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# IMPROVED CAPACITY FOR ENERGY ACCESS (ICEA)

FINAL REPORT

**SEPTEMBER 29, 2011**

This report was produced for review by the United States Agency for International Development (USAID). It was prepared by International Resources Group (IRG).



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**DISCLAIMER**

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# ACRONYMS

BERC	Bangladesh Energy Regulatory Commission
BOI	Board of Investment
BPDB	Bangladesh Power Development Board
BSO	Business Support Organization
BST	Basic Service Tier rate
BSTI	Bangladesh Standards & Testing Institution
CAB	Consumers' Association of Bangladesh
CFLs	Compact Florescent Light Bulbs
CMD	Center for Management Development
CoE	Center of Excellence
COM	Construction Operations & Maintenance
DESCO	Dhaka Electric Supply Company Limited
DPDC	Dhaka Power Distribution Company Limited
DSM	Demand Side Management
EDM	Economic Development Model
E&O	Engineering and Operations
ERC	Energy Regulatory Commission
FDI	Foreign Direct Investment
GIS	Geographic Information Systems
GIZ	German International Zusammenarbeit (Cooperation)
GOB	Government of Bangladesh
GP	Graduation Policy
HDRC	Human Development Research Centre
ICEA	Improved Capacity for Energy Access
IDCOL	Infrastructure Development Company Limited
IGS	Institute of Governance Studies
IPP	Independent Power Producer
IRG	International Resources Group

KII	Key Informant Interviews
LGED	Local Government Engineering Department
LPG	Liquefied Petroleum Gas
MDF	Market Development Forum
MOF	Ministry of Finance
MOL	Ministry of Law
MOU	Memorandum of Understanding
MPEMR	Ministry of Power, Energy and Mineral Resources
NLDC	National Load Dispatch Center
NRECA	National Rural Electric Cooperative Association
NTPC	National Thermal Power Corporation
OCR	Oil Circuit Recloser
O&M	Operations and Maintenance
PBS	Palli Bidyut Samity
PDB	Power Development Board
PGCB	Power Grid Company of Bangladesh Limited
PROAG	Project Agreement
PTA	Performance Target Agreement
RE	Rural Electrification
REB	Rural Electrification Board
RPCL	Rural Power Co. Ltd.
RPS	Renewable Portfolio Standards
SCADA	System of Data Collection and Control
SERAC	Socio Economic and Rural Advancement Committee
SME	Small and Medium Enterprise
SPPs	Small Power Producers
SPPA	Small Power Purchase Agreement
TOR	Terms of Reference
TPP	Technical Project Proposal
TQS	Technical Quality of Services
USAID	United States Agency for International Development

USoAC	Uniform System of Accounts
USG	United States Government
TA	Technical Assistance
UAP	University of Asia Pacific
WZPDC	Western Zone Power Distribution Company Limited
XEN	Executive Engineer



# I. EXECUTIVE SUMMARY

The Improved Capacity for Energy Access (ICEA) is an energy sector program designed to address critical energy sector priorities in Bangladesh. USAID awarded a contract to International Resources Group (IRG), an L3 company based in the United States, on April 15, 2008 to provide long-term and short-term technical assistance, training and capacity building in the areas of promoting self-reliance of rural electricity distribution cooperatives and strengthening the energy sector and capacity building of Bangladesh Energy Regulatory Commission (BERC) for performing its legal authority. It also helped in establishing an energy regulatory environment in Bangladesh that is based on international best practice and that establishes clear rules of the game for all of Bangladesh's energy sector stakeholders.

ICEA is comprised of two components. Component 1 is focused on support for the Rural Electrification Board (REB) and Palli Biddut Samities (PBSs) and is implemented by IRG sub-contractor National Rural Electric Cooperatives Association (NRECA). Component 2 is focused on improving the capacity of the Bangladesh Energy Regulatory Commission and is implemented by IRG, the prime contractor.

ICEA Component 1 activities were designed to make improvements in PBSs' performance and establish the groundwork for a PBS graduation policy. ICEA contributed in developing plans and processes and training the REB to gain a deep understanding of how a self-reliant PBS system can be adopted and beneficial for both the power sector and the nation. Throughout the project's term, ICEA trained REB and PBS key personnel, providing management and technical support, and completed the Graduation Policy, but due to a lack of support and resistance to change at the Ministry of Power, Energy, and Mineral Resources (MPEMR) and within the REB leadership, few results were achieved.

The ICEA Component 2 activities supported BERC in policy and operation as well as institutional strengthening. It focused on helping BERC achieve approval and implement regulations and, for the first time in the country, establish bulk supply and retail tariffs for the jurisdictional licensees. ICEA made major efforts in building capabilities through a number of regulatory training and best practice methodologies, both in country and abroad, for BERC to comply with the BERC Act and institutionalize best practice regulations.

In order to achieve the project objectives, ICEA focused on enabling Bangladesh Energy Regulatory Commission and Rural Electrification Board to ensure best practice. ICEA carried out implementation of the PBS Graduation Policy on a pilot basis in order to create self-reliance of the REB's Palli Bidyut Samities, enhanced PBS ability to meet demand, and supported local economic development through a number of training activities and workshops – such as Engineering/Technical for managing constructions, operations, and maintenance, E/O record keeping, and enhancing PBS safety; Finance/Accounting; Change management; and Technical Quality of Service (TQS).

To strengthen the regulatory regime of the energy sector, ICEA provided policy and operational support to – and institutional strengthening of – BERC by bringing BERC operations in-line with the BERC Act, followed by improving regulatory methodologies and energy sector governance, enabling accurate and transparent pricing, assisting BERC with an outreach program, and clarifying the regulatory regime for REB/PBSs by formulating a pricing ramp-up approach – which was included in a model tariff decisions regarding PBS cost of service rates to address PBS funding gaps – while maintaining PBS transparency, improving the framework to attract private sector investment and improve energy market options, improving understanding between BERC and MPEMR of their respective roles, and improving BERC staff operation with improved efficiency, transparency, and accountability. BERC Chairman, members, and senior management officials were trained in-country throughout the year, including some US-based training, shadowing various state regulatory

commissions and the US Federal Energy Regulatory Commission. In addition, direct management expert support to the Commission and various one-on-one BERC staff trainings were provided throughout the year, covering tariff investigation and analysis in several BERC-regulated sectors. ICEA's Uniform Systems of Accounts (USoAC) was provided to BERC and other regulated utilities to ensure financial efficiency and transparency.

There have been a few constraints from the government level, but the important factor is the peoples' participation in the energy regulatory process, which was developed through the outreach programs and which is obviously creating further awareness. BERC has been able to make a number of regulations and a few more are in the pipeline, which is a sign of a stronger Commission. Many accomplishments were made during the ICEA Project life. The participation of women is one remarkable point to mention. Additionally, other partnerships in the social, community, academia, university, lawyers, and consumers' level organizations were developed.

At the time of project completion, ICEA supported BERC in holding a national seminar, in which BERC was able to create awareness at the national policy level of their role, empowerment, and the future of the energy sector. ICEA completed two software products – namely TQS and USoAC – and delivered them to BERC for further implementation with all jurisdictional utilities.

## II. OVERVIEW

Contract number EPP-I-00-03-00006-00, Task Order #8, between the U.S. Agency for International Development (USAID) and International Resources Group (IRG) became effective April 18, 2008 with concurrence to begin activities on May 1, 2008. The Task Order Ceiling Price of \$7,738,501 covered the three-year and five-month period through September 29, 2011. This was a Cost Plus Fixed Fee/Level of Effort Task Order under the Energy II IQC.

The Task Order was modified on July 25, 2011. The purpose of modification was to: (a) de-obligate \$539,673.70 from the Task Order, thereby decreasing the total obligated amount from \$7,015,743.70 to \$6,476,070; (b) decrease the Task Order ceiling price by \$1,262,431, thereby decreasing the ceiling price from \$7,738,501 to \$6,476,070.

International Resources Group (IRG), an L3 company based in the United States, was awarded a Task Order agreement to provide USAID-Bangladesh's Improved Capacity for Energy Access (ICEA) Program long-term and short-term technical assistance, training and capacity building in the areas of promoting self-reliance of rural electricity distribution cooperatives, strengthening the energy sector, and capacity building of the Bangladesh Energy Regulatory Commission (BERC) for performing its legal authority. Among the latter is the development and implementation of training programs for Bangladesh lawyers on energy law, policy, and regulations.

Under the ICEA Task Order, IRG was further required to assist the Bangladesh Energy Regulatory Commission in establishing an energy regulatory policy and regulatory environment in Bangladesh that is based on international best practice and that establishes clear rules of the game for all of Bangladesh's energy sector stakeholders.

### **KEY PROJECT PURPOSES:**

The purpose of the ICEA program was to:

- Provide continuous technical advisory services that support the further development of the energy sector.
- Provide all necessary support to increase management authority of the Palli Bidyut Samities (PBSs) in order to allow them to improve their financial sustainability, as well as their performance, and to directly access existing sources of power supply and alternative options and contract supplemental or additional power to meet their demand.
- Provide business advisory services to enhance local economic development through PBSs.
- Strengthen capacity within the Rural Electrification Board (REB) to provide oversight and capacity building to the insolvent PBSs in order to improve prospects for an expanded graduation program in the future.
- Continue improvement of the legal and regulatory regime in the energy sector, through support to the Bangladesh Energy Regulatory Commission, in order to increase overall sector performance, transparency, accountability, financial sustainability of regulated utilities, and to encourage private investment in the energy sector.

### **PROJECT REPORTS DELIVERED**

13 Quarterly Reports

3 Annual Reports

4 Annual Workplans

3 Annual Monitoring & Evaluation Reports

4 Annual Financial Reports

All Deliverables were provided both in soft and hard copies. The ICEA Project's technical reports, including all contract deliverables, are furnished on one CD.

## **BACKGROUND ON BANGLADESH RURAL ELECTRIFICATION PROGRAM**

The development of the Bangladesh Rural Electrification (RE) Program is rooted in the fact that access to electricity is a constitutional right of the people. Efforts to expand electric service to the rural areas had been ongoing under the RE Directorate of Bangladesh Power Development Board (BPDB), but the rate of rural electrification had been extremely slow. In the mid-1970s, the Government decided to explore rural electrification as a critical means of improving the socio-economic condition of the rural population, as well as increase agricultural production.

In 1976, USAID funded a comprehensive feasibility study to examine the development of rural electrification in Bangladesh. According to the recommendations of the study, the Rural Electrification Board (REB) was established through Presidential Ordinance No. LI of 1977 promulgated on October 29, 1977 and started functioning on January 1, 1978. The Ordinance empowers the Board to electrify the rural areas through generation, transmission, and distribution of electric power. The organization's primary functions relate to establishing and developing the PBSs that function as cooperatives on a "no-profit and no-loss" basis. The overall concept is closely patterned after the US Rural Electrification Program that successfully electrified the rural areas of the United States. The PBSs are established by the REB and operate as fully functioning distribution utilities that provide connections to consumers and issue and collect bills, as well as operate and maintain the distribution systems.

To extend electricity to rural populations, REB provides or arranges a number of support services to the PBSs, including: arranging loans for system development, power supply agreements with BPDB and Independent Power Producers (IPPs), procurement and supply of equipment/materials, system engineering, and construction. REB also provides overall management services to the Palli Bidyut Samities.

Under the cooperative concept, the individual consumers are members of the cooperative and owners of the system, and each PBS is managed by a Board of Directors elected by its members. The Board of Directors sets policy and provides oversight on behalf of the members at the policy level. The General Manager is hired by the PBS Board and is responsible for the day-to-day management and operations of the PBS. The General Manager is supported by other management personnel carrying out a variety of tasks at the PBS.

Over the years, the success of the Bangladesh RE program became widely recognized and acclaimed for its achievements by the governments and donor community, many of whom had been active in providing financial support for its development. It has earned the recognition as a model for the rest of the world of a successful rural electrification program. Delegations from many countries visit Bangladesh to learn about the key elements of the RE program for application in electrifying the rural areas of their countries.

Current RE Program statistics as of June 2011:

- Number of PBSs 70
- Number of Villages Electrified 47,641
- Energized Distribution Line 220,067 km

• Total Number of Consumers	7,641,132
○ Domestic:	6,562,850
○ Irrigation:	170,086
○ Commercial:	768,818
○ Industrial:	126,038
○ Others:	13,340
• Number of 33/11KV Substations	420
• Average System Loss PBS Substation Meter	12.19%
• Average System Loss Grid Substation Meter	15.19%
• Collection Percentage	98.2%
• Accounts Receivable	1.55%
• Avg. Monthly Amount Billed @72/\$	\$49,159,861

In the late 1990s, the Government of Bangladesh (GOB) took decisions on an initiative to bring about reforms within the power sector as a means of improving its performance and better positioning the sector to meet the rapidly increasing demand of electricity. In fact, the sector reform had started in 1977 with the establishment of REB, where individual distribution systems (PBSs) would buy and sell power and operate separately from the BPDB. However, with the reform that began in the 1990s, the initial steps were taken to unbundle the vertically integrated BPDB, first with the formation of the Power Grid Company of Bangladesh (PCGB). In subsequent years, the other functional areas of generation and distribution were separated from BPDB and established as government-owned public limited companies to operate as independent utilities. Another element of the reform process included the establishment of the Bangladesh Energy Regulatory Commission under the BERC Act of 2003 that empowers the Commission to act as the regulator of the energy sector.

Meanwhile, the RE Program continued to demonstrate noteworthy success, showing significant growth from the late 1990s through 2006, with the number of connections increasing at an average annual rate of over 600,000 and doubling the number of connections to over 7 million during this period. While considered positive, this high rate of growth began to stress the REB's institutional capacity to effectively and efficiently operate the rapidly expanding distribution systems and there were indications of a decline in the Program's performance. Also, the financial condition of many of the PBSs showed a decline, with greater investments being made into more remote rural areas that had less potential to be financially viable service areas. The decline in both operational and financial performance caused concern in terms of the viability and sustainability of the RE Program. Two studies were conducted, one by NRECA International and funded by USAID ("Bangladesh Rural Electrification Program at the Crossroads – An Analysis of Barriers, Threats, and Opportunities to Enhance Program Sustainability", February 2005), and another by Snowy Mountain Engineering Company and funded by the World Bank ("Study to Assess Effectiveness of Current Organizational and Management Structure of REB of Bangladesh," Final Report July 2010). Both studies identified a number of challenges facing the RE Program; the objective was that the Government and REB would begin taking the necessary action to address the identified areas that were seen by donors as reasons for concern. The overall focus of both studies was linked not only to operating the existing system serving more than 7 million connections but also examining REB's capacity to support the Government of Bangladesh's vision "to provide access to affordable and reliable electricity to all by the year 2020."

There were clear indications that effective governance was declining and related activities were becoming less transparent. There was a need for restructuring REB to allow for a clear separation between the Board's policy function and that of the Executive staff as the means for ensuring improved governance and transparency. This proposed change would also provide the opportunity for selecting competent professionals with the necessary background and experience to serve in the senior level positions within REB, as well as more effectively address REB's human resources needs and the need to be free from existing government policies that placed restrictions on organizational setup, recruitment, promotion, and compensation.

Another vitally important institutional issue identified as a concern was the development of an ineffective relationship between REB and the individual PBSs. The intended role of REB would be to develop PBSs to the point of becoming a fully separate and independent entity, as stated in the Preamble of the REB Bylaws. The increased PBS independence continued to be a major concern for the donor community and resulted in the development of the initial "Graduation Policy;" this Policy had not been implemented as many within REB were very reluctant to support the idea of allowing selected PBSs to be more independent.

Another significant issue that impacts the financial condition of individual PBSs and the overall RE Program concerns how capital requirements would be met, as more and more investments are made into more and more remote areas, that in most cases are not viable. Consultants and development partners continued to stress the need for having tariff reform in terms of the retail rate-setting becoming more cost-based as a means for dealing with the financial position of the PBSs. Options related to the use of subsidies for more remote PBSs continue to be considered by the Government due to the Constitutional provision that all citizens should have access to electricity. If decisions are taken in support of subsidies and/or margins transfer, steps must be taken to ensure full transparency and to ensure that the best possible performance by the participating PBSs is being maintained and poor performance is not rewarded.

## **BACKGROUND ON REGULATIONS**

The concept of energy regulation for Bangladesh has been a very important issue for a long time. After a long period of work with the USAID and other donors, the BEREC Act was passed in March 2003 to make provisions for the establishment of an independent and impartial regulatory commission to: create an atmosphere conducive to private investment in the generation of electricity, and transmission, transportation and marketing of gas resources and petroleum products; ensure transparency in the management, operation, and tariff determination in these sectors; protect consumers' interest; and promote the creation of a competitive market.

The Bangladesh Energy Regulatory Commission was established on April 27, 2004 with the appointment of two members of the five-member Commission, including the Chairman. The first Chairman was appointed on June 4, 2005. The Commission has the mandate to regulate the gas, electricity, and petroleum sectors for the whole of Bangladesh.

USAID, in partnership with the Government of Bangladesh, has championed energy governance from two fronts – the electricity cooperatives and the energy regulatory body. USAID has worked with the GOB since 1997, assisting with the formulation of the Bangladesh Energy Regulatory Commission Act of 2003, and the establishment of the BEREC.

USAID continues to partner with the GOB under the Improved Capacity for Energy Access Project in strengthening Bangladesh's energy regulatory regime and in building sustainable capacity at the BEREC. ICEA assisted BEREC and its stakeholders on best practice energy regulation and improved energy regulatory governance through practical due process.

Adoption and implementation of regulations and internal procedures by BEREC as mandated by the BEREC Act of 2003 seeks to help delineate the roles for policy making, operation, and regulation, while seeking to enhance overall sector governance and performance. More importantly, it helps protect the interest of

consumers and investors and provide incentives for energy sector utilities to improve the efficiency of operations and the quality of service, achieve financial solvency (through effective tariffs and targeted subsidies), attract public and private sector investment capital, and eventually pave the way for a market-based structure.

The establishment of appropriate regulatory principles for the REB and its PBSs, through formalized licensing and tariff-setting, will help them improve their financial performance. Under this component of ICEA, technical assistance and training was provided to BERC to assist them in carrying out necessary functions as required under the Act.

# III. ICEA PROGRAM OBJECTIVES

The following were the objectives that the ICEA Program was to achieve over the three and a half-year period. It was understood that some of the objectives might have appeared to be outside USAID and the Contractor's manageable interests within this time frame. However, the Contractor carried out its tasks in such a manner as to help facilitate achievement of these tasks rather than purely focus on task outputs.

As was previously noted, ICEA consists of two major components, which include: (i) promotion of self-reliance of PBSs, and (ii) strengthening the regulatory regime of the energy sector. Component 1 dealt with the following objectives:

- Adoption and implementation of the Graduation Policy and implementation plan by 5 to 10 PBSs.
- Adoption and implementation of the supplemental generation power supply and purchasing and demand-side management (DSM) plans by the selected pilot PBSs in order to better help them meet their system load requirements and further enhance their financial viability.
- Overall improved performance of the PBSs as an outcome of selected graduations and improved institutional capacities.
- Enhanced capabilities within REB to sustain and expand the PBS Graduation Policy over time.
- Increased ability and commitment of PBSs to provide business support services to maximize socio-economic impacts associated with access to modern energy services.

The key objectives under Component 2 focused on the regulatory regime, including:

- Approval and implementation of necessary energy regulations to improve energy sector governance, overall performance, and investment to fuel continued economic growth.
- Adoption and implementation of BERC internal operating procedures to allow it to independently carry out its mandate under the Bangladesh Energy Regulatory Commission (BERC) Act of 2003.
- Approval and implementation of a regulatory framework governing REB and the PBSs to help strengthen PBS financial viability, improve service quality, and facilitate implementation of the PBS Graduation Policy.
- Adoption and enforcement of appropriate market structure and associated rules to ensure a competitive and sustainable power sector market for efficient market operations and increased consumer benefits.
- Adoption of appropriate tariff methodologies to enhance the financial positions of sector players, while ensuring appropriate social safety net considerations.

Objectives of the ICEA program in the two major components are discussed and reported in the following sections.

## COMPONENT I – PROMOTE SELF-RELIANCE OF PBSs

Objectives: This component seeks to: (i) increase management authority of the PBSs to allow them to improve their performance, financial sustainability, and access additional generation sources; (ii) enhance local economic development through business advisory services of the PBSs; and (iii) strengthen REB's ability to provide oversight and capacity building to the PBSs.

Discussion: Since the creation of REB, the number and size of its PBSs has grown substantially, with 70 PBSs operating across the country today. This has put considerable strain on REB's operational and management capacity. As these PBSs continue to develop their capabilities, REB will need to begin its transition from a provider of implementation support to one of oversight. The growing electricity shortage has also had a major impact on the existing rural electricity sector, where significant load shedding has only exacerbated the precarious financial positions of many of the PBSs. Though the GOB is considering various medium- and long-term plans to increase power generation capacity, including regional sources, these strategies are unlikely to address the shortages in rural areas. REB hoped to address this through the creation of the Rural Power Company, Ltd (RPCL), but its creation has led to the most expensive and inefficient power station in the country, due to poor management and corruption.

The GOB has a policy for PBS graduation, which provides criteria for PBSs *“which have achieved financial solvency and stability. The designated PBSs shall be granted increased management authority to conduct their operations and the withdrawn subsidies shall be made available to those PBSs that are in need of additional financial assistance.”* About 25% of the PBSs have met these criteria, although REB has yet to approve their graduation. The recent power shortages have caused some PBSs to slip below the financial viability criteria. Further, no clear roadmap exists on how best to implement the Graduation Policy, which areas of PBS operations should be decentralized first, and what training the PBSs will need to improve their operations, etc.,— all elements needed to ensure smooth graduation. The establishment and adoption of a framework for the implementation of this policy, under the ICEA Program, and implementation on a pilot basis with 5 to 10 PBSs, could offer substantial value to assess how the policy could best be carried out and expanded over time. The provision of technical assistance to REB and select PBSs is needed to help them evolve and assert themselves as self-sustaining entities, while becoming integrated into the redefined relationship with REB, and within the new regulatory provisions to be established by BERC.

Given the major power crisis facing the country, it is also hoped that graduated PBSs may be allowed to seek alternative options to identify and directly contract their power supply needs and access additional generation capacities from other sources in order to better meet their end-use demand within their respective systems. This would allow the PBSs to meet their own power requirement directly from reliable sources or to contract generation capacity to private investors without having to rely on any cumbersome and non-transparent processes under REB. Further, greater ability to provide power would further improve the financial position of many of the PBSs by enhancing power sales, and thus lead to higher revenues. The ICEA Program would seek to improve PBS capabilities to explore and analyze various options, whether contracting directly from the grid, captive power sources or new small power producers, and then to provide assistance to help implement one or more of these options. Similarly, options to improve end-use efficiency will be explored and viable options implemented to reduce the load requirements and thus, increase hours of service. Capacity would also be built within the PBSs to conduct open and transparent procurement and contracting processes for power, as well as to implement tariff methodology, service standard, technical codes, and accounting procedures that will also be warranted by BERC regulations, and are crucial to the success of these efforts.

Despite the potential graduation of some PBSs, REB would continue to play a central role in the sector, albeit shifting from providing operational, financial, and management support to oversight and, as needed, customized technical support. Continued support to REB will also be essential to ensure smooth implementation of the Graduation Policy and its future expansion. Further, the establishment of a center of excellence, or a similar approach to provide technical support and training to the rest of the PBSs, would be an important part of the Program. Support would also be provided to the PBSs to offer business

development services to improve the commercial mix of their customer base (and thus their revenue base), while helping to ensure that local economic development is maximized through the provision of electricity services.

## **TASK I: IMPLEMENT PBS GRADUATION POLICY ON PILOT BASIS**

### **TASKS AND OBJECTIVES:**

#### **(a) Develop an implementation plan for the PBS Graduation Policy**

- Review existing policies and operational guidelines pertaining to PBS graduation and identify any gaps, deficiencies or barriers that need to be addressed in order to successfully implement the policy.
- Review the criteria for selection of graduating PBSs and recommend expanded criteria as appropriate to establish a shortlist of 5 to 10 PBSs for implementation on a pilot basis and, in close consultation with USAID and REB/PBSs, develop a shortlist of PBSs.
- Develop a draft implementation plan for PBS graduation, which will include but not be limited to: (i) define/clarify “graduation,” including specific functions and authorities the PBS should assume during the graduation process; (ii) recommend changes to REB/PBS operational policies to allow for enhanced managerial, commercial, and financial performance and increased operational authority, including clarifying the relationship with REB/BERC, formulation of tariffs, treatment of retained earnings, financing of operations and maintenance (O&M) and system upgrades/expansion, purchase of power, criteria for Board member selection, etc.; (iii) recommend measures to be adopted by concerned stakeholders in order to ensure smooth implementation of the Graduation Policy, highlighting critical path, budget implications, timing, etc.; and (iv) review recommended changes and measures with appropriate government officials and stakeholders, including other donors, and finalize them.

#### **(b) Build capabilities within the REB and PBSs in order to strengthen their performance**

- Build management capacity of the pilot PBSs in commercial operations and cost recovery, transparency, and other regulatory principles to ensure compliance with BERC licensing obligations and successful operations as graduated PBSs. This would include: (i) conducting a needs assessment for pilot PBSs and identifying specific training requirements in order to ensure their successful operation; (ii) recommending a plan for addressing gaps with a prioritized set of actions; and (iii) implementing high priority, short-term needs.
- Build functional capabilities within the selected PBSs based on new authorities associated with graduation (e.g., O&M, commercial borrowing, system planning, procurement, construction, inventory control, tariff formulation). This would include: (i) conducting an assessment of pilot PBS abilities to assume new functions and identify areas of weakness; (ii) recommending a plan for addressing most critical weaknesses; and (iii) implementing high priority, short-term actions.
- Enhance capacity within REB to support the graduated and prospective graduating PBSs through the provision of customized technical support, including: (i) conducting a skills gap analysis for REBs to support graduating PBSs; (ii) recommending a plan for addressing gaps, which may include training of existing REB personnel as well as establishing a broader network of local experts; and (iii) implementing the approved plan.
- Deliver continued capacity building to REB, perhaps through creation of a center of excellence, to help REB improve performance of the non-pilot PBSs and thus, increase prospects for expanded PBS graduation.

**(c) Assist pilot PBSs to implement the graduation plan**

- Work with pilot PBSs to customize a graduation implementation plan based on their specific performance weaknesses.
- Provide advisory services to pilot PBSs to implement their customized plans, identifying any implementation issues that arise, and recommending options to address them.
- Develop a set of indicators to measure performance of pilot PBSs before, during, and after graduation to assess the impacts of graduation on their performance and to document results in order to help make the case for an expanded graduation program in the future.

The ICEA Team undertook project Task 1 “Implementing PBS Graduation Policy on Pilot Basis,” with the plan to pilot test the revised Graduation Policy in 5-10 PBSs through a screening process that was developed by the ICEA Team and REB Task Force. The screening process had provisions for identifying additional PBSs as pilots. Going through the process of testing for selection of pilot PBSs proved overwhelming, and the ICEA team and REB Task Force decided on a strategy to select two PBSs for initial testing. This initial testing was later expanded by one PBS, resulting in three Pilot PBSs (Sirajgonj, Tangail, Jessore) with one PBS in each of REB’s three zones of PBS Management Directorates. Since the Graduation Policy was a new initiative for improving the capability of the cooperatives, the ICEA Team and REB Task Force felt that this would be an effective way to select pilot PBSs. Once the initial piloting was successfully implemented, ICEA planned to work with the Task Force to formulate a process to expedite implementation of the policy in additional PBSs (5 to 10), as outlined in the ICEA scope of work. This approach was presented in the ICEA Workplans that were reviewed and approved by USAID.

## **TASK II: ENHANCE PBS ABILITY TO MEET DEMAND**

### **TASKS AND OBJECTIVES:**

- (a) Conduct an analysis of options to enhance PBS access to supplemental generation sources
- Develop customized analyses of power supply sources<sup>1</sup> for selected PBSs, which should include captive power, wholesale power from the grid, and new small power producers, and identify viable options.
  - Review contracting options for increasing power purchase from the grid and other generation options and develop appropriate model contracts.
  - Review options to create a model small power purchase agreement (SPPA), which would offer standard (non-negotiable) terms and conditions for small power producers (SPPs) and captive generation.
  - Develop a strategy and implementation plan to customize and pursue viable options.
  - Build capacity within REB and PBSs to conduct future analyses of options on their own.

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<sup>1</sup> Recent shortages of natural gas supply have severely hampered efforts by the GOB to bring new generation capacity on-line. Therefore, the GOB has requested that, under the circumstances, natural gas not be considered as a potential fuel for new generation that PBSs may contract. Other conventional fuels, such as coal, or renewable resources, such as biomass and small hydro, would likely be most viable. Discussions with the Infrastructure Development Company Limited (IDCOL) suggest that there may be great untapped generation potential in many of the sugar mills operating across the country, using bagasse for cogeneration. This option should be explored with the PBSs.

- (b) Support PBS implementation of the plan, as developed in Subcomponent B, subtask (a) above. Tasks may include:
  - Assist REB and pilot PBSs to develop and negotiate new and/or modified contracts for additional power purchase from the grid and/or captive sources.
  - Provide advisory services to pilot PBSs to conduct SPP bids, which may include assisting with pre-bidding conferences, providing independent technical reviews of proposals and supporting the PBSs through contract negotiations and financial closure.
  - Exploring options for offering guarantees (possibly using USAID’s Development Credit Authority) and other support to SPPs interested in selling power to pilot PBSs.
- (c) Review options to support end-use energy efficiency within PBS systems
  - Explore options and potential impacts to supplement the REB and pilot PBS generation source plan with appropriate DSM programs in order to further help them meet their load requirements.
  - As appropriate, develop 1-2 targeted DSM programs for implementation by the pilot PBSs (e.g., consumer education, promotion of compact fluorescent lamps through bulk purchase, and/or electricity bill financing).
  - Provide advisory services to REB and PBSs during the implementation phase, identifying implementation issues and recommending actions to address them.
  - Build REB capacity to incorporate DSM within their planning functions and replicate successful DSM programs within other PBSs, as appropriate.

### **TASK III: SUPPORT LOCAL ECONOMIC DEVELOPMENT**

#### **TASKS AND OBJECTIVES:**

- (a) Review options for PBSs (pilot and non-pilot) to improve their customer composition, enhance revenues and support local economic development through the offering of business support services (e.g., advising local industries how best to meet their energy needs, helping develop new small and medium-sized enterprises (SMEs) in order to boost PBS commercial electricity sales) and develop a PBS business plan template.
- (b) Provide advisory services to select PBSs to implement the business plan, which may include facilitating community entrepreneur linkages to other institutions and programs (e.g., small and medium enterprise training, microfinance), offering advisory services for electrical applications, fostering private partnerships, and promoting other productive uses.
- (c) Develop a set of indicators for PBSs to track in order to assess outputs and outcomes from this subcomponent, which may include number of businesses supported, number of linkages facilitated, enhanced utility revenues, and private investment mobilized through partnerships, along with some more detailed anecdotes about local economic development fostered through these support services.

## **COMPONENT 2 – STRENGTHEN REGULATORY REGIME OF THE ENERGY SECTOR**

Objectives: The objectives of this component are to improve the legal and regulatory regime in the energy sector in order to improve overall sector performance, transparency and accountability, financial sustainability, and private investment.

Discussion: A well-designed and functional regulatory climate is essential to promote an efficient and effective energy sector. However, well-intentioned regulations are not enough; such regimes must be properly implemented and enforced in a credible and transparent manner or else investor and consumer confidence may be undermined. Until such an enabling environment is firmly in place, efforts to attract investment, local and foreign, and subsequently energize other sectors will remain constrained.

The 2003 BERC Act provides the policy impetus to establish such a regulatory regime and institutions to support its implementation. The Act provides BERC with the mandate to ensure transparency in the management, operation, and tariff determination in the energy sector; to protect consumers' interests; to promote creation of a competitive market; and to create an atmosphere conducive to private investment. To date, however, BERC has not exercised its full authority and, as a result, progress in carrying out provisions of the Act has been slow. The GOB has not granted BERC full independence to pursue its mandate and BERC has, until now, been unable to fill all its mandates. The current BERC leadership has made no attempt to regain BERC's independence as was practiced by its predecessor during the first half of the ICEA Project. Two new commissioners have been recently appointed and appointment of another two is uncertain, which is keeping the Commission from being fully functional. Senior level staff trained by the ICEA are members of government cadre service on deputation and are temporary in nature. They are unlikely to remain at the Commission long enough to train other regulatory specialist/experts. Also, filling all of the vacant positions of staff with qualified professionals may take several months to complete, and any future USAID technical assistance should target the bulk of its support once a critical mass of staff is in place.

## **TASK IV: POLICY AND OPERATIONAL SUPPORT TO BERC**

### **TASKS AND OBJECTIVES:**

- (a) Review the BERC Act and conduct assessment of BERC's capabilities to fully carry out the authority the Act provides, including identifying new required internal operating procedures, institutional changes, skill needs, etc.
- (b) Provide advisory services to assist BERC to fully address areas noted above, including establishing procedures to ensure transparent, competitive, and efficient sector investment and operations.
- (c) Provide advisory services to BERC to carry out its core regulatory functions, which may include carrying out research on global best practices, drafting regulations, assisting in public hearings and rate cases, conducting supplemental analyses, contracting of outside experts, etc.
- (d) Review procedures to develop and implement tariff schemes, including appropriate cross-subsidies and social safety net programs, and develop a set of recommendations to improve them.
- (e) Develop internal procedures for BERC to conduct public outreach and consultation, and dissemination of BERC procedures, actions, and decisions. This would entail assisting BERC to actively engage with consumer groups, particularly the Consumers' Association of Bangladesh (CAB), to build on their efforts to date, as well as other groups, including women's groups, to facilitate their participation in the regulatory environment.
- (f) Review BERC's role with respect to REB and the PBSs in light of 2003 BERC Act and PBS Graduation Policy and prepare a discussion paper of issues and recommendations to address them.
- (g) Recommend additional policies and actions to further improve the development of the electricity sector, improve regulatory functions, and facilitate private participation and investment and energy access.

- (h) As appropriate, review and analyze options for the medium- and long-term structure of the power market that could evolve over time and develop appropriate market rules, grid and other codes, model contracts, and provisions to allow and encourage private sector participation.

## **TASK V: INSTITUTIONAL STRENGTHENING OF BERC**

### **TASKS AND OBJECTIVES:**

- (a) Seek improvements in the management and leadership of BERC
  - Conduct an assessment of BERC leadership to fully implement the BERC Act and identify/recommend specific institutional adjustments and management support needed.
  - Provide advisory services to BERC to implement the recommendations above.
- (b) Improve the staffing of BERC
  - Conduct a skills gap analysis for BERC staff to competently conduct all functions associated with the Act and previous relevant legislation, and fulfill its clarified role with respect to REB/PBSs, and recommend a plan for addressing priority areas.
  - Implement staff training plans developed in previous subtask.
  - Recommend actions to reform the staff compensation system and position descriptions/qualifications in order to improve staff composition and retention.

# IV. CAPACITY BUILDING

ICEA's two major components, as stated earlier, were: (i) to promote self-reliance of PBSs through implementation of a Graduation Policy on a pilot basis and (ii) to strengthen the regulatory regime of the energy sector. In order to detail accomplishments of the ICEA program, all tasks are discussed and elaborated as follows:

For Component 1, ICEA worked closely with the Rural Electrification Board and Palli Bidyut Samities and worked to implement a PBS graduation policy on a pilot basis; in order to do this, ICEA developed an implementation plan for PBS graduation, selected three PBSs as pilots for graduation, built the capacity of REB and PBS to strengthen their performance, and assisted pilot PBSs to implement the graduation plan. Under this component, ICEA also supported PBSs to develop and implement strategies to better meet system load requirements. In order to do this, the program supported the PBSs in conducting an analysis of options to enhance PBS access to supplemental power generation, supported the PBS implementation options plan, reviewed options to support end use emergency efficiency with PBS systems, and assisted PBSs to develop business advisory service functions to support local economic development, under which ICEA also helped REB review options for pilot PBSs to improve customer composition and enhance revenue, and provided advisory services for local economic development.

For Component 2, ICEA's specific objectives aimed to: provide high quality technical advisory services to USAID and selected Bangladesh energy agencies to strengthen energy regulatory agency and energy utilities' operational deficiencies in order to support the further development of the sector; and improve the legal and regulatory regime in the power sector, through support to the BERC, in order to increase overall sector performance, transparency, accountability, financial sustainability and private investment

In these two components there were five tasks where ICEA achieved remarkable accomplishments which are described in the following sections.

## TASK I: IMPLEMENT PBS GRADUATION POLICY ON PILOT BASIS

### PROMOTION OF RATIONALE FOR PBS GRADUATION

The basic ICEA objective of "promoting self-reliance of PBSs" stems from a belief that PBSs should be able to function more independently, as was envisioned as part of the initial intent of the RE Program. The donor community had long supported having this greater self-sufficiency manifested within the RE Program, with capable PBSs having less direct involvement of REB, thus allowing REB to focus its scarce resources on strengthening the weaker PBSs. This perspective had gradually eluded some of the REB management and staff and the ICEA initiative on PBS graduation was designed to help revive this important element of the RE Program and to make it a priority for establishing a more effective working relationship between REB and the PBSs.

### GRADUATION TASK FORCE

- Formation of Task Force: The suggestion included in the ICEA Solicitation for utilizing a Task Force to direct the work associated with implementing a revised PBS graduation policy was fully supported by the ICEA program. Utilizing the Task Force was recognized as a requirement for maximizing input from REB and other stakeholders and gaining support for implementing the initiative on PBS graduation. While the GOB had previously concurred with the existence of a Graduation Policy for the PBSs under the purview of REB, no roadmap was in existence to support its implementation. Working in collaboration with the concerned REB officers, the ICEA drafted the Terms of Reference (TOR) for the Graduation Task Force, including its members and its responsibilities, and submitted the draft TOR to REB for approval in

February 2009. The draft TOR was formally accepted by the REB Chairman and an Office Order was issued on April 2009 establishing the Task Force and directing the assigned officers to actively participate in the work as outlined in the Terms of Reference.

- **Terms of Reference for Task Force:** According to the approved TOR, the Task Force was empowered to complete a series of interventions/tasks related to implementing the Graduation Policy for PBSs on a Pilot basis, as outlined for Task 1 in the ICEA Project documents. The following is the language of approved TOR for the Task Force:
  1. *Develop an implementation plan for the PBS Graduation Policy;*
  2. *Support the building of capabilities within the REB and PBSs in order to strengthen their performance*
  3. *Assist pilot PBSs to implement the graduation plan*
  4. *Interface with Ministry of Power, Energy & Mineral Resources (MPEMR) and the Bangladesh Energy Regulatory Commission (BERC), familiarizing BERC with the needs of the PBSs, and attempting to mitigate MPEMR decisions that have had a negative impact on the REB program as well as for any decisions that may have similar impacts in the future.*
- **Task Force Engagement:** Despite there being some delay in having the Task Force formally established by the REB, once it was formed there was very effective engagement by the Task Force and its members, with positive leadership provided by the REB's officer serving as the Executive Director at that time. As Chairman of the Task Force, the Executive Director was to facilitate the work of the Task Force in terms of recognizing the growing need for increased empowerment and self-sufficiency of PBSs, particularly given the current size of the RE Program and the need for its continued growth and expansion in the future. The first Task Force meeting was held on April 23, 2009 and the Task Force continued to meet on a monthly basis through December 2009. However, in early 2010, the retirement of the Executive Director initiated a change in the person serving in that post, resulting in a decline in support for the activities of the Task Force and the overall implementation of this particular Task. These changes had significant negative impact on the results achieved by the ICEA Project under this task. As the newly appointed Executive Director did not have much positive support for the policy, the effectiveness of the Task Force decreased thereafter.

#### **REVIEW OF EXISTING PBS GRADUATION POLICY**

With one of the three ICEA tasks related to supporting the self-sufficiency of the PBSs through the implementation of the PBS Graduation Policy on a pilot basis, the Task Force agreed that having an appropriate Graduation Policy that could be effectively implemented should be the initial step for this process. This required having the Task Force review the existing PBS Graduation Policy, which basically existed in name only, as it had not yet been implemented by REB despite the strong interest from the donor community and agreement from REB to implement the approved policy.

#### **REVISED PBS GRADUATION POLICY WITH EIGHT APPENDICES**

In compliance with the Task Force's decision, the revised PBS Graduation Policy was to provide a framework which REB and PBSs could follow for effectively implementing PBS Graduation after the completion of the ICEA Project. Consequently, ICEA worked in collaboration with members of the Task Force during the preparation of the revised Graduation Policy in order to incorporate all relevant elements from the selection of PBSs to the process of revoking graduation status if a PBS fails to maintain the required performance level.

The revised PBS Graduation Policy provides an explanation of what PBS Graduation means and how PBS Graduation is in actuality a "process" for PBSs to achieve a higher level of professionalism while assuming more authorities and responsibilities for operating as a more self-sufficient enterprise, as outlined in the Preamble to the REB By-laws. The process includes identification of characteristics of well-run electric utilities, selection of exemplary PBSs to work towards achieving those characteristics, eventual "graduation" of qualified PBSs, gradual assumption of additional authorities and responsibilities by graduated PBSs, assisting REB in an expanded role of monitoring graduated PBSs, as well as outlining the procedure for

revocation of graduated status if necessary. The following table provides a listing of the revised Graduation Policy’s Appendices:

Appendix No.	Short Title	Description
A	Key characteristics and authorities and responsibilities of graduated PBSs	Outlines characteristics of well-run electric utilities and converts those into authorities and responsibilities of graduated PBSs
B	Selection process	Details the specific steps towards graduation
C	Full graduation requirements	Outlines four steps to become graduated
D	Training requirements	Specifics training for Board, Management, and technical personnel required prior to graduation
E	PBS Model Policy Manual	A sample complete Policy Manual for PBS adoption suggested for PBSs interested in becoming graduated
F	Primary additional responsibilities and authorities	Ties to Appendix A since both relate to “authorities and responsibilities.” This Appendix clearly identifies the most important additional authorities and responsibilities
G	REB monitoring	Provides guidance to REB to administer responsible monitoring of graduated PBSs
H	Revocation of graduation status	Outlines six steps to be followed in the unlikely event that any graduated status needs to be revoked

#### **DEVELOPMENT OF PROCEDURE FOR SELECTING PBS FOR GRADUATION**

Clearly a critical part of the work of the Task Force was the development of an appropriate process for selecting PBSs for graduation. The incorporation of the criteria to be used and the process for completing the selection had to be developed and agreed upon by the Task Force and subsequently by the Executive Committee and full REB Board. This effort focused on the preparation of an appropriate selection process that could be used by REB both now and in the future, as well as utilizing this process for selecting the pilot PBSs under the ICEA Project.

- Two Step Procedures: The ICEA’s approach working in collaboration with the Task Force members and other concerned REB officers was twofold.
- Desk Evaluation Criteria: The ICEA Team worked with the Task Force to identify criteria for the “Desk Evaluation” using a series of statistics and ratios recognized by the world-wide industry to indicate the overall performance of rural electric distribution cooperatives, many of which were currently being used by the REB to monitor PBS performance. Most of the criteria are associated with financial performance so the Desk Evaluation is basically a “financial review.” The process included an initial screening of all PBSs on meeting four minimum criteria. Those PBSs meeting the four minimum criteria were further assessed against 13 additional criteria.
- Graduation Field Assessment Criteria: The Graduation Field Assessment is the second part of the formal process for selecting PBSs for Graduation based on the consensus of the Task Force that the selection of PBSs had to be based on more than just financial criteria.

#### **ACTUAL SELECTION OF PILOT GRADUATION PBSs FOR ICEA**

- Decision for Three Pilots: The plan and approach to the piloting of the revised Graduation Policy was based on a decision taken by the Graduation Task Force and senior REB officials. It was suggested that

three PBSs be selected as pilots with one from each of the three Management Operations Directorates – namely Central, North, and South. This was based on using three pilot PBSs for testing various aspects of the Graduation Plan that was being developed and then be included in the final Graduation Plan that would be utilized by REB to continue with the graduation of additional qualified PBSs, targeting 5 to 10 as outlined in the ICEA scope of work.

- Selection Process for ICEA Piloting with Modified Criteria: At the time when the Task Force was to select pilot PBSs for testing the revised Graduation Policy, the financial position of most PBSs was declining for a number of factors, many of which were not under the control of REB and the individual PBSs.

First Selection Criteria – Modified Minimum Graduation Criteria (Temporary)

In order for a PBS to be considered for selection as a potential candidate for Graduation, at a minimum a PBS must meet the following criteria:

1. Have completed at least 10 years of operations (Note – Gazipur, Narayangonj, and Chittagong-3 are exempted from this requirement, as each had been a part of other long-established PBSs)
2. Have positive “Total Equities and Margins” (Form 550, Part C, Line 39) as of the end of the last fiscal year
3. Have earned positive Margins (Form 550, Part A, Line 17) for at least one of the two fiscal years ending June 30, 2008 and June 30, 2007

(Note: Given the poor financial condition of many of the PBSs due to unresolved tariff issues, some temporary adjustments were made to match the current circumstances. Under item 3, the requirement was reduced from having positive margins for the last two years to having positive margins for at least one of the last two years. Also, the requirement for being current on Debt Service Payments to REB was dropped from the established minimum requirements.)

Second Selection Criteria – Modified Desk Evaluation and Graduation Assessment (Temporary)

In order to address the current financial situation for the PBSs, the second set of selection criteria was also modified. Modifications resulted in the temporary removal of two indicators, leaving 11 indicators instead of 13. Both the requirement for having a “Times Interest Earned Ratio” (TIER) of 1.5 for current and previous fiscal years and the requirement for being current with long-term debt repayment were removed.

**TRAINING ASSESSMENT AND PLANS FOR THE PILOT PBSs**

Thorough training is absolutely critical for success of the PBS Graduation Program. Each PBS being considered for graduation must have the training courses outlined in Appendix D of the Graduation Policy (or as modified by the appropriate REB officers) for the appropriate PBS categories of personnel within four years (48 months) of award of graduation.

This Appendix outlines the training required for each PBS being considered for graduation. Training is divided into the following five categories:

- PBS Boards
- General Manager, AGMs, and DGMs
- Finance
- Operations and Engineering
- Member Services

Training outlined in this Appendix may be modified as shown below; however, changes to training must still accomplish the goal of “understanding and applying the characteristics,” since graduation is based upon actual application of the characteristics. Modification of training can be made by the REB concerned officers if required.

## **TRAINING FOR PILOT GRADUATION PBSs**

Significant training for pilot PBSs was provided in support of the PBS graduation initiative provided by ICEA. This section of the report provides a summary of the formal training programs that were conducted during the project period.

### **ORIENTATION WORKSHOPS ON PBS GRADUATION AT 3 PILOT PBSs FOR BOARDS AND MANAGEMENT**

Training sessions on the Orientation on the PBS Graduation Concept were delivered to Boards and management teams of each of the three pilot PBSs. The objective of the training was to provide the PBS Directors and members of the management team background on the ICEA Project and to present information on the PBS Graduation concept in preparation for their subsequent involvement with its implementation. Three programs were delivered during the first half of May 2010 with a total of 71 participants attending.

- Program Overview: The content of the training focused on providing a comprehensive overview of the concept of PBS Graduation that would be implemented under the ICEA Project. Given the controversy of the concept of PBS graduation in some circles within the RE Program, there was a strong emphasis on presenting the rationale for promoting greater PBS independence and their functioning as independent entities as outlined in the Preamble of the REB By-Laws. It was confirmed that graduation would mean a greater delegation of authority; however, that does not mean that PBSs would no longer be subject to oversight and monitoring by REB. It was stressed that REB’s oversight function would move to more of an audit activity. The work assigned to the Graduation Task Force was outlined as well as its progress to date. Participants were also introduced to the list of operating characteristics that had been prepared by the Task Force with input from a number of PBS GMs.
- Observations: The overall reactions of the participants were positive as most PBS Directors and management staff believe the PBSs should have more authority delegated to them and thus be able to function more independently. They indicated that this would allow them to provide better service to their membership if they were empowered to handle more of the day-to-day operations without having to seek clearances and/or approvals from REB, which requires additional time and effort. When asked, most indicated that they would be willing to assume greater responsibility and the associated accountability that would be necessary with greater independence. One of the main concerns expressed by Board members was the importance of moving this forward to demonstrate a commitment to implement the revised Graduation Policy.

### **ORIENTATION WORKSHOPS ON PBS GRADUATION AT THREE PILOT PBSs FOR PBS SUPERVISORS**

- As the supervisors at the three pilot PBSs would be impacted with the implementation of PBS graduation, a specific program was prepared for this group of PBS personnel working in different functional areas of the PBS. The program provided an orientation on the concept of PBS graduation that is being implemented under the ICEA Project. The programs for the three pilot PBSs were conducted in June and early July 2010 and included a total of 94 participants.
- Program Overview: The participants were provided an overview of the ICEA Project with a description of specific tasks that were related most closely with REB and PBS activities – namely, graduation and options for meeting PBS demand – including the introduction of demand-side management, and promoting economic development in PBS areas. Participants were briefed on the concept of PBS graduation with clarifications made as to the meaning of graduation and the reasons for its importance. It was confirmed that even with increased delegation and a greater degree of independence, the PBSs would still be

accountable to REB as before; however, REB's involvement would be focused more from an audit perspective and not on operational issues. Lastly, the presentation covered the plan for the development of a PBS Policy Manual, according to the original intent of PBS Policy Instruction 300-16. Adhering to the Policy Manual would be a requirement of a graduated PBS, in addition to completing the 100, 200, and 300 Instruction Series. Various areas to be included in the Policy Manual were discussed with the participants.

- **Observations:** The participants in all three locations were engaged in the presentations and discussions on all the issues presented. A sampling of the comments/questions raised included the following: What will be the benefits of the employees after being graduated? After graduation piloting, will the PBS get approval for generation of electricity? Will the PBS have the chance for training abroad? Will PBS get the chances of recruiting their own External Auditor? Why do PBS need to develop policies for their own? How the training program will be organized? Is it thru REB? Can task force be reconstituted involving representations of 3 piloting PBSs? How long the piloting be undertaken? What will be the timeframe of piloting? Replies were provided jointly by ICEA and REB staff involved in the delivery of the Program. The types of questions indicate an interest in participating in PBS graduation and should be supportive of the pilot testing in their respective PBSs.

#### **ENGINEERING/TECHNICAL TRAINING:**

##### **MANAGING CONSTRUCTION OPERATIONS & MAINTENANCE (COM) AND ENGINEERING DEPARTMENTS**

This particular program is the first in a series of training programs covering engineering and technical areas that were delivered to the concerned PBS personnel in the three pilot PBSs and to the REB engineering staff responsible for monitoring PBS engineering and technical operations. The focus of this training was to provide a combination of information related to both management and technical concepts and techniques as many of those working in the areas of operations and engineering are relatively young and have limited practical experience. In some instances follow-up visits were also made to the pilot PBSs to monitor progress on assignments related to the training that was given to the participating PBS staff. Three different sessions were conducted for the concerned REB and PBS personnel, with a total of 59 attending.

- **Program Overview:** This Program provided the participants with a basic overview of all aspects of the PBS COM Department and a general approach for managing the work to ensure reliable power while also maintaining a positive working environment for all PBS staff. The importance of REB/PBS Guidelines (Policy Instructions) was highlighted in terms of guiding how work should be done in order to provide a uniform system within the RE Program. Similarly, the Engineering function was reviewed in terms of roles and responsibilities for REB, PBSs, and local consulting engineers assigned to each PBS. Use of different methods for managing the proper maintenance of PBS substations and other COM department work was presented with reference to REB/PBS Guidelines, requirements for proper record keeping, monthly reporting, line maintenance and inspections, reporting, and record keeping. Methods for managing the engineering function were also covered. Lastly, the subject of system planning was reviewed with emphasis on the need for proper coordination with the local engineering consultant.
- **Observations:** The participants from both REB and PBSs were found to be very engaged throughout the two-day program. It is apparent that many of the management staff for most COM departments are relatively young and have had limited training due to current requirements that people be posted to PBSs prior to receiving training, when previously, they received this training before being assigned to a PBS. Concerns were raised by participants over lack of the required materials needed for properly maintaining the substations, such as Oil Circuit Reclosers (OCRs) and voltage regulators, which frequently need to be taken out of service. Specific recommendations from the trainers indicated the need for additional training on management and on the performance of specific technical tasks which the management teams oversee. They also confirmed that practical knowledge was lacking for many of them. Participants requested that a specific program be prepared for conducting "power line inspections." The results of a short post-training

examination indicated positive improvement in the knowledge related to the topics covered during the two day program.

#### **ENGINEERING/TECHNICAL TRAINING: MANAGING E&O RECORD KEEPING**

This particular program is the second in series of training programs covering engineering and technical areas that were delivered to the concerned PBS personnel in the three pilot PBSs and to the REB engineering staff responsible for monitoring PBS engineering and technical operations. This program focused on the importance of proper record keeping within the engineering and operations functions of the PBS as these records support both operations and the engineering elements related to system planning for expansion and improved reliability of the distribution network. Three sessions of the program were conducted for a total of 62 participants in the latter part of 2010 and early 2011. Follow-up visits were also made to the pilot PBSs to monitor progress on assignments related to work areas covered during the training that were given to the participating PBS staff.

- Program Overview: This program provided the participants with additional concepts related to managing and supervising the areas of engineering and operations in support of the first program for this target population. Proper management techniques to more effectively manage these functional areas were presented in the program. The concept of good record keeping was outlined and why this needs to be a priority for the concerned PBS staff because of its value in effectively operating the system and for doing necessary planning. The program elaborated on how managers and supervisors need to ensure that the required record keeping is being completed properly because poor record keeping results in improper actions being taken to correct operational problems as well as causes poor planning for the distribution system. Elements of the program provided methods and techniques for effectively monitoring the record keeping as well as for taking corrective action to address deficiencies when they are identified. The emphasis that was placed on simply using and complying with REB/PBS Policy Instructions will help prevent problems with record keeping; however, these procedures and associated forms must be understood and properly adhered to by the concerned staff. A review of the specific processes used for checking and recording information related to updating Single Line Diagrams and transformer records as well as various other forms referenced in the related REB/PBS Policy Instructions was completed as part of the program.
- Observations: The trainers reported that participants provided positive feedback on the training program; however, the comments made indicate that record keeping does not have the priority that is required for the responsible personnel. Complaints were made that these functional areas are understaffed and consequently the quality of record keeping is inadequate compared to what is required. Results of the post testing indicated a positive average improvement in knowledge related to the subject of record keeping; however, the major question for the measure of true impact is evidence of improved implementation of record keeping process within the pilot PBSs. Evidence appears to indicate the follow-up and monitoring of the record keeping by the engineering and COM departments' management staff is lacking and requires continued reinforcement. This also indicates that REB is not actively involved in providing proper monitoring of this important work within the PBSs. As a means of initiating some improvements in the areas of engineering and operations, specific tasks were given to the participants from the three pilot PBSs with a plan for ICEA staff to follow up and monitor progress on these tasks as a method for institutionalizing the content of programs on Managing the Engineering and Operations functions and this program on record keeping.

#### **ENGINEERING/TECHNICAL TRAINING: ENHANCING REB/PBS SAFETY**

This particular program is the third in a series of training programs covering engineering and technical areas that was delivered to the concerned PBS personnel in the three pilot PBSs and to the REB engineering staff responsible for monitoring PBS engineering and technical operations. The genesis of this program is based on what was observed during various visits to different PBSs during the process of selecting PBSs as pilots of graduation. The high numbers of accidents and even fatalities was a cause for concern and the general observation was made that the numbers of incidents indicated that safety was not being properly emphasized.

Consequently, this program was developed for engineering staff responsible for PBS operations and maintenance activities as well as concerned REB System Operations personnel with a focus on implementing a safety program supported by a safety manual that is formally approved by the REB Board. A second training program was developed that presented key elements of the American Public Power Association Safety Manual, which REB has adopted as its reference manual for providing safety training to PBS line personnel. As such, the Bangladesh RE Program currently does not have a formal Safety Manual – which is required. Having an approved Safety Manual would help support making safety a higher priority for all REB/PBS staff.

- **Program Overview:** Participants were provided a broad overview of various key issues associated with an electric utility having an effective safety program and why greater emphasis needs to be placed on ensuring safe working conditions in each of the PBSs. The program outlined where responsibilities lie with respect to safety and what is needed to make a safety program effective. Clarifications were made to the current status of the Safety Program for the RE Program including the need for a having a Safety Manual and a formal Safety Policy. Some of the practical aspects of providing a safe working environment for line personnel were included. A list of required actions to be taken when accidents occur was outlined for discussion, including reporting and investigating.
- **Observations:** The trainers indicated a positive response from the participants with respect to content of the programs. A number of suggestions were made for improving the program with nearly all having to do with training in Pole Top Rescue, CPR, and First Aid. These detailed programs are beyond the scope of work under the ICEA Project; however, the information was conveyed to the concerned persons at REB. Again, the evidence of the number of work-related accidents occurring in PBSs is above an acceptable level and requires proper attention of the concerned REB officials as well as the senior level officers, including the Board. Making safety more of a priority is an urgent requirement for the entire Bangladesh RE Program. A formal REB Safety policy has been drafted by the ICEA Team and included in the PBS Policy Manual prepared as part of Appendix E of the final draft of the revised Graduation Policy that was submitted to the Task Force for action.

#### **FINANCE/ACCOUNTING TRAINING: BUDGETING, CASH MANAGEMENT, AND CONTROLLING DISBURSEMENTS**

This training program that was prepared and delivered to the pilot PBSs provided coverage of concepts that will promote improved Financial Management within the pilot PBSs, thus strengthening their positions for making more appropriate decisions on their own. The broad topics included in the program deal with budgeting, cash management, and controlling disbursements, all of which would be relevant for any graduated PBSs. A total of 44 participants attended the training, which was conducted in two locations –the first one at Tangail PBS for both Tangail and Siraganj staff, and the second at Jessore PBS 2.

- **Program Overview:** By design, the content of the training was prepared not to provide “details” about budgeting, but was developed to provide a higher level of understanding of what Operating and Capital Budgets are and their importance to management and the Board. Discussions focused on various elements of these two types of budgets and certain techniques to be used for their preparation and subsequent utilization for monitoring the PBSs financial position during the year. The objective was to have these concepts added to the PBS “budgeting” processes. The program also included other information related to cash management and ways for improving this area of the PBS’s operation. This section covered key principles associated with cash management and controlling disbursements, as well as use of different PBS funds (General, Construction, Membership, Provident Fund, etc.).
- **Observations:** The ICEA staff indicated a positive response from the participants with respect to content of the program at the two PBSs. While it was a refresher for some of the senior PBS staff, the more junior staff found it to be very appropriate and useful. The ICEA Team was very complimentary of the active participation by the PBS staff as well as that of the REB Director of PBS Loans and Audit who attended the session at Jessore. His presence added significantly to the resolution of questions being raised by the

participants regarding the related policies and procedures. Other REB officials provided positive support during the program at Tangail.

#### **CHANGE MANAGEMENT TRAINING – TASK FORCE**

A two-day change management program was delivered to members of the Graduation Task Force as a means of introducing the concept of change to the members of the Task Force and promoting the need for embracing change as part of implementing PBS graduation. This training program was designed to introduce the concept of change and provide insights into the process for managing its implementation. While the concept of PBS graduation is fully in line with the original RE Program concept, it was understood that changes in PBS management would be needed to successfully refocus REB's relationship with the PBSs in a way that would support bringing a greater degree of independence for those PBSs selected for graduation. Likewise, the PBSs would also undergo some changes in order to successfully function as a graduated PBS. The Change Management program was conducted for members of the Task Force in late January 2010 with a total of 19 participants, including almost all members of the Task Force, selected senior Deputy Directors of Management Operations from REB, and selected senior PBS General Managers.

- **Program Overview:** This two-day program provided participants with an overview of the concept of change and why it was important to deal with change when introducing new systems and concepts into any organization or program. The implementation of the Graduation Policy, which demands a shift from the existing operational and management practice of PBSs, needs the concerned personnel and stakeholders to be on board in the change process. To initiate the changes, they should be aware of the change management process and principles; identify and assess problems related to change; and develop a change management strategy. Under these circumstances, it is necessary that the current skill levels of the concerned personnel and stakeholders in managing change are enhanced so that they are able to support the changes required in the management and operational practices of PBSs under the new environment supporting PBS Graduation Policy. The presentations and discussions focused on the following topics: Concept of Change Management; Approaches to Organizational Change by Aligning People with Organization; Organizational Change by Empowering the People to Participate; People Change: Behavior Modeling for Changing Attitude; Change Management with External Stakeholders; Dealing with Resistance to Change; Dealing with Changes for PBSs under Goals, Authorities, and Responsibilities of Graduated PBSs.
- **Observations:** Participants provided positive feedback in their written evaluations of the two-day program with many offering constructive suggestions for the Change Management program to be conducted for the pilot PBSs. From the consultants' perspective the program course was successful in achieving its overall objectives. They noted that at the beginning of the program, it seemed that the participants were skeptic about the purpose and necessity of the training. Initially, most of the participants were not that involved in the learning process but as the program progressed, their initial negative attitude changed and they responded positively. Soon the participants were able to recognize the need for the program and their interest in the program was manifested through their interaction and participation in the lively discussion during the program. They greatly appreciated the program and suggested that this type of program should be arranged for all stakeholders. The consultants feel that more training programs involving the stakeholders will help create awareness in accepting change, which will ultimately produce a favorable environment for implementing change related to implementing PBS graduation.

#### **CHANGE MANAGEMENT TRAINING – THREE PILOT PBSs**

The Change Management training was provided to all three PBSs involved with the Graduation Task 1 under the ICEA Project. This training program was designed to introduce the concept of change and provide insights into the process for managing its implementation. While the concept of PBS Graduation is fully in line with the original RE Program concept, it was understood that changes would be needed to successfully refocus REB's relationship with the PBSs in a way that would support bringing a greater degree of independence for those PBSs selected for graduation. Likewise, the PBSs would also undergo some changes in order to successfully function as a graduated PBS. The Change Management program was conducted for

the Boards and management staff in the three pilot PBSs in late October and early November 2010 with a total of 78 participants attending. The training was delivered primarily by the Center for Management Development (CMD), with involvement by ICEA team members.

- **Program Overview:** Similar to the content of the Change Management program delivered to the Graduation Task Force, the main focus was to introduce the concept of change and create an awareness regarding the various factors to consider when introducing new ideas that will require institutional changes. For the benefit of the target population, some of the presentations were translated into Bangla to make it easier for the participants to understand the concepts. The presentations and discussions focused on the following topics: Concept of Change Management; Approaches to Organizational Change by Aligning People with Organization; Organizational Change by Empowering the People to Participate; People Change: Behavior Modeling for Changing Attitude; Change Management with External Stakeholders; and Dealing with Resistance to Change. In order to get Boards and management teams to focus on how things might change for a graduated PBS, one half-day was utilized for group work preparing action plans against the main goals, authorities, and responsibilities of graduated PBSs that had been approved previously by the Task Force. Each group assigned responsibilities to the PBS and to REB for each of the 28 goals and authorities under the six functional areas of Board, Board & Management, Engineering & Operations, Finance, Members Services, and Crosscutting.
- **Observations:** The engagement of the participants in all three PBSs was exceptional, with many not really understanding the issue of how change impacts the process of introducing new ideas and procedures into an organization. The participants were very active in the group work and very constructive suggestions and ideas came out in the group presentations. Each of the PBSs summarized the work of the different groups and submitted these to the ICEA office as the starting point for having individual PBS action plans for implementing graduation in their respective PBS. The ICEA team consolidated the input from the three PBSs for review and consideration by the Task Force for moving ahead on individual action plans for each PBS.

#### **TECHNICAL QUALITY SERVICE STANDARDS AND REPORTING FOR PBSs**

As part of the ICEA Project support provided to the BERC, technical assistance was provided for preparation of Technical Quality of Service Standards. In order to monitor these standards, the regulations included reporting requirements against selected reliability indicators commonly used for this purpose by electric utilities worldwide. The BERC had taken a decision to use eight reliability indices (SAIFI, SAIDI, CAIDI, CTAIDI, CAIFI, ASAI, ASIFI, and MAIFI) for this purpose.

- **Existing Similar Manual System for PBSs for Internal Use:** Since the inception of the RE Program, the operation of the PBSs has always included the process for recording on outages and system problems using a manual system. A Complaint Register was available in every office location of each individual PBS (headquarters, zonal offices, and complaint centers) for recording complaints including outages that are regularly being reported to the PBSs.
- **Decision to Automate the TQS Reporting for PBSs:** Despite the fact that a significant amount of information was already being gathered for the PBSs, the introduction of the new TQS reporting requirement from the BERC was a cause for concern due to the difficulty of managing the information in hard copy form and completing the necessary calculations required for reporting on the selected indicators required by BERC. Given these circumstances, a decision was taken to develop a software package that would facilitate the process of data gathering in the PBSs and automatically completing calculations for the reliability indices. Given certain limitations with the existing networks of the PBSs and other distribution utilities, it was decided that it would be too difficult for all utilities to report on the CTAIDI and CAIFI and MAIFI indices; thus, these were not included in the initial software development.
- **BERC Decision to Adopt TQS Software for All Distribution Utilities:** The software package prepared by ICEA was demonstrated to the BERC in August 2010 and given the software's functionality in supporting

its reporting requirements, the BERC made the decision that all distribution utilities (BPDB, DESCO, DPDC, NWPGL, and WZPDCL) would adopt this newly developed TQS software for use in complying with its monthly reporting requirements. There was agreement that due to the importance of this new BERC initiative, the ICEA Project would assist with the training and other support needed for implementation in these other utilities.

#### **INTERACTIVE MAP WITH GIS INCLUDING MIS INFORMATION**

The ICEA Team worked in collaboration with REB to develop a functioning website for the project that would communicate ICEA objectives and main tasks included under the USAID support to the energy sector. One of the innovative features of the interactive PBS map was that it would provide links that would allow access to basic information and operational data for each PBS. The majority of the information presented is secured from the database supporting the preparation of the individual Financial and Statistical Report (Form 550) which is prepared monthly by each PBS and submitted to REB. A decision was eventually taken by REB to include the map on the REB website.

#### **INITIAL PBS RATE CASE PREPARATION PER BERC GUIDELINES**

ICEA worked collaboratively with BERC in order to support the effort required to prepare the initial PBS Retail Rate case for all 70 PBSs. This submission was to be according to the procedure outlined in the BERC Rate Submission Guidelines issued to REB in May 2009.

The capacity building associated with this initial PBS rate case has allowed REB to prepare subsequent requests for retail rate adjustments that have been made since that initial submission in June 2009.

The planned Cost-of-Service Study for a selected number of PBSs was not completed for various reasons; however, this Study still needs to be completed. Under ideal conditions, a cost-of-service study would be conducted for each individual PBS; however, the lack of sufficient resources and time required prevented this from being done during the project duration.

#### **SUPPORTING DONOR COLLABORATION FOR REB REFORM**

As part of donor coordination, ICEA participated in work associated with the World Bank and the Power Cell in support of the ongoing initiatives to bring about changes to REB as a means of addressing current and future challenges.

Activities included direct involvement in a series of initiatives taken to assist the Government of Bangladesh in taking appropriate decisions regarding REB. This section of the report will describe aspects related to these initiatives.

Monitoring World Bank-Funded Assessment Under Power Cell (March 2009 thru Feb 2010): ICEA worked in support of the Study to Assess Effectiveness of Current Organizational & Management Structure of REB, Bangladesh that was funded by the World Bank and conducted by the Snowy Mountain Engineering Company of Australia. A formal report of this involvement was submitted as an ICEA deliverable.

- Continued Collaboration with World Bank Advisory Team: As an outcome of the Study and the subsequent negative reaction from the REB and Government presented during the Stakeholders' Workshop, the World Bank decided to engage a team of two ex-World Bank officials supported by the recently retired REB Member Engineering to work directly with the REB to help facilitate discussions within all levels of REB. This engagement focused on three pillars of reform – namely, Governance, Human Resources, and Financial Conditions. A formal Communiqué comprised of the results of this engagement was executed between this Advisory Team and the REB on April 26, 2010. The results of this work were presented at a donor coordination meeting arranged by ICEA as a means of keeping all donors informed of the status of efforts to bring meaningful change and reform to the REB that was in the interest of the entire donor community who had provided funding for the development of the RE Program.

- **Participation with Power Ministry’s Committee on REB Reform:** As part of ICEA’s ongoing support for donor coordination within the power and energy sector, the ICEA team continued to work with the World Bank and the Power Cell in support of the ongoing initiatives to bring about changes to REB as a means of addressing current and future challenges. With a mandate to review the proceedings of the October 2010 Workshop, a Committee on REB Reform was formed under the Ministry of Power, Energy & Mineral Resources Committee. At the request of the World Bank, a knowledgeable member of ICEA team was asked by the Committee Chairman to participate as a member of the Committee. The involved ICEA staff attended the initial Committee meeting in early February 2011 and subsequently worked with other Committee members in the preparation of potential actions to be taken to address the issues that resulted from the Workshop. The Committee’s Report was submitted to the Power Secretary during the second half of June 2011. A summary of this involvement was prepared and submitted as an ICEA deliverable.

ICEA engaged with the process as the discussions between the Government and the World Bank continued even into August and September 2011. Direct input was sought regarding strategies for moving forward with the ongoing engagement and provided to the officials involved with making the necessary decisions.

## **TRAINING FOR REB OFFICIALS**

### **CHANGE MANAGEMENT TRAINING FOR REB OFFICIALS MONITORING PBSs:**

A two-day program on Change Management training was conducted for mid-level officers assigned to positions that are responsible for overseeing PBS activities in all areas – management, engineering/technical operations, and finance. The participants included a total of 23 officers working as Directors, Deputy Directors, Executive Engineers, and Assistant Directors. The program was conducted by ICEA in the second half of September 2010 with the help of the Center for Management Development.

- **Program Overview:** The objectives of this program were very similar to the change management programs conducted for the Task Force and those planned for the pilot PBSs. Trainings introduced the concept of change and how change must be managed effectively in order to implement new concepts and processes in an organization. Presentations stressed that in order to initiate the changes, the responsible officials needed to be aware of the change management process and principles; identify and assess problems related to change; and develop a change management strategy. Under these circumstances, it is necessary that the current skill levels of the concerned personnel and stakeholders in managing changes are enhanced so that they are able to support the changes required in the management and operational practices of PBSs under the new environment supporting PBS Graduation Policy. Examples of implementing change within the Bangladesh power sector were presented and discussed in order to make the topics relevant and to promote participation. The presentations and discussions focused on the following topics: Concept of Change Management; Approaches to Organizational Change by Aligning People with Organization; Organizational Change by Empowering the People to Participate; People Change: Behavior Modeling for Changing Attitude; Change Management with External Stakeholders; Dealing with Resistance to Change. Lastly the potential changes for PBSs under Goals, Authorities, and Responsibilities of Graduated PBSs were presented.
- **Observations:** While there was positive feedback from the participants on the program’s content, there was an overreaching concern expressed from some participants about the recommended changes being proposed for REB stemming from the study that was funded by the World Bank. The participants saw the change issue impacting REB’s situation more than changes that would be coming as a result of PBS graduation. It was clarified that this training was being implemented to support PBS graduation under ICEA and not to support the work being done by other donors with respect to reforms and changes within REB. The CMD trainers and ICEA staff were patient in attempting to deal with issues being raised from time to time by the participants. The ICEA team observed all the factors related to dealing with resistance to change from the comments made by participants. Various comments were raised about issues such as tariff reform, power supply shortages, and customer mix that negatively impact the PBSs regardless of whether they are being considered for graduation or not.

## **OVERVIEW OF PBS GRADUATION AND MONITORING FOR REB MID-LEVEL OFFICERS**

A training program covering the new revised PBS Graduation Policy prepared under the direction of the Graduation Task Force was conducted for mid-level REB officers (Deputy Directors, Assistant Directors and Assistant Engineers from Management Operations, System Operations, Office Systems, and Training Directorate). A total of 50 (38 male and 12 female) participants, including three Directors on the Task Force, attended the two half-day sessions. This training targeted those officers most directly involved with providing proper oversight and monitoring of PBS activities, which would change with PBSs functioning differently under the revised Graduation Policy.

- **Program Overview:** The focus of this program was to provide the concerned officers with information about the ICEA Project and the work that had been completed by the Task Force in support of PBS Graduation. Given the controversy of the concept of PBS Graduation in some circles within the RE Program, there was a strong emphasis on presenting the rationale for promoting greater PBS independence and their functioning as independent entities as outlined in the Preamble of the REB By-Laws. It was confirmed that graduation would mean a greater delegation of authority; however, that does not mean that PBSs would no longer be subject to oversight and monitoring by REB. It was stressed that REB's oversight function would move to more of an audit activity. Specific work that was completed was outlined and discussed as were planned activities to move the pilot testing forward. The work assigned to the Graduation Task Force was outlined and its progress to date, including a presentation to the REB Executive Committee, was reviewed and the Committee gave approval to proceed. Participants were also introduced to the list of operating characteristics that has been prepared by the Task Force with input from a number of PBS GMs.
- **Observations:** There were similar reactions from some of the REB officials who had not attended the Change Management program, in that there were verbal reactions where the issues of changes coming from PBS graduation were intermingled with the initiatives currently underway to bring changes and reform to REB in hopes of addressing challenges. There were extensive discussions regarding the difference between the PBS graduation initiative and the REB reform initiative. The concern and frustration of numerous officers, due a lack of detailed information on both of these initiatives, was very obvious. ICEA facilitators openly engaged the vocal participants with efforts to listen and honestly explain the correct positions for the two initiatives in hopes of removing confusion.

## **TASK II: ENHANCE PBS ABILITY TO MEET DEMAND**

### **LOAD ALLOCATION STUDY FOR EQUITABLE LOAD SHEDDING**

Since the inception of the RE Program, the increasing demand on the overall grid and within PBS distribution networks has created a growing shortage of power with wide recognition that having an adequate supply of power would continue to be problem for the foreseeable future. The ICEA Project included a task that focused efforts for examining potential strategies for PBSs to better meet their system load requirements on their own, which was in line with the overall project objective of promoting PBS self-reliance. Given the current power shortages, one of the elements of the ICEA team's approach included evaluating the current wholesale power load shedding requirements to ascertain whether load shedding occurs on an equitable and rational basis among rural and urban customers. Knowing that the supply of power would continue to lag behind the increasing growth in demand dictated that the burden of load shedding be shared equitably between consumers of all distribution utilities. At times there have been indications from various sources that the PBSs had to carry a disproportionate share of that burden, making verification of the situation by conducting a load allocation study necessary.

- **Objective of the Load Allocation Study:** This study was undertaken to determine whether the PBSs are receiving an equitable share of the power supply available under the current constrained conditions. In order to make this determination, two evaluations were carried out:

- Determination, based on analysis of historical data, of what would constitute the equitable share of the available resources that should be dedicated to the PBSs.
  - Analysis of the actual allocation of available resources by the National Load Dispatch Center (NLDC) and the grid substation operators to determine whether the PBSs were receiving an equitable share.
- Background on Power Allocation Process: Power resources in Bangladesh are dispatched by the Power Grid Company of Bangladesh (PGCB)'s National Load Dispatch Center. NLDC is responsible not only for establishing production levels for generation plants on an hourly basis, but also for allocating available resources among the various grid substations. Grid substations are the points at which power is delivered from the national grid of 220kV and 132kV lines to the 33kV circuits administered by the distribution organizations. There are 12 230/132 kV and 89 132/33 kV grid substations in Bangladesh, all of them staffed on a 24-hour basis. Data on system loading is provided by the grid substation operator to the NLDC, and instructions are executed by the operator. There is no automated system of data collection and control (SCADA) in service in Bangladesh, so the NLDC does not have access to data other than that provided by the grid substation operators. Because Bangladesh has been short on capacity for so many years, NLDC has established a set of guidance charts that determine allocation of available power among the various grid substations. Actual allocations are based on historical data and perceived priorities. Once the power has been allocated to a grid substation by the NLDC, it is the responsibility of the grid substation operator (actually the Operations Supervisor) to allocate available resources among the various 33kV circuits served by the grid substation. One of the objectives of this evaluation was to determine whether the grid substation operators are fairly administering the allocation process.
  - Methodology of Load Allocation Study: To conduct the Study, the ICEA Team had to complete three main activities. First, there had to be a determination of the meaning of an "equitable share" of the power available in order to conclude whether or not the PBSs were receiving an "equitable share" of the available resources. Next, the ICEA Team had to determine what amount of power actually was being received by the PBSs by monitoring a sample of grid substations. The chosen grids were selected from four geographical regions of Bangladesh: the Central (Tangail and Kishorgonj grid), Northern (Saidpur and Rangpur grid), Southern (Jessore grid), and Eastern (Dohazari grid). Local consulting engineering firms provided personnel who were contracted to collect the hourly load dispatch data from the six selected grid substations to the 33 kV feeders assigned to the grid stations for the period from March through July 2009. Lastly, in addition to the national and zonal pictures which were provided through an analysis of the REB load shedding reports and data from the NLDC, the ICEA Team also directly measured power deliveries at six grid substations and evaluated whether the associated PBSs were receiving their equitable share.
  - Conclusions and Recommendations from the Study: Among others, the two primary conclusions were:
    - On an overall basis, the REB PBSs receive an equitable share of the power available in the system. The aggregate demand of the PBSs is approximately 42% of the national demand and, taken as a whole, the REB system in fact receives approximately 42% of available power during all seasons.
    - NLDC has developed a well-researched and transparent methodology for allocating power to grid substations on the basis of their historic demands that appears to be equitable.

The ICEA Team's Report contained five Recommendations, including the following two key ones:

- REB should adopt the Equitable Share methodology as a means of determining whether load shedding is disproportionately burdening particular PBSs. While it seems apparent that the REB system as a whole is receiving an equitable share of available power, there are very significant variations between PBSs in the level of equity in their power supplies so this needs to be confirmed.

- REB should work with NLDC to develop a documented allocation process for use at all grid substations that is analogous to the process used by NLDC at the national level. This allocation method can be straightforward and if well documented should go a long way to limiting the variation in equity of power delivery to PBSs.

### **BIOMASS RESOURCE ASSESSMENT FOR POWER GENERATION FOR PBSs**

Since the Government had indicated that distributed generation plants could no longer use natural gas as a fuel option, the second initiative under the ICEA Project for providing options for PBSs to meet their growing demand focuses on the completion of an assessment of renewable energy options. As agricultural production is widespread across the country, it was appropriate to consider conducting an assessment of whether various biomass resources derived from agricultural wastes were a potential source of energy.

- **Objective of Assessment:** The objective of this assessment and its subsequent report was to examine the potential value to the PBSs of implementing biomass power generation on a scale that would provide power into the grid for distribution to PBS customers. Accordingly, plant sizes have been limited to 1MW or greater, and it is assumed that biomass resources would be collected and consumed in a dedicated power plant arranged to interconnect with the power grid.

The biomass resources chosen for evaluation were those that are produced in quantities sufficient to provide adequate inputs to fuel a utility scale power plant. The resources chosen included:

- Rice (rice husk is the biomass resource) is the most widely produced crop in Bangladesh
- Sugarcane (bagasse) is a traditional crop now somewhat in decline but still important
- Maize (cob) is a new cultivar whose production is increasing
- Coconut (shell and husk) is widespread but production is not industrialized
- Biogas from poultry and cattle wastes – both of these industries are seeing significant growth
- The ICEA Team carried out research, including field investigations, intended to quantify both the total production and the production density of the resources. Of specific interest was the presence of clusters of processing plants that would aggregate significant amounts of biomass that could be used in fueling a power plant of the minimum required size. Of equal importance are the existing alternate uses for the biomass resource.
- Summary of Results of Biomass Power Evaluation

Fuel Source	Number of Plants	Total Capacity	Cost of Generation		CO2 Displaced
			\$/kWH	Tk/kWH	MT/Yr
Rice Husk	10	50MW	\$0.11	8.0 Tk	277,759
Bagasse	7	39MW	\$0.07-0.12	5.1-9.0 Tk	47,908
Maize Cob	1	5MW	\$0.09	6.1 Tk	16,203
Coconut Shell/Husk	4	20MW	\$0.06	4.2 Tk	111,103
Poultry Waste Biogass	3 to 6	3-6MW	\$0.14	10.1 Tk	15-30,000
Cow Dung Biogass	8 to 12	8-12MW	\$0.15	10.2 Tk	40-60,000

Based on the results of this resource assessment, REB was receptive to exploring biomass as an option and subsequently included biomass plants as part of the renewable power supply plan they submitted to the Government in late 2010. The completion of a feasibility study in support of locating two to three of these plants was planned under the ICEA Project, but was not completed due to a decision not to proceed with that activity.

## **NEW IPPS FOR PBSs UTILIZING LIQUID FUELS**

The ICEA Task associated with exploring options for PBSs to meet the system was designed to assist with identification of appropriate power supply options with fuel sources other than gas. Consequently, the biomass assessment was conducted and indicated renewable options. As part of this process, the ICEA Team participated in discussions with various REB officials regarding the forward action being taken on the potential for additional small power plants being set up to supply power to selected PBSs—as was already being done by the PDB for adding power to the grid. Discussions focused on the dangers associated with having new IPPs using liquid fuels entering into new Power Purchase Agreements with REB and selected PBSs due to the high cost of power from these types of plants. With the increasing need for the installation of additional generation to serve the growing demand, REB was approached by the Ministry to consider contracting to have IPPs set up to serve PBSs directly instead of putting the power on the grid, which had been the usual approach with these plants. Decisions were subsequently taken by REB management to have REB's Generation Directorate proceed with the preparation of the necessary documents and solicitation of bids from interested vendors for the proposed power plants. Decisions resulted in an approach which provided for soliciting these plants for seven PBSs in two phases. ICEA Team members held discussions with the REB Chairman and other Members of the Board regarding how such a plan was not appropriate for the PBSs, pointing out that even the strongest PBSs within the RE Program could not sustain buying power from the plants that were being planned for, given such high bulk supply tariffs.

Subsequent to these discussions, the REB Board took a decision that was forwarded to the Ministry stating that the PBSs would only be responsible for payment of the power provided from these new installations at the prevailing Basic Service Tier (BST) rate set for the power supplied from the grid. Furthermore, the differences would be covered by the Government as is the case for other plants that have been installed with liquid fuels and connected to the grid. Final decisions on REB's proposal to the Ministry are still pending. Regardless, any plan that would expect PBSs to pay significantly higher BST rates has to be viewed as being ill-conceived given the financial position of most PBSs. In addition, the power supplied from other liquid fuel plants is provided to the grid and the bulk supply pricing from the grid has been blended with a government subsidy covering the difference, so there is a precedent for having these new plants connected to the grid and not directly to the PBSs.

## **WORK WITH WORLD BANK AND GIZ ON UTILIZATION OF CFLS IN PBSs**

Under Task 2, the ICEA team engaged in a series of activities with the purpose of improving end-use energy efficiency within PBS systems. During the period of mobilization, the ICEA team became engaged with an initiative supported by the World Bank and the German International Cooperation (GIZ) that focused on the introduction of compact fluorescent light bulbs (CFLs) as a means of reducing demand for power, particularly during peak time hours.

- **Energy Use Survey:** As an initial step for developing a meaningful DSM program, it was important to secure relevant information on energy use at the consumer level of the PBSs. Initially, the ICEA plan called for conducting a small energy use study for two to three PBSs and Terms of Reference were prepared and circulated to ICEA local partners for implementing this study. However, ICEA was able to collaborate with GIZ on a common energy use survey in PBS areas for determining the utilization of CFLs under the World Bank project, and defining other relevant potential DSM programs for rural consumers of PBSs. This collaboration provided the opportunity for some cost savings as well as having a larger sample size which would capture additional information on energy use from a larger number of PBSs and thus add to the validity of the survey findings. It was understood that the review and analysis of the data would provide information on potential DSM initiatives other than use of CFLs that could be selected and implemented under ICEA. The actual survey consisted of 68 households being surveyed in each of the 36 participating PBSs with respondents being represented from each of the Upazilas. The number of households surveyed totaled approximately 2,500. Results of the survey indicated that there was interest on the part of consumers to use CFLs and that the replacement of incandescent lamps with CFLs in all households served by the PBSs would amount to a reduction in the demand of 208.21 MW.

- Implementation of CFL Program: Based on the findings of the energy use survey, the World Bank took a decision to provide funding for a CFL Program that would provide CFL bulbs for all utilities with the majority of the bulbs being made available to rural households served by the PBSs. The development of the project plan resulted in the decision to implement the project in two phases, which would include the procurement of CFLs in two bid packages. For Phase I, 10.55 million CFL bulbs were purchased for distribution to consumers. The PBSs were provided 3.94 million and distribution was conducted through 15 PBS. Under Phase II, an additional 14.38 million bulbs are in the process of being procured and provided to BPDB, DESCO, and additional PBSs for distribution to the consumers in a manner similar to what was used for Phase I. A total of 10.3 million of the 14.38 million will be utilized by PBSs.

### **INVESTIGATIONS OF ELECTRIC FAN EFFICIENCY AND QUALITY OF LOCAL CFL BULBS**

In addition to the ICEA support to GIZ and the World Bank regarding the initiative to introduce CFLs in rural households served by the PBSs, additional work was undertaken to initiate energy efficiency and DSM into the RE Program. While the main focus of the GIZ survey was on domestic lighting in support of the CFL bulb initiative, the data collected during the survey provided significant information regarding the usage of other electrical appliances in rural households. The ICEA Team utilized the information contained in the survey report for further investigation into the impact of two widely-used electrical appliances in these rural households, namely locally made CFLs and domestic fans. ICEA also considered collaborating with Bangladesh Standards and Testing Institution (BSTI) to have it provide support to the investigation with the testing equipment available to them.

- Objective of Study on Fans and CFLs: The objective of this research and analysis work is to evaluate the availability and potential supply of commonly used energy efficient household electrical devices that have widespread impact on the rural electrification program. As part of this work, the ICEA team planned to work in collaboration with the Asia Pacific University to conduct testing and research in order to design and prepare an implementation plan for a DSM program that examines options for introducing more energy-efficient ceiling fans and improving the power factor of the CFLs that are being made available in the marketplace through local manufacturers/suppliers and/or importers.
- Proposed Methodology: The proposed methodology for conducting this study includes a market survey to identify the various brands of these two electrical devices as well as range of sizes, etc. Actual laboratory testing will take place to determine the energy efficiency of these various brands, both for energy consumption and power factor ratings. The results of this testing will be compared with the results of testing conducted by the Bangladesh Standards and Testing Institute (BSTI), which is the Government entity responsible for setting standards for various types of electrical equipment, as well as other types of equipment.

### **TASK III: LOCAL ECONOMIC DEVELOPMENT**

An assessment of any rural electrification program in any country will likely indicate that the primary problem for most distribution entities serving the rural areas is limited amount of demand from which to generate sales and revenues to support the utility operation. Like the PBSs in Bangladesh, many rural utilities have a poor mixture of domestic consumers with limited commercial and industrial customers who have higher power requirements and thus provide more revenue for the utility. These conditions contribute to the utilities' poor financial performance and raise questions related to their long term viability.

As a means for augmenting existing PBS customer bases that in many cases are primarily comprised of residential consumers, the ICEA utilized research of existing conditions in different PBSs to support the development of meaningful initiatives to expand the PBS consumer base to include increased commercial and industrial customers. The ICEA Component 1 Team worked in numerous ways to explore options for increasing small and medium enterprises in PBS service areas through the involvement of the PBS with the local business community and other stakeholders from the PBS service territories.

## **SURVEY ON PBS ATTRIBUTES FOR ECONOMIC DEVELOPMENT**

The ICEA Team proposed that in order to effectively assist PBSs in promoting economic activities in their respective areas there had to be an assessment of PBSs with good economic activity in order to determine the factors that contribute to positive conditions for economic growth. ICEA had proposed that such a study be conducted for this purpose. In April 2009, ICEA awarded Human Development Research Centre (HDRC) the assignment of carrying out a survey to identify the attributes supporting economic activities within PBS areas. The accompanying study report is an outcome of HDRC's execution of the study requested by ICEA.

The adopted survey method was a combination of both qualitative and quantitative techniques. Both Key Informant Interviews (KIIs) and One-to-One Interviews were conducted. The quantitative questions were used for answering questions related to the “what” elements of the survey, and the qualitative questions were used for answering questions related to the “why and how” aspects of the study. A total of five PBS areas were selected for the survey. The selection of the five sample PBS areas was based on a number of criteria and experts' opinions. The five selected sample PBS areas were: (a) Chittagong PBS 1, (b) Noakhali, (c) Narsingdi- PBS 1, (d) Tangail, and (e) Sirajgonj.

- Survey Findings: The Survey Report provided the following findings:

### **a. Existing Businesses in Sample PBS Areas and Reasons for Their Growth**

Almost half of the surveyed enterprises (47%) are small in size followed by the medium-sized (39%), and the large-sized (14%) enterprises – of which 80% are sole proprietorships, 14% partnerships, and 6% private limited companies.

The passion for carrying out local traditional businesses still prevails quite significantly, and the influence of business clusters on economic development has been identified in some of the sample PBS areas.

### **b. Overall Business Climate**

86% of the interviewed small and medium enterprise (SME) owners in Narsingdi reported they have enjoyed easy access to finance from formal commercial banks, but in Tangail, the entrepreneurs lack easy access to credit from banks, because it usually requires an entrepreneur to provide a huge amount of collateral and to undergo a lengthy process to get a loan.

### **c. Entrepreneurship among the Businessmen in the Sample PBS Areas**

As entrepreneurship is a critical factor in economic development, various aspects of it have been identified to demonstrate the attributes of local economic development.

### **d. Constraints to Business Development**

The study respondents mentioned that the SME owners/operators usually face a number of constraints in their businesses which need to be eliminated to accelerate economic development.

- Conclusions And Recommendations: The Survey Report prepared by HDRC for the ICEA Project included the following Conclusions and Recommendations:

### **a. Conclusions**

There are certain factors that prevail in various PBS areas in Bangladesh that directly encourage growth of business, and there are certain linkages between one business and another triggering growth of further businesses.

### **b. Recommendations**

The following steps are recommended for REB/PBSs to develop potential local business and foster economic development for expanding their rural electricity network.

- **Concept of Business Support Organization**

The Study completed under ICEA served as a means for identifying the various attributes that are found in PBSs with good economic activity and consequently, a better customer mix providing a more favorable financial position. After identifying these attributes, the ICEA Team examined a series of options as to how the development of these attributes in other PBSs could be supported. Drawing on experiences used for promoting economic development activities in other electric cooperative service territories, the concept of the Business Support Organization (BSO) was given strong consideration as a means of successfully addressing these issues within the pilot PBS under the ICEA Project as well as providing a model solution for other PBSs to adopt.

The ICEA Team's belief in the need to establish BSOs within a PBS lies not in providing business advisory services redundant to those already available on a national level but in providing local resources through the BSO that can help the SMEs make informed choices in the selection and utilization of already available services. This local advisory service tailored to the specific needs of an individual SME currently does not exist in rural Bangladesh.

- **Selection of Pilot PBSs for Promoting Economic Development**

The ICEA Team understood that the selection of appropriate PBSs to serve as two pilot PBSs for conducting the work on this ICEA Task for enhancing capacity for PBSs to provide business support services was a critical step. Therefore, a formal process for doing this was prepared, which included selection criteria to support the process.

The approach used for the selection of the PBSs included having a method for screening the PBSs to determine a group of candidate PBSs from which to select two as the pilot PBSs. ICEA took the following steps/criteria into consideration in the development of a short list of PBSs qualifying for the pilot program:

1. Evaluate customer mix and financial status of the PBSs
2. PBS characteristics including presence of reliable power supply
3. PBS management
4. Area economy
5. Financial institutions activities
6. Expert's opinion
7. Possibility to replicate identified business success factor/attributes
8. Other development agencies' priorities and their activities
9. Previously completed GIS data

All PBSs were initially screened and the list was narrowed to 26 PBSs to receive a closer evaluation as candidates for selection as pilot PBSs for testing the concept of providing business advisory services through a BSO. Following the evaluation process, the first priority PBSs for the BSO included Manikgonj, Chittagong PBS 1, Feni, and Natore PBS 2. The second priority PBSs for selection where assistance with energy efficiency might be a contributing factor included Narsingdi PBS 1, Chandpur, and Munshigonj. However, due to problems with power supply in most PBSs, strong consideration had to be given to both Bhola and Sylhet PBS 1, since both of these PBSs had excess power available and no load shedding during peak shedding due to non-availability of power. Due to the power crisis, Bhola and Sylhet PBS 1 were the PBSs finally recommended by REB. Follow-up visits to these two PBSs found them to be suitable for pilot testing this new initiative.

- **Development of Model Business Plan for BSO**

One of the key elements of the proposal for the ICEA activity regarding business support services was the development of a “Model Business Plan” that would serve as a template for the development of business plans for the two pilot PBSs and be available for subsequent use by other PBSs in the future.

The ICEA Team prepared the Model Business Plan for implementing the concept of the BSO in the two pilot PBSs in two parts. Part 1, “A Primer on Business Support Services,” is a brief introduction to why a PBS might wish to offer business support services and how the interested PBS would structure such a program. For the PBS that decides to move forward and adopt the program, Part 2, “The Business Plan Template” is a guide for thinking through and writing a business plan for the initiative.

### **Executive Summary**

The executive summary sets the tone for the rest of the document, and can be used by the PBS to very quickly establish its reasons and support for proposing business support services, along with making key points on major topics, including how the community will be involved and how the program will be structured and implemented.

- **Market Description and Analysis**

This section of the business plan is used to characterize the SME customer base and the attributes of the local economy of the particular PBS designing the program. The characterization should strike a balance between detail and page length such that the reader understands the composition of the SME customer class and the economic environment in which they operate, but is not burdened with extraneous information.

- **Power Supply and Availability**

The preparation of this section stated that given the power supply situation in Bangladesh it is likely that one of the obstacles to growth of the SME sector identified in the Market Description and Analysis will be power availability and quality. This is admittedly a challenging paradox for the PBS developing a program to support SME customer growth and local economic development, but without sufficient electric power to do so.

- **Business Support Services**

The description presented by the ICEA Team in this section stressed that this was a key section of the business plan because it is where the PBS will present its proposal for offering new business support services to its existing customer base and to engage with business and industry in general to promote the economic growth of the community. It was confirmed that this section of the business plan was a culmination of the material presented up to this point, and the writer should strive to build upon the prior sections by bringing together those previously introduced issues in a way that supports greater PBS participation in business support services.

- **Management Plan**

This section stressed that once the proposed business support services have been delineated in other earlier sections of the Business Plan, the PBS must establish its plan for administratively managing those offerings. This is accomplished in the current section of the business plan. The management plan does not need to be presented in great detail; instead, information should be discussed simply enough to demonstrate that the additional services offered are fully understood and that they will be properly managed.

- Customer Marketing Plan

Emphasis for this section of the business plan focused on raising concern with the PBS's task of designing a marketing program to make sure that SME customers utilize the new services. The menu of Commercial Customer Services that a particular PBS decides to offer has through this business planning process been carefully designed to both meet the needs of its customer base and enhance revenue to the PBS.

- Community Participation Plan

Development of this section stressed that the SME customer base of the PBS must be made aware and sold on the new services offered; similarly, the community must be educated and engaged in the BSO process and economic development efforts. The focus of this section of the business plan is to develop a strategy for ensuring community participation in these efforts. Once again the particular situation of each PBS, along with the nature of existing relationships that the PBS already has within the community, will be the starting point for developing a strategy to roll out the BSO and promote community participation.

- Financial Analysis

In this section of the business plan it was stressed that there is an opportunity to translate much of the information provided in previous sections into a numerical summary of financial costs and benefits to the PBS. Offering business support services to the membership and community must be at least partly justified on a financial basis, and certainly the PBS board will want to understand the proposed investment and projected return before approving the new program.

- Implementation Plan

The final section of the business plan presented the important aspects of the implementation plan, which is an opportunity to pull together all of the previously presented material in a concise action plan. Little if any new material should be presented; instead, the implementation plan should provide the reader a clear understanding or mapping of how the PBS plans to move forward.

## **FOUNDATION TRAINING ON BUSINESS SUPPORT SERVICES & BUSINESS SUPPORT ORGANIZATION**

The need for this training emerged as a result of the pilot PBSs' requiring capacity building to offer business support services for their existing SMEs and to take a lead role in establishing a grassroots business support organization to accelerate economic development in order to improve their customer mix and increase revenues. Participants for this initial training program were selected by considering their role and involvement with the business support services and BSO program at their respective PBSs. Categories of individuals attending the training included: local government agency representative, REB representative, PBS Executive Committee/Board member, PBS GM, DGMs, and AGM Member Services, local entrepreneurs/business community representatives, local bank representative, Chamber of Commerce and Industries representative, and PBS local engineering consultants. The training sessions in the two pilot PBSs were conducted in late May 2010 included a total of 49 participants (24 at Bhola PBS and 25 at Sylhet PBS-1).

Program Overview: Training objectives were: 1) illustrate the relationship between the PBS, Business Support Services, and a Business Support Organization, 2) show the linkage between Business Support Organization, Economic Development, and the community, and 3) demonstrate the key elements and purpose of a business plan. In all, seven topics were covered during the one-day workshop. Instructional training began with an overview of business support services, followed by the role of the PBS and the community. The last topic covered during the morning session was SME energy services and efficient power use. During the afternoon sessions participants were introduced to business planning and how to write a business plan. Training concluded with an overview of community leadership and economic development, and program support and

monitoring services for the pilot PBSs from the ICEA team. Several training methodologies were used during the workshop in order to promote participation.

Observations: The training sessions were lively with active participation by those in attendance. A number of constructive questions were raised in both sessions, including a number of issues related to the concepts and strategies related to BSS and the formation and function of the BSO. Questions were also raised about meeting REB/PBS rules and regulations for these activities. Positive suggestions were offered during both sessions. These ranged from ensuring power to help with recruitment of SMEs and businesses to engaging business and community leaders through providing programs to disseminate information. Many thought this type of organization should be established in many localities within the PBS service territories. Many also thought it would be beneficial to have an appropriate website for the pilot PBSs having a profile of the service areas as well as involving both the national and local Chambers of Commerce.

### **GEOGRAPHIC INFORMATION SYSTEM (GIS) DATABASE FOR ECONOMIC RELATED FACTORS IN BHOLA AND SYLHET PBS I**

A proposed activity under the ICEA Task that focuses on improving the financial position of the PBSs through enhancing local economic activities as a means of improving the PBSs customer mix included the provision for utilizing a GIS database for geo-referencing business-related activities that would include local markets, growth centers, educational institutes, industries, communication facilities, etc. Having this type of information available to prospective entrepreneurs interested in establishing SMEs and other commercial activities within the service territory of a PBS was envisioned as a feature of how PBSs could provide business advisory services to help promote economic activities within their respective areas.

Based on experience with the development of geo-referenced database, the ICEA team had a keen understanding that there had to be some investigation into identifying potential alternatives for securing the use of existing databases as a means for avoiding the time and cost to develop completely new databases with the relevant economic information. Based on investigations it was determined that some of the existing GIS databases developed by the Local Government Engineering Department (LGED) could potentially be of value to this ICEA initiative. In addition to their infrastructure development, both LGED and REB had been successful in introducing and utilizing new technologies, including GIS. There is broad agreement amongst many within the Bangladesh Government and the donor community that the two organizations which have been successful in delivering positive results over the years per their specific mandate have been the LGED and the REB. Countless benefits have reached millions of rural inhabitants due to the development of rural roads and having access to electricity.

In order to support this plan, the ICEA Team worked with REB to initiate a plan for sharing different GIS databases between REB and LGED. Under previous USAID-funded projects, a number of GIS databases for selected PBS areas (11 to date) contain extensive information, some of which may have some relevance and value to the LGED's ongoing project work. Since these databases exist and would likely contain many of the attributes relevant to implementing this ICEA Task, there is significant justification for making them available to REB.

After an extended effort, the GIS maps were made available and the relevant databases were developed incorporating the relevant data points locating growth centers, markets, roads, and other geopolitical information as well as roads and highways. The ICEA GIS Specialist downloaded satellite imagery to prepare the base maps and completed the necessary adjustments to ensure accuracy and compatibility with existing GIS databases for Bangladesh, including the databases managed by the LGED.

The BSO concept that was initiated under the ICEA Project calls for having these GIS databases available through the pilot PBSs for use and reference by prospective entrepreneurs and others looking to establish business operations in the local area.

Copies of maps for the entire District are available and the database can also prepare maps for individual Subdistricts (upazilas) providing greater details.

#### **MEMBERSHIP IN THE MDF**

In an effort to promote collaboration with other initiatives promoting economic development within the private sector, including those funded by USAID and other development partners, the ICEA became a member of the Market Development Forum (MDF) in mid-2009. Formed in early 2005, the MDF is a group of market development-practitioner organizations working to strengthen the private sector in Bangladesh. Its objective is to create greater collaboration and coordination among organizations and projects applying different market development approaches and to make those approaches more effective, synchronized, and sustainable. The ICEA Team saw that members in MDF provided an opportunity for synergies with other like-minded groups. This entity has provided a platform for sharing relevant information potentially beneficial to other members.

The ICEA team made a formal presentation to MDF members in June 2010 regarding the economic development initiative under the ICEA Project and to identify opportunities for synergies with other MDF organizations working in areas served by Bhola PBS and Sylhet PBS 1. Unfortunately, during the period of the ICEA Project no MDF members were working in the two pilot PBS service territories. A number of separate meetings were held with MDF members to discuss ICEA Project activities and to explore areas of potential collaboration including: PRICE, Katalyst, Practical Action, IFC-SEDF, GTZ, and IDE.

Meetings were also held with officials from other stakeholders engaged with various economic development initiatives, particularly SMEs including SME Foundation, Janata Bank and others.

#### **TASK IV: POLICY AND OPERATIONAL SUPPORT TO BERC**

- **Bringing BERC operations in-line with the BERC Act:** With the purpose of bringing BERC operations in-line with the BERC Act, ICEA performed activities in order to build capacity and provide policy and operational support to BERC. Through its support to BERC, ICEA was committed to establishing certainty, transparency, and accountability in the energy sector, fostering the creation of regulatory mechanisms and rules for energy sales and purchases, and increased private direct investment. In the first year of the ICEA Project, a rubric was formulated comparing BERC Act requirements to actual BERC accomplishments. The rubric demonstrated that BERC had accomplished much, but needed to act on energy efficiency and conservation issues, supply-side benchmarking, and uniform system of accounts for each appropriate regulated sector.

BERC then received direct assistance in these areas from the ICEA. Training, capacity building, and assistance were successfully and thoroughly provided in Year 2 to develop BERC regulatory policy on energy efficiency and demand-side management, technical quality of service standards, technical benchmarking, and uniform system of accounts – all areas of BERC responsibilities expressly mandated by the Act. ICEA experts facilitated technical conferences for BERC officials on the aforesaid responsible areas mandated by the BERC Act and aided BERC with necessary regulatory policy implementation follow-up. ICEA continued to move forward with various activities during the year and moved on aiding BERC in finalizing Technical Quality of Services and Uniform System of Accounts (USoAC) regulatory policies. Also, while ICEA in the past had provided BERC with necessary BERC Act requirements, including what has been done and what needs to be done, some discussion with the BERC leadership revealed BERC's desire to hold a National Regulatory Seminar on "Energy Management and Development: Role of Regulator" in Dhaka to portray BERC's role, achievements, and progress in improving Bangladesh's energy supplies through regulation to the stakeholders and the public, which was successfully held.

ICEA also formulated preparations to provide direct management expert support to the Commission with a written set of operating procedures aimed to further institutionalize the proper handlings of administrative fillings at BERC. In addition to ICEA's workplan activities, at the request of BERC,

ICEA provided the Commission with written comments and analysis of risks and financial liabilities associated with the draft power purchase agreement (PPA) between the GOB/PDB and the Government of India/National Thermal Power Corporation (NTPC), for cross-border exchange of 250 MW power supply between NTPC and BPDB.

- **Improving Regulatory Methodologies:** With the purpose of improving regulatory methodologies and best practice information retention, enabling the public to have increased confidence in BERC processes as well as in the energy sector, ICEA visited the Commission and its staff on a weekly basis throughout Year 1 and thereafter.

ICEA guided BERC in applying real-time energy regulatory best practice operations and decision-making. In an effort to facilitate timely access to best practice methodologies and information, in Year 2 the ICEA also worked with the Commission to establish a functioning ICEA office on-site at BERC, procuring two desktop computers to enable BERC Members and staff online access to best practice energy regulatory material and training. ICEA continued in Year 3 in-house training for BERC through one-on-one capacity building assistance. Specifically, in the last year, a number of advisory meetings were held with the Commission Chair, Members, and directors to discuss various regulatory issues such as Renewable Portfolio Standards, DSM, and Energy Efficiency and Incentive Mechanism and rate case hearing procedures.

- **Improving Energy Sector Governance:** With the purpose of improving energy sector governance through regulatory transparency, due process and appropriate sector voice, ICEA's first-year focus was limited by actual tariff processing, hearings, and open meetings. Unresolved BERC regulations, with the aforesaid regulatory activities as the subject, garnered more benefit from the practical experience of this past year, as compared to regulation rewriting and updating based solely on theoretical concepts. Nonetheless, ICEA was able to formally re-evaluate and suggest modifications to the BERC's existing draft retail tariff regulation.

For improving energy sector public participation, outreach training continued with a new emphasis on formal consumer non-governmental groups outside of Dhaka. Various grassroots consumer groups were trained in how to organize as well as conduct successful, positive, and constructive local outreach events for their consumer members and non-members on energy regulation and the energy consumers' voice.

ICEA provided energy lawyers' training in partnership with BAR Council and BRAC University Institute of Governance Studies, through professional seminars on the need for energy regulation and on the BERC Act. The purpose of such training was to build the capacity of the legal professionals in Bangladesh to aid the BERC and BERC stakeholders in properly addressing the regulatory issues and improving energy sector governance through regulatory transparency and accountability. Due to time constraints and BERC's desire to maintain its leadership role, it is unknown at this time if the training will provide the expected outcome.

- **Enabling accurate and transparent pricing:** ICEA provided training and capacity building at BERC and among its stakeholders with regard to tariff formulation and rate design, on how to hold an adjudicatory hearing, how to evaluate evidence, and how to write a rational decision. BERC stakeholder groups also benefited from ICEA training in this area, which enabled effective participation in the energy regulatory tariff formulation process.

With the purpose of enabling accurate transparent pricing of downstream energy sales and to enable BERC to acquire appropriate price setting authority, power tariff-related sensitivity analysis with cost/benefit comparison of various rate design schemes was performed extensively by the ICEA program. A well developed and sound tariff analysis model was formulated utilizing real-life REB/PBS case data (including individual data analyses for each of the 70 PBSs) as an applied study

in point. The model was shared with REB/PBSs and forwarded to BERC for future use. ICEA provided BERC continuous assistance with best practice regulations in energy tariff setting.

ICEA also worked with BERC's in-house consultants for drafting regulatory policies. BERC recently has engaged in-house consultants to work on power transmission tariff, power distribution tariff, gas transmission tariff, gas distribution tariff, and petroleum products storage, transportation and distribution licensing and tariff, Liquefied Petroleum Gas (LPG) storage, transportation and distribution licensing and tariff. ICEA provided advice and emphasized best practice tariff methodologies as well as continuous review of current tariff models, just and reasonable rates, and transparent pricing of downstream energy sales. The work continued to enable BERC to acquire appropriate tariff-setting experience, with particular emphasis on framing regulations for the best practice tariff regulations.

- **Assisting BERC with Outreach Programs:** ICEA team discussed with BERC Members the need to reach out to its stakeholders directly, as well as through the media. Internal BERC protocol was established in regard to issuing notices on filings, hearing, and decisions. As part of BERC's outreach endeavors, the ICEA worked with BERC to enable BERC to hold its first energy consumers roundtable in April 2009. The roundtable was a success with approximately 150 attendees – the focus was on rural electricity and women cottage industries.

With the purpose of assisting BERC in establishing an overarching outreach theme – increasing confidence and trust to be associated with the BERC name and institution, outreach training continued with new emphasis on fortifying BERC linkages with formal consumer non-governmental groups outside of Dhaka. The Team facilitated successful outreach endeavors on BERC and the importance of energy regulation with Asia Foundation's Leaders of Influence. The ICEA Team assisted BERC in successfully organizing 13 energy consumer outreach events throughout Bangladesh. More than 2,100 energy consumers participated in the outreach events. Also, in an endeavor to further laud the benefits of institutionalized energy regulation through an operable BERC, a national consumer leader participated in ICEA US training on energy regulatory best practice, and its importance to the energy consumer.

ICEA facilitated BERC's successful second energy consumers' roundtable in April 2010. With more than 100 in attendance, the roundtable demonstrated to the public BERC's commitment to addressing current power sector needs, including issues that matter to international joint ventures and foreign direct investor consumers.

With the purpose of assisting BERC in establishing an overarching outreach theme – increasing confidence and trust to be associated with the BERC name and institution, ICEA provided BERC with continuous assistance with outreach programs by BERC designated appropriate staff officers, who were trained by ICEA to organize and implement BERC outreach events. With advisory assistance from ICEA, BERC staff independently conducted three successful outreach events in Gazipur, Cox's Bazar, and Comilla. ICEA advised BERC on organizing outreach programs on a regular basis throughout the year, and carrying out consumers outreach impact evaluation analysis.

- **Clarifying the regulatory regime for REB/PBSs:** At the beginning of the project a white paper was drafted and forwarded to BERC members on the BERC/REB/PBSs relationship in light of the BERC Act. The paper provided a solid foundation and understanding for BERC in moving forward with PBS tariff analyses with the purpose of clarifying the regulatory regime for REB/PBSs to improve the aggregate national power system by bringing all sector participants – rural and urban – under a sole central government regulatory arm – BERC.. A pricing ramp-up approach was formulated and included in a model tariff decision regarding PBS cost-of-service rates to address PBS funding gaps while maintaining PBS by PBS transparency. The Team's cost-of-service decision for the PBSs demonstrates to energy sector stakeholders the importance of bringing all of the country's service providers under a sole regulatory jurisdiction of BERC. Revenue requirements and rate analysis was conducted for each of the 70 PBSs.

ICEA's revenue requirement and rate analysis model for the PBSs was forwarded to BERC for future reference and use.

- **Improving framework to attracting private sector investment:** At the very beginning of the ICEA Project, an outline was drafted which details the electricity sector restructuring necessary to move the sector further away from crisis. Multiple wholesale sellers, transmission interconnection reliability and safety issues, necessary policy development as well as new laws, forms, and downstream pricing are topics in the outline to be addressed in detail when drafting the actual electricity sector policy recommendations paper.
- **Improving Energy Market Options:** With the purpose of improving energy market options for increased power supply, a power market purchase options report including PBS direct wholesale power options was drafted and forwarded to BERC for BERC's endorsement with plans for the report to be formally presented to the GOB Energy Advisor.

## **TASK V: INSTITUTIONAL STRENGTHENING OF BERC**

Under this Task, with the purpose of improving BERC's and MPEMR's understanding of their respective roles in developing the energy sector and diminishing conflicts in energy regulation and policy while enabling increased harmonization, ICEA completed, in partnership with BRAC University, energy regulatory-related discipline training to energy sector stakeholders on Transparent Transmission Operations and Reliability Regulations.

Under this task the following activities were performed to institutionalize and strengthen BERC:

- **Improving understanding between BERC and Ministry of Power, Energy and Mineral Resources of their roles:** A management assessment and 24-month training plan was developed for BERC Members and its senior officers. Members and senior management officials were trained in-country throughout the year, receiving formal classes on the adjudicatory hearing process, benchmarking, wholesale and retail rates, and the importance of electronic docketing. Training participants included the BERC Chairmen (the immediate past and the present incumbent), and four BERC Members (three of them have since completed their term and left the Commission). One Director and two Assistant Directors also participated in US-based training on, among other things, shadowing various state regulatory commissions and the US Federal Energy Regulatory Commission. One other Member and a Director attended a regulatory training program in the USA under the ongoing SARI/Energy program of USAID.

With the purpose of improving BERC's and MPEMR's understanding of their respective roles in developing the energy sector, diminishing conflicts in energy regulation and policy while enabling increased harmonization, BERC members received best practice energy regulatory US training that emphasized the importance of coordinating energy regulatory policy with executive administrative policy, as well as with legislative law-making acts in the energy sector.

Coordination continued between the ICEA Team and World Bank in ensuring that US Study Tours funded respectively under both programs ensured efficient synergies in building both BERC members and BERC staff's best practice operational capacity and abilities to work effectively with GOB counterparts. Senior MPEMR officers and members of the Parliamentary Standing Committee on MPEMR participated in ICEA proffered best practice energy regulatory US training. Also, the ICEA signed a memorandum of understanding (MOU) with the Bangladesh BAR Council to establish an energy lawyer's forum and relevant energy regulation and law continuing education learning center to enable the country's lawyers to sustainably facilitate productive and harmonious interaction between BERC and MPEMR. An MOU was also developed as a first step toward a partnered endeavor between BRAC University's Institute of Governance Studies and ICEA to develop a center of excellence for energy regulatory studies – enabling the preliminary foundation for sustainable synchronization of best practice energy sector policies from BERC and MPEMR.

As mentioned earlier, ICEA supported BERC on a national seminar held on Energy Regulation, Renewable Energy and Policy Options, and on best practice components of Energy Efficiency and Incentive Mechanism.

- **Improving BERC staff operations with improved efficiency, transparency, accountability:** A staff assessment and 24-month training plan was developed. Various one-on-one BERC staff training sessions were provided throughout the year covering tariff investigations and analysis in several BERC-regulated sectors. Staff also participated in ICEA docket training.

With the purpose of improving BERC staff operations with improved efficiency, transparency, and appropriate staff member accountability, the Team participated in BERC new hire orientations and assisted BERC with developing energy regulatory best practice scope of work details for BERC new hires. In addition, ICEA continued training BERC staff throughout the year, as well as working closely with World Bank and BERC in drafting appropriate terms of reference for World Bank-funded BERC staffing enhancements.

ICEA formulated plans to provide direct management expert support to the Commission that concluded while writing this report with, among other things, staff training, including newly recruited staff on operating procedures that was aimed to further institutionalize the proper handling of administrative filings at BERC; hence improving BERC operations. Best practice staffing options continued to be provided through one-on-one capacity building discussion with appropriate BERC members.

In capacity building under the ICEA program, all training activities in terms of regulations, training, workshops, roundtables, seminars and extra project activities are discussed in Annex IV for further clarification of the project outcome.

# V. CONSTRAINTS

The following is the list of the constraints that prevented some of the ICEA program activities from being implemented as envisioned at the beginning of the program:

- REB's decision to no longer be engaged in the ICEA component activities due to incomplete and unapproved TPP by the GOB. ICEA supported REB in preparing the initial TPP but REB never showed any true interests.
- Abrupt decision-making prevented the completion of some key activities specifically related to the PBS Graduation Task Force, which had seen the completion of a significant amount of work during the project.
- It should be noted that the presence of some resistance to effective engagement with ICEA staff for implementing activities was gradually becoming more visible from those same selected officials. However, during the same time period, progress was continuing on various other activities, although at a slower than desired pace. The issue of having "honorariums" paid to all members of the Task Force for attending meetings was raised by a key staff member and the reply – that this was not possible under a USAID project – was not well received. While this was never an issue from any other officer on the Task Force prior to this senior officer's inquiry, some questions/concerns still remained.
- The current Membership of three out of five BERC Members was scheduled to terminate without possible extension. The first termination was scheduled in late June 2010, the second in July 2010, and the third in December 2010.
- Current appointments are also being challenged in the Bangladesh courts. BERC's rapid membership appointment process and challenges to the appointees can undermine BERC's accomplishments in energy regulation since May 2008.
- The Commission under the current Chairman's leadership commenced operating and functioning as an administrative agency with little independence. BERC's recent decision-making process lacks proper regulatory principles.
- BERC has been barely functioning for over a year with only three (as opposed to five) members, for various reasons, and with no replacements named, despite ICEA's repeated requests to the State Minister and secretary of MPEMR. It is, however, expected that the momentum may pick up again, because the public and the media are demanding BERC as a regulatory body, faced with a lot of responsibilities. The actions of BERC affect the lives of virtually every citizen of the country in one way or another since each year BERC oversees utilities generating billions of Taka in annual revenues.

# VI. PUBLIC PARTICIPATION

One of ICEA's objectives was to ensure that BEREC takes all initiatives in making people participate in their programs to strengthen them to implement regulations. Because BEREC is mandated by the state to act as a referee to any discrimination that may arise among the stakeholders, ultimate benefits are to be protected for the consumers – as they are the real owners of PBSs and ratepayers of regulated utilities. BEREC is strong when citizens have confidence in it. With this principle in mind, BEREC, with the support of the ICEA, implemented outreach programs in various parts of the country to engage the public in the decision-making process of the rate case proceedings, where consumers delivered opinions and asked for justification of the rate increase proposed by the utilities.

# VII. LESSONS LEARNED

## BARRIERS TO ESTABLISHING A SUSTAINABLE ENERGY SECTOR IN BANGLADESH

Energy is the sine qua non for economic development; it creates opportunities in other areas of development that would not otherwise be possible. A well-functioning regulatory commission is a precondition to the financial viability of the energy sector and the key to attracting private sector capital to energy projects to solve the ongoing demand/supply crisis in Bangladesh. The energy sector of Bangladesh holds enormous potential given the nation-wide electric distribution network with prospects for expansion and the largely untapped potential for natural gas, a primary source of clean fuel for power generation. To realize the potential for the energy sector to develop effectively and contribute to economic growth, the following major governance challenges must be overcome:

- The inability to reach a critical level of financial self-sufficiency, transparency, and accountability within key energy sector institutions and utilities, which inhibits investment in power generation capacity, developing new gas resources, and expanding access to energy services to meet the needs of non-served or underserved segments of the population.
- Top management of the relevant institutions is out of reach unless they are convinced that they have a direct incentive from a program.
- Key professionals are not very qualified and are not passionate about the issues they are working on and do not have much intention to build their capacity.
- People with independent, impartial, and constitutional posts are busy implementing a political agenda rather than practicing implementation of regulations for the greater national interests, which makes other staff indifferent.
- Recruitment of the appropriate number of professionals is routinely delayed.
- Staff are quitting their jobs as they cannot see where to position themselves in the future, do not feel empowered in their specific job descriptions, face obstacles from the top, do not see evaluations being made on the basis of merit, and see political games everywhere.
- The lack of clarity regarding roles, responsibilities, and the rules governing the energy sector, along with a lack of management capacity within key energy sector institutions, inhibits the effective implementation of agreed-upon policies and reforms.
- Selected individuals at REB continue to have a strong resistance to empowering PBSs to support their increased independence despite the fact that REB maintains ultimate control through the agreements in place to protect the loans made to the PBSs by the Government through REB. Many of these positions result from vested interests by those individuals.
- Capacity building for both REB and PBS remains a considerable challenge for the RE Program. During the three and a half years of the ICEA Project, a significant number of highly experienced officers, many of whom joined the RE Program in the early years, have reached retirement age and have left the RE Program. Many others will follow in the near future as well. During the period from 2008 through 2012 more than 100 officers, with an average of 30 years of experience, will retire from REB, which translates into a loss of over 3,000 years of experience.
- Government cooperation to reenergize the Commission is vague.

# VIII.IMPACT OF THE ICEA PROJECT

- ICEA provided PBS graduation policies and guidelines to REB to strengthen the independent financial viability of the individual PBSs in order to improve rural consumers' access to electricity services for improved economic growth in their communities.
- As part of the PBS graduation policy task work, ICEA developed essential financial options and training for PBS viability of Bangladesh's entire Rural Electrification (RE) program.
- As part of the PBS economic development task work, the Human Development Research Centre performed a major survey under the ICEA project which identified options and opportunities for establishing a variety of industries (small, medium and large scale) in rural areas for overall expansion and intensification of rural markets.
- Recognizing the long history of overall success of USAID's RE program, ICEA continued RE program objectives for new employment opportunities in electrified villages.
- Continuing the impact of USAID's RE Programs, in general, and PBSs' contribution to irrigation systems (e.g., powered irrigation is 24% higher than that of the diesel), ICEA's efforts to establish consistent tariff rates helped to keep the irrigation system a viable option. Today Bangladesh is self-sufficient in rice production through irrigation.
- ICEA's outreach programs and training of REB/PBS personnel encouraged the participation of women and thereby created new opportunities for the empowerment and education of women.
- An adjudicatory process that has emerged, enabling due process on all sides, has enabled transparent and accountable decision-making in Bangladesh's electricity and natural gas sector.
- All Bangladesh state-owned electricity and natural gas companies have undertaken capacity assessments to move toward efficient operations.
- Energy consumers and utilities are better able to mitigate miscommunication and non-constructive interaction regarding energy-related business management impacts.
- As a result of TQS implementation by BERC, all Bangladesh energy consumers are covered by quality of service standards of the energy delivery entities and have a regulatory compliant mechanism established within BERC for their concerns on service quality.
- All Bangladesh state-owned electricity and natural gas enterprises are better placed for private sector participation and competitive markets.

# IX. CONCLUSIONS

- A significant amount of work had been accomplished during the ICEA Project period in support of the development of a revised PBS Graduation Policy; however, senior management at REB were not supportive of empowering PBSs to do more on their own by implementing the new revised PBS Graduation Policy.
- BERC has made impressive progress on tariff applications and licensing. It has come a long way in just a short three-year period despite all of the typical challenges facing a new agency in a developing country. However, lately, the momentum has slowed and BERC has been handicapped by its loss of staff.
- Significant training is still required for the PBS Directors in order to have them adequately prepared to assume more responsibility as functioning Boards at PBSs having the status of PBS graduation.
- BERC has been barely functioning for over a year with three members as opposed to a five-member Commission. The Secretary's position is vacant and about 20% of professional staff has left the Commission due to various reasons with no replacement yet in sight. Three of the four Directors are transferred Government cadre service officials and one is from PetroBangla;<sup>2</sup> they were trained by the ICEA and it is more likely that they will move out when they attain seniority to be promoted to the next higher position in their service. This would create a great vacuum of ICEA-trained experts in the Commission.

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<sup>2</sup> PetroBangla is a state-owned entity controlling upstream production and downstream distribution of natural gas in the country, and is fully regulated by the Commission under the BERC Act. The individual, while still in PetroBangla's payroll, is assigned to the Commission as Director of the Gas Division, which oversees the regulations and rates of PetroBangla. This is a major conflict of interest.

# X. RECOMMENDATIONS

- REB must fully engage the concept of PBS graduation in order to add sustainability to the overall RE Program given its current size and the significant growth that is required for the future, and in order to meet the Government of Bangladesh’s vision of Electricity for All by 2021.
- The Cost of Service Study for selected PBSs that was originally planned under the ICEA Project still needs to be completed in order to assist with the proper allocation of costs that will support future PBS rate cases and ensure that they would be based on more accurate and realistic financial data.
- The need for cost-based retail rates for the PBSs must be recognized by the BERC, the Power Division of the Ministry of Power, Energy & Mineral Resources, and the Government. Continuing to attempt to use a single approach for establishing rates for all PBSs so that retail rates remain nearly the same for all PBSs is not advisable – and most likely impossible – given the differences in location and economic conditions for different PBSs, both of which contribute to the customer mix and revenue streams for the individual PBSs.
- When considering options for power supply for PBSs, extreme care must be given to individual power plants that are supplying PBSs with power using liquid fuels, as the production cost of power at PBSs will be too high for even those PBSs with strong financial positions; thus, the preferred option would be from the grid that provides a blended rate for the power from various sources.
- REB should initiate a feasibility study to pursue the potential for power supply to the grid from alternative sources such as biogas or biomass sources. The potential of rice husks as fuel source is referenced in the Biomass Resource Assessment study completed under the ICEA Project. This would support Government’s initiatives to increase grid mix with renewable resources.
- It is important for BERC to have the Government’s full support to be a fully functional, impartial, and independent regulatory agency to serve the public interest and meet the needs of the regulated utilities in order to sustain a reliable utility infrastructure throughout Bangladesh.
- BERC should be fully manned to have the capability to function and carry out its mandated authority provided under the 2003 BERC Act. Senior level officials of the Commission should be assigned as permanent staff of BERC and not on short-term posting as government cadre service officials, in order for them to acquire the knowledge and expertise of regulatory function and continue to be in its service.
- BERC should be the sole authority to issue license to upstream and downstream utilities of the energy sector and be the single regulator for all energy related matters.
- It is evident from the ICEA outreach programs that public at large is very interested in reaching out to BERC officials given the opportunity to raise their concerns with respect to rates and quality of service (see attachment). BERC should carry out frequent outreach programs on a regular basis in different parts of the country to build consensus among its stakeholders.
- The Government of Bangladesh should encourage BERC to function and make prudent decisions on its own in an open and transparent manner mandated under the BERC Act 2003 without outside political influences and pressure.

# ATTACHMENTS

## I. STRENGTHENING ENERGY SECTOR

Training was the most important element for building capacity among the members and staff of Bangladesh Energy Regulatory Commission (BERC). A number of US and local expert trainings were provided to them in order to build capacity, so that they could implement regulations effectively and balance the energy sector and its utilities and the consumers. In addition to the regulatory trainings, technical, operational, and financial trainings were also provided to them for overall management and implementation of the BERC Act and to increase efficiency to ensure a healthy regulatory regime of the power sector. The following trainings were provided to the BERC and other relevant organizations:

### **BERC ACHIEVEMENT IN MAKING REGULATION**

- BERC Electricity Generation Tariff Regulation 2008
- BERC Gas Transmission Tariff Regulation 2010
- BERC Gas Transmission Tariff Regulation 2011 updated
- BERC Gas Distribution Tariff Regulation 2010
- BERC Gas Distribution Tariff Regulation 2011 updated
- BERC Electricity Transmission Tariff Regulation 2010
- BERC Electricity Distribution Tariff Regulation 2010
- BERC Petroleum Product Storage, Transportation and Distribution Regulations
- BERC LPG Storage, Transportation and Distribution Regulations

### **REGULATIONS BEING FINALIZED**

- Uniform System of Accounts Regulations
- CNG Refueling station safety Codes and Standards Regulations
- CNG operated vehicle safety Codes and Standards Regulations
- Gas Transmission & Distribution codes & standards regulations
- Petroleum Products Specifications

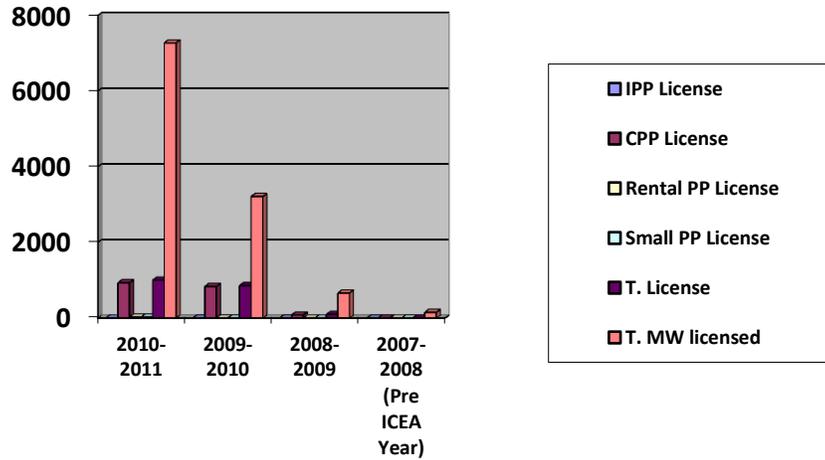
### **ACHIEVEMENTS IN CODES AND STANDARDS**

- BERC Technical Quality Standards (Electricity)

- Electricity Grid Code 2010 - Completed technical consultations with stakeholders on the draft code
- Electricity Distribution Code 2010 – Awaiting technical consultations with stakeholders on the draft
- Uniform System of Accounts (waiting to be published)
- CNG Codes and Standards (waiting to be published)

**BERC’S LICENSE ISSUANCE**

BERC licensing for production of electricity:



This chart indicates issuance of license from BERC in different categories, including their approved capacity (MW) for production of electricity.

## II. GENDER PERSPECTIVES

Energy is an important factor for the development of a country, and for that development to take place, rural women must be given priority in order to mobilize gender equity. In all BERC outreach programs, ICEA saw to it that participation of women in the regulatory process was ensured so that they could participate in economic development. Many women in rural areas are engaged in small, cottage industries and, in order to create awareness among them about their rights regarding access to electricity and involvement in PBS operation and management, ICEA encouraged active participation of women in all such events.



# III. KEY COUNTERPARTS AND PROJECT PARTNERS

ICEA has been very active with its project partners in implementing different programs during its life of project. Major counterparts and partners were as follows:

- Bangladesh Energy Regulatory Commission
- Rural Electrification Board
- Hoda Vasi Chowdhury & Co.
- Prokaushali Sangsad Limited (PSL)
- Bangladesh Bar Council
- LawDev
- SERAC Bangladesh
- BRAC University
- Center for Management Development (CMD)

# IV. TRAININGS

## ENERGY REGULATORY LAW TRAINING

### Program overview:

A memorandum of understanding between ICEA and Bangladesh Bar Council was signed for creation of an energy law forum where a group of lawyers would be interested in practicing in energy regulation and help develop rate cases and other energy-related hearings and present in the greater national interests. ICEA and the Bar Council agreed to cooperate in a mutual effort to establish a Bangladesh Energy Forum or Bar Council members' group on energy to assist in the creation of an enabling environment to facilitate continuing legal education in the area of energy regulatory law and practice, ensure the availability of trained lawyers in energy regulatory law and other relevant energy law matters, and increase broad-based utilization of Bangladesh lawyers trained in energy law to facilitate the participation of various energy sector stakeholders in Bangladesh Energy Regulatory Commission processes and ICEA energy regulatory objectives.

In cooperation with the School of Law & Institute of Governance Studies BRAC University, ICEA provided the training. The purpose of the seminar “Synchronizing Bangladesh Energy Laws and Policies,” jointly organized by the Institute of Governance Studies and the School of Law of BRAC University, in partnership with the ICEA, to create an effective link between energy law and energy policy, focusing on the main law – the Bangladesh Energy Regulatory Commission Act 2003. The aim of the Institute of Governance Studies (IGS) and the School of Law, BRAC University, is to create a “think tank” on law and policy issues regarding the energy sector in Bangladesh, and this Seminar is also a part of that initiative.

## STUDY TOURS

- Program overview: ICEA conducted a number of study tours for the BERC Chairmen, Members, Directors, Assistant Directors, State Minister of MPEMR, Member of Parliament, who is a member of the Parliamentary Standing Committee on Ministry of Power, Energy and Mineral Resources:
  - i. to improve BERC members' understanding of and ability to implement best practice energy regulation and coordination with national administrative and legislative counterparts
  - ii. to demonstrate the internal affairs, especially the government affairs and legislative liaison offices, in an energy regulatory agency to better enable improve energy supplies and security
  - iii. to emphasize the necessity of communications, coordination, and harmonization amongst regulators and policy formulators, and
  - iv. to highlight the importance of universal leadership skill and traits required in the quest to improve energy supplies and security for economic growth and poverty reductions.
- Observation: Study tours created dedication among the persons trained to work on regulation and implement best practice energy regulation.

## DEMAND-SIDE MANAGEMENT (DSM) TRAINING

For building capacity in BERC, one of the important tasks was development of electricity demand-side management programs and training of BERC and stakeholders on the benefits of those programs.

ICEA developed a working draft of a BERC Demand-Side Energy Efficiency Policy Statement and Order. At the suggestion of ICEA, BERC subsequently created a multidiscipline internal Demand-Side Working Group. In August, ICEA began to formulate low-cost DSM options for the electric sector distribution companies. To facilitate this effort, BERC requested that companies review their DSM options

- Program overview: The context for DSM efforts in the electricity sector in Bangladesh is the management of continuing power shortages that lead to frequent interruptions of supply and the need to allocate power during peak usage periods. To better manage the available supply, the Government and the Ministry of Power, Energy and Mineral Resources (MPEMR) have announced several policy initiatives and directives. These policy directives include:

Encouraging the shifting of irrigation load to the evening off peak hours of 12 midnight to 6 a.m. Closing retail shops and markets after 8 p.m. Shutting down of industries between 5 p.m. and 11 p.m. Staggering the supply of electricity by distribution areas during holidays Encouraging customers to avoid unnecessary usage of electricity and not to use heaters, pumps, irons and air conditioners during the peak hours. Encouraging the setting of air conditioners at 24 degrees C or higher.

In addition, the Government is embarking on a major CFL installation campaign. World Bank provided 20-30 million CFL bulbs for distribution utilities to install on customer premises. Each utility was allocated a share of the bulbs. According to the distribution companies, the program calls for them to deliver the bulbs to the customer. To assure installation, the utility personnel were to take the old incandescent bulbs out and install the new CFLs themselves. Based on the distribution company reports to BERC on their DSM activities, ICEA reached the following conclusions and observations:

- Observation: Low-cost energy savings options are now being addressed by the distribution companies and BERC. The companies have all begun outreach campaigns, including team visits to customers, to encourage actions which save electricity.

Most of the distribution company activity is in response to Government-instituted policy initiatives and directives. These policies are mostly focused on load shedding and load shifting. However, they also encourage more efficient use of electricity and provide information on low-cost options.

BERC needs to adopt a regulatory policy, with accompanying orders, to assure that the distribution companies' DSM efforts continue on an ongoing basis and become an integral part of their operations and the meeting of their obligations to provide service.

Because of their recently initiated DSM efforts, there does not appear to be any need to create any new low-cost option programs specific to each distribution company at this time. There is a need for BERC to establish a review process for the current efforts and outreach materials and to suggest changes or adoption of methods and materials used by distribution companies and establish ongoing collaboration with companies and BERC.

The planned installation of CFLs free-of-charge to customers starting in the fall of 2009 needs immediate attention from BERC to establish a monitoring and reporting process to track the installation, savings, and costs of the CFL project.

BERC and the distribution companies need to develop the capability to utilize their web sites as a tool for imparting information on energy efficiency measures and government initiatives to customers and the public.

Existing distribution company outreach provides a solid foundation and valuable experience upon which to build an ongoing energy efficiency program. The existing outreach efforts of the distribution companies in response to the continuing power shortage and government initiatives provides a solid foundation upon which to build ongoing DSM energy efficiency program. While much of the outreach effort is directed at motivating or enforcing compliance with government initiatives on load shedding and load shifting, they also encourage low-cost actions by the electricity customer to use supply more efficiently.

All the distribution companies say they are utilizing advertisements, leaflets, posters, and information on or with bills to inform customers. Of more significance may be the practice of sending personnel out to the customers to inform them and to work with them on complying with the government initiatives.

The CFL project and the planned installation of 20-30 million bulbs is a major effort designed to achieve significant energy savings. It requires direct contact on the customer premises between distribution company personnel and the customer.

This reporting will be beneficial to any tariff review proceedings. Any tariff calculation will need to take into account the energy savings from the CFL installation and any associated costs such as capacitor banks. Information from the reporting will help BERC verify any assumptions about actual installations and expected savings. The Demand-Side Working Group has developed a checklist of information it believes would be important to collect in any regular reports on the CFL installations.

The practice of sending personnel to the customer premises to suggest or monitor energy efficiency measures is a practice that can be used as a basis for developing an auditing program to assist customers in identifying and implementing measures that require higher cost and longer payback times.

All the distribution companies said they often sent personnel to customer premises for one reason or another. In most cases, it was to explain government initiatives and monitor compliance. However, in some cases, such as DESCO, it involved more analysis of customer usage and electrical equipment and devices. DESCO said it has been sending personnel to larger commercial and industrial enterprises to conduct what they called an “energy audit” and that it was thinking about developing a program that might be tied to some kind of financial assistance.

However, the extent of the “audit” and the information it provided to the customer was unclear. The other distribution companies either had not seriously contemplated instituting a similar program for commercial customers.

To promote taking of energy efficiency measures with higher costs and longer payback periods will require establishing a more formal and extensive auditing process. It will also require more information on the relative efficiency of different appliances, motors, pumps, and other electrical devices. This all may have to be coupled with some forms of financial assistance to the customer to overcome cost barriers to implementation of any measures.

Any such program will require the willingness and the ability of the distribution company to send personnel with the proper knowledge and skills to the customer premises and to work with the customer over time. The fact that distribution companies have already been sending personnel to meet with customers means they are recognizing the necessity of this type of outreach and gaining experience with this kind of direct customer contact and relationships. This can be a precedent and a building block for more extensive DSM programs.

## **OUTREACH TRAINING**

Outreach training programs were conducted to enable BERC staff to independently hold outreach events to listen to consumers and create awareness among them on their rights and inform consumers on how to secure rights in a regulatory process.

- Program Overview: In the outreach training section, BERC was trained on how to organize an outreach on energy regulation and the energy regulatory process. The outreach training provided to BERC by ICEA focuses on dealing with consumers’ rights and its regulatory implications. The detailed topics covered for outreach training to enable BERC to understand and answer the following questions to the consumers and the stakeholders were:
  - What is the Energy, Regulation, Regulatory Capture, and Regulatory Process?

- Why there is a need to regulate the energy market?
  - Group Exercise and Presentation
  - Understanding Consumer Disputes
  - Role of BERC in resolving consumer disputes
  - Social acceptability of BERC as a reliable dispute resolving forum
  - Purpose of BERC Outreach Programs
  - Essential Steps to organize BERC Outreach Programs
  - Identifying the Initial, pre-outreach and post-outreach stage problems, dos and don'ts
- **Observation:** Following the outreach training provided to BERC, there have been many successful outreach events in the various districts of Bangladesh. Some of the successful outreach programs have been reported here as success stories. Outreach events at Gazipur and Cox's Bazar have been totally organized and managed by BERC, with ICEA present as observers. The participation of the consumers and their voice in the outreach in front of the regulator was remarkable.

#### **TECHNICAL QUALITY OF SERVICES TRAINING**

- **Program Overview:** TQS training provided utilities an understanding of the significant advantages from the introduction and application of electric utility quality of services standards, through the process known as bench marking. The training provided a review of the benefits that can be realized from the application of these standards, both to the utilities and to the economy in general. It is an established fact that an efficient and reliable power system is a prerequisite for attracting development investment.
- The training also provided a review of the indicators that are used to establish the performance of the various entities, and the reporting systems that are required to provide the necessary data. In this respect, considerable effort was required from both BERC and utility managers.

The training was provided to understand the meaning quality of service standards and benchmarking, to review of the benefits that may be accrued from the introduction of quality of service standards through benchmarking, to review the indices that will be applied to benchmarking, to segregate benchmarks into primary indices and secondary indices, to derive the indices values from collected data, to understand data collection requirements and its impact on field operations, and to establish and compare levels of performance.

- **Observation:** To establish performance based on large numbers, two groups – primary and secondary indices – were established. The primary indices represented a group of key performance indicators upon which a comparative analysis of utility performance may be made. The larger grouping of secondary indices was used in conjunction with the primary indices to pinpoint the shortcomings in utility performance, which directly affected the primary indices that formed the basis of the utility comparison of performance between utilities. The technical performance indicators are divided into five principles categories– i.e., Reliability, Power Quality, Efficiency, Customer Service, and Component Utilization. Reliability data illustrated the frequency and duration of power outages and the most important indicator of them all. Power quality referred to disturbances to the power system which affect the voltage at the customer terminals. Efficiency measurements typically review the number of employees per customer or unit of energy and also the percentage of technical and non-technical losses. Technical losses refer to energy and demand losses on the distribution system. Technical losses may be due to overloading of lines and equipment often due to under-sizing of both medium and low voltage lines and cables.

- The reporting of data is an onerous duty and requires a well-organized reporting system from all levels of a utility. This report summarizes the results of the fact-finding visits to selected utilities to review the data collected by them and the format in which it is collected.

#### **UNIFORM SYSTEM OF ACCOUNTS (USOAC) TRAINING**

- Program overview: In accordance with Bangladesh Energy Regulatory Commission Act, 2003 Chapter 4, Para 22 Bangladesh Energy Regulatory Commission (BERC) shall develop and design Uniform System of Accounts for all Licensees, and all Licensees must follow the Uniform System of Accounts. Uniformity and consistency in record-keeping and financial reporting are essential to BERC. This has manifold advantage to BERC, providers, investors, users, and others.

ICEA issued the first draft of USoAC on July 15, 2010, and it appears to be in working order with some exceptions that needed further work by both the BERC staff to revise and re-issue a second draft for the stakeholders' consideration and comment.

*Prescribing a system of accounts for public utilities and licensees under the BERC Act*

“Uniform System of Accounts Prescribed for Public Utilities and Licensees Subject to the Provisions of the BERC Act,” and the rules and regulations contained therein; and *It is hereby ordered:*

(a) That said system of accounts and said rules and regulations contained therein be and the same are hereby prescribed and promulgated as the system of accounts and rules and regulations of the Commission to be kept and observed by public utilities subject to the jurisdiction of the Commission and by licensees holding licenses issued by the Commission, to the extent and in the manner set forth therein;

(b) That said system of accounts and rules and regulations therein contained shall, as to all public utilities now subject to the jurisdiction of the Commission and as to all present licensees, become effective and as to public utilities and licensees which may hereafter become subject to the jurisdiction of the Commission, they shall become effective as of the date when such public utility becomes subject to the jurisdiction of the Commission or on the effective date of the license;

(c) That a copy of said system of accounts and rules and regulation contained therein be forthwith served upon each public utility subject to the jurisdiction of the Commission, and each licensee or permittee holding a license or permit from the Commission.

Observation: Several collaborative workshops between the electricity generation/transmission and distribution companies were held at the BERC offices. An important number of participants attended the collaborative workshops. BERC members encouraged all participants to review the USoAC before coming to the next workshop as it would help further develop their understanding. With these words of encouragement the final workshop ended. As the ICEA Project was coming to a close, BERC issued an order to DESCO to implement USoAC on a pilot basis. ICEA developed software for the USoAC and work is in progress to calibrate the DESCO's accounting system into an automated USoAC system which BERC could utilize for other regulated utilities.

#### **SEMINAR/WORKSHOPS/ROUNDTABLE**

Program overview: In order to empower and build capacity among the regulators, ICEA delivered insights through various programs, including Seminars that helped various stakeholders understand the regulatory environment and their role. ICEA assisted the Bangladesh Bar Council to receive in-kind assistance for this purpose. ICEA developed a set of training questionnaire for the intended lawyers to participate in Law Training. ICEA Chief of Party Kelly D. Hewitt trained the lawyers. Following are the events that took place during the ICEA Project in Bangladesh:

##### **1. Synchronizing Bangladesh Energy Laws and Policies**

- **Overview:** The Seminar revolved around the presentation of three important papers, highlighting the relationship between laws and policies that affect the energy sector of Bangladesh.
- **Output:** The following very important papers were generated from this seminar:
  1. *Interface between Energy Policy and the Bangladesh Energy Regulatory Commission Act 2003*, presented by Dr. Abdullah Al Faruque, Associate Professor and Chair, Department of Law, Chittagong University.
  2. *Electricity Act 1910 and Bangladesh Energy Regulatory Commission Act 2003: Conflict and Commonness*, by Dr. Ridwanul Hoque, Assistant Professor, Dept. of Law, Dhaka University.
  3. *Regulating Competition: Challenges for the Bangladesh Energy Regulatory Commission*, presented by Dr. Tureen Afroz, Assistant Professor, School of Law, BRAC University.

## 2. National Seminar: Energy Management and Development-Role of Regulator

- **Overview:** As the capacity was built among the BERC members, a desire was also created – one of these desires was to hold a National Seminar and ICEA provided full support to hold such a seminar with USAID Mission Director, Energy Adviser to the Prime Minister, State Minister for MPEMR, lawmakers and prominent economists, stakeholders, and consumers were present. This gave a very big impetus to building awareness at the top level to think on implementing regulations for the nation’s greater interests.
- **Output:** Three important key notes came out from the national seminar which were deemed resourceful for BERC in their regulatory activities:
  1. *Energy Development and Regulatory Framework-Bangladesh*, perspective by Dr Abul Barakat, President of Bangladesh Economic Council
  2. *Incentive Mechanism*, by Dr. Izaq Hossain, Professor, BUET
  3. *Renewable Energy*, by Dr. Rizwan Khan, Professor and Vice Chancellor, United International University

This has been the first-ever initiative of BERC to organize a seminar of this nature and was quite a success with over 170 attendees; participants expected that such events of the Commission in the future would provide even better understanding of energy and energy regulation in the country. The New Age and The Financial Express covered the seminar. News on the seminar was also telecast in several TV channels.

## 3. Technical Seminar:

The Improved Capacity for Energy Access (ICEA) held a technical seminar on ***Transparent Power Transmission Operations & Reliability Regulations (Including Grid Code and Pricing Case Studies)***. Professor Qamrul Hasan of BUET shared his research and findings on best practice grid codes, as well as Bangladesh case study recommendations; and Professor Sayeed Salam of BRAC University shared his research and findings on best practice power transmission pricing, as well as Bangladesh case study pricing findings utilizing the BERC’s published 2008 draft power transmission regulation. With other members of Bangladesh’s academia in attendance, along with important energy sector stakeholders, ICEA experienced constructive and informative technical discussions that certainly aided BERC in assisting the Government of Bangladesh in establishing a sustainable energy regulatory environment that improves energy supplies for the people of Bangladesh.

## **RATE CASE**

- Program overview: Capacity building in rate case design and setting up of an effective rate ICEA provided BEREC and related stakeholders with a very comprehensive presentation and ensured how rates work among the utilities. A major outcome from the ICEA support can be analyzed as follows:

Most major electric utility rate cases take place under two separate but related back-to-back phases, such as revenue, and cost-of-service and rate design

### **Phase 1 –Revenue Requirement**

Determining a *reasonable and just* increase or decrease in rates is the purpose of all parties involved in Phase 1 of the rate case, and parties typically include staff and stakeholders such as the Commission and utility company staff, Office of Consumer Counsel, utility customers, and customer groups.

Step 1: Request Review and Action (Commission Staff)

Step 2: Interested Party Intervention

Step 3: Pre-hearing Conference

Step 4: Public Opinion Hearings

Step 5: The Formal Evidentiary Hearing

Step 6: The Phase 1 Rate Case (Revenue Requirement) Recommendation and Decision

Step 7: The Rate Case Appeals

### **Phase 2 –Cost-of-Service and Rate Design**

Some time lapses between Commission receipt of the utility request, issuance of a rate decision and the filing of a Phase 2 request (usually 6 months).

Sometimes the overall rate increase or decrease arrived at in Phase 1 will be implemented on an interim basis until the final rate distribution is decided in a Phase 2 order.

In Phase 2, the Commission must decide how the change in rates will be distributed between different classes of customers.

This part of the rate case is known as cost-of-service allocation and rate design.

In making Phase 2 decision, the Commission follows the same staff recommendation and public comment steps detailed in Phase 1.

Interested parties can again file exceptions and ask for RRR (reconsideration, re-argument, or rehearing).

After the Commission's final order is signed and issued (this may take another 210 days), and all requests for rehearing have been decided, the utility may make whatever rate changes are authorized to go into effect on a specified date.

Observation: A lot of work on rate cases was made during the ICEA Project life. Basically, a rate case starts when a proposal is submitted to the Commission as per the BEREC Act. This proposal may be made by the utilities like BPDB, DESCO, REB/PBSs, etc. ICEA trained all the stakeholders on how to lodge a bulk or wholesale rate increase for the utility application to BEREC. After the lodgment of this application, BEREC has to call the utility companies for hearings, where all other interested stakeholders, especially the consumer representatives and lawyers, participate and comment on why the rate increase is needed. ICEA used a US specialist to train BEREC on how to run a hearing procedure.. The training process can be summarized as below:

1. Fairness: The presiding officer or judge must take care in substance, tone, and appearance that all parties reasonably feel they have had a fair opportunity to be heard.
2. Efficiency: The presiding officer is principally responsible for managing the hearing so that agency and parties' time and resources are not wasted.
3. Quality: The outcome of a hearing is an agency decision that is based on a record of well-vetted and reliable evidence and thorough briefing of all pertinent matters of law, so that the decision will be complete, clear, and satisfactory to a reviewing court, be intelligible to informed segments of the public, and move public policy in the direction the agency intends, consistent with its statute.



### Rules for the presiding officer

1. The presiding officer must familiarize and manage the case in all its important particulars. He must be deliberate; but he must not be reluctant to decide and dispose of controversies arising between parties. His role is to decide – no one else can do it for him and the parties expect it of him.
2. The judge should let the parties do their work without unnecessary interference.
3. The judge should keep good order in the hearing room.

The presiding officer should never lose sight of the objectives of quality of record, efficiency of proceedings, and substantial and apparent fairness.



### AMWEEK

ICEA, as a part of US enlisted organizations, had an opportunity to participate in the America Week, the Friendship Fairs held in Barisal, Rajshahi, and Khulna where it displayed its project activities to visitors and interacted with other projects and organizations that are USAID-supported/affiliated. Through these three fairs ICEA has been able to interact with the people on its major objectives of working with the energy sector of the country. A lot of interested people visited the ICEA stall at the AMWEEK fairs.

# V. SUCCESS STORIES

There are several success stories that ICEA Project achieved during the project life. A few of these important stories are detailed below:

## **SUCCESS STORY I: ENERGY LAW CONSTRUCTIVE VOICE IN BANGLADESH ENERGY SECTOR**

Bangladesh is known as a democracy in which its people are encouraged to exercise their voice in the streets. With a constitution that explicitly provides for its people's well-being through state-owned enterprises, traditionally, civil society worked to make certain that the Government of Bangladesh lived up to its constitutional mandates. The mode of doing this was street protests. Another option – the administrative hearing process – has been introduced for practice in Bangladesh's energy sector, enabling civil society and energy sector stakeholders to make their voice heard in a constructive due process.



USAID worked with the Bangladesh Energy Regulatory Commission (BERC) and customer group civil society stakeholders to Improve Capacity for Energy Access (ICEA) in Bangladesh. The ICEA Project called forth basic operating principles that many democracies take for granted – transparency, accountability, and due process. USAID understands that when it comes to participation in a process that embraces these principles, energy sector customers and consumers are often disadvantaged – lacking the necessary know-how and expertise to effectively participate.

In response to a July 15, 2008 request of the Bangladesh Power Development Board to BERC to revise its bulk power tariff, the ICEA engaged US experts to train and build capacity at BERC, in various customer groups, and among local accounting and legal partners to enable due process in the sector.

Five ICEA consultants enabled Bangladesh to conduct its first energy rate case hearing. Stakeholders were educated to exercise their voice in a constructive manner. BERC staff was educated on how to conduct a best-practice tariff investigation. The Commission was instructed on how to conduct a successful adjudicatory public hearing.

For the first time in Bangladesh's history, transparency in energy sector decision-making was established. A decision was made by the BERC only after listening to and balancing the public's interest, and carrying out due diligence. Energy sector stakeholders have taken note that when they exercise their voice in a constructive manner, they are indeed heard.

**SUCCESS STORY 2: BERC OUTREACH  
PALLI BIDYUT SAMITY (PBS) UNDER THE RURAL ELECTRIFICATION BOARD (REB) AT A BERC  
OUTREACH PROGRAM EXPRESSED THEIR DEMOCRATIC DESIRE TO DEMAND THEIR RIGHTS.**

ICEA training on outreach to BERC officials enabled BERC to hold an Outreach Program at Comilla. It was an opportunity for BERC and PBS officials to hear consumer concerns and provide answers on their problems with utility service quality and rates.

The meeting was presided by BERC Chairman, and with the presence of a BERC Member, important local officials – such as Member of the Parliament, Upazilla Parishad Chairman, and Union Council Chairman – over 300 people turned up at the public meeting, whereas BERC had expected only about 150. Many had to stand outside the room as it was full. Those present were quite knowledgeable, and did not hesitate to voice their opinions or show their resentment about PBS performance. The PBS officials present were seriously taken to task for their unacceptable performances. Participants raised issues such as load shedding, discriminatory and inequitable service, illegal



connections, corruption, inefficiency, incorrect billing, etc. Consumers also commented that PBS is full of ghosts and Rasulpur is the most under-privileged area within the PBS compared to Burichong and Brahmapur, as they do not have any representative in the PBS board. They all asked for equitable distribution of the electricity and fair treatment of all consumers, or else the PBS should be removed from the area. Even the local MP, Upazilla Parishad and UC Chairmen raised questions about the performance of the PBS. The PBS General Manager was visibly shaken, when the MP charged him with irresponsibility.

This was perhaps the strongest of BERC outreach programs held so far. People came to know that they have a protector, where they could lodge complaints that would be solved, if not solved by the PBSs. They also got to know how BERC works, and how they may participate in establishing their rights.

This outreach was a show of solidarity where there was free expression of complaints, dissatisfaction, tolerance, as well as political leadership for better electricity supply. There was also assurance by the regulator to protect consumers' rights, and to encourage the PBS to provide fair and impartial services.

### **SUCCESS STORY 3: CHANGE MANAGEMENT TRAINING RURAL ELECTRICITY COOPERATIVE MANAGEMENT-CONSTRUCTIVE CHANGE**

Electricity by way of cooperative ownership system throughout Bangladesh's majority rural communities has been a fundamental and express constitutional right since 1977, yet realizing this basic right has been difficult under the country's current centralized rural electrification program.

Discussions among Government of Bangladesh leaders, international donors, and rural electricity cooperatives have yielded an understanding that change is necessary; and absent decentralization and increased autonomy to individual rural electrification cooperatives, Bangladesh's constitutional tenant of electricity for all cannot be achieved.

General Manager of a rural electrification cooperative in Tangail, a rustic community located about a two hour drive north of Bangladesh's capital city Dhaka, says that he and other rural electrification community stakeholders understand the need for greater cooperative independence in management and decision-making, without such changes, improved access to electricity supply cannot be realized.

Rahman is one of several rural electrification cooperative managers who have participated in a series of discussions, technical studies, and training sessions through the Rural Electrification Board's (REB) Graduation Task Force, a formal Task Force established with the aim of moving rural electrification cooperatives toward enhanced independence and improved financial viability.

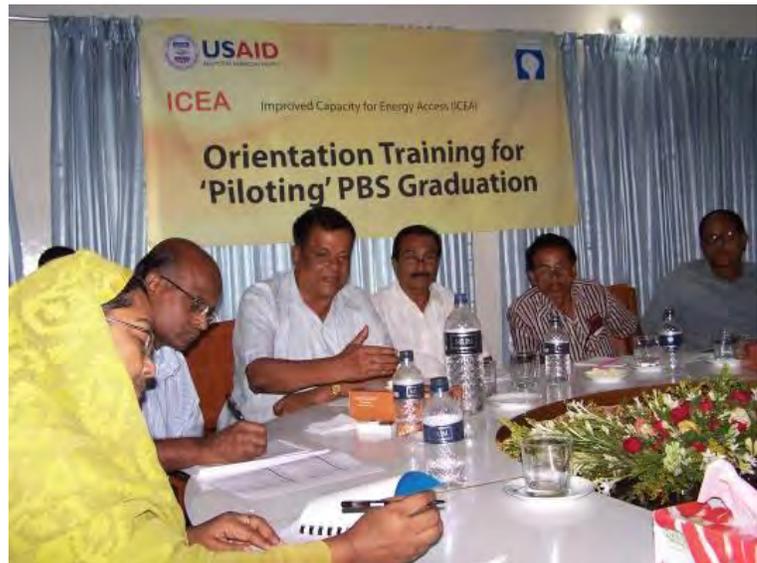
The Graduation Task Force enables constructive dialogue to take place regarding real changes necessary for rural electrification success. Change Management training, itself, has been a focal part of the Task Force's undertakings.

Through its energy governance program, Improved

Capacity for Energy Access (ICEA), USAID is helping to strengthen the REB Graduation Task Force and the rural electricity cooperatives to improve country-wide access to electricity services. Rural electrification program stakeholders are learning that while rural electrification does not come easy; opportunity exists for improvement through constructive dialogue, new and innovative best practice technical and management techniques, and through change management itself.

Rahman and other rural electrification cooperative managers will in due course have the chance to be more responsible and accountable for managing their own electricity cooperative. As the result of the REB

Graduation Task Force process, they know that constructive change is necessary, that if exercised properly and understood by all relevant rural electrification program stakeholders that appropriate change will take place to increase electricity access, enabling Bangladesh's constitutional right to electricity to be a reality for all of its citizens.





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