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AFGHANISTAN EXECUTIVES EXAMINE INDIAN STRATEGIES TO IMPROVE ELECTRICITY DISTRIBUTION CUSTOMER SERVICE & COMMERCIAL OPERATIONS

EXECUTIVE EXCHANGE WITH CESC LTD & TPDDL POWER DELHI DISTRIBUTION LTD

JUNE 2013 – NEW DELHI & KOLKATA, INDIA – Supported by the U.S. Agency for International Development (USAID), ten executives from Afghanistan’s state-owned electricity utility Da Afghanistan Breshna Sherkat (DABS) recently met their counterparts to review Indian best practices in customer service and commercial operations. USAID organized this exchange to support the continued development of the electric power sector of Afghanistan by sharing best practices and experiences with energy leaders in India.



DABS delegates at CESC Limited's Asia Institute of Power Management

Tata Power Delhi Distribution Limited (TPDDL) is a joint venture between TPDDL Power Company and the Delhi Government. It distributes electricity in the north and northwest parts of Delhi and serves 1.3 million customers with a peak load of around 1573 MW. The company started operations in 2002 with the unbundling of the local electricity board. Since privatization, the Aggregate Technical & Commercial (AT&C) losses in TPDDL areas have shown a record decline. Today they stand at 13%, compared to the 53% loss level at the time of privatization.

Calcutta Electric Supply Corporation Limited (CESC) started as India's first fully integrated electrical utility, generating and distributing electrical power in Kolkata and Howrah since 1897. It is the sole distributor of electricity within an area of Kolkata and Howrah serving 2.3 million consumers. CESC owns and operates the transmission and distribution system through which they supply electricity to consumers, as well as own and operate four thermal power plants generating 1225 MW of power.

PRIMARY TOPICS OF THE EXCHANGE

The delegation of ten senior engineers from Afghanistan spent two days each visiting TPDDL and CESC, reviewing various methods to advance distribution system commercial operations and customer service. Key focus areas of the program included:

- Gain exposure to best practices in the distribution utility **commercial management** process, including:
 - Commercial department structure and functions
 - Metering, billing, and collections, including meter testing programs
 - Determining cost of service
- Understand best practices in the distribution system **customer service** process, including:
 - Customer information systems and data collection
 - Customer service department organization
 - Customer complaint management
 - Staff customer service training programs
- Best practices in **managing load shedding**, including:
 - Scheduling load shedding
 - Public relations
 - Offsetting with demand side management

DABS delegates listen to a presentation from TPDDL on its **privatization reform**. One of the challenges facing many distribution utilities is breaking a circle of unsustainability. Customer satisfaction is low, leading to unwillingness to pay. This in turn makes the distribution company to be unable to purchase power from generators. Lack of revenue makes the generators unviable and the network poor. This in turn, again, lowers customer satisfaction, which is usually blamed on the utility. TPDDL



Power Delhi Distribution Ltd (formerly North Delhi Power Ltd) found itself in this position in 2002 when the company was privatized. The utility had the highest AT&C losses in India. Bill payment was low. There was 3 – 4 hours of load shedding per day. There was an absence of commercial principles throughout the company. The entire network lacked investment, leading to an inability to secure generation capacity and frequent breakdowns. Through a stringent 10-year strategic plan and key support from the state regulator and local government, the company has turned itself around. TPDDL spent the next decade on a five-point reform: (1) improvement of quality of supply, (2) focus on consumer service, (3) reduction in AT&C losses, (4) making the sector self-sustaining, and (5) attracting investment. Today, TPDDL's AT&C losses have improved by 393%, system reliability is up to over 99%, and commercial and the network reliability and availability have steadily developed.

DABS tour TPDDL's 33/11 KV and 11/0.415 KV substations.



Now Payment Options At Your Doorstep!

Dear Consumers, for your convenience we have installed more than 500 cheque drop boxes in your neighbourhood area. You can now pay your electricity bills by dropping the cheque in your nearest drop box. You will get the payment confirmation on your registered mobile No. You can register your mobile no. at www.tatpower-dtl.com or by calling us at 66111912 / 66404040. You can also track your cheque by calling at 42143371 (Cheque Pick-up Agency Helpline No.).

List of Drop Boxes of your area

Client	Location	Address
Plamours	Kaaf Vihar	Gate No. 2, Near Kapil Vihar West Light, Kaaf Vihar, Plamours
Plamours	Plamours	Near Gate, BP Block, Opp. Phiroze Dutt, Plamours, Plamours
Plamours	Plamours	Near Gate, TP & BP Block, Opp. WCD School, Plamours
Plamours	Plamours	SM Durgam Chattri, CP Block, Near BP Road, Plamours
Plamours	Plamours	Gate No. 6, 1st Block, Near CDA Park, Plamours
Plamours	Plamours	RWA Office, AP Block, Plamours
Plamours	Plamours	Gate No. 1, Vardah, Near Suni Naya Nam Hospital, Plamours
Plamours	Plamours	42 Block, Residential Welfare Association, Harshvardh, Plamours
Plamours	Plamours	Guard Room, LD Block, Tower Apartments, (Plot No. 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 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BEST PRACTICES INTRODUCED

Over the course of the program, the DABS delegation was exposed to numerous best practices in commercial operations and customer service. The senior engineers recognized many similarities in the challenges faced by TPDDL's and CESC's commercial operations and observed firsthand strategies to deal with these issues. Beyond the key topics of commercial and customer service structure and operations, the exchange also highlighted issues in change management, energy efficiency, privatization, loss reduction, and planning. Through the course of the program, the delegation was exposed to numerous best practices:

- The importance of building a performance orientation culture.
- Compliance to performance standards.
- Acknowledge and commit to the key profit drivers – investment of capital in the network, reduction of AT&C losses below stipulated norms, and additional revenue generation opportunities.

Role of Operational Technology:

- Strong automation and IT backbones to streamline operations and reduce outages.
- Strong communication infrastructure within the utility's operational technology.
- Implementation of SCADA to centralize control and monitor operations. SCADA can optimize human resources through redeployment, reduce the chances of manual error in reporting accidents thus enabling better operational and maintenance analysis, improve reliability indices (SAIDI, SAIFI), avoid over draw of power, and provide strategic load shedding when necessary to maintain frequency.
- Distribution Management System (DMS) to centralize monitoring of the distribution network and provide faster identification of fault location. Distribution Automation (DA) to centralize control of the distribution network and provide faster restoration of faults. Implementation of DMS and DA minimizes the diagnostic time for faults and isolates the fault. This, in turn, lessens the amount of effort needed by field workers and minimizes outage time.
- TPDDL identifies the strategic points to be automated for control and monitoring to identify the most cost effective solution.
- To maximize usefulness, DMS should be integrated with a geographic information system (GIS) to provide a real world location. GIS can access land base information (such as roads, buildings, etc), the electrical network and information on consumers as they relate to the issue.
- TPDDL outlined various GIS business processes, including Capital Expenditure Management, Asset Management, Operations and Network Management, and Commercial Management.
- An Outage Management System (OMS) should integrate the Customer Relationship Management system, SCADA/DMS, the Advanced Metering Infrastructure (AMI), GIS, and the Work Management System (WMS). An integrated OMS help manage outages efficiently by providing the utility with a perfect integration platform for all systems and processes responsible for power supply related issues.

Demand Side Management:

- Demand Side Management (DSM) is an important tool to control consumption, especially in a country like Afghanistan and India where a supply-demand gap exists. DSM can provide overall energy savings, improve reliability, increase revenue (through reduced power theft or reducing costly peak demand), and positively impact tariff subsidies.
- Automated Demand Response (ADR) provides the fastest and most cost effective DSM. Manual and semi-automated demand response are labor intensive, unreliable and operate too slowly to be effective. ADR provides an integrated system with energy management control systems to initiate customer approved actions to curtail loads automatically during grid stress.
- When load shedding is the only option, ADR enables the utility to disconnect load which is non-essential.

Role of Information Technology:

- IT plays a vital role in a reliable power system and is the backbone to the network. The IT network is the communication tool between the grid stations, distribution, customers, and the utility staff.

- Data centers should be well equipped with integrated and scalable storage, consolidated servers, host-based data replication, automated backup, automated fire detection and firefighting equipment, precision air conditioning, and 24/7 server operations monitoring.

Revenue Protection, Enhancement and Assurance:

- Establish a Revenue Recovery Group whose sole responsibility is recovery defaulted payments for live customers and disconnected customers. Payment options should be as convenient as possible – to include collection centers, website, debit/credit cards, Electronic Clearing Systems (ECS), drop boxes, anytime payment machines (ATPM), etc.
- Utilities can organize payment incentive schemes including pay and win schemes, and offering free services in low-income neighborhoods including healthcare, vocational training and education, etc. Methods such as these can result in steady increases in collection and consumer base to otherwise non-paying customers.
- Automatic Meter Reading is a worthy investment for high revenue customers.
- A utility should have a group specifically dedicated to identifying revenue leakages and process gaps, and suggesting processes for improvements for commercial processes.
- Offering customers multiple payment options as a way to reduce non-payment.

Meter Reading and Billing Systems:

- TPDDL has four levels of meter reading and billing quality checks before a consumer's bill is generated.
- Domestic consumers' meters are read on handheld devices, ensuring 100% accuracy and timely reading and billing by allowing instant onsite billing clarifications if needed.
- Automatic Meter Reading (AMR) is used for large commercial and industrial to ensure timely and accurate billing and regular monitoring to prevent theft. Through AMR, reading meters and billing can occur on the same day.
- Meter reading and bill distribution can be outsourced by establishing a performance-based contract. The contractor can be evaluated on correctness of meter reading, correctness of billing parameter mentioned on bill and timely and proper bill distribution.
- CESC installed pre-paid meters for government connections up to 35 kW. However, the utility preferred not to use pre-pays for residential customers because pre-paid meters do not have the technological capabilities to handle slab adjustments. Therefore, with each tariff change, the utility would have to manually enter a coupon into the customer's meter to make the adjustment.

Customer Relationship Management:

- Successful Customer Relationship Management (CRM) is a customer centric philosophy that has to permeate through the entire company and must be part of the planned business strategy to be successful. If done correctly, it will generate a positive consumer experience and add value to the company by differentiating itself from its competitors.
- Customer Service departments should establish guiding principles and standards for processing all types of customer requests. Standards should be steadily raised and regular performance audits conducted.
- Monitoring performance at Consumer Care Centers and Call Centers should be connected with an incentive scheme, including monitoring through scorecards with rewards and acknowledgements given to best performers.
- Complaint management should be tracked through a detailed complaint registration and status update system.
- Staff should receive a variety of regular and ongoing training, including soft skill and behavior training, as well as refresher trainings and daily briefings.
- Consumer satisfaction surveys and evaluations should be conducted by an independent third party to assess problem areas.

Connection & Meter Management:

- Meter management activities should be linked with the utility's overall goals through ensuring proper and accurate metering, installation as per standard code of practice and safety guidelines, and optimizing workforce productivity.
- Static meters provide a number of benefits over conventional meters, including longer lifespan, greater durability, and superior accuracy.
- Various safety and quality initiatives can be made. These include surprise site visits, daily audits for compliance and record keeping, safety guideline stickers on all vehicles, weekly safety talks, distribution of safety booklets to all engineers, ongoing training, and competency mapping.
- CESC shared its experience with meter vendor selection. It strongly recommended the utility not always go with the cheapest vendor, but rather consider a variety of products, meet with the vendor personally, and spend considerable time in testing the meters before purchasing.

RESULTS

- **Revenue Recovery Processes:** Afghan delegates were provided with methodologies for recovering revenue from live customers and defaulters. TPDDL also provided the delegation with extensive details on facilitating payment and improving collection efficiency for low income customers in areas historically known for theft. One example was the use of red stationary for notice to non-payers. The notice was easily visible from great distances when posted on customers' doors.
- **Theft Protection:** TPDDL and CESC shared theft detection programs for AMR and low-end consumers, and honesty incentives for meter readers.
- **Tariff Setting:** Both utilities shared their pricing and tariff setting procedures.
- **Meter Installation:** TPDDL shared their meter installation process, including links with customer service and SAP.
- **Customer Relationship Management:** CESC provided DABS with a detailed overview of their CRM system, including its operational and technological benefits.
- **Customer Service:** Key Performance Indicators for customer service implemented by TPDDL and CESC, such as average waiting time and average serving time. Both utilities had a number of measures to ensure customer service quality, prompt response to customer and the importance of respecting the customer.
- **Geographic Information System (GIS):** The DABS delegation was given a first-hand look at the enormous impact GIS can provide in assisting the utility in accessing customers and service problems.
- **Automatic Meter Reading (AMR):** DABS witnessed the enormous benefits of AMR, which include reduced meter reading expenses, increased accuracy, improved reliability, and reduced likelihood of tampering or theft. It provides customers the flexibility to pre-pay for electricity, while empowering them to monitor usage online and track expenses.
- **SCADA:** Afghan delegates noted the value of synchronizing substations and integrating SCADA at the distribution level in Afghanistan in order to enhance reliability and facilitate system automation.
- **Reform:** TPDDL shared their ten year reform plan with DABS.

DA AFGHANISTAN BRESHNA SHERKAT (DABS) EXCHANGE PROGRAM PARTICIPANTS

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