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# USAID POWER DISTRIBUTION PROGRAM

FISCAL YEAR 2014 WORK PLAN

February 2014

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FISCAL YEAR 2014 WORK PLAN

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**DISCLAIMER**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government

## ACRONYMS

ABC – Aerial Bundled Cables  
 AMR – Automatic Meter Reading  
 AT&C – Aggregate Technical and Commercial (losses)  
 BOD – Board of Directors  
 CDA – Capital Development Authority  
 CFL – Compact Florescent Lamps  
 CIS – Customer Information System  
 COS – Cost of Service  
 CPPA – Central Power Purchasing Agency  
 CPPAG – Central Power Purchasing Agency Guarantee Limited  
 CSP – Completely Self Protected (transformer)  
 DISCO – Power Distribution Company  
 DSM – Demand Side Management  
 DQA – Data Quality Assessment  
 EE – Energy Efficiency  
 EOI – Expression of Interest  
 ERP – Enterprise Resource Planning  
 ESA – Electricity Supply Agreements  
 EMMP – Environmental Monitoring and Mitigation Plan  
 FY – Fiscal Year  
 GIS – Geographic Information System  
 GOP – Government of Pakistan  
 GPRS – General Packet Radio Service  
 GSM – Global System for Mobile Communication  
 HHU – Hand Held Unit  
 HR – Human Resources  
 HRIS – Human Resource Information System  
 HRM – Human Resource Management  
 HT – High Tension (11 kV)  
 ICO – Integrated Commercial Operations  
 IEC - Informational Educational Communication  
 IEE – Initial Environmental Examination  
 IMR – Improved Meter Reading  
 IRG – International Resources Group  
 IVR – Interactive Voice Response  
 JD – Job Description

KESC – Karachi Electric Supply Company  
KPI – Key Performance Indicator  
KPK – Khyber Pakthunkhwa Province  
kV – Kilo Volt  
KW – Kilowatt  
KWh – Kilowatt hour  
LDI – Load Data Improvement  
LT – Low Tension (400/230 V)  
M&E – Monitoring and Evaluation  
M&T – Metering and Testing  
MEPCO – Multan Electric Power Company  
MVAR – Million Volt Ampere Reactive  
MW – Megawatt  
MWP – Ministry of Water and Power  
MYT – Multi-Year Tariff  
NEPRA – National Electric Power Regulatory Authority  
NPCC – National Power Control Center  
NTDC – National Transmission and Dispatch Company  
ORD – Outage Reduction Device  
P&E – Planning and Engineering  
PO – Purchase Order  
PDC – Power Distribution Control Center  
PDD – Project Design Document  
PDP – Power Distribution Control Center  
PESCO – Peshawar Electric Supply Company  
PICG – Pakistan Institute of Corporate Governance  
PITC – Power Information Technology Company  
PMO – PDP’s Program Management Office  
PMP – Performance Management Plan  
PMS – Performance Management System  
PMU – Project Management Unit  
PQM – Power Quality Monitoring  
PR – Public Relations  
RF – Radio Frequency  
RFP – Request for Proposal  
RFQ – Request for Quotation  
RTC – Regional Training Center

SECP – Security and Exchange Commission of Pakistan

TOU – Time of Use

USAID – United States Agency for International Development

USAID RF – USAID Result Framework

USG – United States Government

VSD – Variable Speed Drive

VVO – Volt VAR Optimization

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## Section 1: Executive Summary

Pakistan's power sector is beset by significant challenges including a limited reliable and affordable fuel supply; alarming and unsustainable subsidies; and an aging and inadequate generation, transmission and distribution infrastructure. The power sector suffers from inefficient governance and inadequate expansion planning, and its utility operational policies and practices lag significantly behind those of modern utilities elsewhere in the world. Almost all power sector entities are owned and operated by the Government of Pakistan (GOP), widely believed to be one of the main drivers to inefficiency. The result of these inefficiencies has created a crisis situation, with violent protests across cities leading to significant property damage, breakdown of law and order, and, in some cases, fatalities. The power crisis has had a significant ripple effect across the economy, with decreasing industrial output and business investments and stalled infrastructure and electricity access programs.

The United States Agency for International Development's (USAID's) response to Pakistan's energy crisis was to launch the Power Distribution Program (PDP). PDP, a five-year technical advisory and materials procurement project launched in September 2010, was designed to facilitate improvements in government-owned electric power distribution utilities across Pakistan through addressing governance issues, reducing technical and administrative losses, and increasing revenues. PDP will continue to support local counterparts until October 2015.

As infrastructure investment requirements in the distribution system<sup>1</sup> have been estimated to exceed \$2.2 billion, PDP's approach includes transferring 'know-how' in all key areas of utility operation (commercial operations, finance and accounting, engineering, communications, etc.) while working at the federal level to improve the policy environment in which distribution companies (DISCOs) operate. PDP is leveraging its limited funding with DISCO resources to finance and deliver high-impact and essential activities that DISCOs can then replicate using solely their own funding.

PDP's Fiscal Year (FY) 2014 Work Plan provides a detailed description of the activities that will be completed between October 1, 2013 and September 30, 2014. Activities range from policy reform efforts at the federal level to workforce training for DISCO lineman. Major activities in the FY 2014 Work Plan focus on 1) continued delivery of turnaround support at the Peshawar Electric Supply Company (PESCO), 2) initiating delivery of turnaround support at the Multan Electric Power Company (MEPCO), 3) policy reform efforts with various GOP stakeholders, and 4) assistance in facilitating the privatization of various GOP-owned DISCOs.

FY 2014 activities also include a number of cross-cutting interventions including a gender strategy, an internship program, and a DISCO communications program; all designed to increase the sustainability of the interventions being implemented. The Work Plan provides a detailed description of supporting project management activities including PDP's Engagement Strategy, Sustainability Strategy, Program Management Office (PMO), Project Schedule (Annex-1), Task Summary Matrix (Annex-2), Risk Matrix (Annex-3), FY 2014 Results Table (Annex - 4.1), mapping of Work Plan activities with USAID Result Framework (USAID RF) (Annex - 4.2) and Data Collection Methods (Annex - 4.3). These project management activities will

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<sup>1</sup> This estimate is for government-owned DISCOs alone and does not include the privately owned Karachi Electric Supply Company (KESC) and is based on the assessment made during audits of the DISCOs by PDP in 2010-11

support the execution of the improvement initiatives; thus, increasing the likelihood for success of the overall program.

All stakeholders – particularly the GOP, DISCOs, their staff, and consumers – are poised for major reform. Through successfully delivering program activities to date, PDP has established itself as a trusted advisor with a proven track record for delivering real change. Building on this foundation of success, PDPs FY 2014 activities will continue to deliver tangible results leading towards reforming the country’s power sector.

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## Section 2: Tasks Narratives

The FY 2014 Work Plan addresses the delivery of the following six tasks as noted in the contract between International Resources Group (IRG) and USAID. These include:

- **Task 1-A:** Reforms in Turnaround Distribution Companies
- **Task 1-B:** Technical Assistance for the Transition of Selected Distribution Companies from Public Management to Private Management
- **Task 2:** Energy Conservation and Demand Side Management
- **Task 3:** Cost Reflective Tariff and NEPRA Reform
- **Task 4:** Capacitors at Tubewells for Power Factor Improvement and Loss Reduction
- **Task 5:** Feeder Optimization for Loss Reduction
- **Task 6:** Expansion of High Impact Opportunities and Improved Governance

Task 1 has two parts. Task 1-A focuses on improving two Turnaround DISCOs with initiatives resulting in enhanced revenue generation, significant loss reduction and overall performance improvement to demonstrate how poorly performing DISCOs can be improved. Task 1-B focuses on providing technical assistance towards the transition of selected distribution companies from public management to private management. PDP will work for transition of these distribution companies both at the national level and at the distribution company level.

Other tasks include Energy Conservation and Demand Side Management (Task 2), Cost Reflective Tariffs and National Electric Power Regulatory Agency (NEPRA) Reform (Task 3), Capacitors at Tubewells for Power Factor Improvement and Loss Reduction Project (Task 4), Feeder Optimization for Loss Reduction (Task 5) and High Impact Projects (Task 6). Under Task 6, high impact projects initiated under Component 2 such as governance, communications/outreach and lineman training programs will continue in FY 2014 and will be expanded to benefit all DISCOs.

### Task 1-A: Reforms in Turnaround Distribution Companies

Task 1-A comprises of the following two sub-tasks:

- Task 1.A.i: Turnaround 1 DISCO – PESCO
- Task 1.A.ii: Turnaround 2 DISCO – MEPCO

The following narrative describes the initiatives planned as an integral part of the Turnaround DISCOs activities.

#### Task 1.A.i: Turnaround PESCO

PESCO was selected as a PDP Turnaround DISCO in July 2012. With Aggregate Technical and Commercial (AT&C) losses at 47.4% in FY 2011-12, PESCO as a company lost almost a half a billion dollars. Starting from August 2012, PDP fielded embedded advisors at the DISCO and have worked closely with the Board of Directors (BOD), senior management and staff to delivery revenue enhancement, technical loss reduction and governance interventions. Moving forward through FY 2014 and beyond, PDP will continue to

modernize policies, processes, and procedures and provide modern infrastructure that will allow PESCO to improve commercial, technical, and financial performance.

This sub-task covers the following activities:

- **Activity 1:** Wide-Scale Electronic Metering & Reconductoring Program
- **Activity 2:** Automatic Meter Reading (AMRs) on High-End Bulk, Industrial & Commercial Consumers
- **Activity 3:** Revenue Enhancement through Theft Control and Procedure Enforcement
- **Activity 4:** Communications & Outreach – Corporate Communications & Public Awareness
- **Activity 5:** Implement Enterprise Resource Planning
- **Activity 6:** Preparing a Strategic Business Plan
- **Activity 7:** Organizational Assessment & Restructuring, Training & Capacity Building

Task 1.A.i will focus on two categories of activities for PESCO. First are those that focus on PESCO-wide interventions such as deployment of AMRs on high-end industrial, bulk, residential and commercial consumers, communication and outreach, organizational assessment and restructuring and training and preparing a strategic business plan. Second are activities that focus on specific circles characterized by high losses and where the security situation is more conducive to allowing PDP staff to work effectively in the field. These include the Wide-Scale Electronic Metering and Reconductoring Program, revenue enhancement through theft control and procedure enforcement and implementation of the billing and collection, financial and Human Resources (HR) component of the Enterprise Resource Planning (ERP) implementation.

### **Activity 1: Wide-Scale Electronic Metering & Reconductoring Program**

**Scope:** PESCO has an outdated metering system that depends heavily on electro-mechanical meters; which measure power consumption poorly, requires manual meter readings, and are prone to tampering. PESCO lacks the management capacity and funding to effectively procure and install new meters and service wiring to improve these systems.

PDP will assist PESCO to carry out a large-scale meter replacement program which will include replacing electro-mechanical meters with electronic meters in mutually agreed areas and Radio Frequency-(RF) enabled meters in urban areas. In addition, PDP will work with PESCO to replace bare secondary conductor with insulated Arial Bundled Cable (ABC) in target circle. These activities will be focused on mutually agreed Peshawar Circle, targeting sub-divisions with high losses but where the security situation is reasonably conducive to allow PDP and PESCO to work with minimum issue.

Installation works will be completed utilizing a combination of DISCO-staffed installation crews trained by PDP and hired subcontractors. Work will also include enumerating all of the consumers of the target circle, classifying them in correct tariff codes and updating the customer information so that accurate information can be fed into the Customer Information System (CIS). This information is necessary for effective management of the meters installation program.

**Schedule:** October 2013 – September 2014

PDP has been on the ground supporting PESCO since August 2012; identifying project locations, analyzing data, and designing metering and reconductoring programs. Request for Quotations (RFQs) for a majority of the PESCO meters and associated materials were issued during the last FY. Deliveries of ordered materials and equipment as well as development of new procurements continue into FY 2014, with the following procurement milestones anticipated to be achieved:

- November 2013 – Award Purchase Order (PO) for 42,000 RF-enabled electronic meters
- November 2013 – Award PO for 1000 kilometers of ABC cable and accessories
- January 2014 – Delivery of 70,000 electronic meters
- February 2014 – Award PO for electronic meter testing systems
- January/March 2014 – Delivery of meter fixing materials for 100,000 meters
- January/March 2014 – Delivery of 42,000 RF-enabled meters
- March/April 2014 – Delivery of ABC cable and accessories
- June 2014 – Delivery of electronic meter testing systems (for PESCO and MEPCO)

**Deliverables:** The deliverables of this activity are:

- Installation of RF-enabled meters
- Installation of electronic meters
- Securing of service drops
- ABC cable installation on the secondary network
- A monitoring program and consumer census (in selected Peshawar Circle)

**Results<sup>2</sup>:** Metering interventions targeted at high loss divisions will result in a reduction in non-technical losses and will lead to improvement in revenues of up to \$3 million by life of project. However, based on the installations expected to be completed by the end of current the Fiscal Year, the related result for FY 2014 is \$1 million.

## **Activity 2: AMR on High-End Bulk, Industrial, Residential and Commercial Consumers**

**Scope:** PESCO has 270,000 commercial customers and 28,000 high-use consumers currently depending on manually read meters. Use of AMR metering will help reduce commercial losses due to improper meter installation, improper meter reads, and/or collusion between meter readers and customers, and will lead to securing of PESCO's revenue from these customers.

PDP will assist PESCO to improve their revenue in this area by focusing on installing AMRs Global System for Mobile Communications/General Packet Radio Service (GSM/GPRS) for high-end commercial, residential and industrial customers.

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<sup>2</sup> The results mentioned under this section of Task 1.A.i are specific to activities mentioned in the Work Plan. However, PDP's efforts overall contributed significantly either directly or indirectly to the improvement in PESCO's financial condition between FY 2012-13 over FY 2011-12 to the tune of \$72.4 million. This can be attributed to PDP-led and inspired activities such as the theft reduction program, the Load Data Improvement project, the internal audit project and others. Similarly, an improvement in PESCO's financial condition between FY 2012-13 over FY 2013-14 is expected to be up to \$35 million.

A total of 13,200 AMRs will be procured and installed at PESCO on selected high-end customers. Roughly 6,900 AMR meters for three-phase direct connected high-end residences, commercial and industrial consumers will also have remote connect/disconnect that will enhance the DISCOs capability for load management, while the rest 6,300 Current Transformer/Potential Transformer (CT/PT) operated AMR meters on the high-end customers will not have remote connect/disconnect function because of technological limitations. Improvement in revenue collections from these customers will provide the expected returns on the investment.

**Schedule:** September 2012 – September 2014

PDP has worked closely with PESCO since August 2012 to identify the project locations, analyze the data and design an AMR program for high-end customers and AMR meter with GSM/GPRS communications for traditional customers. RFQs for meters will be issued in February 2014. The orders will be placed by June 2014 and meters installation will begin in October 2014. This intervention will be completed by June 2015.

**Deliverables:** The deliverables of this activity are:

- Installation of AMRs GSM/GPRS enabled meters on high-end consumers in PESCO
- Installation of head-end system as part of establishing AMR
- Staff trained

**Results:** Securing PESCO's revenue from high end residential, commercial and industrial consumers will lead to improvement in revenues of up to \$5.3 million. However, this target is for FY 2015 as AMRs installation will be completed in FY 2015.

### **Activity 3: Revenue Enhancement through Theft Control and Procedure Enforcement**

**Scope:** The primary challenge encountered by PESCO is high losses due to theft and poor revenue collection. AT&C losses for PESCO were 47.4% in FY 2011-12. Reduction in AT&C loss is also a high priority in the GOP's 2013 National Power Policy.

PDP has developed an integrated approach to address the problem of loss reduction and revenue protection. The critical elements of the strategy include a multi-stakeholder coordinated approach to deal with electricity theft and establishing effective commercial management mechanisms through Key Performance Indicators (KPIs) and monitoring of revenue-affecting commercial procedure. Furthermore, PDP in close collaboration with PESCO is creating an enabling environment for operations to succeed which includes seeking of legal and police support.

**Schedule:** October 2013 – September 2014

PDP has worked closely with PESCO management to setup up two revenue enhancement cells at Peshawar Circle level namely, a Protection Cell to control theft and an Enforcement Cell to monitor procedure implementation.

The two cells are being equipped with the required staffing, anti-theft surveillance vehicles and tools. These cells are operational at Peshawar Circle to optimize commercial operations and curb theft. However, greater attention is given to those selected subdivisions of Peshawar Circle where PDP is replacing meters and installing ABC cable, so as to attain maximum revenue improvements.

**Deliverables:** The following are the key deliverables of this intervention:

- Set-up of staffed and equipped Protection & Enforcement Cells at the circle level
- Define and implement processes and procedures for the efficient operations of the revenue enhancement cells
- Develop a first responder guide for ensuring evidence based prosecution of theft cases
- Build capacity of relevant staff members
- Develop KPI dashboards for the monitoring of key revenue affecting procedures
- Take remedial actions for dealing with discrepancies in commercial procedure implementation
- Procuring twelve anti-theft surveillance vehicles

**Results:** This activity is aimed at decreasing AT&C losses through theft control, improving collections and enforcing key commercial procedures. The results for this activity are covered under Activity 1 above.

#### **Activity 4: Communications and Outreach – Corporate Communications and Public Awareness**

**Scope:** DISCOs' Public Relations (PR) Departments often comprise of one PR Officer and two clerical staff who dedicate a majority of their time to issuing rebuttals to inaccurate media reports. Due to the lack of professional and qualified staff to handle communication components, the concept of image building and consumer awareness is lacking to the extent that not a single corporate campaign has been delivered in the last ten years. A PDP-supported Communications and Outreach Program for both PESCO and MEPCO<sup>3</sup> will result in an improved brand image of DISCOs, better customer services and better informed consumers through a series of outreach campaigns.

The PDP-supported communications offices at PESCO and MEPCO will be of prime importance as they will be completely engaged with the PR and Commercial Departments of both DISCOs. Key interventions include planning and execution of media awareness campaigns consisting of mass media and Informational and Educational Communication (IEC) materials for dissemination to the public as well as internal communications. PDP has recently published high impact IEC materials for both internal and external communication. A well-designed electricity theft campaign on mass media for PESCO was launched in August 2013 that is generating significant amounts of interest and resulting in a positive impact on the DISCO's bottom line. Similar campaigns are planned for both PESCO and MEPCO in FY 2014.

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<sup>3</sup> For both Turnaround DISCOs the communications and Outreach activities are same, therefore, the write-up here will refer to both PESCO and MEPCO.

The following Communications activities are planned for both MEPCO and PESCO:

- Corporate communication (including organizational branding, image promotion and employee motivation)
- Revamping of official DISCO websites
- Media and outreach campaigns
- Radio talk shows
- On ground promotions and awareness

**Schedule:** October 2013 - September 2014

PDP started preparations for PESCO in November 2012. PESCO allocated office space, which was refurbished by mid-February 2013 and staffed with young professionals, after which the planned activities for public relations and communications kicked off through planning and development. Key interventions such as branding material, a website, and IEC materials have already been implemented and a localized media campaign was launched during last Ramadan. PDP will continue communications assistance to PESCO during FY 2014 with support in media campaigns, monthly newsletters, radio talk shows, school outreach program and general support as and when requested.

PDP started preparations for MEPCO at the end of Calendar Year 2013. The Program had already established communications office at MEPCO under Component 2. Key interventions such as branding material, localized media and outreach campaigns, and IEC material for customer services were implemented in the first quarter of FY 2013. Activities such as corporate communications, public awareness on anti-theft and energy efficiency, corporate branding and internal campaigns of employee motivation are an essential part of the turnaround process of MEPCO and will continue into FY 2014.

**Deliverables:** The following are the deliverables for both turnaround DISCOs:

- Mass media campaigns (theft crack down and composite)
- Outreach initiative at PESCO (green campus, school conservation drive and farmers' education)
- Corporate communications (organization branding, image promotion and employee motivation)
- IEC material development
- Revamping PESCO and MEPCO official websites
- Radio talk shows
- Periodic newsletters and reports
- Documentaries on projects and success stories
- Supplementary reports at both Turnaround DISCOs will be produced and will be aired and published on local cable channels and newspapers respectively

PDP will submit regular monthly and quarterly communications reports. Press coverage received for various activities will continue to be regularly shared with USAID.

**Results:** Improved DISCO's image as a dynamic and customer-friendly entity through external communications that will help Turnaround DISCOs to smoothly implement consumer awareness campaigns

and will empower the Public Relations department towards assertive communications and outreach on DISCOs' behalf. Internally motivated DISCO staff to take ownership of the above initiatives and foster a sense of pride for the companies they work for as well as contribute to fulfilling the overall objective of the company through well-designed behavior change communication.

## Activity 5: Implement Enterprise Resource Planning

### ERP - Financial and HRIS

**Scope:** Existing DISCO legacy back office operations are incapable of providing timely information required for management to make effective decisions or to properly monitor and control utility operations. DISCO cost/revenue centers are dispersed geographically, adding to the delay in reporting. Furthermore, processes related to collection, validation, compilation and processing of data are inefficient. Automation of back office operations through delivery of an ERP system will result in streamlined processes, improved workflow efficiency, and reliable and precise financial and management information.

ERP implementation is planned in the following three modules:

- **Financials:** General ledger, accounts payable, accounts receivables, fixed assets and cash management
- **HRIS:** Core employee data and payroll
- **Materials Management:** Inventory & procurement management

**Schedule:** October 2013 – September 2014

Development of functional specifications and other preparatory activities started in January 2013 will continue up to April 2014, when the vendor will be mobilized. PDP will complete/continue with PESCO's readiness related activities (Information Technology trainings, enhancing PESCOs Information Technology (IT) organization, data readiness for migration and change management) until April 2014 when the vendor will be mobilized. Once the vendor is onboard, PDP will work with PESCO and the implementation vendor to prepare the business process blue print, system realization, trainings and data migration from legacy to new systems. ERP initiative is scheduled to be completed in August 2015.

**Deliverables:** Successful implementation of the ERP at PESCO will result in the following deliverables:

- Financials: General ledger, accounts payable, accounts receivables, fixed assets and cash management
- Materials Management: Inventory & procurement management
- HRIS: Core employee data and payroll
- IT Support: IT infrastructure supporting ERP that include data centers with servers, end user computers and network infrastructure
- Reporting: Baseline report for collecting and validating existing data

**Results:** Reduced cash flow cycle time, improved asset management operations and reporting, improved banking operations and reduction in labor costs associated with these operations and improved HR processes

and manpower planning. The anticipated revenue savings after ERP implementation is \$2.2 million, this target is for FY 2015, as ERP will be completed in August 2015.

## Customers Information System

**Scope:** The operations of distribution companies in Pakistan are characterized by manual and cumbersome processes, inadequate controls, insufficient commercial focus, limited transparency and lack of reliable information. As a result, the operations are highly inefficient with substantial revenue leakages and poor customer orientation. Integrating and automating core commercial functions like meter reading and billing/collections will minimize the human element in commercial processes and will lay the foundation for sustainable revenue cycle reforms.

CIS is the backbone of customer care and commercial operations. From customer care and metering to billing, payments and credit and collections, these applications improve the customer experience and support all aspects of billing and revenue collections. Augmented with handheld meter reading devices (HHUs), the CIS generates accurate consumer bills and provides a one-window customer service center which provides improved customer experience. Part of the CIS project is a consumer census activity for the consumers of the selected project area to improve the customer database so as to reflect accurate field information.

Implementation will begin with improvement of the consumer database by conducting a consumer census (for the selected circle i.e. Peshawar Circle). This will be followed by development of an IT infrastructure and networking; integrating metering and billing processes for commercial and bulk consumers; deployment of handheld meter reading system; and concluding with CIS deployment.

**Schedule:** The schedule for CIS will follow the same pattern as discussed above under ERP – Financial & Human Resources Information System (HRIS) above. Both CIS and ERP for PESCO are covered under one bid.

**Deliverables:** The following are the deliverables from the implementation of CIS for PESCO:

- Accurate customer database and mapping to distribution network
- Replacement of legacy billing system with CIS at selected circle
- Handheld meter reading system
- One-window customer service centers
- Consumer census report of the selected circle

**Results:** This will result in improved operational efficiency, improved revenue flow, reduced receivables, increased accuracy of bills, reduced process cycle time, more efficient customer services and a reduction in customer complaints.

## Activity 6: Strategic Business Plan for PESCO

**Scope:** This activity entails preparation of a five-year strategic business plan for PESCO. The plans will provide a roadmap including a series of transformation projects that, when implemented, will result in

specific and measurable improvements. The plans will align the DISCO's own planned initiatives with PDP-supported activities so as to achieve the greatest impact in the shortest period of time.

PDP will assist PESCO to develop a business plan for the FY 2015-2019 period. The objective of the business plan is to identify what activities are important through development of Strategic Objectives and related Strategic Goals. PESCO will then need alignment of the DISCO's activities around the Strategic Objectives and Goals. Prior to the development of the Strategic Objectives and Goals, PESCO's senior management will need training in strategic planning. PDP will partner with a local vendor to train senior management.

The strategic goals will include the current status of goals and five year goals for improvement. In those areas needing improvement, senior management will set five-year improvement goals. As the business plan is developed, PESCO will develop action plans around the five-year improvement goals. PESCO will appoint mid-level managers as project managers to develop action plans (preliminary feasibility studies) for all five year goals. The project managers will receive training in project management.

The senior management will select a limited number of action plans to enact as projects for implementation to achieve the strategic goals. The project manager will formally report to a meeting of senior management quarterly and more often if necessary.

### **Sub-Activity 1: Development of Strategic Objectives and Goals**

- Training of PESCO's senior management in strategic planning
- Workshop to develop strategic objectives and goals

### **Sub-Activity 2: Preparation of Action Plans**

- Training of project managers in project management
- Technical assistance to PESCO's project managers in project management

### **Sub-Activity 3: Preparing a Draft Business Plan**

- Technical assistance in preparing business plan

**Schedule:** October 2013 – December 2014

The training of senior managers will be completed by June 2014. The definition on what is important (development of strategic objectives and strategic goals) will be completed by June 2014, followed by training of project managers in July 2014. Development of a draft business plan will commence in August 2014 and will be completed by end of Calendar Year 2014.

### **Deliverables:**

- Strategic Objectives/Strategic Goals 2015-2019 established

- Staff trained
- Action plans based on Strategic Objectives/Strategic Goals 2015-2019 codified
- The Business Plan

**Results:** Investment plans, once implemented, will help DISCOs achieve their long term business goals and help sustain improvements brought in by PDP.

### **Activity 7: Organizational Assessment and Restructuring Implementation, Training & Capacity Building**

**Scope:** DISCOs have yet to develop a progressive corporate culture in which management and staff members have well-defined job functions, management is empowered with appropriate authority, and employees accept and understand their responsibilities. DISCOs' current organizational structures are not well aligned with current and future business requirements. Under Component 2, PDP worked closely with MEPCO to develop a new organization structure that meets the current business requirements, clarifies reporting relationships, and helps corporatize and commercialize the DISCO's operations.

An organizational assessment and restructuring project has already been carried out at MEPCO with a number of sub-interventions, including developing and refining job descriptions (JDs) with relevant KPIs, establishing an effective performance management system, developing and putting in place a well-designed HR Management (HRM) system, and automation of the HR functions.

**Schedule:** October 2013 – December 2014

The RFP for PESCO was issued in September 2013 and contract will be signed with the vendor in January 2013. The vendor will be mobilized in February 2014. The vendor will work with PESCO and PDP to come-up with future organizational structure that meets PESCOs current and future business requirements by December 2014.

**Deliverables:** The following are the deliverables of this intervention:

- Implementation of revised organizational structure
- Upgrading of Safety Function
- Upgrading of Training Function
- Implementation of JDs/KPIs
- Implementation of performance based evaluation system
- Human Resource Manual
- HRIS

**Results:** A better aligned organizational structure focusing on business needs which will help improve overall performance of the company.

## Task 1.A.ii: Turnaround MEPCO

MEPCO has been selected as PDP's second Turnaround DISCO. This decision was announced by USAID on December 20, 2013. Starting in August 2012, PDP enhanced its focus on MEPCO under the Component 2 initiative and initiated planning and design of the activities there. Moving forward, PDP will modernize policies, processes, and procedures and provide modern infrastructure that will allow MEPCO to improve commercial, technical, and financial performance.

This sub-task covers the following activities:

- **Activity 1:** AMR Meters on all of the Agriculture Tubewell Consumers in Multan Circle
- **Activity 2:** AMRs on High-End Residential, Agricultural, Bulk, Industrial & Commercial Consumers Having Load above 20 kW
- **Activity 3:** Expanding Geographic Information System (GIS) Mapping and Planning functions to Circle level
- **Activity 4:** Launching Energy Loss Reduction (ELR) Program
- **Activity 5:** Volt VAR Optimization (VVO)
- **Activity 6:** Improving Commercial Operations
- **Activity 7:** Communications & Outreach – Corporate Communications & Public Awareness
- **Activity 8:** Implement Enterprise Resource Planning
- **Activity 9:** Preparing a Strategic Business Plan
- **Activity 10:** Change Management & Human Resource Development

Task 1.A.ii will focus on two categories of activities for the Turnaround MEPCO. First are those that focus on MEPCO-wide interventions such as deployment of AMRs on 20 kW and above high-end industrial, bulk, residential and commercial consumers, expanding GIS mapping and planning functions communication and outreach, preparing a strategic business plan and the Organizational Assessment and Restructuring and Training Component. Second are activities that focus on Multan Circle to make it a model that the DISCOs will scale to other circles. These include the AMRs on tubewells connections, ELR program, VVO, improving commercial operations and ERP implementation.

### Activity 1: AMR Meters on All Agriculture Tubewell Consumers in Multan Circle

**Scope:** MEPCO has more than 12,000 tube-well consumers in the Multan Circle whose meters are currently manually read. There is a significant loss of revenue from these customers which can be reduced by application of AMR to improve accuracy and reduce opportunities for theft. PDP will assist MEPCO to improve their revenue in this area by focusing on installing AMR meters with remote disconnect and connect capability on all tube-well customers in the Multan Circle. These AMR meters will automatically transmit the reads to the remote servers at predefined interval. In addition, the meters will accept disconnection/reconnection commands by backend system remotely as and when required. This arrangement will enable MEPCO to keep rural feeders running with a facility to switch off the tubewell customers for load shedding as required. In case of disconnection initiated by the backend system, the AMR meter will not reconnect until it receives a reconnection command. These AMR meters will have two-way communication capability to demonstrate load management techniques. They will also have the capability to

support a minimum of two different load thresholds against different time slots (peak/off peak), which will be programmed to activate disconnection/reconnection automatically by the meter. The time between disconnection and reconnection will also be programmable. AMR meter installed on tubewell customers will have the capability to change load thresholds and associated time slots locally and remotely.

Replacement of existing meters with AMR meters on tubewell customers will be carried out by an installation contractor in collaboration with MEPCO field operations, Metering & Testing (M&T) department and PDP.

**Schedule:** January 2014 – September 2014

The RFP will be published by January 2014 and orders will be placed by June 2014. AMR meter installations to replace the existing meters will begin in October 2014, and the project will be completed by June 2015.

**Deliverables:** Following are the deliverables of this intervention:

- Installation of close to 12,000 AMR meters on all active tubewell customers of Multan Circle with remote disconnect and reconnect capability
- Establishment of
- Implementation of GSM/GPRS network
- Installation of head-end system
- AMR integration with CIS & Billing Systems
- Trained Staff

**Results:** AMR metering intervention on tubewell connections of Multan Circle will modernize MEPCO's meter reading and commercial management processes, and will result in considerable loss reduction and energy saving valued at approximately \$1.3 million. However, this target is for FY 2015 as AMRs installation will be completed in FY 2015.

### **Activity 2: AMR Meters on High-End Customers**

**Scope:** The activity has been designed to assist MEPCO achieve significant improvement in commercial performance through integration of advanced metering processes. MEPCO has an outdated metering system based on electro-mechanical metering which are subject to inaccurate manual readings and field tampering, both resulting in loss of revenue. MEPCO lacks the funding to upgrade these meters with state-of-the-art technology. Under this activity, PDP will assist MEPCO to carry out a large-scale meter replacement program across its territory, with AMR (GSM/GPRS) meters for up to 20,000 high-end residential, agricultural, commercial and industrial customers having sanctioned load more than 20 kW. This includes three-phase whole current AMR meters with remote disconnect and connect capability and AMR CT, CT/PT meters. These AMR meters will have two-way communication capability to demonstrate load management capability. Three-phase AMR meters will accept disconnection/reconnection command from a backend system remotely as and when required. In case of disconnection initiated by backend system, the AMR meter will not reconnect until it receives a reconnection command. These will also have the capability to support minimum two different load thresholds against different time slots (peak/off peak) which will be programmed to activate disconnection/reconnection automatically by the meter and time between disconnection and reconnection will also be programmable.

Replacement of existing meters with AMR meters on high-end customers with 20 kW and above load will be carried out by an installation contractor in collaboration with MEPCO field operations, Metering & Testing (M&T) department and PDP.

**Schedule:** January 2014 – September 2014

The RFP will be published by January 2014 and orders will be placed by June 2014. AMR meter installations will begin in October 2014. This intervention will be completed by June 2015.

**Deliverables:** Following are the deliverables of this intervention:

- Replacement of existing meters with AMR meters on all MEPCO customers having sanctioned load 20 kW and above (estimated to be 31,500).
- Implementation of GSM/GPRS network
- Installation of head-end system
- AMR integration with CIS & Billing Systems
- Trained Staff

**Results:** AMR metering intervention on high end customers of MEPCO will result in improved commercial performance, increased revenue by modernizing MEPCO meter reading and commercial management processes. It will also result in considerable loss reduction and energy saving valued at approximately \$2 million. However, this target is for FY 2015 as AMRs installation will be completed in FY 2015.

### Activity 3: Expanding GIS Mapping and Planning Functions to All Circles of MEPCO

**Scope:** Under this activity PDP will extend the access of geo-database to the Circle level. Under Component 2, Planning & Engineering (P&E) intervention has strengthened and modernized distribution planning at the MEPCO headquarter-level through the use of modern GIS and Load Flow analysis tools. The P&E center developed at MEPCO headquarter is fully utilized by planning engineers to increase the overall distribution system efficiency and curtail technical loss. MEPCO has demonstrated effectively the use of the P&E Centers through creating cost effective work plans that lower technical losses while improving system reliability. PDP's capacity building exercise has enabled MEPCO P&E to populate its' geo-database on its' own to support project sustainability objectives. It is essential to address issues like data entitlement, disaster recovery and data availability at this time. PDP will raise the implementation of GIS to a web-based enterprise level, addressing all these issues and implement it in MEPCO.

The following are the envisaged steps to achieve sustainable and secure implementation of GIS:

1. Establishment of a Centralized Data Center to ensure data availability and access through secure authentication process. The data will be archived at regular intervals to eliminate data loss.
2. Deployment and configuration of ArcGIS enterprise server based platform to provide centrally managed, high-performance GIS applications and services that can be accessed throughout an organization using browser-based, desktop, or mobile clients. It comes with standard, end user applications and services for spatial data management, visualization and spatial analysis. ArcGIS

Server offers open access to extensive GIS capabilities that enable organizations to publish and share geographic data, maps.

3. Proper P&E Centers will be established at eight MEPCO Circle offices to assist MEPCO to expand its P&E function in an integrated manner resulting in an accurate geo-database across the entire DISCO, supporting load flow analysis, segregating the technical and non-technical losses and preparing an asset management database. These Circle P&E centers will be provided with hardware and software and the staff will be trained. The Circle Centers will be able to prepare their own expansion and rehabilitation plans.
4. In collaboration with MEPCO P&E, PDP will complete Multan Circle GIS mapping and will have the distribution network analyzed to segregate technical and non-technical losses and help them initiate plans for loss reduction and expansion and rehabilitation.

**Schedule:** February 2014 – September 2014

The procurement process for acquiring ArcGIS and SynerGEE licenses and related computer hardware will be initiated by February 2014. Purchase orders will be placed by April 2014 and the system installation will be completed by July 2014. PDP will start imparting necessary training to field staff of eight MEPCO Circles by July 2014 and will continue to extend On-Job-Training and On-Job-Support till June 2015.

**Deliverables:** Following are the deliverables of this intervention:

- Establishment of eight Circle P&E Centers
- Implementation of GIS Mapping and Distribution Network Planning at each Circle
- Network analysis, including load flow analysis and segregation of technical and non-technical losses at each Circle level
- Integration with P&E Center at MEPCO Headquarters
- Establishment of a Centralized Data Center
- Trained field staff

**Results:** Accurate geo-database of actual physical distribution facilities leading to improved planning capability at each Circle level. It will help them carry out feeder rehabilitation and reconductoring, network bifurcations, power factor improvements and other engineering analysis that results in cost-effective infrastructure investments, reduced technical losses and improved quality of customer service that will result into savings in revenue by \$2.4 million by life of project. The target for the FY 2014 is savings of \$0.4 million.

#### **Activity 4: Launching Energy Loss Reduction (ELR) Program**

**Scope:** PDP will assist MEPCO to carry out a large-scale meter replacement program in one of the selected subdivision of Multan Circle. This will include checking and re-fixing of existing meters, replacement of defective or damaged meters, securing of service drops, installing of parallel groove/compression connectors, replacement of existing meters with AMR (GSM/GPRS enabled) meters on high-end residential, agricultural, commercial and industrial customers and on all tubewell customers with remote connect/disconnect capability. MEPCO has agreed to provide new electronic meters to replace the defective and damaged ones whereas PDP will be providing service drop cable and meter fixing material. In addition PDP will replace bare secondary conductor with insulated ABC cable, extend insulated high tension (HT) line, install inter-set

transformers and Outage Reduction Devices (ORD) to curb technical loss and improve safety conditions in selected congested area. Installation of AMR meters will be carried out by the AMR meter contractor whereas the remaining works will be executed utilizing DISCOs crews with supervision and monitoring support from PDP or PDP sub-contractors. This may also include enumerating all of the consumers of the targeted subdivision, classifying them in correct tariff codes and updating the customer information so as the accurate information can be fed into the CIS. This information is necessary for effective management of the meters installation program.

**Schedule:** February 2014 – September 2014

PDP will be working closely with MEPCO to identify the project locations, analyze the data, and redesign the distribution network. Meter re-fixing will commence from July 2014. Orders for ORD devices, Completely Self Protected (CSP) Transformers and insulated HT & low tension (LT) conductors will be placed by July 2014 and the installation will begin from October 2014. This intervention will be completed by June 2015.

**Deliverables:** The deliverables of this activity are:

- Installation AMR GSM/GPRS enabled meters (covered under activity 2)
- Securing of Service Drops associated with meter replacement
- ABC cable installation on the secondary network with CSP transformers
- A monitoring program and consumer census for the target subdivision

**Results:** This intervention for the targeted subdivision will result in a reduction in technical and non-technical losses and will lead to improvement in revenues up to \$1.1 million. The target for this Fiscal Year is \$0.3 million.

### Activity 5: Volt VAR Optimization

**Scope:** MEPCO has serious problems managing reactive power and proper voltage on lengthy feeders. To assist in improving this situation, PDP will implement a Volts/VAR Optimization (VVO) program utilizing MEPCO's Planning and Engineering function to identify locations where application of 11 kilo volt (kV) switched and un-switched capacitors and voltage regulating equipment, regulators could be deployed. This intervention will help reduce losses and realize substantial savings, improve reliability of supply while significantly improving customer relations, particularly on selected feeders of Multan Circle in excess of 50 kilometers in length.

**Schedule:** March 2014 – September 2014

The RFPs will be published by March 2014 and orders will be placed by June 2014. Material is expected to arrive by October through December 2014. Installation of the VVO equipment is planned to commence from November 2014. This intervention will be completed by June 2015.

**Deliverables:** The deliverables of this activity are:

- Installation of 250 units of VVO equipment
- Trained Staff

**Results:** With the introduction of VVO devices, it is expected to achieve about 5% loss reduction on individual feeders where these devices will be installed. This will result in revenue saving of \$0.4 million by life of project. However, this target is for FY 2015 as VVOs installation will be completed in FY 2015.

## Activity 6: Improving Commercial Operations

Distribution companies experience high losses and poor collections mainly due to power theft and ineffective billing and collections practices, resulting in payment imbalance. Meter reading manipulations contribute significantly to improper billings and lead to customer distrust and a lack of willingness to pay. The use of outdated manual procedures allows these errors to continue.

A number of important and compelling changes must occur to enable MEPCO to achieve performance levels in line with standards set by modern, efficient and effective electric distribution utilities.

This activity will focus on the following sub-activities:

- **Sub-Activity 6.1:** Improved Meter Reading and HHUs
- **Sub-Activity 6.2:** Revenue Protection Through Surveillance
- **Sub-Activity 6.3:** Customer Service Improvement Initiatives

### Sub-Activity 6.1: Improved Meter Reading and Handheld Units

**Scope:** Meter read data integrity is fundamental to sustainable utility operations. This ensures that energy sold is accounted-for properly and establishes trust between the customer and the utility.

The PDP-designed Improved Meter Reading (IMR) and handheld units projects under Component 2 helped improve the efficiency of meter reading and discrepancy identification process and to reduce the opportunities for data manipulation. The project successfully implemented IMR and HHU at several DISCOs and showed excellent results with an average 6% reduction in losses, increased revenue and an average decrease of 50% in customer complaints.

IMR/HHU will be implemented in 14 subdivisions of Multan Circle. At the same time, MEPCO will implement IMR/HHU in another 14 subdivisions of the same circle. The project involves changes to current meter reading procedures and practices and setting KPIs for meter readers.

Under the IMR initiative, PDP will also update customer information, conduct audit of existing meter configurations, implement handheld units for meter reading and train the meter readers in best practices for meter reading.

**Schedule:** January 2014 – September 2014

The process improvement part of IMR that includes lowering the height of meters and getting the defective meters replaced will continue in the meantime.

**Deliverables:** Following are the deliverables for the implementation of the IMR/HHU:

- Implementation of handheld devices for meter reading
- Training of DISCO staff
- Elimination of current paper based meter reading system in the project subdivisions

**Results:** It is estimated that by increasing the ability of the meter readers to accurately read every meter every month and reducing the opportunities for data manipulation/error, losses will be decreased by approximately 3%. This will also improve data integrity and contribute towards the willingness of the consumer to pay the bill. This will result in revenue saving of \$1.9 million. The target FY 2014 is \$0.7 million.

### **Sub-Activity 6.2: Revenue Protection through Surveillance**

**Scope:** Power theft contributes significantly towards losses and poor collections in the DISCOs. For revenue protection, PDP has developed a program to periodically monitor high revenue meters, especially agricultural customers and AMR meters. PDP will assist the DISCO with technical assistance and enabling tools. The surveillance teams will also respond to alerts received from the AMR system.

**Schedule:** January 2014 – September 2014

PDP will start the training and capacity building of the staff while the procurement process of tools and equipment is carried out. Under this initiative surveillance vehicles will be procured and will be utilized to curb theft.

**Deliverables:** Following are the deliverables for the activity:

- A fully functional surveillance unit
- Training and capacity building of staff
- Defining and implementing processes and procedures for surveillance activity
- Communication and Public Outreach Program
- Procuring surveillance vehicles

**Results:** This activity will help in revenue protection and reducing non-technical losses. It will also establish a mechanism for periodic inspection of high revenue meters and taking action on AMR system alerts. The results of this activity are covered under Activity 1, 2 and 7.1 above.

### Sub-Activity 6.3: Customer Service Improvement Initiatives

**Scope:** Efficient customer services are a critical to success factor of electric distribution companies. DISCOs bear a significant responsibility to provide continuous, accurate and reliable service to their customers. Under this activity, PDP will improve the existing Regional Complaint Center and One Window Operations offices in the DISCO. Staff will be trained on customer service excellence and procedures will be improved to ensure a quick and timely response to customer complaints. Necessary tools will be provided to create an enabling environment.

**Schedule:** March 2014 – September 2014

PDP will start working on the training, capacity building and procedure improvement part while the customer service facilities will be renovated.

**Deliverables:** Following are the deliverables for the activity:

- Improved customer services offices
- Customer Service excellence training to staff
- Defining and implementing procedures for customer services

**Results:** This activity will help in improving the customer service function and create a positive image for the DISCO. The target is to decrease the customers' complaints by 40% in selected project areas.

### Activity 7: Communications & Outreach – Corporate Communications & Public Awareness

Please refer to Tasks 1.A.i, Activity 4.

### Activity 8: Implement Enterprise Resource Planning

#### ERP - Financial and HRIS

**Scope:** Existing DISCO legacy back office operations are incapable of providing timely information required for senior management to make effective decisions or properly monitor and control utility operations. DISCO cost/revenue centers are dispersed geographically, adding to the delay in reporting. Furthermore, processes related to collection, validation, compilation and processing of data are inefficient. Automation of back office operations through delivery of an ERP system will result in streamlined processes, improves workflow efficiency, and produces reliable and precise financial and management information.

ERP implementation is planned in the following three modules:

- **Financials:** General ledger, accounts payable, accounts receivables, fixed assets and cash management
- **HRIS:** Core employee data and payroll
- **Materials Management:** Inventory and procurement management

**Schedule:** October 2013 – September 2014

ERP implementation at MEPCO will utilize the same functional specifications as developed for PESCO. It is envisioned that the RFP will be issued in February 2014 and contractor will be mobilized in June 2014. Preparatory activities leading to enhancing readiness for ERP implementation have already begun in MEPCO. The vendor once onboard will complete the business blue printing/modeling and initiate the data migration in this Fiscal Year. The ERP activity will be completed by August 2015.

**Deliverables:** Successful implementation of the ERP at MEPCO will result in the following deliverables:

- Financials: General ledger, accounts payable, accounts receivables, fixed assets and cash management
- Materials Management: Inventory and procurement management
- HRIS: Core employee data and payroll
- IT Support: IT infrastructure supporting ERP that include data centers with servers, end user computers and network infrastructure
- Reporting: Baseline report for collecting and validating existing data

**Results:** Reduced cash flow cycle time, improved asset management operations and reporting, improved banking operations and reduction in labor costs associated with these operations and improved HR processes and manpower planning. The anticipated revenue savings after ERP implementation is \$4.1 million, this target is for FY 2015, as ERP will be completed in June 2015.

### Customer Information System

**Scope:** The operations of distribution companies in Pakistan are characterized by manual and cumbersome processes, inadequate controls, insufficient commercial focus, limited transparency and lack of reliable information. As a result, operations are highly inefficient with substantial revenue leakages and poor customer orientation. Integrating and automating core commercial functions like meter reading and billing/collections will minimize the human element in commercial processes and lay the foundation for sustainable revenue cycle reforms.

CIS is the critical backbone of customer care and commercial operations. From customer care and metering to billing, payments and credit and collections, these applications enable the customer experience and support all aspects of billing and revenue collections. Augmented with handheld meter reading devices, the CIS will generate accurate consumer bills and a one-window customer services facility will provide improved customer experience.

PDP will leverage Component 2 activities to scale a Customer Information and Billing system developed at subdivision level to scale it up for circle level implementation. This activity will be carried out in collaboration with Power Information Technology Company.

The implementation of CIS will be done in phases, starting with rollout at model circle first i.e. Multan Circle through PDP. As the first implementation takes root, CIS will be progressively rolled out to other Circles by MEPCO. PDP will provide necessary training and capacity building to enable that transition.

**Schedule:** December 2013 – September 2014

The application developed under Component 2 covered functionality up to subdivision level. The system scalability to circle level requires some additional development effort which is under way. The project is expected to be completed by the August 2015 with successful parallel testing of three months.

**Deliverables:** Following are the deliverables from the implementation of CIS:

- User Requirements Document for CIS
- Software Design Document for CIS
- Replacement of legacy billing system with CIS at selected circle

**Results:** This will result in improved operational efficiency, increased accuracy of bills, reduced process cycle time and more efficient customer services with reduction in customer complaints.

### **Activity 9: Preparing a Strategic Business Plan**

**Scope:** This activity entails preparation of a five-year strategic plan for MEPCO. The plan will provide a roadmap including a series of transformational projects that, when implemented, will result in specific and measurable improvements. The plans will align the DISCO's own planned initiatives with PDP-supported activities so as to achieve the greatest impact in the shortest period of time.

PDP will assist MEPCO to develop a business plan for the FY 2015-2019 period. The objective of the business plan is to identify what activities are important through development of strategic objectives and related strategic goals. MEPCO will then need alignment of the DISCO's activities around the strategic objectives and goals. Prior to the development of the Strategic objectives and goals, MEPCO's senior management will need training in strategic planning. PDP will partner with a local vendor to train senior management.

The strategic goals will include the current status of goals and five-year goals for improvement. In those areas needing improvement, senior management will set five-year improvement targets. As the business plan is developed, MEPCO will develop action plans around the five-year improvement goals. MEPCO will appoint mid-level managers as project managers to develop action plans (preliminary feasibility studies) for all five year goals. The project managers will receive training in project management.

The senior management will select a limited number of action plans to enact as projects. The project manager will formally report to a meeting of senior management quarterly and more often if necessary.

#### **Sub Activity 1: Development of Strategic Goals and Objectives**

- Training of MEPCOs senior management in strategic planning
- Workshop to develop strategic objectives and goals

### Sub-Activity 2: Preparations of Action plans

- Training of project managers in project management
- Technical assistance to MEPCOs project managers in project management

### Sub-Activity 3: Preparing a Draft Business Plan

- Technical assistance in preparing the Business Plan

**Schedule:** October 2013 – September 2014

The training of senior manager will be completed by April 2014. The definition on what is important (development of strategic objectives and strategic goals) will be completed by April 2014, followed by training of project managers from May 2014. Development of draft business plan will commence in March 2014 to be completed by end of September 2014.

**Deliverables:** This includes the following deliverables:

- Strategic Objectives/Strategic Goals 2015-2019
- Action Plans based on Strategic Objectives/Strategic Goals 2015-2019
- The Business Plan

**Results:** This will result in investment plans that, once implemented, will help the DISCOs achieve their long term business goals and help sustain improvements brought in by PDP.

### Activity 10: Change Management & Human Resource Development

While equipment supplies to the MEPCO will result in high impact gains in the short term, the sustainability of these actions will require people and processes to be augmented to a level comparable to a well-run utility.

This activity will focus on the following sub-activities:

- **Sub-Activity 10.1:** Organization Restructuring Implementation
- **Sub-Activity 10.2:** HR Development/Training & Capacity Building
- **Sub-Activity 10.3:** Additional Change Management Initiatives

#### Sub-Activity 10.1: Organization Restructuring Implementation

**Scope:** DISCOs have yet to develop a progressive corporate culture in which management and staff have well-defined job functions, management is empowered with appropriate authority, and employees accept and understand their responsibilities. DISCOs current organizational structures are not well aligned with current and future business requirements. Under Component 2, PDP worked closely with MEPCO to develop a new organization structure that meets current business requirements, clarifies reporting relationships, and will help corporatize and commercialize the DISCO's operations.

While an organizational assessment and resulting restructuring is necessary, it is not sufficient in and of itself. Other related and supporting actions as well as a number of sub-interventions are needed, including developing and refining JDs with KPIs, establishing an effective performance management system, developing and putting in place a well-designed HRM system, and automation of the HR functions through the HRIS (covered under the ERP activity).

All the work listed above has already been carried at MEPCO, with detailed proposals/reports available. Under Component 3, PDP will focus on the implementation of the proposals already provided to MEPCO, which have already been approved by the BOD. Further assessment/studies will generally not be required. The proposals already submitted to MEPCO are:

**Approved by MEPCO's BOD:**

- Revised Organization Structure
- Performance Based Evaluation System
- Job Profiles (Job Descriptions & KPIs)
- Recruitment & Selection
- Training & Development

**Completed and Approval Awaited:**

- Manpower Planning
- Authority Matrix
- Grading Structure
- Separation
- Employee Relations
- Compensation & Benefits Study
- Employee Handbook
- HRIS, RFP & RFQ
- Implementation Plan/Strategy

MEPCO has initiated implementation of the approved proposals; however, further assistance is required. As in the first phase, an out-sourced consultant will provide necessary assistance to MEPCO. The support in implementation will extend to the other proposals as well. The consultant will review all proposals and studies and, where necessary, modify them and remove any shortcomings to enable quick implementation in coordination with MEPCO.

**Schedule:** July 2013 – September 2015

An RFP for organizational restructuring implementation will be issued in February 2014. Vendor selection will be completed by May 2014. The project will be completed by July 2015.

**Deliverables:** This includes the following deliverables:

- Implementation of revised organizational structure for Head Quarters and Multan Circle
- JDs/KPIs for all employees
- Implementation of performance based evaluation system

- Implementation of Manpower Planning
- Human Resource Manual

**Results:** A better aligned organizational structure supporting business needs and operations. It will improve overall performance of the company.

### Sub-Activity 10.2: HR Development/Training & Capacity Building

**Scope:** DISCOs in Pakistan have not given much importance nor contributed the required resources to the development of their human capital in terms of training and capacity building. The absence of a learning culture leads to a poor working environment, low morale and productivity, misaligned skills sets and poor receptivity towards internal and external human needs of the organization. PDP will revitalize the training infrastructure including the provision of essential training equipment, instituting training programs for enhancing the skill set of all employees.

In addition, through the use of PDP implementation managers<sup>4</sup>, PDP will provide top leadership consulting, coaching and also facilitate top management for effective decision making.

**Schedule:** January 2014 – September 2014

**Deliverables:** This will include the following deliverables:

- Board facilitation and development program
- Management development programs for senior and mid-level management focusing on leadership, service excellence, change management, etc.
- Functional areas training program targeted to Multan Circle, such as:
  - Commercial
  - Finance
  - HR
  - IT/ERP
  - Engineering , Planning and Design
- Development of Training Function:
  - Training of Regional Training Center (RTC) Principal/other instructional staff
  - Curriculum design, plans and training
  - Train the Trainers program
- Upgrade RTC, including establishment of IT training lab, and four CTCs

**Results:** Better trained and focused workforce to meet the requirements of a modern electric utility.

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<sup>4</sup> PDP shadow managers/embedded advisors will work side by side with the existing functional managers heading different functions like finance, IT, engineering, etc. The objective is to fill the gap in the existing skill sets that the DISCOs have at the senior staff level, and to facilitate the joint implementation of PDP work. For MEPCO, the BOD and the senior management have endorsed the deployment of shadow managers, who have already been mobilized at MEPCO.

### Sub-Activity 10.3: Additional Change Management Initiatives

**Scope:** DISCOs currently lack the capacity and drive to implement any new initiatives or changes to programs supporting overall performance improvement.

The Project Management Unit (PMU) will be established at the MEPCO headquarters for overall coordination, monitoring and implementation of PDP's projects. This unit will also be empowered to coordinate change management initiatives related to HR, training and capacity building, finance, P&E, operations and maintenance, commercial management, and communications and outreach. All training and development activities will be centralized.

**Schedule:** April 2014 – September 2014

The change management initiatives will be carried on throughout the life of the project.

**Deliverables:** This activity includes the following deliverables:

- Upgrading the role and capacity of the Information Technology department of the DISCO to ensure successful undertaking, adoption, and sustainability of the automation plans. Under the Organizational Restructuring, the IT department will be restructured so as to support implementation of back-office automation systems such as CIS, ERP, AMRs at the DISCO level. PDP's IT shadow manager will continually upgrade the IT capacity and knowledge of the staff throughout the life of the project.
- All proposed applications (CIS, Billing System, ERP–Finance, HR, Inventory, Procurement, AMR, corporate intranets, and business intelligence systems) will be launched under one umbrella for strong integration and to maximize benefits and support for the corporate analytical and decision-making processes
- Stakeholder engagement plan
- Communication strategy
- Champions of change identified within the organization

**Results:** This approach will bring economies of scale; standardization of policies, procedures, and resources; business case-driven investments and cost savings in term of capital and operational expenditures.

### Task 1-B: Technical Assistance for the Transition of Selected Distribution Companies from Public Management to Private Management

As part of its 2013 National Power Policy, the GOP stated their intent to privatize two or more of its ten state-owned DISCOs. The approach to privatization adopted by the GOP is to offer a minority stock interest to private investors under an irrevocable condition that an agent selected by the investor is responsible for the operation, maintenance, expansion and profit of the reformed company as a public/private partnership. This approach was used in 2002 to attract private investment and to restructure the Karachi Electric Supply Company (KESC); that private investment has since been transformed from a minority interest of 30% to a majority interest of 70%.

The GOP has requested assistance from the U.S. Government (USG) in preparing two GOP-owned distribution companies for privatization. As USAID's primary contractor working in the power distribution sector, PDP proposes providing a combination of services addressing both policy alignment at the government level through conducting an independent review of the legal and regulatory framework, as well as in technical and financial due diligence activities for the two selected distribution companies.

PDP in consultation with USAID will work with GOP ministries, authorities and commissions to provide technical and policy assistance that will assist in the transition of selected distribution companies from public management to private management. The work products provided will support and contribute toward the effectiveness of the GOP privatization program within the power sector and elsewhere.

PDP's legal and regulatory due diligence analyses and research will provide assurances to private investors, government counterparts and the public at large that the GOP's privatization activities will be supported by a solid foundation of policies and regulations that are aligned with sale of either a minority or majority stock interest in state-owned energy entities to the private sector. These assurances conjoined with a secure legal and regulatory foundation are essential for creating an investment climate that attracts the largest number of potential investors from the private sector.

PDP's technical and financial due diligence research and analyses will comprise the core of PDP's direct and focused contributions to the successful privatization of state-owned distribution companies. PDP's role as a privatization advisor will assist the GOP in the selection of transaction advisors and tender managers as well as other areas related to privatization as requested by the GOP and approved by USAID.

This task will include the following activities:

- **Activity 1:** Legal and Regulatory Due Diligence
- **Activity 2:** Technical Due Diligence
- **Activity 3:** Financial Due Diligence

### **Activity 1: Legal and Regulatory Due Diligence**

**Scope:** The goal of this work is to assist the GOP through the building of a solid foundation upon which to conduct the sale of a minority stock holding in two or more state-owned distribution companies. In preparation for the offering of a minority share in the stock of a state-owned distribution company PDP will conduct a comprehensive review and analysis of the legal and regulatory requirements impacting commercial activities, private investment, electricity, land and other relevant requirements that are expected to be encountered during the proposed partial privatization.

The legal due-diligence team may interact on regular basis with the private-sector entities that are independently conducting their own technical and financial due diligence analyses. The task team will provide periodic reports on the state-of-affairs for this task of the PDP engagement.

The legal due-diligence team will participate in and cooperate with the technical and financial due diligence task teams during the preparation of the integrated due diligence package for the joint use by the Privatization Commission and the Ministry of Water and Power (MWP).

**Schedule:** February 2014 – December 2014

- March 2014 – Prepare and release RFP for legal due diligence at two DISCOs
- May 2014 – Award PO for completing legal due diligence at two DISCOs
- December 2014 – Delivery of due diligence analysis to privatization commission

**Deliverables:** The deliverables of this activity are:

- Due diligence determination of regulatory constraints on privatization
- Due diligence determination on legal constraints on privatization

**Results:** Within the period mentioned above, PDP will provide to pertinent parties, especially the Privatization Commission and MWP, analyses of Pakistan’s laws and regulations that affect the privatization of the selected DISCOs.

## Activity 2: Technical Due Diligence

**Scope:** The goal of this activity is to provide an independent determination of the actual physical state of assets currently owned, operated, and maintained by the selected distribution companies as well as to provide an independent assessment of the capacity of the existing distribution facilities to meet the technical demands that are and may be expected to be placed on them by the distribution companies’ existing and expected customer base.

PDP will identify and contract an expert international private company with proven, relevant experience to conduct the technical due diligence for one or more of the distribution companies that have been selected for partial privatization. Conclusions of this technical due diligence will be presented to key decision makers and shall be an important input for the determination of a baseline for the financial value of the selected distribution companies. In particular, the analysis is important for the determination of a reservation price for the stock offering. And lastly, it will provide the GOP and the MWP with an independently determined, unbiased picture of the physical state of the state-owned distribution companies that are selected for partial privatization.

The technical due-diligence team may interact on regular basis with the private-sector entities that are independently conducting legal and financial due diligence analyses. This task team will provide periodic reports on the state-of-affairs for this task of the PDP engagement.

The technical due-diligence team will participate in and cooperate with the legal and financial due diligence teams during the preparation of the integrated due diligence package for the joint use by the Privatization Commission and the MWP.

**Schedule:** February 2014 – December 2014

- March 2014 – Prepare and release RFP for technical due diligence at two DISCOs
- May 2014 – Award PO for completing technical due diligence at two DISCOs

- December 2014 – Delivery of due diligence analysis to privatization commission

**Deliverables:** The deliverables of this activity are:

- Due diligence determination of the technical capabilities of selected DISCOs.
- Due diligence determination of the physical state of the facilities and assets of selected DISCOs.
- Due diligence determination of required expansion and repairs of facilities and assets of selected DISCOs.

**Results:** Within the period mentioned above, PDP will provide to pertinent parties, especially the privatization commission and MWP, analyses of the technical capabilities, physical state of facilities and assets and expansion and or repairs of assets and facilities of the selected DISCOs.

## Activity 2: Financial Due Diligence

**Scope:** The goal of this activity is to provide an independent determination of the actual financial state and capabilities of the selected distribution companies. The goal of this activity is to establish the expected price and revenue ranges for the minority stock offering of the selected distribution companies. This will include a detailed review of the selected distribution companies' financial status that is based on assessment of assets, liabilities, and fiscal discipline.

PDP will identify and contract an expert international private company with proven, relevant experience to conduct the financial due diligence for one or more of the distribution companies that have been selected for partial privatization. Conclusions of this financial due diligence will be presented to key decision makers. In particular, this analysis is important for the determination of a reservation price for the stock offering. And lastly, it will provide the GOP and the MWP with an independently determined, unbiased picture of the financial state of the state-owned distribution companies that are selected for partial privatization.

The financial due-diligence team may interact on regular basis with the private-sector entities that are independently conducting legal and technical due diligence analyses. This task team will provide periodic reports on the state-of-affairs for this task of the PDP engagement.

The financial due-diligence team will participate in and cooperate with the legal and technical due diligence teams during the preparation of the integrated due diligence package for the joint use by the Privatization Commission and the MWP.

**Schedule:** February 2014 – December 2014

- March 2014 – Prepare and release RFP for financial due diligence at two DISCOs.
- May 2014 – Award PO for completing financial due diligence at two DISCOs.
- December 2014 – Delivery of due diligence analysis to privatization commission.

**Deliverables:** The deliverables of this activity are:

- Due diligence determination of the financial capabilities of selected DISCOs.
- Due diligence determination of the financial state of selected DISCOs.
- Due diligence determination of required improvement in the financial state of selected DISCOs.

**Results:** Within the period mentioned above, PDP will provide to pertinent parties, especially the privatization commission and MWP, analyses of the financial capabilities and state of selected DISCOs.

## Task 2: Energy Conservation and Demand Side Management

Pakistan is currently facing its worst power crisis in its history. Load shedding can be reduced by either adding new generation or by conserving available energy by reducing wastage or by reducing demand by demand-side management techniques. Load shedding can also be better load management. This is being done through the LDI Project mentioned in next activity.

This task comprises of the following two activities:

- **Activity 1:** Solutions to enhance DISCOs load management and reduce unplanned load shedding
- **Activity 2:** Working with 1-2 DISCOs on developing improved TOU metering, TOU tariffs, and interruptible tariffs with large industrial and commercial customers

### Activity 1: Solutions to Enhance DISCOs Load Management and Reduce Unplanned Load Shedding

#### Load Data Improvement Project (LDI)

Unscheduled load shedding has been a serious problem in Pakistan. It causes serious civil disturbances with property damage and loss of life and is a focal point for civil disobedience. PDP is assisting the DISCOs and the National Power Control Center (NPCC) to obtain load flows information on a near real-time basis by installing over 8,600 AMR - data acquisition meters on all incomers and outgoing feeders of all 741 DISCO grid stations. This information is now being supplied to NPCC and DISCO upgraded Power Dispatch Centers (PDCs). LDI data management system has been made operational by July 2013 and the real-time data is available since then in NPCC and DISCO PDCs. The LDI System Software is being constantly upgraded to meet with the DISCO reporting requirements. The use of this system has resulted in reduction of unscheduled load shedding across Pakistan, improved DISCO load management, improved timeliness and quality of data required for investment planning. PDP has been and will continue to work with DISCOs PDCs staff to further build their expertise to operate and optimally utilize the LDI system.

The detailed description of this project is given under Activity 1 of Task 6.

## Direct Load Management

PDP has determined that reliable and reasonably priced meters with connect/disconnect capability are now a practical option, roughly 24,600 switched capability meters will be procured for all of the MEPCO Multan Circle tube-well customers and MEPCO high-end customers having load between 20 KW to 70 KW. These AMR meters will accept disconnection/reconnection command by backend system remotely as and when required. This arrangement will enable MEPCO to keep rural feeders running with a facility to switch off the tubewell customers for load shedding, if required. In case of disconnection initiated by backend system, AMR meter will not reconnect until it will receive a reconnection command from backend system. These AMR meters will have two-way communication capability to demonstrate load management techniques. These will also have the capability to support minimum two different load thresholds against different time slots (peak/off peak) which will be programmed to activate disconnection/reconnection automatically by the meter and time between disconnection and reconnection will also be programmable. AMR meter installed on tubewell and/or other customers will allow the DISCO the capability to change load thresholds and associated time slots locally and remotely.

### **Activity 2: Working with 1-2 DISCOs on Developing Improved TOU Metering, TOU Tariffs, and Interruptible Tariffs with Large Industrial and Commercial Customers**

Time of Use (TOU) metering has been introduced and implemented in most of the DISCOs for domestic and commercial customers with loads of 5 KW and greater, and on all industrial loads. There is opportunity for greater penetration of TOU metering. DISCO consumers go to great lengths to ensure that they are not classified with loads exceeding 5KW, indicating that a different measure should be employed to classify DISCO consumers into the TOU category. PDP will evaluate the feasibility of extending TOU billing to the smaller (less than 5 KW sanctioned load) consumers as a means of improving revenue collection from users of air conditioners and other high consuming loads. If determined to be feasible for either MEPCO or PESCO, PDP will work with the DISCO to obtain National Electric Power Regulatory Authority (NEPRA) approval for the required tariff modifications.

#### **Interruptible Load Management:**

PDP will undertake a review of the options available for selective load interruption, and provide a recommendation for one or more pilot projects in the Turnaround DISCOs to develop real options and recommendations for their implementations.

### Task 3: Cost Reflective Tariff and NEPRA Reform

This task has the following two activities:

- **Activity 1:** Cost of Service Study & Tariff Design for all DISCOs
- **Activity 2:** Assistance to NEPRA

#### Activity 1: Cost of Service Study & Tariff Design for All DISCOs

**Scope:** A crucial factor in any DISCO's sustained profitability is the tariff or the rate that it can charge its consumers. However, currently the consumer end tariff for several categories is either being subsidized by the government or cross-subsidized by other consumer categories. Furthermore, DISCOs file tariff petitions with the regulator without any Cost of Service (COS) analysis to back up the requested rates. As a result, the regulator disallows several portions of the requested cost causing significant loss of revenue for DISCO.

Having completed the COS study with IESCO, PDP is currently working on COS studies at the other eight DISCOs (LESCO, FESCO, GEPCO, MEPCO, HESCO, PESCO, SEPCO and QESCO). The methodology used with IESCO and approved by NEPRA will be applied and amended to meet the needs of each DISCO. Financial, commercial and load data will be used to populate the model, which was developed for IESCO and is customized for each DISCO. AMR meters will be procured and installed at all transformers of selected feeders in each DISCO for establishing demand coincidence and contribution to the DISCO's demand. An appropriate methodology for calculation of weighted average cost of capital will be used to determine market based rate of return.

Revenue requirement will be estimated based on the analysis of financial statements, budgets, capital expansion plans, sales, and demand and load data projections. The total COS provision will be functionally unbundled with fixed and variable costs required to serve each customer category determined. Based on the results, demand, energy and customer related costs will be estimated. Costs allocated to each customer category as a result of the COS study will be compared with NEPRA-determined tariffs to assess the adequacy of current tariffs as well as the degree of cross-subsidization taking place under the old system within customer classes and across DISCOs.

PDP will assist each DISCO in preparation of its tariff petition based on the results of COS study. The task will be completed in two groups considering similarity of DISCO profiles, the logistics convenience and the level of effort to complete the requisite task as follows:

**Group 1:** LESCO, FESCO, GEPCO and MEPCO

**Group 2:<sup>5</sup>** PESCO, HESCO, SEPCO and QESCO

COS work at Group 1 DISCOs was initiated in February 2013. Data collection, COS model customization and cost allocation phases will be completed by March 2014. Subsequently, technical assistance will be

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<sup>5</sup> PESCO and other Group 2 DISCOs have poorer data available upon which the COS heavily depends. As such supplemental time has been scheduled for data collection, cleaning and analysis.

provided in preparation of their tariff petitions based on the results of the cost of service studies to be filed with NEPRA.

For Group 2 DISCOs, COS work started in November 2013 and will continue to September 2014 with focus on data collection as well as customization of the COS model based on collected data. Completion of COS studies for Group 2 DISCOs and assistance in tariff petition preparation will take place through to tariff petition submission to NEPRA (July 2015) and acceptance.

AMR meters will be installed at transformer level on two sample feeders at each of eight DISCOs during 2014.

**Deliverables:** Successful completion of this task will offer following deliverables:

- Customized COS Model for each DISCO
- DISCO Specific COS Model User Manual
- Capacity building of DISCOs in preparation and filing of tariff petitions based on COS
- New tariff design proposals

**Results:** Total cost recovery gap for the Pakistani DISCOs for FY 2010-11 was \$609 million. International studies have shown that COS leads to approximately 7-12% improvement in revenue. As such, PDP is targeting an improvement of 10% which leads to reduction in cost recovery gap of approximately \$61 million annually subsequent to completion of COS work at all the eight remaining DISCOs. Moreover, during the Cost of Service Study analysis, PDP discovered that all DISCO were under-billing select customer groups through the use of incorrect billing formulae. NEPRA after reviewing the evidence and supporting documentation supplied, concurred with PDP's findings and issued notices to DISCOs indicating the practice as being in violation of NEPRA's tariff protocols. The reversal of this practice is expected in end of this Fiscal Year resulting in a positive impact on DISCO revenues up to \$6 million for FY 2014 and \$31 million by life of project.

## Activity 2 – Assistance to NEPRA

NEPRA is mandated to regulate the electric power market of the country, with an eventual goal to deregulate the market so that it itself regulates the business with the regulator ensuring that the market is operating as per the parameters set through the NEPRA Act, its rules, regulations and procedures. However, in the fifteen years since its inception NEPRA has not been able to deliver the mandate under which it was created. There is a significant capacity, exposure, training, resource, technology deficit within the organization and this has resulted in significantly affecting the performance of the power market itself.

Through interventions as detailed below, the capacity of NEPRA will be improved to the level that it starts delivering and playing its role as an effective regulator.

## Sub-Activity 2.1: Organizational Restructuring of NEPRA

**Scope:** NEPRA lacks an organizational structure that encourages induction of professionals. Changes in the organizational structure of NEPRA are required to improve its capacity to deliver. This will involve carrying out an organizational and functional analysis of NEPRA, implementing performance management systems, creating revised JDs and compensation and benefits study to make sure NEPRA can play the role of an effective regulator of the power sector in Pakistan.

**Schedule:** June 2013 – December 2014

The Organizational Restructuring assignment will be completed by July 2014. The training and capacity building will be completed by the end of Calendar Year 2014.

The objective of Organizational Assessment & Restructuring project at NEPRA is to have in place an organizational set-up, reflecting a strong and progressive corporate culture, and have well defined JDs. A reinvigorated NEPRA structure and improved clarity of functional and technical roles will support management to be endowed with appropriate authority and acceptance of employees of their responsibilities. Furthermore, PDP will be evaluating the current performance management system, compensation and benefits, and will be proposing new and improved systems for greater productivity. Training needs analysis will be completed for all functional departments and relevant management and functional trainings will be provided.

The project is segregated into four different stages - mobilization, assessment, development, and implementation. PDP has completed the first two stages and delivered the NEPRA “As Is” report which sets the functional baseline of NEPRA. Currently in the development stage, parallel work is in progress on development of JDs, performance management system and organizational structure models.

The project is planned to be completed by July 2014.

**Deliverables:** This activity includes the following deliverables:

- NEPRA “As Is Report”
- 58 JDs for NEG (NEPRA Executive Grade) and NPG (NEPRA Professional Grade) staff
- Performance Management System
- Compensation and Benefits Study
- Training Needs Assessment (TNA) for functional and management trainings
- Organizational Structure Models with an Implementation Plan
- Functional and Management Trainings
- Regional Training/Exchange Programs

**Result:** NEPRA organization strengthened and performing its role in effectively regulating the entire Pakistan power sector.

## Sub-Activity 2.2: Review of Electricity Sector Market Framework

**Scope:** There has been a lack of progress in moving the power sector towards de-regulation and competition, partly because of massive power shortages in the country and non-implementation of an effective market framework. PDP will review electricity market frameworks from other countries and develop a vision of the competitive market structure that may ultimately be established. A course of action for eventual transition to deregulated and competitive environment will be devised.

**Schedule:** October 2013 – September 2014

- Based out of the initial report and discussions with NEPRA Authority, a matrix of activities was developed to work on the development of the electricity market frame work. During the period, based on the documents above, an initial draft for reforms at distribution end of the business will be submitted to NEPRA. As a furtherance to this, NEPRA-PDP will hold a conference related to reforms at distribution end of the business with emphasis on solutions successfully implement by other countries to improve governance at the distribution end. Proceedings of the conference and a report with a possible road map will be shared with NEPRA.
- As per the matrix developed, white papers with recommendations will be provided to NEPRA on key issues that need assistance.

**Deliverables:** This activity includes the following deliverables:

- An initial draft for reforms at distribution end of the business will be submitted to NEPRA
- NEPRA-PDP will hold a conference related to reforms
- Proceedings of the conference and a report with a possible road map will be shared with NEPRA
- White papers with recommendations will be provided to NEPRA on key issues that need assistance.

**Result:** A report with recommended way forward for moving towards establishing a competitive power market.

## Sub-Activity 2.3: Modification in Tariff Rules and Regulations

**Scope:** PDP did the first Cost of Service-based petition for IESCO in FY 2013. Based on the process and current rules, regulations and methodology for tariff determination, PDP will recommend venues for improving the overall process. PDP will thoroughly review how the rate cases are being conducted and recommend more efficient approaches.

**Schedule:** January 2014 – December 2014

**Deliverable:** This activity includes the following deliverables:

- A report will be prepared based on the review of current rate case processing and tariff determination methodology. It will identify strengths and weaknesses of the current system and suggest improvements

**Result:** Improved and more transparent tariff process.

### Sub-Activity 2.4: Equipment and Software Upgrade

**Scope:** The existing IT infrastructure at NEPRA is outdated and cannot meet the requirements of a modern robust and dynamic system. There is a strong desire at NEPRA to have a real-time communication links established between NEPRA and the DISCOs. This will include assessment of existing Information Technology infrastructure (hardware/software) in use at NEPRA as well as a staff competency assessment related IT use. Based on the assessment, required IT hardware and software at NEPRA will be upgraded.

**Schedule:** October 2013 – September 2014

This will involve the tendering process for procurement of IT commodities and then installation by the vendor and NEPRA's IT team will configure its existing ERP and email systems on the PDP-provided IT platform.

**Deliverables:** This activity includes the following deliverable:

- Provision of IT infrastructure (hardware and software)

**Result:** The sub-activity will result in the following:

- A customized consumer complaint handling system
- An interlink with DISCOs operational data
- An improved communication will facilitate improved decision making and operations of NEPRA
- Availability of updated IT infrastructure at NEPRA that will help meet the requirements of a modern robust and dynamic system
- An improved IT infrastructure and backbone at NEPRA.

### Sub-Activity 2.5: Regulatory Partnerships

**Scope:** NEPRA has largely isolated itself from other stakeholders in the energy sector, with limited awareness of what is happening in the world outside. Many regulators in the region and around the world have contributed significantly in turning around loss-making entities. Such experiences will be significant for NEPRA in dealing with the crisis at hand.

PDP will work to establish relationships between NEPRA and international regulatory bodies (preferably countries in the region or with similar environments) and facilitate trainings, workshops and information exchange through fielding international experts in Pakistan. PDP will identify separate regulatory training programs for commissioners/members and for professional staff and facilitate such trainings/workshops. PDP plans to send NEPRA experts to other regulators via exchange programs so that the experts can have hands-on experience of working with other regulators, and gather experience on how regulators function in open electricity markets. PDP has completed two exchange programs in USA and will be planning for a regional training on regulatory affairs.

**Schedule:** September 2013 – September 2014

**Deliverables:** This activity includes the following deliverables:

- Regional training and instructional visits/programs; for a better understanding of the regulator business and learning best practices.

**Result:** Sustainable regulatory partnership(s) programs for long term information exchange, training, and continued development of activities.

### Sub-Activity 2.6: Regulatory Changes

**Scope:** Market practices have changed significantly locally, regionally and internationally, and need to be understood and adopted by the regulator as being prudent and beneficial for the competition process itself. Proposed changes in regulatory laws or solutions through which international best practices can be introduced. This will involve assessments and reviews of existing market practices that have been adopted by various regulatory authorities and have proved beneficial for the overall environment. The concept will be to find solutions that will move the market to the next stage without bringing any significant change to the regulatory laws. A consultant will be engaged for the purpose.

**Schedule:** March 2013 – September 2014

This will include a review of the electricity market, recommended strategy to be developed for the market which will have international best practices included and with improved dynamics. For the purpose, regular interaction through placement of consultants at NEPRA along with workshops/conferences will be held. The outcome of such interactions/events will form basis for development of focused papers for NEPRA to recommend strategies for moving forward.

**Deliverable:** This activity includes the following deliverables:

- Modern concepts like service providers, resale business and franchisee will be discussed and presented to NEPRA with recommendations for adoption

**Result:** A recommended strategy developed for the market which will have international best practices included and with improved dynamics.

## Task 4: Capacitors at Tubewells for Power Factor Improvement and Loss Reduction

### Capacitor Installation Program on Tubewells

**Scope:** One of the largest consumers of power in the system is the load of agriculture tubewells. Nationwide, electric consumption by agriculture tubewell pump-sets accounts for 12 % of the total annual energy consumption, with significant variation from one DISCO to another. Tubewell motors used in Pakistan have

relatively low power factor<sup>6</sup>. Frequent rebuilding of motors results in further reductions in power factor. Low power factor increases reactive power demand on transmission and distribution lines and transformers, resulting in higher technical losses. The high number of inefficient tubewell pumps and motors with low power factors has a significant effect on the system’s technical loss, and creates unnecessary demand on the system.

PDP will reduce the peak MW demand through installation of capacitors for the purpose of power factor correction. The losses in the line feeding a pump with a lower power factor (around 80%) are substantially higher compared to a pump with a power factor of 95%. The PDP team will achieve this reduction in power demand through installation of capacitors on tubewell motors.

Under Component 3 in this Fiscal Year the strategy is to allocate **81,812** capacitors to:

**Turnaround DISCO 1 (PESCO):** 9000 (which covers 100% of its requirement)

**Turnaround DISCO 2 (MEPCO):** 54,262 (which covers 100% of its requirement)

**HESCO:** 10,000 (which covers 100% of its practical requirement – over 5 kVAR sizing)

**SEPCO:** 6,000 (which covers 100% of its practical requirement – over 5 kVAR sizing)

**IESCO:** 2,550 (which covers 100% of its requirement)

**Schedule:**

<b>For T1 (PESCO):</b>	<b>Start Date:</b> October 2013	<b>End Date:</b> September 2014
<b>For T2: (MEPCO):</b>	<b>Start Date:</b> October 2013	<b>End Date:</b> September 2014
<b>For HESCO:</b>	<b>Start Date:</b> April 2014	<b>End Date:</b> September 2014
<b>For SEPCO:</b>	<b>Start Date:</b> April 2014	<b>End Date:</b> September 2014
<b>For IESCO:</b>	<b>Start Date:</b> April 2014	<b>End Date:</b> September 2014

A total of 20,400 capacitors were installed under Component 2, and an additional 81,812 capacitors have been procured and are to be installed under Component 3 (making a total of 102,212 capacitor to be procured and installed under PDP). However, in the current Fiscal Year a total of 37, 631 capacitors will be installed. The installation of capacitors at MEPCO, HESCO, IESCO and SEPCO will commence in June 2014 and will continue till July 2015.

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<sup>6</sup> On the order of 80-85% even when new

**Deliverables:** This activity includes the following deliverables:

- LT Capacitors installed on 81,812 tubewells, however a total of 37,631 LT capacitors will be installed by the end of the Fiscal Year
- Monthly reports showing installation status of LT capacitors along with average (MW) energy savings
- All equipment used for energy auditing and sizing of capacitors, and the installation of capacitors will be handed over to the DISCO for future use by linemen in the installation and maintenance of LT capacitors

**Results:** The installation of 37,631 capacitors on tubewells will improve their power factor, and would lead to releasing much needed peak generation capacity of 56.5 MW and equivalent \$12.5 million revenue savings to the DISCOs through reduction of the technical losses of the system.

## Task 5: Feeder Optimization for Loss Reduction

This task is covered under Task 1.A. HT capacitor work details are given below.

### DISCO HT Power Factor Improvement

**Scope:** DISCOs have not assessed current requirements for HT power factor correction as the feeder loads have changed with continuous addition of air conditioners, motors, Compact Florescent Lamps (CFL) and other appliances, causing poor power factor on many feeders with lost revenue, low voltage, high technical loss and customer dissatisfaction.

The PDP Engineering and Planning project will focus on the Turnaround DISCOs to conduct feeder power flow analysis using new software technology and to install proper switched and/or fixed 11 kV HT capacitor banks. This task will include installation of HT capacitors on feeders and congested area strategies on high-loss feeders. At MEPCO this activity is coupled with voltage regulators for the introduction of VVO concept as part of the ELR program.

**Schedule:** December 2013 - September 2014

**Deliverables:** The following are the deliverables of this activity:

- Design and installation of 11 kV HT capacitors on feeders
- Installation of improved voltage control equipment

**Results:** Improved power factor and voltage on distribution feeders and at the grid stations, thereby improving system reliability, reducing the technical loss in the system with reduced demand in the increased revenue, improved voltage and increased customer satisfaction.

## Task 6: Expansion of High Impact Opportunities & Improved Governance

This task includes the following activities:

- **Activity 1:** Load Data Improvement Project
- **Activity 2:** [Lineman Training for all DISCOs/Line Staff Skill Development](#)
- **Activity 3:** [Exchange Programs](#)
- **Activity 4:** Governance
- ~~Activity 3: [Lineman Training for all DISCOs/Line Staff Skill Development](#)~~

### Activity 1: Load Data Improvement Project

**Scope:** Unscheduled load shedding has been a serious problem in Pakistan. It causes serious civil disturbances with property damage and loss of life and is a focal point for civil disobedience. Unscheduled load shedding occurs when the NPCC must take action to reduce load quickly to prevent the national grid from failing. The operators making these decisions do not have near real-time data available on actual system loading upon which to make decisions. If a DISCO does not follow the plan to shed load, the NPCC does not realize the problem until system frequency starts to drop, and they must then make decisions to take unscheduled load shedding actions. Before introduction of LDI, none of the nine DISCOs nor NPCC were able to know in near real-time the actual load the individual DISCOs were taking from the NTDC grid or the total aggregate load being drawn by all the DISCOs.

PDP is assisting the DISCOs and NPCC to obtain load flows information on a near real-time basis by installing over 8,600 AMR - data acquisition meters on all incomers and outgoing feeders of all 741 DISCO grid stations. This information will be supplied to NPCC and DISCO upgraded PDCs. LDI data management system has been made operational by July 2013 and the real-time data is available since then in NPCC and DISCO PDCs.

**Schedule:** August 2012 – July 2014

By the end December 2013, 8,676 AMR meters have been installed on almost every incoming and outgoing feeder in the country except Tribal Area (TESCO). PDP has planned with the TESCO and the contractor to start installing 175 AMR meters from February 1, 2014. The LDI System Software is being constantly upgraded to meet with the DISCO reporting requirements.

**Deliverables:** This activity includes the following deliverables:

- Installation and commissioning of AMR meters/data acquisition devices on all incoming and outgoing feeders at all ten DISCOs grid substations
- Establishment of a PDC at each DISCO
- Customized LDI system software
- Live data display at NPCC and DISCO PDCs

- Establishing and commissioning centralized 24x7, 365 Network Operation Center (NOC)
- Establishing and commissioning of a complete AMI system
- Modified procedures developed.

**Results:** Reduction in unscheduled load shedding across Pakistan. Improved DISCO load management, improved timeliness and quality of data required for timely operational decisions and on investment planning on feeder rehabilitation, bifurcations, load shifting, capacitor installations etc. Power quality control and availability of feeder data for power flow analysis and long term planning employing Power Quality Monitoring (PQM) and increased revenue through better load management by diverting more power to more revenue earning areas in the DISCOs.

### Activity 32: Lineman Training/Line Staff Skill Development

**Scope:** A good portion of the technical line losses at this time, are a direct result of scant attention paid to linemen training and training facilities by DISCO management and inadequate investment in tools, materials, training and procedures. The quality of current tools and materials employed by the DISCOs cannot be used to rectify the situation. Current training has no direct application to the reality in the field and is at best an attempt to apply outdated techniques on unavailable tools on useless materials. Line workers with no applicable training, using tools, which are unsuitable, are attempting to keep the system operational with materials that are unsuitable for recycling. As a result, transformers are damaged and line losses continue to escalate as the death toll climbs.

Linemen Training, Tools and Equipment is an essential intervention for transforming DISCOs front-line operations to match that of well-run utilities. Tools and equipment will be procured (in conjunction with the transportation intervention) and consolidated at central training locations. The DISCOs<sup>7</sup> will be required to provide some equipment, which has been determined to be of acceptable quality. Groups of line staff from the sub-divisions will be brought to the location and trained in the use and care of the tools. A practical test will be used to determine the ability of the line staff and those who show ability to perform adequately shall be issued tools when they return to their respective sub-division. It is expected that this will reduce the number of non-working line staff issued tools. The training segments will build skills and safe working practices over a two year training horizon through a combination of intensive training sessions designed to develop skills, such as proper installation of compression connectors, installation of complex three-phase AMR metering sets, conductor splicing, advanced transformer installations, and meter tampering inspections. The skills training will be rolled out to all DISCOs through a video training program supported by hands on training activities at the subdivision level as is commonly used in most advanced utilities. In addition, a team of advanced linemen will be provided more formal training in advanced skills and loss reduction techniques. These linemen will provide training and mentoring to linemen from underperforming subdivisions.

Crew tools will be procured for the crew transport to facilitate team or individual activities, maximizing the utility of the transportation. Low-cost line worker transportation prototypes have been designed and built providing transportation for workers, tools, and materials to the worksites. Materials will be identified and procured based on surveys at the sub-divisions. These materials will allow the newly trained and tooled line staff to begin improving system losses and reducing outages immediately upon returning to work. PDP will

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<sup>7</sup> As per direction from USAID this activity will now focus on the two Turnaround DISCOs.

train PESCO planning engineers who will begin audits of major feeders. This will identify major loss connections and allow work plans and material lists to be developed. PDP procurement specialists will work with PESCO standards writers to develop specifications and procedures to minimize quality issues in procurements in the future. During the course of project implementation, PDP will also work to identify local manufacturers who have the ability to manufacture and mass produce these items. This intervention is expected to take between 12 and 18 months for the prototypes to be developed.

PDP HR and Change Management Team will work with the PESCO HR, sub-division officers and other related staff to develop and monitor procedures designed to maximize transformer life and reduce losses on a continuing basis.

**Schedule:** October 2012 – July 2015

For PESCO, significant progress has been made in identification of the Linemen and preparing the training plan for them a) for routine operations and maintenance work and b) for PDP's field installation work.

**Deliverables:** This activity includes the following deliverables:

- Develop a lineman training program that will consist of a combination of classroom, video, and hands-on training sessions provided at the sub-division level, implemented on a monthly basis.
- Updated specifications and procedures
- Lineman trained for PESCO and MEPCO
- Personal Equipment & Tools such as rubber gloves, hard hats, tools to put on the connectors and hot sticks, and Team Equipment including Vehicles,, grounding sets, proximity detectors, isolating gear and cover-up

**Results:** Lineman Trainings, Tools and Equipment is the intervention PDP is planning to implement for improving the binding of joints in the distribution system that will just not only save MWs and improve revenues for the DISCOs, but also improve upon the safety (employees and general public), reliability of supply and customers satisfaction.

**For Turnaround DISCO (PESCO):**

- For Peshawar Circle: If we change the selected connectors of HT/Transformers/LT main of Peshawar Circle, the MWs saved comes out to be 3.4 MWs translating into annual cost savings to PESCO of \$1.4 million.
- Reduction in major accidents
- Reduction in transformer damage. Equip and train in one circle with quality protective equipment
- Tools provided for line workers and for up-fitting lineman transport at one circle
- Improved specifications for tools provided to manufacturers and DISCOs

**For Turnaround DISCO (MEPCO):**

- For Multan Circle: If we change the selected connectors of HT/Transformers/LT main of Multan Circle, the MWs saved comes out to be 2.5 MWs translating into annual cost savings to MEPCO of \$1.2 million.
- Reduction in major accidents
- Reduction in transformer damage. Equip and train in one circle with quality protective equipment
- Tools provided for line workers and for up-fitting lineman transport at one circle
- Improved specifications for tools provided to manufacturers and DISCOs

### Activity 3: Exchange Programs

**Scope:** A good portion of the technical line losses at this time, are a direct result of scant attention paid to linemen training and training facilities by DISCO management and inadequate investment in tools, materials, training and procedures. The quality of current tools and materials employed by the DISCOs cannot be used to rectify the situation. Current training has no direct application to the reality in the field and is at best an attempt to apply outdated techniques on unavailable tools on useless materials. Line workers with no applicable training, using tools, which are unsuitable, are attempting to keep the system operational with materials that are unsuitable for recycling. As a result, transformers are damaged and line losses continue to escalate as the death toll climbs.

Linemen Training, Tools and Equipment is an essential intervention for transforming DISCOs front-line operations to match that of well-run utilities. Tools and equipment will be procured (in conjunction with the transportation intervention) and consolidated at central training locations. The DISCOs<sup>8</sup> will be required to provide some equipment, which has been determined to be of acceptable quality. Groups of line staff from the sub-divisions will be brought to the location and trained in the use and care of the tools. A practical test will be used to determine the ability of the line staff and those who show ability to perform adequately shall be issued tools when they return to their respective sub-division. It is expected that this will reduce the number of non-working line staff issued tools. The training segments will build skills and safe working practices over a two year training horizon through a combination of intensive training sessions designed to develop skills, such as proper installation of compression connectors, installation of complex three-phase AMR metering sets, conductor splicing, advanced transformer installations, and meter tampering inspections. The skills training will be rolled out to all DISCOs through a video training program supported by hands on training activities at the subdivision level as is commonly used in most advanced utilities. In addition, a team of advanced linemen will be provided more formal training in advanced skills and loss reduction techniques. These linemen will provide training and mentoring to linemen from underperforming subdivisions.

Crew tools will be procured for the crew transport to facilitate team or individual activities, maximizing the utility of the transportation. Low-cost line worker transportation prototypes have been designed and built providing transportation for workers, tools, and materials to the worksites. Materials will be identified and procured based on surveys at the sub-divisions. These materials will allow the newly trained and tooled line staff to begin improving system losses and reducing outages immediately upon returning to work. PDP will train PESCO planning engineers who will begin audits of major feeders. This will identify major loss connections and allow work plans and material lists to be developed. PDP procurement specialists will work with PESCO standards writers to develop specifications and procedures to minimize quality issues in

<sup>8</sup> As per direction from USAID this activity will now focus on the two Turnaround DISCOs.

procurements in the future. During the course of project implementation, PDP will also work to identify local manufacturers who have the ability to manufacture and mass produce these items. This intervention is expected to take between 12 and 18 months for the prototypes to be developed.

PDP HR and Change Management Team will work with the PESCO HR, sub-division officers and other related staff to develop and monitor procedures designed to maximize transformer life and reduce losses on a continuing basis.

**Schedule:** October 2012 – July 2015

For PESCO, significant progress has been made in identification of the Linemen and preparing the training plan for them a) for routine operations and maintenance work and b) for PDP's field installation work.

**Deliverables:** This activity includes the following deliverables:

- Develop a lineman training program that will consist of a combination of classroom, video, and hands-on training sessions provided at the sub-division level, implemented on a monthly basis.
- Updated specifications and procedures
- Lineman trained for PESCO and MEPCO
- Personal Equipment & Tools such as rubber gloves, hard hats, tools to put on the connectors and hot sticks, and Team Equipment including Vehicles,, grounding sets, proximity detectors, isolating gear and cover-up

**Results:** Lineman Trainings, Tools and Equipment is the intervention PDP is planning to implement for improving the binding of joints in the distribution system that will just not only save MWs and improve revenues for the DISCOs, but also improve upon the safety (employees and general public), reliability of supply and customers satisfaction.

## Activity 24: Governance

Under this activity, PDP will ~~providesupport~~ policy and governance assistance to MWP aimed to support policy making at the national level ~~national government~~ and ~~as well as~~ enhanced director training for DISCO boards to improve corporate governance at DISCOs level. Component 3 improved governance activities will be designed to promote improved transparency in decision-making and overall improved governance in the power sector as a whole, and of the DISCOs in particular.

### Sub-Activity 1: Governance at MWP

The MWP is the principal body within the GOP responsible for review and formulation of power sector policies needed to resolve power sector challenges including massive capacity shortfalls and mounting circular debt. Power sector governance has in the past been hampered by a lack of transparency, lack of implementation of policies and conflicting political objectives.

To assist in improved policy analysis and macro-level decision making, the governance team will continue to provide support to the MWP that is in line with its stake as the principal shareholder in the DISCOs, while

encouraging the DISCOs to achieve increasing levels of operational independence. The PDP Governance Team will achieve this goal by continuing to provide policy support to MWP in the form of analysis and advisory services.

In addition, PDP will work with the Security and Exchange Commission of Pakistan (SECP) to define a public sector code of corporate governance. The primary focus of the Component 3 governance assistance will be to continue to strengthen the understanding and capacity of DISCO BODs by creating a framework to enhance communication with DISCO senior management and MWP. The governance team will be working closely with MWP to provide them not only with technical assistance but also to help them in improving their decision making capacity.

The implementation strategy for PDP is split into various activities that are described below, with major deliverables for all given at the end.

### **Sub-Activity 1.1: Assist MWP in Amendment of Legal Acts and Laws in the Power Sector**

**Scope:** An activity of this component is to provide assistance to MWP whenever it is necessary to amend the legal Acts and laws. The PDP Governance Team will assist MWP when required to amend the Electricity Act in order to improve the performance of the Pakistan power sector and to make power theft a criminal offence. PDP will also assist MWP in providing a road map for market reform that will lead power sector to a cost-beneficial future.

**Schedule:** March 2013 – September 2015

A draft of necessary and required amendments to the Electricity Act will be prepared and provided to GOP for their review and to other stakeholders for the same purpose. PDP will simultaneously work on the adoption of these amendments by GOP.

**Result:** Overall improvement in power sector governance, improvement in power sector operations and reduction in energy losses.

### **Sub-Activity 1.2: DISCOs Reform**

**Scope:** Support will be provided to DISCO BOD's through MWP for their commercial reforms so as to operate in a comprehensive and rational manner. A policy note on the commercial reforms and proposals for adjustment of the roles of MWP and NEPRA will be produced. The team also would work with the SECP to define a public sector code of corporate governance for public sector companies. The team would work with MWP to ensure that NTDC and the DISCOs prepare a five-year Integrated Generation, Transmission and Distribution Plan for approval by NEPRA that will become the basis for a business plan, multi-year tariff (MYT) and performance contracts for the DISCOs.

**Schedule:** June 2013 – September 2015

Within the period mentioned above, a committee will be formed for defining the Public Sector Code of Corporate Governance. The code will be reviewed by GOP and all other stakeholders, followed by its expected adoption by DISCOs.

Within the period mentioned above there will be the formation of working groups at NTDC and DISCOs to develop the five-year Integrated Generation, Transmission and Distribution Plan for approval by NEPRA. On completion, the DISCOs will develop multiyear tariff and submit to NEPRA. At the same time the DISCOs will use the MYT as input for preparation of their business plans and performance contracts.

**Result:** Improved governance in the sector and realignment in the role of MWP as a policy maker in addition to being an owner of these public sector entities.

### Sub-Activity 1.3: Prevent Accumulation of Circular Debt

**Scope:** Provide assistance to MWP to help develop a means to prevent the accumulation of circular debt that is attributable to events within the Pakistan power sector. An investigation of several alternative means of prevention will occur that leads to the selection of a specific approach to and method for completing this sub-activity. Also, PDP will assist MWP in encouraging the Ministry of Finance to make timely payments to the power sector in order to avoid the further accumulation of circular debt. Assistance would be provided to MWP to work with other ministries/provincial government to clear up electricity receivables and other arrears, if any.

**Schedule:** March 2013 – September 2015

Within the period mentioned, a review of current policies and procedures for revenue collection and the prevention of circular debt that attributable to the power sector will be conducted. Subsequently there may be policy intervention to improve revenue collections and the GOPs policy for prevention of circular debt attributable to the power sector.

**Result:** Will help reduce the circular debt by improving cash flows into the system. Will help improve overall power sector operations.

### Sub-Activity 1.4: Implementation of DISCOs Electricity Supply Agreements

**Scope:** Assist DISCOs and MWP to prepare Electricity Supply Agreements (ESA) between DISCOs and Central Power Purchasing Authority (CPPA).

**Schedule:** March 2013 – September 2014

Within the period mentioned the proposed ESA will be prepared for review by the stakeholders. The ESA are expected to be adopted by June 2014.

**Result:** ESAs will result in DISCOs taking ownership of the energy they procure from CPPA. By doing so, they can be responsible for payment and thereby make them accountable for all their losses and inefficiencies that are currently being added to circular debt.

### Sub-Activity 1.5: Assistance to MWP on National Safety Code

**Scope:** Assist MWP with the adoption of a safety code for the protection of public, system assets and linemen.

**Schedule:** March 2013 – September 2014

Within the period mentioned the National Safety Code will be created, got reviewed by stakeholders, notified by MWP and expected to be adopted by the entities by March 2015.

**Result:** Improved governance and management of public energy sector entities and reduction in fatal and non-fatal accidents.

### Sub-Activity 1.6: Dissolution of PEPCO

**Scope:** This is a continuation of Component 2. Expected dissolution of PEPCO is an important for furthering the independence of DISCOs BODs and senior management with respect to structural reforms and the commercialization of DISCOs and power sector in general.

**Schedule:** Ending September 2014

Within the period mentioned the “solvency” documents will be filed with SECP, a liquidator will be appointed by MWP, and the Prime Minister will sign the closing of PEPCO.

**Result:** Dissolution of PEPCO

### Sub-Activity 1.7: Operationalization of CPPA Guarantee Limited

**Scope:** This is a continuation of Component 2. Creation of CPPA Guarantee Limited and its function as an independent entity to take over the responsibility for the settlement of power pool payments and the inducement of the development of a competitive power market.

**Schedule:** December 2013 – September 2015

Within the period mentioned above, PDP will assist MWP with preparing documents for the formation of a BOD for the Central Power Purchasing Agency Guarantee Ltd (CPPAG), making necessary changes to the Articles and Memorandum of Associations and drafting and advertising for the hiring of the CPPAG senior management. In addition, PDP will assist in the preparation of an agency agreement, a member’s agreement and market rules for CPPAG.

**Result:** Full operationalization of an independent CPPA Guarantee in order to encourage the efficient, effective and transparent settlement of power pool payments and to induce the emergence of a more competitive power market.

### Sub-Activity 1.8: Improvement of NEPRA Performance

**Scope:** Provide assistance to NEPRA to improve the recommendations provided by NEPRA staff, the application of administrative law and procedures, the resolution of regulatory issues by NEPRA members and the conduct of different types of regulatory hearings.

**Schedule:** September 2012 – September 2015

Within the period mentioned above, PDP with input from NEPRA will choose four or five high priority courses of capacity building and training that will improve NEPRA performance as the most effective regulator of the power sector.

**Result:** Improved performance of NEPRA in the critical areas of regulatory functions.

**Deliverables:** This activity includes the following deliverables:

- Amended Electricity Act
- DISCOs Reform Implemented
- Improved Cash Flows and Reduction in Circular Debt
- Execution of ESAs
- National Safety Code Implemented
- Dissolution of PEPCO
- Full Operational CPPA Guarantee Limited
- Legal, Technical and Financial Due Diligence
- Administrative procedures for NEPRA

### Sub-Activity 1.9: Support for the Preparation of a Multi-Year Tariff

**Scope:** Provide assistance to NEPRA to introduce a tariff with improved stability characteristics by transitioning to a multiyear tariff methodology and preparing MYTs for three DISCOs.

**Schedule:** December 2013 – September 2015

**Result:** Three DISCOs will submit MYT with sufficient time for approval by NEPRA and notification by the GOP.

**Deliverables:** This activity includes the following deliverables:

- MYT methodology
- Minimum filing requirements for a MYT
- Five-year investment plan for three DISCOs
- Forecast or projections for operational capital expenditures
- Forecast or projections for remaining expense categories.

### Sub-Activity 1.10: Support for the Preparation of a Generation, Transmission and Distribution Investment Plan

**Scope:** Forward-looking planning is required in order to have an MYT regime. The Generation, Transmission and Distribution Investment Plan will provide a necessary input for the preparation of a MYT by being the base planning document for a forward looking investment plan for the entire power sector.

**Schedule:** December 2013 – September 2014

**Result:** All DISCOs will have a format and a process through which they will submit their investment plans which will become a part of their tariff petitions. (Three DISCOs will have this plan for their MYTs.)

**Deliverables:** This activity includes the following deliverables:

- Generation Transmission Distribution expansion plan
- Generation Transmission Distribution investment plan.

### Sub-Activity 2: Governance at DISCOs Level

**Scope:** Good corporate governance contributes to sustainable economic development by enhancing the performance of companies and increasing their access to outside capital. In emerging markets good corporate governance serves a number of public policy objectives. It reduces vulnerability of the financial crises, reinforces property rights, reduces transaction cost and cost of capital, and leads to capital market development. Corporate governance concerns the relationship among the management, board of directors, controlling shareholders, minority shareholders, and other stakeholders.

A corporate governance system is comprised of a wide range of practices and institutions, from accounting standards and laws concerning financial disclosure, to executive compensation, to size and composition of corporate boards. A corporate governance system defines who owns the firm, and dictates the rules by which economic returns are distributed among shareholders, employees, managers, and other stakeholders. As such, a country's corporate governance regime has deep implications for firm organization, employment systems, trading relationships, and capital markets. Thus, changes in Pakistani system of corporate governance are likely to have important consequences for the structure and conduct of country business.

Based on the feedback received from the participants of different workshops arranged by PDP for DISCO BODs during Component 2, it is now realized that the corporate governance is one of the areas in power DISCOs that requires an immediate training and development program to equip BOD members with modern skills in corporate governance.

PDP will roll out its corporate governance improvement program in the two Turnaround DISCOs. The program has two main components:

1. Impart trainings on Corporate Governance Leadership skill for the development of BODs of both the DISCOs by engaging professional institutions, such as the Pakistan Institute of Corporate Governance (PICG).

2. Provide assistance to initiate the board assessment process for the identification of areas of improvement in BOD functions.

**Schedule:**

**For Turnaround 1 DISCO (PESCO): Start Date:** February 2013      **End Date:** June 2015

**For Turnaround 2 DISCO (MEPCO): Start Date:** June 2013      **End Date:** Aug 2015

**Turnaround 1 DISCO:** For PESCO, Directors of the BOD and key senior executives of the company will undergo a corporate governance leadership skill program. A number of further workshops will be arranged in-country to for a better understanding of utility specific corporate governance improvement action plans.

**Turnaround 2 DISCO:** In MEPCO a similar program will be rolled out.

**Deliverables:** This activity includes the following deliverables:

- To help the DISCOs to have effective BODs
- Ensure polices in the DISCOs reflect the mandate given by MWP
- Have an oversight over financial and operational discipline within the DISCOs
- Assist MWP to develop monitoring and evaluation (M&E) plan to oversee the BOD’s performance
- Initiate the certification program for the Board of Directors of the DISCOs
- Provide guideline to BODs to devise corporate improvement action plans
- Introduce an assessment process to see the areas of improvement within Board function.

**Results:** The anticipated results in Turnaround DISCOs are introduction of sustainable corporate governance in DISCOs, infusing a sense of ownership and responsibility within power utilities, autonomy of effective BODs and to help make utilities financially and operationally viable.

## Section 3: Cross-Cutting Activities

### Activity 1: Gender Strategy

**Scope:** DISCOs are generally considered male-dominated organizations with women number as little as less than 1% of the employed staff. As a result, opportunities for career advancement are limited and women rarely succeed in climbing the corporate ladder to a senior managing level.

PDP's approach is focused on mainstreaming gender where applicable to be fully aligned with USAID policy on gender equality and women's empowerment. Gender strategy will remain cross-cutting all interventions commercial, finance, HR, and engineering divisions to facilitate transformation of target DISCOs into competitive, diverse, profit-making entities in the long term.

Elements of PDP's Gender Strategy include:

- **Gender Equity Trainings (GET):** To be held for all managers and supervisors to facilitate the development of a DISCO gender strategy in three critical areas (i) employment, (ii) career development and (iii) workplace conditions to reduce recruitment disparities and to facilitate women's entry into the power sector.
  - GET for committee members to oversee the implementation of 'Protection Against Harassment at Workplaces' in continuation of GET initiatives
- **Gender and Energy Policy Workshop:** Will educate regulatory officials and policymakers on challenges facing women in the power sector and promote policies and practices that will increase the number of women managers and directors.
- **Women in Leadership (WIL):** Long term engagement of women in power sector will be increased by increasing the number of women interns at DISCOs in technical positions and increasing the number of women DISCO employees in leadership and decision-making levels.
  - Under WIL initiative trainings to inculcate professionalism specifically for women employees will be arranged for females of all sections and all levels of the target DISCOs.
- **Secondment Program:** Secondment program for Grade 16 and 17 women employees of target DISCOs.

PDP will focus on rapid impact in three critical areas:

**Employment:** Promoting policies for the target DISCOs that will attract and, most importantly, retain women employees (e.g., flexible work hours, extended maternity leave with guaranteed return to employment within an agreed time period). Furthermore, internship programs will increase the number of women graduates' exposure to the power sector.

**Career Development:** To facilitate rapid scaling of women in leadership positions PDP will initiate WIL initiative that will identify existing female employees in technical areas at target DISCOs. The initiative will facilitate their advancement through training in areas such as leadership development and best practices management training, ensuring significant knowledge in area of expertise and

providing supplemental training as needed, and facilitating increased responsibilities with regular performance assessments.

**Improvement of Work Place Conditions:** The work place environment is as important as providing equal salary for equal work for ensuring that women graduates and current DISCO female professional staff seek employment or remain within the power sector. PDP will work with DISCOs to develop policies that mandate and maintain basic requirements in all new construction such as at least one women-only washroom on work premises and Customer Service Centers that respect the cultural sensitivities of women clients.

#### Schedule:

**PESCO - Turnaround DISCO 1:** October 2013 – September 2014

The following activities are envisioned in this Fiscal Year:

- Presentation of Code of Conduct – directions under the Protection Against Harassment at Workplaces Act 2010 started in October 2013 and was completed in December 2013
- Women in Leadership Trainings started in mid-2013 will be completed by February 2014. This activity aims to inculcate professionalism, work integrity and ownership in the female employees of PESCO so that they may excel in their professional areas and feel truly empowered.
- In the first quarter of FY 2014, PDP provided technical assistance to support college campaigns conducted by the female employees of PESCO on energy conservation.
- Starting from April 2014, PDP will provide trainings to members of the Sexual Harassment Protection Committee from all DISCOs on how to monitor and deal with such issues in their organizations in the absence of witnesses. This activity will conclude in May 2014.
- Starting from May 2014, PDP will provide Gender Equity Trainings for the supervisory officials/managers of PESCO. As supervisors, they need to be aware of their responsibilities and maintain social and professional discipline as well as improve the work environment for their subordinates. Training being organized for approximately 130 employees at supervisory level i.e. Grade 17 and above, in batches of 20 participants. This activity will continue until June 2015.
- Based on the requirements assessments, PDP may initiate a DISCO Exchange Program (MEPCO and PESCO) for the selected female employees of both Turnaround DISCOs, enabling them to get familiarized with each other's and share their work environment and gain experience – involving 10 employees of each DISCO.
- PDP may select six top of the line female employees from PESCO's core team to work with the PDP Gender Team in Islamabad for a short period as attachment, giving them a chance to familiarize themselves with the working and operations of private sector.

**MEPCO – Turnaround DISCO 2:** January 2014 – September 2014

The following activities are envisioned in this Fiscal Year:

- Presentation of Code of Conduct – directions under the Protection Against Harassment at Workplaces Act 2010 was completed in October 2013.
- WIL Trainings will start in March 2014 and will be completed in May 2014. This activity aims to inculcate professionalism, work integrity and ownership in the female employees of MEPCO so that they may excel in their professional areas and feel truly empowered.
- Starting from January 2014 PDP will provide technical assistance to support college campaigns to be conducted by the female employees of MEPCO on energy conservation.
- Starting from April 2014, PDP will provide trainings to members of the Sexual Harassment Protection Committee from all DISCOs on how to monitor and deal with such issues in their organizations in the absence of witnesses. This activity will conclude in May 2014.
- Starting from May 2014, PDP will provide GET for the supervisory officials/managers of MEPCO. As supervisors, they need to be aware of their responsibilities and maintain social and professional discipline as well as improve the work environment for their subordinates. Training being organized for approximately 130 employees at supervisory level i.e. Grade 17 and above, in batches of 20 participants. This activity will continue until June 2015.
- Based on the requirement assessments, PDP may initiate a DISCO Exchange Program (MEPCO and PESCO) for the selected female employees of both Turnaround DISCOs, enabling them to get familiarized with each other's and share their work environment and gain experience – involving 10 employees of each DISCO.
- PDP may select six top of the line female employees from MEPCO's core team to work with the PDP Gender Team in Islamabad for a short period as attachment, giving them a chance to familiarize themselves with the working and operations of private sector.

**Deliverables:** This activity includes the following deliverables:

- Women's empowerment through trainings and workshops for various sections as well specific trainings for women
- Assist and support the implementation of women encouraging policies to attract women employees – DISCOs take measures to improve infrastructure environment and growth opportunities for women.
  - Career focused trainings for women employees
  - Provision of improved working conditions to female staff

**Results:** Build capacity of and increase the number of women in technical leadership and decision-making positions at Turnaround DISCOs including commercial, finance, and engineering divisions to facilitate transformation of DISCOs into competitive, diverse, profit-making entities in the long term. The PDP Gender Strategy for Component 3 is to engage and assist the target Turnaround DISCOs through our WIL-GET for Supervisors training program to recruit, develop, support and retain women as electrical engineers, IT specialists, and revenue officers with a clear strategy for merit-based career advancement.

## Activity 2: Internship Program

**Scope:** DISCOs are facing significant challenges in their operations stemming largely from deficiencies of human resource, recruitment embargoes, political pressures in respect of hiring practices, and a shortage of funds restricting hiring. The PDP Internship Program will help attract new talent with appropriate skills suited for a modernizing power sector. PDP's unique program is designed to build capacity of PESCO and MEPCO and increase the number of young professionals in the power sector to facilitate bottom-up transformational change. The program will also support the delivery of PDP activities at the two DISCOs.

### Schedule:

**PESCO - Turnaround DISCO 1:** September 2013 – September 2014

For PESCO the gap analysis was conducted in September and October 2013 by PDP to identify the staffing requirements. JDs were drafted for respective tasks in November 2013.

Interviews for selection of interns were conducted between January 2013 and April 2013 for various positions and 20 interns for PESCO were hired and positioned in May and June 2013 and are working in PESCO and attached with Finance, HR, Commercial, Planning and Engineering and are supporting PESCO's core operations besides assisting PDP's interventions at various levels. All the interns are working in the capacity of Support Officers/Management Trainees and have been provided with a desk and chair and a desk top computer.

During FY 2014 a fully-equipped IT lab as part of the Internship Program will be set up at PESCO's head office with a capacity for 15 participants. Besides, the IT lab will be utilized also for various trainings under PDP interventions like ERP and HRIS.

**MEPCO – Turnaround DISCO 2:** Jan 2014 – Sep 2014

For MEPCO the gap analysis will be conducted in January 2014 to identify the staffing requirements. This will be then consulted with PDP Team Leads for feedback in February 10, 2013. During the same month JDs will be drafted and finalized by receiving feedback and input of MEPCO's section heads as well PDP's Team Leads.

The first batch of interns will be positioned after orientation by April 2014 and the second batch of interns to be positioned by July 2014. All the interns working in the capacity of "Support officers"/Management Trainees will be provided with desk/chair and a desk top.

PDP may also possibly provide a fully equipped IT lab as part of Internship Program. The objective is to render the MEPCO employees tech savvy and prepare them to transformation. Besides, the IT LAB will be utilized also for various trainings under PDP interventions like ERP and HRIS.

**Deliverables:** This activity includes the following deliverables:

- Staff Requirement Report and associated JDs developed
- Hiring internees from multi-dimensional academic portfolio for target DISCOs
- Development and implementation of a comprehensive Orientation Program for interns

**Results:** The program is designed to support the two Turnaround DISCOs as young professionals will bring tech-savvy skills and meet short term needs for extra assistance. This will not only assist PDP in its smooth implementation of activities but will also increase the chances of sustainability of interventions at the two DISCOs.

### Activity 3: Communications

**Scope:** DISCO's Public Relations Department mainly comprises of one PR Officer and two clerical staff who most of the time issue rebuttals to the media reports. Due to the lack of professional staff qualified to handle communication components, the concept of image building and consumer awareness is lacking to the extent that not a single corporate campaign has come up since last five year. There is no linkage between PR and consumers, resulting in a widening gap between PESCOs and its consumers and contributing to the DISCO's generally poor reputation of among its consumers and media, same is true for MEPCO.

PDP's Communication & Outreach Program for Turnaround DISCOs will continue to demonstrate the importance of communications and outreach functions through a set of carefully selected activities that will help in strengthening PR departments by bridging the existing gap. DISCOs' Communications and Outreach Program comprises of delivering communications and outreach campaigns, community and schools events, revamped websites, establishing corruption reporting hotlines possibly through Call Centers with dedicated Interactive Voice Response, regular communication channel with the targeted customers facilitating smooth delivery and improved DISCOs corporate branding.

PDP along with PESCO and MEPCO will continue to develop communications protocols and a strategy that will address the DISCO's long term objectives and PDPs implementation of the Component 3 activities. Trainings to DISCO PR staff will continue to empower them on designing strategies and campaigns for consumer awareness and improvements in customer services. DISCO senior staff will also be involved in outreach campaigns especially in the outreach meetings on energy conservation and theft issues both at schools and industrial levels. Regular internal communications activities including but not limited to monthly newsletters, staff assemblies, posters and banners for employees and other corporate activities will also be conducted to support Change Management and organizational change during the turnaround process.

#### Schedule:

**Turnaround DISCO 1 - PESCO:** November 2012 – June 2015

**Turnaround DISCO 2 - MEPCO:** April 2013 – June 2015

**Turnaround DISCO 1 - PESCO:** PDP started preparations for Turnaround PESCO in November 2012. PESCO allocated office space, which was refurbished by mid-February 2013 and staffed with young

professionals, after which the planned activities for public relations and communications kicked-off through planning and development. Many interventions such as branding material, website, IEC material and a localized mass media campaign were launched during Ramadan. PDP will continue its communications assistance to PESCO during FY 2014 with support in media campaigns, monthly newsletters, radio talk shows, school outreach program and general support as and when requested by PESCO.

**Turnaround DISCO 2 - MEPCO:** PDP started preparations for Turnaround of MEPCO in April 2013. PDP had already established communications office at MEPCO under Component 2. Many interventions such as branding material, localized media and outreach campaigns, IEC material for customer services were implemented in the first quarter of FY 2013, however, activities such as corporate communications, public awareness on anti-theft and energy efficiency, corporate branding and internal campaigns of employee motivation are an essential part of the turnaround process of MEPCO and will continue during 2013-2014.

**Deliverables for Turnaround 1 & 2:** The following are the deliverables from this intervention:

- Revamping PESCO & MEPCO official websites
- Revamping PESCO & MEPCO corporate branding
- Radio Talk Shows
- Periodic Newsletters and Reports
- Communications & Outreach Campaigns on Anti-theft at PESCO
- Communications & Outreach Campaigns on Energy Efficiency & Image Promotion at MEPCO
- Corporate Communications

PDP will submit regular monthly and quarterly communications reports. Press coverage received for various activities will continue to be regularly shared with USAID. Documentaries on projects and success stories through supplementary reports at both Turnaround DISCOs will be produced and will be aired on local cable channels as well as local newspapers.

**Results:** Improved DISCO's image as a dynamic and customer friendly entities through external communications that will help Turnaround DISCOs to smoothly implement anti-theft campaigns and empower the PR Department towards aggressive communications and outreach of DISCOs.

## Section 4: Engagement Strategy

PDP is in line with the GOP’s objective to improve the operational, technical and financial performance of the DISCOs to eliminate circular debt in supply chain and reduce depends on government subsidy in phased manner. In order to achieve the stated objectives of the program and to effectively implement the tasks stated in the technical proposal for Component 3 for both turnaround DISCOs, PDP has well defined stakeholder engagement strategy. All DISCOs are regulated by NEPRA and all the prudent costs and investments programs are being determined/approved by NEPRA annually. The delayed determination of tariff is adding to the circular debt issues as well as negatively impacting the DISCO ability to operate effectively.

Similarly the GOP is extending its role in the management of DISCOs resulting in confusion and conflicts between the CEO and BOD. Further, DISCOs also require the support from the Provincial Governments for pursuing war against theft and clearance of government dues by provincial government departments in timely manner. Under the Company’s Ordinance 1984, the BOD of DISCOs are sole decision making authority including the appointment of CEO and senior management and accordingly the BOD is responsible for compliance with all the rules and regulation applicable to the company and enact policies for the company under the guidelines issued by the GOP and approve operating procedures for the company consistent with the laws and regulations.

In order to effectively deliver the program the following are the main stakeholders identified, their requirements and PDPs high level actions to meet those requirements in-order to engage these stakeholders.

Stakeholders	Stakeholders Requirements	Actions
MWP	Reduce circular debt, improve load management and manage the power crisis to an acceptable level	<ul style="list-style-type: none"> <li>Initiate meetings with MWP to apprise them about PDP’s alignment with their priorities. Make them Champion of this change.</li> <li>Develop a strategy for raising funds from donor agencies for Turnaround DISCOs. Pursue MWP to get fast track approvals for investments by the Planning Commission that involve GOPs/other donor funding that require GOPs guarantees. Quarterly PDP progress meetings with MWP.</li> <li>PDP will periodically report to USAID of any potential bottlenecks with GOP entities and will give suggestions to resolve them.</li> </ul>
NEPRA	DISCOs to provide the tariff petitions with supportive analysis as well as develop long term business plans	<ul style="list-style-type: none"> <li>Facilitate PESCO and MEPCO in preparing a multiyear tariff petition so that risk in regulatory approval can be eliminated. This multiyear tariff petition will be aligned with the long term strategic business plans of the DISCOs.</li> </ul>
PESCO and MEPCO BODs	Develop long term vision and goals setting, coupled with a resource plan to deliver it. Increase the autonomy of the DISCOs to achieve the strategic objectives of the companies. Quick fixes to improve operational performance	<ul style="list-style-type: none"> <li>Facilitate in developing short medium and long term strategic objectives and target setting through development of business plans</li> <li>Make the BODs champion and sponsors of all PDPs interventions by conducting periodical meetings on the implementation of business plans and projects under PDP identifying the program support requirements.</li> <li>Place technical advisors in each functional area of the DISCO to support delivery of the projects and to enhance the capacity of DISCO management.</li> </ul>

		<ul style="list-style-type: none"> <li>Employ college graduate interns to assist DISCO's management and PDP advisors with program delivery.</li> </ul>
<b>PDP</b>	Support from MWP/BODs/CEOs/senior level DISCO management. Support from DISCO operations for program delivery	<ul style="list-style-type: none"> <li>USAID to add covenants in agreements with MWP/GOP as rules of engagement such as level of BOD autonomy, tenure postings of CEO, hiring and firing power for senior management, etc.</li> <li>USAID support to pursue donor agencies for leveraging additional funds for long term sustainability.</li> </ul>
<b>Functional Heads of DISCOs</b>	Assigning shadow advisors to specific DISCO area and require clear understanding about the role and responsibilities of the shadow advisors	<ul style="list-style-type: none"> <li>Develop clear role and responsibilities for shadow advisors.</li> <li>Developing close coordination and working relationships with the functional heads by the shadow manager. Solicit periodic and regular feedback from the functional heads regarding performance of the shadow managers.</li> </ul>
<b>Provincial Government</b>	Support of the provincial government is required for the program execution and for utility to improve performance. Need support of local administration for contentious interventions	<ul style="list-style-type: none"> <li>Develop presentations to provincial governments about the program and seek agreement on the support required from them.</li> <li>Quarterly update meetings and sharing of program benefits accruing to the general public and consumers.</li> </ul>
<b>CBA Union of DISCOs</b>	Need to develop a creative and aligned approach to the DISCO staffing	<ul style="list-style-type: none"> <li>Develop an effective communication plan so as to have specific messages focused towards the work force with a goal of keeping them engaged with the transformation</li> <li>Change management interventions will be specially designed to involve Union members, especially the heads to become part of the change</li> </ul>
<b>Energy Policy Project</b>	Energy Generation, Transmission and Distribution system plans coordination	<ul style="list-style-type: none"> <li>Bi-monthly coordination meetings to ensure integrated power planning for generation, transmission and distribution network.</li> </ul>
<b>USAID</b>	Achievement of committed results and timely completion of the project. Positive visibility of program results.	<ul style="list-style-type: none"> <li>Program will be designed and planned in detail. PDP will prepare and manage internal detailed project planning documents, aligned with this Work Plan to ensure timely achievement of committed results.</li> <li>PDP will devise a comprehensive communication strategy with detailed action plan to ensure success of the program and ensuring visibility of the USAID efforts to reform the sector amongst the masses.</li> </ul>
<b>DISCOs</b>	NEPRA to approve timely tariff petition and approve long and short term business plans.	<ul style="list-style-type: none"> <li>Timely preparation and submission of tariff petitions.</li> </ul>
<b>Consumer Groups</b>	Improvement in load shedding, customer service and availability of power	<ul style="list-style-type: none"> <li>Prepare communications and share with consumers to highlight achievement in power availability, reduced load shedding and customer services.</li> </ul>

## Section 5: Sustainability Strategy and Plan

The sustainability of the improvements brought in by the projects implemented under PDP's Component 3 is vital for long term operational sustainability of the DISCOs especially the two Turnaround DISCOs.

For the above purpose, PDP envisages to facilitate the following steps which need to be taken by different entities within the Power Sector:

### Government of Pakistan

- Empower NEPRA to directly notify tariffs after determination. This will increase substantially the autonomy and credibility of the regulatory regime.
- The government should issue a policy guideline with timeline on how it plans to phase out the tariff differential subsidy or how much it needs to retain it through budget.
- NEPRA to then determine cost-reflective tariffs and a rate design that will take into consideration the subsidy. This will also credibly signal investors and development partners that the government will not default on its plan to phase out the subsidy.
- Ensure competent Board of Directors for DISCOs with full autonomy.
- Timely and full payment of subsidies which means the government must reduce them to a level it can pay and eliminate over medium to long term.
- Pursue Federal and Provincial government institutions to clear their electricity bills.
- Empower Board of Directors and give autonomy to the DISCOs as envisaged in the public sector corporate governance guidelines.
- Give the companies full autonomy over their operations, including staffing, procurements, commercial operations, stock management policy and investment programs.

### Board of Directors

- Set long term corporate objective in line with overall sector policies and regulatory framework.
- Approve of the corporate business plan to achieve the long term financial sustainability of the organization.
- Approve filing of multiyear tariff petition with NEPRA in accordance with the business plan.
- Appointment of CEO and senior management of the company purely on merit and performance and their evaluation based on the objectives set in the business plan.
- Approve the restructuring of the organization to meet their current and future needs and to facilitate the introduction and sustainability of new technologies in the company.

### Management of DISCOs

- Management must be guided by a corporate business plan including objectives and goals for which the Chief Executive and the senior management shall be held accountable.
- Preparation and submission of multiyear tariff petition to NEPRA in accordance with the business plan.

- For commercial operations it is crucial to install an appropriate mechanism for checks and balances. Commercial efficiencies will not be achieved, neither in the public nor private-owned utilities if politicians interfere in utilities' operations.
- The DISCOs must (i) formulate clear, well-specified JDs for each position including the tasks for which the staff member will be held accountable (ii) improve the transparency in recruitment processes by establishing clear process rules how to execute the selection process, and (iii) establish a system to regularly appraise staff combined with the adoption of performance-based salary structures in the medium to long term once they are able to implement them.
- DISCOs should collect revenues from their electricity sales (including subsidies from the government for DISCOs) that fully cover the costs of supply and distribution and generate an appropriate return on capital invested.
- Get approvals from the BODs for the organizational restructuring to support new technology and hiring of qualified resources or training of existing ones to take on new positions.
- Get approvals from the BOD to provide resources for field installation work.
- Ensure availability of resources for PDP's IT interventions, such as IT support teams i.e. application support, technical support and IT help desk including the proper physical infrastructure space for IT data center/server room.
- Active participation of DISCOs staff in IT and other training and capacity building programs of PDP.

### Power Distribution Program

- Stakeholders will be engaged thoroughly at all phases of program delivery including design, implementation and closeout. A communications program will ensure stakeholders are continually informed as to what has been, is being, and will be done, and what the impacts were, are or will be
- An effective change management strategy will be implemented with focus on internal champions and considering the organizational culture.
- PDP will work with MWP to get the support for the DISCOs for successful implementation of the program.
- For improving the relationship between the regulator and the DISCOs, workshops, conferences, dialogues, and meetings will be arranged on the relevant issues.
- DISCOs will be assisted in filing a tariff petition based on the cost of service study, and to streamline the process for tariff determination for both DISCOs and NEPRA.
- For sustainability of PDP interventions at the Turnaround DISCOs, organizational structure will be improved to augment the physical and human capacity of these DISCOs, enabling them to operate and maintain what has been delivered during the program.
- Costs associated with the continued delivery of program activities after PDP's closeout will be calculated and shared with counterpart DISCOs so as to be incorporated into their own budgets during the annual budgeting cycle.
- PDP will conduct training of the Lineman for skill enhancement and for improved field installation work and they will be involved in execution of the relevant PDP's projects in their DISCOs to some extent.

- Upon completion of the industrial and municipal DSM program, all equipment and hardware used for the energy auditing of industrial motors/municipal pump sets will be handed over to the DISCOs.

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## Section 6: Program Management Office

### Main Objective

The Program Management Office (PMO) serves as a centralized facilitating management structure for group of projects being executed at PDP, aimed at ensuring standardization, control of the overall scope, cost and schedule, centralized coordination among teams and aligning the vision-strategy of the management with the project delivery teams.

### Functions of PMO

PDP's PMO is performing the following functions:

1. Program Management
2. Monitoring & Evaluation (M&E)
3. Environmental Compliance

#### 1. Program Management

PMO is involved right from the design work i.e. development of the Work Plans to development of PDP's detailed internal Project Design Documents (PDDs) derived from the Work Plans. The PDDs entail detailed estimates for scope, schedule, cost and procurements that form the baseline for further project's monitoring. The PMO assists the management to monitor and track project progress, resolve issues and facilitate implementation by coordination between the on-site PMU for Turnaround DISCOs, other delivery teams assigned to the tasks that are spread all across DISCOs and centralized project finance/procurement teams. PMO also facilitate and help senior management to manage the interdependencies between PDPs delivery teams.

#### 2. Monitoring & Evaluation

This important function by the M&E Team is assuring a standard process of M&E of outcomes. M&E Team coordinates and works closely with PDPs field implementation team and the sub-contractors to ensure that the results achieved by physical process are validated by conducting data quality assessment to physical sample site visits. These results are then shared with the management of PDP for result based monitoring.

M&E core activities include the following:

**Performance Management:** In order to measure project performance, PDP maintains a Performance Management Plan (PMP) based on the performance indicators identified by USAID Pakistan in its Results Framework. PDP's PMP ensures that collection and reporting of performance indicators is timely and useful to the project team and to USAID. PMO works with teams to come-up with the solid methodologies which are then utilized to report results in certain interventions.

**Data Collection and Management:** As part of the M&E function, performance results with respect to the USAID RF are collected from each PDP team including respective sub-contractors on monthly and quarterly basis. On the other hand sub-contractors are required to submit, on a weekly basis, their data in form of progress reports.

**Data Quality Assessments:** Overall quality of data and conformity with standards and procedures is maintained through evaluation and analysis of processed data. The sub-contractors are responsible for ensuring the overall quality of data at site through pre-entry verification, authenticating data entered against filled forms and pictures taken at the field and filing of paper version of forms as per the agreed statement of work. In order to further validate the quality of data collected from the sub-contractors and PDP teams, internal Data Quality Assessments (DQA) are performed by central M&E team on periodic basis; focusing on validity, integrity, reliability, precision & timeliness.

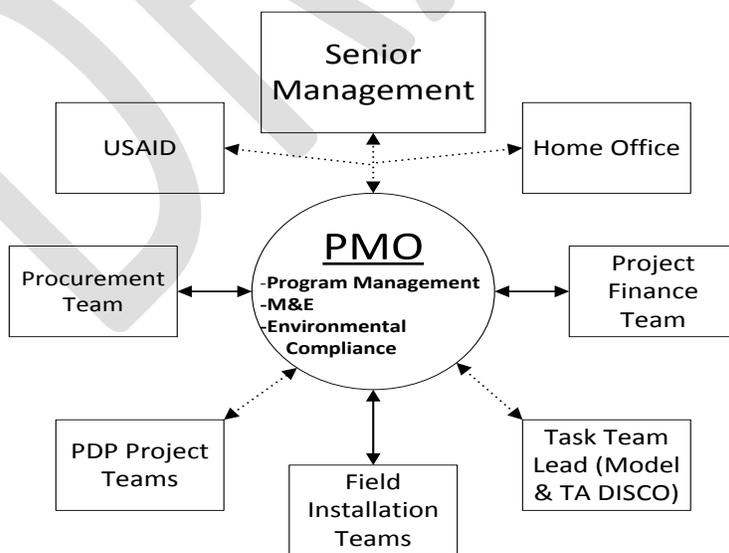
### 3. Environmental Compliance

As per US Regulation-216, an Initial Environmental Examination (IEE) for PDP was carried out in July 2010. Based on the IEE’s recommendations and in compliance with overall USG environmental requirements, an Environmental Mitigation and Monitoring Plan (EMMP) were developed to incorporate environmental considerations in all aspects of the program.

The PMO has been tasked to work with the external environmental consultants and program delivery teams to ensure all interventions developed under PDP are compliant with the EMMP requirements.

#### PMO Interfaces

The following are the PMOs interfaces that facilitate it to deliver the above mentioned functions.



## Section 7: Component 2 Activities Continuing into Component 3

The activities moving from Component 2 to Component 3 are those that achieved tremendous results and those that make logical sense to be continued. Component 2 covers all DISCOs, including PESCO and MEPCO. The high impact activities that are being executed under Component 2 are continued and augmented in PESCO and MEPCO. Apart from these, the activities like capacitor work and motors and pumps replacement that showed excellent results across DISCOs are being continued in Component 3 for all the DISCOs, with the strategy to give implementation priority to the Turnaround DISCOs. The following are the major activities moving into Component 3.

### 1. Congested Area Strategy

Under Component 2 congested area work is being carried out in PESCO, HESCO and LESCO. Under Component 3, PDP will assist the DISCOs to plan congested areas, focusing in the Model and Turnaround DISCO, and install ABC cable extend HT lines by shortening LT lengths, install new high efficiency transformers, switches and outage reduction equipment. To achieve this improvement it is planned to purchase and install the bulk of the material with DISCO participation. This activity will lead to reduced losses and increased revenue in congested and high theft areas with improved customer safety and satisfaction.

### 2. DISCO HT Power Factor Improvement

The DISCOs have committed under Component 2 to repair or replace installed HT capacitors. PDP will continue under Component 3 to assist the DISCOs to complete this on-going effort. Improved distribution system power factor will reduce the technical loss along with million volt ampere reactive (MVAR) demand with improved voltage resulting in customer satisfaction.

The DISCOs have not assessed current requirements for HT power factor correction as the feeder loads have changed with continuous addition of air conditioners, motors, CFL and other appliances, causing poor power factor on many feeders with lost revenue, low voltage, high technical loss and customer dissatisfaction. The PDP Engineering and Planning program will focus on the Turnaround DISCOs to conduct feeder power flow analysis using new software technology and to install proper switched and fixed 11 kV HT capacitor banks. This task will include installation of HT Capacitors on feeders and congested area strategies on high-loss feeders. At MEPCO this activity is coupled with voltage regulators for the introduction of VVO concept as part of the ELR program.

### 3. GIS Survey & Engineering Analysis

In Component 2, PDP carried out feeder mapping and analysis of one sub-division per DISCO. PDP initiated a program to enable nine DISCOs to develop geo-database containing accurate mapping and location information of all field installations. To date nine DISCO P&E computer centers have been made operational. Under Component 3, PDP will continue this effort and build DISCO capacity to map entire divisions and circles. High emphasis on this activity will be focused at the Turnaround DISCOs. Planning engineers will be encouraged to concentrate their engineering software analysis on these areas to produce more accurate feeder/area rehabilitation plans based on field GIS data.

#### 4. Demand Side Management Program

Industrial motors are estimated to contribute between 60%-80% of industrial electricity consumption in most Pakistani industrial sectors. Under the roll-over program and funding from Energy Efficiency and Conservation (EEC) the “Phase 1 Motors in Industry Program” PDP will install 811 energy efficient motors, and 662 Variable Frequency Drives in industries throughout all regions Pakistan (less Baluchistan) – up to December 13. Phase 2 of the same program (January - March 14) PDP will install 784 Motors and 662 Variable Frequency Drives. All activity under this program will be concluded by March 31, 2014.

Another activity under this program is replacement of inefficient pump-sets in the publicly-owned water and sewerage utilities. Under the ongoing Component 2 of the Program, PDP replaced 135 inefficient municipal pump-sets in CDA Islamabad, and 75 large capacity tubewell motors and pumps in the Karachi Water & Sewerage Board. This program activity concluded in December 2013.

#### 5. LT Capacitor Installation Program

Under Component 2 Capacitor Pilot Program, PDP installed 20,400 LT capacitors on agricultural tubewells for the purpose of improving pump-set power factor correction (LT capacitors) on distribution feeders in MEPCO, FESCO, LESCO, IESCO and QESCO. Based on the successful results of this project, PDP has started the national capacitor installation project under Component 3 with 81,812 LT capacitors, addressing the challenges faced during the pilot project, to maximize the nationwide program’s success and peak demand savings.

#### 6. Cost of Service Study

Having completed the COS study with IESCO, PDP is currently working on COS studies at eight (8) DISCOs (LESCO, FESCO, GEPCO, MEPCO, HESCO, PESCO, SEPCO and QESCO). The methodology used with IESCO and approved by NEPRA will be applied and amended to meet the needs of each DISCO. Financial, commercial and load data will be used to populate the model. AMR meters will be procured and installed at all transformers of selected feeders in each DISCO for establishing demand coincidence and contribution to the DISCO’s demand. An appropriate methodology for calculation of weighted average cost of capital will be used to determine market based rate of return.

#### 7. Enterprise Resource Planning

Under Component 2, ERP work was limited to preparation of ERP implementation manual that included road map for implementation for DISCOs for its implementation and the “As-Is” and “To-Be” for financial processes . This was completed in July 2012. Based upon the knowledge and experience gained from the development of the ERP Documentation Manual (Manual) under Component 2, PDP will implement the ERP initiative at both Model and Turnaround DISCOs in accordance with the guidelines outlined in the manual. The ERP Documentation Manual covers the following modules, which will be layered in the ERP system under Component 3.

## 8. Organizational Assessment & Restructuring

A similar project was undertaken at MEPCO under Component 2. Taking the fact into account that all DISCOs are structured in a similar manner with very minor differences, the assessment work conducted at MEPCO will be validated for PESCO environment and minimal assessment will be done only in areas where there might be discrepancies/inconsistency. The project will focus on the implementation of approved proposals/studies.

## 9. Linemen Training in DISCOs

In Component 2 linemen training was focused on nine DISCOs. Component 3 will see efforts largely focused at the Model and Turnaround DISCOs. Efforts will be continued at the remaining seven DISCOs albeit on a comparatively smaller scale. The intervention will be titled as Lineman Tools and Training.

## 10. Dissolution of PEPCO

This is a continuation of Component 2. Dissolution of PEPCO is extremely important for the structural reform and commercialization of power sector entities and is expected to be completed by September 2014. Within the period mentioned the “solvency” documents will be filed with SECP, appointment of liquidator by MWP followed by Prime Minister to sign the closing of PEPCO by end of September 2014.

## **Annexures**

**Annex 1: Life of Project Schedule**

**Annex 2: Task Summary Matrix**

**Annex 3: Risk Matrix**

**Annex 4.1: Results Table**

**Annex 4.2: Work Plan – USAID Result Framework Mapping**

**Annex 4.3: Data Collection at PDP**

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Table 1: Summary of Data Points											
Category	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11
Group A	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10	1.11
Group B	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10	2.11
Group C	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11
Group D	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	4.10	4.11
Group E	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	5.10	5.11
Group F	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	6.10	6.11
Group G	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	7.10	7.11
Group H	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	8.10	8.11
Group I	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	9.10	9.11
Group J	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	10.10	10.11

## Annex 2: Tasks Summary Matrix

**TASK 1-A: Reforms in Turnaround Distribution Companies**

The purpose of this task is to implement such interventions in the selected Turnaround DISCOs that would help them to operate independently and effectively.

**TASK 1-A.i: Turnaround PESCO**

The purpose of this task is to work with PESCO which is selected as Turnaround DISCO-1 to improve its commercial, technical and financial performance by modernizing policies, processes and procedures by providing technical assistance along with modern infrastructure.

Activities	Sub-Activities	Lead	Support	Comments	Output/Milestone
<b>Activity 1:</b> Wide Scale Electronic Metering & Reconductoring Program	<b>1.1:</b> Large Scale Meter Replacement Program  <b>1.2:</b> Replace of Bare Secondary Conductor with Insulated Aerial Bundled Cables (ABC)	IRG / Engility	PITCO / NRECA / External Sub		<ul style="list-style-type: none"> <li>• Procurement and installation of:               <ul style="list-style-type: none"> <li>○ 42,000 RF meters</li> <li>○ 80,000 electronic meters</li> <li>○ 500 km of ABC cable</li> </ul> </li> <li>• Monitoring program covering consumer census</li> </ul>
<b>Activity 2:</b> AMR on High End Bulk, Industrial and Commercial Consumers	<b>2.1:</b> AMR Metering on High-Use Residential, Commercial and Industrial Consumers	IRG / Engility	PITCO / NRECA / External Sub		<ul style="list-style-type: none"> <li>• Procurement and installation of 13,200 AMRs on targeted high end customers including               <ul style="list-style-type: none"> <li>○ 6,900 AMR meters with remote connect/disconnect capability</li> <li>○ 6,300 CT/PT operated AMR meters</li> </ul> </li> <li>• Implementation of GSM/GPRS networks</li> <li>• Installation of head-end system</li> </ul>

	<b>2.2:</b> AMR Meters with Connect/disconnect Facility on High-End Consumers				
<b>Activity 3:</b> Revenue Enhancement Through Theft Control And Procedure Enforcement	<b>3.1:</b> Protection Cell Establishment  <b>3.2:</b> Enforcement Cell Establishment	IRG / Engility	PITCO/ External Sub		<ul style="list-style-type: none"> <li>• Setting up of protection and enforcement cells at circle level</li> <li>• Creation of operation enabling environment</li> <li>• Designing and implementation of improved processes and procedures</li> <li>• Development of first responder guide</li> <li>• Training of relevant DISCO staff</li> </ul>
<b>Activity 4:</b> Communications & Outreach – Corporate Communications & Public Awareness	<b>4.1:</b> Designing of Campaign  <b>4.2:</b> Production of Awareness Material  <b>4.3:</b> Implementation of Campaign  <b>4.4:</b> Outreach Campaign Activation	IRG / Engility	External Sub	These activities will be implemented in PESCO headquarters and circles. While Security remains a challenge, branding waiver will be applied.	<ul style="list-style-type: none"> <li>• Mass media campaigns</li> <li>• Outreach initiatives</li> <li>• Corporate communication (including organizational branding, image promotion and employee motivation)</li> <li>• Revamping of official DISCO websites</li> <li>• Radio talk shows</li> <li>• On ground promotions and awareness</li> </ul>
<b>Activity 5:</b> Implement Enterprise Resource Planning (ERP)	<b>5.1:</b> Enterprise Resource Planning System (ERP)	IRG / Engility	NRECA /HHCC/ External Sub	ERP and CIS will be coordinated	<ul style="list-style-type: none"> <li>• Selection of implementation partner</li> <li>• Implementation, including IT infrastructure and baseline report for collecting and validating existing data work, begun</li> <li>• Formation of ERP Steering Committee</li> </ul>

	<b>5.2:</b> Customer Information System (CIS)	IRG / Engility	NRECA/ PITC/ Telconet/ External Sub	under one umbrella for strong integration and to maximize benefits	<ul style="list-style-type: none"> <li>• Identification and formation of ERP functional core and coordination teams</li> <li>• Accurate customer database and mapping to distribution network</li> <li>• Replacement of legacy billing system with CIS at selected circle(s)</li> <li>• Handheld meter reading system</li> <li>• One-window customer service centers</li> <li>• Consumer census report of the selected circle(s)</li> </ul>
<b>Activity 6:</b> Strategic Business Plan for PESCO	<b>6.1:</b> Development of Strategic Goals and Objectives  <b>6.2:</b> Preparations of Action plans  <b>6.3:</b> Preparing a Draft Business Plan	IRG / Engility	External Sub		<ul style="list-style-type: none"> <li>• Training of PESCOs senior management in strategic planning</li> <li>• Workshop to develop strategic objectives and goals</li> <li>• Training of project managers in project management</li> <li>• Technical assistance to PESCOs project managers in project management</li> <li>• Training of project managers in project management</li> <li>• Technical assistance to PESCOs project managers in project management</li> </ul>
<b>Activity 7:</b> Organizational Assessment & Restructuring, Training & Capacity Building	<b>7.1:</b> Redefinition of Job Description  <b>7.2:</b> Designing & Development of Performance Based Evaluation System	IRG / Engility	EMG/ NRECA/ PITCO/ External Sub		<ul style="list-style-type: none"> <li>• Selection and deployment of implementing partner</li> <li>• Improved &amp; corporatized organizational structure with improved: <ul style="list-style-type: none"> <li>○ JDs &amp; KPIs</li> <li>○ PMS</li> <li>○ Compensation &amp; benefits</li> <li>○ Safety etc.</li> </ul> </li> <li>• HR manual</li> <li>• HRMS implementation</li> <li>• Training &amp; capacity building</li> </ul>

	<p><b>7.3:</b> Drafting of HR Manual</p> <p><b>7.4:</b> Implementing HRIS</p>				<ul style="list-style-type: none"> <li>○ BoD development</li> <li>○ Management development</li> <li>○ Functional trainings</li> <li>● Establishment of PMU</li> <li>● Deployment of change agents</li> </ul>
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**TASK 1-A.ii: Turnaround MEPCO**

The purpose of this task is to work with MEPCO which is selected as Turnaround DISCO-2 to improve its commercial, technical and financial performance by modernizing policies, processes and procedures by providing technical assistance along with modern infrastructure.

Activities	Sub-Activities	Lead	Support	Comments	Output/Milestone
<b>Activity 1:</b> AMR meters on all of the Tubewell connections in Multan Circle	<b>1.1:</b> AMR Meter Installation on Tube-wells  <b>1.2:</b> Establishment of Automated Metering Infrastructure (AMI) with head-end system	IRG / Engility	External Sub		<ul style="list-style-type: none"> <li>• Procurement and installation of 12,000 AMR meters on all tube-well customers of Multan Circle with remote disconnect and reconnect capability</li> <li>• Automated Metering Infrastructure (AMI)</li> <li>• Implementation of GSM/GPRS network</li> <li>• Installation of head-end system</li> <li>• AMI integration with CIS &amp; Billing Systems</li> </ul>
<b>Activity 2:</b> AMRs on High-End Consumers having load above 20 KW	<b>2.1:</b> Large Scale Meter Replacement Program  <b>2.2:</b> Establishment of Automated Metering Infrastructure (AMI) with head-end system	IRG / Engility	External Sub		<ul style="list-style-type: none"> <li>• Procurement and installation of 20,000 AMR meters on all hi-end customers of MEPCO</li> <li>• Automated Metering Infrastructure (AMI)</li> <li>• Implementation of GSM/GPRS network</li> <li>• Installation of head-end system</li> <li>• AMI integration with CIS &amp; Billing Systems</li> </ul>

<p><b>Activity 3:</b> Expanding GIS Mapping and Planning functions to Circle level</p>	<p><b>3.1:</b> Establishment of P&amp;E Circle Offices</p> <p><b>3.2</b> Establishment of a Centralized Data Center</p> <p><b>3.3:</b> Deployment and Configuration of ArcGIS Server</p>	<p>IRG / Engility</p>	<p>External Sub</p>		<ul style="list-style-type: none"> <li>• Establishment of eight (8) MEPCO Circle planning &amp; engineering centers</li> <li>• Implementation of GIS mapping and distribution network planning</li> <li>• Network analysis, including load flow analysis and segregation of technical and non-technical losses</li> <li>• Integration with MEPCO P&amp;E Headquarter</li> <li>• Establishment of a centralized data center</li> <li>• Trained Field Staff</li> </ul>
<p><b>Activity 4:</b> Launching Energy Loss Reduction (ELR) Program</p>	<p><b>4.1</b> Installation of Aerial Bundled Cables</p> <p><b>4.2:</b> Outage Reduction Devices Installation</p> <p><b>4.3:</b> Installation of Inter-set Transformers</p>	<p>IRG / Engility</p>	<p>External Sub</p>		<ul style="list-style-type: none"> <li>• Installation/re-fixing of 35,000 MEPCO provided meters</li> <li>• Procurement and installation of 500 km of ABC cable on the secondary network with CSP transformers</li> <li>• Procurement and installation of outage reduction devices</li> <li>• A monitoring program and consumer census for the target subdivision</li> </ul>
<p><b>Activity 5:</b> Volt VAR Optimization (VVO)</p>	<p><b>5.1:</b> Installation of 11 kV Switched and Un-switched Capacitors</p> <p><b>5.2:</b> Voltage Regulating</p>	<p>IRG / Engility</p>	<p>External Sub</p>		<ul style="list-style-type: none"> <li>• Procurement and installation of 250 VVO equipment</li> <li>• Field staff training</li> </ul>

	Equipment Installation				
<b>Activity 6:</b> Improving Commercial Operations	<p><b>6.1:</b> Improved Meter Reading and HHUs</p> <p><b>6.2:</b> Revenue Protection through Surveillance</p> <p><b>6.3:</b> Customer Service Improvement Initiative</p>	IRG / Engility	NRECA / Telconet/ External Sub		<ul style="list-style-type: none"> <li>• Procurement and implementation of 480 handheld devices for meter reading</li> <li>• Replacement/re-fixing of 28,000 MEPCO provided electronic meters</li> <li>• Training of DISCO staff</li> <li>• Elimination of current paper based meter reading system in the project subdivisions</li> <li>• A fully functional surveillance unit</li> <li>• Training and capacity building of staff</li> <li>• Defining and implementing processes and procedures for surveillance activity</li> <li>• Communication and public outreach program</li> <li>• Procuring surveillance vehicles</li> <li>• Improved customer services offices</li> <li>• Customer service excellence training to staff</li> <li>• Defining and implementing procedures for customer services</li> </ul>
<b>Activity 7:</b> Communications & Outreach – Corporate Communications & Public Awareness				Refer Task 1.A(i), Activity 4	

<p><b>Activity 8:</b> Implement Enterprise Resource Planning</p>	<p><b>8.1:</b> Enterprise Resource Planning System (ERP)</p> <p><b>8.2:</b> Customer Information System (CIS)</p>	<p>IRG / Engility</p> <p>IRG / Engility</p>	<p>NRECA/ External Sub</p> <p>NRECA/ PITC/ Telconet/ External Sub</p>	<ul style="list-style-type: none"> <li>• Selection of implementation partner</li> <li>• Implementation, including IT infrastructure and baseline report for collecting and validating existing data work, begun</li> <li>• Formation of ERP Steering Committee</li> <li>• Identification and formation of ERP functional core and coordination teams</li> <li>• Accurate customer database and mapping to distribution network</li> <li>• Replacement of legacy billing system with CIS at selected circle(s)</li> <li>• Handheld meter reading system</li> <li>• One-window customer service centers</li> <li>• Consumer census report of the selected circle(s)</li> </ul>
<p><b>Activity 9:</b> Strategic Business Plan for PESCO</p>	<p><b>9.1:</b> Development of Strategic Goals and Objectives</p> <p><b>9.2:</b> Preparations of Action plans</p> <p><b>9.3:</b> Preparing a Draft Business Plan</p>	<p>IRG / Engility</p>	<p>External Sub</p>	<ul style="list-style-type: none"> <li>• Training of PESCOs senior management in strategic planning</li> <li>• Workshop to develop strategic objectives and goals</li> <li>• Training of project managers in project management</li> <li>• Technical assistance to PESCOs project managers in project management</li> <li>• Training of project managers in project management</li> <li>• Technical assistance to PESCOs project managers in project management</li> </ul>
<p><b>Activity 10:</b> Change Management &amp; Human Resource Development</p>	<p><b>10.1:</b> Organization Restructuring / Process Re-Engineering</p>	<p>IRG / Engility</p>	<p>EMG/ NRECA/ PITCO/ External Sub</p>	<ul style="list-style-type: none"> <li>• Revised and improved <ul style="list-style-type: none"> <li>○ Organizational chart</li> <li>○ JDs</li> <li>○ HRM policies &amp; procedures</li> </ul> </li> <li>• Improved health policy</li> <li>• Upgraded training and safety units</li> </ul>

	<p><b>10.2:</b> HR Development / Training &amp; Capacity Building</p>		<p>EMG/ NRECA/ PITCO/ External Sub</p>	<ul style="list-style-type: none"> <li>• HR manual</li> <li>• Improved accountability systems and social audit mechanism</li> <li>• Upgrading of training centers</li> <li>• BOD development program</li> <li>• Management development programs</li> <li>• Functional training programs</li> <li>• Train the trainers courses</li> <li>• Updated curriculum and training material</li> </ul>
	<p><b>10.3:</b> Additional Change Management Initiatives</p>		<p>EMG/ NRECA/ PITCO/ External Sub</p>	<ul style="list-style-type: none"> <li>• Strengthened capacity of IT department</li> <li>• Improvement in system and process changes</li> <li>• Training programs</li> <li>• Change agents embedded in various DISCO functional areas</li> </ul>

### TASK 1-B: Technical Assistance for the Transition of Selected Distribution Companies from Public Management to Private Management

The purpose of this task is to work with GOP ministries, authorities and commissions to provide technical and policy assistance that will assist in the transition of selected distribution companies from public management to private management.

Activities	Sub-Activities	Lead	Support	Comments	Output/Milestone
<b>Activity 1:</b> Legal and Regulatory Due Diligence		IRG / Engility	External Sub		<ul style="list-style-type: none"> <li>• Due diligence determination of regulatory constraints on privatization</li> <li>• Due diligence determination on legal constraints on privatization</li> </ul>
<b>Activity 2:</b> Technical Due Diligence		IRG / Engility	External Sub		<ul style="list-style-type: none"> <li>• Due diligence determination of the technical capabilities of selected DISCOs</li> <li>• Due diligence determination of the physical state of the facilities and assets of selected DISCOs</li> <li>• Due diligence determination of required expansion and repairs of facilities and assets of selected DISCOs</li> </ul>
<b>Activity 3:</b> Financial Due Diligence		IRG / Engility	External Sub		<ul style="list-style-type: none"> <li>• Due diligence determination of the financial capabilities of selected DISCOs.</li> <li>• Due diligence determination of the financial state of selected DISCOs.</li> <li>• Due diligence determination of required improvement in the financial state of selected DISCOs</li> </ul>

### TASK 2: Energy Conservation and Demand Side Management

The purpose of this task is to implement industrial and municipal DSM programs in the Turnaround DISCOs by installing energy efficient motors, VSDs in the industry, and pump-sets in the publicly-owned water and sewerage utilities, and evaporative cooling units in urban areas.

Activities	Sub-Activities	Lead	Support	Comments	Output/Milestone
<b>Activity 1:</b> Solutions to enhance DISCOs Load Management and Reduce Unplanned Load Shedding	<b>1.1:</b> Load Data Improvement Project  <b>1.2:</b> Direct Load Management	IRG / Engility	PITC / External Sub	See Task 6, Activity 1	<ul style="list-style-type: none"> <li>• Installation of 8,600 AMR meters with connect/disconnect feature</li> <li>• Demonstration of load management techniques</li> <li>• Capability to change load thresholds and associated time slots locally and remotely</li> </ul>
<b>Activity 2:</b> Developing Improved TOU Metering, TOU Tariffs, and Interruptible Tariffs with Large Ind. and Comm. Customers	<b>2.1:</b> Interruptible Load Management	IRG / Engility	External Sub		<ul style="list-style-type: none"> <li>• Detailed study of available options</li> <li>• Providing recommendations to DISCOs for implementation</li> </ul>

### TASK 3: Cost Reflective Tariff and NEPRA Reform

The purpose of this task is to ascertain the actual cost of service for various consumer categories in each DISCO for determination of DISCO specific cost reflective tariffs. Another aspect of this task is to strengthen NEPRA to effectively regulate the electricity sector in Pakistan. The task will essentially focus on improving the internal and external capacity of the regulator.

Activities	Sub-Activities	Lead	Support	Comments	Output/Milestone
<b>Activity 1:</b> Cost of Service Study & Tariff Design for all DISCOs	<b>1.1:</b> Data Collection and Analysis				
	<b>1.2:</b> Customization of COS Model				<ul style="list-style-type: none"> <li>• Customized cost of service model and user manual</li> <li>• Cost of service study for each DISCO</li> </ul>
	<b>1.3:</b> Cost Allocation & Tariff Design	IRG / Engility	PITCO / Smart Systems		<ul style="list-style-type: none"> <li>• New tariff design proposal</li> <li>• Installation of AMRs at all feeders across DISCOs for data collection</li> </ul>
	<b>1.4:</b> Installation of AMR Meters on selected Feeders				<ul style="list-style-type: none"> <li>• Tariff petitions filings based on cost of service study results</li> </ul>
	<b>1.5:</b> Assist in Preparation of Tariff Petition				<ul style="list-style-type: none"> <li>• Capacity building of DISCOs in preparation and filing of tariff petitions based on cost of service</li> </ul>

<p><b>Activity 2:</b> Assistance to NEPRA</p>	<p><b>Sub-Activity 2.1:</b> Organizational Restructuring of NEPRA</p> <p><b>Sub-Activity 2.2:</b> Review of Electricity Sector Market Framework</p> <p><b>Sub-Activity 2.3:</b> Modification in Tariff Rules and Regulations</p> <p><b>Sub-Activity 2.4:</b> Equipment and Software Upgrade</p> <p><b>Sub-Activity 2.5</b> Regulatory Partnerships</p> <p><b>Sub-Activity 2.6</b> Regulatory Changes</p>	<p>IRG / Engility</p>	<p>PITCO / Smart Systems</p> <p>PITCO / External Sub</p> <p>Consultancy Firm</p>	<p>The tasks being cross cutting both internally (PDP) and externally (NEPRA) will be coordinated by PESCO Lead but functionally handled by the support teams as indicated and the consultant engaged for the purpose</p>	<ul style="list-style-type: none"> <li>• NEPRA “As Is Report”</li> <li>• 58 Job descriptions (JDs) for NEG and NPG staff</li> <li>• Performance Management System</li> <li>• Compensation and Benefits study</li> <li>• Training Needs Assessment (TNA) for functional and management trainings</li> <li>• Organizational structure models with an implementation plan</li> <li>• Functional and management trainings</li> <li>• Regional training / exchange Programs</li> <li>• An initial draft for reforms at distribution end</li> <li>• Joint conference related to reforms</li> <li>• Reforms road map</li> <li>• White papers on key issues that need assistance</li> <li>• Tariff structure as per market requirements</li> <li>• Back bone IT structure provided to NEPRA</li> <li>• Better awareness of the changing world within the regulatory environment. Number of employees trained in specific fields</li> <li>• More realization and ability to adopt to the Best international practices</li> </ul>
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<b>TASK 4: Capacitors at Tube-wells for Power Factor Improvement and Loss Reduction</b>					
<b>The purpose of this task is to reduce the peak MW demand through installation of 151,986 LT capacitors across 8 DISCOs in Pakistan.</b>					
<b>Activities</b>	<b>Sub-Activities</b>	<b>Lead</b>	<b>Support</b>	<b>Comments</b>	<b>Output/Milestone</b>
<b>1: Preparations and Arrangements</b>	<b>1.1:</b> Engagement of Key Stakeholders <b>1.2:</b> Material Procurement & Logistics	IRG / Engility	External Sub		<ul style="list-style-type: none"> <li>DISCOs engaged in providing support to the LT capacitor installation teams</li> <li>Feeder-wise selection of consumers with low power factors</li> <li>Establishment of comprehensive material logistics system</li> </ul>
<b>2: LT Capacitor Installation</b>	<b>2.1:</b> Energy Audits of Sites <b>2.2:</b> Installation of LT Capacitors <b>2.3:</b> Monitoring & Evaluation	IRG / Engility	External Sub		<ul style="list-style-type: none"> <li>Procurement of capacitors</li> <li>Selection and deployment of subcontractor for installation</li> <li>A maximum of 81,812 LT capacitors properly sized and installed resulting in energy savings of 123 MW</li> <li>Proper sized capacitor installations ensured</li> </ul>
<b>3: Capacity Building of DISCO Line Staff</b>	<b>3.1:</b> Classroom and on-field Trainings <b>3.2:</b> Provision of Tools and Equipment used for Energy Auditing	IRG / Engility	External Sub		<ul style="list-style-type: none"> <li>DISCOs (including the Turnaround DISCOs) having the technical capacity and the equipment needed to undertake future LT capacitor installation activities on their own</li> </ul>

<b>TASK 5: Feeder Optimization for Loss Reduction</b>					
<b>Activities</b>	<b>Sub-Activities</b>	<b>Lead</b>	<b>Support</b>	<b>Comments</b>	<b>Output/Milestone</b>
Feeder Optimization	<p><b>1:</b> Implement Feeder Optimization and Congested Area Strategies on High-loss Feeders</p> <p><b>2:</b> Implement Outage Reduction Improvements</p> <p><b>3:</b> Feeder Power Flow Analysis Using new Technology and Software</p> <p><b>4:</b> Installation of Proper 11kV HT Capacitors</p>	IRG / Engility	NRECA / PITCO		<ul style="list-style-type: none"> <li>• Installation of improved distribution equipment on high loss feeders and in congested areas</li> <li>• Installation of outage reduction equipment</li> <li>• Installation of 11 kV HT capacitors on feeders and in grid stations</li> </ul>

<b>TASK 6: Expansion of High Impact Opportunities and Governance</b>					
The purpose of this task is to identify and implement a number of high impact short lead-time activities.					
Activities	Sub-Activities	Lead	Support	Comments	Output/Milestone
<b>Activity 1:</b> Load Data Improvement Project	<p><b>1.1:</b> Obtaining Load Flow Information</p> <p><b>1.2:</b> Installation of AMR-data Acquisition Meters</p> <p><b>1.3:</b> Information Supplied to NPCC &amp; DISCO Power Dispatch Centers</p>	IRG / Engility	PITC		<ul style="list-style-type: none"> <li>• Installation and commissioning of 8,676 AMR meters serving as data acquisition devices on all incoming and outgoing feeders at all nine DISCOs</li> <li>• Customized LDI system software</li> <li>• Live data display at NPCC and DISCO Power Dispatch Centers</li> <li>• Establishing and commissioning centralized 24x7x365 Network Operation Center (NOC)</li> <li>• Establishing and commissioning of a complete AMI system</li> <li>• Modified procedures developed</li> </ul>
<b>Activity 2:</b> Linemen Training		IRG / Engility	NRECA		<ul style="list-style-type: none"> <li>• Reduction in fatal / non-fatal accidents</li> <li>• Improved quality of maintenance work leading to reduction in losses</li> <li>• Up gradation of RTCs / CTCs</li> <li>• Provision of tools to linemen</li> <li>• Delivery of training and training material</li> </ul>
<b>Activity 3:</b> Exchange Programs		IRG / Engility			<ul style="list-style-type: none"> <li>• Training and capacity building of the staff from power sector of Pakistan</li> <li>• Exposure to international work environment and best practices</li> <li>• Establishment of strong professional relationships with international experts</li> </ul>

<p><b>Activity 4:</b> Governance</p>	<p><b>4.1: Governance at MWP Level</b>  <b>Sub-Activity 1:</b> Assist in amendment of Electricity Act</p> <p><b>Sub-Activity 2:</b> DISCOs Reform</p> <p><b>Sub-Activity 3:</b> Prevent Accumulation of Circular Debt</p> <p><b>Sub-Activity 4:</b> Implementation of DISCOs Electricity Supply Agreements</p> <p><b>Sub-Activity 5:</b> Assistance to MWP on National Safety Code</p> <p><b>Sub-Activity 6:</b> Dissolution of PEPCO</p> <p><b>Sub-Activity 7:</b> Operationalization of CPPA Guarantee Limited</p> <p><b>Sub-Activity 8:</b> Improvement of NEPRA Performance</p> <p><b>Sub-Activity 9:</b> Support for the Preparation of a Multi-Year Tariff</p>	<p>IRG / Engility</p>	<p>Consultants</p>	<p>Assistance to be provided to both MWP &amp; MOF and training and capacity building of DISCO BoD</p>	<ul style="list-style-type: none"> <li>• Electricity Act amended resulting in improved power sector governance</li> <li>• Realignment of MWP role as policy maker rather than owner</li> <li>• Will help reduce the circular debt by improving cash flows of TDS</li> <li>• Implement ESAs</li> <li>• Adoption of National Safety Code</li> <li>• PEPCO dissolved</li> <li>• Full operational CPPA Guarantee Limited</li> <li>• Administrative procedures for NEPRA</li> <li>• Methodology for multi-year tariff, investment plan and projections for capital expenditures</li> </ul>
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	<p><b>Sub-Activity 10:</b> Support for the Preparation of a Generation, Transmission and Distribution Investment Plan</p> <p><b>4.2: Governance at DISCO Level</b></p> <ul style="list-style-type: none"> <li>• Development of Policies in line with Mandate by MWP</li> <li>• Oversight over Financial and operational discipline</li> <li>• Facilitation and Development / Training Program</li> <li>• Assessment of BOD Functions</li> </ul>	<p>IRG / Engility</p>		<ul style="list-style-type: none"> <li>• GTD expansion and investment plan</li> <li>• Development of corporate improvement action plans</li> <li>• Adaptation / approval of revised polices</li> <li>• Development of monitoring and evaluation plan – for DISCOs</li> <li>• Training of BOD through professional institutions; and Certification of Directors</li> <li>• Develop a BOD function assessment process and plan</li> </ul>
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**Cross-Cutting Activities: Gender Strategy**

The purpose of this activity is to build capacity of and increase the number of women in technical leadership and decision-making positions at the Turnaround DISCOs including commercial, finance, and engineering divisions to facilitate transformation of DISCOs into competitive, diverse, profit-making entities in the long term.

Activities	Lead	Support	Comments	Output/Milestone
<p><b>Activity 1:</b></p> <ul style="list-style-type: none"> <li>• Gender Equity Training</li> <li>• Women &amp; Energy Workshop</li> <li>• Women in Leadership</li> </ul>	IRG / Engility	External Sub	<ul style="list-style-type: none"> <li>• Reduce recruitment disparities and to facilitate women's entry into the power sector</li> <li>• Supports increase the number of women managers and directors</li> <li>• Increase the number of women in technical positions and decision making level</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation of policies to attract women employees</li> <li>• Career focused trainings for women employees</li> <li>• Provision of improved working conditions to female staff</li> <li>• Long-term engagement of women in power sector</li> </ul>

**Cross-Cutting Activities: Internship Program**

The purpose of this activity is to build capacity of PESCO MEPCO employees and graduates, instill best practices and increase the number of young professionals in the power sector to facilitate bottom-up transformational change at the DISCOs. This opportunity will provide valuable professional experience and build leadership skills of new graduates.

Activities	Lead	Support	Comments	Output/Milestone
<b>Activity 2:</b> Facilitate Bottom-up Transformational Change at the DISCO by Hiring & Deputing Interns	IRG / Engility	Local Universities	Link internship program with turn around DISCO with specific focus on planning, or other areas	<ul style="list-style-type: none"> <li>• Hiring of interns from multi-dimensional academic portfolio for PESCO &amp; MEPCO</li> <li>• Development and implementation of a comprehensive orientation program for interns</li> </ul>

<b>Cross-Cutting Activities: Communications</b>					
The purpose of Communications Program is to build capacities of both Turnaround DISCOs in communications and outreach and assist them in use of streamlined techniques and tools to improve their outreach and service to consumers.					
Activities	Sub-Activities	Lead	Support	Comments	Output/Milestone
<b>Activity 3:</b> Communications	<ul style="list-style-type: none"> <li>• External DISCO Communications</li> <li>• Internal DISCO Communications</li> <li>• PDP Project Communications</li> </ul>	IRG / Engility	External Sub	These activities will be implemented in PESCO and MEPCO. While Security remains a challenge, branding waiver will be applied	<ul style="list-style-type: none"> <li>• Establishment of a Communications and Outreach office</li> <li>• Communications and Outreach campaigns</li> <li>• Community / Schools events</li> <li>• Revamping DISCO official website</li> <li>• Revamping DISCO's corporate branding</li> <li>• Radio Talk Shows</li> <li>• Corporate communications</li> </ul>

## Annex 3: Risk Matrix

Task	Objectives	Risks / Challenges	Mitigation Approach
<b>Task 1-A.i, Activity 5 &amp; Task 1-A.ii, Activity 8: ERP / CIS</b>	<p>1. The availability of timely and accurate business information through back-office automation</p> <p>2. Integrate and automate commercial operations to reduce commercial losses and improve efficiency and quality</p>	<p>1. DISCO staff lack skills and aptitude to adopt to ERP environment</p> <p>2. DISCO staff may resist this change</p> <p>3. ERP system may not provide information in accordance with regulatory requirement</p> <p>4. Labor Union might resist this change by perceiving that ERP implementation will result in job layoffs</p> <p>5. Transition from manual to automated/semi-automated process flow</p>	<p>1. To build capacity by providing trainings to DISCO staff, involving them right from design to implementation and provide day to day support through PDPs advisors placed at the DISCOs</p> <p>2. To establish steering committee comprising board members to champion this change and conduct monthly review of status of ERP project. Moreover, PDP will conduct awareness workshops and reach out to the internal stakeholders through publication of ERP newsletters periodically</p> <p>3. To conduct periodic meetings with NEPRA and MWP to ensure that regulatory requirements are incorporated in 'to be' documentation for implementation of ERP</p> <p>4. Awareness strategy starting from the BOD down to all levels of the organization, especially addressing the labor unions, giving the message that the ERP implementation will not result in reduction of jobs but increase productivity of employees</p> <p>5. Change management, capacity building, phased implementation</p>

Task	Objectives	Risks / Challenges	Mitigation Approach
		6. Selection of correct/appropriate information systems that will fulfill DISCO needs	6. Detailed user requirements analysis and participation of users and managers during the selection and design phase
<b>Task 1-A.i, Activity 1&amp;2 and Task 1-A.ii, Activity 1-5: Technical Interventions</b>	To improve the technical performance of DISCOs by providing modern technology and infrastructure	<p>1. Inadequate coordination between Technical Team and other PDP teams could result in late discovery of conflicts and less than optimum results</p> <p>2. Funding by the DISCOs for sustainability and maintenance are issues which can impact success of technical projects</p> <p>3. GPRS reliability, particularly during times of civil unrest when gov't shutdown of GPRS network may occur</p> <p>4. Installation of new RF or AMR meters require verification proper communications and operation</p> <p>5. Customer resistance may delay schedule</p> <p>6. Higher quantity requirements in specified subdivision due to addition of new customers or bifurcation between order placement and installation</p> <p>7. Delay in DISCO installation support impacting schedule</p>	<p>1. Identification interdependencies followed by communication on frequent basis with other teams to keep each other informed</p> <p>2. High priority on having clear understandings with DISCO management, with specific commitments in writing</p> <p>3. Develop strategies and procedures to cope with such occurrences with users</p> <p>4. Establish capability of on-site acceptance testing using PDP personnel</p> <p>5. Work with DISCO to establish customer preparation and communication ahead of installation</p> <p>6. Close coordination with DISCO on expected totals and allowances</p> <p>7. Obtain strong CEO and BOD agreement with MWP concurrence for DISCO services to be provided. PDP to closely monitor and control the installations</p>

Task	Objectives	Risks / Challenges	Mitigation Approach
		8. Law and order situations impacting ability to complete work	8. Close coordination with DISCOs to plan work in areas with low probability of law and order issues
		9. Material delivery delay	9. Plan for contingency in schedule- specify standard product
		10. Design completion delays	10. Plan for contingency in schedule and keep design simple and make maximum use of current practices
<b>Task 3, Activity 1: Cost of Service Study</b>	To ascertain the actual cost of service for various consumer categories in each DISCO for determination of DISCO specific cost reflective tariffs	<p>1. Lack of cooperation from DISCOs</p> <p>2. Poor data quality</p> <p>3. Acceptability of the model and methodology</p> <p>4. Delays in load measurements at due to delay in metering equipment installation</p>	<p>1. Constitution of liaison committees in each DISCO</p> <p>2. Detailed data analysis, scrutiny and cross verification from multiple sources</p> <p>3. Ensure presentations to all stakeholders to seek their buy-in through workshops</p> <p>4. Use of alternate allocation criteria in case of delay in data collection due to delay in installation of AMR meters on selected feeder</p>
<b>Task 3, Activity 2: Assistance to NEPRA</b>	To improve the overall environment of Governance of the sector through strengthening the regulatory environment/regime	<p>1. Non-committal approach by NEPRA management</p> <p>2. NEPRA management changes during the tenure of the program</p> <p>3. Non related trainings</p>	<p>1. Frequent and regular meetings with members and professionals of NEPRA. Engaging them through workshops, seminars and discussion forums with notes and action items as outputs and circulated to all</p> <p>2. Constant engagement with all Sr. management. Even if some of the members are changed, the others and the Sr. professionals can keep the pace and scope of the project intact</p> <p>3. Trainings will be jointly identified by NEPRA and</p>

Task	Objectives	Risks / Challenges	Mitigation Approach
		4. NEPRA does not provide client end equipment for IT infrastructure provision	PDP by performing Trainings Need Assessment (TNA). A guide line will be provided for NEPRA to remain focused  4. PDP will provide the infrastructure of creating a back bone system for NEPRA's IT system. It will not provide end machines. It will be a self-executed project till its end point
<b>Task 4: Capacitors at Tube-wells for Power Factor Improvement and Loss Reduction</b>	To reduce the peak MW demand through the installation of capacitors for the purpose of power factor correction	1. Oversized installation of capacitor which may result in a power factor correction that goes as high as 99% or even greater than 1, leading to long term damage to the farmer's motor  2. DISCOs are short staffed, and the risk of getting linemen to locate tube-well sites and assist in their installations is crucial  3. Rural areas of Pakistan suffer extreme load shedding, most often 16 hours a day. This can hamper an installation team's work as no pre-audit and right capacitor sizing can take place	1. The PDP methodology for Capacitor sizing has stringent rules for establishing only 95-96% Power Factor. PDP will supervise and conduct regular spot checks of LT capacitor installations to ensure that capacitor installations are carried out by the installation teams according to the guidelines for the installation and capacitor sizing provided by PDP  2. PDP will work with DISCO senior management to ensure requisite linemen are made available. PDP management has secured commitment from the CEOs and senior management of all DISCOs already  3. PDP Senior Management will coordinate with the DISCOs and seek their support in coordinate load shedding on feeders where LT Capacitors are being installed
<b>Task 6, Activity 2: Governance</b>	Improve governance in the sector and realignment in the	1. Risk of not to complete the task in the allotted time period with agreement of multiple	1. Find champions and stakeholders wanting the same objective

Task	Objectives	Risks / Challenges	Mitigation Approach
	role of MWP as a policy maker rather than owner of these public sector entities	<p>stakeholders</p> <p>2. Lack of support and cooperation from employees and unions</p> <p>3. Weak financial position of the government</p> <p>4. Financial and operational independence of DISCOs</p> <p>5. Lack of support from the stakeholders</p>	<p>2. Find champions to facilitate the process</p> <p>3. Strong Donor conditionality for the government to improve its overall governance</p> <p>4. Strong USAID's conditions with GOP for lending funds</p> <p>5. Find champions and stakeholders wanting the same objective</p>
<b>Cross-Cutting Activities: Internship Program</b>	Instill best practices and increase the number of young professionals in the power sector to facilitate bottom-up transformational change at the DISCO	<p>1. DISCO staff unwilling to accept new interns</p> <p>2. Unavailability of space for interns and other initiatives</p> <p>3. Lack of intern capability to perform according to PDP and DISCO standards</p> <p>4. Obstacles in the sustainability of project</p>	<p>1. In order to avoid resistance on part of DISCO staff, the resource gap analysis, the respective positions, JDs and their section will be prepared keeping the DISCO Section Heads on board. Interns will be mentored under DISCO TLs</p> <p>2. DISCO section heads have agreed to attach their team members with the trainee /interns – who will be working together in collaboration, thus reducing the eventual “work in isolation”</p> <p>3. The number of interns, their placement and other initiatives are to be taken with the buy in of DISCO senior management that will ensure space availability</p> <p>4. Interns will be monitored and evaluated under a strict performance management system, by PDP Internship team, PDP respective team members and DISCO</p>

Task	Objectives	Risks / Challenges	Mitigation Approach
			<p>management. Interns will be disengaged if performance is below standard.</p> <p>In order to ensure sustainability of the project, interns are to perform all tasks with two or one appointed DISCO staff. This staff will be trained in the process of two years. Measures to keep Interns on board will also be encouraged in discussions with DISCO HR management</p>
<p><b>Cross-Cutting Activities:</b> <b>Gender Strategy</b></p>	<p>Mainstreaming gender in target DISCOs where applicable to be fully aligned with USAID policy on gender equality and women's empowerment</p>	<ol style="list-style-type: none"> <li>1. Culture of respective DISCO regions might be resistant to gender equity trainings (GET)</li> <li>2. Lack of females willing to work at DISCOs</li> <li>3. DISCO employee might be resistant to change</li> <li>4. Resistance in advancement of female employees stuck in dead end jobs</li> </ol>	<ol style="list-style-type: none"> <li>1. In order to avoid resistance, DISCO HR staff will be taken on board and accompany trainer where necessary. Undertaking GET will be mandatory for all the employees of all levels</li> <li>2. Measures will be taken to promote female employment in DISCOs, especially at policy level, with the help of the Governance Team. All employment opportunities will encourage females to apply</li> <li>3. All changes shall be taken at policy level through regulatory bodies and Governance Team. Gender equity trainings will be made mandatory for all employees in order to help mainstream gender initiatives</li> <li>4. Policy level changes will be encouraged to promote advancement of women and change in job transfer and promotion strategies within the organization</li> </ol>
<p><b>Cross-Cutting Activities:</b> <b>Communications</b></p>	<p>Improve USAIDs and DISCO's image and promote energy conservation</p>	<ol style="list-style-type: none"> <li>1. Lack of cooperation from DISCO staff</li> </ol>	<ol style="list-style-type: none"> <li>1. Form a forum of DISCOs staff and meet periodically to discuss interventions</li> </ol>

Task	Objectives	Risks / Challenges	Mitigation Approach
		2. PR is a neglected area in DISCO business	2. DISCO management will empower PR department to effectively coordinate internal and external communications
		3. Lack of ownership and resources availability at DISCOs	3. DISCO nomination of a fulltime focal person dedicated to website and branding
		4. Weak internal coordination and information sharing among DISCO departments	4. Proposing internal coordination system and information system to DISCOs for implementation
		5. Limited use of DISCO official logo and uniform branding on stationery and events	5. Change management at all levels to stop “WAPDA” branding and encourage DISCO’s branding

## Results Table

Indicator	Unit	LOP Target	FY 2014 Target	FY 2015 Target
<b>Task I-A.i: Turnaround PESCO</b>				
<b>PESCO Wide</b>				
Revenue improvements across PESCO for FY 2014 in comparison with FY 2013 <sup>1</sup>	\$ million		Up to \$35 million	
<b>Activity 1: Wide-Scale Electronic Metering &amp; Reconductoring Program</b>				
Revenue saved by installing electronic meters, RF enabled meters, ABC cables and revenue enhancement through theft control activities	\$ million	3.0	0.9	2.1
Number of electronic meters to be installed	No.	80,000	48,000	32,000
Number of RF enabled meters to be installed	No.	42,000	13,000	29,000
Kilometers of ABC to be installed	Km	500	150	350
<b>Activity 2: AMR on High-End Bulk, Industrial, Residential and Commercial Consumers</b>				
Revenue saved by installing AMR meters	\$ million	5.3	-	5.3
Number of AMR meters to be installed	No.	13,200	-	13,200
<b>Activity 3: Revenue Enhancement Through Theft Control And Procedure Enforcement</b>				
Revenue saved by implementation of Revenue Protection & Enforcement Cell	\$ million		Covered under Activity I	
<b>Activity 4: Communications &amp; Outreach – Corporate Communications &amp; Public Awareness</b>				

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<sup>1</sup> This is DISCOs financial year (July 2013 to June 2014)

Indicator	Unit	LOP Target	FY 2014 Target	FY 2015 Target
Number of awareness campaigns to be launched	No.	4	2	2
<b>Activity 5: Enterprise Resource Planning &amp; Customer Information System</b>				
Revenue saved by installing ERP/CIS	\$ million	2.2	-	2.2
<b>Activity 7: Organization Restructuring / Process Re-Engineering</b>				
No. of best practice system implemented	No.	8	4	4
<b>Task I-A.ii: Turnaround MEPCO</b>				
<b>Activity 1: AMR meters on all of the Tube-well connections in Multan Circle</b>				
Revenue saved by installing AMR meters on tube-wells	\$ million	1.3	-	1.3
Number of AMR meters to be installed on tube-wells	No.	12,000	-	12,000
<b>Activity 2: AMR Meters on High-End Customers having load 20 KW and above</b>				
Revenue saved by installing AMR meters on hi-end consumers	\$ million	2.0	-	2.0
Number of AMR meters to be installed on hi-end consumers	No.	20,000	-	20,000
<b>Activity 3: Expanding GIS Mapping and Planning Functions to MEPCO Circles</b>				
Revenue saved by expanding GIS mapping and planning functions	No.	2.4	0.4	2.0
Number of Circle-level P&E Centers established	No.	8	4	4
<b>Activity 4: Launching Energy Loss Reduction (ELR) Program</b>				
Revenue saved by installing electronic meters and Aerial Bundled Cables	\$ million	1.1	0.3	0.8
Number of electronic meters (DISCO provided) to be installed / re fixed	No.	36,000	11,000	25,000

Indicator	Unit	LOP Target	FY 2014 Target	FY 2015 Target
Kilometers of ABC installed	Km	500	150	350
<b>Activity 5: Volt VAR Optimization (VVO)</b>				
Revenue saved by installing VVO devices	\$ million	0.4	-	0.4
Number of VVO equipment to be installed	No.	250	-	250
<b>Activity 6.1: Improved Meter Reading and Handheld Units</b>				
Number of electronic meters to be installed	No.	28,000	16,000	12,000
Revenue saved by implementing IMR & HHUs	\$ million	1.9	0.7	1.2
Number of HHUs provided	No.	480	280	200
<b>Activity 6.2: Revenue Protection Through Surveillance</b>				
Revenue saved by Surveillance Cell	\$ million	Covered under Activity 1, 2 and 7.1 above		
<b>Activity 6.3: Customer Service Improvement Initiatives</b>				
Reduction in customer complaints	%	40%	40%	40%
<b>Activity 7: Communications &amp; Outreach – Corporate Communications &amp; Public Awareness</b>				
Number of awareness campaigns launched	No.	4	2	2
<b>Activity 8: Enterprise Resource Planning &amp; Customer Information System</b>				
Revenue saved by installing ERP/CIS	\$ million	4.1	-	4.1
<b>Activity 10.1: Organization Restructuring / Process Re-Engineering</b>				
No. of best practice system implemented	No.	8	4	4
<b>Task 1-B: Technical Assistance on Privatization of Selected DISCOs</b>				
Legal due diligence determination of regulatory and legal constraints on privatization	DISCO	2	-	2

Indicator	Unit	LOP Target	FY 2014 Target	FY 2015 Target
Technical due diligence determination of technical capabilities, physical state of facilities and assets, expansion and repairs of facilities and assets of selected DISCOs	DISCO	2	-	2
Financial due diligence determination of the financial capabilities, financial state and required improvement in financial state of selected DISCOs	DISCO	2	-	2
<b>Task 3: Cost Reflective Tariff and NEPRA Reform</b>				
<b>Activity 3.1: Cost of Service Study &amp; Tariff Design for all DISCOs</b>				
Revenue saved by reduction in cost recovery gap	\$ million	63	2	61
Revenue increased by correcting the billing system calculation error	\$ million	31	6	25
<b>Task 4: Capacitors at Tube-wells for Power Factor Improvement and Loss Reduction</b>				
MW of power saved by installing LT capacitors on tube-wells	MW	123.0	56.6	66.4
Revenue saved by LT capacitors	\$ million	27.3	12.5	14.7
Number of beneficiaries receiving improved energy services by installing LT capacitors	No.	1,845,000	849,000	996,000
Number of LT capacitors to be installed	No.	81,812	37,631	44,181
<b>Task 6: Expansion of High Impact Opportunities &amp; Improved Governance</b>				
<b>Activity 6.1: Load Data Improvement Project<sup>2</sup></b>				

<sup>2</sup> The impact assessment of LDI project is being carried out through an independent firm. The results of this intervention in terms of reduced unplanned load shedding, improved revenue, availability of additional MWs to the system etc. will be reported as soon as they are confirmed (expected by mid-April 2014).

Indicator	Unit	LOP Target	FY 2014 Target	FY 2015 Target
Reduction in hours of unplanned load shedding, increased revenue, MW availability etc.	-	TBD	TBD	TBD
<b>Activity 6.2: Linemen Training</b>				
MWs of power saved by replacing bad connectors	MW	5.9	1.8	4.1
Revenue saved	\$ million	2.6	0.8	1.8
Numbers of bad connectors to be replaced	No.	120,000	36,000	84,000
Reduction in fatal and non-fatal accidents	%	50%	50%	50%
<b>Activity 6.4: Governance at MWP &amp; DISCO Level</b>				
Number of policies to be drafted for approval and implementation	No.	7	4	3

## Annex 4.2

### Work Plan Mapping with USAID Result Framework

Task / Activities	USAID Results Framework Indicators
<b>Task 1-A.i: Turnaround PESCO</b>	
Activity 1: Wide-Scale Electronic Metering & Reconducturing	IR1.1(a): Number of beneficiaries with improved energy services due to United States Government assistance (4.4.1-31) IR1.1(b): Gigawatt-hours (GW-h) of energy availability I1.1.2(a): Megawatts (MW) of electrical power saved as a result of United States Government support to distribution companies IR1.1.2(b): Number of installations and operations and maintenance improvements IR1.1.3(a): Revenue at distribution companies
Activity 2: AMR on High End Bulk, Industrial and Commercial Consumers	IR1.1.3(a): Revenue at distribution companies IR1.1.2(b): Number of installations and operations and maintenance improvements IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities
Activity 3: Revenue Enhancement Through Theft Control And Procedure Enforcement	IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities IR1.1.3(a): Revenue at distribution companies
Activity 4: Communications & Outreach – Corporate Communications & Public Awareness	IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities
Activity 5: Implement Enterprise Resource Planning (ERP)	IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities IR1.2.3(a): Number of best practice-driven systems created, improved, and implemented
Activity 6: Strategic Business Plan for PESCO	IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities
Activity 7: Organizational Assessment & Restructuring, Training & Capacity Building	IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities IR1.2.3(a): Number of best practice-driven systems created, improved, and implemented
<b>TASK 1-A.ii: Turnaround MEPCO</b>	
Activity 1: AMR meters on all of the Tubewell connections in Multan Circle	IR1.1(a): Number of beneficiaries with improved energy services due to United States Government assistance (4.4.1-31) IR1.1(b): Gigawatt-hours (GW-h) of energy availability I1.1.2(a): Megawatts (MW) of electrical power saved as a result of United States Government support to distribution companies IR1.1.2(b): Number of installations and operations and maintenance improvements IR1.1.3(a): Revenue at distribution companies IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities
Activity 2: AMRs on High-End Consumers having load above 20 KW	IR1.1(a): Number of beneficiaries with improved energy services due to United States Government assistance (4.4.1-31) IR1.1(b): Gigawatt-hours (GW-h) of energy availability I1.1.2(a): Megawatts (MW) of electrical power saved as a result of United States Government support to distribution companies IR1.1.2(b): Number of installations and operations and maintenance improvements IR1.1.3(a): Revenue at distribution companies IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities
Activity 3: Expanding GIS Mapping and Planning functions to Circle level	IR1.2.3(A): Number of best practice-driven systems created, improved, and implemented
Activity 4: Launching Energy Loss Reduction (ELR) Program	IR1.1.2(b): Number of installations and operations and maintenance improvements IR1.1.3(a): Revenue at distribution companies IR1.1(b): Gigawatt-hours (GW-h) of energy availability IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities
Activity 5: Volt VAR Optimization (VVO)	IR1.1.2(b): Number of installations and operations and maintenance improvements IR1.1.3(a): Revenue at distribution companies IR1.1(b): Gigawatt-hours (GW-h) of energy availability
Activity 6: Improving Commercial Operations	IR1.1.2(b): Number of installations and operations and maintenance improvements IR1.1.3(a): Revenue at distribution companies IR1.2.3(a): Number of best practice-driven systems created, improved, and implemented

	IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities
Activity 7: Communications & Outreach – Corporate Communications & Public Awareness	IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities
Activity 8: Implement Enterprise Resource Planning	IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities IR1.2.3(a): Number of best practice-driven systems created, improved, and implemented
Activity 9: Strategic Business Plan for PESCO	IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities
Activity 10: Change Management & Human Resource Development	IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities IR1.2.3(a): Number of best practice-driven systems created, improved, and implemented
<b>Task 1-B: Technical Assistance for the Transition of Selected DISCOs from Public to Private Management</b>	
Activity 1: Legal and Regulatory Due Diligence	IR1.2.1(a): Number of key policies and regulations in development stages of analysis, drafting, stakeholder consultation, legislative review, approval, or implementation as a result of United States Government assistance IR1.2.2(a): Number of policies following international best practices developed and implemented
Activity 2: Technical Due Diligence	
Activity 3: Financial Due Diligence	
<b>TASK 2: Energy Conservation and Demand Side Management</b>	
Activity 1: Solutions to enhance DISCOs Load Management and Reduce Unplanned Load Shedding	IR1.1.2(b): Number of installations and operations and maintenance improvements IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities
Activity 2: Developing improved TOU metering, TOU tariffs, and interruptible tariffs with large industrial and commercial customers	IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities
<b>TASK 3: Cost Reflective Tariff</b>	
Activity 1: Cost of Service Study & Tariff Design for all DISCOs	IR1.1.2(b): Number of installations and operations and maintenance improvements IR1.1.3(a): Revenue at distribution companies IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities IR1.2.3(a): Number of best practice-driven systems created, improved, and implemented
Activity 2: Assistance to NEPRA	IR1.2.1(a): Number of key policies and regulations in development stages of analysis, drafting, stakeholder consultation, legislative review, approval, or implementation as a result of United States Government assistance IR1.2.2(a): Number of policies following international best practices developed and implemented IR1.2.2(b): Number of board recommendations following international best practices implemented by public sector entities
<b>TASK 4: Capacitors at Tube-wells for Power Factor Improvement and Loss Reduction</b>	
LT Capacitor Installation	IR1.1(a): Number of beneficiaries with improved energy services due to United States Government assistance (4.4.1-31) IR1.1(b): Gigawatt-hours (GW-h) of energy availability IR1.1.2(a): Megawatts (MW) of electrical power saved as a result of United States Government support to distribution companies IR1.1.2(b): Number of installations and operations and maintenance improvements IR1.1.3(a): Revenue at distribution companies
<b>TASK 5: Feeder Optimization for Loss Reduction</b>	
Feeder Optimization	IR1.1(a): Number of beneficiaries with improved energy services due to United States Government assistance (4.4.1-31) IR1.1(b): Gigawatt-hours (GW-h) of energy availability IR1.1.2(a): Megawatts (MW) of electrical power saved as a result of United States Government support to distribution companies IR1.1.2(b): Number of installations and operations and maintenance improvements IR1.1.3(a): Revenue at distribution companies
<b>TASK 6: Expansion of High Impact Opportunities and Governance</b>	
Activity 1: Load Data Improvement Project	DO1(a): Reduction in unplanned load shedding IR1.1(a): Number of beneficiaries with improved energy services due to United States Government assistance (4.4.1-31) IR1.1(b): Gigawatt-hours (GW-h) of energy availability IR1.1.2(a): Megawatts (MW) of electrical power saved as a result of United States Government support to distribution companies

	<p>IR1.1.2(b): Number of installations and operations and maintenance improvements</p> <p>IR1.1.3(a): Revenue at distribution companies</p> <p>IR1.2.3(a): Number of best practice-driven systems created, improved, and implemented</p>
<p>Activity 2: Linemen Training</p>	<p>IR1.2.3(a): Percent change in the number of lineman injuries and deaths</p> <p>IR1.1(a): Number of beneficiaries with improved energy services due to United States Government assistance (4.4.1-31)</p> <p>IR1.1(b): Gigawatt-hours (GW-h) of energy availability</p> <p>IR1.1.2(a): Megawatts (MW) of electrical power saved as a result of United States Government support to distribution companies</p> <p>IR1.1.2(b): Number of installations and operations and maintenance improvements</p> <p>IR1.1.3(a): Revenue at distribution companies</p>
<p>Activity 4: Governance</p>	<p>IR1.2.1(a): Number of key policies and regulations in development stages of analysis, drafting, stakeholder consultation, legislative review, approval, or implementation as a result of United States Government assistance</p> <p>IR1.2.2(a): Number of policies following international best practices developed and implemented</p>

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## **Data Collection at PDP**

### **Main Objective**

In this section the data collection method is briefly described for all the major interventions which are being performed in the DISCOs especially in both Turnaround DISCOs as described in this work plan. Most of the interventions such as meter installation, LT capacitors installation, improved commercial operations; LDI project etc. involves a common data collection method for all DISCOs. The data of all the following interventions is collected from a unique set of sources including DISCOs, NPCC, subcontractors and relevant PDP project teams.

### **LT Capacitors**

Two types of data sets are required to be collected for each LT capacitor installed i.e. pre-installation data and post-installation data in order to evaluate the performance of the tube-well after the capacitor is installed. The pre-installation data serves as the baseline while post-installation data is used to compare the improved performance of the equipment against the baseline. This pre and post installation data is collected by on-site physical measurement of each capacitor installed to calculate resulting impacts of the capacitors in terms of megawatts, energy and revenue savings.

The LT capacitor installation team is mainly comprised of linemen who are responsible for installation and an engineer who is responsible for supervision and pre and post installation audit and data collection/measurement. Engineer ensures that correct readings are taken and also records the reading on a prescribed data collection form. Three readings are taken before and after each installation. He also takes pictures of pre and post readings for verification purpose. Once the forms are completed and verified against the pictures taken, any necessary corrections are made on the forms before sending over to central data office, for data entry. At the central data office, data is again verified against the pictures received from the field and data entry operators enter the information in Data Management System. They are required to enter complete information available on each form and attach respective pictures with each form to ensure future referencing. Data is further verified by Quality Control Operator (QCO). QCOs conduct verification of data entered by the data entry team. Each value entered by data entry operators is verified against the data collection forms.

### **Electronic/RF enabled/AMR Meters**

The data is collected during the installation of meters, to maintain a record of the meters installed and same data is collected for all types of meters including electronic, RF enabled or AMR meters. The meter replacement team which comprised of three members; linemen superintendent (LS), enumerator and linemen is mainly responsible for on-site data collection. The LS is responsible for overall supervision of meter replacement program. Enumerator is the person who performs the survey and fills the form while linemen perform the actual installation pole by pole. The LS check the forms for completeness and send them to central office data manager, located at central data center, on weekly basis. Once all the forms are received at the central office, the central office data manager then manages overall data entry and verification. The data verification personnel sort pictures for each individual case, place them at a central repository, and use these for verification of data filled by the field enumerators. They also make necessary corrections on forms, based

on related pictures, before handing over the forms for data entry. Once data is verified against the pictures, data entry operator enters the information in Data Management System (DMS). They are required to enter complete information available on each form and attach respective pictures with each form to ensure future referencing. Data is further verified by Quality Control Operator (QCO). QCOs conduct verification of data entered by the data entry team. Each value entered by data entry operators is verified against the data collection forms.

For calculating the impacts of meter replacement activity, the baseline data of the targeted subdivision is collected at the start of the project from DISCO MIS department. After the project is completed, the unit loss and recovery data of the subdivision is monitored over a period of time to evaluate its performance. For this purpose the monthly data of the subdivision is collected directly from the DISCO and compared with the baseline data which reveals the benefits gained from the meter installation activity in terms of revenue and energy savings.

### **Miscellaneous Line Equipment**

As stated in the work plan, a number of miscellaneous line equipment are planned to be installed in both Turnaround DISCOs such as ABC cable, outage reduction devices, CSP transformers, VVO equipment etc. The installation of such equipment is a labor intensive task and would be performed by the subcontractor(s) in collaboration with relevant DISCO staff and linemen. Therefore the subcontractor and the relevant PDP project coordinator will be responsible for the primary data collection. The baseline data and the data for evaluating the post-project impacts would be collected in a similar manner as described above.

### **Load Data Improvement Project**

In LDI project AMR meters were installed on the incoming and outgoing feeder of all grid station across the nine DISCOs. The meter installation was done by a subcontractor in collaboration with the staff of metering & testing department of the concerned DISCOs. The subcontractor was mainly responsible to collect the meter installation data and to maintain the record of the meters installed. The data provided by the subcontractor was later verified by the relevant PDP staff by field visits.

For calculating the initial impacts of LDI project, the baseline data of planned and unplanned load shedding is collected at the start of the project from NPCC. In order to calculate the reduction in the magnitude of unplanned load shedding, the data is being collected from NPCC on a monthly basis to compare with baseline and to calculate the percentage of reduction as envisaged.

However it was decided later that a detailed post impact analysis of the LDI project needs to be performed to evaluate the technical, commercial and economic impacts that the project imparted on a national scale. For this purpose, the services of a third party consultant are being hired.

### **Commercial Operations**

The improved commercial operations involve improved meter reading, implementation of hand held units, revenue protection cells and customer service centers renovation. The data of these interventions is collected by the Field Project Manager and his team which are deployed at the target subdivision of both the Turnaround DISCOs. The baseline data of the subdivision is collected at the start of the project from MIS department. During the execution of the project and after its completion, the unit loss and recovery data of the subdivision is monitored to evaluate its performance. For this purpose the monthly data of the

subdivision is collected directly from the DISCO and compared with the baseline data which reveals the benefits gained from the improved meter reading activity.

### **Cost of Service Study**

The cost of service study aimed at reducing the cost-recovery gap of the DISCOs by enabling DISCOs to calculate the actual cost of service based on the customized cost model provided by PDP and filing a petition to NEPRA for tariff adjustment accordingly. To calculate the impact, the cost of service team collects the copy of the petition as filed by the DISCO to NEPRA which has the authority to approve or disapprove the petition as the expected reduction in cost-recovery gap will only be achieved if NEPRA approves the petition. After the petition is approved, the team collects the audited financial statements of the following year of the concerned DISCO to calculate the reduction in cost against revenue.

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