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USAID ENERGY POLICY PROGRAM

MONTHLY PROGRESS REPORT

August 2015



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©USAID Energy Policy Program
House 4, Street 88, Sector, G-6/3
Ataturk Avenue, Islamabad, Pakistan.
Tel: +92 (51) 835 7072, Fax: +92 (51) 835 7071
Email: tjaved@ep-ep.com.pk

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ACRONYMS

AEAI	Advanced Engineering Associates International, Inc.
AEDB	Alternative Energy Development Board
DGPC	Director General Petroleum Concessions
ECC	Economic Coordination Committee
EETL	Engro Elengy Terminal Limited
DISCO	Distribution Company
EMMP	Environmental Mitigation and Monitoring Plan
EPP	Energy Policy Program
ERP	Enterprise Resource Planning
FWO	Frontier Works Organization
G2G	Government-to-Government
GENCO	Generation Company
GIS	Geographical Information System
GOP	Government of Pakistan
IPP	Independent Power Producer
JPCL	Jamshoro Power Company Limited
LNG	Liquefied Natural Gas
MPNR	Ministry of Petroleum and Natural Resources
MSPA	Master Sales Purchase Agreement
MW	Megawatt
MWP	Ministry of Water and Power
NEPRA	National Electric Power Regulatory Authority
NTDC	National Transmission and Dispatch Company
OGRA	Oil and Gas Regulatory Authority
PESCO	Peshawar Electricity Supply Company
PIL	Project Implementation Letter
PPA	Power Purchase Agreement
PQA	Port Qasim Authority
PSO	Pakistan State Oil Company
RTPSS	Real Time Power System Simulator
SCADA	System Control and Data Acquisition
USAID	United States Agency for International Development
WAPDA	Water and Power Development Authority

EXECUTIVE SUMMARY

MONITORING AND PROJECT IMPLEMENTATION SUPPORT

During August, the Energy Policy Program (EPP) continued to provide monitoring and implementation support for the on-going G2G Signature Energy Projects. EPP conducted several site visits and provided United States Agency for International Development (USAID) with detailed quarterly financial projections along with project briefers for the Mangla, Tarbela Phase-I and Phase-II, Guddu, Jamshoro, Muzaffargarh, and Mangla rehabilitation projects. The projections will help USAID in forecasting expected disbursements.

EPP visited Tarbela Hydro Power Station Rehabilitation site to inspect the on-going installation of the SCADA system, which will add to the reliability of the power plant operations. EPP also met with Water and Power Development Authority to expedite the procurement of equipment for Tarbela. EPP's environmental expert visited Tarbela to ensure that the rehabilitation works are in compliance with the Environmental Mitigation and Monitoring Plan and subsequently submitted the environmental monitoring report to USAID.

EPP visited Mangla Dam site to expedite the procurement of equipment for the Rehabilitation Project. EPP supported Guddu Thermal Power Station in obtaining a tax exemption letter from USAID for equipment worth of \$346,214 to help in expediting its procurement and installation at Guddu. On request of USAID, EPP provided information on environment-related lessons learned to USAID on the basis of their environmental compliance monitoring at Guddu. EPP's environmental expert visited Jamshoro Thermal Power Station to ensure that the rehabilitation works are in compliance with the GOP and USG regulations.

POLICY AND REFORM

EPP staff followed up with the Joint Secretary (Policy) at Ministry of Water and Power (MWP) on stakeholders' comments on the revised draft Power Purchase Agreement submitted to MWP and by them to Generation Companies (GENCOs). The Joint Secretary is meeting with GENCOs and GENCO Holding Company Ltd. and has requested EPP to continue finalization of the draft Power Purchase Agreement based on agreed guidelines.

EPP worked on the Connection Agreement to be executed between users of the grid, including GENCOs, distribution companies, and the National Transmission and Despatch Company (NTDC). A working paper on the Connection Agreement was shared with MWP and NTDC to get their feedback on the conceptualization and outline proposed by EPP.

EPP initiated acquisition of data for establishing an online data repository for the Ministry of Planning and Development Energy Wing, where documents such as working papers, presentations, briefs, analysis, and reports from all sections of the Energy Wing will be stored for robust availability. Through its seconded staff, EPP provided IT application support through use of existing software to update the daily power supply demand scenario and shortfall in the power sector, based on daily information provided to the Planning Commission.

EPP participated in a meeting with Member (Energy) and the Pakistan Bureau of Statistics to review their present Geographic Information System (GIS) hardware capacity and its utilisation as a possible

host for a GIS map of national transmission infrastructure, power generation plants, and upcoming projects.

Meetings were held with the management and staff of NTDC to provide an update of strategic planning changes requested by board, an overview of organizational design, and discussion of conflicts in NTDC's current organizational structure. At the Ministry of Finance, EPP provided analysis of the DISCOs' tariff differential claims for June 2015.

The EPP team provided feedback and analysis of PSO's spot LNG tender process and prepared LNG spot market assessment (post-September 2015) and monthly spot LNG pricing forecast for PSO. EPP's consultant accompanied the Port Qasim Authority team in meetings with Qatargas in Dubai on August 10-11 to discuss operational and port related issues with regard to the long-term SPA being negotiated between GOP and Qatargas. EPP consultant's environmental expert and EPP's LNG Advisor visited the Engro Elengy LNG Terminal on August 18 for environmental compliance monitoring.

Advisory support to DGPC on upstream oil and gas included work on pending extension of licenses and leases. Proposed modifications in the offshore model PSA are under EPP review. Proposed changes in the model Petroleum Concession Agreement/Joint Operating Agreement/Accounting Procedure have been submitted by EPP's consultant and are also under EPP review.

NEW PROJECTS, PLANNING, AND DEVELOPMENT

Evaluation of the technical proposal and financial proposals received for construction of the Kaitu Weir, feeder tunnel linking Kaitu River to Kurram Tangi Reservoir, two power houses with installed capacity of 18.4 MW, two irrigation canals, and associated structures have been finalized. Milestone dates for funding disbursement and associated payment schedule for the proposed \$81 million USAID funding will be finalized when the contract is awarded by WAPDA.

The crane-mounted trucks for PESCO are scheduled to arrive in Karachi on August 31 with job completion on September 14. The registration forms for the four telescopic bucket trucks delivered to the PESCO warehouse on April 28, 2015 have been issued and handed over.

Two 40 MVA power transformers were installed and commissioned at 132 kV Chakdara and Peshawar Industrial grid stations. The completion certificates for both transformers are yet to be received from the vendor. EPP is in the process of procuring two oil filtration plants for PESCO's operations and maintenance staff. The plants are awaiting Customs clearance and are expected to be delivered in September. The purchase order for three new 40 MVA power transformers has been executed. These transformers are under manufacturing and their Factory Acceptance Tests are scheduled for September.

EPP has received the draft report on study of integration of intermittent renewable resources on August 28, 2015 with the final report due on September 25, 2015. Two JHSP 250MVA, 220/132kV Auto-Transformers were delivered at Mardan Grid Station (KP) with installation and commissioning works are scheduled to start on October 1, 2015. Circuit breakers for the Mardan transformer project are awaiting Customs exemption certificate; they are scheduled for mid-September delivery.

The live-line training for 20 linemen from LESCO and QESCO started on May 18, 2015 and will be completed on September 18, 2015. The four-week live-line refresher course for GEPCO was started on August 10 and is scheduled to be completed on September 4, 2015.

Registration for HESCO's live-line vehicle was completed, and EPP handed over a complete set of tools, trailers, and vehicles to HESCO. One live-line vehicle each was handed over to MEPCO, SEPCO, LESCO, and QESCO.

COMPONENT I: PROJECT MONITORING AND IMPLEMENTATION

During August, EPP continued to provide monitoring and implementation support for the on-going Government-to-Government (G2G) Signature Energy Projects. EPP conducted several site visits and provided USAID with detailed quarterly financial projections, along with project briefers, for the Mangla, Tarbela Phase-I and Phase-II, Guddu, Jamshoro, Muzaffargarh, and Mangla rehabilitation projects. The projections will help USAID in forecasting expected disbursements. Table I below summarizes results achieved through G2G projects in August.

Table I: Results Achieved through G2G Projects

Projects	USG Funding (\$ Million)	Disbursed (\$ Million)	Completion Date	MW GAINS/BENEFITS	
				Target	Achieved (August 31, 2015)
Tarbela (Phase I)	16.50	15.55	12/31/15	128.0 MW	128.0 MW
Jamshoro	19.32	19.32	6/30/16	150.0 MW	270.0 MW
Guddu	19.12	18.91	12/31/15	75.0 MW	80.0 MW
Muzaffargarh	15.77	15.71	3/31/16	475.0 MW	500.0 MW
Gomal Zam	45.00	45.00	Complete	17.4 MW	17.4 MW
Satpara	26.00	26.00	Complete	17.6 MW	17.6 MW
Mangla	150.00	13.00	12/31/17	90 MW	In progress
Tarbela (Phase II)	25.00	Signing of Project Implementation Letter is in Progress	12/31/16	20 MW	In progress
Total	316.71	153.49		973 MW	1013 MW

REHABILITATION OF TARBELA HYDROPOWER PLANT

Phase-I:

The EPP team visited the Tarbela Power Station site to inspect the on-going installation of the System Control and Data Acquisition (SCADA) system. The installation of this system will add to the reliability of power plant operations. EPP also met with Water and Power Development Authority (WAPDA) officials to expedite the procurement of equipment under Phase-I of the



SCADA RTU panel front view

Work stations in SCADA room

Tarbela Rehabilitation Project. EPP environmental expert visited the site and subsequently submitted the environmental monitoring report to USAID. The visit was conducted to ensure that the rehabilitation works are in compliance with the Environmental Mitigation and Monitoring Plan (EMMP). EPP also provided USAID with detailed quarterly financial projections, along with a project briefer.

Phase-II:

EPP met with WAPDA to expedite the procurement of equipment under Phase-II of the Tarbela Hydro Power Rehabilitation Project. On request of USAID, EPP provided its assessment on the WAPDA cost estimates for equipment under Tarbela Phase-II. The project will add 20 MW to the national grid and add to the sustainability of power plant operations. EPP also provided USAID with detailed quarterly financial projections, along with a project briefer.

Subsequent to the Tarbela site visit by EPP's environmental expert, EPP submitted the environmental monitoring report to USAID. The visit was conducted to ensure that the rehabilitation works are in compliance with the EMMP.

GUDDU THERMAL POWER STATION REHABILITATION PROJECT

On request of USAID, EPP provided to USAID, information on environment related lessons learned on the basis of environmental compliance monitoring.

EPP also supported Guddu in obtaining a tax exemption letter from USAID for equipment worth \$346,214. This will help in expediting the procurement and installation of the remaining equipment. EPP also provided to USAID, detailed quarterly financial projections, along with a project briefer.

JAMSHORO THERMAL POWER STATION REHABILITATION PROJECT

EPP's environmental expert visited the power station to ensure that the rehabilitation works are in compliance with the Government of Pakistan (GOP) and USG regulations as recommended in the approved EMMP. The report will be submitted to USAID in early September. EPP also provided to

USAID, information on environment related lessons learned on the basis of environmental compliance monitoring. EPP also provided USAID with detailed quarterly financial projections, along with a project briefer.

MUZAFFARGARH THERMAL POWER STATION REHABILITATION PROJECT

EPP visited the Muzaffargarh site to expedite installation of the remaining equipment to complete the project by March 2016. EPP also supported Muzaffargarh in obtaining a tax exemption letter from USAID for equipment worth \$713,000. This will help in expediting the procurement and installation of the remaining equipment. EPP also provided USAID with detailed quarterly financial projections, along with a project briefer.

On request of USAID, EPP provided to USAID, information on environment related lessons learned on the basis of environmental compliance monitoring.

MANGLA DAM REHABILITATION PROJECT

EPP visited the site to expedite the procurement of equipment under the Manga Dam Rehabilitation Project. The project will add 90 MW to the national grid. EPP also provided USAID with detailed quarterly financial projections, along with a project briefer.



COMPONENT 2: POLICY AND REFORM

SUPPORT TO MINISTRY OF WATER AND POWER

During the month under review, EPP met with senior officials of MWP for a discussion on on-going and proposed activities. The major activities undertaken during August are described below.

Thermal Power Purchase Agreement

EPP staff followed up with the Joint Secretary (Policy) at MWP on stakeholders' comments on the revised draft Power Purchase Agreement (PPA) already submitted to MWP and by them to the generation companies (GENCOs). The Joint Secretary informed EPP that MWP is meeting with GENCOs and GENCO Holding Company Limited (GHCL) to include them in power sector reforms. The Joint Secretary requested EPP to continue finalization of the draft PPA based on agreed guidelines. Accordingly, EPP has started revising Jamshoro Power Company Limited (JPCL's) PPA. This includes incorporating a few of the changes proposed by JPCL, which are not in contradiction to the 2002 Policy, and making modifications in order to refine the agreement so that it can be used as a template for other GENCOs and future Independent Power Producers (IPPs). This is expected to be completed by mid-September.

Connection Agreement

During the month, EPP worked on the Connection Agreement to be executed between users of the grid, including GENCOs, Bulk Purchasing Consumer (BPC) and the Distribution Companies (DISCOs), and National Transmission and Despatch Company (NTDC). EPP held meetings with MWP, NTDC and EPP lawyers Cornelius Lane & Mufti (CLM) to move forward on the Connection Agreement. A working paper on the Connection Agreement was shared with MWP and NTDC to get their feedback on the conceptualization and outline proposed by EPP. NTDC's lawyer discussed current status of power sector reforms and regulatory compliance with respect to the Connection Agreement. CLM has initiated work on drafting the Heads of Agreement.

SUPPORT TO MINISTRY OF PLANNING AND DEVELOPMENT

Implementation of E-Governance

During the month, EPP apprised the newly-appointed Project Director (IT) Planning Commission about hardware requirements necessary for up-gradation of servers and LAN at the Energy Wing with respect to implementation of the electronic office system. A decision on the future course of action to be taken regarding hardware up-gradation by the concerned authority is to follow in subsequent meetings between the Planning Commission and the Energy Wing.

Database

EPP initiated working on acquisition of data for establishing an online data repository for the Energy Wing where documents (e.g., working papers, presentations, briefs, analysis, reports, etc.) from all sections of the Energy Wing will be stored for robust availability. In the initial phase, the data will be stored in online storage for easy access; once the servers are upgraded and functional in the Energy Wing, the data will be moved to a local network.

Technical Assistance

Through its seconded staff, EPP continued to provide system and network administration and general technical assistance to offices of Member, Energy. EPP also provided IT application support

through use of existing software to update the daily power supply demand scenario and shortfall in the power sector, based on the daily information provided to Planning Commission.

GIS Mapping

EPP participated in a meeting with Member, Energy and the Pakistan Bureau of Statistics (PBS) to review their present geographical information system (GIS) hardware capacity and its utilisation in order to assess its possible use for hosting a GIS map of national transmission infrastructure, power generation plants, and upcoming projects. It was observed that even though PBS has the hardware capacity to host desired data in their system, some bottlenecks need to be tackled in order to move forward with implementation. During the month, EPP continued to provide assistance for procurement of software to reside on the PBS hardware to upgrade their systems regarding hosting the mapping of nationwide transmission system, power generation plants, and upcoming projects. Once commissioned, the GIS mapping would provide easy access to various stakeholders.

SUPPORT TO NATIONAL TRANSMISSION AND DESPATCH COMPANY

Strategic Planning Meetings

Strategic planning meetings with the management and staff of NTDC were held on August 19 in Lahore. The agenda included provision of an update of Strategic Business Plan (SBP) changes requested by the board, an overview of organizational design, and discussion on conflicts in the NTDC's current organizational structure. NTDC's strengths, weaknesses, opportunities, and threats were also discussed, as well as the existing bottlenecks in the NTDC environment. The discussion was very positive, with attendees offering opinions and suggested actions. Further meetings were scheduled with the Board Chairman and Chairman of the Board Planning Committee on September 2 and with the SBP group on September 3.

Meetings were also held with NTDC management on August 18 and 20 to discuss material procurement and planning, with Deputy Director NTDC Finance, GM GSO, Deputy Director NTDC (F&A) Finance, and EPP Lead Advisor for Enterprise Resource Planning (ERP). The purpose of these meetings was to reaffirm the conclusions and facts listed in the most recent draft of the SBP and to obtain additional information for the final two SBP objectives.

NTDC Performance Contract

EPP's Financial Advisor drafted a new NTDC Performance Contract on the request of the NTDC Chairman. The Performance Contract is based on the Chairman's outline of the format and content; a prior NTDC Performance Contract prepared by the Policy Group was not accepted by the board. The NTDC Performance Contract objectives and performance measures were aligned to the NTDC Strategic Plan. The Chairman forwarded the new draft of the Performance Contract to the Board for Comment.

SUPPORT TO MINISTRY OF FINANCE

- EPP provided analysis of the DISCOs' tariff differential claims for the month of June 2015, which were submitted by the Office of the Engineering Advisor, MWP. The claims submitted by the DISCOs were further discussed in a meeting with representatives of Engineering Advisor, MWP, held on August 6 in Corporate Finance Wing, Ministry of Finance; the DISCOs were advised to submit more information to substantiate their claims.
- Work continued on finalizing the term sheet submitted by the consortium of local banks for partial financing amounting to Rs.30 billion for Dasu Hydro Project.

- Corporate Finance Wing, Ministry of Finance, was assisted in preparation of comments on the summary for ECC submitted by MWP for issuance of sovereign guarantee by GOP in respect of syndicated term finance facility amounting to Rs.7.487 billion for the power sector.
- The performance of the power sector for the financial year 2014-15 was reviewed in collaboration with Corporate Finance Wing and Economic Reform Unit, Ministry of Finance.
- EPP's consultant assisted the Ministry of Finance in formulating comments on various policy issues.

SUPPORT TO MINISTRY OF PETROLEUM AND NATURAL RESOURCES

Liquefied Natural Gas Imports

Liquefied Natural Gas Procurement

- EPP consultants provided feedback and analysis of Pakistan State Oil Company's (PSO) spot Liquefied Natural Gas (LNG) tender process.
- EPP team prepared LNG spot market assessment (post-September 2015) and monthly spot LNG pricing forecast for PSO.
- EPP prepared an analysis on "lay time" provisions under the PSO Delivery Ex Ship Master Sales Purchase Agreement (MSPA) for LNG carriers arriving at Port Qasim Authority (PQA).
- EPP team initiated support to PSO for developing the MSPA for medium term (3-5 years) LNG procurement. Queries were submitted to PSO regarding the LNG volumes/quantity intended for the tender term. PSO response is awaited.

Support to Port Qasim Authority

- EPP consultant accompanied the PQA team in meetings with Qatargas in Dubai on August 10-11 to discuss operational and port related issues with regard to the long-term SPA being negotiated between GOP and Qatargas.
- EPP consultant's environmental expert and EPP LNG Advisor visited the Engro Elengy Terminal Limited (EETL) LNG Terminal on August 18 for environmental compliance monitoring.
- Qatargas conveyed its agreement with the Conditions of Use included in the Standard Operating Procedures for LNG vessels calling at Port Qasim prepared by the EPP consultant. The main Standard Operating Procedures are still under Qatargas review.
- Review by EPP consultant team for closing of issues arising out of various gap studies conducted for LNG terminal design and quality is in process.

Shale Gas

- Meetings were held with consultants throughout the month to review ongoing work on Shale Gas resource assessment study. The NuTech Laboratory team arrived in Islamabad and held various meetings with office of Director General Petroleum Concessions (DGPC) and EPP. The revised financial model was presented on August 17 and 19.
- The final resource assessment Milestone-4A report is currently under DGPC review and is expected to be submitted to USAID during the first week of September.
- The Milestone-5 report has been received and is under review; the draft Milestone-6 report is also expected to be submitted by the first week of September.

Upstream Oil and Gas

- Advisory support on day-to-day issues of DGPC, including work on pending extension of licenses and leases, continued.
- Weekly review meetings were held with consultant throughout the month. Proposed modifications in the offshore model Production Sharing Agreement have been submitted by the consultant and are under EPP review.

- Proposed changes in the model Petroleum Concession Agreement/Joint Operating Agreement/Accounting Procedure have been submitted by EPP consultant and are under EPP review.
- Work on the deliverable regarding grant of sub-surface rights to land owners to have access to the areas with security concerns continued during the month.
- Revised offshore Rules 2003 have been received from the consultant and are under EPP review.

COMPONENT 3: NEW PROJECTS, PLANNING, AND DEVELOPMENT

KURRAM TANGI/KAITU WEIR PROJECT

Evaluation of the technical proposal and financial proposals received for construction of the Kaitu Weir, feeder tunnel linking Kaitu River to Kurram Tangi Reservoir, two power houses with installed capacity of 18.4 MW, two irrigation canals (Spaira Ragma and Sheratella), and associated structures have been finalized and are under discussion by WAPDA.

Milestone dates for funding disbursement and associated payment schedule for the proposed \$81 million USAID funding will be finalized when the contract is awarded by WAPDA. Planning Commission PC-I of the project amounting to \$126 million has already been approved by GOP. It consists of \$79 million for Kaitu Weir and associated structures and \$47 million for command area development. Kaitu Weir and its affiliated structure will be constructed by WAPDA, whereas Command Area Development works will be executed by the government of the Federally Administered Tribal Areas (FATA).

GOLEN GOL PROJECT

EPP provided the required information to USAID for 611(e) certification, which provides an assessment of capabilities of beneficiary organization to effectively maintain and utilize USAID funding for the Golen Gol Project. USAID has indicated \$36 million funding to WAPDA for works related to power house electrical and mechanical equipment (Lot 3.2 of contract). The total cost of Lot 3.1 and Lot 3.2 contracts is \$75.5 million. The Kuwait Fund is providing a \$37 million loan for construction of power house civil works and some portion of electrical and mechanical equipment with a shortfall of about \$38.5 million.

The Saudi Fund is providing a soft loan of almost \$97 million for civil structures, such as the intake structure, diversion weir, headrace tunnel, surge chamber, and pressure shaft (Contract Lot 2), while the OPEC Fund is providing \$30 million for transmission lines and grid stations (Lots 4.1 and 4.2). Overall, the funding gap in project costs is \$71 million.

The project is expected to be completed by August 2017 and will provide 436 GWh of annual energy to the national grid. Revenue from Golen Gol will be over \$33 million a year, and this power will replace more expensive electricity production from thermal plants using imported fuel oil of about \$65 million per annum.

COMPONENT 4: NEW ACTIVITIES

PESHAWAR ELECTRIC SUPPLY COMPANY

Crane-Mounted Trucks

- The crane-mounted trucks are scheduled to arrive in Karachi on August 31 and job completion is scheduled for September 14. The cranes arrived at the port and are awaiting Economic Affairs Division exemption.

Bucket Trucks

- Registration forms for the four telescopic bucket trucks delivered to the PESCO warehouse on April 28, 2015 have been issued and handed over to administration for processing. The registration process will be completed during September.

Power Transformer Program

- Two 40 MVA power transformers were installed and commissioned at 132 kV Chakdara and Peshawar Industrial grid stations. The completion certificates for both transformers are yet to be received from the vendor.
- EPP is in the process of procuring two oil filtration plants for PESCO's operations and maintenance staff. The plants are awaiting customs clearance and are expected to be delivered to PESCO in September.
- The purchase order for three new 40 MVA power transformers has been executed. These transformers are under manufacturing and their Factory Acceptance Tests are scheduled for September.

Transmission and Grid Equipment

- All transmission and grid equipment has been delivered; however, accessories for some of the items are missing and the Mission Resource Request is to be signed once the missing accessories are received.

NATIONAL TRANSMISSION AND DESPATCH CENTRE

Rapid Environmental Analysis (REA) of Transmission System for Wind Powered Projects

EPP submitted the Rapid Environmental Analysis report to USAID for review in August. Subsequent to that, a field visit to wind corridor in Sindh (Jimphir) was arranged by EPP. Director Energy Office, Ross Hagan, Regional Environmental Advisor Andrei Barannik, Mission Environmental Officer Howard Batson, EPP Chief of Party, and Reps from Karachi Consulate visited the 50 MW operational wind farm of Fauji Fertilizer and also surveyed the areas through which the new transmission line and 220/132 KV substation is planned for construction. The new transmission system funded through USAID, will help evacuate about 700MW of power generated through the wind projects in Jimphir.



Officials of the USAID, US Consulate Karachi, EPP and Fauji Fertilizer at Jimphir, Sindh

NTDC System Studies

- EPP is to receive the draft report on the study of integration of intermittent renewable resources by August 28, with the final report due September 25.
- The consultant carrying out the study will meet USAID, Alternative Energy Development Board (AEDB), NTDC and other stakeholders on September 9-11.

Testing Equipment for Grid System Operations

- The contract for the testing equipment for grid system operations has been awarded to AYK (Pvt) Ltd. and factory acceptance testing is expected in September 2015. Delivery is scheduled for September 18.

Real Time Power System Simulator

- The System Planning Engineer in Lahore is making preparations for arrival of the Real Time Power System Simulator (RTPSS), which is awaiting Customs clearance.
- Comments from NTDC power planning have been provided to OPAL-RT for training on the RTPSS.
- At the RTPSS training facility, air conditioners will be installed, furniture will be delivered, and laptops and other IT hardware will be delivered by mid-September.

Auto-Transformer Program

- Two JiangSu HuaPeng (JHSP) 250MVA, 220/132kV Auto-Transformers were delivered at the site. Installation and commissioning works are scheduled to start on October 1.
- Circuit breakers for the Mardan transformer project are stalled in Customs, awaiting an exemption certificate from Economic Affairs Division. These circuit breakers are expected to be delivered by mid-September.
- The sorting, stacking and inspection for material delivered at the NTDC Warehouse in Gatti for the Mardan transformer project was completed this month. The material included hardware, conductor, current transformers, surge arresters, and isolators.
- Repair works on 150 MVA and 160 MVA transformers are underway. More than 50% of the repairs are done. The factory acceptance test is scheduled in September, after which these transformers will be delivered to their respective sites. The activity is expected to be completed by mid-September.

Live-Line Training

- Live-line training for 20 linemen from LESCO and QESCO started on May 18, 2015 and is on-going. It will be completed on September 18.
- The four-week live-line refresher course for GEPCO started on August 10 and is scheduled to be completed on September 4.
- Registration for HESCO's live-line vehicle has been completed.
- EPP handed over a complete set of tools, trailers, and vehicles to HESCO.
- One live-line vehicle each has been handed over to MEPCO, SEPCO, LESCO, and QESCO.
- Three vehicles for LESCO, QESCO, and SEPCO are yet to be distributed. The tools for MEPCO, SEPCO, QESCO and LESCO are in EPP's warehouse and are scheduled to be handed over during September.

PROGRAM SUPPORT ACTIVITIES

CAPACITY BUILDING

Live-Line Maintenance. Live-Line Maintenance training of QESCO and LESCO trainees is currently in process at the NTDC Tarbela Training Center, and is anticipated to be completed in the first week of September 2015. The refresher course for GEPCO linemen is currently in process at GEPCO, and anticipated to be completed on September 4. To date, EPP has completed three of the five refresher courses at IESCO, PESCO, and FESCO; in addition, 14-week live-line maintenance training has been completed for MEPCO and SEPCO.

LNG Business Management Certificate: EPP completed the LNG Business Management Certificate training on June 12 in Kuala Lumpur for 14 participants from Oil and Gas Regulatory Authority (OGRA), SSGCL, and PQA. EPP conducted debriefing presentation sessions in Karachi at PQA on August 11, and at SSGC on August 12. EPP hosted a similar debriefing session with participants from OGRA on August 17 in Islamabad at EPP's office. EPP is drafting a comprehensive debriefing report based on participant's feedback, and will share the report with SSGC, PQA, and OGRA for review and comments.

MONITORING & EVALUATION

Post-Training Evaluations: EPP hosted a post-training evaluation session for participants from OGRA, SSGC, and PQA for the LNG Business Management Certificate training.

Acknowledgement Letters: As of August 2015, EPP has obtained acknowledgment letters from the following stakeholders for its accomplished activities: CPGCL, NPGCL, JPGCL, Gomal Zam, Satpara, Tarbela, Planning Commission, MOF, PESCO, NTDC, FESCO, IESCO, and MEPCO.

Confidential information redacted

Confidential information redacted

PROGRESS IN NUMBERS

Table 3 below provides EPP indicators, targets, and achievements for August 2015. **Table 4** presents EPP Indicators by component for August 2015.

Table 3: EPP Indicators and Achievements for August 2015

Indicator	Unit	LOP Target	Achieved in August FY2015	Total Achieved as of August FY 2015	LOP % Achieved as of August FY2015
I.a: GWh of energy sold	GWh	7880	0	9,182	117%
I.1.a: Number of beneficiaries with improved energy services due to United States Government assistance	Individuals	13,624,226	0	15,847,956	116%
I.1.b: GWh of energy availability	GWh	7880	0	9,182	117%
I.1.c: MW available to meet power sector demand as a result of USG assistance	MW	1,303	0	1,518.2	117%
I.1.1.a: MW of electrical power added or saved as a result of USG improvements	MW	875	0	1,027.2	117%
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	166	92%
I.1.1.d: Number of transmission bottlenecks resolved	No.	121	0	122	101%
I.1.4.a: Public and private funds leveraged by the USG for energy infrastructure projects	U.S. \$	193.5 million	0	178.5 Million	92%
I.2.1.a: Number of key policies and regulations in various stages	No.	12	0	34	283%
I.2.2.a: Number of policies following international best practices	No.	6	0	4	67%
I.2.2.b: Number of board recommendations following international best practices	No.	4	0	2	50%
I.2.3.a: Number of best practice-driven systems created, improved, and implemented	No.	10	0	8	80%
I.2.4.b: Number of public forums resulting from USG assistance in which government officials and citizens interact	No.	12	2	8	67%

Table 4: EPP Indicators by Component August 2015

Indicator	Unit	Component	LOP Target	Achieved in August FY2015	Total Achieved as of August FY 2015	LOP % Achieved as of August FY2015
I.1.a: Number of beneficiaries with improved energy services due to United States Government assistance	Individuals	Total	13,624,226	0	15,847,956	116%
		I-Generation	7,993,106	0	9,382,406	117%
		IV-Transmission Throughput Capacity	5,477,544	0	6,283,818	115%
		IV – Transmission Added/Saved	153,576	0	181,732	118%
I.1.b: GWh of energy availability	GWh	I & IV	7880	0	9,182.1	117%
		I-Generation	4,796	0	5,642.29	118%
		IV-Transmission Throughput Capacity	2999.4	0	3,440.92	115%
		IV – Transmission Added/Saved	84	0	99.50	118%
I.1.c: MW available to meet power sector demand as a result of USG assistance	MW	I & IV	1,303	0	1,518.2	117%
		I-Generation	863	0	1,013	117%
		IV-Transmission Throughput Capacity	428	0	491	112%
		IV – Transmission Added/Saved	12	0	14.2	118%
I.1.1a: MW of electrical power added or saved as a result of USG improvements	MW	I & IV	875	0	1027.2	117%
		I-Generation	863	0	1,013	117%
		IV – Transmission Added/Saved	12	0	14.2	118%

ANNEX I

ANNEX I: LIST OF KEY MEETINGS

Table 5: List of Key Meetings Conducted in August 2015

Meeting with	Date	Location	Purpose	Outcome/Result
Component 1: Project Monitoring & Implementation				
Member Power	Aug. 21	WAPDA House Lahore	Discuss progress at Mangla and Tarbela, and issuance of completion certificate of Gomal Zam.	WAPDA was advised to expedite procurement of equipment at Mangla and Tarbela and issuance of completion certificate of Gomal Zam.
Mr. Sher Afzal Khan	Aug. 6	Tarbela Power Station	Discuss progress on procurements under Tarbela Phase-I & Phase-II project, and inspect installation of SCADA.	SCADA installation and cable laying is in progress. WAPDA was advised to expedite procurement of rotor poles under Tarbela phase-I and breakers, runner, and compressor, etc. under phase-II project.
Mr. Jamil Akhter	Aug. 20	Mangla Power Station	Discuss progress of procurement under Mangla project.	WAPDA was advised to expedite procurement of Mangla on fast track schedule.
Component 2: Policy and Reform				
Mr. Zargham E. Khan Joint Secretary (Policy) Ministry of Water and Power	Aug. 17	MWP	Discuss working paper on Connection Agreement, and get update on PPAs.	Given a go-ahead to start working on the Connection Agreement templates; revising JPCL PPA to incorporate their comments not in contradiction with 2002 Policy.
Mr. Majid Khan NTDC Lawyer	Aug. 18	WAPDA House	Get status on current reforms, particularly with reference to the Connection Agreement	NTDC and EPP USAID also agreed to have frequent working level interactions, as needed.
CLM	Aug. 18	CLM Office, Lahore	Discuss CLM's input on the Connection Agreement and redrafting of PPAs	CLM will initiate drafting the CA template, starting with the Head of Agreements

Meeting with	Date	Location	Purpose	Outcome/Result
USAID, PTS	Aug. 21	EPP Islamabad Office	Presentation on key deliverables of upstream oil and gas support	EPP and PTS gave a presentation on key deliverables regarding the upstream oil and gas support program to USAID. Another presentation on the upstream oil and gas support program would be made to Director Energy Office USAID, followed by a presentation to the Minister MPNR.
Program Support Activities				
LNG Business Management Certificate training participants from PQA	Aug. 11	Port Qasim Authority, Karachi	Conducted a debriefing presentation session for participants to share their experiences with USAID and EPP regarding their training visit to Malaysia	EPP hosted a debriefing session to follow-up with the participants to formally share their experiences with USAID and EPP regarding visits, action plan developments, and future plans.
LNG Business Management Certificate training participants from SSGC	Aug. 12	Sui Southern Gas Company, Karachi	Conducted a debriefing presentation session for participants to share their experiences with USAID and EPP regarding their training visit to Malaysia.	EPP hosted a debriefing session to follow-up with the participants to formally share their experiences with USAID and EPP regarding visits, action plan developments, and future plans.
LNG Business Management Certificate training participants from OGRA	Aug. 17	EPP Islamabad Office	Conducted a debriefing presentation session for participants to share their experiences with USAID and EPP regarding their training visit to Malaysia.	EPP hosted a debriefing session to follow-up with the participants to formally share their experiences with USAID and EPP regarding visits, action plan developments, and future plans.

www.ep-ep.com.pk
info@ep-ep.com.pk