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USAID ENERGY POLICY PROGRAM

MONTHLY PROGRESS REPORT MARCH 2012

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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: mshaikh@aeai.net

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ACRONYMS

ADB	Asian Development Bank
AEAI	Advanced Engineering Associates International
AEDB	Alternate Energy Development Board
BOD	Board of Directors
CASA 1000	Central Asia to South Asia 1,000-MW Power Import Project
CCGT	Combined Cycle Gas Turbine
CDM	Clean Development Mechanism
CPGCL	Central Power Generation Company, Ltd
CPPA	Central Power Purchasing Agency
DISCO	Distribution Company
ECC	Economic Coordination Committee
EPP	Energy Policy Project
FARA	Fixed Amount Reimbursable Agreement
FESCO	Faisalabad Electric Supply Company
FODP	Friends of Democratic Pakistan
GE	General Electric
GENCO	Generation Company
GOP	Government of Pakistan
GTPS	Guddu Thermal Power Station
GZDP	Gomal Zam Dam Project
HESCO	Hyderabad Electricity Supply Company
HVAC	High Voltage Alternating Current transmission lines and substations
IESCO	Islamabad Electricity Supply Company
IPP	Independent Power Producer
JTPS	Jamshoro Thermal Power Station
KESC	Karachi Electricity Supply Company
LESCO	Lahore Electricity Supply Company
LNG	Liquefied Natural
MOF	Ministry of Finance
MPNR	Ministry of Petroleum and Natural Resources
MTPS	Muzaffargarh Thermal Power Station
MWP	Ministry of Water and Power
MW	Megawatt, unit of electrical power, 1 million watts, 1 thousand kilowatts
NEPRA	National Electric Power Regulatory Authority
NPCC	National Power Control Center
NTDC	National Transmission and Despatch Company
OGDCL	Oil and Gas Development Company, Ltd
PC	Planning Commission
PDIP	Power Distribution and Improvement Program
PEPCO	Pakistan Electric Power Company
PPIB	Private Power and Infrastructure Board
PSO	Pakistan State Oil Company
PSRP	Power Sector Reform Program
PSS/E	Power System Simulation for Engineers
SOP	Standard Operating Procedure

T&D	Transmission and Distribution
TUTAP	Turkmenistan, Uzbekistan, Tajikistan, Afghanistan, Pakistan Power Import Project
USAID	United States Agency for International Development
WAPDA	Water and Power Development Authority

PROGRAM OVERVIEW

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

- Four repair and maintenance projects (3 GENCOs and Tarbela. Total Funding \$68 million)
- Two multipurpose dam completion projects (Gomal Zam and Satpara, Total funding \$66 million)

These projects, when completed, will add more than 888 MW to Pakistan's generation capacity. As of March 2012, a total of 423 MW have been added to Pakistan's grid.

Project	MW per FARA	Expected Gains	
		Low	High
Muzaffargarh	165	440	475
Jamshoro	95	120	150
Guddu	55	35	100 ¹
Tarbela	80	88	128
Gomal Zam	17.4	17.4	17.4
Satpara	17.66	17.66	17.66
Total	430.06	718.06	888.06

EPP is providing technical support to the Ministry of Water and Power (MWP) for identifying and selecting new generation and transmission projects. Examples include import of electricity from Central Asian Republics to Pakistan through Afghanistan, providing analytical support for projects such as Step 1 Due Diligence for Diامر Basha, Kurram Tangi, Warsak and Mangla Dam Projects and issues related to these candidate projects.

EPP is also supporting generation & transmission related studies and the policy reform activities assigned by USAID, development of GENCO and NTDC business plans, and developing policies/procedures for the National Power Control Center and advisory services at MWP and the Planning Commission (Energy Wing), Ministry of Finance, etc.

¹ At the beginning of the EPP project, due diligence report on Guddu TPS indicated an expected increase of 55 MW in the production capacity. However, due to further de-rating of equipment the expected gain in production capacity of Guddu has increased to 100MW

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

Location: All Provinces and Federally Administered Tribal Areas

Total USAID Funding: \$ 134.121 million - FARAS
\$ 14.893 million - EPP Phase II

PROJECT ACTIVITIES



COMPONENT I: PROJECT MONITORING & IMPLEMENTATION

EPP is monitoring the implementation of six Fixed Amount Reimbursable Agreement (FARA) projects, three existing thermal GENCO power plants (Muzaffargarh, Guddu and Jamshoro), one existing hydropower (Tarbela) and two new multipurpose dams (Gomal Zam and Satpara). EPP is also coordinating with the implementing partners to achieve timely progress and the processing of invoices for reimbursement to the GOP from USAID.

HYDROPOWER PLANTS

Under the FARA with a funding of \$82.5 million a total of up to 163MW are estimated to be added through the rehabilitation of Tarbela hydropower plant and completion of two multipurpose dams, Satpara and Gomal Zam.

For Tarbela the baseline condition at the time of signing of FARA was 80MW; however due to further deration in plants operational capacity the estimated gains have increased to 128MW. For Satpara and Gomal Zam the baseline at the time of signing of agreement was zero.

Tarbela Units under Rehabilitation	Baseline at the time of FARA signing (in MW)		Baseline at shut down for replacement (in MW)	
	Capacity	Gains	Capacity	Gains
Unit 1	185	10	185	10
Unit 3	185	10	185	10
Unit 4	135	60	87	108
Total	505	80	457	128

Rehabilitation of Tarbela Hydropower Plant under FARA:



Replacement/installation work on the third and last winding at Unit 3 was started in mid Feb 2012 and expected to be completed in May 2012. This will add another 10 MW capacity gain. Already 118MW capacity gain achieved with installation of new modernized winding at Unit 1 & 4.

Work on installation of Spare Seals & Guides

for Relief and Bypass Valves on Turbine Side at Units 1-10 are in progress and expected to be completed in next month. Procurement of remaining equipment's pumps, digital governors and SCADA system is under process.

Third and last batch of seven WAPDA engineers from Tarbela power station have also completed training in the reporting month. Total twenty WAPDA engineers from Tarbela power station have completed training on hydropower maintenance and operations in Switzerland.

Amendment-I of the Tarbela FARA, revised the completion date to December 31, 2012. Out of the \$16.5 million assistance amount committed for Tarbela, total disbursement as of March 2012 is \$10,579,917.

Gomal Zam Multipurpose Dam under Activity Agreement:

The installation of transmission line towers is in progress; towers have been installed over a distance of 54 km (95 % completion achieved) starting from the Tank Grid station to the powerhouse. Main Dam and Spillway concrete and related works along with mechanical testing of dam fixtures are 100 % complete. Hydropower and Switchyard component is 98 % complete.



The reservoir filling started with the closure of the diversion tunnel and, the water level has gone up to 90 meters in the reservoir. The final testing and commissioning is dependent on reservoir filling which is expected in Jul-Aug 2012.

Amendment No. 1 to the Activity Agreement, revised the completion date to September 30, 2012. From the \$40 million assistance amount committed for Gomal Zam, the total disbursement as of March 2012 is \$36,589,000.

Satpara Multipurpose Dam under Activity Agreement:



On WAPDA request an Amendment to the Agreement was signed on Feb 17, 2012, extended the completion date of irrigation system to April 2012 which was delayed due to severe weather conditions in Jan-Feb 2012. After improvement in weather conditions, contractors have been re-mobilized at site and resumed work to complete remaining part of irrigation works which are already 99% complete.

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