



**USAID**  
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# TENTH QUARTERLY PROGRESS REPORT

## JANUARY - MARCH 2013

PRODUCED BY:

USAID POWER DISTRIBUTION PROGRAM

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# **TENTH QUARTERLY PROGRESS REPORT**

## **JANUARY - MARCH 2013**

IRG, USAID contractor for the Power Distribution Program

House 23, Street 19, F-6/2

Islamabad, Pakistan

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# ACRONYMS

AEAI	Advanced Engineering Associates International
AMR	Automated Meter Reading
BMR	Blind Meter Reading
BOD	Board of Directors
CCN	Cooperating Country National
CEO	Chief Executive Officer
CIS	Customer Information System
CM	Change Management
COP	Chief of Party
COR	Contracting Officer's Representative
CoS	Cost of Service
CoSS	Cost of Service Study
CPOP	Commercial Process Optimization Project
CPPA	Central Power Purchasing Agency
DCOP	Deputy Chief of Party
DISCO	Government-Owned Power Distribution Company
EAD	Economic Affairs Division
EMG	Energy Markets Group
Enercon	National Energy Conservation Centre
EOI	Expression of Interest
ERP	Enterprise Resources Planning
ESCO	Energy Service Company

FD	Finance Directors
FESCO	Faisalabad Electric Supply Company
GENCO	Generation Company
GEPCO	Gujranwala Electric Power Company
GIS	Geographic Information System
GOP	Government of Pakistan
HESCO	Hyderabad Electric Supply Company
HHU	Handheld Unit
HR	Human Resources
HT	High Tension
HRIS	Human Resources Information System
HT	High Tension
IA Manual	Internal Audit Manual
ICO	Integrated Commercial Office
IESCO	Islamabad Electric Supply Company
IRG	International Resources Group
IT	Information Technology
KPA	Key Performance Area
KPI	Key Performance Indicators
KPMG	KPMG, Taseer Hadi & Company
KVA	Kilo Volt Amperes
kW	Kilowatt
kWh	Kilowatt-hour
LESCO	Lahore Electric Supply Company

LOP	Life of Project
LT	Low Tension
M&S	Monitoring and Surveillance
MD	Managing Director
MIS	Management Information System
MEPCO	Multan Electric Power Company
NPCC	National Power Control Center
MVA	Mega Volt Ampere
MVAR	Mega Volt Ampere Reactive
MW	Megawatt
MWP	Ministry of Water and Power
NEPRA	National Electric Power Regulatory Authority
NRECA	National Rural Electric Cooperative Association
NTDC	National Transmission and Dispatch Company
O&M	Operations and Maintenance
PCB	Punjab Cooperative Bank
PDP	USAID Power Distribution Program
PEPCO	Pakistan Electric Power Company
PESCO	Peshawar Electric Power Company
PITCO	Pakistan Industrial Trading Company (Pvt.) Limited
PITC	Power Information Technology Company
PO	Purchase Order
QESCO	Quetta Electric Supply Company
RF	Radio Frequency

RFP	Request for Proposal
RFQ	Request for Quotations
RO	Revenue Office / Officer
RTC	Regional Training Center
SECP	Security & Exchange Commission of Pakistan
SEPCO	Sukkur Electric Power Company
TA	Technical Assistance
TCN	Third Country National
TELCONET	TelcoNet Services (Pvt.) Limited
TORs	Terms of Reference
URD	User Requirements Document
US	United States
USAID	United States Agency for International Development
USN	United States National
WAPDA	Water and Power Development Authority

# SECTION 1: PROGRAM OVERVIEW

The tenth Quarterly Report of the USAID Power Distribution Program (PDP) covers continuing efforts of USAID and International Resources Group (IRG) to implement improvements affecting the overall commercial performance of participating government-owned power distribution companies (DISCOs) and the Ministry of Water and Power (MWP). Under Component 1, PDP conducted operational audits of MWP, DISCOs and the National Electric Power Regulatory Authority (NEPRA), and developed Action Plans for future interventions and demonstration projects. Components 2 and 3 are focused on the execution of jointly selected interventions and projects identified in Action Plans to achieve sustainable performance improvements.

This quarter, PDP expanded Component 3 implementation activities. With the Peshawar Electric Supply Company (PESCO) senior management (the selected “Turnaround DISCO”), PDP developed a detailed work plan and supporting project design documents outlining the approach for both capacity building activities and infrastructure improvement investments. RFQs were developed and the procurement of materials including meters, aerial bundled cable, vehicles and tools are underway. In addition, PDP prepared a financial improvement plan which outlines and links planned investments to expected impacts on overall DISCO financial performance.

The Circular Debt Report was finalized this quarter as PDP experts worked in close collaboration with experts from USAID-funded Energy Policy Project to complete this important study. The end product details the negative impacts of pursuing current policies in the power sector and their resulting financial impacts. The report was highly regarded by various government groups including the Planning Commission of Pakistan, the Ministry of Finance and the MWP. The report was formally released to the public at a press event hosted by the Planning Commission of Pakistan on March 26.

Work continued this quarter with fast-tracking delivery of the Load Data Improvement (LDI) project. Through the installation of over 7,000 Automated Meter Reading (AMR) meters and establishment of nine control centers, the LDI project will afford DISCOs and the Central Power Purchasing Agency (CPPA) improved monitor of power flows and improved responsiveness in dealing with unplanned load shedding. A priority for both the MWP and USAID, the system will be operational prior to the expected summer power crisis.

We look forward to continue delivering a program that provides real results and impacts the lives of millions in Pakistan.

Best Regards,

Craig R. VanDevelde

Chief of Party

## FINANCIAL SUMMARY

Contract No:	EPP-1-00-03-00006-00, Task Order 13
Date of Issuance of Task Order:	September 17, 2010
Date of Exercise of Task Order Component 2:	March 30, 2011
Date of Exercise of Task Order Component 3:	March 30, 2012
Amount Obligated Under Task Order:	US \$63,199,409
Total Project Funds Expended to Date:	US \$35,655,878
Project Funds Expended During the Quarter:	US \$6,500,337

## PDP PERFORMANCE REPORT FOR THE QUARTER

Indicator	Unit	LOP to End of Previous Quarter	Current Quarter (Jan - Mar 2013)	LOP to End of Current Quarter
<b>Power and Energy Saving</b>				
MWs of power saved by installing high tension/low tension capacitors, meters and improving commercial procedures	MW	79.1	4.4	83.5
Giga-watt hours of energy made available by installing high tension/low tension capacitors, meters and improving commercial procedures	GW-h	299	87	386
Amount saved or Revenue generated by installing high tension/low tension capacitors, meters and improving commercial procedures	\$ million	25	7	32

Indicator	Unit	LOP to End of Previous Quarter	Current Quarter (Jan - Mar 2013)	LOP to End of Current Quarter
<b>Beneficiaries</b>				
Number of beneficiaries receiving improved energy services by installing high tension/low tension capacitors, meters and improving commercial procedures	No.	1,186,500	66,000	1,252,500
<b>Capacitors</b>				
Number of capacitors installed in tube well pumps	No.	2,783	1,712	4,495
<b>Pumps &amp; Motors</b>				
Number of pumps installed in municipalities	No.	139	0	139
Number of motors installed	No.	0	262	262
Number of Variable Speed Drives (VSDs) on motors	No.	0	41	41
<b>Load Data Improvement Project</b>				
Number of AMR meters installed	No.	0	1,600	1,600
<b>Meter Installation CPOP &amp; Technical</b>				
Number of meters assessed	No.	29,000	22,000	51,000
Number of meters assessed	No.	29,000	22,000	
Number of faulty meters replaced/installed	No.	12,000	15,000	27,000
Percent reduction in complaints	%	79%	-	78%
<b>Census</b>				
Number of consumers enumerated	No.	48,528	0	48,528
Number of meters replaced after census	No.	757	3,117	3,874
<b>Linemen Training</b>				
Number of linemen trained on proper safety techniques	No.	1,288	383	1,671
% reduction in fatal accidents	%	67%	-	71% (maximum in a month)
% reduction in non-fatal accidents	%	63%	-	66% (maximum in a month)
<b>Functional Training</b>				
Number of DISCO staff trained in various functional areas like Finance, Human Resources, Technical, Commercial and Communication	No.	5,000	4,000	9,000

Indicator	Unit	LOP to End of Previous Quarter	Current Quarter (Jan- Mar 2013)	LOP to End of Current Quarter
<b>Governance</b>				
Number of policies analyzed and issued	No.	15	1	16



- 1,252,500 households received improved energy services
- \$32 million in savings and revenue generated by the Power Distribution Program's interventions
- 83.5 megawatts (MW) saved through installation of capacitors, meters and improving commercial procedures

# SECTION 2: COMPONENT 2 TASKS

## TASK 1: TRAIN AND MENTOR DISCO BOARDS OF DIRECTORS AND SENIOR MANAGEMENT

The MWP dissolved DISCO Board of Directors (BOD) in November 2010 and announced new boards in early February 2011. The decision to name new directors was undertaken to reduce the influence of national and local government in DISCO governance and to ensure greater participation of local stakeholders in DISCO decision-making. In response to this important change, PDP began a series of training activities.

### HIGHLIGHTS

- **Implementing Corporate Governance with the Ministry of Water and Power** – The USAID Power Distribution Program (PDP) conducted a workshop on “financial decision-making” for BODs of DISCOs to build their capacity on finance and accounting, and tools and Key Performance Indicators (KPI) that can be used for enhanced financial decision-making. Additionally, PDP completed training on tariff-setting processes and the performance of each DISCO. PDP developed Corporate Governance policies were approved by the MWP for adoption at DISCOs, and these policies were adopted by most DISCO boards while the remaining will put them in play during the next BOD meetings. PDP also assisted the Securities and Exchange Commission of Pakistan in making modifications to the draft Public Sector Companies (Corporate Governance) Rules 2013 to improve corporate governance of public sector companies.



**Participants of the Performance Management Workshop**

- **Performance Management Focus in Management Development Program** – Under PDP’s Management Development Program, three workshops on performance management targeted at DISCO senior management was completed this quarter. The objective of the workshops is to create awareness among participants from different DISCOs about

*“In the course of my professional career, this has been, by far, the most interactive & valuable training session that I have ever participated in.*

– DG HR & Admin, MEPCO  
**Zafar Iqbal Awan**

“performance management.” Over 50 senior managers from all DISCOs participated and post-workshop feedback was positive.

## **TASK 2: DEVELOP DISCO BOARD POLICIES & PROCEDURES MANUAL**

Since previous DISCO BODs have been composed primarily of MWP, PEPCO and other WAPDA representatives, the DISCOs do not have policies and procedures for board activities that are oriented to operating as independent, autonomous bodies focused on supporting long-term profitability and sustainability. PDP first drafted a policies and procedures manual to suit all DISCOs, and later customized the manual to address the specific needs of each DISCO.

### **HIGHLIGHTS**

- **Developing Leadership Skills in PESCO –**

Under the Board Development and Facilitation initiative, PDP and Pakistan Institute of Corporate Governance (PICG) organized a four-day Skills Development Program workshop where members from PESCO’s BOD and senior management were in attendance. These trainings are designed to ensure that board members have the necessary information and understanding to make DISCO policy changes, establish and maintain a healthy and productive relationship with the DISCO CEO and represent DISCO interests in interactions with MWP and other government entities.



**Corporate Governance Leadership Skills Program**

## **TASK 3: EVALUATE CHANGES IN DISCO ORGANIZATIONAL STRUCTURE**

To foster a corporate culture that embraces change, all employees must feel that they are valued corporate assets in whom investments such as training will be made and whose welfare is considered vital. Leading utilities around the world empower their employees to identify problems, help devise solutions and receive recognition and rewards for doing so. Empowering DISCO employees to participate meaningfully in the fundamental changes that lie ahead requires continuous improvement of work practices and the understanding that no problem is too small to receive attention.

DISCO service areas are established on a political and geographical basis that encourages political interference and creates inherent conflicts between engineering, operations and commercial management. Given the challenges in commercial management to act independently and responsibly for all activities related to consumer billings and collections, changes are required in the organizational structure of DISCOs.

## HIGHLIGHTS

- **Organizational Assessment & Restructuring at MEPCO** – To date, seven detailed proposals were received as part of the assignment: Performance Evaluation System, Organization Structure, Grade Structure & Career Path Planning, Manpower Planning, Recruitment & Selection, Delegation of Power & Authorities, and Employee Relations. Job profiles / descriptions of key positions have also been submitted. All proposals were reviewed by PDP and are under assessment by MEPCO's Change Management Steering Committee. The Committee was established, in response to PDP's request, to review, analyze and provide feedback, and where approval is accorded, it will present its recommendation to the Board of Directors for implementation.

## TASK 4: PERFORM ALLOCATED COST OF SERVICE STUDY

DISCOs continue to operate with tariff structures that have been designed to cross-subsidize electric service from industrial and commercial consumers to domestic and agricultural consumers, as well as from larger domestic to smaller domestic consumers. Tariffs do not reflect full cost of service to DISCOs as a whole, or customer categories. PDP is completing one comprehensive cost of service study for IESCO and rolling out the methodology and results to the remaining DISCOs including training and capacity building. PDP is demonstrating true cost of service and charting a course to tariff reform that can lead to the elimination of all but social safety net subsidies.



**Presenting the Cost of Service Model to IESCO Board Members**

## HIGHLIGHTS

- **Streamlining IESCO's Tariff Petitions & Cost of Service Studies** – IESCO's Cost of Service Model, previously based on financial data from FY 2010-11 was updated based on FY 2011-12 data. Additionally, the model was revamped and linked to the prescribed NEPRA tariff petition forms, to streamline tariff petition preparation and filing by DISCOs. This model will

make it possible for IESCO (and eventually other DISCOs) to independently conduct Cost of Service studies in the future.

## **TASK 5: IMPLEMENT FULL ERP FUNCTIONALITY AT ONE DISCO**

Enterprise Resource Planning (ERP) systems are standard operating tools for well-managed, modern electric distribution utilities. LESCO has already begun implementation of an ERP, while several others are evaluating costs and benefits. PDP reviewed LESCO's implementation of ERP and is supporting further development of key functionalities to demonstrate to DISCOs how an enterprise information environment can be employed to significantly improve information management, financial management, HR management, and internal and external DISCO communications between management, staff and consumers. The results will be disseminated throughout the remaining DISCOs to assist in the development of ERP systems.

### **HIGHLIGHTS**

- **Accounting and Internal Audit Process Optimization at Power Distribution Companies:**

A milestone was reached this quarter when the Accounting Manual and Internal Audit Manual were presented to all DISCOs. The Accounting Manual serves as a comprehensive finance and accounting resource that is fully compliant with all governmental, regulatory and international accounting standards as applicable in Pakistan. The Internal Audit Manual details a new internal audit framework PDP developed for DISCOs, emphasizing a risk-based approach which considers the entire business process rather than individual transactions. Audit committees will oversee the internal audit function and results reported to DISCO BODs. Instead of centralizing power into the hands of CEOs, this PDP-introduced initiative will exemplify an improved level of financial transparency and accountability.

## **TASK 6: IMPLEMENT ANTI-THEFT, SUBDIVISION DISTRIBUTION SYSTEM OPTIMIZATION, AUTOMATED METER READERS**

PDP is performing a number of operations demonstration interventions that include theft reduction, feeder optimization at the subdivision level and rural feeder optimization projects. Also included are tube well power factor improvements, an AMR initiative, and others. These projects have several implementation elements in common, including use of Geographical Information System (GIS) to map distribution systems, and engineering software to model losses and identify loss reduction targets. Projects will provide an introduction of AMR metering technology for each feeder and for selected distribution transformers, multiplex secondary circuits to reduce vulnerability to theft, primary circuits for reducing low tension (LT) losses, smaller and more efficient distribution transformers, and improved service drop design with secure revenue meters.

## HIGHLIGHTS

- **Defective Meter Replacement:** PDP completed the rehabilitation of 6,041 meters in FESCO and 7,000 meters in PESCO, while continuing rehabilitation of LESCO's Niaz Baig subdivision with approximately 15,500 meters repaired or replaced. The meter replacement project covers the rehabilitation of approximately 20,000 meters with the work scheduled to continue through May 2013. This work is similar to what was done for LESCO's Nargis feeder which is now seeing a 16% increase in revenue.



An interactive session with MEPCO's farming community, organized by PDP

- **Awareness on Theft in Farming Communities** – To cope with electricity shortfalls and power theft in rural areas, PDP held gatherings for farmers in all circles of MEPCO where over 2,000 farmers and nearly 400 households attended the sessions arranged by the PDP-supported MEPCO Communications Department. Participants were informed on the use of efficient tube well motors and how they can save electricity and lower electricity bills. Also highlighted was the community's role in using the right conservation measures and tips for doing so were shared as part of the DISCO's efforts to mitigate energy shortfalls.

*"This is an important step taken by USAID and we hope that through the discussed practices, we will conserve energy and reduce our power bills."*

– Farmer, District  
**Muzzafargarh Saif-Ullah**

## TASK 7: CONCENTRATION ON HUMAN RESOURCE MANAGEMENT INITIATIVES

One of the most significant deficiencies at all DISCOs assessed during the operational audits was the poor quality of human resource management systems. Realizing that human resources is key to sustained improvements, PDP is concentrating on improving DISCOs human resource management capabilities in all areas, including addressing human resources factors impacting all Action Plan and improvement project activities.

## HIGHLIGHTS

- **Modern HR Concepts and Practices** – Workshops on "Modern HR Concepts and Practices" continued this quarter and were delivered to 35 managers and officers working in the HR &

Administrative Departments of all DISCOs as well as Regional Training Center (RTC) Principals. These workshops focus on key HR areas relevant to the current situation in DISCOs while providing support for the changes introduced by various PDP initiatives. Workshops include presentations on the preparation of job descriptions, performance management and training and development.

- **Improving Working Conditions of Professional Women** – PDP handed over MEPCO’s first day care center making MEPCO the first DISCO to successfully launch this endeavor. The facility can accommodate 25 infants and children of mothers employed by the company – additionally; MEPCO has employed two full-time female attendants and a part-time nurse. The onsite facility allows working parents to leave their children in a safe and protected environment while being able to visit them during working hours, thus greatly contributing to lowered absenteeism resulting from childcare issues.

*“USAID has taken the initiative in a previously neglected area, and with this facility in place, working mothers can continue working in ease without worrying about their children who will now be looked after by the day care center’s professionally qualified staff.”*

*– Chief Executive Officer, MEPCO  
M. Shakeel Chaudhry*

## **TASK 8: IMPROVE COMMERCIAL MANAGEMENT PRACTICES**

Most DISCOs employ manual commercial management practices such as handwritten logs of customer information and electricity consumption. However, DISCOs have grown to the point where it is no longer feasible to manage customer information, meter readings, billing and revenue collection efficiently with manual systems. Automating these procedures is now a requirement and if status quo is maintained, reforms in engineering, finance, and human resources will not be able to reap the full benefits.

### **HIGHLIGHTS**

- **Deploying Customer Information System at Multan Electric Power Company** – The Customer Information System (CIS) reached an advanced stage this quarter with successful parallel testing of the billing engine for general consumers of MEPCO’s Bosan Road subdivision – all bills and reports were compared against the legacy system for accuracy and deficiencies were identified and corrected.
- **Commercial Procedure Optimization Project** – This quarter, PDP held an IMR Orientation Workshop where participants were briefed on the benefits of IMR including IMR technology. PDP will serve as consultants for the rollout process to ensure MEPCO can achieve IMR

sustainability. IMR has reduced billing complaints by 56% in Gulgasht, a subdivision with 35,000 customers, while increasing revenue by Rs10.66 million. The rollout in PESCO's Sikandarpura subdivision added Rs5.7 million to the company's revenue and reduced consumer complaints by 88%. Similarly in FESCO's Peoples Colony subdivision with 27,000 customers IMR implementation resulted in additional revenue of Rs1.02 million and a 54% reduction in customer complaints within two months.

*"IMR is more than a process – it is a cultural change in the way our meter readers read meters and provide customers with accurate billing."*

*– Director Commercial, MEPCO*  
**Malik Imtiaz**

- **Integrated Commercial Offices at Multan Electric Power Company** – PDP's Integrated Commercial Office project integrates and automates core commercial functions, thus laying the foundation for sustainable revenue cycle reforms. This quarter, PDP completed the design and fabrication of the one-window customer service facility of MEPCO's Musapak division and furnishing of the Bosan Road subdivision and Musapak division's offices in preparation for the implementation of CIS

## **TASK 9: IMPROVE CUSTOMER RELATIONS THROUGH COMMUNICATIONS & OUTREACH**

PDP in partnership with DISCOs is developing a general communications management program to address general DISCO communications needs, and to implement specific demonstration interventions to illustrate how to develop and communicate messages from DISCO management to customers. This will include trainings and technical assistance to commercial staff that have direct contact with customers, seeking to sensitize staff to the need for projecting a more positive image of DISCOs.

### **HIGHLIGHTS**

- **Developing Consumer Outreach Materials for Power Distribution Companies** – PDP, in close collaboration with DISCOs, developed consumer awareness material with information on new connection procedures, contact numbers for complaints, human safety, the consumer's role in discouraging theft and useful tips on energy conservation to be circulated as flyers, banners, posters and standees. PDP distributed this material to SEPCO and LESCO which was prominently displayed at their Customer Service Centers.
- **Energy Conservation Awareness** – PDP-supported Communications Department at MEPCO conducted energy conservation seminars at 13 private and public schools in Multan, which were attended by over 13,000 students and 80 teachers along with MEPCO senior

management. Through interactive sessions, speakers highlight the importance of energy conservation and discuss measures being taken to resolve the prevailing energy shortfall. Thus far, over 13,500 students have participated. Additionally, PDP successfully held an energy conservation walk in the FESCO region which was attended by over 4,000 people from all walks of life.



**An energy conservation walk at FESCO organized by PDP**

- **Awareness Sessions at Women’s Colleges –** PDP organized interactive sessions at Punjab College Lahore, Lahore College for Women on gender issues and effective energy saving habits at home and the workplace. The awareness sessions were attended by 900 students. Targeting young women helps create a ripple effect as they are well positioned to implement the message in their households, helping to reduce the current energy shortfall at a grassroots level. Female students were also informed of employment opportunities in LESCO.

## **TASK 10: SUPPORT TO NATIONAL ELECTRIC POWER REGULATORY AUTHORITY**

PDP is supporting NEPRA in improving its regulatory capacity in line with international best practices by embedding regulatory, legal, and economic advisors. These advisors are international regulatory experts and will visit Pakistan on an as required basis.

### **HIGHLIGHTS**

- **Guiding NEPRA on Regulatory Environment –** Task reported in “Section 3: Component 3 Tasks” under “Task 3: Cost Reflective Tariff and NEPRA Reform.”

## **TASK 11: TRAIN MWP, DISCO & OTHER GOVERNMENT OFFICIALS ON UTILITY REFORM OPTIONS**

PDP is engaging with MWP, DISCO Boards of Directors and senior management, and other Government of Pakistan officials in a series of workshops on utility reform options including management contracts and other privatization options.

## HIGHLIGHTS

- **Support Reversal of Anti-Reform Moves Made by Outgoing PPP Government –** Significant effort was expended in March to slow down and later reverse a decision by the outgoing PPP government to hand over control of the power sector to the Water and Power Development Authority (WAPDA) Chairman. Viewed by many as a move to re-bundle the power sector, the PPP party initiated efforts in early March to seek approval from the then-Prime Minister to place the Chairman, WAPDA at the apex of the power sector. PDP highlighted the importance of blocking such a move to donors, DISCO Board members and senior managers, and senior level officials within the MWP, developing various legal and political arguments as to why such a policy decision should not be pursued. PDP crafted memos and briefs providing policy and regulatory arguments that demonstrated the illegality of PPP actions, and crafted briefs that conveyed expected donor response to anti power sector reform activities. PDP’s role in raising awareness and crafting legal arguments played a significant role in the recent policy reversal.

## TASK 12: SUPPORT ENERGY EFFICIENCY & DEMAND SIDE MANAGEMENT IMPLEMENTATION

PDP is engaging with MWP and DISCOs on opportunities to improve energy efficiency, including appliance efficiency, and support for the design and implementation of Demand Side Management (DSM) programs. In particular, PDP will assist two DISCOs with large industrial loads in designing and implementing load management programs and two DISCOs with large urban loads in developing their capacity to conduct energy audits for residential, commercial, and industrial customers.



**The first Karachi Sewerage Board pump replacements at Clifton Road Station, Karachi**

## HIGHLIGHTS

- **Support Energy Efficiency and Demand Side Management –** Task reported in “Section 3: Component 3 Tasks” under “Task 2: Energy Conservation and Demand Side Management.”

## TASK 13: IMPLEMENT PERFORMANCE IMPROVEMENT INTERVENTIONS & PROJECTS

PDP is performing a combination of general and specific performance improvement interventions that ensure sufficient performance improvement projects are implemented across all DISCOs. These include:

- Theft reduction through feeder optimization
- Revenue management through prepaid metering
- Anti-theft intervention



**Unveiling SEPCO's first ever  
P&E Computer Center**

### HIGHLIGHTS

- **Inaugurating Planning & Engineering Centers in DISCOs** – PDP inaugurated and operationalized Planning & Engineering (P&E) Computer Centers in all nine DISCOs. USAID received positive media coverage of these events.



**“I will tell my mother to exchange fluorescent yellow bulbs with energy savers which would reduce our electricity bill by up to 30%,”** said Anum Zehra, a student at Government Muslim Girls High School, Multan.

**(Pictured Above) Students Rallying for Energy Efficiency:** The USAID Power Distribution Program in collaboration with MEPCO is spreading the message of energy efficiency to people in the southern belt of Punjab. Thus far, an outreach campaign for students has reached over 12,000 male and female students in Multan, where each of these students have pledged to share energy saving tips with five of their friends and family members.

# SECTION 3: COMPONENT 3 TASKS

## TASK 1: COMMERCIALIZATION OF DISCOS

Task 1 provides a two-pronged approach to commercializing DISCOs by focusing on improving performance of the Model (Task-1a) and Turnaround (Task-1b) DISCOs. As Task-1a has yet to begin, this report focuses only on Task-1b. Task-1b focuses on improving Turnaround DISCO PESCO with initiatives resulting in significant loss reduction and performance improvement to demonstrate how low- performing DISCOs can be improved.

### HIGHLIGHTS

- **Inaugurating Planning & Engineering Center in PESCO** – PDP inaugurated and operationalized P&E at PESCO. The new P&E Computer Centers house USAID-provided equipment which is enabling PDP-trained Planning Engineers to implement the new GIS software and state-of- the-art engineering analysis computer programs. For the first time this allows PESCO to produce accurate GIS maps of existing feeders and transformer locations and to conduct engineering analysis to reduce losses and optimize new projects.



**Inaugurating the new Planning & Engineering Computer Center**

- **Geographical Information System Mapping in PESCO** – PDP continued GIS mapping in PESCO’s Peshawar Circle, mapping 22 feeders including the entire Lala subdivision which was mapped at the High Tension (HT) level. Mapping at the Low Tension (LT) level is still progressing. PDP is mapping networks in targeted divisions and circles, resulting in an accurate geo-database supporting load flow analysis, segregating technical and non-technical losses.

*“For the first time, we will be able to accurately map our feeders and transformers and I would like to thank USAID for providing us with the right tools to make this possible.”*

– PESCO Planning Engineer  
**Ghafoor Khan**

- **Field Officer Training in Peshawar** – Under the PESCO Improvement Action Plan, PDP organized a workshop on Service Excellence in Peshawar. Participants included field officers

of Peshawar Circle and the workshop was also attended by the Chief Commercial Officer. The session was highly interactive and focused on the concept of service excellence which follows leadership models that focus on growth and care. PDP was requested to arrange similar programs in the future.

- **Developing Consumer Outreach Material for PESCO** – PDP, in close collaboration with DISCOs, has developed consumer awareness material with information on new connection procedures, contact numbers for complaints, human safety, the consumer’s role in discouraging theft and useful tips on energy conservation to be circulated as flyers, banners, posters and standees. PDP distributed this material to PESCO, SEPCO and LESCO which was prominently displayed at their Customer Service Centers.

- **New Effective Meter Reading Program in PESCO**

– In support of PDP’s ongoing intervention of improving the meter reading process through its Improved Meter Reading (IMR) Program, the newly prepared Effective Metering Reading Program was delivered for the first time in PESCO. The training program elucidates the responsibilities of meter readers, technical terms, and techniques for reading both electromechanical and other types of electronic meters, and improving customer interaction. The revised program replaces the Meter Reader curriculum previously developed by USAID in the 1980s.



**Informative awareness material at PESCO’s Customer Service Center**

- **Enterprise Resource Planning Rollout at PESCO**

– PDP began its engagement with PESCO this quarter for rolling out ERP. A PESCO Steering Committee was established for implementation and a PESCO Function Core Committee was established to provide both technical and project management oversight. Three PESCO Coordination Committees (Finance, Engineering & HR) were established to ensure ERP data input integrity.

*“This knowledge would have been very useful earlier in our careers. I would like to request USAID to continue providing us additional training to help us do our jobs better.”*

**– PESCO Meter Reader**

## TASK 2: ENERGY CONSERVATION & DEMAND SIDE MANAGEMENT

Pakistan faces the worst power crisis in its history. Power supply of 11,000 MW falls significantly short of the estimated demand of 19,000 MW. The capacity shortfall has resulted in 12 hours of load shedding in metropolitan cities such as Lahore, and as much as 20 hours of load shedding in rural areas of Pakistan. In the face of such challenges, energy efficiency and DSM can contribute significant benefits and in many cases in the shortest possible timeframe. DSM initiatives are considered to be the most cost-effective options for transforming peak demand growth to a longer time horizon and reducing wasted electricity consumption due to inefficiency.



**18.5 KW tubewell motors for replacement at Ittehad Chemicals Limited, one of Pakistan's largest chemical producing companies**

### HIGHLIGHTS

- **Demand Side Management of Municipal Pumps** – The Capital Development Authority (CDA) has 187 tube well pump stations throughout Islamabad of which only 135 are working and 52 are non-operational. Those still functional are operating with approximately 28% efficiency, resulting in increasingly large electricity bills that the CDA is unable to pay due to a lack of funds, which in turn, increases the financial burden on DISCOs. CDA also lacks funds to replace the pumps. Because of these factors, PDP identified Islamabad as the city for USAID-funded potable water tube well pumps. By replacing the 187 pumps, PDP expects to boost efficiency rates to 58%. This will decrease the CDA's electricity bills by \$865,000 a year and ensure a continuous supply of clean water to the community.
- **Demand Side Management of Industrial Motors** – The Industrial DSM Program focuses on the replacement of inefficient motors and Variable Speed Drives. Industrial motors are estimated to contribute between 60-80% of industrial electricity consumption in most Pakistani industrial sectors. This quarter, suppliers collected orders for the confirmed replacement of 1,055 motors and 702 VSDs with power demand savings of 8.01MW through efficiency improvement.

*"There was hardly any water early this year, and things were really difficult for us but since the new energy efficient pumps have been installed, we have had absolutely no problems with the water supply."*

*– President, I-10 Civil Society  
Dr. Saeed Ullah Khan*

## TASK 3: COST OF SERVICE & NEPRA REFORM

This task covers two activities: Cost of Service Study (COSS) and Tariff Design for all DISCOs and NEPRA Reform. The Cost of Service Model is the tool with which the COSS is performed, and includes a repository of financial, technical and billing information in a spreadsheet-based model. The model performs a functional classification of the total costs incurred by a utility and then allocates these costs to different customer categories. Once a customized model is developed, it becomes possible for utility staff to perform COSSs by simply updating the information repository.

### HIGHLIGHTS

- **Cost of Service Study Appreciated by All DISCOs** – PDP presented the completed IESCO Cost of Service Study results to the Boards of Directors (BODs) of MEPCO and GEPCO, having previously presented the results to LESCO and FESCO’s BODs. The intervention has been unanimously appreciated across all DISCOs with the remaining distribution companies requesting similar studies. PDP has begun developing these studies and DISCOs have appointed liaison teams to work with PDP.
- **Working with NEPRA for IT Infrastructure Improvement** – PDP finalized the scope of activity for improving the IT backbone infrastructure in NEPRA and its regulated entities. This infrastructure will provide the necessary baseline for improved communication and information-sharing between the regulator and its regulated counterparts. It will allow NEPRA the resources for obtaining real-time information – NEPRA is funding the consumer equipment ensuring long-term sustainability of the initiative.
- **Reevaluating Organization Assessment and Restructuring at NEPRA** – Currently, NEPRA’s organizational structure is non-competitive and non-growth oriented, leading to a low retention ratio which results in limited technical skills and morale of its professional staff. Through a series of meetings, PDP concluded that the absence of a mechanism for individual assessment and growth and a perpetually readjusting organizational chart has resulted in significant employee dissatisfaction adversely affecting NEPRA. PDP initiated the process for organizational assessment and restructuring, and proposed a new organization chart with all parameters defined, e.g. work flows, job descriptions, Key Performance Indicators, etc.

*“Both the Cost of Service Model and Cost of Service Study have been instrumental in reevaluating our tariff petition to NEPRA. These initiatives will help transform the rate-making processes of all power distribution companies.”*

*– MEPCO Board Member*

- **Guiding NEPRA on the Regulatory Environment** – PDP began developing advisories for NEPRA on various issues that were raised including but not limited to market practices, improvements in regulatory processes and new practices adopted by international regulatory bodies to improve the overall governance of their sectors. Additionally, PDP placed a short-term consultant at NEPRA to guide the authority on the regulatory environment. The consultant will interact with NEPRA members, identify weaknesses particularly those in the overall regulatory process and market structure, and propose changes streamlining NEPRA's processes and initiatives.

## **TASK 4: CAPACITORS AT TUBEWELLS FOR POWER FACTOR IMPROVEMENT & LOSS REDUCTION**

One of the largest loads on Pakistani DISCOs is that of tube well pump-sets. Nationwide, electric consumption by tube well pump-sets accounts for 15% of the total annual energy consumption, with significant variation from one DISCO to another. Tube well pumps used in Pakistan have low-rated power factors, on the order of 80-85% even when new. Frequent rebuilding of pumps required due to poor power quality results in further reductions in power factor. Low power factor increases reactive power demand on transmission and distribution lines and transformers, and results in higher technical losses. The high number of inefficient tube well pumps with low power factors has a significant effect on the system's technical loss, and creates unnecessary demand on the system.

### **HIGHLIGHTS**

- **Capacitor Installation at PESCO** – The PESCO capacitor installation program was awarded to Mansha Brothers Consulting this quarter. Startup has been delayed by a month due to delayed international capacitor delivery; stock projections are being explored to split stocks between QESCO and PESCO for subsequent backfill. The capacitor installation program will reduce 248MW in peak demand through the installation of 176,386 LT capacitors to improve the power factor to significantly reduce technical distribution losses and power demand.



**Capacitors for installation at PESCO**

## TASK 5: FEEDER OPTIMIZATION FOR LOSS REDUCTION

DISCOs have not assessed current requirements for HT power factor correction in five years. Feeder loads have changed with air conditioner motors and other appliances being added causing poor power factor on many feeders with lost revenue, low voltage and customer dissatisfaction.

The PDP Planning & Engineering program will focus on the Model and Turnaround DISCOs to perform feeder power flow analysis using new software technology and to install 11 kV HT capacitors, both un-switched and switched. This task will include installation of HT Capacitors on feeders and in grid stations.

### HIGHLIGHTS

- **High Tension Power Factor Improvement in PESCO:** PDP is working with all DISCOs including PESCO on the repair and replacement of all defective HT capacitors at grid stations and on 11 Kilo Volt feeders to make them operational for the 2013 summer months. Preliminary results indicate that 1,100 mega volt ampere reactive (MVAR) effective capacitors require repair or replacement. PDP completed the audits of all nine DISCOs and shared the results with the power companies – the repair and replacement work will continue through summer 2013.



**Energization of the HT capacitor bank at IESCO's Chakwal grid station**

## TASK 6: EXPANSION OF HIGH IMPACT OPPORTUNITIES & IMPROVED GOVERNANCE

This task includes the following activities:

- Activity 1: Load Data Improvement Project
- Activity 2: Improved Meter Reading Project

- Activity 3: Line Staff Skill Development
- Activity 4: Governance
- Activity 5: Lineman Training for all DISCOs

## HIGHLIGHTS

- **Load Data Improvement Program** – PDP is working on a fast track basis to provide DISCOs with the capability to reduce unscheduled load shedding through the installation of Automated Meter Reading (AMR) meters at grid stations of all nine DISCOs including PESCO. PDP is installing 7,845 AMR meters in 741 DISCO grid substations to provide each DISCO Power Dispatch Center (PDC) and National Power Control Center (NPCC) to communicate in near real-time, a revolutionary intervention in the Pakistani power sector. PDP completed the manufacture and testing of all 7,845 AMR meters and with excellent cooperation of DISCOs, joint AMR meter installations began at DISCO grid stations while concurrently carrying out improvements to individual DISCO Power Dispatch Center control rooms and developing operator displays and training programs. By quarter's end, meter installation was underway in all DISCOs excluding QESCO with 1,613 meters installed and communication links successfully established between DISCO PDCs and the NPCC. PDP is also renovating PDCs of DISCOs to accommodate data display screens and computer hardware. PESCO's PDC and the Centers of other DISCOs will follow shortly.



**PESCO Headquarters Power Dispatch Center**

*7,845 AMR meters are being installed to help reduce unscheduled load shedding especially during the summer.*

**– PDP Load Data Improvement Program**

- **Creating an Independent Central Power Purchasing Agency** – PDP is assisting MWP in creating Central Power Purchasing Agency as an independent company that will act as an agent between generators and distributors. The Memorandum and Articles of Association are currently under review after which development of its business plan would begin – accordingly, PDP has asked the MWP to provide all required documents to facilitate development.



**“All participants must be commended for taking the opportunity to share their knowledge and experience with counterparts in the UAE and Australia. I am sure the ideas and tools they have brought back will have a positive impact,”** said Timothy Moore, Acting Director, USAID Pakistan Energy Office

**(Pictured Above) Launching Utility Exchange Programs:** PDP, through its Utility Exchange Program (UEP), sponsored a study tour for DISCO professionals (including women) to visit UAE and Australia this month. UEP focuses on building professional development at DISCOs through exchange programs to get a better understanding of international best practices.



## SECTION 4: EVENTS

### LAUNCH OF DAY CARE FACILITY

#### EMPOWERING WOMEN IN THE POWER SECTOR:

USAID in cooperation with MEPCO launched the first ever day care facility for MEPCO employees – the facility aims to improve the efficiency, motivation and performance for MEPCO’s female employees.

#### MESSAGE DELIVERED

Currently, less than one percent of employees in the power sector are female. Unfortunately some quit at an early career stage to take on social roles as mothers and wives. The USAID-funded facility will improve working conditions for female employees while simultaneously attracting new employees with child care issues.



## **LAUNCH OF PLANNING & ENGINEERING CENTER AT SEPCO**

### **PROVIDING SUPPORT TO A NEWLY FORMED UTILITY:**

Sukkur Electric Power Company (SEPCO) is a newly created DISCO catering to 150,000 customers and, unlike other DISCOs, has never had a P&E section.

### **MESSAGE DELIVERED:**

The new P&E center will strengthen SEPCO's operations and decrease its dependency on other DISCOs. This computer center will modernize the P&E sector of the DISCO, instrumental in its growth as an independent power company in the region.



## STUDY TOUR FOR COMMERCIAL ENERGY SECTOR OFFICIALS

### SUSTAINING PROFESSIONALISM AT POWER DISTRIBUTION COMPANIES:

PDP organized a study tour for DISCO professionals to the UAE and Australia. Exposure to different energy operations teaches energy professionals how to strengthen commercial operations and customer service as well as professional development.

### MESSAGE DELIVERED:

The US Government is committed to assisting the Government of Pakistan in improving the country's power distribution system. By working with public sector power distribution companies to improve their operations, reduce losses and ultimately to ensure that Pakistani citizens have a more reliable supply of power. The study tour also, for the first time, took female DISCO employees for training.

**USAID Power Distribution Program**

**House 23, Street 19, F-6/2,**

**Islamabad, Pakistan**