassing major issues/concerns that need to be addressed for further progress such as misallocation of risk between parties, asset allocation, and liabilities.

#### Improved Capacity of USAID-Supported Energy Public Sector Entities

Policy decisions in Pakistan are often made without the benefit of detailed quantitative analysis. In order to better prepare senior decision makers, EPP has developed PowerSIM—a tool to analyze how key policy, and regulatory and operational parameters impact important sector performance indicators such as circular debt, cash flow, generation, end-user's quantities of electricity and tariffs.

- With the PowerSIM now complete and updated, EPP has initiated preparing papers to analyze critical issues in the power sector. The first policy paper focuses on the impact of increasing gas to the power sector and has been submitted to the Joint Secretary, MWP. Subsequent policy

papers will be prepared after consultation with senior management of MWP. These briefs will be used to demonstrate application of the PowerSIM.

- Trainings to MWP staff on PowerSIM will be conducted to enable the participants to utilize the tool in their routine daily assignments.

## SUPPORT TO MINISTRY OF FINANCE

- Assistance was provided to C.F. Wing, Ministry of Finance in the preparation of their views/ comments on the draft summary for the ECC submitted by the Ministry of Petroleum and Natural Resources regarding import of LNG by the CNG Association for CNG stations, through a Special Purpose Vehicle being created by the association for this purpose.
- Briefing was provided to Mr. Ross Hagan and Mr. Carlos Guerra from USAID regarding IMF interventions relating to implementation of key structural reforms in the power sector which *inter alia* included energy price adjustment, power sector circular debt, payment of tariff differential subsidies, supply/demand management and regulatory reforms.
- Corporate Finance Wing of the Ministry of Finance was assisted in the preparation of their views/ comments on the draft summary for ECC submitted by the Ministry of Petroleum and Natural Resources for Shale Gas Policy Framework for the pilot projects.
- Data regarding power sector payables and receivables is being obtained for preparation of an update regarding financial position of the power sector.
- A note was prepared in consultation with C.F. Wing and Economic reforms Unit of the Ministry of Finance for Secretary Finance regarding Private Investment in the Power Sector.
- Input was provided to C.F. Wing in preparation of their views/ comments on the proposal of Ministry of Petroleum and Natural Resources regarding downward revision in the price of gas being supplied by SSGCL to Al Tuwairqi Steel Mills Karachi. These comments are being sent by the C.F. Wing to the committee constituted by the ECC under Secretary Finance to review the proposal and make recommendations in this regard.

## Impact

- Assistance provided by EPP helped the 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 Diagnostic Analysis of the Regulatory Framework of NEPRA. The comments received from various stakeholders in this context are being examined by the committee constituted by the Ministry of Finance.

## 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

- Following USAID approval, Delivery Orders and Sub-contracts were executed with Watson, Farley & Williams LLP (WFW) to provide legal advisory services, and with Facts Global Energy (FGE) for providing commercial/technical advisory services for LNG procurement.
- A series of conference calls were held throughout the month with WFW, SSGC, EETPL and their respective legal counsels to finalize the draft Option and Direct Agreements which are to be executed by the LSA long stop date. Subsequently, the following Agreements drafted by WFW and reviewed by other stakeholders were discussed in multi-stakeholders conference calls:
  - Extension Agreement to Long Stop Date
  - Conditions Subsequent
  - FSRU Option & Charter Direct Agreements
  - Fixed Assets Option Agreement
  - Generic Direct Agreement
- WFW and its local counterpart Vellani & Vellani reviewed & provided their comments on the following ETPL documents related to Conditions Subsequent under the LSA:
  - License for Construction and Operation of LNG Receiving Terminal
  - License for Transmission of Natural Gas
  - Mandate Letter signed with IFC on May 7, 2014
  - Mandate Letter signed with ADB on May 19, 2014
  - Offer Letter of NBP for Bridge Finance dated February 28, 2014
  - Offer Letter of NBP for Project Finance Facility dated April 29, 2014
- WFW submitted the trip report for attending the pre kick-off and kick-off stakeholders meetings in Islamabad on August 11-12, 2014.
- WFW provided its comments on the draft Work Plan prepared by FGE.
- FGE commenced its support to SSGC in conjunction with WFW on LSA open items related to FSRU Option Agreement for Fair Market Value assessment.
- FGE submitted the trip report for attending the pre kick-off and kick-off stakeholders meetings in Islamabad & stakeholders meetings in Karachi from August 11-13, 2014, and revised presentation made during the kick-off meeting in Islamabad.
- The first part of draft Market Study Report was submitted by FGE which is under review.
- EPP reviewed and suggested amendments to the draft Work Plan till December 2014 submitted by FGE, focusing on key activities including LNG market report, procurement strategy, MSAs, draft SPA, and other items.
- Pre-award discussions were initiated with the selected bidder for conducting full mission bridge simulation study for PQA with the approval of Procurement Department. However, the discussions were put on hold upon finding out that EETPL had carried out a similar study, report of which would be available by the end of August. A decision would be taken in this regard subsequent to a review of EETPL study in consultation with PQA.
- EPP team visited the EETPL LNG terminal under construction at PQA, Karachi on August 21. During the visit, EPP team met with the bidder ranked No. 4 for providing consulting services for LNG import terminals at PQA. EPP emphasized upon the urgent need of providing a rationalized manpower plan by the bidder, and to ensure presence of foreign consultants on-site in Karachi as and when required until completion of the program.
- Pre-award discussions with the No. 4 ranked bidder for providing consulting services for LNG import terminals to PQA concluded. Request of Consent for USAID and Delivery Order were drafted and provided to the Procurement Department for further necessary action.

## Shale Gas

- Confidential well data regarding cores and cuttings were sent to NuTech labs in Houston for evaluation. This was included in the study to improve accuracy of the results.

- MPNR/DGPC officials visited Houston for a technical review tour to NuTech labs following USAID approval. Visit report would be submitted by LMKR shortly.
- Work on Milestone-4 is in progress, and likely to be completed in September as inclusion of confidential well data would require re-working.
- Wire-line logs and final well reports for UEPL confidential wells data (Ditch Cuttings) to study the intervals of Sember Formation requested by LMKR are still awaited. However, NuTech has indicated that the well cuttings data is not very useful and the same is on hold for the time being.

## Upstream Oil and Gas

- DGPC was provided day-to-day advisory support on various legal and regulatory issues by PTS consultants and the EPP team. Issues regarding extension of Sui Gas field lease, TORs for possible unitization agreement between two foreign companies through an independent consultant and certain gas pricing and license extension issues have been submitted to DGPC for consideration. Other issues examined included extension of Licenses/Leases, Unitization, legal framework for tight gas, rational use of gas in fields, recommendation on gas price determination for old fields of one of the companies and options for activation of dormant/depleted fields and 2012 Policy price for incremental production.
- The progress of work on outstanding cases was reviewed in Weekly Review meetings held with PTS.
- Draft Supplemental Agreement for policies conversion revised after incorporating PPEPCA's comments has been sent to DGPC for review and further action as deemed fit.
- As per discussion held with Law Division on July 18, a revised draft notification regarding amendment in Rules for extension of leases suggested to DGPC for onward transmission to Law Division has been submitted to Secretary MPNR for approval.
- A meeting was held with PTS regarding the amended RQ-2 covering the six months work plan. Following the meeting, PTS response to RQ-2 revision was received and discussed, and is likely to be finalized by early next week.
- Four professionals of Inter-State Gas System (two engineers, one economist and one with a finance background) have joined DGPC on the request of MPNR.
- PTS long-term consultants have developed a concept paper for fast track development of marginal gas fields. The same is under review.

## SUPPORT TO MINISTRY OF PLANNING AND DEVELOPMENT

**Implementation of PowerSIM:** EPP has begun implementation of PowerSIM and subsequent training at the Planning Commission Energy Wing. During the month, meetings were held with the newly appointed Member Energy to discuss PowerSIM training and assistance in the development of the current Five-Year Plan. The training program includes hands-on training to enable PC staff to operate and maintain the PowerSIM, as well as demonstration of its application and usefulness as a policy tool.

**Development of Five-Year Plan:** EPP is providing assistance to the Planning Commission in the development of the Five-Year Plan. This includes providing accurate energy forecasts, as well as providing technical expertise in projected power sector key statistics. EPP developed a model to allow PC to forecast electricity sector demand in main customer groups for the 11<sup>th</sup> Five-Year Plan and have started using the PowerSim model to quantify different policy and plans on the supply side. The result of this work will be the 11<sup>th</sup> Five-Year plan electricity section.

### Planning Commission

- EPP lent ongoing assistance to Planning Commission for the Power Sector Chapter of the 5-Year Plan.
- EPP lent ongoing assistance to the Planning Commission on PowerSIM and other analytical tools.

### Issues Constraints

- No constraints were faced during the reporting period.

## Planned Activities for the Coming Month

**Reorganization of the Energy Wing:** EPP will finalize a draft reorganization plan for the Energy Wing.

**Hydropower Database:** The Planning Commission will provide requisite documents for data extraction for the database. EPP will populate the database based on the inputs provided. The database will include project features, timelines, costs and benefits.

## 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. PowerSIM trainings at MWP scheduled for this month will now be conducted in the upcoming month. The visit to Jamshoro was cancelled because of the anticipated transportation issues and will be scheduled once the situation improves.

### MPD

Assistance on development of the Five-Year Plan is an urgent priority for 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. The decision on whether or not to undertake the study would only be taken after reviewing the simulation study report sponsored by EETPL, once available.

Discussions had to be opened with the bidder ranked No. 4 for providing consulting services for LNG import terminals at PQA as a result of refusal by the top three ranked bidders to send their foreign consultants to Pakistan given the security concerns. A rationalized manpower plan was negotiated with the bidder ranked No. 4 and draft Request for Consent and Delivery Order has been drafted which will be sent to USAID for award of sub-contract.

Conditions subsequent to LNG Services Agreement between SSGC and EETPL could not be met by the long stop date of August 28, 2014 due to unavoidable circumstances. It was then proposed and mutually agreed upon by all stakeholders to extend the long stop date till November 28, 2014. However, it was also agreed upon that there shall be no extension in the Scheduled Testing Commencement Date, the Testing Commencement Date and the Scheduled Commercial Start Date (as each term is defined in the LNG Services Agreement) in terms of clause 4.5 (*Right of Way*) of the LNG Services Agreement.

#### Shale Gas:

LMKR has received an invoice for the well cores received from OGDCL and shipped to NuTech Labs. The invoiced amount (US\$ 170,200/-) was excessive; therefore, LMKR had raised the issue with DGPC. DGPC assured LMKR that this data will not be charged as proposed by OGDCL and the data should be included in the study. The matter has been taken up with OGDCL.

#### 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 professionals) from ISG 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 is also preparing a plan for providing the services of a professional team on the request of USAID to clear the backlog of pending cases.

The timeline for implementing some activities in the work plan has been missed due to delayed visit of foreign consultants. Accordingly, a mid-course revision in the work plan has been in discussion and is likely to be finalized soon.

## ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

### MWP

- PowerSIM trainings for staff nominated by MWP
- Providing Policy Papers on key power sector items for senior management at MWP

### MPD

- Continued trainings on PowerSIM
- Assistance to the Member Energy on a variety of issues in the Power Sector including transmission, generation, circular debt analysis

### 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; development and implementation of work plan for LNG procurement strategy and initiation of procurement activities; 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.

# 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.

EPP also provided detailed information on overall project cost, schedules, development approach and financial plan of Diامر-Basha dam Project for the proposed conference to be held in Washington D.C tentatively on October 8, 2014.

EPP has obtained preliminary 'milestone and payment schedule' from WAPDA for the Kaitu Weir project. This schedule is essential to complete a PIL for the G2G transfer of USAID funds. The information has been shared with USAID.

EPP's Component 3 undertakes due diligence of candidate projects to provide the information required to reduce USG risks and develop Project Implementation Agreements for selected projects. At USAID/Pakistan's direction, EPP follows a two-step Due Diligence Process as follows:

## ADDITIONAL SUPPORT TO USAID

EPP also assisted USAID in responding to questions and issues raised by reviewers in Washington D.C. on USAID plans to fund WAPDA for the completion of on-going and new construction projects under Component 3.

## ISSUES/CONSTRAINTS AND STEPS TAKEN TO RESOLVE THEM

EPP have also requested WAPDA to take ownership of the Kaitu Weir project by regularly sharing their Progress Reports, security situation and site activities of the project with USAID.

Moving forward, the next step is signing of a PIL agreement with WAPDA committing funds for the project. Currently USAID asks EPP to call WAPDA to seek information but without written assurance or commitment by WAPDA.

EPP also suggested to WAPDA to establish a project office at Spin Wam, close to the site of Kaitu Weir to demonstrate their seriousness in starting the project.

## ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

- An Activity Agreement and related PIL to provide funds for to the two RoR projects are overdue. USAID and WAPDA are in discussions for establishing pending liabilities of both projects, and EPP proposes to respond quickly to assist them in accomplishing the task.
- EPP continued support to USAID and WAPDA to finalize activity schedule and PIL agreement for US\$ 81 million funding for Kaitu River and Affiliated Structure. WAPDA need to establish a Kaitu Weir Project Office in Spin Wam in North Waziristan to demonstrate their ability to start the project. WAPDA also need to finalize timelines for bidding process of the project. EPP will continue to work with WAPDA and keep USAID informed of progress.

# 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, 321.1 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 – 44 out of 84 (~52%) reports have been compiled to-date. All substations have been audited. The reports highlight shortcomings/bottlenecks found and recommend preventive and corrective measures.

#### Power Transformer Program

- Thirteen oil sample results were received and analyzed this month, making 189 of 206 (~92%) completed. The results determine potential transformer damage and the consequence of an outage which can cause unscheduled load-shedding.
- Oil seepage from new 40MVA PTF at 132kV Hattar GS was successfully rectified on August 11, 2014.
- An SOW for procurement of oil purification plant was prepared – the procurement process has initiated. Once delivered, the plant will help PESCO in purifying transformer oil.

#### Capacitor Bank Rehabilitation

All material and equipment i.e. (Current Transformer, Circuit Breakers with all accessories and Capacitor Cells) for capacitor bank rehabilitation have been delivered to PESCO store at 132kV Shahibagh GS and 132kV Jamrud GS.

#### P&I Vans and Test Equipment

The registration of three Vans for Protection & Instrumentation department of PESCO was completed. The SOW for modification of P&I vans was prepared and the RFP floated. The equipment and vehicles will be handed over in an official event.

#### NTDC Technical Audits

To-date, 24 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 26 out of 41 substations have been audited (~63%) by now.

#### IT Support for Secured Metering System (SMS)

The Storage Area Network (SAN), Servers, UPSs and other associated equipment were delivered to NTDC last month. The assembly, installation and commissioning of the system is taking place at the WAPDA House, Lahore. The system will help NTDC on commercial and operational fronts. EPP anticipates that the system will be functional by end of September this year.

## Issues/Constraints and Steps Taken to Resolve Them

- The Hattar Power Transformer oil leak issue was discussed with PESCO & PEL. After detailed deliberations, EPP, PESCO & PEL agreed on method statement for carrying out the maintenance. The maintenance activity was carried out in light of agreed method statement on August 11. The transformer is functioning properly and is not a safety/environmental hazard anymore.
- As part of extension of SMS to DISCOs, LED Display Panels will be given to all DISCOs. NTDC had written letters to DISCOs asking them to accept the Panels and allocate space for their installations in the control rooms. Only four DISCOs have responded till now – efforts are being made to obtain letters from the remaining DISCOs.

## 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
- Training of CPPA IT personnel on deployment and O&M of Storage Area Network (SAN)
- Installation and commissioning of IT equipment for NTDC and DISCOs for strengthening the SMS.

# CROSS-CUTTING ACTIVITIES

## CAPACITY BUILDING

### Best Practices in Thermal Operations and Maintenance Training

EPP completed the training report for the Best Practices in Thermal O&M training and submitted the findings to USAID. EPP will follow up with participants from the training in September to review course assignments and measure the impact of training on O&M improvements.

### Best Practices in Hydro Operations & Maintenance Training

EPP received revised nominations from WAPDA for the three anticipated Best Practices in Hydro O&M Training. EPP's generation technical team will select 60 hydel plant staff with the ability to better manage their respective units, and undertake preventative and predictive maintenance measures.

The first training program is tentatively scheduled for October 2014. The O&M training program 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 received DS-2109 forms for the NTDC Grid Operation participants. As part of obtaining the J-1 visa, EPP held sessions with NTDC Grid Operations participants in Lahore. The sessions aim to assist the participants in filling in the Online Nonimmigrant Visa Application (DS – 160). EPP plans to schedule visa interviews for 9 participants to receive J-1 visas in early September.

EPP received nominations from NTDC for the next exchange visit focusing on market operations. EPP will interview nominees for selection in early September.

EPP continues to develop a Design Department Rehabilitation and Capacity Building scope of work that will increase NTDC's design capacity, and its ability to better deliver transmission improvements.

EPP continued working with the Storage Area Network (SAN) providers to develop training curriculum for CPPA. Training was delayed due to security concerns in Lahore; however, EPP anticipates SAN Training for early September.

### DISCO Live Line Maintenance Training

With the September arrival of Live Line trucks, trailers, and tools, EPP continues to plan for four DISCO refresher courses to start in October 2014.

## LNG

EPP's procurement team is in the process of identifying the service providers for the LNG Business and Management Intensive Training Program to support LNG stakeholder understanding of port and commercial operations with site visits. EPP anticipates a third country or U.S. based program to be delivered in December 2014.

## GENDER ACTIVITIES

### Gender Equality Assessment

As part of the follow up on the gender employment data, EPP met with Director General (Policy) Qazi Muhammad Saleem Siddiqui Ministry of Petroleum and Natural Resources (MPNR). EPP anticipates receiving all remaining gender employment data in early September. Once all the data is received, EPP will submit the Gender Assessment for the Energy Sector to USAID for approval.

EPP shortlisted 5 short-term Gender Specialists for drafting the gender equality strategy in September 2014. Due to security concerns, EPP will interview and select the specialist in early September.

### Female Participation in Training Activities

EPP will reach out to Islamabad-based engineering universities to obtain female nominations to participate in the best practices in hydel O&M training program tentatively scheduled for October 2014.

## 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 for approval.

### Site Visits

EPP conducted a site visit for PESCO installations, operations, and maintenance improvements. EPP will obtain a signed, acknowledgment letter verifying EPP's technical and installation support since 2013.

EPP will conduct the post-training evaluations at GENCOs I, II, and III in September 2014. The purpose of these site visits is to review O&M training outcomes, as well as verify installations of equipment that resulted in MW gains.

## ANTICIPATED ACTIVITIES FOR THE NEXT REPORTING PERIOD

- Storage Area Network training for CPPA will be conducted in September following the delivery and installation of equipment.
- EPP will conduct post-training evaluations for GENCOs I, II, and III related to O&M training in September 2014.
- PowerSIM Training for PC will be conducted in September – Date to be determined. EPP will monitor and evaluate PowerSIM progress at MPNR following the delivery of the PowerSIM model.
- Gender assessment of key stakeholders to be drafted and shared with USAID for comments.
- Hiring of a Short-term Gender Specialist to design and develop the gender strategy.
- Identification and selection of the service providers for the LNG Business and Management Intensive Training Program.
- NTDC Grid Operations Exchange pre-training briefing to draft plan of action prior to departure to U.S.
- Interviews to select nominees for the two of the three Exchange visits focusing on commercial and market operations.

# 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. Similarly, a variety of information is uploaded on the official EPP website to keep viewers abreast of current and past activities and interventions. Other promotional material such as banners and standees were designed and produced catering for programmatic events.

During the reporting period, EPP's Communications & Outreach covered the LNG kickoff meeting held at Marriott Islamabad.

## REPORTS

Appropriate USAID branding and marking was ensured for the following EPP-generated reports:

- EPP Presentation.
- Monthly Report - July 2014.
- Pre-training Briefing Manual - Storage Area Network Training.
- Policy Brief No. 1 - Increasing Domestic Gas to the Power Sector.
- Interim Report Milestone 3 - Shale Gas Resource Assessment.
- Best Practices in Thermal Operations and Maintenance Training Report: March – June 2014.
- Ten Power Point Presentations for Storage Area Network Training.
- Designed and prepared backdrop and standees for Storage Area Network Training.

## 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 be a mega media event.

**Confidential information redacted**

1. Time Sheets (Islamabad, Lahore and Peshawar)
2. Per Diem Calculations (Islamabad, Lahore)
3. Overtime Calculations (Islamabad, Lahore and Peshawar)
4. Deductions (Mobile and Others) (Islamabad, Lahore and Peshawar)
5. Transfer advice preparations (Islamabad, Lahore and Peshawar)
6. Pay Slips for the month of Aug 2014 (Islamabad, Lahore and Peshawar)
7. Technical Payments (Foreign Wires)

## Logistics

Logistical support was provided for 25 trips made by project staff. International travel for expats was arranged.

## Human Resources

During the reporting month, Completed Recruitment for the following staff

1. Inductions during Aug 2014
  - a. Syed Makbul Ahmed Shah (Communications Specialist) Islamabad Office
  - b. Muhammad Danish Akhtar (Administrative Assistant) Lahore Office
2. Deductions during Aug 2014
  - a. Syed Usman Ali Shah (Assistant Electric Engineer) Peshawar Office
3. Leave Record (Islamabad, Peshawar and Lahore)
4. Health Insurance and Card Issuance (Islamabad, Peshawar and Lahore)
5. Monitoring of Mobile and OPD/IP Ceilings (Islamabad, Peshawar and Lahore)
6. Interviews conducted for the positions advertised.
7. Life Insurance of AEAI employees.

## IT PROCUREMENT

During this reporting period, the following tasks were undertaken by IT for Islamabad, Peshawar and Lahore offices.

1. Cisco Wireless Access point for Islamabad office.
2. Portable hard disk drive purchased for Islamabad office
3. Miscellaneous IT Accessories like USB, Optical Mouse, Cables, Power Adapters, Laptop bags, etc.

## IT SUPPORT & SERVICES

1. Installation, Configuration and e-mail setup on 4 Laptops
2. Network cable laying at House 2 to connect CCTV DVR
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. CCTV System Management for Peshawar, Islamabad and Expatriates houses
7. Troubleshooting of (AEAI, ISB office, M/o Finance, NPCC, Lahore office and Peshawar office) Network Printers and complete track of cartridges/toner replacement.
8. Monthly attendant backup activity for outlook e-mails communication.
9. IT support to all program staff including seconded staff and third party contractors working at Ministries, NPCC and DGPC.
10. 24/7 Internet, Telephone and Video Services Support on Expatriates' houses in Islamabad and Peshawar.
11. E-mail Server management of **ep-ep.com.pk** domain and BlackBerry Services Administration and support for all Program Staff.
12. Complete monthly payroll and large official documents scanning

13. Assisting Administration & Finance department to keep well-run database record for Travel Authorization and Leave Application Forms
14. Daily routine hardware, software, systems and network support to all EPP staff
15. 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)	18.12	37.94	47.77

Table 6: Purchase Orders Issued during the Month

Progress/ Activities	Impacts	Issues/ Constraints	Resolving Issues
<b>Hilux Pickups 4x4 M/T for Transmission for 09 DISCO's:</b> Purchase Order Issued, Amount <b>US\$ 270,000.</b>	N/A	N/A	N/A
<b>Telescopic Bucket Truck for PESCO:</b> Purchase order issued for Telescopic Bucket Truck. Amount <b>US\$ 231,558.</b>	N/A	N/A	N/A
<b>Hydroelectric Power for Basha Dam:</b> Purchase order issued for Hydroelectric Power Dam, Hydro Advisor. Amount <b>US\$ 5,000.</b>	N/A	N/A	N/A
<b>Hydroelectric Power for Basha Dam:</b> Purchase order issued to Finance Advisor, Suman Babar for Hydroelectric Power, finance advisor. Amount <b>US\$ 25,000.</b>	N/A	N/A	N/A
<b>Custom Clearance and Transportation of Live Line Tool Trailers:</b> Purchase order issued to M/s Security Packers for Custom Clearance and Transportation with Transit Insurance for 09 Live line Tool Trailers. Amount <b>US\$ 10,020.</b>	N/A	N/A	N/A

## Work Continued

- Tool & Equipment for PESCO T&G Department:** Technical Evaluation completed and Best and Final Offer called from bidders with closing date August 29, 2014. Approx. Amount **US\$ 450,000.**
- 220/132kV-250MVA Three Phase Auto Transformers (NTDC):** Request for consent sent to USAID. Approx. Amount **US\$ 2.8 Million.**
- Repair of damaged Towers:** Best and Final Offer Request (BAFO) received from bidders and bidding in process. Approx. Amount **US\$ 300,000.**
- Port Qasim Authority Consultancy Service:** Financial and technical evaluations completed. Negotiations with consultants in process. Approx. **US\$ 1,500,000.**
- Full Bridge Simulation Study Service:** Financial Evaluations in Process. Approx. Amount **US\$ 250,000.**
- Replacement of 20/26 MVA PTF at 132kV Chakdara:** Bids opened and financial evaluation in process for Replacement of 20/26 MVA Power Transformer at 132 kV Grid Station Chakdara. Amount **US\$ 15,000.**
- Study for Enhancement of Transmission Capacity of NTDC:** Technical Bids Opened for consultancy for Study for enhancement of transmission capacity of NTDC's 500kV Transmission System by the application of Series Compensation and Technical Evaluation in process. Approx. Amount **US\$ 50,000.**
- 4 Sets of 220kV & 27 Sets of 132 kV Circuit Breakers:** Technical Bids opened for supply of 4 sets of 220kV & 27 sets of 132 kV Circuit Breakers for NTDC & PESCO respectively and Technical Evaluation in process. Amount **US\$ 1.13 Million.**

9. **LNG Business Management Intensive Training Program:** Request for Proposal uploaded at EPP Website with closing date September 01, 2014. Amount **US\$ 165,975.**
10. **Consultancy for Study to determine the limit of Integrating Intermittent Renewable (Wind & Solar) Resources onto Pakistan National Grids:** Request for Proposal uploaded at EPP website with closing date August 11, 2014. Amount **US\$ 70,000.**
11. **Real Time Digital Simulator for NTDC:** Request for Proposal uploaded at EPP Website with closing date September 01, 2014. Amount **US\$ 500,000.**
12. **Bus Disconnecter, Current Transformer and Surge Arrestors:** Request for Proposal uploaded at EPP Website with closing date September 01, 2014 for supply of Bus Disconnecter, Current Transformers and Surge Arrestors for Mardan and Nishatabad GS to be delivered at NTDC Warehouse Gatti. Amount **US\$ 300,000.**
13. **Hardware and Software for NTDC Design Department:** Request for Proposal uploaded at EPP Website with closing date August 25, 2014 for Hardware and Software with Training for NTDC Design Department. Amount **US\$ 700,000.**
14. **Supply of Hardware Connectors and Conductors for NTDC Mardan & Nishatabad GS:** Request for Proposal uploaded at EPP Website with closing date September 08, 2014 for Supply of Hardware Connectors and Conductors for NTDC Mardan and Nishatabad Grid Stations. Amount **US\$ 300,000.**
15. **Technical Assistance for Monitoring and Auditing:** Request for Proposal uploaded at EPP Website with closing date August 29, 2014 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.**
16. **Personal Protective Equipment (PPE):** Request for Proposal sent to limited bidders, deadline September 18, 2014. Amount **US\$ 48,000.**
17. **Oil Purification Plant:** Request for Proposal in process for Supply of two Oil Purification Plants for PESCO. Amount **US\$ 150,000.**
18. **Modification of 03 P&I Testing Vans:** Request for Proposal sent to vendors with closing date September 03, 2014 for Modification of three P&I Testing Vans for PESCO. Amount **US\$ 7,500.**

### Planned Activities for the Next Month

1. Purchase order for Repair of Damaged Towers.
2. Purchase order for 220/132kV-250MVA Three Phase two Auto Transformers.
3. Purchase order for Tool & Equipment for PESCO T&G Department.
4. Purchase order for supply of 4 sets of 220kV & 27 sets of 132 kV Circuit Breakers for NTDC & PESCO.
5. Sub Contract for LNG Business Management Intensive Training Program.
6. Bid evaluation process for Consultancy regarding study to determine the limit of Integrating Intermittent Renewable (Wind & Solar) Resources onto Pakistan National Grids and issuance of subcontract.
7. Bid evaluations and issuance of purchase order for Real Time Digital Simulator for NTDC.
8. Purchase order for supply of Bus Disconnecter, Current Transformers and Surge Arrestors for Mardan and Nishatabad GS to be delivered at NTDC Warehouse Gatti.
9. Purchase order for Hardware and Software with Training for NTDC Design Department.
10. Purchase order for Supply of Personal Protective Equipment (PPE) for Live Line Trainers.
11. Bid evaluation process, purchase order for Supply of Hardware Connectors and Conductors for NTDC Mardan and Nishatabad Grid Stations.
12. Purchase order for Supply of two Oil Purification Plants for PESCO.
13. Purchase order for Modification of three P&I Testing Vans for PESCO.
14. Sub Contract for Technical Assistance for Monitoring and Auditing Implementation Compliance of EDF and EMMP for Hydroelectric Power Plants, Transmission and LNG Activities.
15. Bid evaluation process for supply of Bus Disconnecter, Current Transformers and Surge Arrestors for Mardan and Nishatabad GS to be delivered at NTDC Warehouse Gatti.
16. Follow-up for delivery of SAN & Equipment and Training for NTDC.

17. Inventory Tagging and arranging Material Receiving Report (MRR) for delivered goods.
18. 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 August 2014

Meeting with	Date	Location	Purpose	Outcome/Result
Mr. Riaz Qadeer Bukhari, Director CS, IESCO Mr. Irfan Mehmood, Deputy Manager C.A, IESCO Mr. Moazzam Hussain, Deputy Manager CPC, IESCO	August 4, 2014	Islamabad Electric Supply Company, Islamabad	Discuss the treatment of Additional tariff items and subsidies for the validation of methodology used in PowerSIM.	<ul style="list-style-type: none"> <li>Obtained required information on General Sales Tax, Tax on Fuel Price Adjustment, Extra Tax, and Income Tax.</li> </ul>
Mr. Carlos Guerra(USAID)	August 5, 2014	EPP Office	Briefing on Power SIM and its application	<ul style="list-style-type: none"> <li>Provided update on PowerSIM status and discussion of current status</li> <li>Discussion on training schedule/implementation plan for August 2014</li> </ul>
USAID	August 6, 2014	US Embassy	To review the procedure of cost estimates for G2G projects	<ul style="list-style-type: none"> <li>Validation of cost estimates for G2G projects</li> </ul>
MPNR Director General (Policy) Qazi Muhammad Saleem Siddiqui	August 6, 2014	AEAI Office, Islamabad	To discuss gender baseline data and EPP scope for assessment and strategy for energy sector	<ul style="list-style-type: none"> <li>DG Policy will coordinate to have AEAJ obtain EPP's gender data survey.</li> </ul>
USAID Project Manager (Mr. Carlos) and Jamshoro Project Manager (Mr. Iftikhar Aziz)	August 7, 2014	EPP Office	To review the progress of remaining equipment	<ul style="list-style-type: none"> <li>It was advised to expedite the procurement of remaining equipment</li> </ul>
CEO EETPL, EPP	August 7, 2014	Energy House, Islamabad	Briefing on EETPL LNG Terminal construction progress, full mission bridge simulation study for PQA	<ul style="list-style-type: none"> <li>Report of Navigation simulation study sponsored by EETPL to be shared with EPP.</li> <li>EPP to consider providing training support for PQA pilots and tug masters for maneuvering LNG vessels.</li> </ul>

Meeting with	Date	Location	Purpose	Outcome/Result
Federal Minister MPNR, Minister of State MPNR, Special Advisor to PM, Secretary MPNR, USAID, ISGS, SSGC, PSO, SNGPL, FGE, WFW, EPP	August 11-12, 2014	Marriott Hotel, Islamabad	Multi-stakeholders pre kick-off and kick-off meetings for devising an LNG procurement strategy for Government of Pakistan (GoP)	<ul style="list-style-type: none"> <li>Way forward and guidelines for developing LNG procurement strategy provided to FGE and WFW.</li> <li>FGE to prepare a detailed market study report for GoP and other stakeholders, followed by monthly LNG market reports tailored for Pakistan.</li> <li>WFW to provide legal support to SSGC on LSA open items.</li> </ul>
PSO, FGE, EPP	August 13, 2014	PSO Head Office, Karachi	Follow-up discussion after kick-off meeting, training/capacity building for PSO	<ul style="list-style-type: none"> <li>EOIs received by PSO for LNG procurement would be evaluated by FGE.</li> <li>FGE to provide support to PSO in G2G discussions for LNG procurement.</li> </ul>
EETPL, FGE, EPP	August 13, 2014	EETPL Office, Karachi	Update on LNG terminal construction, issues pertaining to Q-Flex LNGC and FSRU	<ul style="list-style-type: none"> <li>FGE gave an overview on the various procurement options being considered for ensuring early supply of LNG to Pakistan.</li> <li>CEO EETPL briefed about the current status of the project.</li> <li>Issues regarding payment of dead freight due to disparity in LNG Q-Flex and FSRU capacity need to be considered carefully.</li> </ul>
Ivanna Reed and Raana Zafar of World Learning's Training for Pakistan Program	August 19, 2014	World Learning Office, Islamabad	To discuss logistics and goals of anticipated Women's Energy Internship Program under TFP's Task Order.	<ul style="list-style-type: none"> <li>EPP will be responsible for participant selection criteria, selection, informal buy-in from partner organizations, and gender justification memo.</li> <li>TFP will be responsible for all logistics, advertisements, and stakeholder organization.</li> </ul>

Meeting with	Date	Location	Purpose	Outcome/Result
PQA, EPP	August 21, 2014	PQA, Karachi	Review of USAID-EPP support to PQA to facilitate implementation of Fast Track LNG Program	<ul style="list-style-type: none"> <li>EPP FMBS Study will be kept on hold till the receipt of EETPL final report.</li> <li>After full review of the report and its validation by PQA Pilots on the Full Mission Bridge Simulator, PQA will confirm and inform EPP whether Study under the existing EPP RFP or part thereof, is still required.</li> <li>DG Technical and DG Operations PQA will finalize the training requirements in coordination with EPP for capacity building in the relevant port functions specially related to the LNG Project.</li> <li>PQA confirmed provision of office-space for port consultants and LNG Advisor EPP at PQA head office.</li> <li>In response to their request for USAID EPP support, PQA was advised to develop a comprehensive scope of work for conducting a navigational study for Chann Waddo Creek and forward to EPP for consideration and review by EPP and USAID.</li> </ul>
PSO, EPP	August 22, 2014	PSO, Karachi	Follow-up to kick-off meeting at Islamabad	<ul style="list-style-type: none"> <li>Monthly LNG market reports prepared by FGE would be shared with PSO.</li> <li>Training sessions conducted by FGE for LNG procurement would also be held at Karachi to facilitate wider PSO &amp; SSGC participation.</li> </ul>
ECIL-Granada, EPP	August 22, 2014	ECIL, Karachi	Pre-award meeting with LNG Port Consultants	<ul style="list-style-type: none"> <li>Outstanding issues resolved and ECIL confirmed availability by Sept 15, 2014.</li> </ul>
ISGS, EPP	August 25, 2014	ISGS, Islamabad	Review of LNG procurement program	<ul style="list-style-type: none"> <li>Work Plan till December 2014 to be developed with FGE, focusing on key activities including LNG market report, procurement strategy, MSAs, draft SPA, and other items</li> </ul>

Meeting with	Date	Location	Purpose	Outcome/Result
Ahmad Kamal Janjua and Tahir Ali Khan of IRG's Power Distribution Program	August 25, 2014	IRG Office, Islamabad	To discuss potential trainers and EPP support for trainings to be delivered to NEPRA as a result of PDP's training needs assessment.	<ul style="list-style-type: none"> <li>EPP is reviewing the NEPRA needs assessment to see if we can recommend trainers/subcontractors to complete PDP's request.</li> </ul>
Mr. Arshad Malik, Chief Power, Planning Commission & Member Energy	August 25-27, 2014	Energy Wing, Planning Commission.	Introduction of Power SIM and implementation/training schedule	<ul style="list-style-type: none"> <li>Nomination of staff members for Power SIM training</li> <li>Familiarizing trainees with Power SIM model</li> <li>Application of Power SIM in development of Five-Year Plan</li> </ul>
Aftab Ahmad Sethi and Niaz Muhammad Khan of PESCO	August 26-29, 2014	PESCO Office, Peshawar	To verify installations, operations, and maintenance improvements at PESCO sites.	<ul style="list-style-type: none"> <li>EPP completed the site visit and will have the travel report and acknowledgement letter as supporting documentation for indicator gains.</li> </ul>
NTDC participants Grid Operations exchange	August 26-29, 2014	NTDC and AEAI Office, Lahore	To assist participants in the completion of the DS-160 non-immigrant visa application	<ul style="list-style-type: none"> <li>Collected their one-page confirmation form (with legible barcode)</li> </ul>
Advisor MPNR, OGDCL, EPP, PTS	August 27, 2014	OGDCL, Islamabad	Utilization of standard gas recoveries for power generation	<ul style="list-style-type: none"> <li>EPP team/PTS long term consultants to suggest a draft framework for utilization of stranded gas fields for power generation by early September.</li> </ul>

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