



**Gender Analysis &  
Recommendations for a  
Gender Plan of Action:  
Rural Energy Portfolio  
USAID/Bangladesh**

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**The Women in Development (WID) IQC  
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## TABLE OF CONTENTS

<b>ACRONYMS &amp; ABBREVIATIONS</b> .....	iv
<b>EXECUTIVE SUMMARY</b> .....	vi
<b>I. INTRODUCTION</b> .....	1
I.A. Scope of Work and Methodology .....	1
I.B. Acknowledgements .....	2
<b>II. GENDER CONCEPTUAL FRAMEWORK</b> .....	3
II.A. Terminology .....	3
II.B. Overview of Gender Issues for the Energy Sector .....	4
<b>III. GENDER ANALYSIS OF BANGLADESH'S RURAL ENERGY SECTOR</b> .....	10
III.A. Gender-Related Constraints in Bangladesh .....	10
III.B. Gender-Related Opportunities in Bangladesh .....	11
III.C. Gender Issues Specific to Bangladesh's Rural Energy Sector .....	13
1. Gender and Energy Policy and Planning Processes .....	13
2. Gender Dimensions of Consumer Usage of, and Access to Rural Energy .....	14
3. Gender-Related Externalities and Impacts of Various Energy Forms .....	16
4. Gender-Related Energy Activities in Bangladesh .....	17
<b>IV. FINDINGS AND CONCLUSIONS</b> .....	17
IV.A. Rural Electrification Board (REB) and the Co-operatives (PBS's) .....	17
1. Status of Rural Electrification .....	17
2. REB Staffing Issues .....	19
3. REB Programs .....	19
4. The Gender Equity Strategy of REB .....	20
5. PBS Board of Directors .....	21
6. PBS Operations .....	22
7. PBS Performance Measurement .....	24
IV.B. Grameen Shakti .....	25
1. Program Funding and Background .....	25
2. Clients .....	25
3. Staffing .....	26
4. Future Plans .....	26

<b>V.</b>	<b>RECOMMENDATIONS FOR A GENDER PLAN OF ACTION FOR USAID/BANGLADESH’S ENERGY PROGRAMS</b>	27
V.A.	Context for a Gender Plan of Action	27
	1. USAID’s ADS Context	27
	2. USAID/Bangladesh Gender Plan of Action – Energy & Environment Section	28
V.B.	Recommendations of Gender-Related Actions For the USAID/Bangladesh Energy Team	28
	1. Gender Mainstreaming Recommendations: REB	28
	2. Gender Mainstreaming Recommendations: PBS’s	29
	3. Gender Mainstreaming Recommendations: Grameen Shakti	31
	4. Recommendations for USAID/Bangladesh Cross-Team Collaboration on Gender and Energy Issues	32
	5. Recommendations for Other Energy-Related Gender Collaborations with Other Partners	33
	6. Gender-Related Performance Monitoring (PM) for Energy Programs	34
	7. Framework and Recommendations Summary	36
<b>VI.</b>	<b>CONCLUSIONS</b>	44

**ANNEXES**

1.	Methodology	46
2.	Schedule	47
3.	List Of Contacts	48
4.	List Of References	50
5.	Findings, Conclusions And Recommendations For The REB/NRECA Socio-Economic Baseline Survey	53
6.	Gender Training Options For REB And PBS Staff	55
7.	Sample By-Law Language Used For The Joint Membership Provision For U.S. Electric Cooperatives	56

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## ACRONYMS & ABBREVIATIONS

ADB	Asian Development Bank
ADS	Automated Directives System
BBS	Bangladesh Bureau of Statistics
BPDB	Bangladesh Power Development Board
BRAC	Bangladesh Rural Advancement Committee
CEWDC	Coastal Electric and Women's Development Cooperative
CIDA	Canadian International Development Agency
DAC	Development Assistance Committee
DFID	Department for International Development (United Kingdom)
DG	Democracy-Governance
EGAT	Economic Growth, Agriculture and Trade
EIT	Energy and Information Technology Office
ENERGIA	International Network on Gender and Sustainable Energy
EnPoGen	Energy, Poverty, Gender Project
ESMAP	Energy Sector Management Assistance Program
FAO	Food and Agriculture Organization of the United Nations
GES	Gender Equity Strategy
GOB	Government of Bangladesh
GPA	Gender Plan of Action
GS	Grameen Shakti
HRDC	Human Development Research Centre
ICA	International Cooperative Association
IDCOL	Infrastructure Development Company Limited
IPRSP	Interim Poverty Reduction Support Program
LGED	Local Government Engineering Department
MDGs	Millennium Development Goals
MEMR	Ministry of Energy and Mineral Resources
MWCA	Ministry of Women and Children Affairs
NEP	National Energy Policy
NGO	Non-governmental Organization
NRECA	National Rural Electric Cooperative Association
OECD	Organisation for Economic Co-operation and Development
PBS	<i>Palli Bidyut Samity</i> (Rural Electric Cooperative)
PRSP	Poverty Reduction Support Program
PSL	Prokaushali Sangsad Limited
PTA	Performance Target Achievement
REB	Rural Electrification Board
REIN	Renewable Energy Information Network
RERED	Rural Electrification and Renewable Energy Development
SEBD	Socio-Economic Baseline Database
SEEMC	Socio-Economic Evaluation and Monitoring Cell
SHS	Solar Home System
SIDA	Swedish International Development Agency
SO	Strategic Objective

SRE	Sustainable Renewable Energy
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WEN	Women's Energy Network
WID	Women in Development Office
WINUP	Women's International Network of Utility Professionals
WIRE	Women Involved in Rural Electricity
WOESA	Women in Oil and Energy South Africa

## EXECUTIVE SUMMARY

### I. INTRODUCTION

- This report explores the gender issues, impacts and mainstreaming opportunities specific to USAID/Bangladesh's rural energy programs under Strategic Objective 7. The end goal of these recommendations is to ensure that more gender-sensitive strategies are adopted by energy professionals to meet the sustainable energy needs and priorities of both men and women stakeholders in rural Bangladesh. Gender-sensitive strategies will help to improve the sustainability of rural energy programming by broadening participation in Bangladesh energy activities, reducing gender-based discrimination and improving the status of women in rural energy programs. These efforts are particularly timely since USAID/Bangladesh is now preparing its new country strategy.
- The USAID/Washington Energy team (EIT) and USAID/Bangladesh, with support from USAID's Office of Women in Development (WID), sponsored this gender assessment. The USAID EIT Office is committed to augmenting public participation in decision-making about rural energy delivery and related environmental management services. It is taking steps to integrate social and gender issues into its energy programs and has begun design work for a gender-sensitive capacity building program for the rural energy policy and planning sector in Bangladesh. USAID/Bangladesh has demonstrated considerable commitment to gender mainstreaming but very little has been done by the Energy Team and its partners to understand the gender implications of the rural energy services and gender situation within its service providing organizations.
- At the request of the USAID/Bangladesh Energy Team, we focused on the work of their U.S. contractor, the National Rural Electrification Cooperative International Ltd. and three Bangladeshi partners: the Dhaka-based Rural Electrification Board (REB); the rural electric co-operative--known as *Palli Bidyut Samities* (PBS's)-- that provide retail electric service to consumers, and the non-governmental organization, *Grameen Shakti*, which services customers in off-grid areas via solar home systems.

### II. OVERVIEW OF GENDER ISSUES

- As with other types of development programming, an understanding of gender issues and improved gender equity within energy institutions and decision-making situations will help to improve the sustainability of energy programming. It is important to understand how gender relations will impact energy program results, both positively and negatively, and how energy programs will impact the status of women and the nature of gender relations. Understanding gender issues helps energy sector professionals to identify new opportunities for working with clients, partners and professionals and minimize gender-related constraints. Assessing and addressing gender workplace issues can help to improve job-related satisfaction for both male and female employees of energy institutions.
- Many energy sector discussions and activities in the South and the North continue to ignore larger social and gender issues. Most energy sector professionals have paid

little attention to the differences among men and women energy consumers, entrepreneurs and professionals. In most countries, the energy sector remains centralized, has not adopted participatory planning with stakeholder input, and energy planning has not taken into account gendered usage and needs in both productive and service sectors.

- In general, energy institutions are dominated by male staff at all levels, including the front-line units that work with household and small business customers. Women professionals tend to be segregated into administrative and accounting job categories while men occupy technical and field-based jobs.
- Despite their key roles in energy collection, purchase and usage, most women, including housewives, entrepreneurs, advocates and energy professionals, have been disenfranchised from energy decision-making and are not targeted as primary users and beneficiaries of energy services. The absence of women in energy institutions and decision-making and the weak understanding of energy-related gender issues have several important consequences including:
  - energy providers that are out-of-touch with large segments of their customer base
  - an uninformed and disenfranchised constituency for sustainable energy alternatives
  - inhospitable work environments for women
  - increasing environmental degradation due to unavailable or irregular electricity services.
- There are many constraints on women in Bangladesh as a result of the patriarchal nature of Bangladeshi society including land ownership, involvement in public life, mobility, education and literacy for older women, and lack of technical training and education. These constraints vary by class, age, religion, location and other factors. Government and non-governmental agencies in the energy field are dominated by male professionals and do not always have family-friendly policies nor are recruitment, hiring and retention practices tailored by sex. There are more female-headed households among the poor. There is a lack of sex-disaggregated statistics for the energy sector and a lack of energy data for social and gender studies.
- There are a number of opportunities for gender mainstreaming in Bangladesh. Bangladesh's Constitution and its National Policy for the Advancement of Women (1998) codify equal opportunity (i.e., employment, decision-making and natural resources) and reject discrimination on the basis of sex; a quota of reserved seats for women is being re-considered by the National Parliament. There are a plethora of women's groups and NGOs working with women and institutions with valuable experience in training their staff on gender issues. The Ministry of Women and Children's Affairs has field offices and there are gender focal points within all line ministries including executing agencies such as the Rural Electrification Board. Societal attitudes are changing regarding women's fitness for some non-traditional jobs, including those requiring mobility in rural areas (e.g., police, health and NGO related work). Younger Bangladeshi women are rapidly approaching educational and literacy parity with male counterparts. Bangladeshi women have considerable experience with enterprises and credit. Several donor agencies with rural energy activities have their own gender specialists.

- Gender and energy issues have not received much policy or research attention in Bangladesh. From a policy perspective, gender equity received no attention in the 1996 National Energy Policy and energy issues are not mentioned in the National Policy for the Advancement of Women. However, the Rural Electrification Policy Framework (2000), within the 2020 Master Plan, clearly stated gender equity as one of its development objectives. The Royal Netherlands Embassy supported a “Comprehensive Gender Strategy and Action Plan for Integration in REB Master Plan” in 2003. Overall, it appears that women, as professionals, consumers, producers, service providers or elected officials, have had little opportunity to participate in energy policy development in Bangladesh.
- Several projects in Bangladesh either focus on women and energy or have the potential to do so. On the energy service delivery side, a noteworthy mention that has received international attention is the Coastal Electrification and Women’s Development Co-operative. Thirty-five rural women on Char Montaz in Patuakhali District are manufacturing energy appliances like lamps and controllers, operating solar battery charging stations, and micro-financing solar home systems to provide off-grid power for un-electrified households and small businesses on several remote islands.

### **III. REB AND PBS**

#### **Findings and Conclusions**

- Following a template of the U.S.-based Rural Electric Associations (REA), electrification service to the people of rural Bangladesh is being provided by 67 rural electrification co-operatives called *Palli Bidyut Samities* (PBS) under the regulatory oversight of the autonomous entity, the Rural Electrification Board (REB). After operating for nearly 30 years, more than 43,000 villages and 5.8 million customers have access to electricity. The annual revenue of REB exceeds USD 2 million. To ensure sustainability of the Rural Electrification Program in Bangladesh, USAID provides support to NRECA to implement the Rural Power for Poverty Reduction Project (RPPR) with the REB.
- The Government of Bangladesh has committed to providing electrification service to all rural households by the year 2020. REB is currently preparing the 2020 Master Plan to ready itself for the next fifteen years and there appears to be opportunity for USAID to encourage REB to internalize social dimensions and gender mainstreaming within REB and PBS programs.
- The major objective of the Rural Electrification Program is to “uplift the standard of living of the rural people and bring about a radical transformation in the rural areas through broad-based growth of the economy.” One objective is providing better working options for rural women and REB assumes that a business-as-usual approach can produce to just such an outcome.
- There have been few REB and PBS resources devoted to gender and socio-economic issues. None of the 21 PBS performance indicators monitored by the REB are focused on socioeconomic issues. The first socio-economic impact evaluation of rural electrification was done in 1996. In 2002, the Human Development Research Centre

(HDRC)<sup>1</sup> performed a socio-economic assessment of the impacts of rural electrification. The REB Socio-Economic Evaluation and Monitoring Cell (SEEMC) was formed in 2001 but is under-staffed and under-resourced. Two separate surveys of PBS customers are now underway via the World Bank and NRECA.

- NRECA's current program is focused upon: 1) Planning and System Engineering 2) Operation and Maintenance, 3) Utility Strengthening (including computerization and training), and 4) Supplemental tasks including assistance with a socio-economic baseline survey for some pilot PBS's, management of areas taken over from BPDB, and a governance study of PBS's. The only activity that addresses gender issues is the sex-disaggregation of some variables within the household survey.
- With respect to REB staff, about eight percent of REB's officers and staff are female and some job categories are almost completely sex-segregated. Interviewed REB staff members do not perceive any sex-based discrimination in salary, benefits and promotion practices for men and women serving in the same position. REB is required to follow civil service regulations. However, from the perspective of the Gender Focal Point for REB, it appears that male officers seldom appreciate the professional capacities of female officers. There is no gender policy at REB.
- There is a detailed training program at REB for each of its directorates and operational units. Topics emphasized include REB operations, power distribution details, hardware maintenance and procurement, in addition to Geographic Information Systems, computerization and information technology. To date, there have been no gender trainings in the present curriculum of REB and the PBS's. Men, due to seniority, are more often selected for career development opportunities and advanced training.
- During the initial period of PBS formation for new areas, Development Teams from REB spent about three months in the field. They assessed the institutional requirements and potential for commercial demand, and consulted with local people to help in selection of a Board of Directors. Apart from three non-voting Women Advisors, the rest of the selected board members were men. In the past, female officers were not encouraged to be part of Development Teams, although it was mandatory for all staff and officers of REB to serve on these teams.
- The Socio-Economic Monitoring and Evaluation Cell (SEEMC) within REB appears to be under-staffed and under-resourced. In 2003, the Royal Netherlands Embassy supported the preparation of a Gender Equity Strategy (GES) and a workshop to mainstream gender within the REB Master Plan 2020 and to formalize the gender dimensions within the PBS's. The Gender Equity Strategy (GES) highlights the two major aspects of mainstreaming gender in REB including the integration of gender equality concerns into the analysis and formulation of all policies, programs, projects and practices, and initiatives that enable women as well as men to formulate and express their views and participate in decision-making across development issues. The GES consultants and REB staff identified the SEEMC as the appropriate body for implementing the GES and its associated Action Plan (AP). REB has not set a target date for incorporation or implementation of these issues.

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<sup>1</sup> HDRC. 2002. Economic and Social Impact Evaluation of Rural Electrification Program in Bangladesh. HDRC, Dhaka.

- Although the PBS's are considered as independent entities, most of their activities are subject to approval by the REB. At present, there are no gender-related procedures in place.
- A PBS Board of Directors is an elected body of people who represents local cooperative members plus three selected, non-voting women advisors. After being initially selected by the REB Development Team, the PBS Board Members serve five-year terms and can be re-elected. The terms for the selected women advisors has been changed from two years to five years but the renewal process is not standardized. Apart from an initial training, the women advisors have had limited opportunity to receive training on the scope of electrification and to network with women advisors from other PBS's
- The impact of power shortages with scheduled and unscheduled load shedding has not been documented specifically for rural consumers and the PBS's seldom provide training or information related to efficient use of electricity or effective selection of electrical devices. Power outages may have different impacts upon women than men in some instances.
- To date, the PBS's have not yet identified women as potential customers in their comprehensive master plans nor have they investigated women's specific uses of, and priorities for rural electrification services.
- The PBS's are consumer-owned cooperatives and most of the members are men. PBS membership and the connections for electrification are only given to the land owners, who are most often men, of the electrified premises. Consequently, the PBS directs monthly electric bills, the invitations to the annual general membership meeting and all relevant correspondence to the male cooperative member. The annual general meetings of the PBS's are attended by the members; 25% of attendees at Barisal 2 and Dhaka 1 PBS's were women.
- The PBS's recruit women for bill preparation at PBS offices. A number of these women are over-qualified for these positions. These were permanent jobs with benefits before 1999. Because of computerization, the Billing Assistants hired after 1999 have been hired under annually renewable contract without benefits. However, under an on-going proposal, REB and PBS's are already considering reversing this decision and making these positions permanent again, as was the situation prior to 1999.

## **Recommendations**

NRECA is in a strategic position to help the REB-SEEMC take the lead on capacity-building activities related to gender mainstreaming within REB and the PBS's. In addition, some additional assistance for capacity-building may be available from USAID/EGAT/EIT global and regional programs.

- Different types of staff or clients will benefit from training that is tailored to their specific needs. As noted in the Gender Equity Strategy for REB, two aspects of gender issues are relevant to the REB and the PBS staff: (1) the gender dimensions of

personnel and work environment issues and, (2) gender issues related to energy users and the end uses of energy.

- Gender mainstreaming activities could begin on a pilot basis in some or all of the PBS's where the NRECA-supported socio-economic baseline survey is being implemented. NRECA could work with REB-SEEMC and other gender-interested REB staff to support gender training and outreach activities.
- NRECA assistance could help the REB to address social dimensions and gender mainstreaming in the REB's new Master Plan 2020 and in REB policy and by-laws.
- USAID can encourage REB to set operational guidelines for gender mainstreaming that would be followed by the PBS's. Knowledgeable REB staff, together with external advisors, should be involved in preparing REB guidelines for incorporating and monitoring gender aspects in planning, operation and management of REB and related performance measures
- To enhance training opportunities for the women working for REB and PBS, training quotas for women staff would be helpful, similar to the ten percent quota for recruitment policy. These quotas could be used until women attain equitable percentages and seniority within these organizations. NRECA can assist in trainings and capacity building programs and offer more training focused on mid-level positions rather than senior positions, where men are dominant. REB is currently offering Information Technology training and it should ensure that equitable numbers of female and male officers receive this type of training.
- Rather than assuming that business-as-usual rural electrification programs will automatically result in better working options for women, REB should establish baseline information and appropriate indicators for the collection of sex-disaggregated data on this topic (e.g., number of officers receiving training, budget allocations, attendance in policy meetings, incorporation of gender issues in monitoring reports, etc.).
- PBS's have the scope to play an even more significant role in rural development at the grassroots level if women's groups and non government organisations can be mobilized as partners in participatory programs on gender equity.
- It would be helpful if all PBS management, staff and officers received gender education and training (see Annex 6, Table 2). The first priority will be senior staff at the REB and PBS's, followed by training, program management and member services staff.
- The REB and PBS's should strongly consider: a) a quota for women representatives, b) election rather than selection of women board members, and c) voting privileges for women members. NRECA could support the development of on-going networking seminars for the women advisors to the PBS Boards (and/or elected women Board Members).
- The global cooperative practice of joint membership for couples could easily be adopted for PBS's.
- Under an ongoing proposal, REB and PBS are already considering reversing the annual contracts for Billing Assistants and offering permanent employment to these women. USAID should support this policy change. The positive effects of this change are likely to include: 1) greater respect from their colleagues and supervisors; 2)

better motivation for greater work output, and 3) availability of trained personnel for future service expansion.

- At the community level, PBS should provide outreach seminars to village advisors to raise awareness of the differences in the energy needs and usage of women and men; outreach programs should be adapted to include this information and tailored to different audiences and meeting venues.

#### **IV. GRAMEEN SHAKTI**

##### **Findings and Conclusions**

- Grameen Shakti incorporated in 1996 and is one part of the Grameen “family” of NGOs. They focus on off-grid energy alternatives for remote areas. In addition to receiving USAID funds, they are currently one of the Bangladeshi partners of the World Bank’s Rural Electrification and Renewable Energy Development (RERED) Project that is supporting the promotion and sales of solar home systems (SHS) in off-grid locations. Because of the time-limited incentives offered by RERED for sales volume and the need for cost-recovery and scale efficiencies, Grameen Shakti has paid less attention to reaching the poorest households.
- Most of their clients are residential and most systems are sold in the name of the man of the household. They do not track clients by sex. They encourage women to be owners and train them in routine maintenance and repair.
- Almost all of their field staff members are men and GS does not tailor their recruiting, hiring or personnel practices by sex.
- Future plans include training 1,000 women field technicians to resolve issues related to post-warranty maintenance. Their intent is to help these women start independent business to expand the number of rural-based SHS field technicians, increase opportunities for women and improve technician access to the SHS’ when only women are at home. The proposed program seems likely to encounter problems if technician trainees have no business background, have constrained mobility or saturate their customer area. Grameen Shakti staff does not yet have specific strategies in mind to help women address mobility and safety constraints.

##### **Recommendations**

- Grameen Shakti field offices and headquarters should collect sex-disaggregated information on clients and consider undertaking sex-disaggregated impact studies.
- To reach more women and encourage SHS ownership by women, Grameen Shakti should tailor their outreach and marketing strategies. Similarly, Grameen Shakti should adapt their outreach, time of day, day of week, seasonality issues and childcare to help women participate in maintenance training.
- If Grameen Shakti retains staff engineers and technicians for SHS sales and installation, then they should consult with university and women’s professional groups about how to modify their recruitment, hiring and personnel practices so that they attract and retain women engineers and technicians.

- Because there is a shortage of girls, particularly from rural areas, who are entering engineering, Grameen Shakti could adapt its “solar scholarship” program to target technical education for local girls in client households.
- In its proposed training program, Grameen Shakti should offer a business training and on-going business-related technical assistance to the new female technicians. Collaboration between USAID/Bangladesh’s Energy Team and Economic Growth Team contractors and other experienced organizations working with women energy entrepreneurs may help to strengthen the business-related portion of the technicians’ training.

## **V. PERFORMANCE MONITORING FOR USAID ENERGY PROGRAMS**

Sex-disaggregated information will help USAID/Bangladesh partners to better identify customer sub-groups and work with them to better address their specific needs. Two of the existing indicators used by the Energy Team of the USAID/Bangladesh Mission can be adapted to collect sex-disaggregated data: men and women trained and the number of electrical connections made to male- and female-headed households and male and female rural consumers. For Grameen Shakti, data tracked should include the number of solar home systems sold to women and men (or female-headed and male/couple-headed households); number of all-women’s meetings held during outreach activities; number of women technicians trained, the number of female trainers and the number of technicians still in business after one year. Other qualitative indicators should be considered to capture attitudinal and budget issues related to gender mainstreaming within PBS and REB, consumer demand-side issues and poverty alleviation.

## **VI. OTHER RECOMMENDATIONS**

### **USAID/Bangladesh Cross-Team Collaboration on Gender and Energy Issues**

There are a number of possibilities for collaboration between the USAID/Bangladesh Energy Team and other teams at the USAID/Bangladesh Mission, including: collaboration on expanding women’s roles in governance of the PBS’s (SO 9); interaction with health clients about electrification benefits and health issues related to collection and usage of biomass fuels and kerosene (SO 1); credit and support to women entrepreneurs for expenses related to electrification, energy appliances and technology and service provision in energy allied service fields (SO 5); renewable and off-grid energy alternatives that relieve pressure on bio-fuel sources (SO 6); provision of solar cookers and other alternative energy sources to individuals receiving emergency provisions of cereals and beans and energy-related assistance to disaster-affected businesses (SO 8) and provision of energy information in pre-school media programs and pilot night lighting for students at safe community-based sites.

## **Other Energy-Related Gender Collaborations with Other Partners**

There are several areas where strategic collaboration on gender and energy issues with new partners is recommended. It would be helpful to foster collaboration between REB and the Bangladesh Bureau of Statistics to expand the collection sex-disaggregated data. The UNDP-funded Renewable Energy Information Network could collect and disseminate gender and energy information. The USAID/Bangladesh's Energy Team could foster capacity building and networking through nascent networks such as GEN-Bangladesh, donor collaboration and field-level cooperation between the PBS's, REB and NGOs that are working with women's micro-enterprise groups. USAID/Bangladesh's Energy Team should track attention to energy issues in the Gender Matrix of the Poverty Reduction Support Program and encourage attention to gender issues in the REB section of the Infrastructure Development and Reforms Matrix.

## **VII. CONCLUSIONS**

At the time of our visit, USAID/Bangladesh was in the process of developing its new country strategy, including the formulation of its future energy programs. Accordingly, the Mission Energy Team should revisit our recommendations as future program plans solidify. Because the most effective action plans are developed over time and by the people who will carry them out, we suggest that the USAID Energy Team and its partners work together in several facilitated sessions to refine our recommendations for a Gender Plan of Action and develop objectives and targets, assign tasks and develop a plausible timetable.

## I. INTRODUCTION

### I.A. Scope of Work and Methodology

This report explores the gender issues, impacts and mainstreaming opportunities specific to USAID/Bangladesh's rural energy programs under Strategic Objective 7. The end goal of these recommendations is to ensure that more gender-sensitive strategies are adopted by energy professionals to meet the sustainable energy needs and priorities of both men and women stakeholders in rural Bangladesh. Gender-sensitive strategies will help to improve the sustainability of rural energy programming by broadening participation in Bangladesh energy activities, reducing gender-based discrimination and improving the status of women in rural energy programs. These efforts are particularly timely since USAID/Bangladesh is now preparing its new country strategy.

The USAID/Washington Energy team (EIT) and the USAID/Bangladesh, with support from USAID's Office of Women in Development (WID), sponsored this gender assessment. The USAID EIT Office is committed to augmenting public participation in decision-making about rural energy delivery and related environmental management services and has been taking steps to integrate social and gender issues into its energy programs, particularly in the rural sector. EIT is beginning its design work for a gender-sensitive capacity building program for the rural energy policy and planning sector in Bangladesh. Their objectives for this program are as follows:



1. Ensure energy policy-makers and planners (both male and female) have a better understanding of the gender dimensions of rural energy issues, with which to inform policy.
2. Increase recognition of women in the rural energy sector and increase training opportunities for women to improve their access to increased promotions in the rural energy sector by:
  - a. Involving end users in the planning process to better meet their needs
  - b. Getting women into decision-making positions in the field of energy as a way to create greater opportunities for women in a sector that has traditionally been dominated by men.

3. Build bridges between energy policy makers and women in rural areas who are responsible for procuring, utilizing, and paying for fuel so that the perspective of the end user is reflected in policies and practices.

USAID/Bangladesh has demonstrated considerable commitment to gender mainstreaming and is now developing a new country strategy. Senior management at USAID/Bangladesh has placed a high priority on gender mainstreaming for all mission operations, projects and programs, including the hosting of an IWID Fellow and the development of a Mission-wide Gender Audit, a Gender Action Plan and a Gender Action Team. However, to date, very little has been done to understand the gender implications of the rural energy services and the gender situation within its service providing organizations.

At the request of USAID/Bangladesh's Energy Team, we focused on three Bangladeshi partners and a U.S.-based implementing partner. The first, the Dhaka-based Rural Electrification Board (REB), was created with support from the USAID during the early 1980s. Subsequently, the program received funds from the GOB and several donor agencies to support the rural economy through electrification service to households, commercial centers, rural industries and irrigation. There has been considerable progress in service delivery but nearly 70 percent of rural households still need to be electrified to meet the GOB's commitment to provide electrification service to all citizens by the year 2020. This objective creates a significant challenge in terms of investment, resources and institutional setup to meet the unmet demand of rural populations. The second point of focus is the rural electric co-operatives, which are known collectively as *Palli Bidyut Samities* (PBS's) and individually as *Palli Bidyut Samity* (PBS). They retail electric service to consumers. The third partner, the non-governmental organization, *Grameen Shakti*, services customers in off-grid areas via solar home systems. USAID works on programs with the REB and PBS through the U.S.-based National Rural Electric Cooperative Association (NRECA).

Our data collection included document review and interviews with over 100 key informants engaged in gender, rural energy and development activities. We conducted interviews in Dhaka, Barisal and Patuakhali Districts. Our methodology, schedule and a list of contacts can be found in Annexes 1, 2 and 3, respectively. Annex 4 includes a list of references.

### **I.B. Acknowledgements**

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and enthusiasm of the staff and members of the Char Montaz Coastal Electrification and Women's Development Cooperative and the staff from Prokaushali Sangsad Ltd (PSL).

## II. CONCEPTUAL FRAMEWORK FOR GENDER ASSESSMENT

### II.A. Terminology<sup>2</sup>

USAID's Energy Team defines **energy programming** in the following way:

Activities with a primary purpose of increasing access to environmentally sound energy and improved environmental management practices. Activities include efforts to: promote clean energy technology; improve policy, legal and regulatory energy frameworks; increase institutional capacity; and augment public participation in decision-making regarding delivery of energy and related environmental management services.

As with other types of development programming, an understanding of gender issues and improved gender equity within energy institutions and decision-making situations will help to improve the sustainability of energy programming. It is important to understand how gender relations will impact energy program results, both positively and negatively. Understanding gender issues helps energy sector professionals to identify new opportunities for working with clients, partners and professionals and minimize gender-related constraints. Assessing and addressing gender workplace issues can help to improve job-related satisfaction by both male and female employees of energy institutions. In addition, gender analysis helps energy sector planners and policymakers to predict and direct how energy programs will impact the status of women and gender relations and to include more stakeholders in decision-making. USAID emphasizes gender mainstreaming to positively impact sectoral program results and also to promote gender equality and the empowerment of women. The point is to look for the implications of any program or policy for men and women, as well as incorporating the needs and experiences of women and men as an integral part of the design, implementation and monitoring.

In this report, the term, **gender**, refers to “the economic, social, political and cultural attributes and opportunities associated with being male and female.”<sup>3</sup> **Gender mainstreaming** is an approach that treats gender as a critical consideration in policy formulation, planning, evaluation and decision-making, rather than a special interest to be taken up separately. It takes into account the differential roles of men and women, the relationship and balance between them, their differential access to resources and confronts the institutional structures that support these gender relations. Gender mainstreaming strategies are based on **gender analyses** that use social methodologies to identify gender-based constraints and opportunities at all levels. This information is then

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<sup>2</sup> Gender terminology definitions adapted from: Lambert, V. 2003. Gender Assessment for USAID/Guyana. DevTech Systems, Inc. (WID IQC), Washington, DC.

<sup>3</sup> Development Assistance Committee (DAC) 1998. Guidelines for Gender Equality and Women's Empowerment in Development Co-operation. OECD, Paris.

incorporated into policy-making, decision-making, budgeting and program design and implementation. At USAID, the WID Office has oversees gender mainstreaming in all programs and the implementation of the Automated Directive System (ADS) operational requirements for giving appropriate consideration to gender in development programming.

Gender analysis and mainstreaming strategies are not focused solely on women but do recognize that women are almost always in a subordinate position in society. As noted by Annecke (1999), “women are not isolated beings, operating according to their own set of rules and desires, but function (as do men and children) in relation to norms and values, opportunities and constraints, around them. In addition, it is important to remember that neither women nor men are homogeneous groups and social factors, such as class, religion, race and age, usually influence women’s and men’s access to resources, decision-making and power.

## **II.B. Overview of Gender Issues for the Energy Sector**

Many energy sector discussions and activities in the South and the North continue to ignore larger social and gender issues. Most energy sector professionals have paid little attention to the differences among men and women energy consumers, entrepreneurs and professionals. Cecelski (1992) observed that, “women have been defined out of the energy sector” because under the dominant paradigm, “...’energy’ is defined as large-scale, capital-intensive technology projects run by professional experts for the purpose of providing energy for ‘economic growth,’ and consists solely of inanimate fuels rather than the actual definition of energy as ‘the capacity for doing work and overcoming resistance.’ ‘Energy’ in the dominant paradigm is emphatically *not* small-scale, management-intensive activities done by women using their own muscle power or local natural resources, either for family subsistence or small-scale income activities.”

In most countries, the energy sector remains centralized. In comparison to other sectors such as forestry and agriculture that have adopted participatory planning and policymaking processes, the energy sector is often closed to input from stakeholders and advocacy groups representing households and small businesses. Procedures for setting national energy priorities do not often take into account gendered usage and needs for energy in both productive and service sectors. Despite their key roles in energy collection, purchase and usage, most women, including housewives, entrepreneurs, advocates and energy professionals, have been disenfranchised from energy decision-making and are not targeted as primary beneficiaries of energy services.

From a staffing perspective, energy institutions tend to be dominated by male staff at all levels, including the front-line units that work with household and small business customers. Women professionals tend to be more often segregated into administrative and accounting job categories. Men are more often in the technical and field-based jobs. Women often joined energy institutions later than men and have not achieved parity with men at the senior levels of management.

The absence of women in energy programming and a weak understanding of energy-related gender issues have several important consequences. Energy service providers are more out of touch with household and small business energy needs. There is increasing environmental degradation from fuel collection by women. The customer base for energy services is uninformed and the energy sector has lost a large potential constituency for sustainable energy alternatives. Resolving these problems and improving the status of women will require an understanding of gender relations, as well as gender-focused and gender-mainstreaming actions.

There are a number of important gender issues for the rural energy sector:

- Under the gender division of labour for many rural households, women are often the primary providers and users of traditional energy resources. Besides family cooking and home heating, women in developing countries often require energy for business, agriculture and health activities. If they do not purchase fuel, they must collect natural fuels from wild lands or manage trees or crops to supply their energy needs. Despite their close involvement in energy production and use, women's expenditure of time and effort is rarely taken into account in calculating national energy needs and expenditures.
- There are a number of gender-related externalities and impacts of various energy forms. Primary attention has been given to the negative impacts of cooking smoke on women and children who spend more time inside than men. Health impacts associated with bio-fuel pollutants include adverse pregnancy outcomes (i.e., stillbirths, premature births and low birth weights), acute respiratory infections, chronic lung and heart disease, cancers and eye problems (Parikh 2002). Collection of bio-fuels by women can be hazardous with respect to spinal column damage, sprains and strains, sexual violence and assault, as well as safety risks from wild animals. Kerosene lanterns pose a household risk both because of fumes and the fire hazard potential. Kerosene and other fuels are often subsidized or subject to reduced taxation but often do not directly benefit the poor or women in particular because the subsidies are diverted by the transport or other sectors.
- Electricity can be both a positive and negative force for households. While it may offer a woman more flexibility in the scheduling of her household tasks, it may also lengthen her workday and create pressure on her to generate more household income. In addition, television has both positive and negative aspects: women may learn valuable health, educational and political information, while children may be distracted from their studies. There may also be reduced social interaction among family members. Also, poor quality installation of electrical wiring poses potential safety hazards for all household members.

A small body of literature addresses issues and strategies related to *women and energy and gender and energy*:

- From the mid-1970s through the 1990s, workers have more often focused on the situation of women and emphasized women-focused strategies rather than gender relations. For example, literature from the mid-1970s emphasized women in households as victims of fuel wood shortages, known as “the other energy crisis.” Women-focused strategies emphasized fuel switching, tree-planting and more efficient cooking schemes (Cecelski 1991). However, inadequate consultation of women by male energy professionals limited the success and sustainability of these efforts. By the mid-1980s, there was more attention to women as energy consumers but primarily in their roles as household cooks for subsistence purposes.
- In the early 1990s, Cecelski’s (1992) research agenda indicates a more holistic but still women-focused perspective that includes: 1) the impacts of global energy policy on women (i.e., pricing, technology, projects) and engaging more women in global energy institutions; 2) increasing women’s involvement in national energy decision-making, 3) expanding local-level women’s initiatives, 4) researching women’s natural resource management coping strategies, 5) linking energy technologies, women’s work and knowledge, 6) understanding the relationships between energy, health and nutrition, and 7) the North-South linkages for women, energy and environment.
- With respect to the gender dimensions of consumer usage of, and access to rural energy, “not everyone in a community has the same needs and priorities, the same problems or the same possibilities for participation” (Skutsch 2001). Skutsch lays out four areas of consideration: 1) women’s household energy needs, 2) non-traditional energy needs at home, 3) energy for women’s income generation, and 4) women as energy entrepreneurs.
- For Skutsch’s first category, household energy needs can include (depending on income level): cooking, refrigeration, electric pumps for domestic water supply, electric grinding mills for grains and oils, irons and blenders. The second dimension, non-traditional energy needs at home when electricity is available, includes lighting for children doing homework and women in literacy or other educational programs and increased political and social awareness from television. Particularly in areas where women’s mobility is reduced culturally or religiously, electricity may provide a woman needed flexibility for existing or new income generation. Increased local opportunities due to electricity can also have an impact on reducing out-migration. Women often choose different types of enterprises than men, including hairdressing, food processing, computer-based services and bakeries. Besides using energy in their enterprises, women are increasingly tapping opportunities in energy-related services including installation and maintenance of electrical systems and alternative energy technologies, appliance repairs, small scale manufacturing of energy equipment and administration of supply and payments.
- Beginning in the late 1990s, Annecke (1999) and others noted that precautions should be taken, when isolating women as a target group for energy activities, to ensure that the social relations and context for women, specifically gender relations, are taken into account. Annecke’s conceptual framework (1999) for national and regional

energy planning discusses: 1) inclusion (or exclusion) of women's energy activities and services (including those for income generation) in national policy; 2) fiscal and other resources dedicated to women's energy needs; 3) policy implementing agencies and their efficacy; 4) identification of barriers to change; and 5) identification of appropriate support measures and incentives. At the community and household levels, Annecke suggests greater attention to women's access to energy services, the availability of energy services, the affordability of energy services, security of energy services and the sustainability of energy services. Although not mentioned by Annecke, her framework could also be adapted for gender-related performance measures for the energy sector.

Gender issues are also addressed in a more recent body of literature that addresses linkages between energy and poverty.

- The feminization of poverty has been well-documented during the 1990s, particularly with regard to the disproportionate impact of poverty and structural adjustment policies on women, the high proportion of female-headed households among the poor, and the lower socio-economic status of female-headed households across all classes.
- The energy sector focuses on particular productive activities that are often male-dominated. This focus has resulted in the neglect of the productive and household maintenance tasks in rural households and exacerbated household poverty.
- For example, a recent DFID strategy (2002) "Energy for the Poor: Underpinning the Millennium Development Goals" emphasizes greater access to energy by the poor, as well as participatory approaches for the energy sector. It focuses on the central role that energy can and does play in poverty alleviation.
- The World Bank, via its EnPoGen Project in Asia, is systematically assessing the potential benefits of energy, in general, and electricity in particular, for the poor. This work will help to ensure that future energy-electricity projects of the Bank will better fit with poverty reduction strategies.
- However, "poverty means, among other things, limited access to energy sources. Poverty influences and determines energy choices of poor households. There is a gender bias in rural energy poverty, too, because the main source of energy in poor rural households is not biomass. It is women's labour. The real energy crisis in rural areas is women's time" (Cecelski 2000). According to Cecelski, a poverty-alleviating energy strategy focused on women as a target group would address a number of issues. With respect to cooking and fuel wood collection, strategic issues would include cook stoves, indoor air pollution from smoke and the health and time impacts related to fuel collection. Pricing of fuels used by the poor can have different impacts on men and women. Poor women need improved transport for fuel, as well as more efficient and labor-saving technology.

- Lighting is an important issue for women, not just for their homes, but also for streets, health and education facilities. To take advantage of energy technologies for their businesses or engage in energy-focused businesses (i.e., building, manufacturing, selling, maintaining and repairing energy technologies and appliances), women also need access to credit for investments. In addition, there need to be expanded opportunities for poor women's organizations and views to be represented during macro-energy planning and pricing discussions.
- Recent work by Ramani and Hijndermands (2003) related to the EnPoGen research suggests that decentralized energy planning and delivery mechanisms will help to empower women and strengthen their role as consumer advocates in energy decision-making.

In terms of organizational issues, several strategies have been proposed or attempted for the energy sector:

- There is evidence that women energy professionals and entrepreneurs have formed women-only professional networks at the state, national and international levels to address gender imbalances. For example, there is a US-based organization, Women's International Network of Utility Professionals (WINUP) that builds upon an organization founded in 1923, The Electrical Women's Round Table, Inc.<sup>4</sup> The Texas-based Women's Energy Network (WEN) organizes regular networking meeting and has a current lecture series on "Gender, Development and Energy" with the James A. Baker III Institute for Public Policy at Rice University.<sup>5</sup> In South Africa, Women in Oil and Energy in South Africa (WOESA) was launched in 2002 and aims to be the lead organization for facilitating the participation of women in business ventures in oil, gas and other energy sectors. ENERGIA, based in The Netherlands, is an internationally based organizations of professionals engaged in gender and energy issues.
- There is not much recent literature about women's roles in electric cooperatives. Women in the United States were motivators in the early days of the electric cooperatives.<sup>6</sup> In the United States, parallel women's organizations have formed at the community level (e.g., Women Involved in Rural Electrification – WIRE, affiliated with the Mid-Carolina Electric Cooperative, and the Missouri Rural Electric Women's Association) and at the national level (National Rural Electric Women's Association). As in the case of WIRE in North Carolina, eligible women include consumer members, cooperative employees and the wives of male employees, cooperative directors and the wives of male directors and retirees associated with the cooperatives. Most of their activities are geared to improve the quality of rural life in

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<sup>4</sup> <http://www.winup.org>

<sup>5</sup> <http://www.wenhouston.org>

<sup>6</sup> For an interesting first-person account of the early days of consumer education on electricity for the Rural Electrification Administration, see Louisan Mamer's interview at: <http://www.rurdev.usda.gov/rbs/pub/mar98/pagepast.html>.

the communities served by the electric cooperative communities. This mission is viewed as part of the original aims of the electric cooperatives in the United States.<sup>7</sup> They also state objectives related to consumer education related to the rural electric program. However, other efforts at consumer education related to energy are now being undertaken by local, national and global non-profit organizations, such as Women's Energy Matters.<sup>8</sup> In addition, electric cooperatives instituted by-laws that facilitated joint membership by both husbands and wives while maintaining the one-household, one-vote practice of cooperatives. Appendix 5 provides examples of sample by-law language.

- The global cooperative movement literature addresses the low representation of women in the membership and leadership of mixed-sex cooperatives. Proposed explanations include land ownership requirements for members (rather than land users), discrimination against *de jure* and *de facto* female-headed households, women's lack of time, male resistance to women's participation, social pressures against women taking active and visible public roles, women's lack of confidence, mobility and childcare constraints, and traditions of men negotiating and handling money matters.<sup>9</sup> While some suggest that all-women's cooperatives can serve as training grounds for women, this is not an alternative for electricity-providing cooperatives and other solutions such as training for women, gender training for men and women and greater attention to the logistical, mobility and family responsibilities of women. The International Cooperative Association's (ICA) Gender Equality Committee also has regional committees in the Americas and the Asia/Pacific region, with an informal network of women co-operators in Europe. Its approaches include gender awareness training for women and men, training schemes, career incentives, recruiting and promotions schemes, mentorship programs and access to decision-making bodies. Together with the International Labour Organization, ICA has developed an introductory two-hour training session on gender issues for cooperative leaders.<sup>10</sup>

In terms of gender-related performance monitoring for the energy sector, several elements have been addressed in the literature:

- Adapting Skutsch's gendered approach to energy provision (2001), there are three dimensions that could be monitored:

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<sup>7</sup> President Franklin Roosevelt declared in 1935 that he wanted the Rural Electrification program to be a social service agency that helped those most in need and the electric cooperatives to be cooperative business units that improve the quality of living for members. [Glaess, M. 1996. Capturing the spirit. Year in cooperation: A cooperative development magazine. 2 (2).]

<http://www.wis.edu/uwcc/info/yic/22com.html>

<sup>8</sup> <http://www.womensenergymatters.org>

<sup>9</sup> FAO. 1995. The gender dimension in rural cooperatives. Paper commissioned by FAO for the Centennial Meeting of the International Cooperative Alliance, Manchester, UK, September 1995.

<http://www.fao.org/sd/rodirect/roan0008.htm>

<sup>10</sup> <http://www.ica.coop/gender/ica-ilo-manual/overview.htm>

1. documenting gender-disaggregated differences in energy needs, dreams, constraints and potential by income and social group and how these needs change over time;
  2. documenting how barriers to energy access and use are reduced for women and men, including access to credit, training and extension for grid- or off-grid electrification and
  3. identifying the success of electrification programs in reaching and meeting the needs of poorer parts of the population, including women and poor women.
- Recent work by the ESMAP Project of the World Bank (2003) emphasizes how rural electrification projects can be monitored and evaluated from a demand-oriented perspective. Relevant sex-disaggregated variables include: how effectively the energy systems are sustained; the equitability of access and use of energy services, etc.; the degree of change in cross-sectoral social development indicators; the distribution of costs and benefits; participation in service establishment and operation; institutional and policy support for gender- and poverty-sensitive participation in energy projects and programming.

### III. GENDER ANALYSIS OF BANGLADESH'S RURAL ENERGY SECTOR

#### III.A. Gender-Related Constraints in Bangladesh

- Much has been written about how the patriarchal nature of Bangladeshi society influences gender relations and limits women's social and productive roles in comparison to men. However, the degree to which legal, social and religious issues constrain women's opportunities often varies by class, age, religion, location and other factors. For example, women from conservative rural religious communities often have more limited mobility and economic opportunities than women from elite urban households.
- With respect to poverty, women and women-headed households are more numerous than men or households headed by men or couples. Female-headed households include women who have been abandoned, widowed or have a husband who is temporarily away. While not all female-headed households are poor, they tend to be poorer than those headed by men (or couples) in all economic classes and are represented as a higher percentage among the poorest socioeconomic classes in Bangladesh. Estimates of the percentage of female-headed households in Bangladesh range from around 11 percent to 20-30 percent.<sup>11</sup> The latter range is more consistent with other countries in the region and is likely to include *de facto* as well as *de jure* female-headed households.<sup>12</sup> In 1991, the percentage of female-headed households in rural areas (11.41 percent) was somewhat higher than in urban areas (8.42 percent).

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<sup>11</sup> The lower estimate comes from the 1991 National Census and the higher estimates from Afsar (1997) and MOWCA (1998) are cited in Pal, Mariam (2001).

<sup>12</sup> *De jure* female-headed households are those where a women's partner is legally dead or she has been divorced. *De facto* female-headed households include those in which women have been abandoned or their partners are living elsewhere for extended periods of time.

Like other poor households in rural areas, their homes are likely to be in remote areas that are further away from the electric poles and energy grid services.

- Bangladeshi women are less likely to own land and property and their access to land is often mediated by men. Islamic sharia inheritance laws specify that daughters receive less than sons and widows must share their husband's property with children. Besides affecting women's access to collateral for loans, women's lack of land ownership makes them ineligible for membership, services, leadership and voting rights within some organizations, including the PBS cooperatives.
- In public life, public spaces and civic decision-making, men are dominant. In part, this is due to sexist social conventions and is compounded by restrictions on women's mobility. Social norms, family responsibilities and men's attitudes regulate women's mobility and a lack of suitable transport further limits women. However, women do have their own spaces within homesteads and villages and they often have their own women-only groups.
- In terms of educational, professional and occupational issues, middle-aged and older women have less education than their male peers. Women are less likely to participate in technical training and education, including fields related to energy provision. Government and non-governmental agencies in the energy field are dominated by male professionals and do not always have family-friendly policies. Recruitment, hiring and retention practices are not tailored by sex. Few energy staff in technical fields have received gender training or been exposed to participatory, client-oriented service delivery approaches. Female employees, in field and desk jobs, often face negative attitudes and harassment from male colleagues and negative field performance by a few women is often generalized to all women.
- While some sex-disaggregated statistics are available from the Bangladesh Bureau of Statistics, collection and analysis of these statistics is primarily focused on health, demographic, education and employment issues rather than energy issues. The sex of the head of the household is recorded, but cross-tabulations and regressions with other variables have been quite limited for female-headed households.

### **III.B. Gender-Related Opportunities in Bangladesh**

- From a policy perspective, Bangladesh's Constitution and its National Policy for the Advancement of Women (1998) codify equal opportunity (i.e., employment, decision-making and natural resources) and discrimination on the basis of sex.
- Particularly for younger women, literacy and educational levels are rapidly approaching parity with their male counterparts. Increases in girls' school attendance can be attributed, at least in part, to GOB policies that provide rice to families who send their children to school.

- Bangladeshi women have considerable entrepreneurial experience and have proven to be reliable re-payers of micro-credit. The world-renowned Grameen Bank was founded in Bangladesh and more than 90 percent of its clients are women.
- Societal attitudes are changing regarding women’s fitness for some non-traditional jobs, including those requiring mobility in rural areas (e.g., police, health and NGO related work).
- The National Parliament is currently debating a proposed quota for reserved seats for women to improve gender equity in decision-making. As with other countries that have instituted a women’s quota for elected bodies, this decision could have far-reaching effects in terms of setting a precedent for women’s quotas in local decision-making bodies, including the PBS’s.
- There are a plethora of women’s groups and NGOs working with women at the local and national level. Very few of the women’s NGOs appear to be working on energy (e.g., improved cook stoves). However, they do provide extension services, training and support for women’s entrepreneurial activities. Conversely, many of the energy-related NGOs and institutions do not appear to be targeting women as clients.
- Some governmental and non-governmental institutions have gained valuable experience with staff gender training and programmatic gender mainstreaming experience. Notable examples include GOB’s Local Government Engineering Department’s efforts to use multi-disciplinary teams and fully integrate local women into water management cooperatives and the extensive staff gender training by the Bangladesh Rural Advancement Committee (BRAC).
- The Ministry of Women and Children Affairs has established a system of gender focal points who are staff within all line ministries and their implementing departments (e.g., LGED, Department of Health, Department of Education, etc.), as per the National Action Plan on Gender. There are gender focal points at the Rural Electrification Board and the Power Development Boards under the Ministry of Energy and Mineral Resources. MWCA also has field offices in each district who register organizations engaged in women’s development.
- Several donor agencies that have been or plan to be active in the rural energy sector have their own gender specialists (i.e., World Bank, ADB, UNDP, DFID and

**Box 1: Energy Aspects of the Policy Matrix for Women’s Advancement & Rights of the IPRSP**

- “ensure electrification & gas for female-headed poor,”
- women’s role in energy policy-making,
- incorporate women in PBS Managing Committee,
- address women’s small businesses needs,
- increased women’s employment in PBS desk jobs.

Netherlands). Some of the donors supported the preparation process for the Poverty Reduction Strategy Paper (PRSP 1999-2004) which is the national document to be followed for development projects during the upcoming years. The interim version of the PRSP clearly states the importance of women's rights, their scope of participation in the planning process, implementation and supervision, and the need for gender equity for achieving poverty reduction. The Royal Netherlands Embassy supported the "Comprehensive Gender Strategy and Action Plan for Integration in REB Master Plan" in 2003.

- The Interim Poverty Reduction Strategy Paper includes energy-related recommendations in its Policy Matrix for Women's Advancement & Rights. (See Box 1)

### **III. C. Gender Issues Specific to Bangladesh's Rural Energy Sector**

#### **1. Gender and Energy Policy and Planning Processes**

- Although gender issues in Bangladesh have received attention in other primary sectors like the health, education and rural development, there is no particular mention of the gender issues in the National Energy Policy (NEP), which was formulated in 1995 under the Ministry of Energy and Mineral Resources (MEMR). However, under general policy issues for rural electrification, NEP states that, "...Planning of rural electrification is to be made consistent with the overall goals of socio-economic development of the country." The 2020 Master Plan of REB has clearly stated gender equity as one of its development objectives. While the National Policy for the Advancement of Women by the MWCA is a policy directly targeted at women's development and empowerment, it does not discuss energy issues.
- In general, policy formulation in Bangladesh is not a participatory process. A policy framework is prepared by the respective ministry or its affiliated bodies. Senior staff members are usually involved in policy development. To date, the senior staff members of the energy sector has been almost entirely men. Energy consumers, producers and service providers are generally not invited to review draft policies. Policy decisions are then approved by the respective departments of the Planning Commission. Because women are also seriously under-represented as elected officials at the national (and sub-national) levels, their perspectives are not generally heard on energy-related or other discussions in Parliament. At present in Bangladesh, there appear to be no advocacy groups devoted to women's energy issues or representing women energy consumers, producers or service providers.
- Women's participation is also quite limited in energy planning processes. For REB, there are some women professional staff at the REB who are now involved in planning activities. Most female staff at the PBS's occupies lower-level positions, such as Billing Assistants, and their involvement in planning seems unlikely. The three selected Women Advisors on the Boards of the PBS's are able to participate in

any planning discussions held by the PBS Boards but they do not have voting privileges. There are a very small number of women who are elected as voting members of the PBS Boards. While women energy consumers can attend the annual PBS general meetings, most are not registered as cooperative members and do not have voting privileges.

- A network of professional men and women, GEN-BANGLADESH, has recently formed to mainstream gender issues into energy planning and work on several other objectives (i.e., fact finding and research, awareness creation and promotion and information dissemination and capacity building). Members of this network come from the private sector, NGOs, academic institutions including Bangladesh University of Engineering and Technology, Dhaka University and Jahangirnagar University and government agencies such as the REB, Bangladesh Council for Scientific and Industrial Research (BCSIR) and other institutions. They participate because of their interest in gender and energy issues and do not serve as official representatives of their organizations. GEN-Bangladesh recently affiliated with the international ENERGIA network<sup>13</sup> to extend its knowledge base and connections.

## 2. Gender Dimensions of Consumer Usage of, and Access to Rural Energy

- According the REB data from March 2005<sup>14</sup>, the REB has electrified nearly 43,000 villages in Bangladesh. More than 5.8 million consumers have electrical connections over 180,000 kilometers of distribution lines. In terms of household lighting, only 30 percent of Bangladesh households use electricity whereas 70 percent make do with kerosene.<sup>15</sup>

- In general, most social and gender-focused studies have not usually focused on energy-related issues and there have been few energy studies in Bangladesh that have collected gender-related or sex-disaggregated data. For example, the 1991 National Census includes information on the sex of the head of household, as well as household electrical connection, system of lighting by household and source of fuel, but the energy-related information has not been disaggregated by sex of the head of households. This information could be very useful for energy planning and service provision.

- Sometimes, energy-related household data has been disaggregated by socio-economic class. The National Household Income and Expenditure Survey (BBS) conducted in 1999-00 indicated that only 19 percent of rural households have electricity

**Box 2. Proportion of Rural Households with Electricity Connections by Economic Quintile (2000)**

Poorest:	3.0 %
Low Middle:	28.0 %
Middle:	31.6 %
High Middle:	42.4 %
Richest:	44.0 %
Overall:	19.0 %

(Source: Household Income and Expenditure Survey. 2000. Bangladesh Bureau of Statistics, Dhaka.)

<sup>13</sup> Prokaushali Sangsad Limited (PSL), which is a private company, serves as the Bangladesh focal point for the International Network on Gender and Sustainable Energy (ENERGIA).

<sup>14</sup> REB. 2005. Management Information System (MIS), March 2005. REB, Dhaka.

<sup>15</sup> BBS. 2000. National Household Income and Expenditure Survey. BBS, Dhaka.

connections. Among rural households, only 3 percent of the poorest rural households have electrical connections as compared to nearly half (44 percent) of the richest households (see Box 2).

- While differences in household fuel sources used by female- versus male-headed households have not been established, data for poor households in rural areas suggest that the poor are more likely to be dependent upon agricultural residues (e.g., cow dung, jute sticks, rice straw, rice husks, twigs, leaves) and natural resources (i.e., firewood) for their sources of energy. Among all rural households in Bangladesh, approximately 43 percent used purchased or gathered firewood for cooking at the time of the 1991 Population Census Sample Survey. For cooking purposes, 0.36 percent of households used kerosene, 0.20 percent used natural gas, 0.38 percent used electricity and 56.40 percent of households used other types of biomass (i.e., not firewood). Fuel sources do vary by socio-economic class but data is not yet available regarding differences for male- versus female-headed households in middle and higher income households. Less than one percent of Bangladeshi households use electricity or bio-gas for cooking.
- In a 2002 socio-economic study of the impacts of rural electrification, the Human Development Research Centre (HDRC)<sup>16</sup> researchers performed a socio-economic assessment of the impacts of rural electrification. Sex-disaggregated data included expenditures for education and health, literacy rates, awareness of health issues and practices, spatial mobility and participation in household decision-making. Some of these variables were used as a proxy for women's empowerment. The authors assert that electricity has given women more opportunities for employment. Intensive farming with electricity-powered irrigation has resulted in extra work for women during evening for post harvesting but electricity has enabled women to organize their work at their own convenience. Irrespective of availability of electricity, patterns of income-generation activities for women was the same. Women from electrified villages spent 85 percent more on health care than women in un-electrified villages.
- The HDRC study states that electricity has positively contributed to the income of all households, to varying degrees. Their data indicated that the average annual income in the electrified households and un-electrified households (in un-electrified villages) was Tk 92,963 (US\$ 1549) and Tk 56,524 (US\$ 942), respectively. Therefore, the average annual income of households with electricity was found to be 64.5 percent higher than the income of households of non-electrified villages. However, only 16.4 percent of the annual income of the electrified households could be attributed to electricity itself. Electric-powered irrigation equipment and commercial and industrial connections provide additional income to households.
- Some sex-disaggregated employment data are available from the 1991 National Census on employment by sector. Energy employment is grouped with water and gas sector employment. Overall, employment in the water-gas-electricity sector was the

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<sup>16</sup> HDRC. 2002. Economic and Social Impact Evaluation of Rural Electrification Program in Bangladesh. HDRC, Dhaka.

lowest of all sectors for men and women (0.21 percent of the employed population aged 10 years and over). Approximately 95 percent of all jobs in this sector were held by men.

### 3. Gender-Related Externalities and Impacts of Various Energy Forms

- The price of firewood has increased significantly as demand exceeds supply. These price increases have the greatest impact on the poor, and consequently, on many female-headed households. The deficit of firewood has increased the price and use of jute straw and other alternative fuels. For the many rural residents who can only afford to collect rather than purchase their fuel supplies, they are switching fuels. They are more often collecting and burning branches and plant leaves, felling fruit-bearing and immature trees and uprooting the residuals of rice plants. In the north, some people are using wooden dust and *ghota* (jute stick and cow dung). Impacts can include reduced soil fertility and erosion, reduced sources of nutrition from fruit, reduced fuel for income-generating activities and increased risks to women and girls who must travel further from home to collect fuel.
- Collection of fuels is most often the responsibility of women and girls. These duties take increasing amounts of time and women and girls must travel over greater distances. These activities reduce women's availability for income generation, and interfere with school and study time for girls.<sup>17</sup> In addition, women and girls risk their physical safety and may also be at greater risk of experiencing domestic violence in communities with strictures on women's mobility.
- An on-going study conducted by the Bangladesh Institute for Development Studies (BIDS) and sponsored by ESMAP is focusing on household energy usage<sup>18</sup> patterns. They have collected national-level sex-disaggregated data and analyzed women's time use as it relates to energy collection and usage. Women and children have primary responsibility for biomass collection for cooking. Similarly, women are generally responsible for construction and maintenance of clay stoves on a weekly basis. The study estimates that the average amount of time spent by a woman on preparing biomass for cooking fuel is approximately 36 person-days per year.
- There are also health-related impacts associated with the burning of firewood for cooking. International data from the early 1990s indicates that 10-180 grams of particulate matter are emitted from open fire stoves (Ellegard and Egneus 1992). Prolonged exposure to these toxic substances has been identified as one of the major sources of several health problems, including acute respiratory infections and low birth weights for children, chronic lung diseases, cataracts, headaches, fatigue and

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17. Billah, A.M. nd. Energy and environment: Demand for wood energy in Bangladesh. SNDP Bangladesh website: ([http://www.sdnbd.org/sdi/issues/energy/publications/energy\\_and\\_environment.htm](http://www.sdnbd.org/sdi/issues/energy/publications/energy_and_environment.htm))

<sup>18</sup> BIDS. 2005. Energy for Rural Households: Towards a Rural Energy Strategy in Bangladesh, ESMAP Report, World Bank, Washington D.C.

cancer in women (Barnes *et al.* 1994). Kerosene poses additional hazards with respect to household fires.

#### **4. Gender-Related Energy Activities in Bangladesh**

- On the energy service delivery side, a noteworthy mention that has received international attention is a co-operative of 35 rural women of Char Montaz.<sup>19</sup> They are engaged in off-grid power supply for several islands. The organization is called “Coastal Electrification and Women’s Development Co-operative (CEWDC). It is targeted towards the empowerment of women, where energy is the means to serve the community and create opportunity. This micro-enterprise is manufacturing energy appliances like lamps<sup>20</sup> and controllers. It is operating solar battery-charging stations. The cooperative is also micro-financing solar home systems for un-electrified households and small businesses in the remote locations. The co-operative is expected to participate in the national solar program under the World Bank-financed RERED and also to become an active partner organization to IDCOL, like the national NGOs.
- In recent years, the Sustainable Rural Energy (SRE) Office of the United Nations Development Program has supported the Renewable Energy Information Network (REIN). It is documenting non-conventional energy projects and programs in a database. REIN is situated at the GOB’s Local Government Engineering Department (LGED). National projects are highlighted through the SRE website and the database provides information on the distribution of renewable energy resources, technology application and user benefits with special focus on poverty alleviation and women.
- The World Bank-funded solar electrification program has been underway since 2002. The Infrastructure Development Company Limited (IDCOL) is the implementing agency. In this project, several NGOs are the executing bodies, where solar home systems are sold to rural customers with micro-credit of three to five years. In view of the high demand for lighting and communications, the project is moving ahead of its target. Without much attention to the gender implications of solar electrification, IDCOL is collecting a detailed database of the hardware and techno-commercial information.

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<sup>19</sup> Prokaushali Sangsad Limited. 2002. Opportunity for Women in Renewable Energy Technology Applications in Bangladesh. ESMAP Report. World Bank, Washington, D.C.

<sup>20</sup> Khan, H., *Battery Operated Lamps Produced by Rural Women in Bangladesh*, in *Generating Opportunities: Case Studies on Energy and Women*, (NY UNDP 2001), <http://www.undp.org/energy/publicaitons/2001/2001a.html>.

## IV. FINDINGS AND CONCLUSIONS

### IV.A. Rural Electrification Board (REB) and the Co-operatives (PBS's)

#### 1. Status of Rural Electrification

- The Ministry of Energy and Mineral Resources (MEMR) oversees the power and energy sector of Bangladesh. In 1977, the Rural Electrification Program (REP) was established by the GOB, with a mandate to provide electrification services to its people through the autonomous entity called Rural Electrification Board (REB). The responsibilities of REB go beyond provision, management and operation of a technical infrastructure for providing electricity to the rural sector. REB is also responsible for efficient use of electricity for socio-economic benefits of the rural people. Following a template of U.S.-based Rural Electric Associations (REA), electrification service to the people of rural Bangladesh is being provided by 67 rural electrification co-operatives called Palli Bidyut Samities (PBS's) under the regulatory oversight of the REB. The PBS's have geographical coverage of most<sup>21</sup> of the population in the rural areas along with small towns and sub-district levels.
- As per ordinance of the REB (1980), the major objective of the Rural Electrification Program is to 'uplift the standard of living of the rural people and bring about a radical transformation in the rural areas through broad based growth of the economy' In addition to providing better working options for rural women, the program had envisioned several outputs covering socio-economic responsibilities of the public program. These outputs of rural electrification range from enhancing production, increasing employment, increasing household and community services, changing the scope of investment and industrialization, utilizing domestic resources, better health care and entertainment facilities. The current techno-commercial operation of REB however assumes that the current grid extension and area coverage program will lead to these objectives, without any special attention to the level of achievement of the desired outputs. Consequently, rural electrification program assumes that a business-as-usual manner will result in better working options for women.
- After nearly 30 years of operation, more than 43,000 villages have access to electrification for about 5.8 million customers, and the annual revenue of REB exceeds USD 2 million.<sup>22</sup> The government of Bangladesh has taken a decision to provide electrification service to all rural households by the year 2020. This task will create a significant demand upon REB. Rapid expansion and intensification of grid connections is now needed to cover the rapid growth in household numbers and their consequent rise in demand for electricity. It is evident that there is a significant need for investment, new infrastructure for coverage and the number of co-operatives will

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<sup>21</sup> Considering the complexity of grid extension, the hilly regions of Chittagong and some remote islands in the south are beyond any electrification master plan.

<sup>22</sup> REB. 2005. Management Information System (MIS), March 2005. REB, Dhaka.

increase in the near term. With such a vision for service, REB is currently preparing the 2020 Master Plan to ready itself for the next fifteen years. Through this master plan, there appears to be some scope for USAID to encourage REB in internalizing social dimensions and gender mainstreaming within the REB and the PBS's, which has been missing in the past.

- To ensure sustainability of the Rural Electrification Program in Bangladesh, USAID provides support to NRECA to implement the Rural Power for Poverty Reduction Project (RPPR) with the REB. Their current program is mainly focused upon: 1) Planning and System Engineering 2) Operation and Maintenance, 3) Utility Strengthening (including computerization and training), and 4) Supplemental tasks including assistance with a socio-economic baseline survey for some pilot PBS's, management of areas taken over from BPDB, and a governance study of the PBS's. NRECA has included gender as a variable in the design of the household survey being implemented by pilot PBS's but has not done other work related to gender issues.

## **2. REB Staffing Issues**

- There is an unequal number of male and female staff at REB and some job categories are almost completely sex-segregated. About eight percent of REB's officers and staff are female.
- Interviewed REB staff members do not perceive any sex-based discrimination in salary, benefits and promotion practices for men and women serving in the same position. REB is required to follow civil service regulations.
- Interviewed staff indicated that men officers at REB are more often selected for career development opportunities and advanced training. There are two reasons: participants are selected on the basis of seniority and more men hold senior positions at REB because they joined REB before women. In addition, REB has not used sex-based quotas to balance opportunities for capacity building and advanced training. One negative aspect of training only senior staff is that these staff members tend to be transferred more often and the benefit of their training is not always retained within departments.
- The REB has developed a detailed training program for each of its directorates and operational units. Among others, programs in Geographic Information Systems, computerization and information technology aim to modernize and improve the PBS system and build staff capacity. To date, there have been no gender trainings in the present curriculum of REB and the PBS's.
- From the perspective of the Gender Focal Point for REB, it appears that male officers seldom appreciate the professional value of the female officers. Since the numbers of professional women are so much smaller than their male counterparts, she thinks that

there is a lack of awareness and acknowledgement by men of women's performance and how they benefit the REB. She attributes these attitudes to cultural issues.<sup>23</sup>

### **3. REB Programs**

- According to official REB procedures, the formation of a new PBS and its Board of Directors is a well-defined process. When a PBS is formed a 'Development Team' from REB spends about three months in the field to assess the institutional requirements and potential commercial demand. They also consult with local people to help the new PBS to select a Board of Directors that includes social representatives from each of the local level administrative units (*upazilla*). Apart from the three non-voting Women Advisors, the rest of the selected board members are men.
- During the initial period of REB and PBS formation, "Development Teams" consisted of about 20 people and included a balance of technical and non-technical REB staff. In the past, PBS's covered new areas and much effort was spent on motivation and awareness-raising of local people. Currently, the older PBS's are being divided to form new PBS's. Because people are very aware of rural electrification, the role of Development team has been reduced. Although it was mandatory in the past for all staff and officers of REB to serve on the Development Team, participation of female officers in this team was not encouraged.
- At present, there is a Socio-Economic Monitoring and Evaluation Cell (SEEMC) within REB that appears to be under-staffed and under-resourced. The head of this unit has a socio-economic background and has attended gender training. However, there are no other social scientists working under this person. While there are some individuals with social science degrees working at REB, they are doing other duties and there have been no other REB staff positions designated for individuals with social expertise other than the SEEMC head.
- There is no gender policy at REB but there is a gender focal person available. She is the senior-most female officer in the institution. Other gender-aware staff members, both male and female, are employed by REB.

### **4. The Gender Equity Strategy of REB**

- In 2003, the Royal Netherlands Embassy supported the preparation of a Gender Equity Strategy<sup>24</sup> (GES) to mainstream gender within the REB Master Plan 2020 and formalize gender dimensions within the PBS's. In addition, a workshop was held with REB staff and others to discuss the GES and plan for its implementation. The GES consultants and REB staff identified SEEMC as the appropriate body for

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<sup>23</sup> Interview with Motiza Begum, REB Director and Gender Focal Point, April 22, 2005.

<sup>24</sup> ENERGIA and ECBL. 2003. Comprehensive Gender Strategy and Action Plan for Integration in REB Master Plan. The Royal Netherlands Embassy, Dhaka.

implementing the GES and its associated Action Plan (AP). They anticipated that the GES and AP would provide a conceptual framework that could be followed in the future by projects, programs and activities of REB and the PBS's. However, it appears that the GES has not yet been adopted as a legal document for gender mainstreaming within REB master plan. REB has not set a target date for incorporation or progressed on a plan for implementation.

- The GES provides an overview of mechanisms that could engender the REB master plan 2020, including:
  - Identification of gender and development issues
  - Enhancement of gender capacity
  - Provision of gender development initiatives with technical assistance and funds for program training and mentoring.
  - Creation of a database on gender participation and representation.
- The GES highlights the two major aspects of mainstreaming gender in REB:
  - Integration of gender equality concerns into the analysis and formulation of all policies, programs, projects and practices.
  - Initiatives to enable women as well as men to formulate and express their views and participate in decision-making across development issues.

## **5. PBS Board of Directors**

- A PBS Board of Directors is an elected body of people that represents local cooperative members. Candidacy requirement for the posts are stringent: a board candidate should be engaged in some form of social service work, not be affiliated or under the influence of the political parties, be cleared by the local police and have a sound record of citizenship. Although initially selected by the REB Development Team, the PBS Board Members serve five-year terms and then must run for re-election if they want additional terms. There are no term limits.
- An exceptional situation exists for three women advisors. Although their presence in the PBS board meetings is mandatory, the female advisors do not have voting rights for the election of the executive body of the Board of Directors nor any other voting process of the board. They are initially selected by the Development Team of REB. From 2005, these positions are renewable after five years. However, the renewal process for the women advisors does not appear to be standardized or formalized and can sometimes be arbitrary and ad-hoc in nature. Initial training is given to all PBS board members and the women advisors. It includes an orientation training and additional training on (a) understanding PBS policy, (b) policy development, (c) performance appraisal and board development of the PBS. Apart from the initial training, the women advisors have had limited opportunity to receive further training on the scope of electrification and to network with women advisors from other PBS's.

- Despite not having voting privileges, the incentives for the women board members for long-term service include opportunities to meet with local people, understand their needs and provide information and knowledge about electrification. Our interviews with four women board members included one elected board member of 20 years for Barisal 1 PBS and a selected non-voting board member that has served for 24 years on the Dhaka 1 PBS Board. It is generally found that women advisors complete their full term of membership, which has been currently extended from two years to five years of service.

## 6. **PBS Operations**

Although the PBS's are considered as independent entities, most of their activities are subject to approval from the REB. The PBS's closely follow guidelines provided by the REB for financial, technical, and commercial operations. There are no gender-related procedures at the current time.

- Apart from recent move towards independent power generation, bulk power purchased by REB from the BPDB is distributed among the PBS's based upon consumer demand. Shortage of national power generation affects overall performance of the PBS's on a daily basis. Therefore, even with grid connections, customers are affected by the unreliability and unavailability of power. The impact of power shortages with scheduled and unscheduled load shedding has not been documented specifically for rural consumers. In an interview, the gender specialist<sup>25</sup> of ADB placed a very high importance on this issue. She observed that women, particularly those who are self employed or engaged in small businesses, are perhaps most negatively affected by power shortages since their activities are low investment in nature.
- Each PBS prepares a comprehensive master plan for extending its grid electrification services. These plans form the details of basic structure for service, growth and operation of any PBS. The master plan of any PBS is based upon expected revenue from consumers of four categories: (a) household, (b) commercial, (c) irrigation, and (d) industrial. Revenue from each of these consumer types varies between the locations and contributes to the overall financial viability of any PBS. However, to date, the PBS's have not yet identified women as potential customers nor have they investigated women's specific uses of, and priorities for rural electrification.
- The PBS's are consumer-owned cooperatives and most of the members are men. Members are entitled to receive information on the financial performance of the PBS. After receiving electrification service, each consumer becomes a member of the PBS. No distinction is made between male or female members. However, the connections for electrification are only given to the land owner of the electrified premise. From the land records and property ownership data, it appears that the male member of a

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<sup>25</sup> Interview with Ferdousi Sultana Begum, Asian Development Bank, March 10, 2005.

household is the owner of the land. Therefore, the PBS membership certificate is usually written for the male property owner. Consequently, the PBS directs monthly electric bills, the invitations to the annual general membership meeting and all relevant correspondence now goes to the male cooperative member. However, some PBS's have more female members than others, e.g., there are 2,622 female members out of the approximately 57,000 members of the Comilla PBS.<sup>26</sup> The most probable reason for higher female membership in this particular case is the higher level of education among the people of this region. Educated women are more likely to be land owners and they can more conveniently communicate with their PBS for meter reading.

- While the capital budget of REB is managed by GOB, revenue budget is managed by the REB. Effective billing of rural consumers is a key component for revenue generation for REB. The PBS's recruit women for bill preparation at the PBS office. Most of the women have at least a secondary school degree. We met several Billing Assistants with bachelor and master's degrees from universities. These credentials are not needed for the duties of these positions but there appear to be no other opportunities available in the rural areas.
- As the current manual billing process of the PBS's is now being replaced by computerized billing process to handle an increasing number of customers, this change has resulted in less favorable terms of employment for the Billing Assistants. Prior to 1999, these were permanent jobs with benefits. All Billing Assistant appointments after 1999 have been subject to an annually renewable contract without benefits. The PBS's wanted the flexibility to reduce staffing as computerization increased efficiency. However, these contractual appointments have exposed the staff to uncertainty and greater risk of losing their jobs. The result is a more dissatisfied workforce. The contracts are perceived by observers as a means of avoiding the formation of labour union within the PBS's. The PBS's that we visited recognized that the expanding customer base will require the services of existing Billing Assistants, even with computerization. Hence, a proposal is underway to make these positions permanent as was the situation prior to 1999.
- The annual general meetings of the PBS's are attended by the members and appear to be well-attended for the two PBS's that our team visited. Although attendance is through invitation letters from the General Manager of the PBS, members attend on a voluntary basis. The GMs of Barisal 2 and Dhaka 1 PBS mentioned that about 500 to 1000 women attended the annual meetings last year, respectively, and this number represented approximately 25 percent of the total attendees.
- A pre-determined tariff structure for each PBS is also set by the REB. Many of the PBS's are found to be operating at a loss with only a few producing profitability. The household consumers are the most expensive to serve. A mixture of different consumer types is needed to ensure the financial viability of the PBS's.

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<sup>26</sup> ENERGIA and ECBL. 2003. Comprehensive Gender Strategy and Action Plan for Integration in REB Master Plan. The Royal Netherlands Embassy, Dhaka.

- The consumers of the PBS's, especially rural women, seldom receive training or information related to efficient use of electricity or effective selection of electrical devices.

## 7. Performance monitoring of the PBS's

- While significant resources have gone into establishment of the operational entities of the PBS's, not much effort has been placed on monitoring the actual impact on the people. The PBS performance indicators monitored by the REB are highly focused on the engineering and operations aspect, without much attention to the social issues. In fact, 21 indicators are used for evaluation of performance of the PBS's through the Performance Target Achievement (PTA), where no socio-economic issues are currently being considered.
- In order to better monitor the socio-economic performance of the REP, REB formed the Socio-economic Monitoring and Evaluation Cell (SEEMC) in 2001, and it has yet to produce any significant output. Although baseline data has not been collected by the PBS's, the first study for socio-economic impact evaluation of rural electrification was done in 1996<sup>27</sup>. In 2002, a detailed socio-economic study of the impacts of rural electrification was done by Human Development Research Centre (HDRC)<sup>28</sup>, which was sponsored by USAID and executed by NRECA.
- Currently, a broad-based data acquisition system called Socio-Economic Baseline Database (SEBD) is being established to record sex-disaggregated socio-economic baseline data from the consumers taking new connections. NRECA, under RPPR 1, begun conducting this pilot study through the REB-SEEMC in un-electrified areas of eight PBS's. The baseline was further extended to an additional nine PBS's under the USAID-funded RPPR 2.<sup>29</sup> The objective is to institutionalize the process of baseline data collection within the PBS's through appropriate training and monitoring.
- Under the Rural Electrification and Renewable Energy Development 2004 (RERED) project of The World Bank, a socio-economic survey is being conducted to establish a baseline for project impact. It covers 30,000 households within 43 PBS's.
- People- and household-related targets for the REB in the Interim Poverty Reduction Strategy Program Policy Matrix for Infrastructural Development & Reforms include: 1) number of consumers served, 2) number of villages connected, and 3) 22,000 SHS provided.

<sup>27</sup> Unnayan, Sammanay. 1996. A socio-economic impact evaluation of the Rural Electric Program in Bangladesh. REB, Dhaka.

<sup>28</sup> HDRC. 2002. Economic and Social Impact Evaluation of Rural Electrification Program in Bangladesh. HDRC, Dhaka.

<sup>29</sup> NRECA International Ltd. 2005. Report on baseline information of the domestic consumers, (Data Collection Period: July 2003 to June 2004). March 2005. Final draft. NRECA International Ltd., Dhaka.

## IV.B. Grameen Shakti

### 1. Program Funding and Background

- Grameen Shakti is an NGO that is part of the Grameen “family” of NGOs. They incorporated in 1996. In addition to receiving USAID funds, they are currently one of the partner organizations of IDCOL, the implementing agency for the World Bank’s Rural Electrification and Renewable Energy Development (RERED) Project. The latter is supporting the promotion and sales of solar home systems (SHS) in off-grid locations. The RERED has been offering incentives such as subsidies and payments from a fixed amount of money to partners based on their quantity of sales numbers. Unlike other Grameen programs, Grameen Shakti has not initially targeted the poorest households. By focusing on wealthier households, their aim has been to more quickly develop an economically sustainable program with cost recovery and they have been able to tap the RERED incentive funds and also take advantage of economies of scale.

### 2. Clients

- Their client mix is primarily residential (85 percent) with a smaller portion comprised of commercial businesses, primarily in marketplaces (15 percent). The current cost of SHS is prohibitive for poorer households and so Grameen Shakti’s client base is more often rich or middle-income. Their staff noted that they are, “...selling the systems in the name of the man.” Accordingly, a 2004 rural energy and gender study found that 91.5 percent of Grameen Shakti’s clients were male and 8.5 percent were females.<sup>30</sup> However, they do not routinely track their clients by sex. While the Grameen Bank serves mostly poor women, only five percent of SHS customers are Grameen Bank borrowers of micro-credit.<sup>31</sup> Apart from external and broader studies, Grameen Shakti has not yet studied its clients or the impacts of electricity on men and women in client and nearby households.
- To broaden their client base to reach more of the poor and more women, Grameen Shakti has been employing several strategies:
  - Encouraging staff to sell to women as owners of SHS.
  - Developing residential or commercial micro-utilities using larger SHS so that poorer households or entrepreneurs can gain access to electricity via those with SHS’.
  - Training SHS clients and users, including both men and women, in routine maintenance and repair.

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<sup>30</sup> As of July 2004, 1,046 SHS sold to women out of a total of 12,303 units. (Berthaud, A. *et al.* 2004. Integrating gender in energy provision: case study of Bangladesh. ESMAP. World Bank, Washington, D.C.)

<sup>31</sup> *Ibid.*

- Building social capital with women via “solar” school scholarships for girls (4,000 Tk or \$69).

### **3. Staffing**

- In terms of staff, most of Grameen Shakti’s employees are men. A small number of engineers and technicians are involved in adaptive research and there is roughly equivalent gender parity. However, ninety-five percent of all Grameen Shakti’s field engineers are men and this job entails SHS installation. These discriminatory personnel practices are justified by sex-stereotyped attitudes such as, ““Women don’t like hardy jobs...women don’t like to walk...women engineers join then leave.” Because of the difficulty of getting both men and women engineers and technicians to move from Dhaka to remote locations, Grameen Shakti has initiated a technician training program for male and female rural youth. These youth are paid Tk 1,200 (\$21) for part-time SHS maintenance work and they are eligible after five years for senior technician position.
- GS’ current strategies are not particularly effective at reaching and servicing women SHS customers or recruiting and retaining female engineers and technicians. The time pressure associated with securing a limited fund of bonuses from the World Bank has meant weak record-keeping on the gender mix of those reached by outreach, those who buy SHS and those clients who are trained in routine maintenance. Time pressure also leads GS to maintain their customary ways of recruiting and retaining technical employees, rather than making any special adaptations to attract more women. Current outreach strategies, focused on public spaces and group presentations, have been more effective at reaching men than women due to rural women’s reduced mobility and sex-segregated groups.

### **4. Future Plans**

- Grameen Shakti is proposing to train 1,000 women field technicians so that they can start independent businesses in post-warranty SHS maintenance to expand the number of rural-based SHS field technicians, increase opportunities for women and improve technician access to the SHS’s when only women are at home. Currently, Grameen Shakti offers three years of “free” service as part of the sales contract. After this period, clients have been paying for service contracts or for individual visits. The mostly male field staff members of Grameen Shakti that have provided these services are employees with Grameen NGO benefits.
- The proposed scheme would train women technicians to be free-lance entrepreneurs. Grameen projections estimate that each woman would service 100 customers/month in their own villages on a contractual basis and at a customer cost of 15 Tk per month. Grameen Shakti proposes to provide field-based training on testing SHS equipment & repairing mobile phones, testing equipment and technical assistance. They plan to select women with minimum qualifications of a secondary school certificate (10th grade graduate) and recruiting would be done via newspapers, workshops and word-

of-mouth. Grameen staff is assuming that women's male relatives would help her with her business.

- There are several problematic aspects to this proposed program. It seems likely that many of the new technicians may have difficulties establishing an independent service business since they will not be required to have a prior business background. Given women's mobility constraints, women technicians are likely to saturate coverage near their home areas and will need to travel beyond their original client base to earn an adequate and secure source of income. The proposed monthly payment for clients of 15 Tk/month will not cover costs for one trip's transport or a women technician's time. Some customers may be reluctant to contract with women with less technical background than with the male technicians from Grameen Shakti who have a higher level of education and training. Mobility and personal safety may be problems in some particularly conservative rural areas but Grameen Shakti has not yet addressed this potential issue. The proposed means of recruiting, via newspapers, may not be the most effective way to reach the right women.

## **V. RECOMMENDATIONS FOR A GENDER PLAN OF ACTION FOR USAID/BANGLADESH'S ENERGY PROGRAMS**

### **V.A. Context for a Gender Plan of Action**

#### **1. USAID's ADS Context**

U.S policy and regulations mandate that all foreign assistance programs address gender issues. The 1973 Percy Amendment to the U.S. Foreign Assistance Act, as well as the more recent changes to USAID's internal operational regulations (Automated Directives System - ADS), state that gender mainstreaming is a priority for USAID and all partners who are receiving USAID funding. At a minimum, gender issues are to be addressed in four ways:

- Technical Analyses and Strategic Planning (ADS 203.4.11)
- Performance Monitoring Systems for SOs and Intermediate Results (ADS 201.3.4.13)
- Activity Design and Activity Approval Documents (ADS 201.3.6.3)
- Issuing RFPs (ADS 302.5.14) and RFAs (ADS 303.5.5b).

This report falls under the first category, Technical Analyses and Strategic Planning. The ADS states, "gender analysis is a required component of technical analyses done for strategic planning and development of results frameworks." Gender analysis refers to the socio-economic methodologies that identify and interpret the consequences of gender differences and relations for achieving development objectives. Differential access to and control over resources (land, labor, capital, produce, tools, knowledge, institutions, social networks) is an essential component of the analysis, as is the comparative participation of men and women in the exercise of power and decision-making. Collection of sex-disaggregated quantitative and qualitative data provides the empirical foundation for assessing potential impact of gender relations on the program, and the

relative benefits to men and women. This report provides the USAID/Bangladesh Energy Team with a reference document on gender issues specific to energy issues and a set of options for gender mainstreaming of existing and proposed rural energy programs by USAID.

## **2. USAID/Bangladesh Gender Plan of Action – Energy & Environment Section**

Our recommendations build upon on-going USAID/Bangladesh efforts to mainstream gender. During 2003-04, USAID/Bangladesh, via its Mission Gender Team, conducted a mission-wide Gender Audit and developed a Gender Plan of Action (GPA) for all Strategic Objective Teams. It included targets and benchmarks to build programming and staff skills in gender analysis. To reduce gender disparities via USAID programs, the GPA section on Energy and Environment activities states that:

- “Both environment sector projects have strong gender components. They address issues relevant to both women and men in natural resource management.
- A recent study on gender and energy in Bangladesh will form the background for new efforts in this sector. Work with the rural electrification boards promotes gender equity in staffing. Solar energy programs promote women’s empowerment. “

### **V.B. Recommendations of Gender-Related Actions by the USAID/Bangladesh Energy Team**

#### **1. Gender Mainstreaming Recommendations: REB**

NRECA is in a strategic position to help the REB-SEEMC take the lead on capacity building activities related to gender mainstreaming within REB and the PBS.’ In addition, some additional assistance for capacity building may be available from USAID/EGAT/EIT global and regional programs.

REB 1: As noted in the Gender Equity Strategy for REB, two aspects of gender issues are relevant to the REB and the PBS staff. The first is the gender dimensions of personnel and work environment issues. The second concerns the gender issues related to energy users and the end uses of energy (see Annex 6, Table 2). Different types of staff or clients will benefit from training if it is tailored to their needs.

REB 2: Gender mainstreaming activities could begin on a pilot basis in some or all of the PBS’s where the NRECA-supported socio-economic baseline survey is being implemented. NRECA could work with REB-SEEMC and other gender-interested REB staff to support gender training and outreach activities.

REB 3: USAID can encourage REB in bringing changes in REB policy and by-laws that could include implementation of gender awareness and education for the upcoming programs and address social dimensions and gender mainstreaming in the REB’s new Master Plan 2020. The Master Plan could be adapted to include gender issues for the

REB and PBS's at policy, institutional and operational levels. While the Gender Equity Strategy provides a number of suggestions, it would be most helpful if REB policy and by-laws were modified to include mandatory implementation of gender training for staff and PBS Boards, as well as education of consumers. By better understanding the roles and needs of male and female colleagues and the energy-related issues for male and female customers, REB will be better able to: 1) meet its social goals and meet national commitments; 2) improve REB profitability; c) increase staff satisfaction and enhance work environments and 4) improve and increase service to consumers.

REB 4: USAID can influence REB to set guidelines on gender mainstreaming that are to be followed by the PBS.' Knowledgeable REB staff, together with external advisors, should be involved in preparing REB guidelines for incorporating and monitoring gender aspects in planning, operation and management of REB and related performance measures. The Gender Equity Strategy of REB (2002) and the Gender and Energy Toolkit prepared by the UNDP should be consulted.

REB 5: To enhance training opportunities for women working for the REB and PBS, training quotas for women staff would be helpful similar to the ten percent quota in recruitment policy. REB can be encouraged to implement a quota for women's participation in advanced training and higher education. These expanded opportunities can help women to explore their job prospects and develop their leadership qualities. NRECA can assist in trainings and capacity building programs and offer more training to staff working in mid-level positions rather than emphasizing senior staff where men are dominant.

REB 6: Rather than assuming that business-as-usual rural electrification program will automatically result in better working options for women, REB should establish baseline information and appropriate indicators for the collection of sex-disaggregated data on this topic. Such indicators could include data on the number of officers receiving training, budget allocations, attendance in policy meetings, incorporation of gender issues in monitoring reports and others.

REB 7: REB is currently offering training on Information Technology and it should ensure that equitable numbers of female and male officers receive this type of training. In this way, women will be better able to qualify for more positions in senior management.

REB 8: In view of the current situation of limited participation of women in the highest positions of the PBS's, USAID could encourage REB to make special provision for advertising and recruiting female general managers within a few pilot PBS's.

## **2. Gender Mainstreaming Recommendations: PBS's**

The PBS's, as consumer owned cooperatives, have been successful in extending rural electrification to meet the needs of people in a cost-effective manner. The PBS's have

become an important rural institution. They are not just service providers but they are also important as employers.

PBS 1: The PBS's have the scope to play an even more significant role in rural development at the grassroots level if women's groups and non government organisations can be mobilized as partners in participatory programs on gender equity. Electrification service is a basic need for small industries and commercial entities in the rural areas. Participating women interested in becoming engaged in such income-generating activities would benefit from interaction with the PBS's by learning more about how to optimize their resources from electrification.

PBS 2: Gender training for personnel at all institutional levels will create a more gender-balanced and equitable work environment for REB and PBS staff. In addition, service provision will be improved because training on the gender issues related to electrification usage by rural population will help staff to better understand their customers. Therefore, it would be helpful if all PBS management, staff and officers received gender education and training (see Annex 6, Table 2). The first priority will be senior staff at the REB and PBS,' as well as training, program management and member services staff.

PBS 3: The original design of women as non-voting advisors on the PBS Board of Directors overlooked gender equality and some of the PBS by-laws conflict with gender equity provisions in the Bangladesh Constitution. Therefore, we recommend that after 28 years of operation, the institutional design of the PBS's be changed. The REB and PBS's should strongly consider: a) a quota for women representatives, b) election rather than selection of women board members, and c) voting privileges for women members.

PBS 4: The PBS cooperative system of one vote per household has been modelled after the American electric cooperative system. The current US model includes a provision for joint membership for a single household whereby either the man or the woman from the same household can vote in cooperative elections (see Annex 7). This practice could easily be adopted for the PBS's in Bangladesh. It would give women the opportunity to participate in cooperative affairs and retain a household's electoral franchise when their husband's are unavailable to attend the annual meeting.

PBS 5: Under an ongoing proposal, REB and PBS are already considering reversing the contract trend for Billing Assistants and offer these women permanent employment. The positive effects of this change are likely to include: 1) greater respect from their colleagues and supervisors, 2) better motivation for greater work output, and 3) availability of trained personnel for future service expansion.

PBS 6: NRECA could support REB in the development of an on-going networking seminar series for the women advisors to the PBS Boards (and/or elected women Board Members) to increase their knowledge of both electrical and social/gender issues and to enhance the quality of their participation in the board meetings.

PBS 7: At the community level, PBS village advisors should be made aware of the differences in the energy needs and usage of women and men and outreach programs should be adapted to include this information and tailored to different audiences and meeting venues. Outreach seminars, designed to meet the knowledge levels and availability of both men and women members, will help inform rural people about energy management: 1) efficient use of energy; 2) energy conservation, and 3) alternative options like Solar Home Systems. Gender-balanced client service and awareness teams can educate men and women with outreach programs about: 1) the benefits of electrification and PBS plans, 2) impacts on health, and 3) scope for income generation.

### **3. Gender Mainstreaming Recommendations: Grameen Shakti (GS)**

As recognized by the current GS Managing Director, Dipal Barua, “unless you deliberately design it, you won’t get women.” Accordingly, the following recommendations apply to GS’s current program:

GS 1: Grameen Shakti field offices and headquarters should modify their record-keeping and record the numbers of male and female clients (those who sign the contracts for the SHS), the numbers of men and women reached via outreach activities directed at potential clients, the numbers of men and women clients (and spouses) being trained in routine maintenance of their SHS.

GS 2: To reach more women and encourage SHS ownership by women, Grameen Shakti should tailor their outreach and marketing strategies to include more presentations to women’s groups, mothers with school children and clinic users. They can collaborate with organizations involved in other types of sectoral extension, training and education programs that focus on rural women. For the latter, Grameen Shakti may be able to coordinate with other USAID sectoral programs that focus on reaching women, i.e. the JOBS program implemented by the IRIS Center at the University of Maryland and health projects aimed at expanding access to health care.

GS 3: Similarly, Grameen Shakti’s maintenance training can reach more women through more house-to-house outreach rather than focusing primarily on outreach in public spaces. Other sectoral programs offer additional opportunities to provide training. The time of day, day of week, seasonality issues and childcare will also determine women’s availability for training.

GS 4: If Grameen Shakti retains staff engineers and technicians for SHS sales and installation, then they should consult with university and women’s professional groups about how to modify their recruitment, hiring and personnel practices so that they attract and retain women engineers and technicians. Illustrative practices could include holding job fairs at university and technical colleges, speaking in classes to senior students and starting a paid internship program for female university students.

GS 5: Because there is a shortage of girls, particularly from rural areas, who are entering engineering, Grameen Shakti could adapt its “solar scholarship” program to target technical education for local girls in client households.

GS 6: Grameen Shakti is reaching remote households and communities with its SHS. It has the opportunity to track the impact of electrification on client and non-client households. However, no baseline or impact work has been done during its nine years of activities. They may want to consider undertaking sex-disaggregated impact studies. There are many local or international university graduate students who may be interested in assisting with a study of this nature.

The following recommendations apply to Grameen Shakti’s proposed training program for female technicians:

GS 7: Grameen Shakti should offer business training and on-going business-related technical assistance to the new female technicians. Collaboration between USAID/Bangladesh’s Energy Team and Economic Growth Team contractors may help to strengthen the business-related portion of the technicians’ training. Grameen Shakti would also benefit from collaboration with other organizations, such as PSL, who have on-the-ground experiences with micro-enterprise development with rural women who are engaged in solar electrification businesses.

- The criteria for trainees could be modified to include some or all women who already have business skills and experience.
- Grameen Shakti may want to consider offering 3-year service contracts directly to new women technicians to allow women to gain business experience and establish their client base.
- The proposed monthly service fee should be amended to cover a woman’s costs and time used.
- In collaboration with Grameen Bank, Grameen Shakti may want to provide loans to women for safe transport (e.g., motorbikes) and offer driving training.
- Use women’s groups and other informal communication channels, including radio, for advertising the technician training opportunity, in addition to newspapers and word-of-mouth.

#### **4. Recommendations for USAID/Bangladesh Cross-Team Collaboration (CTC) on Gender and Energy Issues**

Listed below are a number of illustrative ideas for collaboration between the USAID/Bangladesh Energy Team and other teams at the USAID/Bangladesh Mission:

CTC 1: Collaboration on women's roles in the governance of local institutions could be undertaken with the Democracy/Governance (DG) Team (SO 9). Many of the older PBS's have become strong local institutions. While it is valuable to have experienced directors on their Boards, there are Board Directors who have served for more than 20 years. In order to honor the rights of Bangladeshi women guaranteed by the National Constitution, USAID DG partners could provide assistance to the REB and selected pilot PBS's to revisit PBS rules and practices related to Board nominations, elections and procedures to make them more gender-equitable. In addition, training from DG programs could be adapted to strengthen the quality of women's participation in PBS Board of Director meetings and at the annual membership meetings of the PBS's.

CTC 2: Collaboration with the Health Team (SO 1) could include three aspects: 1) incorporating consumer education on electrification and rural energy into trainings and meetings with women's groups; 2) greater documentation and communication of negative health-related issues associated with biomass fuel collection and kerosene usage including respiratory infections, burns, spinal problems, etc.; and 3) documentation and communication of the positive benefits of clinic and hospital electrification for women and children (e.g., lighting, vaccine refrigeration, etc.).

CTC 3: Opportunities for collaboration with the Economic Growth (SO 5) Team include: 1) identifying how earmarked credit can be provided to women entrepreneurs for expenses related to electrification and/or energy appliances and technology, and 2) support to women entrepreneurs who are interested or already engaged in new business possibilities related to energy allied services (e.g., electrical technicians, small manufacturing, energy system sales and maintenance, etc.).

CTC 4: Collaboration with the Environment (SO 6) Team could focus on renewable and off-grid energy alternatives that relieve pressure on bio-fuel sources such as forests and rangelands and increase women's time available for small and micro-enterprise alternatives that are not dependent on natural resources.

CTC 5: Food Security & Disaster Management programs, together with the Energy Team, could collaborate on offering solar cookers and other alternative energy sources to individuals receiving emergency provisions of cereals and beans. In addition, disaster-related assistance could also focus on minimizing the disruptive impact of disasters on businesses by addressing their emergency energy needs.

CTC 6: Mission Education programs aimed at pre-schoolers can incorporate information about energy and electricity and teach children and their parents about the benefits of

school and home lighting. Other Education-Energy programs could pilot lighting at safe community-based sites so that students can do their homework.

## **5. Recommendations for Other Energy-Related Gender Collaborations (ERGC) with Other Partners**

There are three areas where strategic collaboration on gender and energy issues with new partners is recommended:

ERGC 1: With respect to data and information needs, it would be helpful to foster collaboration between REB and the Bangladesh Bureau of Statistics to expand the sex-disaggregated collection of data related to household and commercial customer energy needs, expenditures and priorities. Broader dissemination of this information to energy and gender professionals and organizations could be provided by the UNDP-funded Renewable Energy Information Network.

ERGC 2: USAID/Bangladesh's Energy Team could foster greater capacity building and networking on gender and energy topics in Bangladesh. Nascent networks such as GEN-Bangladesh have been set up to encourage networking between gender and energy professionals. While there is a donor assistance committee focused on energy and a donor assistance committee focused on gender, neither group has focused much attention on gender issues and the USAID/Bangladesh Energy Team can play a role in expanding interaction among donors working on gender and energy linkages. To improve mutual understanding, it is important to broaden field-level cooperation between NGOs that are working with women's micro-enterprise groups and both the PBS's and REB.

ERGC 3: For the approval process for the Poverty Reduction Support Program, USAID/Bangladesh's Energy Team should track attention to energy issues in the Gender Matrix and encourage attention to gender issues in the REB section of the Infrastructure Development and Reforms Matrix.

## **6. Gender-Related Performance Monitoring (PM) for Energy Programs**

The Energy Team of the USAID/Bangladesh Mission has focused on five Intermediate Result indicators during the past few years:

Indicator 1: Number of acts finalized

Indicator 2: Number of persons trained

Indicator 3: The installed generation capacity from small power plans in rural areas measured in megawatts.

Indicator 4: The number of electrical connections made to rural consumers (in millions).

Indicator 5: Kilometers of 230 kilovolt electric transmission line.

Only two of these indicators address people and households (#2 and #4 respectively) and can be adapted to collect sex-disaggregated data:

PM 1: The training indicator (#2) should be modified to collect sex-disaggregated information and targets should be set to progressively increase the number of women staff of REB and PBS, PBS Board Members (elected and selected) and customers (PBS and Grameen Shakti). Staff training by NRECA programs will probably need to focus on mid-level staff to increase the number of women being trained relative to men.

PM 2: For Indicator #4, we recommend that USAID encourages REB, the PBS's and Grameen Shakti to adjust their data collection on new customers to include the sex of the customer and whether the woman is a household, business or farmer customer. For Grameen Shakti, data tracked should include the number of solar home systems sold to women and men (or female-headed and male/couple-headed households). This information will help these institutions to better identify customer sub-groups and work with them to better address their specific needs.

However, there are a number of gender-related aspects of energy service provision that are not captured by these indicators.

PM 3: If steps are taken to change the rules for the PBS Boards of Directors and increase the number of women elected to these boards, then it would be meaningful to track changes in the numbers of women elected.

PM 4: While baseline information is now being collected at 17 pilot PBS's for new customers, it will be important to know how men and women use energy differently at the time of the baseline survey and how usage, expenditures and needs change at different points in time after the household receives electrical connections. (see Annex 5 for specific suggestions).

PM 5: For the new activities proposed by Grameen Shakti, several indicators seem relevant:

- # all-women's meetings held during outreach activities,
- # women trainers engaged in the program,
- # women technicians trained,
- Proportion of women technicians that are still in business after one year compared to total number trained.

PM 6: If gender-related training of REB and PBS staff is undertaken by USAID and its partners, then they should also track changes in the level of institutional and policy support at REB and PBS for gender- and poverty-sensitive energy projects and programming that is demand-responsive.

PM 7: As noted above in the discussion of gender and energy indicators now being discussed in the literature, USAID may want to consider asking its partners to periodically look at more qualitative indicators that specifically relate to the household poverty alleviation, through electrification. These sex-disaggregated variables would look at the equitability of access and use of energy services, the degree of change in cross-sectoral social development indicators and the division of costs and benefits and participation in service establishment and operation.

## 7. Gender and Energy Framework and Summary of Recommendations

Note: The framework below suggests a medium- to long-term view of the types of results that can be expected from greater attention to gender issues in the rural energy sector activities in Bangladesh.

### Gender and Energy Framework

Gender and Energy End Goal:	More gender-sensitive strategies adopted by energy professionals, who are working in partnership with the USAID mission of Bangladesh, to meet the sustainable energy needs and priorities of both men and women stakeholders in rural Bangladesh.
Sub-Goals:	<ol style="list-style-type: none"> <li>1. Better identification of gender-related opportunities for rural energy programs by energy service providers.</li> <li>2. Improved ability to predict and minimize negative social impacts from rural energy programs.</li> <li>3. Improved understanding of the sustainable energy needs and priorities of men and women customers.</li> <li>4. Increased knowledge about gender aspects of sustainable energy alternatives and environmental impacts of biomass use by household and small and medium-sized energy consumers.</li> <li>5. Broadening participation to include male and female stakeholders in Bangladesh energy planning and policymaking.</li> <li>6. Increased energy provision to women entrepreneurs for the development of micro- and other sized enterprises.</li> <li>7. Increased job-related satisfaction by male and female employees of energy service-providing institutions.</li> </ol>
Gender-Specific Approaches (A or B)	<ol style="list-style-type: none"> <li>A. Increase the gender equity of workplace opportunities and improve the workplace environment for men and women professionals in energy institutions.</li> <li>B. Broaden understanding of differences in rural men's and women's energy needs and interests in Bangladesh.</li> </ol>



**Table 1 - Summary of the Recommendations**

<b>Organization</b>	<b>Recommendations</b>	<b>Jump Starting Action &amp; Actors</b>	<b>Priority (1st, 2nd, 3rd order)</b>	<b>Gender-Specific Approach A or B (See key p. 36)</b>
<b>USAID Mission Energy Team</b>  <b>CTC = Cross-Team Collaboration</b>  <b>ERGC = Energy-Related Gender Collaborations (with other partners)</b>  <b>PM = Performance Measurement</b>	CTC 1: Collaboration on more gender-equitable governance of the PBS's with the DG Team (SO 9).	Energy Team initiates meeting with DG Team.	1st order	B, A
	CTC 2: Collaboration with the Health Team (SO 1) on new venues for consumer energy education, as well as greater documentation and communication of energy-related health impacts and energy benefits for health activities.	Energy Team initiates meeting with Health Team.	2nd order	B
	CTC 3: Collaboration with the Economic Growth (SO 5) Team on earmarking credit for the energy expenses of women entrepreneurs and supporting expansion of woman-owned energy-allied service enterprises.	Energy Team initiates meeting with EG Team.	1st order	B
	CTC 4: Collaboration with the Environment (SO 6) Team on the scope of renewable and off-grid energy alternatives.	Energy Team initiates meeting with Environment Team.	1st order	B
	CTC 5: Collaborate with the Food Security & Disaster Management programs on alternative energy sources to emergency relief clients and addressing the emergency energy needs of businesses.	Energy Team initiates meeting with FSDM Team.	2nd order	B
	CTC 6: Collaborate with Mission Education programs to incorporate information about energy and electricity into pupil and parent educational activities and do pilot lighting at safe community-based sites for homework.	Energy Team initiates meeting with Education Team.	2nd order	B

Organization	Recommendations	Jump Starting Action & Actors	Priority (1st, 2nd, 3rd order)	Gender-Specific Approach A or B (See key p. 36)
	<p>ERGC 2: Foster greater capacity building and networking on gender and energy topics via participation in nascent professional networks and the Donor Assistance Committee on energy. Encourage field-level cooperation between NGOs that are working with women's micro-enterprise groups and both the PBS's and REB.</p>	<p>Energy Team initiates meeting with Gen-Bangladesh Network and/or regularly attends their meetings. Energy Team suggests gender as meeting discussion topic for Energy-DAC. Energy Team meets with NRECA and REB staff to discuss how to encourage field-level collaboration between women's micro-enterprise groups, PBS and REB staff.</p>	1st order	B
	<p>ERGC 3: Track attention to energy issues in the Gender Matrix of the Poverty Reduction Support Program and encourage attention to gender issues in the REB section of the Infrastructure Development and Reforms Matrix.</p>	<p>Energy Team suggests gender and the PRSP as a topic for the Energy Donor Assistance Committee and collaborates with DFID Gender staff on meeting content.</p>	2nd order	B
	<p>PM 1 and PM 2: Adapt IR indicators #2 and # 4 to collect sex-disaggregated data and use targets to track improvements. Indicator #2 on training is modified to track the number of men and women staff of REB and PBS, PBS Board Members (elected and selected) and customers (PBS and Grameen Shakti). USAID partners should be tracking male and female clients with Indicator #4.</p>	<p>Energy Team changes these indicators in the new USAID Country Strategy.</p>	1st order	A, B

Organization	Recommendations	Jump Starting Action & Actors	Priority (1st, 2nd, 3rd order)	Gender-Specific Approach A or B (See key p. 36)
	PM 7: Periodically look at more qualitative and sex-disaggregated indicators related to household poverty alleviation from electrification (i.e., the equitability of access and use of energy services, the degree of change in cross-sectoral social development indicators and the division of costs and benefits and participation in service establishment and operation).	Energy Team initiates meeting with NRECA social scientist to discuss how these types of indicators could be tracked periodically.	2nd order	B
<b>Rural Electricity Board (REB)</b>	REB 1. Training of REB staff and officers should be initiated on two topics: gender dimensions of personnel and work environment issues for REB and PBS, and, gender issues related to the energy users and the end uses of energy by the consumers	NRECA works with REB-SEEMC and other gender-interested REB staff to support gender training and outreach activities at the pilot PBS;..	1st order	A,B
	REB 2: Gender mainstreaming activities to begin on a pilot basis selected PBS's where the NRECA-supported socio-economic baseline survey is being implemented.	NRECA works with REB-SEEMC and other gender-interested REB staff to support gender training and outreach activities.	1st order	A
	REB 3: USAID can encourage REB to change REB's Master Plan 2020 to include gender issues for the REB and PBS's at policy, institutional and operational levels and implementation of gender awareness and education in the upcoming programs.	Energy Team meets with REB senior management and SEEMC to encourage gender-related changes in REB policy and by-laws.	1st order	A
	REB 4: USAID can influence REB to prepare guidelines for incorporating and monitoring gender aspects in planning, operation and management of REB and related performance measures.	Energy Team and NRECA meet with knowledgeable REB staff to set guidelines on gender mainstreaming using the Gender Equity Strategy and UNDP's gender toolkit as resources.	1st order	A,B

Organization	Recommendations	Jump Starting Action & Actors	Priority (1st, 2nd, 3rd order)	Gender-Specific Approach A or B (See key p. 36)
	REB 5: Adopt training quotas for the women staff of REB and PBS, similar to the ten percent quota for recruitment policy, to attain equitable percentages of women in senior management.	Energy team encourages REB to implement women's quota. NRECA supports capacity building programs for staff working in mid-level positions where more women are present.	1st order	A
	REB 6: Establish baseline information and appropriate indicators (1) data on number of officers receiving training, (2) budget allocations, (3) attendance in policy meetings, (4) incorporation of gender issues in monitoring reports and others	NRECA and the SEEMC of REB prepare a monitoring plan using these indicators to assess social dimensions and gender mainstreaming within the programs.	2nd order	A.
	REB 7: Ensure that equitable numbers of women attend Information Technology training so that women qualify for senior positions of REB and the PBS's.	Energy Team encourages REB to increase women's participation in IT and other skill areas.	2nd order	A
	REB 8: Adopt special provisions for advertising and preferred recruiting of female general managers at a few pilot PBS's	Energy Team encourages REB to increase women's participation in the highest qualified positions of REB and the PBS's.	2nd order	A
	PM 6: For gender-related training of REB and PBS staff, track changes in the level of institutional and policy support at REB and PBS for gender- and poverty-sensitive energy projects and programming that is demand-responsive.	Energy Team initiates meeting with NRECA social scientist, REB SEEMC leader and other interested REB staff to discuss how these types of indicators could be tracked periodically.	2nd order	A,B
<b>Palli Bidyut Samities (PBS's)</b>	PBS 1: PBS's play a significant role in rural development at the grassroots level mobilising local organisations as partners in participatory programs on gender equity.	Energy Team initiates dialogue between NRECA, REB, EG Team, women's groups and NGOs on gender and rural energy.	2nd order	B

Organization	Recommendations	Jump Starting Action & Actors	Priority (1st, 2nd, 3rd order)	Gender-Specific Approach A or B (See key p. 36)
	PBS 2: PBS management, staff and officers receive gender education and training. Priority given to senior staff of the PBS,' training, management and member services staff	NRECA assists PBS to initiate gender training for personnel at all institutional levels of PBS	1st order	A,B
	PBS 3: The institutional design of the PBS's changed to include 1) a quota for women representatives, 2) election rather than selection of women board members, and 3) voting privileges for women members	Energy Team, via NRECA and REB, recommends gender equality and change in some of the PBS by-laws.	1st order	A,B
	PBS 4: Joint membership for a single household be adopted by the PBS's, whereby either the man or the woman from the same household can vote in elections of the co-operative.		2nd order	B
	PBS 5: Reversing the contract trend for Billing Assistants and offering these women permanent employment with benefits.		1st order	A
	PBS 6: Development of an on-going networking seminar series for the women advisors to the PBS Boards to increase their knowledge of both electrical and social/gender issues and enhance the quality of their participation in the board meetings.	NRECA and REB support the pilot PBS's in formulating appropriate outreach programs and seminars on gender issues, energy management and its benefits.	2nd order	B
	PBS 7: Outreach seminars be designed to provide knowledge about energy management: 1) efficient use of energy; 2) energy conservation and, 3) alternative options like Solar Home Systems. Gender-balanced client service and awareness teams educates with outreach programs about 1) the benefits of electrification and PBS plans, 2) impacts on health, and 3) scope for income generation.		2nd order	B

Organization	Recommendations	Jump Starting Action & Actors	Priority (1st, 2nd, 3rd order)	Gender-Specific Approach A or B (See key p. 36)
	PM 6: For gender-related training of REB and PBS staff, track changes in the level of institutional and policy support at REB and PBS for gender- and poverty-sensitive energy projects and programming that is demand-responsive.	Energy Team initiates meeting with NRECA social scientist, REB SEEMC leader, interested REB staff and some PBS General Managers from pilot districts to discuss how these types of indicators could be tracked periodically.	2nd order	B
<b>Grameen Shakti</b>	GS 1: Change to sex-disaggregated record-keeping.	GS instructs its staff to record the sex of the SHS client on client paperwork and database.	1st order	B
	GS 2: Tailor their outreach and marketing strategies to reach more women and collaborate with other programs working with women on health, education and entrepreneurship.	GS meets with other Grameen programs and other projects focused on serving women clientele to identify how to tailor its outreach and marketing strategies and collaborate with non-energy programs.	1st order	B
	GS 3: Use house-to-house strategies, women's meeting places and gender-sensitive logistical arrangements for maintenance trainings.	GS uses women staff and outside assistance to hold all-women focus groups to identify how it can better address women's mobility and logistical constraints.	1st order	B
	GS 4: Use gender-sensitive recruiting and personnel practices to employ more women engineers and technicians.	GS contacts engineering department of local university and women's professional association for engineers to get ideas about more gender-sensitive recruiting and personnel practices.	2nd order	A
	GS 5: Adapt the "solar scholarship" program to target technical education for local girls in client households.	GS changes the criteria for its solar scholarship program and selection process.	2nd order	A

Organization	Recommendations	Jump Starting Action & Actors	Priority (1st, 2nd, 3rd order)	Gender-Specific Approach A or B (See key p. 36)
	GS 6: Undertake sex-disaggregated impact studies and work with university graduate students or interns.	GS requests assistance from social scientists at Bangladeshi universities or overseas universities.	3rd order	B
	GS 7: Strengthen the business dimension of the new training for female technicians by seeking out candidates with business experience and collaborate with others to provide on-going technical support and transport loans.	Energy Team asks GS to develop trainee technician criteria and plan for on-going business technical assistance. Energy Team asks GS to meet with USAID EG partners and other organizations with experience with women-focused enterprise training, credit and energy enterprises.	1st order	B
	PM 5: For the new GS activities, collect data on: # all-women's meetings held during outreach activities, # of women trainers engaged in the program, # of women technicians trained, proportion of women technicians that are still in business after one year.	Energy Team asks GS to routinely collect data on the indicators listed in Recommendation PM 5.	1st order	A, B
<b>NRECA</b>	Note: See REB & PBS Sections above for additional recommendations with role for NRECA			

Organization	Recommendations	Jump Starting Action & Actors	Priority (1st, 2nd, 3rd order)	Gender-Specific Approach A or B (See key p. 36)
	ERGC 1: Foster collaboration between REB and the Bangladesh Bureau of Statistics to expand the sex-disaggregated collection of data related to household and commercial customer energy needs, expenditures and priorities. Broader dissemination of this information to energy and gender professionals and organizations could be provided by the UNDP-funded Renewable Energy Information Network.	NRECA and the Energy Team initiate dialogue with the BBS and REIN about data collection and information dissemination on gender and energy issues in Bangladesh.	3rd order	B
	PM 3: Track changes in the numbers of women elected to PBS Boards of Directors, if rule change is made.	NRECA and Energy Team meet with REB to discuss possibilities of a rule change and monitoring plan.	1st order	A
	PM 4: Collect baseline and time interval data on how men's and women's usage, expenditures and needs change after the household receives electrical connections. (See Annex 5).	NRECA works with the pilot PBS's and REB-SEEMC to develop a monitoring plan that tracks sex-disaggregated changes in usage, expenditures and needs over time.	2nd order	B

Key:

Priority level - determined by the expected scale of the impact, qualitative significance of output and timing considerations.

## VI. CONCLUSIONS

This document, similar to the gender audit conducted for the Mission's Gender Plan of Action, assesses key gender issues for the work of the Energy Team and highlights some potential opportunities for gender mainstreaming. In this case, two external consultants developed recommendations based on small group and individual interviews focused on the gender aspects of rural electrification, as well as a review of literature and a short field visit. While we did our best to capture relevant issues and ideas, some of our recommendations may be a better fit than others for the new or modified energy programs now being planned.

At the time of our visit, USAID/Bangladesh was in the process of developing its new country strategy, including the formulation of its future Energy programs. Due to procurement sensitivities, our access was limited to some documents addressing specific plans for future activities. Accordingly, it would make sense for the Mission Energy Team to revisit our recommendations as future program plans solidify.

The most effective action plans are developed over time and by the people who will carry them out. Once more details are publicly available regarding the future programs, we suggest that the USAID Energy Team and its partners work together in several facilitated sessions to refine our recommendations for a Gender Plan of Action. Because they will be managing and implementing these programs, they are in the best position to develop a set of reasonable objectives and targets, identify and assign specific tasks and develop a plausible timetable.

## METHODOLOGY

1. Review of existing reports, studies and research related to gender and energy linkages, poverty and energy linkages, gender issues specific to Bangladesh, gender mainstreaming activities for USAID and other donors and the socio-economic impact of rural electrification in Bangladesh. A list of the documents consulted for this purpose has been provided in Annex 4.
2. We held preliminary, interim and out-going group discussions with USAID/Bangladesh Energy Team members: Bruce McMullen, Md. Kamaruzzaman and A.K.D. Sher Mohammed Khan, as well as USAID/EGAT/EIT staff member, Ellen Dragotto.
3. Interviews were held in Dhaka with the Director and Social Scientist of the National Rural Electrification Cooperative Association International Ltd. and three staff members from Grameen Shakti.
4. We conducted interviews with people engaged in gender and energy issues, including one person from Dhaka University, two bilateral donor agencies, two multilateral organizations and other key informants. Annex 3 includes the names and affiliations of these individuals.
5. We conducted interviews with approximately 70 staff at two PBS's: Barisal 2 and Dhaka 1. These included individual interviews with General Managers from each of the two PBS's. Individual administrative staff at the PBS's also provided specific types of information. We were able to hold focus group discussions with many of the women employees at each PBS, including billing assistants, accounting staff, data entry clerks and cashiers. At Barisal 2, the General Manager and several male staff were also present during the women's focus group. During the Dhaka 1 focus group, we were also able to meet with the billing assistants from two other PBS's: Manikgonj, and Dhamrai.
6. With respect to the PBS Boards, we attended one board meeting (Dhaka 1) and met with a total of four Lay Advisors from the two PBS's that we visited (one in Barisal 2 and three from Dhaka 1). In addition, we met ten additional Board Members at Dhaka 1.
7. At the REB, we organized one group discussion and two individual interviews. Our group interview included mid- and senior-level staff, including five women and one man. The individual interviews were with the Gender Focal Point of REB and a senior-level officer who have had some role in prior gender mainstreaming activities with REB (i.e., the Dutch-funded Gender Equity Strategy development).
8. On Char Montaz in Barisal District, we visited the Coastal Electric Women's Development Cooperative (CEWDC) in Patuakhali. We conducted a group interview with 17 women (and one infant). An additional interview was held with three customers who were purchasing a solar home system. We visited several rural homes of cooperative members that had SHS and were undertaking other projects, several other homes. We also visited rural market shops operating at night with solar lighting systems from CEWDC and Grameen Shakti, as well as diesel micro-grid service from a private sector provider.

## SCHEDULE

<b>Date</b>	<b>Location</b>	<b>Interviews/Activity</b>
9 March	Dhaka	USAID Energy Team
10 March	Dhaka	NRECA ADB USAID Gender Action Team
11 March	Dhaka	Rest Day
12 March	Dhaka	Dhaka University Grameen Shakti
13 March	Barisal District, Barisal & Patuakhali	REB Focus Group Barisal PBS 2
14 March	Barisal District, Char Montaz	Coastal Electric Women's Development Cooperative, Char Montaz
15 March	Barisal District & Dhaka	Travel Day
16 March	Dhaka	REB World Bank Local Government Engineering Dept. Women's Affairs, Ministry of Women and Children's Affairs
17 March	Dhaka	USAID Energy Team NRECA DFID IRG Nishogoro Support Project Gender Study Presentation
18 March	Dhaka	Rest Day
19 March	Dhaka	Dhaka PBS 1 – Interviews
20 March	Dhaka	Dhaka PBS 1 – Board Meeting
21 March	Dhaka	Briefing Preparation REB Interview
22 March	Dhaka	Briefing Preparation
23 March	Dhaka	USAID Briefing

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Barisal PBS 2	Mana, Md.	General Manager	
Barisal PBS 2 Board of Directors	Begum, Jahanara (Mrs.)	Elected Member of Board of Directors	
Barisal PBS 2 Focus Group		Billing Assistants General Manager and several AGM's	

Dhaka PBS 1	Hussain, Md. Sarwar	General Manager	<a href="mailto:dhkpbsl@bdmail.net">dhkpbsl@bdmail.net</a> Tel: 7708253; 7708894
Dhaka PBS Focus Group		Billing Assistants and several other accounting staff	
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## **FINDINGS, CONCLUSIONS AND RECOMMENDATIONS FOR THE REB/NRECA SOCIO-ECONOMIC BASELINE SURVEY**

### **Findings**

- The baseline survey of a sample of new customers is intended as the first data collection stage for a longitudinal customer survey.
- Sex-disaggregated data is collected for several variables:
  - Households: sex of head of household and their family members (age, education, income earner, main and secondary occupation), social power structure involvement, development message uptake.
  - Commercial and industrial customers: Sex of unit owners and various categories of employees (and their working hours, days and average salaries).
  - Farm customers: sex could be determined from the name of the respondent but it is not recorded separately.
- Information on land and property ownership is not sex-disaggregated.
- Comparisons of female- versus male-headed households have not yet been done in the survey analysis.<sup>32</sup> The surveyed households included only 2.20 percent female-headed households which seems considerably lower than the 11-30% estimates in other sources
- Poverty indicators have not been analyzed by male- and female-headed households.
- Percentages are included in the analysis but it is not always possible to tell if differences between men and women are statistically significant.

### **Conclusions**

- The richness of the database has not been fully analyzed with respect to gender issues. It is important to gain a better understanding of the poorest households and female-headed households that are becoming new customers so as to better serve those not yet electrified.

### **Recommendations**

- Given that property ownership is a current prerequisite for PBS membership (and many women are excluded), it would be helpful to adapt the baseline to identify the status of women's land holdings in different PBS service areas.

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<sup>32</sup> NRECA International Ltd. 2005. Report on baseline information of the domestic consumers, (Data Collection Period: July 2003 to June 2004). March 2005. Final draft. NRECA International Ltd., Dhaka.

- The low percentage of female-headed households among newly electrified customers is worthy of further investigation. It would be very interesting to try to analyze this set of households separately to see if they differ from the rest of the sample and to determine their poverty status, education, etc.
- Data analysis should identify correlations and statistically significant differences by sex.

## GENDER TRAINING OPTIONS FOR REB AND PBS STAFF

Because most staff members have had no exposure to gender related issues, including personnel and workplace issues as well as gender differences for male and female end users, gender training is one of our priority recommendations for REB and the PBS's. Such training would take place among the different levels of personnel, officers, staff and employees of REB and PBS's. Although the training content for the different groups will vary, some practical concerns about the factors that may influence women and men's participation and decision making need to be understood by most staff. Table 2 below proposes the types and duration of training appropriate for different categories of staff and assigns relative priority for the scheduling of trainings.

**Table 2 - Illustrative Matrix of Gender Training Matrix for REB and the PBS Staff**

Priority	Who to train	Topic	Possible duration (days)
1	REB management	<ul style="list-style-type: none"> <li>• Gender training at the personnel level</li> <li>• Gender issues related to policy, project formulation and implementation by REB</li> </ul>	2
1	REB PBS and Training REB Program Planning, REB Member Service,	<ul style="list-style-type: none"> <li>• Gender training at the personnel level</li> <li>• Gender issues related to project formulation and implementation by REB</li> </ul>	
2	All REB officers and staff	<ul style="list-style-type: none"> <li>• Gender training at the personnel level</li> </ul>	1
1	PBS General Manager, Deputy General Manager, Assistant General Managers	<ul style="list-style-type: none"> <li>• Gender training at the personnel level</li> <li>• Gender training at the institutional level</li> <li>• Gender issues related to electrification usage by rural population</li> </ul>	3
2	PBS employees, PBS Board members and staff interfacing consumers	<ul style="list-style-type: none"> <li>• Gender training at the personnel level</li> <li>• Gender issues related to electrification usage by rural population</li> </ul>	2
3	Village advisers and other volunteers	<ul style="list-style-type: none"> <li>• Gender issues related to community's participation in rural electrification usage and management</li> </ul>	1

**SAMPLE BY-LAW LANGUAGE USED FOR THE JOINT MEMBERSHIP  
PROVISION FOR U.S. ELECTRIC COOPERATIVES**

From the Coosa Valley Electric Cooperative Web-Page on By-Laws  
(<http://www.cosavalleyec.com/bylaws.php>):

Article 1. Membership

Section 2. Joint Membership

A membership by either a husband or a wife shall constitute a join membership and the term “member” as used in these bylaws shall be deemed to include a husband and wife and any provisions relating to the rights and liabilities of membership shall apply equally with respect to the holders of a join membership. Without limiting the generality of the foregoing, the effect of the hereinafter specified actions by or in respect to the holders of a joint membership shall be as follows:

- (a) The presence at a meeting of either or both shall be regarded as the presence of one member and shall have the effect of constituting of a joint waiver of notice of the meeting;
- (b) The vote of either, but not both, shall constitute one vote;
- (c) A waiver of notice signed by either or both shall constitute a joint waiver;
- (d) Notice to either shall constitute notice to both;
- (e) Expulsion of either shall terminate the joint membership;
- (f) Withdrawal of either shall terminate the joint membership;
- (g) Either but not both may be elected or appointed as an officer of trustee, provided that both meet the qualifications for such office.

From the Egyptian Electric Cooperative in Steeleville, Illinois  
(<http://www.egyptianelectric.coop/article1.html>):

Article 1. Membership

Section 1.04 Joint Membership

A husband and wife shall be accepted into joint membership or if one of them is already a member, such membership shall automatically be converted into a joint-membership. The words “member”, “applicant”, “person”, “his” and “him”, as used in these By-laws, shall include persons apply for or holding a joint membership, unless otherwise clearly distinguished in the text: and all provisions relating to the rights, powers, terms, conditions, obligations, responsibilities and liabilities of membership shall apply equally, severally and jointly to them. With limiting the generality of the foregoing:

- (a) the presence at a meeting of either or both shall constitute the presence of the joint membership and joint waiver of notice of the meeting.
- (b) the vote of either or both shall constitute, respectively, one joint vote.
- (c) notice to or waiver of notice signed by either or both shall constitute, respectively, a joint notice or waiver of notice.