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October 2015
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Pakistan’s Power Distribution Companies (DISCOs) and Their Profiles (Fiscal Year 2015)

**Peshawar Electric Supply Company (PESCO)**
- Serves the province of Khyber Pakhtunkhwa
- 2.9 million consumers
- Peak demand 2,718 MW (megawatt)
- Security and law and order issues
- 42.6% aggregate technical and commercial (AT&C) loss, mainly due to high transmission and distribution losses (34.8%)

**Islamabad Electric Supply Company (IESCO)**
- Serves Islamabad, northern Punjab, some of Azad Jammu and Kashmir
- 2.4 million consumers
- Peak demand 2,206 MW
- Consumer base: Mostly government consumers
- 17.6% AT&C loss.

**Tribal Electric Supply Company (TESCO)**
- Serves the Federally Administered Tribal Areas (FATA’s)
- 0.4 million consumers
- Peak demand 379 MW
- Relatively new, licensed in 2013
- Security and law and order issues
- 40.1% AT&C loss

**Lahore Electric Supply Company (LESCO)**
- Serves eastern part of Punjab
- 3.9 million consumers
- Peak demand 5,034 MW
- Highest density service area
- 17.6% AT&C loss

**Multan Electric Power Company (MEPCO)**
- Serves southern Punjab
- Largest consumer base, 5 million consumer
- Peak demand 4,098 MW
- Supplies power to 25% of the country’s tubewells
- 14.9% AT&C loss

**Faisalabad Electric Supply Company (FESCO)**
- Serves central Punjab
- 3.4 million consumers
- Peak demand 3,062 MW
- Consumer base: Industrial, mostly textile factories
- 10.9% AT&C loss, 100% revenue collection

**Gujranwala Electric Power Company (GEPCO)**
- Serves northeastern Punjab
- 2.9 million consumers
- Peak demand 2,335 MW
- Consumer base: Steel industry and small fan factories
- 13.3% AT&C loss

**Islamabad Electric Supply Company (IESCO)**
- Serves Islamabad, northern Punjab, some of Azad Jammu and Kashmir
- 2.4 million consumers
- Peak demand 2,206 MW
- Consumer base: Mostly government consumers
- 17.6% AT&C loss.

**Quetta Electric Supply Company (QESCO)**
- Serves the province of Balochistan
- 0.5 million consumers
- Peak demand 1,468 MW
- 80% of load comes from tubewells
- Rural delivery and law and order issues
- 75% AT&C loss, 33% revenue collection

**Hyderabad Electric Supply Company (HESCO)**
- Serves southern part of Sindh
- 1.0 million consumers
- Peak demand 1,134 MW
- 43% AT&C loss

**Sukkur Electric Power Company (SEPCO)**
- Serves northern part of Sindh
- 0.7 million consumers
- Peak demand 1,252 MW
- Relatively new, licensed in 2011
- Inherited highest loss areas from HESCO
- 64.3% AT&C loss
The Power Distribution Program (PDP) is part of the assistance the Government of the United States provides to the Government of Pakistan through the United States Agency for International Development (USAID) to support the energy sector. This was a five-year (2010–2015) (USD) $218 million program. Launched in September 2010, this program was designed to facilitate improvements in Pakistan’s government-owned electric power DISCOs through interventions and projects addressing governance issues, technical and non-technical losses, and low revenue collection.

The main goal of PDP was to improve the commercial performance of the participating DISCOs through technology upgrades and improvements in processes, procedures, and practices, as well as training and capacity building. PDP also assisted the Ministry of Water and Power and the regulator—National Electric Power Regulatory Authority (NEPRA)—to improve power sector governance, the regulatory framework, and their operational capacity. PDP supported the Privatization Commission for moving closer towards the privatization of DISCOs.

Major areas of work:
• Strengthening governance and policy reforms
• Improving load management and operations
• Loss reduction and revenue improvement
• Training and capacity building and gender facilitation
• Communications and Consumer outreach

Since 2013, PDP activities focused on two DISCOs: PESCO delivering power to 2.9 million Consumers (23 million people) in the province of Khyber Pakhtunkhwa and MEPCO delivering power to 5 million Consumers (33 million people) in southern Punjab. These two companies are responsible for more than 38% of losses incurred by all the DISCOs. The improvements introduced by PDP have increased the revenues of DISCOs by approximately (USD) $400 million and have eliminated as much as (USD) $180 million in annual losses to Pakistan’s economy.

PROGRAM OVERVIEW

Through PDP, USAID:
• Increased the revenues of DISCOs by up to $400 million a year
• Eliminated up to 85% of unscheduled load shedding countrywide, reducing Pakistan’s economic losses by up to $180 million a year
• Reduced losses and demand by more than 200 megawatts—enough to continuously supply electricity to 400,000 homes
## Summary / Overview of PDP Interventions and Projects

<table>
<thead>
<tr>
<th>Area of Performance</th>
<th>Intervention / Project</th>
<th>Quantities (if applicable)</th>
<th>FESCO</th>
<th>GEPCO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengthening Governance and Policy Reforms and Financial Management Improvement</strong></td>
<td>Governance Support (Multiple Activities)</td>
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<td></td>
<td>Strategic Business Planning</td>
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<td>New Accounting and Internal Audit Manuals</td>
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<td>10-Year Financial Forecast Model</td>
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<td>ERP Implementation</td>
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<td>Cost of Service Study (CoSS)</td>
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<tr>
<td></td>
<td>Board Trainings</td>
<td></td>
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<tr>
<td><strong>Improving Load Management and Operations</strong></td>
<td>Load Data Monitoring and Control System</td>
<td>9,335 meters, 10 control centers</td>
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<tr>
<td></td>
<td>Modernization of Planning and Engineering Function</td>
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<td>Tools for Outage Reduction</td>
<td>10,000 devices</td>
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<td><strong>Loss Reduction and Revenue Improvement</strong></td>
<td>Introduction of Electronic Meter Reading Devices</td>
<td>1,450 devices</td>
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<td>Revenue Protection and Recovery Activities</td>
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<td>Consumer Information System</td>
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<td>Low Loss Transformers</td>
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<td>Advanced Metering System</td>
<td>71,200 Automatic Meter Reading (AMR) meters</td>
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<td>ABC Cabling</td>
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<tr>
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<td>Meter Replacement</td>
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<td>Capacitor Banks for High Tension Power lines, Voltage Regulators</td>
<td>125 capacitor banks +80 regulators</td>
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<td>Installing Capacitors on Tubewells</td>
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<td>Upgrades of Municipal Pumps</td>
<td>210 pumps in Islamabad &amp; Karachi</td>
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<td>Upgrades of Industrial Motors</td>
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<td>Linemen Tool Sets Provided</td>
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<td>Linemen Vehicles Provided</td>
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<td>Organizational Assessment and Restructuring</td>
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<td>Internships</td>
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<td>Information Technology (IT) Labs</td>
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<td>Utility Exchange Program</td>
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<td>Gender Equity Training</td>
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<td></td>
<td>Day Care Facility for Employee's Children</td>
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<tr>
<td></td>
<td>Rest Area for Women</td>
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<td>Improvements in Consumer Service Centers</td>
<td>82 centers</td>
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<td>Energy Conservation, Anti-Theft Campaigns</td>
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<td>Communications and Outreach Office Support</td>
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<td>Consumer Awareness Kits</td>
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</table>
PDP advisors worked with the Ministry of Water and Power, NEPRA, the Privatization Commission, and DISCOs to facilitate policy reforms and improvements in the sector’s governance to reduce the need for government subsidies, allow the sector entities to recover their costs, and improve the delivery of power to consumers.

Developed with PDP support:
- Circular Debt Report
- Sector Policy
- Code of Corporate Governance
- Amendments to the Electricity Act
- CPPA-G Operationalization

Support to Sector Oversight Institutions
PDP supported to the Ministry of Water and Power, NEPRA, and the Privatization Commission included the development of reports, preparation of guidelines and policies, training of employees and staff, and delivery of advisory services. Similarly, PDP assisted the Pakistan Engineering Council (PEC), a statutory body regulating the country’s engineering profession, to formulate and develop a national electric safety code.

One of the most important contributions to the sector has been the Circular Debt Report, which PDP developed in collaboration with other USAID partner programs. For the first time ever, this report defined and quantified the sources and magnitude of circular debt being generated in the power sector.
sector. Several of the recommendations have already been adopted by the government of Pakistan; for example, payment for an adequate operating subsidy to DISCOs, payment for the tariff differential subsidy on behalf of the DISCOs, settlement of the cases on fuel prices by the court, and timely fuel price adjustments. Additionally, generation companies now receive funding to restore the capacity of their plants and use technical studies to support their tariff applications.

Other PDP-supported documents include the 2013 Power Sector Policy, which has outlined policies for each part of the power sector; the Code of Corporate Governance for Public Sector Companies; Best Practices for the Adoption of the Regulatory Framework for Franchising and Distribution Services (prepared in 2014); and amendments to the Electricity Act.

PDP assisted the Ministry of Water and Power in setting up the Central Power Purchasing Agency Guarantee Limited (CPPA-G) to operate as an independent wholesale power purchasing agent between power generation companies (GENCOs) and DISCOs; to encourage the efficient, effective, and transparent settlement of power pool payments; and to promote a more competitive power market. PDP helped CPPA-G develop a business transfer agreement with the National Transmission and Dispatch Company (NTDC), market operator registration rules and commercial code, power procurement and agency agreements, and operating procedures. Similarly, PDP supported the development of a market structure and franchise model for NEPRA and DISCOs.

To improve the overall operations of the Ministry of Water and Power, PDP expanded the Ministry’s information technology (IT) infrastructure and trained the Ministry's staff to use it. Almost all of the Ministry's staff received desktop computers and related software from PDP along with a Web-based dashboard application that maintains information flow between the Ministry and DISCOs. Finally, PDP facilitated sector-level legal and regulatory due diligence processes to prepare for the privatization of DISCOs.

**Cost Reflective Tariff Determination**

A crucial factor in sustained profitability of any DISCO is the tariff—rate the company can charge its consumers for electricity. The current tariff structure cross-subsidizes electricity supply from one category to another and covers
only part of the costs that DISCOs incur. To enable DISCOs to recover their full cost of service, PDP facilitated the development of more effective methodologies for the determination of an Electricity End-User Tariff (both annual and multi-year) and the Cost of Service Study (CoSS). These methodologies pursue the goals of the 2014 National Tariff and Subsidy Policy and serve to determine both single and multi-year consumer tariffs.

CoSS alone is expected to increase cost recovery at DISCOs by approximately (USD) $63 million a year. CoSS tabulates the costs a utility incurs and then allocates these costs to different Consumer categories. By October 2015, CoSS was adopted by all DISCOs as a tool to develop tariff petitions.

While developing these methodologies, PDP identified and helped eliminate an anomaly in the calculations of one of the tariffs, resulting in a (USD) $42 million increase of the annual revenue for DISCOs. PDP also improved the methodology for calculating the Cost of Capital (allowed profit) at each DISCO. This methodology was adopted by NEPRA in early 2015 and will increase the revenue for DISCOs by approximately (USD) $78 million each year.

Governance

At the request of the Ministry of Water and Power, PDP developed performance contracts for DISCOs in 2014. Key performance indicators and monitoring mechanisms were established to track the overall performance of DISCOs. By 2015, all government-owned DISCOs had signed performance contracts with the Ministry. With PDP’s assistance, DISCOs developed their five-year Integrated Generation, Transmission, and Distribution Plans (IGTDPs) in 2014 and submitted them to NEPRA for approval. Implementation of these plans will optimize resource allocation and lead to savings in investments, loss reduction, and improved revenue.
PDP introduced business planning as a standard management tool for all DISCOs. PDP involved NEPRA in the delivery of workshops to DISCOs. Such collaboration ensured that NEPRA understands the role and process of business planning in the regulation of DISCOs. As a result, NEPRA instructed DISCOs to develop the Business Plan/Distribution Investment Plan (DIP) as the basis for their Fiscal Year 2015 petitions for annual or multi-year tariff petitions and budgets. PDP actively worked with MEPCO and PESCO to prepare a five-year strategic business plan for Fiscal Years 2016 to 2020. Earlier, PDP provided all the DISCOs with a 10-year financial forecast model to be integrated into the business plan. PDP also worked with all the DISCOs to develop new accounting manuals and new internal audit manuals to replace legacy manuals from the 1980s PDP also introduced risk-based audits.

For integrated automation of back office functions, PDP implemented enterprise resource planning (ERP) in both PESCO and MEPCO in the areas of finance, inventory management, and human resources (HR) and provided an ERP documentation manual. This will help the DISCO management to have access to timely and accurate information to monitor and reduce financial losses.
IMPROVING LOAD MANAGEMENT AND OPERATIONS

The Pakistan power sector is beset with a number of challenges, but most important is the supply demand gap that is covered by 6 to 12 hours of load shedding across the country. The most irritant aspect was the unscheduled load shedding, which was causing more economic losses and affecting and interrupting the general public’s normal life leading to widespread public unrest. At the request of the DISCOs, PDP addressed this issue by implementing the Load Data Improvement (LDI) project. As a result, unscheduled load shedding was drastically reduced.

PDP implemented a series of interventions that have made a significant impact on the power flow through the network, therefore improving the delivery of power to consumers.
**Automated Load Data Monitoring and Control System**

To improve the management of the power flow within the distribution system and reduce unscheduled load shedding, PDP modernized the monitoring and control system in the country’s distribution network. The intervention included the establishment of the Power Distribution Control Centers at the 10 DISCOs, establishment of the Network Operation Center at WAPDA House in Lahore, and the creation of access to real-time data on power flows for the National Power Control Center (NPCC) and the Regional Control Centers for the northern and southern parts of the country. Additionally, PDP installed 9,335 automatic meter reading (AMR) / smart meters in all 762 grid substations country-wide to transmit real-time data on loads in various parts of the power network to the control centers. This initiative significantly improved load management and helped eliminate as much as 85% of unscheduled load shedding since July 2013.

According to an audit conducted by two independent international consulting firms, the decreased instances of unscheduled load shedding have reduced Pakistan’s annual economic losses by as much as (USD) $180 million. Additionally, it has increased the power sector’s annual revenue by (USD) $62.3 million by diverting more power to DISCOs with low losses and better collection of revenue.

**Reduction in Unscheduled Load Shedding in 2012-2014**

![Timeline chart showing reduction in load shedding](chart.png)

Automation of control, July 7, 2013
To improve planning of the expansions and rehabilitation of the power network, PDP helped DISCOs modernize their P&E departments. P&E departments are responsible for developing power distribution network rehabilitation and expansion plans to optimize the power flow and cater for new connections based on load forecasts.

The first step in the activity was creating a Geographic Information System (GIS) database for the entire distribution network to prepare an accurate record of network configuration. To initiate the process, PDP helped develop GIS maps for one area of each DISCO, established a computer center at each DISCO, and supported processing of the data into a GIS database. Currently, DISCOs are mapping their networks on their own. By October 2015, over 38% of the country’s network was mapped using this technology. Additionally, PDP purchased and installed specialized power flow analysis software for all DISCOs. This software has significantly enhanced the ability of network planners to identify the most cost-effective ways to plan network expansions and upgrades based on technically sound solutions.

This new technology saves operational costs, enables DISCOs to properly manage loads on power lines and transformers, and improves the delivery of power to consumers.
Tools for Outage Reduction

The power distribution system reliability is critically important for both utilities and consumers. Due to the lack of sectionalizing devices in DISCOs distribution system, consumers located not in the vicinity of the area of the fault are also affected during outages. PDP introduced Outage Reduction Devices (ORD) to mitigate hardship and loss of business / production of consumers resulted due to unwarranted interruptions.

To demonstrate ways to reduce the number of Consumers affected by unwanted power outages in case of scheduled maintenance or line faults, PDP provided seven DISCOs—HESCO, FESCO, GEPCO, IESCO, LESCO, MEPCO, and PESCO—with equipment that isolates outage areas and speeds up detection of faults in the system. Approximately 10,000 devices including fault indicators and switches (equipment that isolates outage areas) were provided for installation at strategic locations of the distribution network. At least one of the DISCOs (GEPCO) has already started to replicate these improvements throughout its entire geographic jurisdiction at its own expense.
In FY 2015, AT&C losses in the distribution sector were 27%. In developed countries, losses do not exceed 10%.

One of the major reasons for poor power supply is extensive losses in the distribution system. Approximately half of the distribution losses are technical (i.e., losses incurred during the flow of power through the power lines and other infrastructure), while the remaining half are commercial losses caused by incorrect billing, the inability to collect billed amounts from consumers, and electricity theft. A 2012 study by PDP has suggested that if relatively efficient DISCOs could keep their losses below 10% and poor performing DISCOs to 15%, the system would save approximately $500 million a year.

PDP carried out a wide variety of interventions to help DISCOs reduce both commercial and technical losses in order to improve their revenues.
2.3 million consumers have their meters read using hand-held electronic devices.

Commercial Loss Reduction

To help DISCOs improve commercial losses, PDP worked to revise meter reading processes, enhance consumer billing, and discourage electricity theft.

Manual meter reading is highly prone to misreporting and errors. Typically, meter readers visit each consumer once a month and write down data from electricity meters into notebooks; recordings are then manually transferred into other paper-based ledgers for the production of bills. Oftentimes, meter readers simply copy data from corresponding months of the previous years or change recordings to favor some of the consumers. The resulting bills are very inaccurate, and many consumers either complain or refuse to pay the bills altogether, causing huge losses in revenues for DISCOs.

To improve the accuracy of electricity bills, PDP streamlined meter reading processes at MEPCO and PESCO and has introduced hand-held electronic meter reading devices in several areas covered by MEPCO, PESCO, and IESCO. The use of these devices alone has significantly reduced losses and improved consumer satisfaction and payment of bills, leading to increases in DISCO revenue.
Seeing the impact of this intervention, MEPCO and PESCO have begun adopting electronic meter reading devices throughout their geographic jurisdiction, and the Ministry of Water and Power instructed all DISCOs to follow this approach. PDP assisted MEPCO and PESCO to expand this activity to cover a total of 2.3 million consumers.

Additionally, PDP introduced various metering technologies. Over 210,000 meters were upgraded or replaced at MEPCO, PESCO, and several other DISCOs, including 71,200 Automatic Meter Reading (AMR) meters that send information from the consumer’s premises to the billing system automatically, eliminating the need for any manual processing. AMRs were installed for high-consumption consumers at MEPCO and PESCO.

In yet another effort, PDP helped MEPCO and PESCO design and install a state-of-the-art billing system called the Customer Information System (CIS). This system streamlined billing processes for 1.7 million (33% of all) MEPCO consumers and 2.9 million PESCO Consumers (100%). PDP support included analysis of the consumer databases at the two DISCOs, consumer registration, and transfer of the data into electronic databases, purchase and configuration of the new computer-based systems, and training of staff to operate these systems. By overhauling the way DISCOs conduct their business, the new system reduced operating costs, enhanced employee efficiency and productivity, and improved Consumer satisfaction.

Additionally, PDP helped design and broadcast mass media campaigns to discourage theft and promote energy conservation. One thousand kilometers (km) of aerial-insulated/bundled cable (ABC) was provided for installation in congested areas of Peshawar and Multan to mitigate power theft from the power lines and improve public safety. PDP trained teams of DISCO employees who are currently conducting prosecution of power theft cases, recovery and collection of arrears, and mobilization of communities against electricity theft at MEPCO and PESCO. As of June 2015, these teams have recovered (USD) $1.4 million in revenues for both DISCOs.

PDP also helped DISCOs identify and address an error in electricity charges for Time of Use consumers. These consumers were being under-billed due to an erroneous billing formula. Annually, this correction will add as much as (USD) $42 million to the DISCOs revenues.
Technical Loss Reduction

Technical losses are an inherent part of any distribution system; however, in most other countries, such losses are significantly lower due to higher investment in system planning, maintenance, and upgrades. To reduce technical losses, PDP promoted the use of new technologies and equipment in the power network as well as on the demand side.

To demonstrate loss reduction technologies, at MEPCO and PESCO, PDP installed 228 low loss and self-protected transformers for installation in congested areas. Additionally, PDP helped install 125 high-tension switched capacitors, 80 voltage regulators, and similar equipment on selected power lines to improve the management of reactive power and voltage on lengthy power lines. This project will reduce losses on the upgraded power lines by approximately 5%.

Capacitors are used to stabilize voltage and power flow through the power network and to reduce power losses.

Voltage Regulators are designed to automatically maintain a constant voltage level.

Transformers transform the electrical supply from one voltage to another.
Several activities focused on demand side management, which is considered to be the most cost-effective option in improving energy efficiency. PDP worked to improve the efficiency of two types of equipment: tubewell pumps and industrial motors.

Tubewell pumps account for about 12% of the total energy consumption in Pakistan. Due to low efficiency, these pumps cause huge technical losses, creating unnecessary demand for power. PDP provided more than 89,000 capacitors for installation on agricultural tubewells for consumers of MEPCO, FESCO, LESCO, PESCO, IESCO, HESCO, SEPCO, and QESCO. This reduced electricity demand by approximately 128 MW. Additionally, 210 inefficient municipal tubewell pumps were replaced in Islamabad and Karachi in 2012 and 2013.

Industrial motors, on the other hand, are responsible for 60% to 80% of the industrial power consumption in Pakistan. PDP replaced 1,539 inefficient motors and installed 749 variable speed drives on the industrial motors in the areas served by FESCO, IESCO, MEPCO, HESCO, LESCO, PESCO, and SEPCO, reducing industrial power consumption by approximately 12.5 MW.

**128 MW**
of electricity will be saved by 89,000 capacitors installed on agricultural tubewells

**12.5 MW**
saved by replacement of 1,539 inefficient industrial motors

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**Distribution Company Losses in 2014-2015**

![Graph showing distribution company losses in 2014-2015]
Programming of Automatic HT Voltage Regulator
TRAINING & CAPACITY BUILDING

Gaps in employee skills contribute to the sub-standard functioning of the power sector institutions and poor power supply to the Consumers. To eliminate these gaps, PDP conducted an extensive range of capacity-building programs at all DISCOs and at NEPRA. All training activities complemented the physical improvements to ensure that changes introduced by PDP are sustainable.

Most of the capacity-building activities used a three-tier model: (1) training of local staff in a classroom setting; (2) on-the-job training whereby trained staff used new skills in their work with support of PDP staff; and (3) staff used their newly learned skills mostly independently, while PDP experts

![Interactive training session for DISCOs](image-url)
provided occasional advice and monitored performance. In addition to training initiatives, PDP facilitated organizational restructuring at NEPRA, MEPCO, and PESCO to help them meet their business requirements and to promote organizational growth, staff retention, skills development, and enhance employee morale.

**Training Programs**

Through PDP programs, DISCO employees received training in all of the functional areas relevant to power distribution sector. Extensive attention was paid to IT skills to facilitate the automation processes. Several courses focused on the development of the female workforce, while internships encouraged young professionals to work in the power distribution sector.

In total, approximately 31,000 distribution sector employees received training during the lifespan of PDP in various management, leadership, and functional skills to lead, support, and sustain changes in the power distribution system.

A significant portion of the training program focused on linemen safety. Poorly trained and equipped line workers often damage equipment, increase technical losses, and risk their lives. Approximately 100 linemen die each year while performing their duties; in comparison, in the United States, linemen deaths do not exceed six per year. PDP and its trained trainers have trained more than 15,000 linemen (25% of the country’s linemen) on proper safety techniques and procedures related to meter installation.

Additionally, linemen at MEPCO and PESCO received sets of safety tools and 200 specialized vehicles with all necessary equipment to facilitate lineman work. To ensure a continuous focus and improvement on linemen training, senior and middle managers from all DISCOs were trained on proper verification and compliance of new safety procedures.

**Training Facilities**

PDP trained trainers, improved the curriculum, renovated premises, and supplied training aids, tools, and equipment to upgrade a total of 10 training centers at PESCO and MEPCO along with several other DISCOs training facilities. Additionally, eight computer labs were established at the Regional Training Centers of MEPCO, PESCO, GEPCO, LESCO, HESCO, and QESCO as well as at the headquarters of MEPCO and PESCO to facilitate transition to automated processes at DISCOs.
COMMUNICATIONS AND CONSUMER OUTREACH

To strengthen the ability of DISCOs to manage relationships with consumers, PDP worked to enhance their communications skills and outreach functions. DISCOs received support in the preparation of consumer outreach materials (documentaries, posters, leaflets, and similar items) on new connection procedures, submission of complaints, public safety, the consumer’s role in discouraging theft, and energy conservation. Additionally, PDP helped PESCO and MEPCO develop and run a series of weekly FM radio talk shows and energy conservation and anti-theft campaigns. At least 70,000 people increased their awareness of the power sector issues through direct outreach activities, and approximately 14 million people were reached through mass media campaigns, mostly in the areas served by PESCO and MEPCO, in 2010 through 2015.

In a related activity, PDP supported the transformation of several Consumer service centers at PESCO and MEPCO into one-window Consumer service facilities that address Consumer complaints and queries. Additionally, all the subdivision offices and their Consumer service counters in Multan and Peshawar, as well as Consumer service centers at FESCO, GEPCO, HESCO, and LESCO, were renovated to provide comfortable and appealing reception areas for consumers.
FOCUSED SUPPORT TO PESCO

PESCO was selected for more extensive PDP support in late 2012 due to the large gap between the power delivered and the costs recovered. With AT&C losses at 47.4% in 2012, PESCO incurred approximately $370 million in overall losses.

As a result of the collaboration with PDP, PESCO’s losses declined from 47.4% to 42.6%. This has enabled PESCO to add more than $100 million in the annual revenue. Additionally, for the first time in its history, PESCO’s revenue for the Fiscal Year 2014-2015 covered its operational costs.

PESCO serves the Khyber Pakhtunkhwa Province, a territory that borders the FATAs and Afghanistan. The province houses a large contingent of Afghan refugees as well as internally displaced persons from FATA, where the government of Pakistan is waging a war against terrorists. This makes PESCO operations highly susceptible to security and law and order issues.
PDP’s work at PESCO focused on (1) improving the accuracy of consumer bills and overall consumer services and (2) reducing theft and losses and increasing revenue. PESCO received extensive technical support, training, and an infusion of equipment and tools to improve its operations. PDP has also significantly improved the accuracy of its metering and billing processes through the introduction of the AMR meters, electronic meter reading devices, and similar interventions, reducing consumer complaints and increasing revenues.

To improve the overall functioning of the DISCO, PDP helped PESCO undergo organizational restructuring, overhaul the load management system and P&E functions, and adopt a fully automated ERP system for the financial, HR, and materials management functions. A state-of-the-art system was introduced to manage billing and Consumer care services for all of PESCO’s 2.9 million consumers. Additionally, PDP helped PESCO adopt the Cost of Service Model and IGTDP, design a five-year business plan, and revise tariff application processes. All these interventions will enable the company to sustain and scale up the changes introduced with PDP support.

Field activities were conducted in the high-loss areas of Peshawar City and its surroundings and focused on the reduction of losses and improvements in revenues.

To ensure the sustainability of the changes, PDP has trained more than 2,300 PESCO staff in key areas of work, renovated and upgraded PESCO’s Regional Training Center and four circle-level training centers, and conducted a wide number of other capacity-building activities.

**Equipment provided and installed in PESCO:**
- 120,000 quality meters
- 12,820 AMR meters
- Sets of lineman tools
- 100 linemen vehicles
- 2,400 capacitors for tubewells
- 3,200 outage reduction devices
- 78 completely self-protected transformers
- 400 km ABC

**Losses and Revenue Collection at PESCO in 2010-2015**

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue Collection</th>
<th>Aggregate Losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009/2010</td>
<td>85%</td>
<td>46.2%</td>
</tr>
<tr>
<td>2010/2011</td>
<td>82%</td>
<td>48.4%</td>
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<tr>
<td>2011/2012</td>
<td>83%</td>
<td>47.4%</td>
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<tr>
<td>2012/2013</td>
<td>85%</td>
<td>44.3%</td>
</tr>
<tr>
<td>2013/2014</td>
<td>86%</td>
<td>43.2%</td>
</tr>
<tr>
<td>2014/2015</td>
<td>88%</td>
<td>42.6%</td>
</tr>
</tbody>
</table>
FOCUSED SUPPORT TO MEPCO

MEPCO was selected as PDP’s second focus DISCO in December 2013 at the request of the Ministry of Water and Power. Since then, PDP assistance has enabled MEPCO to reduce its AT&C losses from 24% to 14.9% and to add more than $60 million in annual revenue. PDP worked to improve commercial, technical, and financial performance of MEPCO. Field activities focus on the Multan Circle, which covers Multan City and its immediate surroundings.

$60 million added to the annual revenue of MEPCO

| Progression of PDP Efforts to Improve Customer Billing Systems |
|--------------------------|-----------------|-----------------|-----------------|-----------------|
| **2011** | **2012** | **2013** | **2014** | **2015** |
| PDP begins development of the MEPCO CIS, Customer registration, and upgrades to Customer service centers. | PDP begins meter replacement and improvement in meter-reading processes. | PDP begins automation (e.g., smart meters, electronic reading devices). | PDP begins introduction of CIS at PESCO and MEPCO. | Transition to CIS for:  
  • 1.7 million Customers at MEPCO  
  • 2.9 million Customers at PESCO |
To strengthen the overall operations of MEPCO, PDP introduced a Cost of Service Model and the IGTDP, designed a five-year business plan, and revised tariff application processes. All these interventions will enable MEPCO to sustain and scale up the changes introduced with PDP's support.

Additionally, PDP installed various network upgrades in congested areas including introduction of single phase system and installation of aerial bundled cable to reduce theft and improve safety. PDP also facilitated organizational restructuring and introduced a new performance management system. PDP-led activities have improved the P&E function at the MEPCO headquarters and nine circle-level offices, whereby MEPCO has documented more than 50% of its infrastructure into a GIS mapping database and adopted specialized software to automate the analysis of the network performance, leading to substantial savings in resources needed for network expansion and rehabilitation.

Similarly, an upgraded load management system has enabled MEPCO to eliminate most of the unscheduled load shedding. PDP has also significantly improved the accuracy of its metering and billing processes through the introduction of the AMR meters, electronic meter reading devices, and similar interventions, reducing consumer complaints and increased revenues. Also with PDP's support, MEPCO automated its financial, HR, and materials management functions through introduction of a state-of-the-art ERP system and to improve billing for 1.7 million (33%) of all consumers through a CIS. To reduce energy loss, PDP increased the operating efficiency of more than 48,000 agricultural tubewells by the installation of capacitors, releasing demand and making more electrical power available to other MEPCO consumers.

To ensure the sustainability of these changes, PDP has trained more than 3,500 MEPCO staff in key areas of work, upgraded MEPCO’s Regional Training Center and four circle-level training facilities, and conducted a variety of capacity-building activities.

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**Equipment provided to MEPCO:**
- 42,100 AMR meters
- Sets of linemen tools
- 100 linemen vehicles
- 48,000 capacitors for tubewells
- 125 switched capacitor banks for selected power lines
- 1,260 outage reduction devices
- 150 low loss and completely self-protected transformers
- 80 voltage regulators
- 600 km of ABC
GENDER FACILITATION

In support of the government of Pakistan policies, PDP worked to increase gender awareness and equity in DISCOs and encourage an increase in the female workforce in these DISCOs. PDP’s gender strategy included Gender Equity Training for all managers and supervisors to facilitate the development of a DISCO gender strategy to reduce recruitment disparities and facilitate women’s entry into the DISCOs.

PDP worked with DISCOs to improve workplace environments and to develop policies that mandate and maintain basic requirements in all new facilities, such as at least one women-only washroom on work premises and Consumer service centers that provide a culturally sensitive environment for women clients. A model daycare center was established at MEPCO.

As a result of PDP efforts, gender equity courses became a permanent part of the training curriculum offered by seven DISCOs. To support adoption of the 2010 Government of Pakistan’s Act on Protection Against Harassment at the Workplace, PDP facilitated the formation of standing inquiry committees at all DISCOs and trained committee members on handling sexual harassment cases.
PDP established three state of the art Data Centre at Multan Electric Power Company, Peshawar Electric Supply Company and Power Information Technology Company, WAPDA House Lahore