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INTEGRATED PDIP WORK PLAN

COMPONENTS 1 & 2 MERGED

Produced by:

**USAID POWER DISTRIBUTION
IMPROVEMENT PROGRAM**

JULY 2011

USAID POWER DISTRIBUTION IMPROVEMENT PROGRAM

INTEGRATED PDIP WORK PLAN

ENERGY II IQC CONTRACT EPP-I-00-03-00006

TASK ORDER 13

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This publication was made possible through support of the American people provided by the U.S. Agency for International Development (USAID). The opinions expressed herein are those of International Resources Group and do not necessarily reflect the views of USAID or the United States Government.

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ACRONYMS

AMR	Automated meter reading
BoD	Board of Directors
CDP	Common delivery point
CEO	Chief Executive Officer
CIS	Customer Information System
CoSS	Cost of Service Study
CTC	Circle training center
CY	Calendar year
DISCO	Government-owned electric power distribution company
ERP	Enterprise Resource Planning
FARA	Fixed Amount Reimbursement Agreements
FESCO	Faisalabad Electric Supply Company
GEPCO	Gujranwala Electric Power Company
GIS	Geographical positioning system
GOP	Government of Pakistan
HESCO	Hyderabad Electric Supply Company
HRIS	Human Resources Information System
HRMIS	Human Resource Information Management System
HT	High tension
IESCO	Islamabad Electric Supply Company
KPA	Key Performance Area
KPI	Key Performance Indicator
LESCO	Lahore Electric Supply Company
LT	Low tension
MEPCO	Multan Electric Power Company
MWP	Ministry of Water and Power
NEPRA	National Electric Power Regulatory Authority
PDIP	USAID Power Distribution Improvement Program

PESCO	Peshawar Electric Supply Company
PIAP	Performance Improvement Action Plan
PIPs	Performance improvement projects
PSRWG	Power Sector Reform Working Group
QESCO	Quetta Electric Supply Company
RF	Radio frequency
RTC	Regional training center
USAID	United States Agency for International Development
WACC	Weighted average cost of capital

I. BACKGROUND TO THE PROGRAM

The overall goal of the Power Distribution Improvement Program (PDIP) is to assist the Ministry of Water and Power (MWP) and individual Government of Pakistan (GOP)-owned distribution companies (DISCOs) to improve the financial, commercial, and technical performance of the participating DISCOs to levels comparable to well-run distribution utilities in other countries. Improved performance includes improved governance, increased revenue recovery and overall financial performance, reduced technical and non-technical losses, and improved quality of service.

To achieve these goals, PDIP team began by conducting operational audits of all the eight licensed DISCOs to evaluate all aspects of DISCO operations as a starting point to design specific demonstration projects through which improved DISCO functionality could be illustrated. Performance improvement opportunities were documented in Performance Improvement Action Plans (PIAPs) drafted for each DISCO, illustrating the means by which revenue recovery could be improved, losses could be reduced, and technical performance could be improved at each DISCO. The details and actions outlined in these Action Plans have been reviewed jointly with each DISCO, and a consensus has been reached regarding the interventions proposed as a part of each Action Plan.

In addition, PDIP is assisting the MWP reform efforts by assignment of highly experienced and qualified professionals as Senior Advisors to the Power Sector Reform Working Group (PSRWG) in the Ministry. These PDIP senior advisors offer a broad spectrum of institutional, policy, technical, and financial expertise, spanning utility management, planning, distribution, human resources, and legal services. PSRWG has prepared an MWP Action Plan that presents a number of high priority initiatives and interventions designed to support the Pakistan power sector reform process, as well as to strengthen MWP policy design and power sector analysis capacity.

2. DESCRIPTION OF THE POWER DISTRIBUTION IMPROVEMENT PROGRAM

PDIP was designed to be implemented in two stages, named in the PDIP project description as Component 1 and Component 2. Component 1 refers to the project preparatory phase during which the aforementioned operational audits and action planning process for participating DISCOs were undertaken. This process commenced upon PDIP team mobilization in late September 2010. The Operational Audit process was designed during the preparatory months of October and early November 2010. The PDIP team launched the first audit by the third week of November, and concluded the field work by the second week of December. After adjustments were made in the data collection process, the team implemented the auditing process for the remaining seven DISCOs from the third week of December, concluding the last audit by the end of January, 2011. The Operational Audit reports were submitted to USAID in March, 2011, followed by the Action Plans, which were submitted by April 2011. Annex 1 presents a project Gantt chart that includes a summary of Component 1 activities.

In addition to the completion and submission of the Operational Audit reports and Performance Improvement Action Plans, as directed by USAID the PDIP team drafted and negotiated agreements with each of the eight DISCOs. The agreements were designed to ensure institutional buy-in to proposed PDIP interventions and projects for each DISCO. The DISCO Boards of Directors have passed resolutions authorizing their Chief Executive Officers (CEOs) to sign the agreements. They were to also to be endorsed by USAID and MWP. Recently, USAID has advised that these agreements will be supplanted by collaboration arrangements signed directly between each DISCO and USAID. This new collaborative arrangement document is currently in development.

Component 2 will focus on five key performance areas (KPA) that include DISCO sustainability, governance improvement, revenue enhancement, technical and non-technical loss reduction, and capacity building and training. The PDIP team will accomplish Component 2 goals by execution of the performance improvement projects and interventions identified in Performance Improvement Action Plans, under the collaboration arrangements that will be signed with each participating DISCO. Performance improvements will be measured by pre- and post-project assessments that illustrate loss levels, revenue collection efficiencies, and other pre-defined quantitative indicators of DISCO financial and technical performance.

Component 2 will focus on the final design and implementation of performance improvement projects (PIPs), training, and general interventions that will form the primary output of PDIP. The PIPs span a number of key interventions that were identified during the operational audit including:

- Technical and non-technical loss reduction strategies for both urban and rural DISCO subdivisions
- Design and implementation of modern commercial management systems for the DISCOs including a Customer Information System (CIS) to modernize customer information, billing, collection, work order, and other commercial processes
- Introduction of automated meter reading technology for feeders at the substation, distribution transformers, and high end customers such as large industrial consumers
- Optimization of rural feeders to include reduction of feeder lengths, introduction of more appropriate distribution voltages, and deployment of capacitors for power factor correction for pumping/ tubewell loads
- Introduction of compact medium voltage conductor/cable for very highly congested urban electric distribution applications
- Compact and low loss transformers
- Equipment for improvement of operational efficiency, among other technical interventions

Improvements for governance and financial performance projects include board training and revision of board policies, revision of accounting and audit manuals, and revision of the entire revenue collection cycle policies and procedures. The PDIP human resource team will also implement a number of performance improvement projects with DISCO partners to overhaul human resource policies, practices, and procedures, and will implement a human resource information system (HRIS) in at least one DISCO. The training program will offer a wide variety of training activities for the boards of directors, senior management, and staff, and will have a heavy emphasis on capacity and safety training for linemen. Annex 2 provides a summary of proposed performance improvement actions presented in a matrix format.

3. TASKS UNDER COMPONENT 1

The following Tasks from the Component 1 Task Order have been completed by PDIP :

TASK 1: INCEPTION MISSION, WORKING GROUP SESSION, USAID-MWP START-UP WORKSHOP

PDIP mobilized in September 2010, participated in the first Power Sector Reform workshop in October 2011, and then carried out introductory visits of all DISCOs. The PDIP Team presented the program at the November 11th-12th Second Power Sector Reform Workshop in Lahore. The November 2010 workshop served as the start-up workshop for PDIP. All eight DISCOs participated at this event, and it served as an excellent platform to introduce PDIP to not just the DISCOs, but to all stakeholders of the power sector.

TASK 2 & 3: ESTABLISH PDIP IMPLEMENTATION TASK FORCE AND ESTABLISH LOCATION OF TASK FORCE

PDIP has setup its offices at House # 23, Street 19, F-6/2, Islamabad, which is serving as the PDIP Secretariat. The PDIP Secretariat in Islamabad was established in October 2010, and has served as the location for the PDIP Implementation Task Force.

TASK 4 & 5: OPERATIONAL AUDIT AND DEVELOP COMPREHENSIVE PERFORMANCE IMPROVEMENT ACTION PLAN FOR 8 DISCOS

The PDIP Team finalized the operational audit methodology in November 2011 and then carried out the operational audits of all eight DISCOs in the period November 2011 to January 2012. The PDIP team visited each DISCO, and spent between 3-5 days at each location, and carried out detailed assessment in the key functional areas of Engineering, Finance, Commercial & Billing, Human Resources, and Communications & Outreach. The PDIP Team then prepared Operational Audit Reports, and based on the results given in these reports, prepared the Performance Improvement Action Plans for each DISCO. The Operational Audit Reports, and Performance Improvement Action Plans were approved by USAID in April 2011. Detailed review of specific action plan activities is continuing with the DISCOs under Component 2 to insure understanding between DISCO and PDIP on the specifics of planned improvement projects.

TASK 6: DEVELOP ACTION PLANS FOR MWP

In parallel, a team of PDIP senior advisors was requested to be provided and mobilized in the MWP offices to provide assistance to the MWP in November, 2010. This team worked with the MWP to develop an MWP Action Plan for reform of the MWP. This is now complete, and a supporting PDIP Action Plan for the Component 2 support PDIP's team will provide to assist the MWP to accomplish the Action Plan reforms is in final preparation stages.

TASK 7: ANALYZE COST OF SERVICE AND TARIFF DESIGN

The PDIP Team carried out a Cost of Service & Tariff Design exercise to examine the current rate-making process, review the tariff estimation practices at eight DISCOs, determine the cost of service for various consumer categories of each DISCO, and design a cost-reflective tariff. The activities performed in this part of PDIP during component 1 focused on situational analysis and were primarily diagnostic in nature. Detailed calculation of DISCO-wise and category-wise cost of service as well as determination of cost-reflective tariffs are being undertaken during Component 2 of the program.

TASK 8: LEGAL AND POLICY REVIEW OF DISCOS AND NEPRA

PDIP has prepared specific reports on the legal and policy review of DISCOs and National Electric Power Regulatory Authority (NEPRA), which include:

- Submission of a factual report on the present governance of and planned changes in the governance of DISCOs including the roles of MWP, NEPRA, Boards of Directors of DISCOs.
- Submission of draft reports on the review of DISCOs and NEPRA.
- A comprehensive report on current revenue management, policies, and practices including the roles of the DISCOs and banks in the policies and practices.
- Action Plan development for assistance to NEPRA was put on hold by USAID and the hold is still in force in Component 2.

TASK 9: LEAD THE TASK FORCE IN THE IDENTIFICATION AND REVIEW OF EXISTING PERFORMANCE AGREEMENTS

PDIP prepared a comprehensive report on review of existing performance agreements of each DISCO submitted to USAID in February 2011, and this was approved by USAID in July 2011. The report included the purpose and role of the Performance Contracts, the parties to the contract, performance indices, contract terms and conditions, observation and recommendations for performance indices, enforceability issues, etc.

TASK 10 & TASK 11: HUMAN RESOURCE DEVELOPMENT AND CHANGE MANAGEMENT

PDIP undertook detailed assessment of the Human Resources functions in detail during the Operational Audits carried out under Task 4, and highlighted the areas for improvement in the Operational Audit Reports under Task 5. PDIP is also preparing a comprehensive Human Resources Report encompassing all the findings from the Operational Audits. Additionally, PDIP has prepared a separate report on a Change Management-Focused Human Resource Improvement Strategy. Both these deliverables are currently under peer review, and it is envisioned that this will be finalized and submitted to USAID under Component 2 in August 2011.

TASK 12: REDUCE OPPORTUNITY FOR THEFT, CORRUPTION

The Performance Improvement Action Plans propose specific performance improvement projects, which will reduce the opportunities for theft, and this will be undertaken under Component 2.

TASK 13: DESIGN AND CONCLUDE MEMORANDA OF UNDERSTANDING

PDIP has developed memoranda of understanding entitled Partnership Agreements for all DISCOs and obtained approving resolutions from all DISCO Boards of Directors, authorizing their respective CEOs to sign. USAID has recently decided to enter into these Agreements directly with the DISCOs and is developing "USAID-DISCO Agreements." It is envisioned that these will be signed under Component 2 in August 2011.

TASK 14 & 15: DEVELOP SECURITY PLAN FOR COMPONENT 2 AND DEVELOP PROPOSAL FOR COMPONENT 2

The PDIP Team developed the Security Plan under Component 1 and submitted the Component 2 Proposal in March 2011. The Component 2 Task Order was authorized by USAID on March 30, 2011.

TASK 16: PROVIDE A TWO-WAY UTILITY PARTNERSHIP PROGRAM FOR CAPACITY-BUILDING ACTIVITIES

This Task has been shifted to Component 2 to be finalized after the memoranda of understanding in Task 13 is finalized and has been executed.

4. TASKS UNDER COMPONENT 2

The following sections describe the 10 tasks that will be undertaken for Component 2.

TASK 1: TRAIN AND MENTOR DISCO BOARD OF DIRECTORS

The MWP dissolved the Boards of Directors (BoDs) for all DISCOs in November 2010. In February 2011 it announced new BoDs composed of private and public sector professionals with enhanced local representation. By redefining the selection process, composition, and mandate for the BoDs, MWP intended to enhance DISCO independence, introduce a higher level of business and management capacity, and foster a higher level of independent decision making among the new BoDs.

To support this process, PDIP initiated a training program for newly appointed board members in March 2011. PSRWG has thereafter assumed the responsibility to provide ongoing training and guidance to the BoDs. Board training activities initiated during Component 1 implementation will continue through the end of calendar year (CY) 2011, and thereafter board support will continue as a mentoring activity. Future training activities have been designed to present increasingly specialized information to board members, focusing specifically on issues pertaining to governance of electric distribution utilities. Training segments have been designed to provide an orientation to the electric utility business, characteristics of independent yet transparent good governance, director duties and obligations, and the challenges faced by the DISCOs and other Pakistan power sector agencies.

Deliverables: Training events and reports summarizing the training events.

TASK 2: DEVELOP DISCO BOARD POLICIES AND PROCEDURES MANUAL

While board training is essential to prepare new board members for the role and duties of an electric distribution utility director, it is equally important to draft a new board policy and procedure manual to provide ongoing guidance for present and future board actions. A revised board manual will provide more clarity regarding board powers, limitations, and decision-making processes. It will clarify the role of the CEO in DISCO management, administration, and sound operations, and the role of the board with respect to oversight of the CEO, and reporting requirements to the Government of Pakistan. The PDIP team will prepare a draft of board policies and procedures by the end of CY 2011 to be presented to all DISCO boards of directors for review and comments. The PDIP team will revise the manual based upon feedback from the board members and the perceived needs that arise during the course of providing support to boards via the mentoring process.

Deliverables: Policy and procedures manuals for DISCO boards of directors.

TASK 3: EVALUATE CHANGES TO IMPROVE DISCO ORGANIZATION STRUCTURE

A key finding of the operational audit process was that the present organizational structure of DISCOs results in operational inefficiencies that must be corrected to ensure improved operational and institutional performance. Towards this end, the human resources team will implement an activity to review and revise the organizational structure of a typical DISCO. This task will be performed with the active collaboration of selected DISCO senior managers. It will include preparing position descriptions that describe the obligations, qualifications, responsibilities, and reporting requirements for each position within the DISCO. The position descriptions will refer to revised human resource policies that are applicable to the respective positions. The position descriptions will also include guidelines for annual performance assessments. The terms of compensation and benefits will also be addressed. Related activities will include an independent compensation analysis to determine fair market values for all positions within the DISCOs, an evaluation of health and life insurance programs for DISCO employees, and an evaluation of how to sell the changes of the organization structure to DISCO management and employees. The organizational assessment will begin in

October-November 2011. The process of evaluating organizational changes required to meet DISCO business management needs as well as to comply with regulatory demands will take approximately nine months, while implementation of the changes may require an additional six months.

Deliverable: Revised DISCO organization chart, position descriptions, and description of authorities and responsibilities for senior positions.

TASK 4: PERFORM ALLOCATED COST OF SERVICE STUDY

PDIP will conduct a comprehensive allocated cost of service study (CoSS) that will provide the data required to evaluate and recommend a revised tariff schedule for all tariff categories. The study will evaluate the true cost of service for each tariff category, allocating general, administrative, commercial, engineering, and operational costs to each category in line with the results of the allocation methodology employed. The methodology will follow NEPRA guidelines while being informed by best practice rate-making techniques employed in regulatory environments noted for objectivity and equity.

The tariff evaluation exercise will ideally be performed with a team that includes representatives from several DISCOs. The results of the study, including the methodology, financial models, and associated evaluation worksheets, as well as ancillary studies (if any) will be shared with DISCO tariff specialists as part of a training/technical assistance effort for the DISCOs.

A model will be designed to specifically address data management patterns employed by the DISCOs and thus facilitate rate case presentations to NEPRA as one output of this process. The PDIP cost of service team will evaluate the weighted average cost of capital (WACC), document the methodology DISCOs use, and demonstrate the importance of evaluating the WACC for future DISCO investments.

The methodology and the results will be shared with NEPRA and MWP to illustrate the divergent values of the notified and actual tariffs. The goal will be to plan an eventual return from a system of subsidized tariffs to one that dramatically reduces or eliminates subsidies as well as giving clear price signals with incentives to consume electricity efficiently and switch demand from peak to off-peak periods.

Deliverable: Cost of service study and rate case presentation submission for a selected DISCO.

TASK 5: DOCUMENT ERP PROCESS FOR DISCOS

Enterprise Resource Planning (ERP) is a standard operating tool for well managed, modern electric utilities. Implementation of ERP systems is, however, a complex process that requires careful planning including:

- An objective assessment of the enterprise's ability to implement the ERP
- An evaluation of the modules that will be employed for the first phase of ERP implementation
- An evaluation of the business processes that will need to be mapped in preparation for ERP implementation
- An evaluation of the IT infrastructure that will be needed for implementation
- A definition of the conversion process that will be followed

Towards this end, the PDIP ERP team will develop an ERP implementation guideline that will assist the DISCOs to prepare for the ERP implementation process. Several DISCOs are moving quickly towards ERP implementation, but have loosely defined plans regarding how to manage the ERP implementation process. Implementation of ERP will provide significant benefits to DISCOs, including greatly improved capacity to evaluate and resolve non-technical losses and to increase revenue recovery.

The ERP implementation guideline will present a roadmap for the ERP implementation process for all DISCOs. It will help DISCOs identify key barriers and capacity building needs; present a description of the

modules that should be considered for early implementation, and suggest those that can be added thereafter; and map key business processes common to all DISCOs.

Deliverable: ERP implementation guideline.

TASK 6: IMPLEMENTATION OF LOSS REDUCTION / DISTRIBUTION SYSTEM OPTIMIZATION PROJECTS

PDIP will implement a number of engineering and operations performance improvement projects that showcase theft reduction, technical and non-technical loss reduction, feeder optimization, low voltage power factor improvement strategies, and introduction of specialized distribution infrastructure for highly congested urban construction. These projects have several common characteristics: they will be implemented at the subdivision level in respective DISCOs where there are nominally high overall losses; they will be preceded by conducting GIS mapping of all high tension (HT) circuits and selected low tension (LT) circuits, they will include a comprehensive consumer census for the subdivision in question, and the data will be employed to model feeders and laterals to evaluate loss levels for the purpose of changes that are required to the distribution system.

Loss reduction/feeder optimization projects will introduce automated meter reading (AMR) technology on all outgoing feeders and distribution transformers in selected subdivisions. AMR will enable the DISCOs to adopt energy accounting principles for feeder circuits and to identify sources of theft and energy losses in the respective feeder circuits. In addition, the loss reduction projects will include introduction of smaller and more efficient distribution transformers, extension of HT circuits as a means of reducing secondary (LT) network, multiplex secondary to reduce vulnerability to theft, and improved service drops and replacement of inefficient electro-mechanical meters with modern electronic meters.

The loss reduction/feeder optimization projects will be designed and managed by the PDIP engineering team, who will be supported by DISCO engineers seconded to the PDIP team. The engineering team will define all specifications, supervise material and services procurement, will oversee the installation process and post-construction, and will define and thereafter oversee the data collection and analysis process.

Implementation of the loss reduction and distribution optimization projects will occur over roughly a two-year period, beginning with mapping and modeling of the distribution systems from May through December 2011. Procurement will begin in July 2011 and should result in delivery of goods by early 2012. The construction period will be intervention-specific and may take from four to six months for each project. Post-construction, PDIP engineering team members will manage the data collection and evaluation of benefits for each project. The Gantt chart in Annex 2 presents a summary of the estimated implementation period for all projects.

To support implementation of future DISCO loss reduction/distribution system optimization projects, PDIP will sponsor an expansion planning project that will strengthen DISCO engineering planning and analysis capabilities. This project will focus on demonstrating the value of system planning by forming an engineering working group comprised of engineers from each participating DISCO that will initially support the loss reduction projects described above, and thereafter work on a previously selected DISCO to serve as a training facility and a model for other DISCOs. The engineering team will begin with mapping the HT and LT circuits for an entire circle, develop a load forecast for the circle, and then complete an engineering expansion plan that will evaluate investment needs to reduce circle losses and improve quality of service. Having gained experience on the loss reduction demonstration projects, the engineering team will apply the knowledge to generate and evaluate engineering models through the guidance of the PDIP engineering planning expert.

Deliverables: Individual project maps, project design, and procurement lists; final design and construction of changes to electric distribution systems.

TASK 7: HUMAN RESOURCES MANAGEMENT INITIATIVES

The operational audits have shown that all the DISCOs suffer from human resource management challenges. DISCOs typically rely on manual record keeping, lack clear position descriptions, employ outdated performance evaluation systems that lack goal setting and objective performance evaluation, and follow government basic pay scale structures.

PDIP will implement a number of human resource performance improvement interventions that will include:

1. Design of a human resource information management system. (HRMIS)
2. Evaluation and modification of the organizational structure in at least one DISCO to reorient operations along functional lines (see Task 3).
3. Development of revised position descriptions, definition of authorities and responsibilities for each DISCO work unit.
4. Development of a DISCO-wide performance management system.
5. Upgrading of Regional and Circle Training Centers in each DISCO.
6. Instituting new initiatives for lineman training and lineman apprenticeship program.
7. Implementation of a Change Management Program, across all the DISCOs, including Utility Exchange Program.

Training activities will include development of lineman skills development and safety training programs; skills enhancement for DISCO mid-level and senior management; basic training for information technology and communications, to include network and internet server management; commercial management improvement training; training to implement updated accounting and internal auditing functions; engineering planning training; and various courses to introduce advance metering technology and other hardware interventions.

The human resource and training initiatives will be implemented at all DISCOs, although some human resource interventions such as the human resource information system and the DISCO reorganization projects will be implemented at one or at most two DISCOs.

Deliverables: Training course curricula, training workshops, course evaluations, human resource system policies and procedures; DISCO organization chart with position descriptions and structure of authorities; DISCO HR policies and procedures manual.

TASK 8: IMPROVE COMMERCIAL MANAGEMENT PRACTICES

One of the principal concerns with regard to DISCO efficacy is the ability of DISCO commercial offices to effectively manage the revenue recovery process of service installation and disconnection, meter reading, data transfer, billing, and collection. Most of the PDIP performance improvement projects will include improvements in commercial practices and procedures, in some cases focusing on implementation of automation of manual processes, such as implementation of Customer Information Systems, and in others, improvements in the manual processes themselves. While the DISCOs have manual work practices that should result in seamless data collection, billing and collection processes, these processes have in many cases not been followed with the level of discipline and integrity that is required. Therefore, the PDIP commercial team will develop supplemental checks, balances, and selected modifications in the commercial practices to ensure verifiable and improved commercial processes at all DISCOs.

CIS implementation will be undertaken at two DISCOs and will be supported by a concerted team effort to design and install a robust digital commercial management system. The implementation period will require a significant effort, but will provide a significant higher level of commercial control than would otherwise be possible without the CIS. The CIS will be implemented in concert with a reorganization of the commercial department, introduction of advanced metering, replacement of all older, electro-mechanical revenue meters,

and use of handheld meter reading devices. This effort will be undertaken at the subdivision level in both DISCOs.

In addition, to address the difference between the cost of service and the prevailing tariffs, PDIP will carry out a cost of service study for one DISCO, and then disseminate the results to the remaining DISCOs, which will provide a basis for tariff rationalization resulting in revenue enhancement and subsidy reduction. Moreover, PDIP will embark on measures to improve financial health of the DISCOs by implementing Receivable Recovery Project in DISCOs where the outstanding receivable are the highest amongst all the DISCOs. A third party collection agency will be engaged to collect outstanding dues. This will improve the cash flow for the weaker DISCOs and will improve its commercial performance.

Deliverables: These will include implementation of CIS in two DISCOs, including software, hardware, training, and capacity building and improvement of manual commercial procedures in the selected DISCOs.

TASK 9: IMPROVE CUSTOMER RELATIONS THROUGH COMMUNICATIONS AND OUTREACH

The DISCOs experience significant challenges in effective communication with their consumers, as well as with the community as a whole. As a group, they lack communication expertise and an appreciation for the necessity of a well-designed communication program designed to promote good will and community relations within the DISCO service territory.

Effective communication media and technology today depends upon a number of conventional and emerging community media. Social media, cell phone text messages, websites, as well as more conventional print and audio media are extremely important means of communicating with the public. The process of defining how best to communicate with customers is dependent upon the nature of the message, but also on the demographic of the audience for which the messages are targeted. Conventional print, television, and radio modalities are still effective, but should not be considered the only means for effective communications.

In addition to communication media, messaging and modalities, DISCOs will need considerable improvement in their ability to effectively brand themselves and their product. The DISCOs are quite often confused with WAPDA, the Ministry of Water and Power, and with the generic brand of the Government of Pakistan.

PDIP will design a communication program that is geared to improve, expand, and modernize DISCO communication programs and institutional capacities. The technical assistance programs will develop cross-cutting training and technical assistance products that suit all eight DISCOs, as well as customized programs that are targeted for specific DISCOs and their communication requirements. PDIP will also design and implement a pilot project to roll out an internet portal with a DISCO-specific web presence to publicize current events, special program information, load shedding information, construction notices, and other key messages that might affect consumer business decision and livelihood patterns. This will also enable the DISCO to improve on the dissemination of tenders and recruitment notices.

Additionally, PDIP will undertake specific performance improvement projects, which will be geared to improve the internal communications in the targeted DISCOs. This includes setting up an intranet and portal, which is bound to result in greater IT penetration, extensive use of email, replacement of legacy filing, and paper movement system.

Deliverables: Consumer awareness kits; DISCO-specific communication projects; internet and internet portals.

TASK 10: IMPLEMENTATION OF PERFORMANCE IMPROVEMENT PROJECTS

Through performance improvement projects, PDIP will demonstrate the means by which DISCOs can achieve loss reduction, power quality improvements, revenue enhancement, process improvements, and

human resource management effectiveness. Due to the breadth of performance improvements that are desired, performance improvement demonstration projects will cover a broad scope.

Performance improvement projects can be categorized by the objectives they are intended to serve. The following presents a synopsis of each of the categories of demonstration projects.

Loss reduction projects as described in Task 6 above will be implemented at a number of DISCOs. They will include:

- Introduction of advanced metering technologies for high-end consumers
- Feeders on distribution transformers
- Replacement of electromechanical revenue meters; redesign and rehabilitation of selected LT circuits
- Introduction of specialized conductor for highly congested urban neighborhoods
- Redesign and rehabilitation of rural HT circuits that are subject to high voltage drop and high reactive power characteristics

These projects will address both technical and non-technical loss reduction challenges. They will also directly address DISCO revenue improvement needs. These projects are referred to as theft reduction, rural feeder optimization, congested area strategies, and power factor correction for tubewell pumps in the performance improvement project descriptions.

Improvement of commercial practices and procedures as described in Task 8 above will be undertaken to (1) redefine selected manual practices that affect revenue recovery, and (2) begin the process of automation of commercial practices. Commercial practices – including meter installation, meter reading, data transfer from meter log sheets to billing data base, bill delivery and collection – are currently done manually. A review of the practices reveals that the commercial policies and procedures are well-defined and should result in high revenue recovery, but the execution of the procedures does not reach the level of proficiency and integrity required. For this reason, the methods for quality control of the commercial practices will be redefined to include management relationships. Automation of commercial work practices will be accomplished in two DISCOs through implementation of a Customer Information System and reengineering of the entire commercial management framework. Other commercial improvements will include improved metering and meter reading systems; reduction of receivables, and implementation of an allocated cost of service study.

Financial management performance improvement projects will focus on the following important interventions. As explained in the Task 5 description, the PDIP team will document the process required to prepare for ERP implementation in an effort to streamline the lengthy and complex process of introducing enterprise information management systems in the DISCOs. In addition, the team will redefine the internal audit function to include reporting requirements as a means of enhancing transparency and due diligence for DISCO governance and management. The finance team will also draft a revised accounting manual to update accounting practices in preparation for ERP implementation, since ERP systems require certain accounting practices specific to ERP functionality.

Change management and human resource improvement projects as described in Task 7 above focus on the human interface within the DISCOs, including:

- Introduction of human resource information systems
- Performance management systems
- Organizational restructuring

- Management skills enhancement
- A wide variety of training programs

The training programs are not demonstration projects; rather, they are meant to be directly integrated into DISCO training programs.

Communications and outreach projects as described in Task 9 above will focus specifically on building capacity through a “learning by doing” approach to implement several communication program elements in two DISCOs. As will be the case with all demonstration projects, the process and results will be shared by all DISCOs participating with the PDIP project team.

For each of the performance improvement projects, PDIP will follow a multi-step process. The steps will include:

1. **Preparation and approval of project design documents.** Project design documents are what the name implies – documents that define the scope, cost, specific activities required to successfully complete the project, challenges, and expected results of each project. The project design documents will be used to ensure that each project activity has been carefully vetted by the PDIP team, and that PDIP management is fully informed of how each project will be implemented, and is aware of the risks and challenges, together with mitigation measures that will be taken by the project team.
2. **Preliminary design.** For engineering projects, this process will consist of mapping, engineering analysis, and preliminary design of the engineering interventions that will be undertaken. The preliminary design process is quite important to assist the team to prepare the bill of materials that will be required for each project.
3. **Procurement.** Procurement of high efficiency transformers, meters, metering systems, capacitors, conductor, and other materials is a long lead-time process and therefore will be performed as early as possible in the project implementation process. The PDIP team will engage in a two-step procurement process, the first step beginning in May 2011 to procure high value, long-lead time items, and a second stage after all design activities have been completed. This will allow construction activities to begin earlier than if procurement were staged later in the implementation process.
4. **Final design, procurement of construction services.** Upon completion of the mapping process, the PDIP engineering team will engage in final engineering design of each engineering demonstration project. The design process will result in definition of a set of construction specifications that will be used to solicit proposals from local construction companies. The local construction companies will be pre-qualified after engaging in a training program, and bids will be solicited based upon the engineering design specifications.
5. **Data collection and performance monitoring.** Each project design document will identify key performance indicators that will be used to measure the effectiveness of the improvement measures undertaken for each respective performance improvement project. The PDIP team members will thereafter determine how the specific data fields will be collected for performance monitoring purposes, as well as how the data collection and analysis process will be administered in collaboration with DISCO collaborating parties. The data and key performance indicators will be monitored on a schedule that is defined by the PDIP monitoring and evaluation plan.

Table 1 below provides a summary of the performance improvement projects by DISCO and by performance improvement category. Note that each DISCO will benefit from performance improvement projects and interventions of each performance improvement category.

Table 1: Summary of PDIP performance improvement projects

DISCO	Loss Reduction	Revenue Enhancement	Financial Management	Human Resource & Change Management	Communications & Outreach
FESCO	Theft Reduction, including Outage Reduction	Customer Information System (CIS), Cost of Service Study (CoSS)	Accounting & Audit Manual, ERP Preparation	Upgrade RTC & CTC, Lineman training, Lineman Apprenticeship, Utility Exchange Program	Consumer Awareness Kits
GEPCO	Congested area strategy, including Outage Reduction	CoSS*	Accounting & Audit Manual, ERP Preparation	Upgrade RTC & CTC, Lineman training, Lineman Apprenticeship, Utility Exchange Program	Consumer Awareness Kits
HESCO	Anti-Theft, including Outage Reduction	Receivable reduction + Customer Information System (CIS), CoSS*	Accounting & Audit Manual, ERP Preparation	Upgrade RTC & CTC, Lineman training, Lineman Apprenticeship, Performance Based Evaluation System, Utility Exchange Program	Consumer Awareness Kits
IESCO	Theft Reduction, including Outage Reduction	Prepaid Metering, CoSS*	Accounting & Audit Manual, ERP Preparation	Upgrade RTC & CTC, Lineman training, Lineman Apprenticeship, HRIS, Utility Exchange Program	Integrated Communications and Outreach Department, Consumer Awareness Kits
LESCO	Congested area strategy, including Outage Reduction	AMR at Common Delivery Points, CoSS*	Accounting & Audit Manual, ERP Preparation	Upgrade RTC & CTC, Lineman training, Lineman Apprenticeship, organization structure study, Utility Exchange Program	Consumer Awareness Kits
MEPCO	Rural Feeder Optimization, including Outage Reduction	Receivable reduction, CoSS*	Accounting & Audit Manual, ERP Preparation	Upgrade RTC & CTC, Lineman training, Line Apprenticeship, organization structure study, Utility Exchange Program	Integrated Communications and Outreach Department
PESCO	Anti-Theft, including Outage Reduction	Receivable Reduction, COOP Setup in TESCO, CoSS*	Accounting & Audit Manual, ERP Preparation	Upgrade RTC & CTC, Lineman training, Line Apprenticeship, Utility Exchange Program	Fully integrated intranet & portal, Consumer Awareness Kits
QESCO	PF Correction for Tubewell Consumers	CoSS*	Accounting & Audit Manual, ERP Preparation	Upgrade RTC & CTC, Lineman training, Line Apprenticeship, Utility Exchange Program	Fully integrated intranet & portal, Consumer Awareness Kits

*CoSS: Carried out at one DISCO; capacity building and training at the remaining seven DISCOs.

ESTABLISH JOINT PDIP IMPLEMENTATION TASK FORCE

One of the primary objectives of PDIP is to build capacity in the electric power distribution utilities in Pakistan. Towards this end, PDIP will convene a formal Joint PDIP Implementation Task Force to ensure seamless coordination between policy-setting activities at the Ministry of Water and Power; PDIP project design and implementation activities; and DISCO demonstration projects, training events, and performance improvement interventions. The Task Force will be headed by the PDIP COP who will serve as manager of the Task Force and shall be staffed by PDIP team members together with seconded DISCO team members.

Upon signature of the USAID-DISCO agreements, PDIP will form the PDIP Joint Implementation Task Force. The Task Force will review all major PDIP activities and project implementation milestones, functioning as a decision making mechanism to ensure all principals are kept abreast of progress, challenges, and major project events.

SUPPORT TO MINISTRY OF WATER & POWER

The Government of Pakistan launched a power sector reform process in 2010 that preceded the initiation of PDIP activities. Shortly after the PDIP team mobilized, the MWP made a request to USAID to provide an advisory team at the Ministry. PDIP was instructed by USAID to contribute expertise in electric power distribution, change management, energy planning, and legal affairs to this effort. Together with experts from other USAID projects, the members of this advisory body formed the MWP Power Sector Reform Working Group that continues to provide support to the MWP.

In addition to assisting MWP staff in performing power sector analysis and policy support activities, the Power Sector Reform Working Group drafted an action plan to define the specific activities that would be undertaken during the course of PDIP implementation to build capacity within the MWP, and to play an active role in the reform program on behalf of the MWP. The MWP action plan elements include:

1. **Governance.** The PSRWG will review power sector enabling legislation and make recommendations to modify the Electricity Act and secondary legislation to improve institutional governance and functionality of power sector institutions.
2. **Power sector reform.** The principal activity for the PSRWG will be to assist in the rational close of PEPCO, reallocating former PEPCO responsibilities to other institutions participating in the power sector.
3. **Strengthening the MWP.** In addition to installation of IT infrastructure, the PSRWG will assist in drafting position descriptions, provision of technical assistance and mentoring to MWP key staff, and develop a forward-looking power sector policy. This will include a more effective communication strategy and plan for the MWP
4. **DISCO governance.** As described in Task 1 above, the PSRWG will design and offer training and capacity building for DISCO boards of directors.

SUPPORT ON LARGE-SCALE FARA PROJECTS

USAID may offer financial support to the Government of Pakistan through a number of mechanisms, one of which is referred to as Fixed Amount Reimbursement Agreements (FARA), which can provide grants to the recipient country by USAID on a reimbursement basis. The PDIP scope of work includes a requirement to identify and evaluate potential FARA projects that could be financed by USAID. The scope requires that PDIP identify and perform due diligence for one FARA project by July 31, 2011 and three additional projects by August 31, 2011.

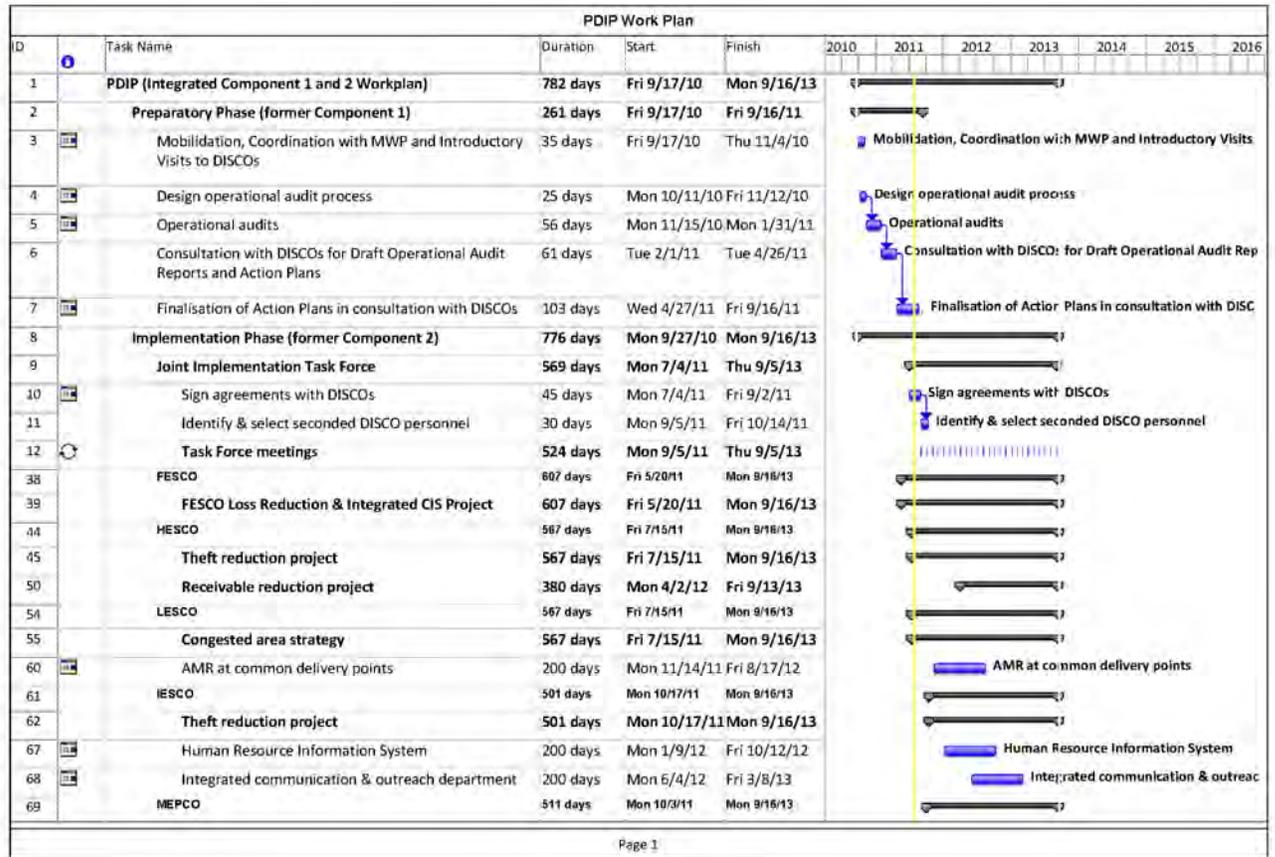
The Gantt chart included as Annex 2 of this document presents the life of project schedule for all demonstration projects, DISCO interventions, and other PDIP activities.

ANNEX I. OVERVIEW OF PDIP OBJECTIVES, CHALLENGES AND APPROACH

Objectives/Targets	Challenges	Approach
Greatly improved DISCO governance and management	Board of directors lack independence and autonomy Lack of management expertise undercuts organization, performance Insufficient autonomy for lower-level managers to take decisions on their own; lack of incentives to improve organizational performance Intense interference by public legislators in the day to day running of the DISCOs	Develop Performance Improvement Action plan with the MWP to document measures taken to increase board autonomy and responsibility for DISCO performance improvement. Provide newly appointed board members on-going training and support for orientation, guidance and information to empower/facilitate improved decision making. Develop a board policy and procedure manual oriented towards operating as independent, autonomous bodies focused on supporting long-term profitability and sustainability. Partner with DISCOs to reorganize and operate sustainably, developing position descriptions and defining authorities and responsibilities. Empower upper and mid-level managers to take decisions based on performance rather than politics and ensure that they are held responsible.
Improve Governance Creation of the legal and political space required for DISCOs to be able to operate in commercially rational manner	Without institutionalizing authority for DISCO management to enforce current performance agreements with NEPRA, local buy-in and sustainability will be limited Interference by public legislators in the day to day running of the DISCOs	Work with MWP to define the MWP-DISCO relationship through the board of directors. Assist in drafting necessary legislation to enable DISCOs independence. BODs to be empowered to protect DISCO staff from external interference and political pressures. Work with MWP in updating the Pakistan Electricity Act, to enable DISCOs to effectively pursue electricity theft.
Improve Governance Establishment of full-cost recovery tariffs	Subsidized tariffs undermine efficiency, financial viability. Circular debt as DISCOs cannot recover their costs, cannot make payments to generators	Work with MWP and NEPRA to revise the tariff-setting methodology and specifically to limit lifeline tariffs to the segment of the economy that requires it. Develop allocated cost of service study with at least one DISCO. Continue working with DISCOs to complete data collection for cost of service studies for each DISCO.
Increase Revenue Introduce prepaid and smart meters, other technologies which can provide strong performance improvement	Existing end user meter fleet is predominantly electromechanical Substation metering is outdated, or not effectively used	AMR metering to be installed on distribution feeders and transformers in sub divisions selected for the performance improvement projects to quantify technical and non-technical losses, promote energy accounting and to develop anti-theft methodology to be used by all DISCOs. Demonstration intervention on prepaid metering to evaluate the potential for wider scale rollout.
Reduce Losses Substantial improvement of Human Resource Management including the introduction of performance-based incentives	Lack of progressive corporate culture, with staff unclear about reporting requirements Lack of transparent hiring process Compensation system makes no distinction between performers and non performers DISCO staff is underpaid, but DISCOs are overstaffed Outdated training programs Lack of training infrastructure	Specific performance improvement interventions to address all areas of human resource development, including lineman training, RTC upgrading, evaluation of organizational structure, job descriptions coupled with compensation analysis, establishing a performance management system and a fully integrated Human Resource Information System (HRIS) and a long term lineman apprenticeship system. Carry out organizational assessment project to illustrate the benefits of reengineering, developing new position descriptions, identifying core competencies, conducting a compensation study, and implementing new human resource policies and procedures to clarify roles, responsibilities, and levels of authority.

Objectives/Targets	Challenges	Approach
<p>Reduce Losses</p> <p>Substantial reductions in technical and non-technical energy losses including reduction in energy theft and power factor optimization</p>	<p>Non-technical losses allow meter readers, others to supplement meager salaries</p> <p>Electricity customers steal power, do not pay bills, use power inefficiently</p> <p>Reducing technical losses requires significant investment</p>	<p>Performance improvement projects focusing on reduction of technical and non technical losses. These will consist of GIS mapping of HT/LT networks and power flow analysis to segregate technical and non-technical losses.</p> <p>A range of technologies, including transformer metering, multiplex, 33kv, others, will be used in demonstrations to reduce losses.</p> <p>Upgraded commercial procedures, including hand held meter reading, AMR, Radio frequency (RF)-enabled meters and a fully integrated CIS will be used in the demonstration interventions.</p> <p>Use these interventions to demonstrate in financial terms, performance of investments related to technical and non-technical loss reduction.</p>
<p>Increase Revenue</p> <p>Improvement in energy and power factor metering at points of purchase, during flows through network, and end-user sales (initially on large customers)</p>	<p>Outdated, ill-maintained equipment causes outages, allows for ease of theft</p> <p>Lack of system-wide metering allows for undetected, untraceable theft</p>	<p>Performance improvement projects specifically focusing on AMR at Common Delivery Points (CDPs), meter up gradation (including AMR, electronic, etc.).</p> <p>Demonstrations to install LT capacitors at transformer locations and tubewell consumers.</p>
<p>Increase Revenue</p> <p>Improvement in billings, collections, and revenue management</p>	<p>Weaknesses in current billing system allow for individual staff to benefit financially, and they are thus strongly opposed to improvements</p> <p>Commercial function is currently reporting to Operations in the field</p>	<p>Performance improvement projects focusing on demonstrating how commercial functions need to be separated from the operations in the sub divisions.</p> <p>Independent Customer Information System, which will handle billing and collections.</p> <p>ERP Implementations specifically targeted to improve CIS and revenue management.</p>
<p>Increase Revenue</p> <p>Improvements in customer service to be service-oriented and customer-needs focused including reduced planned and unplanned outages and voltage fluctuations.</p>	<p>Lack of customer centric approach</p> <p>PR department not fully equipped to handle communication and outreach activities</p>	<p>All consumer focused performance improvement projects have a dedicated communications and outreach component.</p> <p>Specific performance improvement projects set up to assist DISCOs in branding, image building, development of tools and information kits for effective communications and outreach, theft reduction programs.</p>
<p>Increase Revenue</p> <p>Elimination of dependence on and need for GOP subsidies</p>	<p>Existing tariff not leading to full cost recovery</p> <p>Subsidies do not establish sustainable basis for DISCOs, regressively burden the needy</p> <p>DISCO technical losses exacerbate the problem</p>	<p>Cost of service study linked to consumer classes.</p> <p>Partner with the MVP to develop pricing structure tiered by customer class.</p> <p>Engineering and commercial demonstration projects will reduce technical and non technical losses, thereby reducing the subsidy burden on GOP.</p>

ANNEX 2. LIFE OF PROJECT SCHEDULE



PDIP Work Plan											
ID	Task Name	Duration	Start	Finish	2010	2011	2012	2013	2014	2015	2016
70	Rural feeder optimization project	500 days	Mon 10/17/11	Fri 9/13/13							
75	Receivable reduction project	470 days	Mon 10/3/11	Fri 7/19/13							
79	Integrated Communication & Outreach Office	336 days	Mon 6/4/12	Mon 9/16/13							
84	PESCO	511 days	Mon 10/3/11	Mon 9/16/13							
85	Theft reduction project	466 days	Mon 12/5/11	Mon 9/16/13							
90	Receivable reduction project	400 days	Thu 3/1/12	Wed 9/11/13							
94	Integrated internet portal & outreach	190 days	Mon 1/16/12	Fri 10/5/12							
99	FATA RE Cooperative feasibility study	300 days	Mon 10/3/11	Fri 11/23/12							
103	QESCO	445 days	Mon 1/2/12	Fri 9/13/13							
104	Rural feeder optimization PF correction	445 days	Mon 1/2/12	Fri 9/13/13							
109	Integrated internet portal & outreach	130 days	Fri 6/1/12	Thu 11/29/12							
113	GEPCO	501 days	Mon 10/17/11	Mon 9/16/13							
114	Congested area strategy	501 days	Mon 10/17/11	Mon 9/16/13							
119	DISCO-Wide Interventions	775 days	Mon 9/27/10	Mon 9/16/13							
120	Allocated cost of service study	400 days	Mon 9/5/11	Fri 3/15/13							
126	ERP Documentation	218 days	Mon 10/3/11	Wed 8/1/12							
133	Lineman training program	511 days	Mon 10/3/11	Mon 9/16/13							
145	DISCO Engineering Planning	362 days	Mon 8/15/11	Tue 1/1/13							
153	HRIS	591 days	Mon 9/27/10	Mon 12/31/12							
160	Organizational Structure Reassessment	173 days	Thu 9/1/11	Mon 4/30/12							
164	Upgrade RTC & CTC	348 days	Thu 9/1/11	Mon 12/31/12							
168	Utility Exchange Program	530 days	Thu 9/1/11	Wed 9/11/13							
172	Performance Based Evaluation System	173 days	Thu 9/1/11	Mon 4/30/12							

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