



KABUL ELECTRICITY SERVICE IMPROVEMENT PROGRAM FINAL REPORT



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Kabul Electricity Service Improvement Program: KESIP Final Report

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Prepared for:
US Agency for International Development/Afghanistan

Prepared by:
Tetra Tech ES, Inc.
4601 North Fairfax Drive, Suite 601
Arlington, VA 22203 USA

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Foreword

The Kabul Electricity Distribution Improvement Program (KESIP), jointly sponsored by Afghanistan's national electricity company Da Afghanistan Breshna Sherkat (DABS) and the US Agency for International Development (USAID), was designed to help accelerate power distribution reforms in Afghanistan. KESIP's primary goal was to reduce commercial losses in power distribution in DABS' Kabul Electricity Directorate (KED); demonstrate best commercial and technological practices in order to improve consumer service, quality and reliability; and provide capacity building to DABS.

From June 2009 to March 2012, Tetra Tech was privileged to serve as the DABS-USAID implementing partner for the program. Our work had two parts: 1) advise DABS on the management of the company, and 2) lead the development of specific projects designed to improve efficiency at DABS. Tetra Tech provided technical assistance, advice and training to assist DABS in the management of KED's personnel and physical assets, and financial and commercial management within the Directorate. Tetra Tech also led the design of various systems to modernize DABS, procuring the necessary equipment and commodities for them, installing and implementing the systems, and providing training on them.

During this time, Tetra Tech served at DABS' side as a number of improvements were made in KED and the DABS headquarters. The DABS of today is nothing like it was when the project started – DABS is now functioning with a number of modern systems and procedures. These improvements have enabled DABS to substantially reduce losses in Kabul, improve the collection of revenues, and provide additional energy service to its customers in Kabul.

In addition to Tetra Tech, principal partners in the KESIP team were International Relief and Development, Manitoba Hydro International, Deloitte Consulting, and NET Group. All the members of the Tetra Tech team would like to express what a great honor it has been to have been part of the DABS-USAID KESIP project. We sincerely appreciate the opportunity to work together with Afghanistan's leading power sector professionals, and with USAID. We thank all of those at DABS and USAID whom we have served during this program.

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1 Program Objectives

The Kabul Electricity Service Improvement Program (KESIP) was USAID’s direct response to the high electricity and financial losses being experienced by the Kabul Electricity Directorate (KED, the largest power distribution unit of the national electric utility, DABS). Its high losses included a substantial percentage of the electricity supplied to Kabul’s electric distribution system, without payment for the cost of supply, a situation that was neither financially nor economically sustainable. When KESIP began in 2009, KED’s high losses were being (and still are) subsidized by the Ministry of Finance, with substantial direct and indirect support from the donor community.

The basic objectives of KESIP were to help DABS to:

- Reduce commercial and non-technical losses, enumerate and register customers, and improve revenue billing and collection efficiency in KED
- Design and implement a KED metering program including procurement and installation of meters, the creation of a meter testing and calibration lab, and improvements in meter reading operations
- Design, install and bring into operation a standard electric utility company information technology system, supporting financial, customer information, revenue billing, asset and human resources management
- Design new human resource systems; train staff in new work procedures, systems and methods; and establish and operate an appropriate line management supervision system for KED staff
- Improve the overall management of KED’s electricity distribution system through advisories and mentoring of DABS and KED management.

At the beginning of the project, DABS was the new vertically integrated national electric utility. It was incorporated in early 2008 pursuant to Afghanistan’s Law on Corporations and Limited Liability Companies and has adopted bylaws to govern its internal decision-making processes.

DABS’s basic mandate was to first receive the facilities and staff of the national power system operator DABM from the Ministry of Energy and Water (MEW) and then to operate and manage them on an efficient commercial basis. The transfer of facilities and staff from MEW to DABS, which occurred on September 30, 2009, was governed under a Comprehensive Agreement between DABS and relevant Ministries. The agreement authorized a transition period of nine months for DABS to assume full responsibility for the received power generation, transmission and distribution facilities and staff previously contained in DABM, including those of KED.

2 Program Activities

Under the KESIP program, Tetra Tech advisors supported DABS and KED directly from November 4, 2009 to March 15, 2012. This support ranged from mentoring and capacity building to the development of personal management skills. Advisories and mentoring continued throughout the project. This advisory support was a critical component to the success of DABS and KED providing for a gradual transition to commercial management, thus promoting the sustainability of USAID investments.

Tetra Tech supported DABS through the following work streams:

1. Revenue and Commercial Management
2. Electricity Delivery
3. Information and Communication Technology
4. Finance and Accounting
5. Purchasing and Procurement
6. Corporate Planning
7. Human Resources
8. Public Relations
9. Oversight of Kandahar Commercialization.

2.1 Revenue and Commercial Management

Under this work stream, Tetra Tech planned, designed and implemented/operationalized a program to complete the enumeration of KED customers into the original DABS Pooyesh electronic billing system and the validation of the records of those customers already enumerated. This program completed the update of the commercial database of DABS and KED, including a Geographic Information System (GIS). In addition, it supported the later implementation of a modern Customer Information System (CIS), the mPower system by Phoenix IT Solutions, which was procured and installed at DABS/KED by KESIP. The objectives were accomplished through the following activities:

1. **Commercial Management Advisory** – Provided advice and consultation to the senior management of DABS and KED on strategic and operational issues related to commercialization. This included the development of an operation and performance reporting and management communications process and reports.
2. **Operation and Maintenance Advisory** – Provided advice and consultation on distribution network management related to technical loss reduction.

3. **Enumeration and Regularization** – Provided the development of a customer database used to improve electricity revenues through accurate customer identification and account verification using GIS.
4. **Revenue Protection** – Provided strategy and development advice on establishing the Revenue Protection organization at DABS, which is now assisting with the reduction of electricity theft.
5. **Meter Services** – Provided strategy and development advice on establishing a Meter Services organization at DABS that is now providing testing, calibration and warehousing of revenue meters as well as oversight of large power user meters.
6. **Meter Reading** – Provided management oversight of the design and development of the organization at DABS, which is now focusing on large power users related to metering and revenue billing.
7. **Customer Accounts** – Provided management oversight in the migration of customer data and billing information from the existing and obsolete billing system at DABS to the new CIS.
8. **Customer Information Systems** – Provided the procurement and implementation of Phoenix mPower, a modern CIS system (including billing and collection modules) and supporting applications that are improving billing and revenue collection.
9. **Operations and Maintenance** – Provided strategy advice and the development of network maintenance scheduling applications and developed a Rapid Response organization in DABS related to reducing technical losses.

2.2 Electricity Delivery

Under this work stream Tetra Tech planned, designed, developed specifications; and procured and implemented a pilot program related to a bulk and customer metering system to measure the receipt, distribution and consumption of electricity in DABS/KED. This work included a laboratory to test, repair and calibrate customer revenue meters, which was an element of a larger program to update the commercial database of DABS and KED. In addition, strategic and advisory assistance was provided to DABS to address the critical need for the Northeast Power System's (NEPS) O&M and emergency restoration system to assure the delivery of high-quality, reliable, low-cost imported power to Kabul. These objectives were accomplished through the following activities:

1. **Bulk Metering Type 1** – Provided management oversight in the implementation of a pilot program related to bulk metering for substations and junction stations located in

KED's service territory. This initiative provided metering and communications interfaces to measure demand and energy into the KED distribution system.

2. **Transformer Metering Type 2** – Provided management oversight in the implementation of a pilot program related to transformer metering and circuit breaker installation for distribution transformers located within KED.
3. **Meter Testing and Calibration Bench** – Provided management oversight in the procurement, acceptance testing, and set up of an industry-standard meter testing and calibration bench. This activity included a training course and supporting materials.
4. **World Bank Meter Installation** – Provided management oversight on the installation of nearly 50,000 World Bank-funded customer revenue meters. The program also focused on the installation of several thousand three-phase meters associated with high-revenue commercial customers.
5. **Meter Procurement Advisory** – Provided advice and consulting on improving the KED meter procurement process including a review of specifications, procurement, acceptance, warehousing and inventory management processes.
6. **Tools Inventory and Maintenance Plan** – Provided advice and consulting on improving the KED asset management process as it relates to tool maintenance and inventory management. This included a review of inventory management processes, procedures and training.
7. **Provided strategic advisory support to DABS in structuring and implementing NEPS O&M and ERS.** This activity included donor coordination between the ADB and USAID.

2.3 Information and Communication Technology

Under this work stream Tetra Tech planned, designed, procured, installed and implemented/operationalized a modern utility information technology (IT) system required for electricity distribution. This activity included the implementation of both wide and local area networks (LAN/WAN), and disaster recovery systems that are supporting the implementation of the business management systems used by DABS/KED. Implementation included the training and certification of staff on related system and software.

1. **ERP Implementation** – Provided management oversight in the implementation of the MS Great Plains programs related to financial, human resources, and procurement management. This activity included application testing, training and user support of applications.

2. **LAN/ WAN** – Provided management oversight in the installation of both the wide and local area networks. This activity improved the overall data and communication transfer between DABS/KED locations, and provided for management oversight of operations.
3. **Training and Certification** – Provided advice, consultancies, and training for DABS/KED personnel on key IT equipment and systems management. This activity improved the capacity of DABS' IT personnel in the maintenance and management of key IT systems.

2.4 Finance and Accounting

Under this work stream Tetra Tech supported the DABS and KED finance and accounting organization with developing work processes, procedures and related supporting documentation related to data collection, financial analysis and production of financial documents. This was achieved by implementing MS Great Plains General Ledger modules at KED and DABS. In addition, changes to processes and procedures were developed in support of this implementation. These objectives were accomplished through the following activities:

1. **Financial and Accounting MS Great Plains** – Provided management oversight related to financial and accounting module implementation of the Great Plains suite of financial programs. This included training on related modules by a certified Great Plains instructor.
2. **Accounting Process Design** – Provided advice and consulting to design and develop accounting and financial processes and procedures in support of the MS Great Plains implementation. This activity included process mapping and procedure development and documentation, as well as associated training.
3. **Financial Statement Development** – Provided management oversight for a special accounting projects outsourcing initiative. Activities associated with this work stream were completed by a qualified accounting firm. This allowed DABS to focus on current accounting activities and not be burdened with having to address the current backlog of accounting projects and tasks.

2.5 Purchasing and Procurement

The primary requirement of this work stream was the procurement of items deemed necessary for DABS' success in becoming a commercial entity.

The equipment purchased ranged from modern IT and data systems (both hardware and software), to improved meters and metering equipment, as well as tools and vehicles to be

used by DABS staff. Additionally, improvements to DABS’ facilities allowed for additional usable space, more robust data security, greater protection of DABS’ assets, and improved customer service capabilities. The following table outlines the total procurements under KESIP in each of the main categories.

KESIP Procurement Summary

IT Equipment	\$ 6,093,040
Meters and distribution equipment	\$ 1,242,586
Tools / vehicles	\$ 2,562,918
DABS facilities	\$ 1,994,953
<u>GIS and other Services by Afghan firms</u>	<u>\$ 998,609</u>
Total	\$12,892,106

Improving the IT systems of DABS was a main priority of KESIP. Over the life of the project, key procurements included such equipment as computers, servers, switches, printers and photocopiers, equipment for DABS’ Customer Care Centers, and the installation of connectivity equipment to allow branches to communicate with the main billing and IT systems. Additionally, the implementation of the Customer Information System (CIS) has led to improvements in customer billing, collections, and service. Implementation and training on MS Great Plains software has allowed DABS to modernize its financial system.

Under the Electricity Delivery work stream, meters, transformers, and testing equipment were procured and installed. Additionally, KESIP improved meter testing facilities and built a laboratory to house and protect this equipment.

The vehicles purchased under KESIP are in use by a number of departments within KED and DABS, including Metering, IT, Customer Care, and Commercial Management. In addition to 40 pick-up trucks, 2 bucket trucks and 2 cranes were purchased to improve KED’s ability to respond to damaged equipment, as well as to install new equipment. New employee uniforms and tools were also procured, and employees were trained on tool use and care.

In addition to the procurement of commodities, KESIP provided the services of local experts to improve systems and services. Among the services provided was the development of a GIS system, improved financial management, and customer outreach and public relations initiatives.

2.6 Corporate Planning

Under this work stream, Tetra Tech supported DABS’s Senior Management Group and Corporate Planning Department in the initial development of both short- and long-term plans related to the supply, transmission and distribution of electricity. These activities were focused

on building management capacity at the senior levels of the company. The main services provided in this area included:

1. **DABS Corporate Plan** – Provided advice and consultation to the Corporate Planning Department on the development of plans related to capital and operating expenditures, supply/demand, integrated resource planning, risk analysis of scenarios and financial projections.
2. **Goals and Objectives Development** – Provided advice and consultation to DABS on the development of its corporate goals and objectives. This included the development of goals for the Generation, Transmission and Commercial units of DABS.
3. **SWOT Analysis of DABS** – Provided advice and consultation for the follow-up activities associated with the Breshna Summit workshop that was supported by KESIP. This activity supported analyses related to priority setting, target development, action planning and status reporting.
4. **Operations Staffing and Cost of Production Models** – Provided advice and consultation on the development of staffing needs and cost of production models. This included staffing analysis, resource requirements and asset valuation, along with development of supporting models.
5. **Donor Project Capital Funding Analysis** – Provided advice and consultation to DABS related to donor-funded capital and operating programs. This activity included integrated funding and project tracking models, and provided DABS with better coordination and management of donor-funded projects.
6. **Management Report and Scorecard Development** – Provided advice and consultation on the development of a “performance scorecard” related to key operational metrics of DABS. This scorecard provided DABS management a “dashboard view” of company operations.
7. **Financial Projections and Forecasts** – Provided advice and consultation to DABS corporate planners on the development of financial models for forecasting revenue requirements and operating expenditures.
8. **Development of Key Performance Indicators** – Provided advice and consultation on the development of the entire organization and department key performance indicators (KPIs) resulting from the corporate goals and objectives initiative. Development of the KPIs allowed for the development of the DABS Management Report and Scorecard.

2.7 Human Resources

Under this work stream Tetra Tech supported the DABS and KED Human Resources organization with developing human resource policies, processes and practices related to organizational design, human resource operations and human resource (HR) training. This was achieved by developing new HR policies that would enhance DABS' commercial viability. Included in this area was the development of the DABS' HR policy and supporting processes. In addition, this work stream developed related recruiting, staffing and placement tools. It also developed changes to processes and procedures in support of the policies' implementation. These objectives were accomplished through the following activities:

1. **DABS Human Resource Policy Manual** – Provided management oversight on the design and development of the DABS Human Resource Policy Manual which governs DABS and KED in administering employee-related practices and activities.
2. **Organization Design and Staffing Analysis** – Provided analysis and recommendations on the design of the commercial entity, including DABS HQ Operations and the KED operating division. This activity included conducting a department-focused needs and staffing analysis and recruiting strategy.
3. **Human Resource Process Development** – Provided management oversight and guidance in developing supporting processes and practices for recruitment and staffing, appraisal and performance monitoring, and employee record retention.
4. **Human Resource Training Needs Assessment** – Provided DABS management a comprehensive review of training needs and a current gap analysis, designed a training institution, and made recommendations for implementing the program.
5. **Human Resource Enterprise Training & Development** – Provided management oversight for developing and executing the DABS training organization. This included developing and implementing a computer training lab, developing special accounting training, and supporting the new IT and CIS systems with employee training.

2.8 Public Relations

Under this work stream Tetra Tech supported DABS and KED in the development of a Public Relations Department, including developing programs for Internal Communications and Employee Awareness, External Communication and Customer Awareness, and Targeted Communication and Community Outreach. This was achieved by designing, developing and enabling a new organization at DABS that is accountable for supporting the transformation and commercialization activities of DABS and KED. These objectives were accomplished through the following activities:

1. **Design and Development of Public Relations** – Provided management oversight related to the design and development of the DABS Public Relations Department. This included providing initial staffing, equipment and media funding to enable DABS to gain employee, government, public and customer trust associated with the organizational transformation and implementation of commercial practices.
2. **Internal Communications** – Provided management oversight with the design, development and implementation of an employee communication program, including supporting employee meetings, message boards, information videos, newsletters and special programs related to the DABS/KED commercialization.
3. **External Communications** – Provided management oversight on the design, development and implementation of an external communication program, including supporting press conferences and press releases, radio and television information messaging, government communications, and special customer programs related to DABS/KED commercialization.
4. **Targeted Communication** – Provided KED with management oversight of the design and development of targeted communications campaigns including designing brochures related to metering, billing and changes to customer policies and practices.

2.9 Oversight of Kandahar Commercialization

From December 2011 to March 2012, after the end of the USAID TO 22 Project, KESIP monitored the investments USAID made in the development, implementation and operationalization of commercial systems that supported DABS' electricity operations in Kandahar. During the TO 22 Project, a number of IT-related business systems were developed and operationalized. As TO 22 ended prior to KESIP's ending, USAID transferred responsibility to KESIP to provide oversight of these systems for the last few months. In addition, the KESIP project team mentored the DABS Kandahar management staff in commercialization best practices and supported DABS management reporting of commercial activities and performance.

3 Results

KESIP's activities were successful in achieving tangible, measurable results, and also created a sustainable model that can be expanded to DABS distribution units in other provinces.

During the time of KESIP, DABS achieved increased cash collections by nearly 60% (see Figure 1 and the table below), reduced losses by 12%, and improved system commercial efficiency by 20%.

Indicator	Year 1388	Year 1390	Change
Cumulative Cash Collection at year end	2.69 billion Afs	4.29 billion Afs	+ 59%
KED Aggregate Technical & Commercial Losses (AT&C), average over course of year	50%	38%	- 12%
Commercial efficiency ratio: Cash Collection/Energy Received, average over course of year	2.61 AFA/kWh	3.15 AFA/kWh	+ 20%

Figure 1: KED Cumulative Cash Collection

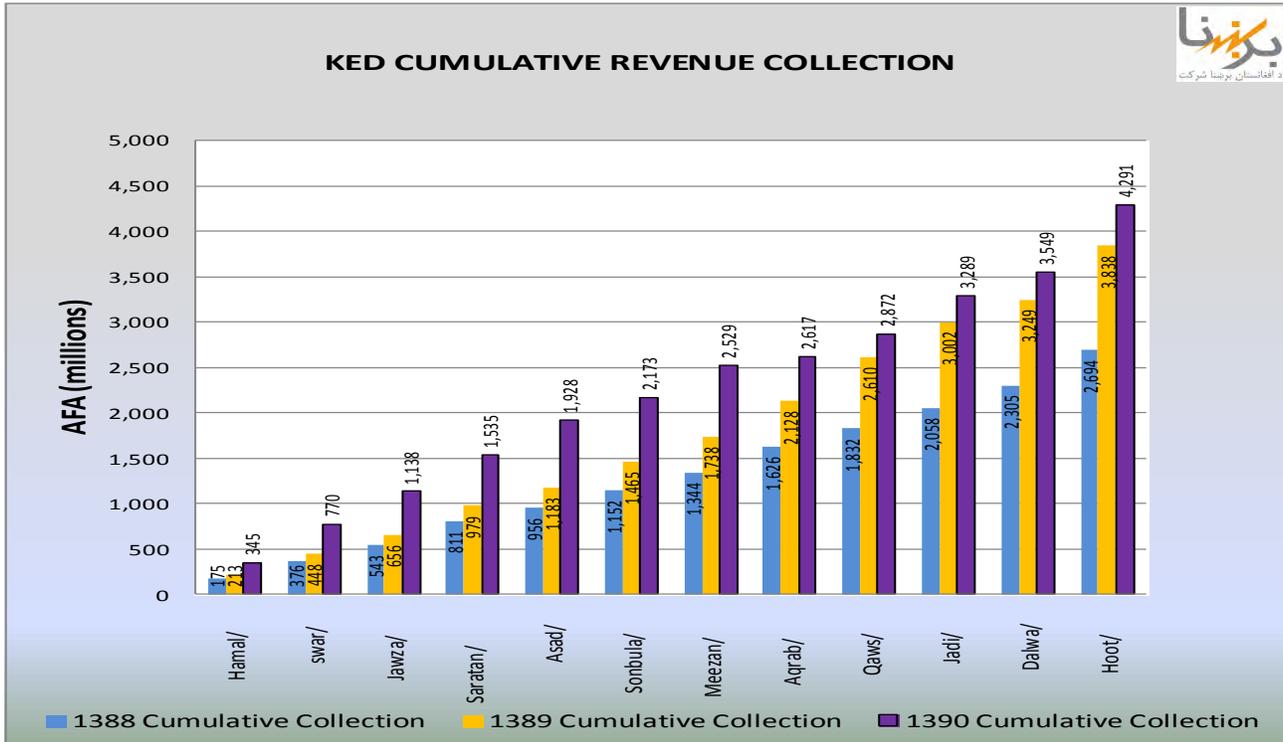


Figure 2: KED Energy Received per Cycle

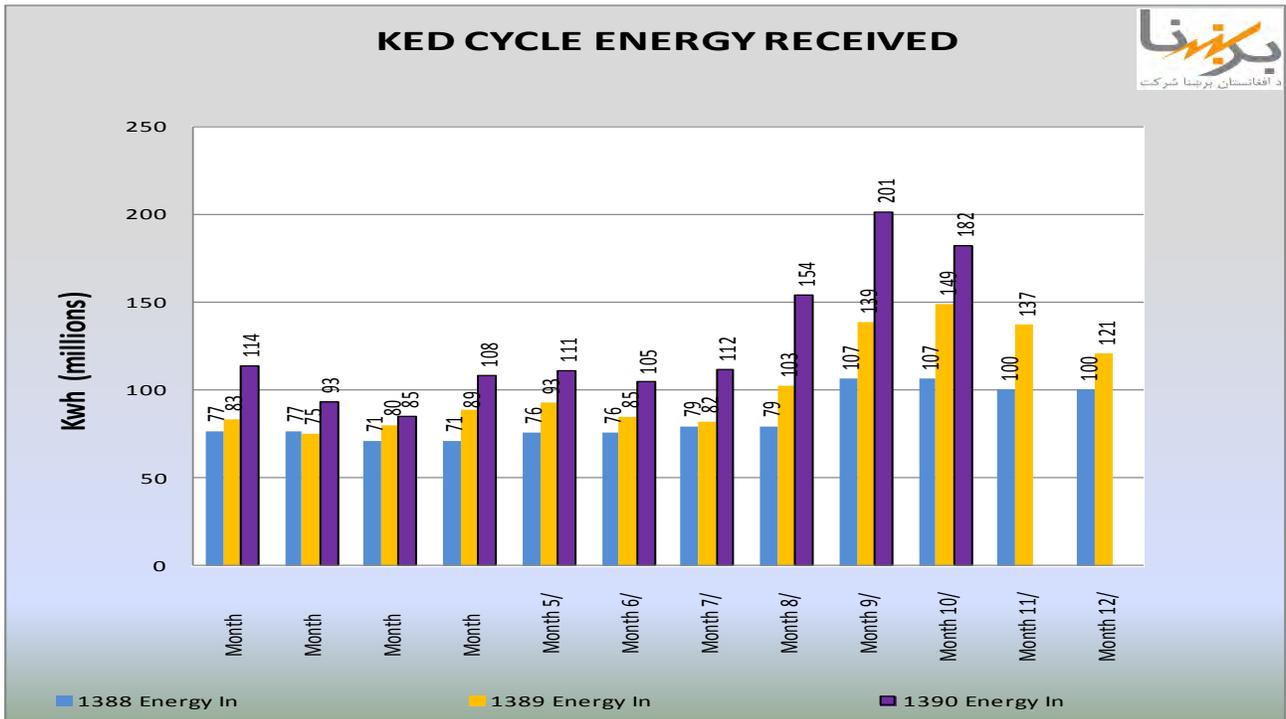


Figure 3: KED Cumulative Energy Received

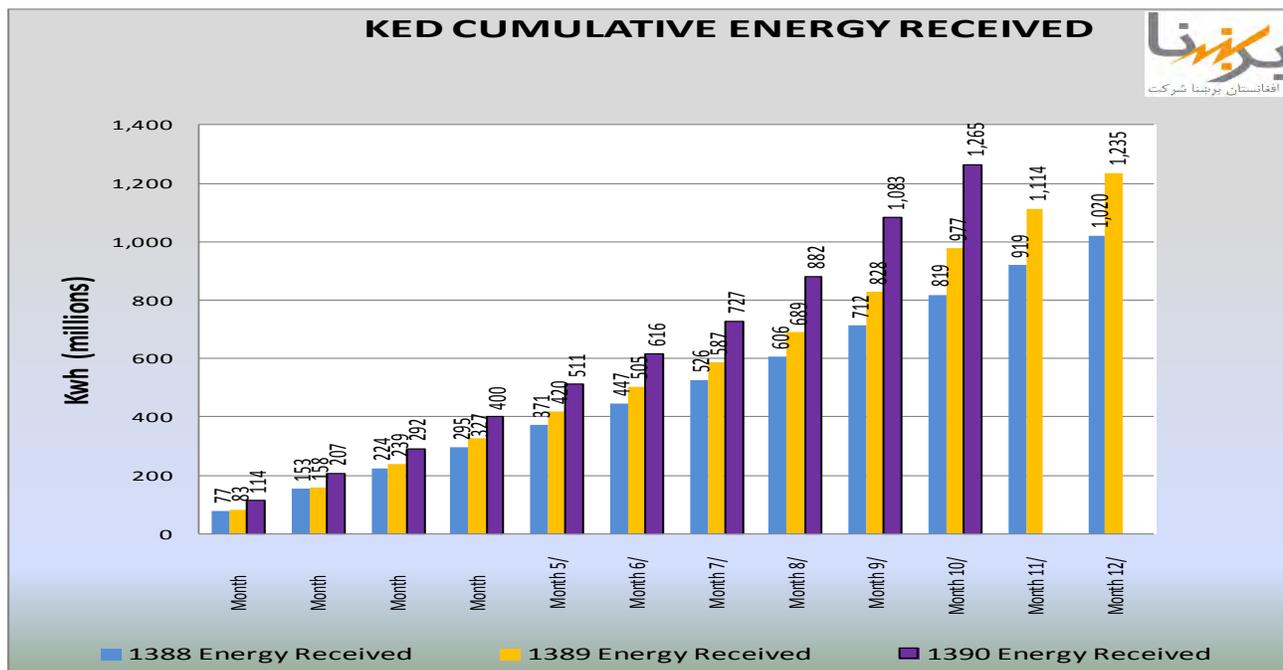


Figure 4: KED Energy Billed per Cycle

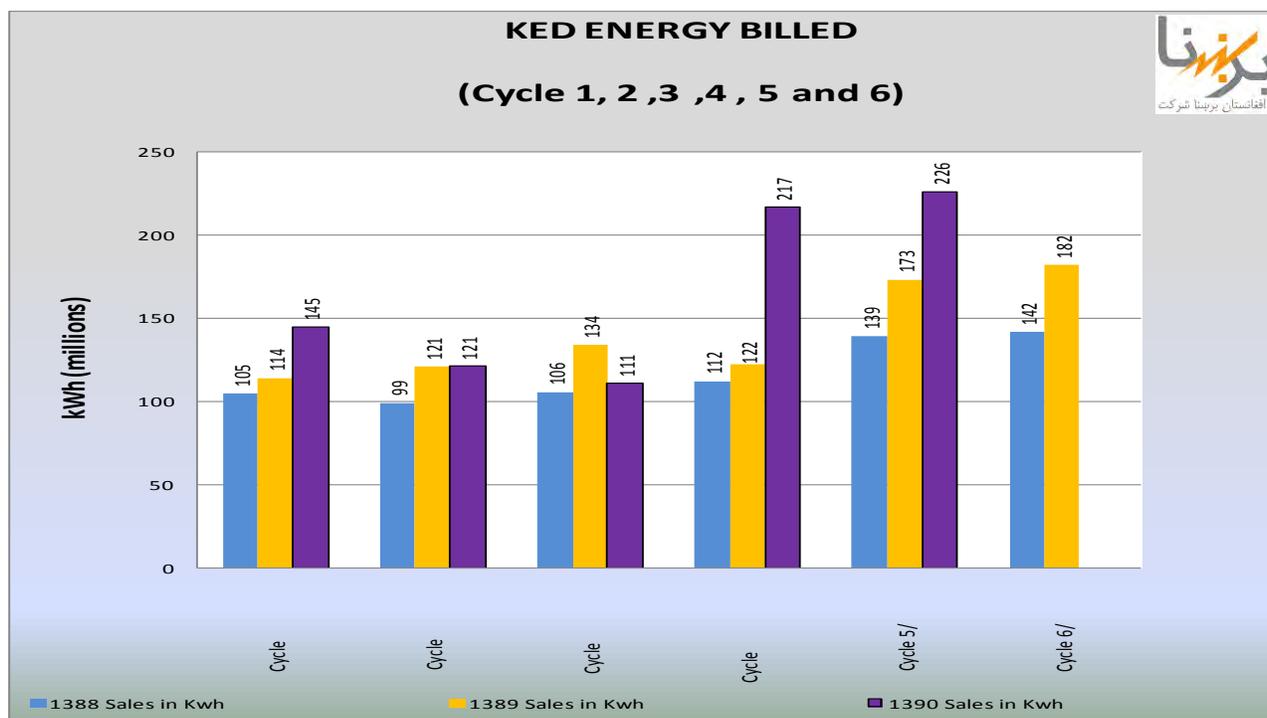


Figure 5: KED Cumulative Energy Billed

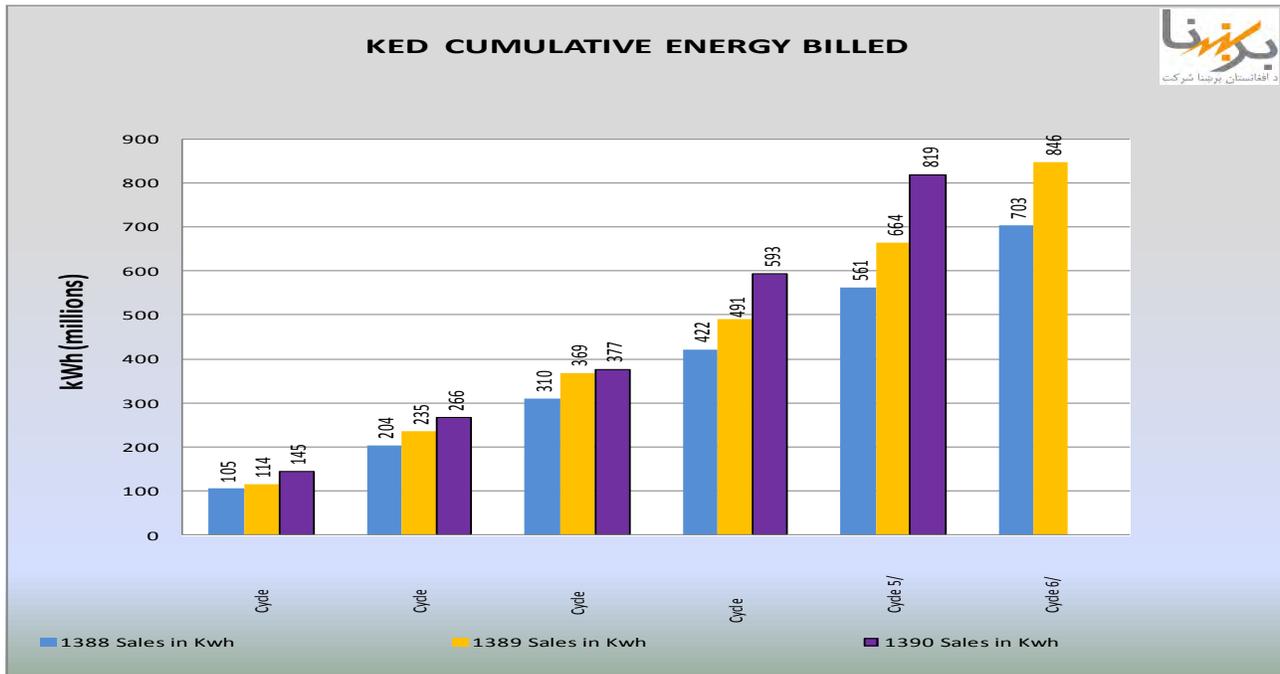


Figure 6: KED Revenue Billed per Cycle

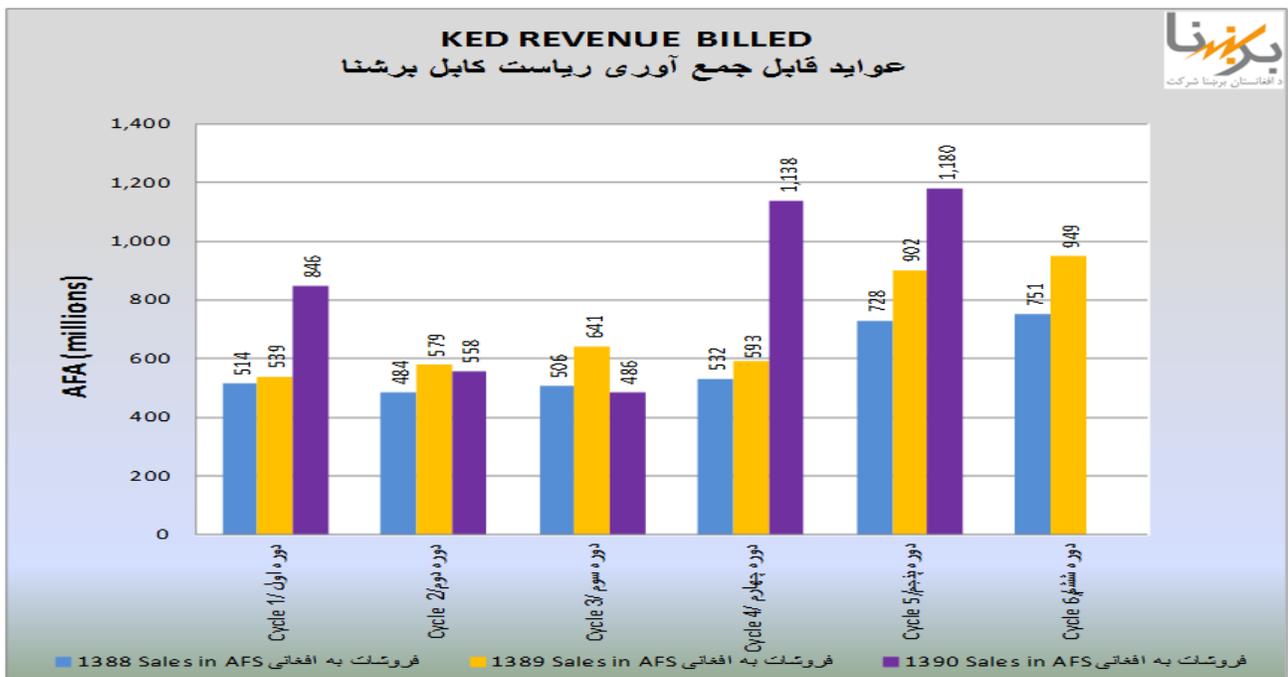


Figure 7: KED Cumulative Revenue Billed

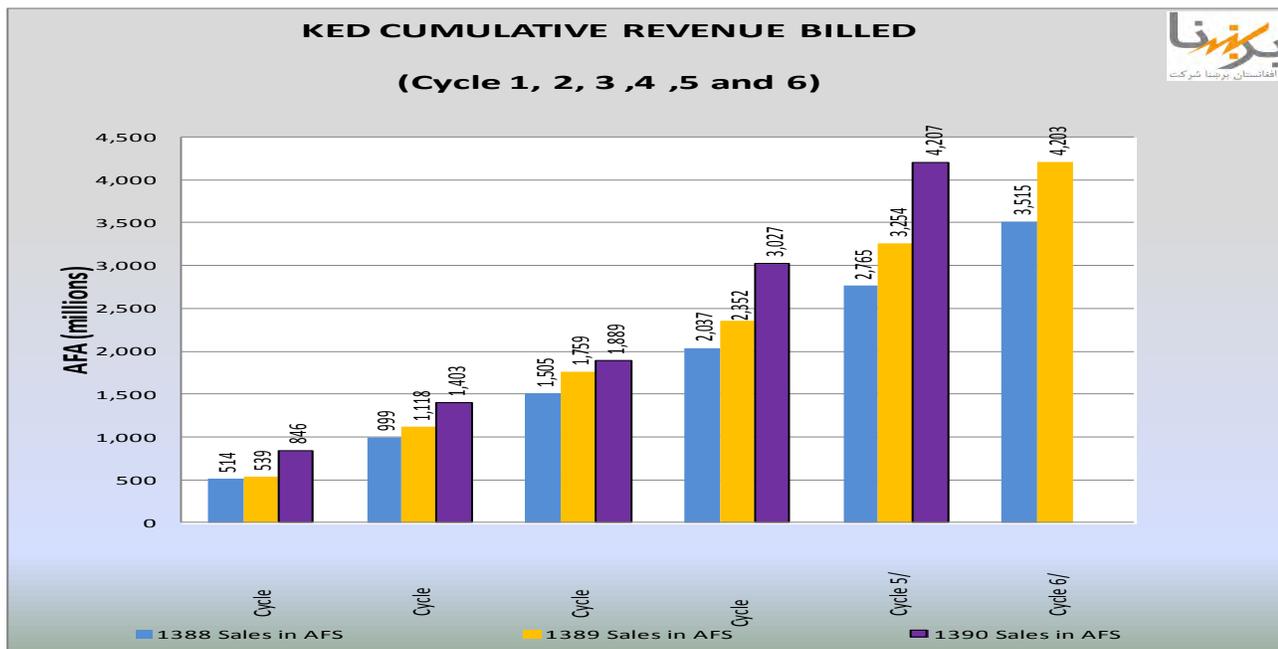


Figure 8: KED AT&C Losses

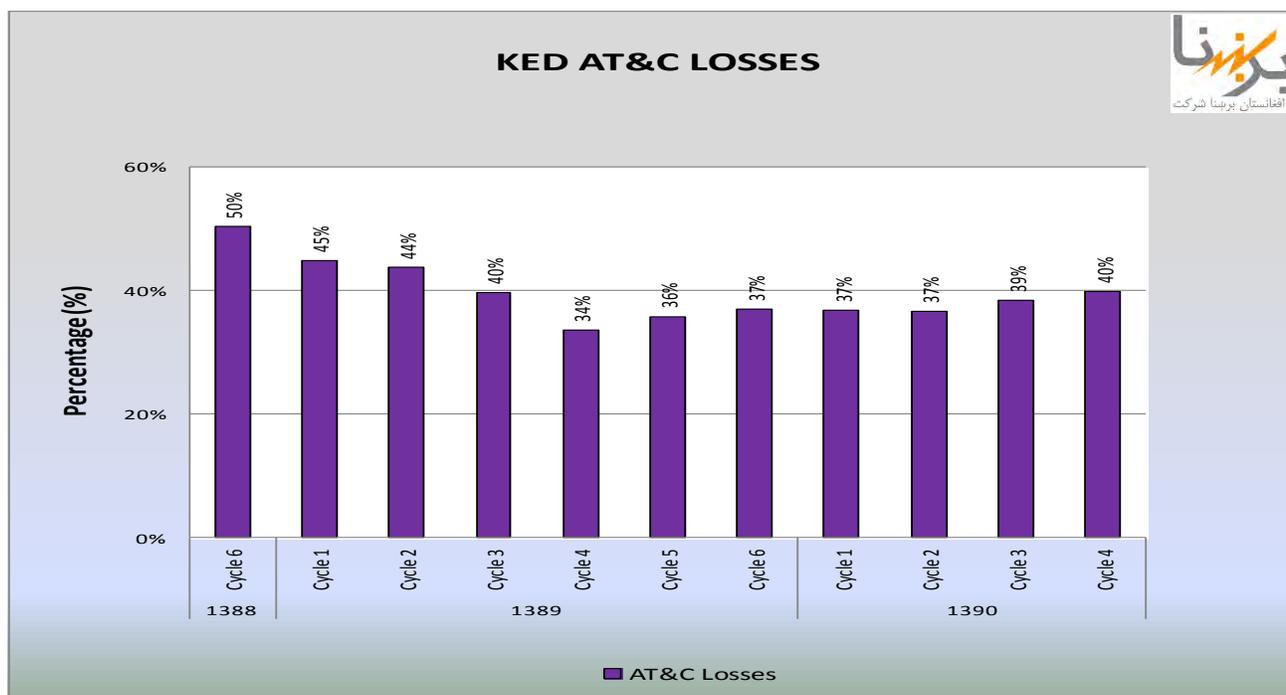
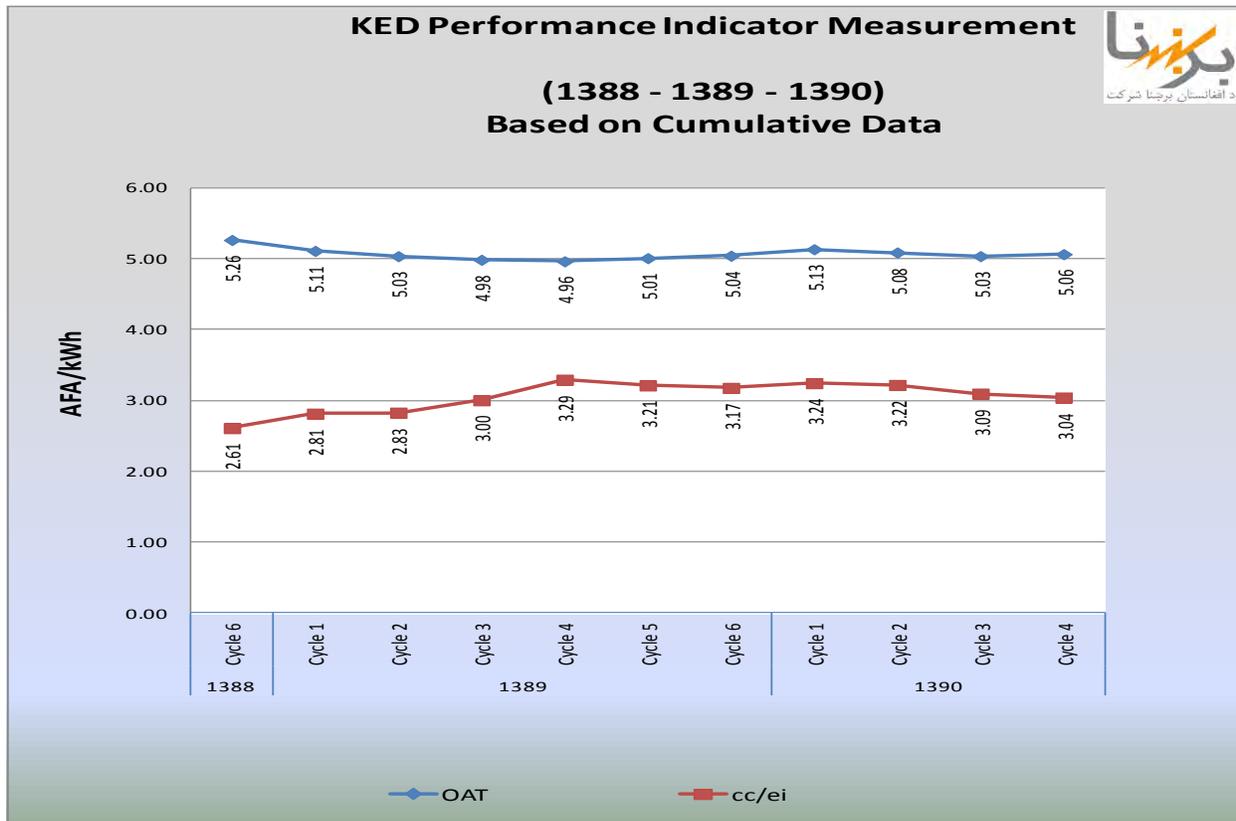


Figure 9: Commercial Efficiency Ratio:
Cash Collection / Energy Received (cc/ei) vs Operating Average Tariff (OAT)



While these performance results of KED were a prime indicator of the success of the program, it should be noted that achievements in each work stream contributed to the overall success of the project. Some specific achievements included:

CIS and Process Enhancement

- 270,000 successfully customers enumerated into the computerized billing system from the old manual notebook system
- Reviewed and analyzed DABS' meter reading, billing, collections, customer service and meter service practices
- Developed and implemented enhanced processes for commercial departments
- Overhauled the organizational structure of the Commercial Division
- Re-staffed and retrained the Commercial Division
- Revised the billing schedule
- Completed tender and specifications for the new CIS
- Configured, installed, implemented the new CIS
- Installed a Customer Relationship Management (CRM) system

- Installed a Collections Module for on-line processing of customer payments.

Meter Services

- Entrenched a dedicated Large Power User (LPU) Section within the Field Commercial Services Department to ensure efficient transactions with large power users
- Developed an organization structure for the LPU section
- Transferred suitable technicians to the section and competitively recruited a competent LPU supervisor
- Performed process enhancements of the LPU section
- Trained the staff in enhanced new processes
- Held capacity building trainings for LPU technicians
- Equipped the LPU section with vehicles, computers, printers, and GPS units.

GIS and Regularization

- Established a GIS Lab
 - Trained GIS technicians in ArcGis
 - Trained GIS supervisor in Advanced ArcGis
- Digitized the mapping of Kabul City
- Geo-coded each premise on the map
- Surveyed meter boxes and recorded each meter serial number in each box
- Plotted meter box locations on the map
- Surveyed transformers and captured details
- Plotted junction stations and transformer locations on the map
- Linked meters to premises on the map
- Compared GIS survey data to CIS data and rectified the data to ensure 100% compatibility
- Investigated meters that are not in CIS (meters found installed during the GIS survey but were not registered in the CIS).

Distribution Maintenance

- Established an emergency response to customer interruption system and link to a call center, operations center and distribution teams (rapid response)
- Implemented the urgent preventive maintenance of overhead lines and transformer stations system
- Developed a program for an annual planned maintenance of overhead lines for KED.

Customer Meters

- Developed specifications for both residential and LPU meters
- Conducted a successful pilot program for Type 1 boundary area metering, providing insights to junction station metering and monitoring

- Conducted a successful pilot program for Type 2 transformer metering, providing insights to transformer metering and monitoring
- Coordinated the installation of over 48,000 single- and 2,000 three-phase meters used for billing customers for energy use
- Developed and procured a meter testing and calibration system to test and measure the accuracy of customer meters.

Tools and Equipment

- Developed specifications for and procured tools, equipment and vehicles that provided the resources needed to operate and maintain equipment used for commercialization activities.

Distribution Transformers

- Developed specifications for and procured 20 distribution transformers to be used in the KED distribution system to relieve system constraints and enable greater energy supply for critical areas, thus improving revenues.

Computers and Technology Infrastructure

- Developed specifications and procured over 740 laptops, desktops and printers that are now being used at DABS HQ and KED
- Installed LAN communications throughout the DABS headquarters campus to facilitate information connectivity
- Installed supporting infrastructure related to IT servers, voltage regulators, and universal power supply systems
- Coordinated the installation of the new CIS hardware and backup equipment
- Coordinated the installation of the MS Great Plains Financial system along with backup hardware and systems
- Designed and outfitted a disaster recovery center so as to assure DABS/KED of continuous IT operations.
- Coordinated and conducted various IT-related courses to over 295 DAB/KED employees.

4 Leveraging Resources and Program Sustainability

Since its initial mobilization in Kabul in late May 2009 for the design phase of KESIP, and especially after start of the implementation phase in November 2009, the Tetra Tech team became thoroughly familiar with the views of USAID and DABS' senior executives and management. Most members of the DABS executive team were new to the utility industry and required assistance in developing commercialization policies, processes and practices.

The views expressed by DABS management were always directed toward the KESIP team leveraging resources and achieving sustainability. DABS views were as follows:

- DABS told USAID they needed assistance in the commercialization of KED and DABS;
- DABS wanted KESIP to provide support in a strong, but low-profile manner;
- DABS did not accept KED management under a conventional full-authority management contract with expatriate line managers; instead, it preferred a capacity-building approach to the design of commercialization strategies and systems;
- DABS wanted KESIP advisory support in such a way that the efforts would be institutionalized at DABS, and hence will be sustainable after its support ended.

Most notable in the approach taken by the KESIP team was to always be working hand-in-hand with DABS, and through the auspices of the DABS CEO and Senior Management Group.

By working with DABS personnel, augmented by other Afghan resources, the KESIP team was able to leverage the technical resources already available in Afghanistan as well as build capacity directly at DABS in commercialization knowledge and practices. Many – if not all – of the DABS technical staff had little knowledge of commercialization and how it applied to the energy sector. KESIP advisors helped DABS recruit appropriate staff, and also provided other Afghan resources to help DABS on specific work in key areas of the project. KESIP expatriate advisors worked closely with their DABS counterparts on a daily basis and provided coaching and mentoring in key areas of project implementation.

A focus on capacity building was a cornerstone of KESIP. Over 466 DABS employees were trained in various aspects of commercialization and utility operations. These training courses ranged from English language and computer courses to specific training in CIS applications and customer service processes. Advisors also developed and documented processes and procedures at KED that will be used as DABS expands its commercialization work to other provinces.

Anticipating the need to maintain the newly installed CIS, coupled with the knowledge that DABS/KED would have limited resources to pay for such maintenance, KESIP secured a contract with a long-term maintenance contract with Phoenix, the implementation vendor for the CIS. This action will assure that the CIS will continue to operate and support the revenue management activities of DABS/KED. As part of this contract, the CIS vendor is continuing to train DABS/KED employees in CIS application as necessary.

5 Recommendations

5.1 Revenue and Commercial Management

Even after the successful efforts of KESIP, commercial management is still in its early stages at DABS and KED, and will need considerable additional focus if KED and distribution units in other regions are to succeed as viable entities. Important and immediate steps are:

1. **Continued Staffing** – KED needs to be fully staffed with qualified people. At the time of project closure, key positions in billing, CIS and revenue protection remained unfilled.
2. **Consolidate and Operationalize New Process and Systems** – As new Customer Information System (CIS) application modules are implemented, new processes supporting those applications will need to be developed and implemented within KED. This will include documentation and employee training on these new processes and practices.
3. **Install a New Interactive Voice Response System (IVRS)** – As a support to the new CIS and the renewed focus on customer service, an IVRS will need to be implemented. This will provide for enhanced customer communications related to commercial practices.
4. **Resource and Support the Revenue Protection Department** – As a new department within the KED organization, Revenue Protection must be staffed with qualified personnel who are familiar with revenue protection practices such as meter tampering, illegal connections, investigation practices and consumer fraud.

5.2 Electricity Delivery

The primary recommendation within this work stream is to expand the boundary and area metering pilot project that were commissioned during the course of the KESIP project. Many practices were developed as part of these pilot programs including the development of metering specification, contractor management, network system configuration, and data acquisition and management. Recommendations and next steps are:

1. **Complete Substation and Junction Station Grid Metering** – This will be an integral part of determining the amount of energy coming into the KED system at high voltage at the substation and junction station level, and will allow for KED to easily identify

areas of loss and system improvement. Most improvements from this area will be system based, thus providing improved service for all customers being served from these distribution points.

2. **Complete Transformer Station Metering** – This task will be important in determining the amount of energy flowing within the KED system at medium voltage (the transformer station level) and will allow for KED to easily identify areas of loss and system improvement. This differs from the above activity in that it will focus on specific local distribution lines, and help with customer based-revenue protection.
3. **Continue with Digital Meter Installation** – The installation of the World Bank meters was the beginning of transforming the KED customer metering system from old analog meters to state-of-the-art digital meters. This program should address 1-phase, 3-phase and LPU meters. The improvement in accuracy and the ability of KED to accurately bill customers for energy consumed is of paramount importance to KED’s commercial success.

5.3 Information and Communication Technology

Information technology is the backbone of communication and data movement for DABS/KED. While substantial improvements were made during KESIP, much remains to be done to achieve utility performance at today’s level of other South Asian countries. Recommendations in this work stream center on system network improvements, improvements to disaster recovery systems. and operationalizing commercial business applications. Recommendations and steps are:

1. **Configure Management Systems** – These systems range from the mPower CIS and the MS Great Plains ERP systems to desktop applications. Improvements in these core applications will enable the organization to operate as a successful business entity. This recommendation includes expanding connectivity between operations and equipment.
2. **Complete Disaster Recovery and Business Continuity Systems** – An initial system was set up at DABS HQ, but a full replica is needed some distance away from HQ. The site selected is the PCE complex. This will be an integral part of securing the operating viability and sustainability of the organization. This recommendation includes the infrastructure, systems, processes and practices needed to secure operating system and critical data.
3. **Expand the Use of Information Technology** – While KESIP provided several hundred computers to DABS/KED, the expansion of personal computing throughout the organization still remains to be fully done. Only when the organization has enabled

itself with proper computing infrastructure will commercial sustainability be achieved.

5.4 Finance and Accounting

DABS' Accounting and Financial organization has made improvements during the course of the project. However, the state that the organization was in prior to KESIP's involvement was poor. DABS could not produce the financial documents necessary for a commercial organization. Recommendations in this work stream center on building a qualified organization, expanding on the accounting and financial systems in place, and creating a sustainable workforce that is able to support the commercialization of the organization. Recommendations for next steps are:

1. **Create a Sustainable Finance and Accounting Organization** – DABS should focus on recruiting additional qualified accountants. This will include establishing minimum proficiency standards, conducting additional screening and testing of applicants, and creating liaisons with local training institutes that will provide a steady supply of resources as commercial expansion continues.
2. **Increase the Use of Accounting and Financial Systems** – The MS Great Plains Accounting and Financial system has provided a foundation for basic accounting reports. Implementing additional modules within the system will provide DABS with additional financial and accounting reports that will guide and support operational decisions. Additional modules such as Accounts Payable, Purchase Order Processing, Bank Reconciliation and Cash Management applications should be operationalized as soon as possible.
3. **Accounting Policies** – While KESIP helped DABS to develop a series of accounting policies, processes and procedures, additional follow-through in this area is required. The further development, approval and implementation of a full set of accounting policies will provide the organization with operational guidance and provide the foundation for the development of necessary financial controls required by the Board of Directors and outside auditors.

5.5 Corporate Planning

Corporate planning is an integral strategic component of the management of DABS. Corporate plans should be regularly updated for changes in DABS' priorities, goals and objectives. A fully functional Corporate Planning Department is essential the development of both short- and long-term plans. Recommendations for next steps are:

1. **Continue with Developing Corporate Actions Plans** – The Corporate Planning Department created an initial draft of the corporate plan based upon the data and resources available. However, the plan was developed without supporting processes and/or verifiable data. DABS should develop a corporate planning process and continue to refine the report as more reliable data sources become available.
2. **Continue to Work on Key Performance Indicators** – DABS has developed some initial Key Performance Indicators and provided framework for further development. It should now review the existing KPIs and align them with overall corporate goals and targets. In addition, DABS should identify data sources and develop process to obtain verifiable data on a regular basis. KPIs should be reviewed on a regular basis at both the Senior Management Group and Board of Directors levels to assure that the company is achieving its established goals.

5.6 Human Resources

DABS' Human Resource Department needs to establish its governing responsibility within DABS. While HR policies have been developed, there is still a lack of understanding and adherence to the policies and procedures. The Department also needs to increase compliance with the HR policies by continuing to orient and train management on the use of these policies and procedures. Recommendations for next steps are:

1. **Continue with HR Policy Development** – DABS' HR organization needs to continue training management and other employees on employee policies and procedures. This continuous reinforcement will increase compliance with policies and will improve the standardization of employee issue resolution.
2. **Continue Employee Training** – The foundation of employee training was established by KESIP and DABS should continue this momentum. Basic English and computer courses must continue to be offered to employees. These basic courses will raise the level of business proficiency throughout the organization and assist in the overall commercialization capacity of DABS.
3. **Conduct Capacity and Workforce Planning** – DABS needs to identify the resources needed within the organization. Specific operational areas, such as Accounting and Finance, and IT, lack key personnel. The absence of accountants and other commercially-focused resources will severely hamper DABS' ability to sustain its commercial operation. DABS needs to develop ways of attracting, recruiting and retaining these key resources.

5.7 Public Relations

KESIP provided DABS with the foundation of a Public Relations Department, including equipment, staffing and an overall annual public relations plan. It now needs to continue to expand on this foundation by increasing the use of campaigns focused on internal, external and targeted communications. Recommendations for next steps are:

- 1. Develop an Annual Public Relations Plan** – DABS should develop its public relations plan and align it with the goals and activities planned for the company such as changes in tariffs, billing and payment policies and company strategy. Developing an overall public relations plan will assure that the organization will be able to address the communication needs related to supporting the commercial transformation of DABS.
- 2. Continue Internal, External and Community Outreach** – DABS needs to continue communicating with all stakeholders affected by the commercialization transformation of DABS. This include communicating with employees as to changes in organizational and work processes, communicating with customers about changes in customer services, and communicating with targeted customer groups that will be affected by field activities such as meter changes and network improvements.

5.8 Oversight of Kandahar Commercialization

Although the KESIP team had limited involvement in the Kandahar commercialization, it identified several areas to help sustain the commercialization performance already achieved in Kandahar. Recommendations for next steps are:

- 1. Plan for the Customer Information System's Sustainability** – DABS should continue to support the recently installed CIS. This will include developing a maintenance plan, conducting employee training, and operationalizing installed applications and modules.
- 2. Continue Boundary Area Metering** – Boundary metering was procured through USAID; however, meters are in storage and there are no immediate plans to install them. The absence of meter data hampers DABS' ability to identify areas of energy loss and develop corrective action plans. A plan to install and operationalize these meters should be undertaken.
- 3. Implement Revenue Cycle Improvements** – The recently installed CIS system has provided the ability to accurately bill Kandahar customers. While the number of customers billed has steadily increased since the installation of the CIS, customer payments are still below acceptable levels. This is primarily due to old processes

related to bill distribution and payments. DABS should investigate and implement new processes and systems that will align with improvements made in the CIS. Such process as SMS billing and payments hold promise for increasing the revenue collection rates of Kandahar and will support the improvements made in customer billing.