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MID-TERM PERFORMANCE EVALUATION FINAL REPORT

Catalyzing Clean Energy in Bangladesh (CCEB)

Accelerating Capacity for Monitoring and Evaluation (ACME) Activity

April 13, 2016

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Addendum to the approved Catalyzing Clean Energy in Bangladesh (CCEB) Mid-term Performance Evaluation Report

The Evaluation Question # 4 *"To date, how effectively has gender been integrated or incorporated in the interventions? What have been the challenges and opportunities, if any?"* under the CCEB Mid-term Evaluation Report could not completely and clearly capture how gender was effectively integrated and incorporated. Apart from citing M&E training data, which can also be gathered from the CCEB's quarterly and annual M&E reports, the evaluation report did not provide sufficient information and evidence to back the statement: "There is informed evidence that CCEB has promoted gender integration within its activities." Furthermore, the response to gender integration appeared to be limited to only personnel trained. Also, a meager reference has been made on CCEB gender strategy call for support to the Council on Women in Energy and Environmental Leadership, without providing enough substantial information. Based on this review, USAID finds responses on question 4 to be inadequate.

ACRONYMS

ACME	Accelerating Capacity for Monitoring and Evaluation
AEE	Association of Energy Engineers
BB	Bangladesh Bank
BERC	Bangladesh Energy Regulatory Commission
BPDB	Bangladesh Power Development Board
CAP	Country Action Plan
CCEB	Catalyzing Clean Energy in Bangladesh
CDCS	Country Development Cooperation Strategy
COR	Contracting Officer's Representative
COP	Chief of Party
DCOP	Deputy Chief of Party
DESCO	Dhaka Electric Supply Company
DISCO	Distribution Company
DO	Development Objective
DO4	DO for Climate Change, Environmental & Natural Resources projects
DPDC	Dhaka Power Development Company
DSM	Demand Side Management
EE	Energy Expert
EG	Economic Growth Office
FGD	Focus Group Discussion
GCC	Global Climate Change
GHG	Greenhouse Gas
GOB	Government of Bangladesh
IBTCI	International Business and Technical Consultants, Inc.
ICS	Improved Cook Stoves
ID	Identifier/Identity
IDCOL	Infrastructure Development Company Limited
IP	Implementing Partner
IR	Intermediate Result
KII	Key Informant Interview
KPI	Key Performance Indicator
M&E	Monitoring and Evaluation
NEEAP	National Energy Efficiency Action Plan
NGO	Nongovernmental Organization
NRM	Natural Resource Management
PMP	Performance Management Plan

PRA	Participatory Rural Appraisal
PSPAM	Power Sector Planning Analysis Model
RAF	Risk Assessment Framework
SOW	Statement/Scope of Work
SPSS	Statistical Package for Social Sciences
SREDA	Sustainable and Renewable Energy Development Authority
TOU	Time of Use
US	United States
USAID	U.S. Agency for International Development
USG	United States Government

EXECUTIVE SUMMARY

International Business & Technical Consultants, Inc. (IBTCI), under U.S. Agency for International Development (USAID)/Bangladesh's Accelerating Capacity for Monitoring and Evaluation (ACME) activity,[1] conducted a mid-term performance evaluation of USAID/Bangladesh's Catalyzing Clean Energy in Bangladesh (CCEB) project.[2,3] The CCEB project is intended to support energy sector development for energy security, contribute to economic growth and climate change mitigation, build capacity to design and implement supportive policies and regulations, and increase utilization of clean energy approaches and technologies for energy sector development on a low carbon trajectory.

The CCEB components and the tasks are as follows:

- Component A: Improve Enabling Environment for Low Emissions Development
  - Task 1: Improve Regulatory Environment for Clean Energy Development
  - Task 2: Strengthen Analytical Capacity for Energy Sector Planning and Policymaking
- Component B: Increase Energy Efficiency and Conservation
  - Task 3: Promote Industrial Energy Efficiency and Conservation
  - Task 4: Adopt Demand Side Management Programs for Electric Utilities
  - Task 5: Conduct Market Analysis and Development for Improved Cook Stoves

Purpose, Objectives, and Evaluation Questions

The purpose of the mid-term performance evaluation was to assess the extent to which the CCEB project is on track to meet its overall goals and inform management of any challenges or opportunities that warrant adjustments to the project to ensure the achievement of the project's intended results.

The findings and recommendations from the evaluation are expected to be used to improve CCEB's implementation and to inform the design of other relevant climate change, environmental, and natural resources projects.

The mid-term evaluation aimed to answer the following four questions:

(i) To what extent is the CCEB project on track, in terms of progress and outcomes, to meet its overall goals for the five tasks under Components A and B?

(ii) What plausible opportunities exist to enhance the project's programmatic approach and effectiveness within the stipulations of the contract?

(iii) What have been the major constraints and opportunities with respect to sustainability of the interventions? What measures should be taken to enhance sustainability?

(iv) How effectively has gender been integrated or incorporated into the interventions? What have been the challenges and opportunities, if any?

Methodology and Conceptual Approach

IBTCI used a utilization-focused, mixed-method evaluation methodology that included desk review of program-produced documents and related materials, key informant interviews (KIIs), focus group discussions (FGD), and a field survey of improved cook stoves (ICS) end users, which included visits to the Bagerhat, Chapai Nawabganj, and Gaibandha districts of Bangladesh.

For each evaluation question, the team used multiple data sources to triangulate evidence to minimize biases and other limitations, (including recall, response, and selection biases). By synthesizing the information from multiple sources, no one singular data point could skew the analysis.

[1] Contract number: AID-388-C-14-00001

[2] On October 10, 2012, USAID/Bangladesh awarded a $14,990,150 contract to Deloitte Consulting LLP for implementation of the five-year CCEB program.

[3] The scope of work for the mid-term evaluation is presented in Annex K of this document.

The evaluation team conducted 17 KIIs with 39 people, three FGDs with 15 industry representatives and members of the financial community, and surveyed 134 ICS end users.[4] The informants were key CCEB stakeholders, including central government entities, private sector organizations, the CCEB implementing partner and local subcontractors, and program beneficiaries. A list of organizations can be found in Annex I.

The evaluation team collated and analyzed the quantitative and qualitative information collected through the KIIs, FGDs, and survey to address the questions and inform evaluation findings, recommendations and lessons learned.

Reponses to the Evaluation Questions

Evaluation Question 1: To what extent is the CCEB project on track, in terms of progress and outcomes, to meet its overall goals for the five tasks under Components A and B?

To evaluate the project's progress and outcomes, the team asked key counterparts in each task to provide responses against a Likert scale to a series of questions.[5] The majority of respondents believe CCEB is making progress and is on track to achieve its goals related to Tasks 2, 3, and 5. Progress in Tasks 4 and 1 is less clear. The counterparts associated with Task 4, Dhaka Electric Supply Company (DESCO) and the Dhaka Power Development Company (DPDC) indicated they see the prime driving force for widespread adoption of DSM to be a fully functioning BERC and while both organizations spoke highly of efforts taken by CCEB to try to facilitate DSM activities, they consider it may be difficult for the CCEB to achieve its goal of increasing use of demand side management (Task 4) given the lack of sector regulation and supportive government policies. Similarly, the Task 1 work with the Bangladesh Energy Regulatory Commission (BERC), has made some progress but is still a long way from providing sector regulation to an internationally acceptable standard.

Evaluation Question 2: What plausible opportunities exist to enhance the project's programmatic approach and effectiveness within the stipulations of the contract?

The evaluation team found a number of opportunities to enhance programmatic approach. They include:

- **Overall**: CCEB should continue to align all activities with relevant national goals and objectives, especially the 2013 National Energy Efficiency Action Plan (NEEAP) and the Country Action Plan (CAP) for improved cook stoves for (ICS) as SREDA becomes effectively operational.
- **Capacity Building**: CCEB could follow-up with counterparts to evaluate their capacity to perform their role and/or function and overall usefulness and effectiveness of the training. For example, staff of the Bangladesh Power Development Board (BPDB) indicated to the evaluation team that they are not able to fully utilize the models developed by CCEB and require further hands-on training.
- **Monitoring and Evaluation (M&E) of BERC's Performance**: It is not clear whether current progress relative to the organizational maturity model reflects how BERC is performing relative to its legally mandated functions. As such, it may not be an effective measure of progress as a result of CCEB support
- **M&E of Training**: Capacity-building efforts aimed at enhancing the country's ability to design and implement supportive policies and regulations, and increase utilization of clean energy approaches and technologies should be evaluated after an extended period post- training delivery to assess the initiative's long-term efficacy and benefits.

[4] The survey was limited to direct beneficiaries of CCEB support under Component 2, Task 5 Conduct Market Analysis and Development for Improved Cook Stoves.

[5] The Likert scale is defined as a method of ascribing quantitative value to qualitative data, to make it amenable to statistical analysis.

- **M&E of ICS:**
  - Most of the ICS users surveyed had been using the ICS for less than one year. A follow-up survey is recommended to determine the long-term durability and sustainability of tools.
  - The ICS end users surveyed were from middle to low income communities and they did not indicate the purchase of the ICS was a major issue. However, a survey of low-income rural communities may be considered to determine whether the pricing would be a significant barrier to future deployment on a large scale.
  - CCEB should revise the Task 5 M&E reporting methodology to include information on distributor sales rather than collecting information only on sales by manufacturers, which provides a limited picture of the ICS supply chain and does not provide sufficient, feedback to CCEB and USAID/Bangladesh on how successfully the supply chain is developing. Expanding the M&E reporting system to include information from ICS distributors can provide valuable information for CCEB and help inform other key ICS CAP stakeholders.
- **Support to BERC:** Support to BERC should focus on enhancing the organization's function with respect to its legal mandate and less on resolving short-term issues.
- **Energy Planning Models:** User reference manuals should be developed for the two CCEB models to improve energy sector planning and analysis.
- **Sustainability of Industrial Energy Efficiency**: CCEB should work closely with the Sustainable and Renewable Energy Development Authority (SREDA) to accelerate adoption of national standards for auditor certification and energy audit protocols, as well as improve coordination with industry associations and the financial community to enhance awareness of the benefits of energy efficiency.
- **Development of ICS market supply chain:**
  - Findings indicate that there are lags in end-user sales relative to distribution from the manufacturers.
  - Use female ICS end users as advocates in CCEB promotion activities. The ICS end users survey indicates end users discuss their experiences not only with family members but also with their local community. CCEB should use some of the end users as advocates to facilitate and accelerate village level acceptance of ICS.

The evaluation team found a number of opportunities to improve effectiveness. They include:

- **Overall:**
  - CCEB and key stakeholders should develop a stakeholder-driven strategic plan for sustainability.
  - CCEB activities should emphasize outcomes over outputs to achieve its development objective.
  - CCEB could work to facilitate strategic alliances between SREDA, the financial community, and industry and trade associations to foster local ownership and engender greater awareness throughout the industrial sector. This would catalyze implementation in accordance with the goals of the 2013 NEEAP.
  - Capacity building should be performance-based and support skills building in M&E to ensure effectiveness.

- **Task 3:**

  - CCEB should assist key counterparts and stakeholders in the development of financing mechanisms. Findings indicate there is willingness to pay for energy efficiency services delivered by the CCEB subcontractors and that the financial community views the energy efficiency market as an opportunity to expand its lending portfolios. CCEB can assist these key stakeholders and key counterparts such as SREDA in the establishment of new financing mechanisms for energy efficiency and clean energy. The project should consider the feasibility of transitioning the existing grant program to a sustainable financing mechanism, simplifying the application process, and reducing the time for financier's approval.

  - CCEB should establish a formal mechanism for matchmaking between industry and the financial community to promote implementation of clean energy and energy efficiency measures. Findings indicate there is a nascent market for energy efficiency; CCEB should work with industry (through trade associations and the chamber of commerce) and the financial community to develop a formal mechanism that can accelerate "match-making" between the two sectors, stimulate, and expand the fledging market.

- **Task 4:**
  - Utility-based DSM programs targeting energy efficiency and conservation are facilitated by a supportive regulatory framework to ensure widespread adoption. However, to date, favorable regulations promoting/requiring utility-based DSM are not in place. Therefore, CCEB should not initiate any additional demand side management work and should redistribute resources to other tasks until a supportive regulatory framework is in place.

- **ICS:**
  - CCEB should support the ICS manufacturers in working more closely with distributors and vendors to ensure balance of production and demand along the supply chain so that there is not oversupply or unavailability in the market.
  - CCEB should keep working closely with the manufacturers to ensure the validity of the design and construction issues raised by some ICS end users.
  - CCEB should work with policy-makers to revisit the duties imposed on imported cook stoves given the limited local manufacturing capacity and the substantive number of ICS needed to meet the CAP targets.

Evaluation Question 3: What have been the major constraints and opportunities with respect to sustainability of the interventions? What measures should be taken to enhance sustainability?

The team found evidence of the following constraints to sustainability:

- Regulatory environment is not supportive of clean energy
  - BERC is still a weak organization that lacks autonomy, requires restructuring, and lacks resources, including sufficient qualified permanent staff to carry out its mandated functions and develop an enabling environment conducive to widespread adoption of clean energy.
- Insufficient skilled personnel
  - There are limited organizations offering training for clean energy professionals.
  - A national standard for certification, in line with international practices, of energy efficiency professionals is anticipated to develop qualified persons to work as consultants or as energy managers.
  - Key organizations such as BERC and SREDA do not have enough qualified professionals.
  - Capacity building must be scaled up to develop and sustain the critical mass of energy efficiency professionals needed to reach national targets for industrial energy efficiency.
- Market for clean energy and energy efficiency goods and services is still immature
  - Although there are some examples of private companies paying for energy efficient goods and services, there is limited demand due to a lack of awareness among most of industry.
  - CCEB should examine whether it is appropriate to begin phasing-out its current support to ensure they are not subsidizing services that private sector companies are willing to buy. If appropriate, the project should develop a transition strategy in conjunction with key counterparts and stakeholders to facilitate market expansion.

  - The design and construction of the ICS needs to be further evaluated. Over 27% of the ICS responders expressed concerns with the ICS designs and attributes. Concerns included a 'better fan/charger', 'enlarged fuel feed entrance space', 'enlarged combustion space', 'increased stove height', 'better quality handle' and 'making the body heat resistant'. Other requests for improvements included: increased ease of refueling, reduced cooking time, less smoke, and more energy savings. These should be further investigated by the manufacturers.
  - There are insufficient financing mechanisms for clean energy and energy efficiency. CCEB should work with the financial community to transition its grant facility to a sustainable mechanism.

The following opportunities to enhance sustainability exist:

- CCEB activities are consistent with national policies and the program can work with key GoB counterparts to ensure they can leverage CCEB program activities to establish national standards.
- CCEB can enhance its outreach efforts and leverage existing communication networks such as trade and industry associations to increase awareness of the benefits of energy efficiency.
- CCEB can promote the additional benefits of job creation and employment from adoption of clean energy to facilitate political support.
- CCEB should work to establish a formal mechanism for matchmaking between industry and the financial community to promote implementation of clean energy and energy efficiency measures.
- CCEB should direct more support on ICS toward the point of sales between distributors and end users and leverage existing end-user experiences, to accelerate sales.

Evaluation Question 4: How effectively has gender been integrated or incorporated in the interventions? What have been the challenges and opportunities, if any?

In Bangladesh, 94.8%[6,7] of the energy sector workforce is male. CCEB has effectively successfully mainstreamed gender integration, exceeding program targets for gender participation by the end of the third year. Although CCEB has been able to increase gender participation in its activities, the team did encounter some negative attitudes towards women, notably regarding their participation in energy audits.

Lessons Learned

The following key lessons can be learned from CCEB:

- Capacity building needs to be strategic and evaluated for effectiveness, targeting performance improvement. For example, CCEB should work closely with SREDA to build its capacity to establish national standards for energy audit protocols and certification of energy efficiency professionals. (Lesson Learned (LL)4 and LL5)
- Communication with all key actors and stakeholders is essential for scalability and sustainability. For example, CCEB should improve and enhance its outreach on industrial energy efficiency by using the existing networks of trade and industry associations. (LL3)
- Counterpart ownership is crucial for long-term sustainability. For example, it is important for BERC to secure funding for changes in its organizational structure and for an e-docketing system. (LL2)
- Project implementation should emphasize strategy over activity to achieve its development objective. For example, having demonstrated the value of using professional certified

[6] Source: "Bangladesh Bureau of Statistics, Ministry of Planning, Report on Labor Force Survey 2010"
[7] In Pakistan the number is 92%.

auditors and standardized approaches to audits, long-term sustainability will be enhanced if the CCEB approaches are used to develop national standards. (LL1)

1. INTRODUCTION

International Business and Technical Consultants, Inc. (IBTCI) under the Accelerating Capacity for Monitoring and Evaluation (ACME) activity, U.S. Agency for International Development (USAID) contract AID-388-C-14-00001, conducted a mid-term performance evaluation of the five-year Catalyzing Clean Energy in Bangladesh (CCEB) project. Initiated in October 2012,[8] CCEB is intended to:

- Support energy sector development for energy security, economic growth, and climate change mitigation in Bangladesh.
- Build the Government of Bangladesh's (GOB) capacity to design and implement supportive policies and regulations, and increase utilization of clean energy approaches and technologies for energy sector development on a low carbon trajectory.

The primary purpose of the evaluation is to determine the extent to which the CCEB is on track (including processes and outcomes) to meet its overall goals across the project's two major components:

- Component A: Improve Enabling Environment for Low Emissions Development
- Component B: Increase Energy Efficiency and Conservation

The evaluation team carried out fieldwork in Bangladesh from November 9, 2015 through December 31, 2015. Data were collected in Dhaka and several rural locations.[9] The team analyzed the data and wrote the report between December 31, 2015 and February 9, 2016.

[8] The evaluation scope of work is included in Annex K of this document.

[9] Task 1-4 information was gathered in Dhaka. Data pertaining to Task 5, ICS, were collected from the following districts: Bagerhat, Chapai Nawabganj and Gaibandha.

2. PROJECT BACKGROUND: THE DEVELOPMENT PROBLEM AND USAID'S RESPONSE

Economic growth in Bangladesh has been constrained in part due to a flawed energy sector. More than 50 percent of the population lacks access to electricity. The sector governance framework lacks a strong regulatory environment and energy prices are too low to sustain commercial services. Several studies show that energy efficiency can be enhanced in the industrial sector. However, the country faces challenges to grow its economy using a low carbon development trajectory.

USAID/Bangladesh is committed to providing support to reduce and sequester greenhouse gasses (GHGs). The 2011-2016 Country Development Cooperation Strategy (CDCS) is oriented around four development objectives (DOs). DO4: Responsiveness to Climate Change Improved aims to mitigate climate change and increase the nation's responsiveness and adaptation to challenges that occur due to climate change through three interrelated intermediate results (IRs):1) improved management of natural resources; 2) enhanced adaptation capacity and resilience to shocks; and 3) strengthened capacity for low emissions development, focusing on mitigation.

CCEB contributes to the achievement of CDCS IR4.3: Strengthened Capacity to Reduce Emissions and the corresponding sub-IRs 4.3.1: Improved Enabling Environment for Low Emissions Strategies; 4.3.2: Increased Adoption of Renewable Energy; and 4.3.3: Improved Energy Efficiency and Conservation.

The CCEB's development hypothesis is that "*USAID support for enhanced planning capacity for energy sector and low-emissions development, increased investment in energy efficiency and renewable energy, and an improved energy sector regulatory framework will result in strengthened Bangladesh capacity to reduce emissions.*"

3. PURPOSE OF THE EVALUATION

As required by the scope of work (see Annex K), the mid-term evaluation assessed the extent to which the CCEB project is on track to meet its overall goals and recommended evidence-based adjustments to programmatic approaches that could enhance the potential for achievement of the intended results. Evidence-based constraints are presented with specific recommendations to enhance effectiveness and impact, taking into consideration the project's existing scope of work and contract. Finally, the evaluation team determined the extent to which USAID investments are likely to be sustained after the life of the project and provided viable recommendations for future (post-CCEB) focus areas.

3.1. Intended Audience

While the primary intended user of this evaluation is USAID/Bangladesh, particularly the Economic Growth (EG) Office and Mission management, the evaluators anticipate that other key stakeholders may be interested secondary audiences. These include local institutions, including the GOB, other donors, and other actors in the clean energy space, including the leading institutions involved in energy efficiency and clean energy in Bangladesh.

The USAID EG office should be able to use the findings and recommendations presented in this report to plan for the remaining period of the project, as the evaluation provides an informed evidence-based assessment of the project's progress and identifies needed adjustments.

3.2. Evaluation Questions

The evaluation provided evidence-based answers to the following questions, as specified in the scope of work:

1. To what extent is the CCEB program on track, in terms of progress and outcomes, to meet its overall goals for the five tasks under Components 1 and 2?
2. What plausible opportunities exist to enhance the project's programmatic approach and effectiveness within the stipulations of the contract?
3. What have been the major constraints and opportunities with respect to sustainability of the interventions? What measures should be taken to enhance sustainability?
4. To date, how effectively has gender been integrated or incorporated in the interventions? What have been the challenges and opportunities, if any?

4. EVALUATION METHODOLOGY AND LIMITATIONS

The evaluation used a utilization-focused, mixed-method methodology. The steps included planning; document review; data collection through key informant interviews (KIIs), focus group discussions, (FGDs) and surveys; data analysis; and report preparation.[10]

4.1. Planning and Document Review

Throughout the evaluation, the team worked closely with USAID/Bangladesh's EG Office, especially the evaluation point of contact and the ACME Contracting Officer's Representative (COR), ensuring the evaluation remained on schedule and issues were addressed quickly. This was pertinent to the improved cook stoves (ICS) survey, given that limited end user information was readily available. The work plan was submitted on November 15, 2015. It was revised and resubmitted on November 17, 2015, November 24, 2015, and December 5, 2015 and was approved by USAID on December 7, 2015. The team reported progress every week and held progress briefings with USAID/Bangladesh bi-weekly. The team relied on CCEB-produced materials but also reviewed a range of secondary information sources (see Annex G for details).

4.2. Data Collection and Analysis

The evaluation team collected both quantitative and qualitative data through 17 KIIs with 39 people, 3 FGDs with 15 industry representatives and members of the financial community, and a survey of 134 ICS end users.[11,12] The informants were key CCEB stakeholders, including central government entities, private sector organizations, the CCEB implementing partner and local subcontractors, and program beneficiaries. A list of organizations can be found in Annex I. Every two days, the team held internal debriefs to review and crosscheck the evidence collected, look for patterns, identify any discrepancies, and make any required adjustments to the schedule.

The team analyzed the data based on its respective source and compared to related data sources. For example, the team developed preliminary findings by first analyzing interviews with key informants, and then developed complementary preliminary findings from key documents and other secondary materials. Finally, the team used a risk assessment framework (RAF) matrix to assess the extent of progress toward the desired development outcome. See Annex H for a full description of the RAF methodology.

4.3. Biases and Limitations

Recall, response, and selection biases and other limitations were considered and accounted for within the methodology used for data collection and subsequent analyses. The team sought to minimize these by triangulating data using multiple sources for each issue. By synthesizing the information found in documents and/or interviews from multiple sources, the evaluation team reduced the likelihood of a singular data point skewing end results.

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[10] Documents reviewed are included in Annex G. Instruments used for KIIs, FGDs and the ICS survey are included in Annexes D, E, and F respectively. Data analysis methodologies are discussed in Annex C. The Evaluation Design Matrix used to inform the answers to each of the evaluation's questions is included in Annex B.

[11] The evaluation team found that neither the CCEB nor the ICS manufacturers CCEB is supporting collect contact information for end users. As such, the team carried out a phone survey of some of the major ICS distributors to identify end users.

[12] The survey was limited to direct beneficiaries of CCEB support under Component 2, Task 5 Conduct Market Analysis and Development for Improved Cook Stoves.

5. FINDINGS AND CONCLUSIONS

Evidence-based findings and conclusions drawn from the document review, KIIs, FGDs, and ICS survey are presented in the following sections of the report.

5.1. Findings - CCEB Overall Performance

The team analyzed responses to the four questions to determine the extent of the project's progress. Responses are summarized below with an indication of the responses' consistency with the views of implementing partner and USAID.[13]

Table 3: Qualitative Questions Summary Findings

Item	Number of Stakeholder Interviewee Responses		
	Highest #	2nd Highest #	3rd Highest #
Expectations	Promote & motivate industry to implement[14]	Targeted capacity building to address skill gaps[15]	
Accomplishments	BERC e-docketing system [16]	Grants	Software models
Challenges	Industry awareness	Lack of access to energy experts (EE) and green technologies	Residential energy use
Challenges – demand side management (DSM) only	Distribution Companies (DISCOs) not policy setters	Residential energy use	Load shedding no longer an issue
Strengths	Financial support to industry[17]	Improved BERC	Activities outside of Dhaka[18]
Constraints	Lack of awareness and knowledge[19]	Lack of primary data	Lack of trained manpower
Constraints – DSM only	Government policy does not promote DSM[20]		
Lessons learned	Targeted capacity building to address skill gaps is needed	Promotion and awareness can facilitate positive behavior change	Private sector approach helped facilitate development of ICS manufacturing

[13] It is imperative to learn if the comments received are consistent across all of the key actors involved in CCEB's implementation. This provided an objective vision of the program in totality as well as providing a method of identifying where there are disconnects that may well hamper progress towards meeting outcomes.
[14] Consistent with USAID and or IP comments
[15] Consistent with USAID and or IP comments
[16] Consistent with USAID and or IP comments
[17] Consistent with USAID and or IP comments
[18] Consistent with USAID and or IP comments
[19] Consistent with USAID and or IP comments
[20] Consistent with USAID and or IP comments

CCEB Risk Assessment Framework (RAF) and Risk Mitigation Options

CCEB support includes activities related to the clean energy enabling environment (Tasks 1 and 2), clean energy deployment delivery mechanisms (Tasks 3, 4, and 5), and the financing environment (Task 3). As such, it is important to consider any interdependences and linkages between the different activities when assessing the project's progress toward its development objective. To do this, the team assessed risks using the quantitative and qualitative information collected through the KIIs and FGDs, with consideration for potential impact if any tasks did not achieve the desired outcome. The team also considered the probability and potential severity of impact of an occurrence. The evaluation team ranked against the following four impact levels: negligible, marginal, serious, and catastrophic. The probability of failure was ranked as remote, occasional, probable, or frequent. (See Annex H for quantitative and qualitative explanations of each of these impact and probability levels.) Table 4 shows the relative rankings of each of the main CCEB activities. The relative rankings for each CCEB activity were entered into a RAF matrix using the following probability ranges: (i) remote. less than 0.25 probability; (ii) occasional, 0.26 to 0.50 probability: (iii) probable range, 0.51 to 0.75 probability; and (iv) frequent, 0.76 to 0.99 probability. Table 5 shows the CCEB Risk Mitigation Assessment Matrix.

Review of the RAF shows there is less than 50 percent probability that tasks 2 and 3 would fail to achieve their expected objectives and the impact would be marginal. With Tasks 4 and 5, there is slightly higher probability of failure, but the impact would be similar. Given the crucial role regulation has on creating an enabling environment for widespread adoption of clean energy, there will be major impact if BERC fails to function at or close to international best practice standards. Failure in this area could potentially undo much of what CCEB has accomplished thus far in establishing foundations for success. Unfortunately, it is also difficult for CCEB to address BERC's systemic issues, which require sustained commitment from the GOB to be addressed appropriately. If that commitment is forthcoming, there is a high probability that CCEB will be very close to achieving its development objective by the end of the program.

Table 4: Summary of RAF Analyses

Impact	Catastrophic	High	Critical	Critical	Critical
	Serious	High	High	Task 1	Critical
	Marginal	Medium	Tasks 2 & 3	Task 4	High
	Negligible	Low	Low	Task 5	Medium
		Remote	Occasional	Probable	Frequent
		Probability			

CCEB Risk Mitigation Assessment

Identifying a risk is only a first step. It is imperative to identify concrete actions to mitigate identified risks. Table 6: CCEB Risk Mitigation Assessment Matrix presents mitigation options for the risks identified with the various CCEB activities.

Table 5: Summary of Probability and Impact Determinations for CCEB Tasks

CCEB Component	ID #	CCEB Activities	Probability Rating	Impact	Impact & Probability Deter-mination	Ranking Comments
Component 1 Task 1: BERC	1.1.1	(i) Maturity Model ODA	Occasional	Marginal	Medium	BERCs continuing staffing issues and GOB's lack of commitment to independent regulation and lack of funding means BERC does not progress as an organization and the impact is marginal (M). Probability is considered occasional (O) and impact and probability determination (I&PD) is medium (M).
	1.1.2	(ii) e-docket system	Probable	Serious	Critical	Best practice regulatory bodies use e-docketing systems to enhance their performance. Developing a request for proposal (RFP) for an e-docketing. System will accelerate adoption if BERC can obtain funds from the GOB to implement. The probability of failure is considered probable (P); the impact serious (S) and the I&PD is critical (C).
	1.1.3	(iii) Legal department	Frequent	Serious	Critical	A legal department is needed for appropriate regulatory authority. BERC has no legal department and lacks funds to implement. The probability of failure is considered frequent (F); the impact serious (S) and the I&PD is critical (C).
	1.1.4	(iv) Organizational review	Probable	Serious	High	The new organizational structure requires resources to implement. BERC has no resources and lacks funds to implement. The probability of failure is considered probable (P); the impact serious (S) and the I&PD is critical (H).
	1.1.5	(v) Advisory services	Occasional	Marginal	Medium	Ad hoc support to BERC addresses problems but does not resolve systemic issues, including continuing staffing issues coupled with the lack of commitment to independent regulation and lack of funding. Impact is marginal (M) as there is no capacity being built, probability is considered occasional (O) as CCEB can provide support to address ad hoc issues and the I&PD is medium (M).
	1.1.6	(vi) Power plant regulatory audit procedure	Occasional	Marginal	Medium	Limited number of trained staff. Impact is marginal (M) given limited trained staff but as there is some trained staff the probability is considered occasional (O) and the I&PD is medium (M).
Average Ranking Task 1			Occasional to Probable	Marginal to Serious	High to Critical	

Component 1 Task 2: Analytical Capacity	1.2.1	Developed GHG emission and Power Sector Planning and Analysis models and built capacity of counterpart personnel	Occasional	Marginal	Medium	Models provide good analyzes but need trained staff to use. Impact is marginal (M) due to limited training. As there is some trained staff the probability is considered occasional (O) and the I&PD is medium (M).
Average Ranking Task 2			Occasional	Marginal	Medium	
Component 2 Task 3: Industrial Energy Efficiency	2.3	• Built capacity of service organizations • Introduced certification standards and audit protocols • Provided grant financing • Implemented energy efficiency measures • Raised awareness among stakeholders, notably the financial community	Occasional	Marginal	Medium	Limited number of auditors trained, audit protocols demonstrated but greater awareness of EE by industry needs to be developed as well as many more trained auditors are needed to implement on a national scale. Impact is considered marginal (M) due to limited number of trained staff but as there is some trained staff the probability is considered occasional (O) and the I&PD is medium (M).
Component 2 Task 4: DSM	2.4	• DSM Roadmap • Time of Use (TOU) tariffs • Interruptible tariff • Load control • Pre-paid meters	Probable	Serious	High	DSM is highly dependent on strong regulation of electricity usage and is driven by a regulatory framework in which pricing reflects cost of service. BERC is not performing as an independent regulator due to lack of autonomy, lack of sufficient qualified permanent staff and the lack of an organizational structure that reflects international best practice there is high probability (P) of failure and the impact of this will be serious (S). The I&PD is high (H)
Component 2 Task 5: Market Development	2.5	Developed local manufacturing capacity and sales of Tier 2 ICS	Probable	Serious	Medium	Local manufacturing capacity has been established and ICS produced locally are apparently gaining acceptance, but ICS targets are very high. There is high probability (P) of failure unless manufacturing is increased and sales and marketing is improved. Failure to expand capacity would have a serious impact (S). Expansion requires funding so the I&PD is medium (M).

Table 6: CCEB Risk Mitigation Assessment Matrix

Desired Outcome	CCEB Component	ID #	CCEB Activities	Key Observations	Risk Mitigation Options
Enabling Environment in place that promotes clean energy development	Component 1 Task 1: BERC	1.1.1	(i) Maturity Model ODA	KPIs should reflect BERC's mandated performance.	Necessary changes in the organization structure that include: creation of a Legal Department to support legal, litigation, arbitration, investigation, enforcement and other legal functions; incorporates M&E requirements and introduces other functional responsibilities as provided by BERC Act 2003; must be implemented rapidly and require appropriate commitment and support for BERC to become a fully-functioning regulator consistent with international best practices. Significant development support could facilitate this but should be conditional on demonstrated GOB commitment to implementing regulatory autonomy.
		1.1.2	(ii) e-docket system	The proposed system is consistent with BERC operating as per its legislated mandate.	Funding should be allocated by GOB to implement.
		1.1.3	(iii) Legal department	The proposed legal department is consistent with BERC operating as per its legislated mandate.	The GOB needs to commit to funding the necessary changes in the organization structure and implement them rapidly. This will enable BERC to function in accordance with the 2003 BERC Act and help establish a regulatory framework that promotes clean energy deployment. This in turn will lead to consistent pricing which in turn will stimulate energy efficiency and DSM.
		1.1.4	(iv) Organizational review	CCEB carried out this key input as a step towards needed changes in BERC's structure. Implementing the changes will facilitate BERC's	The GOB needs to commit to funding the necessary changes in the organization structure and implement them rapidly This will enable BERC to function in accordance

				functioning in accordance with its legislated mandate.	with the 2003 BERC Act and help establish a regulatory framework that promotes clean energy deployment. This in turn will lead to consistent pricing which in turn will stimulate energy efficiency and DSM.
		1.1.5	(v) Advisory services	Can be key inputs to catalyze BERC functioning in accordance with its legislated mandate.	Services should be conditional on demonstrated GOB commitment to implementing regulatory autonomy
		1.1.6	(vi) Power plant regulatory audit procedure	This is consistent with BERC functioning in accordance with its legislated mandate.	Regulation should be adopted rapidly as it is consistent with international best practices and reduce emissions of greenhouse gases.
GHG analytical capability exists in key government entities	Component 1 Task 2: Analytical Capacity	1.2.2	Built capacity of counterpart personnel	Counterparts stated they need hands-on training.	Provide hands-on training to staff at Power Cell, BPDB, and staff at other key stakeholders.
Industry reduces energy use by cost-effective reduction projects	Component 2 Task 3: Industrial Energy Efficiency	2.3	• Built capacity of service organizations • Introduced EA certification standards and audit protocols • Provided grant financing • Implemented energy efficiency measures • Raised awareness among stakeholders, notably the financial community	Energy Audit certification and audit protocols positively recognized by industry and financial community CCEB engagement with financial community very positive. Financial community ready to lend for EE; CCEB Investment Grade Audit facilitates financier's due diligence. Approach (audit/certification) scalable consistent with national policy for EE, and can Limited signs that EE services market is developing. Awareness among end users limited, particularly on accessing finance.	• Work with SREDA and leverage the CCEB introduced auditor certification curricula and audit process and protocols to establish national standards. • Develop financing mechanisms with SREDA, and the financial community. • Develop a match-making mechanism between industry and the financial community. • Leverage the existing trade associations and chambers of commerce/industry to promote greater awareness of energy efficiency benefits.

Utilities implement DSM programs to improve effective use of available energy supply	Component 2 Task 4: DSM	2.4	• DSM roadmap • TOU tariffs • Interruptible tariff • Load control • Pre-paid meters	Both Dhaka Electric Supply Company (DESCO) and the Dhaka Power Development Company (DPDC) see the prime driving force for DSM to be a fully functioning BERC. Both spoke highly of efforts taken by CCEB to try to facilitate DSM activities. Both looking for funding for pilots. Both still very technical energy supply organizations and yet to transition into commercial entities.	Supporting BERC's efforts to become a fully functioning regulator will facilitate DSM initiatives if it is accompanied by reduction/removal of subsidies currently provided to electricity consumers. Supporting and strengthening consumer/end user advocacy organizations can help catalyze DSM initiatives.
Scale up use of ICS in rural communities	Component 2 Task 5: ICS Market Development	2.5	Developed local manufacturing capacity and sales of Tier 2 ICS	The third year has seen a significant increase in sales of the ICS from the five manufacturers supported by CCEB. The ICS survey revealed over 70% of the ICS sold by the manufacturers have been distributed.	Develop a match-making financing mechanism between the ICS manufacturers and the financial community to access funds for expansion of manufacturing capacity. Provide training to point-of-sale/interface between end users and vendors/suppliers. Use existing ICS end users in promotion activities, leveraging their experiences to date with the ICS.

5.2. Evaluation Question 1

The findings with respect to the four specific evaluation questions included in the Evaluation Design Matrix (Annex B) are presented in the following sections. For each question, we present qualitative data collected from KIIs, organized around the individual questions. Quantitative findings are shown in graphic form.

Question 1: To what extent is the CCEB program on track, in terms of progress and outcomes, to meet its overall goals (for the five tasks under the components 1 and 2)?

The findings show that most stakeholders believe CCEB is making positive progress, and is having positive impact in most areas, with the exception of the regulatory framework. These issues have been described and mitigation options are provided above.

KII Question 1.1 (a) How effective has the program's technical assistance approach been in strengthening institutional capacity?

The evaluation team found the program has been partially successful to date in strengthening institutional capacity. BERC is a stronger organization thanks to CCEB support, notably having developed the power plant regulatory audit protocol and strengthened the legal department. BERC has a long way to go, however, to become a regulatory body consistent with international best practices. Analytical capabilities for energy planning have been enhanced within key counterpart organizations (i.e., Power Cell and Bangladesh Power Development Board (BPDB)) due to the availability of the program-developed analytical models (Power Sector Planning Analysis Model (PSPAM) and the GHG model). However, their utility is limited as some of the counterpart staff indicated during KIIs they felt the training they received was not sufficient for them to be fully capable of using the models. Consequently, they do not use them in their day-to-day activities. As such, the models are not used to help inform national policy decisions.

The evaluation team found evidence that the CCEB has contributed to the establishment of a market for energy efficiency services and technology through Task 3 and 5 activities. Under Task 3, the program has succeeded in mobilizing the financial community, helping to reduce transaction costs for the banks by developing a small pool of internationally-certified energy auditors who carry out technical due diligence of energy efficiency measures using standardized procedures (walk-through audits and investment grade audits). They have used a grant financing mechanism to "buy-down" part of the implementation costs for identified energy efficiency opportunities, establishing a proof of concept for certain elements of the industrial sector. As part of Task 5, CCEB has helped increase local manufacturing capacity for ICS and has supported development of testing protocols.

KII Question 1.1 (b) How effective has the project's technical assistance approach been in building capacity?

The evaluation team found evidence the project has built capacity across all major task areas, but further capacity building is needed. For example, in Task 2 there is limited evidence that the professionals who received training on the analytical models developed by CCEB can fully use them, nor can they adapt or develop them. There is evidence that the analytical tools are valued but their long-term utility is at risk. There is a small cadre of certified audit professionals whose are appreciated and valued by the financial community. However, this group is only sufficient to have provided qualified personnel to carry out the activities expected to be delivered by CCEB. Strategically, having proven the conceptual approach, the program can enhance the likelihood of sustainability by transitioning towards assisting the country in establishing mechanisms to develop a critical mass of qualified professionals to support the 2013 NEEAP goals for energy efficiency improvements.

How effective has the project's technical assistance approach been in catalyzing clean energy development?

The evaluation team found evidence that the project's approach has been somewhat effective in catalyzing clean energy. The evidence includes the implementation of energy-efficient technologies in industry, introducing the concepts of certified energy efficiency professionals, developing standardized auditing protocols that are gaining acceptance by industry, and the financial community's willingness to invest in clean energy. However, there is much to be done to ensure the foundations that the program has established are leveraged to expand the market and create sustainable mechanisms for clean energy development.

How effective has the program's technical assistance approach been in increasing access to financing?

The evaluation team found evidence that one of CCEB's major accomplishments has been increasing access to financing. The project has mobilized the financial community, resulting in the initiation of limited financing of industrial energy efficiency activities without financial support from CCEB (audit services and energy efficiency project implementation). While these are positive outputs, the evaluation team found evidence from KIIs with CCEB subcontractors that it is currently difficult to sell services for energy efficiency and that due to the lack of industry awareness, the market for energy efficiency goods and services is not yet mature.[21]

In addition, CCEB has been instrumental in getting Bangladesh Bank to accept that energy efficiency activities can be eligible for "Green Financing."[22]

How effective has the CCEB program been in achieving outputs or results?

There are findings from KIIs and FGDs that the project has been effective in achieving outputs and results in all major task areas and the CCEB outputs are consistently considered to be of high quality. Examples include: the development of the Power Plant Regulatory Audit protocol (Task 1); the PSPAM and GHG models (Task 2); the certification from an internationally recognized body of more than 80 energy auditors; the introduction and acceptance by local banks of standardized energy audit protocols as technical due diligence tools for investment decision making; saving of energy from deployment of energy efficient technologies (Task 3); and assisting the development of the market supply chain for ICS (Task 5). However, the challenge exists to turn these outputs into outcomes as envisioned in the CCEB results framework.

To what extent has participant training under CCEB been able to build capacity of partner institutions, including capacity of women members, to enhance market development?

The evaluation team found evidence that the country's analytical and energy planning capacity has been somewhat enhanced, but additional training is needed. Some of the participants trained on the two analytical models expressed their concerns that the training afforded by CCEB did not include any "hands-on" sessions that would have enabled them to learn to use the models under the supervision of the training instructor. In addition, they were not provided with a user manual to be used post training as a reference. International best practices for instruction typically includes "learning by doing," and provides trainees

[21] The estimated market for industrial energy efficiency goods and services is between $3 to 4 billion. The exact amount of funding spent by CCEB for industrial energy efficiency activities is not known but thought to be less than 0.1% of the overall market potential.

[22] "Green Financing" products/activities are eligible for funding at a discounted financing rate, currently around 9%, as opposed to the prevailing commercial rate that is between 15% and 16%.

access to the tools needed (in this case laptops and the model) during the classroom sessions as well as simulation exercises to solidify participants' understanding and capabilities.

5.3. Evaluation Question 2

Question 2: What are the plausible opportunities to enhance programmatic approach and effectiveness within the stipulations of the contract?

- **Overall**: CCEB should continue to align all activities with national goals and objectives, especially the 2013 NEEAP and the CAP for ICS.
- **Capacity Building**: CCEB should ensure their counterparts' capacity to perform their role and/or function. For example, staff of the Bangladesh Power Development Board (BPDB) indicated they are not able to fully utilize the models developed by CCEB and require further hands-on training.
- **Monitoring and Evaluation (M&E) of BERC's Performance**: It is not clear whether current progress relative to the organizational maturity model reflects how BERC is performing relative to its legally mandated functions. As such, it may not be an effective measure of progress as a result of CCEB support
- **M&E of Training**: Capacity-building activities should be evaluated after an extended period post- training delivery to assess the initiative's long-term efficacy and benefits.
- **M&E of ICS:**
    - Most of the ICS users surveyed had been using the ICS for less than one year. A follow-up survey is recommended to determine the long-term durability and sustainability of tools.
    - The ICS end users surveyed were from middle to low income communities and they did not indicate the purchase of the ICS was a major issue. However, a survey of low-income rural communities should be done to determine whether the pricing would be a significant barrier to future deployment on a large scale.
    - CCEB should revise the Task 5 M&E reporting methodology to include information on distributor sales rather than collecting information only on sales by manufacturers, which provides a limited picture of the ICS supply chain and does not provide sufficient, feedback to CCEB and USAID/Bangladesh on how successfully the supply chain is developing. Expanding the M&E reporting system to include information from ICS distributors can provide valuable information for CCEB and help inform other key ICS CAP stakeholders.
- **Support to BERC:** Support to BERC should focus on enhancing the organization's function with respect to its legal mandate and not on resolving short-term issues.
- **Energy Planning Models:** User reference manuals should be developed for the two CCEB models to improve energy sector planning and analysis.
- **Sustainability of Industrial Energy Efficiency**: CCEB should work closely with the Sustainable and Renewable Energy Development Authority (SREDA) to accelerate adoption of national standards for auditor certification and energy audit protocols, as well as improve coordination with industry associations and the financial community to enhance awareness of the benefits of energy efficiency.
- **Development of ICS market supply chain:**
    - Findings indicate that there are lags in end-user sales relative to distribution from the manufacturers.
    - Use female ICS end users as advocates in CCEB promotion activities. The ICS end users survey indicates end users discuss their experiences not only with family members but also with their local community. CCEB should use some of the end users as advocates to facilitate and

accelerate village level acceptance of ICS.

The evaluation team found a number of opportunities to improve effectiveness. They include:

- **Overall:**
  - CCEB and key stakeholders should develop a stakeholder-driven strategic plan for sustainability.
  - CCEB activities should emphasize outcomes over outputs to achieve its development objective.
  - CCEB should work to facilitate strategic alliances between SREDA, the financial community, and industry and trade associations to foster local ownership and engender greater awareness throughout the industrial sector, thus catalyzing implementation in accordance with the goals of the 2013 NEEAP.
  - Capacity building should be performance-based and support skills building in M&E to ensure effectiveness.
- **Task 3:**
  - CCEB should assist key counterparts and stakeholders in the development of financing mechanisms. Findings indicate there is willingness to pay for energy efficiency services delivered by the CCEB subcontractors and that the financial community views the energy efficiency market as an opportunity to expand its lending portfolios. CCEB can assist these key stakeholders and key counterparts such as SREDA in the establishment of new financing mechanisms for energy efficiency and clean energy. The project should consider the feasibility of transitioning the existing grant program to a sustainable financing mechanism, simplifying the application process, and reducing the time for approval.
  - CCEB should establish a formal mechanism for matchmaking between industry and the financial community to promote implementation of clean energy and energy efficiency measures. Findings indicate there is a nascent market for energy efficiency. CCEB should work with industry (through trade associations and the chamber of commerce) and the financial community to develop a formal mechanism that can accelerate matchmaking between the two sectors, stimulate, and expand the fledging market.
- **Task 4:** Task 4 activities require a functional regulatory framework for widespread adoption. Therefore, CCEB should not initiate any additional demand side management work and should redistribute resources to other tasks until the Government of Bangladesh demonstrates tangible commitment to systemic change at BERC.
- **ICS:**
  - CCEB should support the ICS manufacturers in working more closely with distributors and vendors to ensure production and demand along the supply chain is well managed and there is not oversupply or unavailability in the market for end users.
  - CCEB should work closely with the manufacturers to ensure the validity of the design and construction issues raised by some ICS end users.
  - CCEB should work with policy-makers to revisit the duties imposed on imported cook stoves given the limited local manufacturing capacity and the substantive number of ICS needed to meet the CAP targets.

5.4. Evaluation Question 3

Question: 3. What have been the major constraints and opportunities with respect to sustainability of the interventions? What measures should be taken to enhance sustainability?

The evaluation team found evidence that CCEB is addressing some of the major constraints to sustainability of industrial energy efficiency activities through Tasks 3 and 5. However, much work remains to be done to enhance the likelihood of sustainability and scalability. The major constraints identified in this area through the KIIs and FGDs include lack of awareness about the benefits of energy efficiency among the industrial sector, a lack of skilled workers, and a lack of primary data on energy efficiency technologies and energy utilization and management practices. In addition, counterparts indicated they do not have certified energy managers working for them, which is not currently addressed by CCEB.

The utility DSM counterparts, DPDC and DESCO, stated that current government policy does not promote DSM. Respondents stated that DSM will only be viable when the BERC is fully functional and develops policies conducive to DSM implementation. They were aware of CCEB's support to BERC but felt the support was having little or no impact on policy and expressed concern that the impact of CCEB support is limited at BERC.

The counterparts at BERC also indicated there were initial challenges with the implementing partner's assistance, including selection of personnel and activities. While these choices impacted timing when the program could disengage, the assistance in the early phase did not address BERC's systemic challenges. USAID decided to modify the project contract in the third year to continue support to BERC throughout the life of the project. Project support to BERC has evolved in the third year with more focus on addressing shortcomings in BERC's organizational structure.[23]

The KIIs and FGD indicated that moving forward, CCEB should focus on addressing the lack of awareness of EE technology and practices in industry. It was felt an awareness campaign using the industrial trade associations' networks championed by the financial community and industries who have benefitted from CCEB support could accelerate understanding. Review of background documents and the findings from the KIIS and FGDs with key counterparts, stakeholders, and beneficiaries across all task areas indicate activities are very scalable and sustainable. The challenge will be to leverage opportunities to enhance scalability and sustainability. Enhancing sustainability will require greater local ownership of many of the CCEB activities. For example, SREDA needs to develop national standards for industrial energy audits and certification of energy efficiency professionals. Currently, however, there is no plan for CCEB to support SREDA directly in this area.

In addition, key counterparts are like SREDA—nascent organizations with limited staff and resources, or are like BERC—struggling to assume their leadership role in the sector. BERC has a critical role in market transformation and adoption of clean energy. However, a weak, underperforming BERC will stall progress in Tasks 3, 4, and 5. Despite donor support, BERC is still a long way from being a fully autonomous energy sector regulator operating in accordance with international best practices.

[23] It should be noted that the quality of the work completed in support of BERC in the first phase was appreciated by the counterparts. By the end of the third year, the CCEB developed a new organizational structure, prepared an RFP for an e-docketing system, outlined capacity-building requirements, and drafted a Power Plant Audit regulation.

Sustainability of Task 3 and 5 activities is supported by the 2013 NEEAP and the 2009 CAP.

3.1 Has your involvement in CCEB helped your business activities?

There is some evidence that CCEB has enhanced the businesses it has worked with directly (notably the ICS manufacturers, the private sector organizations providing services under Task 3, the companies who received grant support to implement energy efficiency measures, under Task 3, and the financial community). However, several interviewees expressed concern that the enabling environment is not developing (notably independent regulation) despite CCEB support.

Most organizations—including all of the service companies interviewed, the Power Cell and BPDB, and the four representatives from the financial community—indicated that the work of CCEB is part of their long-term business plans.

5.5. Evaluation Question 4

Question: 4: To date, how effectively has gender been integrated or incorporated in the interventions? What have been the challenges and opportunities, if any?

There is informed evidence that CCEB has promoted gender integration within its activities. The program has a gender strategy and reports participation disaggregated by gender in its annual progress report, quarterly reports, and in its project monitoring and evaluation plan (PMEP). However, there are still challenges and opportunities with respect to gender integration that the project can help address. These are discussed in the paragraphs below.

4.1 To what extent has CCEB promoted and integrated gender into its activities?

The evaluation team found evidence the CCEB gender strategy has been successful. CCEB's PMEP includes two indicators with gender integration information, indicator #3 Number of people trained in energy, technical, business, and/or regulatory practices, and indicator #10 number of person hours of training completed in climate change as a result of U.S. Government (USG) assistance. Table 7 shows the percentage change in female participation from program inception until the end of FY15.

Table 7: CCEB and Gender Integration

PMEP Indicator #	% Female Participation				
	Actual FY 13	Actual FY 14	Actual FY 15	Target FY 16	Target FY 17
3	7	16.9	38	35	35
10	6.8	16.1	22	35	35

By the end of FY 15 (approximately the end of the third year of CCEB) female participation had already achieved the life of project target.

4.2 Are any CCEB activities specifically targeted toward gender integration?

The evaluation team found evidence that CCEB's strategy of mainstreaming gender integration rather than targeting gender integration in specific activities has been successful. For example, one of the selection criteria for industry participation in the CCEB-supported energy audits under Task 3 stresses female participation in the ownership of the company, but this is not the only criteria for participation.

4.3 What challenges has CCEB encountered in integrating gender into its activities?

The program does encounter challenges with gender integration in the conduct of its activities. For example, evidence shows that only 5 percent of energy sector employees are female, though women make up 30 percent of Bangladesh's workforce.[24] The GOB does have a gender policy with a target of 10% female participation in the energy sector, but clearly this policy does not appear to be effective in promoting this.

In other sectors that CCEB interacts with, the situation is different. For example, in the manufacturing sector women represent 28 percent of the labor force[25].

Legacy biases also remain (notably in the service sector) that women are unable to perform technical activities. These persist despite relatively high female participation in the manufacturing industries (a current driver of the economy).

4.4 In your opinion, do you see CCEB taking existing opportunities to facilitate and promote gender integration in its activities?

The team found evidence that CCEB is using existing opportunities to facilitate and promote gender in its activities, as demonstrated by the results included in the program's M&E plan and their last quarterly report. The CCEB gender strategy called for support to the Council on Women in Energy and Environmental Leadership, however, there are additional opportunities the program can take, notably in Task 5 by using female end users to promote ICS (78 percent of people not in the labor force are females).

5.6. Findings – Overall

Project M&E and associated key performance indicators (KPIs) should help inform project priorities: A number of M&E indicators for should reflect the desired outputs/outcomes from program activities. For example, a protocol that provides for monitoring information at key nodes along the market delivery chain for ICS (manufacturing, supply and sales, and end use) would allow CCEB to evaluate where to prioritize interventions, rather than monitoring only at one nodal point, as is currently done (sales by manufacturers). Similarly, KPIs for BERC-related support focused on their delivery of regulatory functions may provide more information on where CCEB support should be provided.

5.7. Findings – Task 1: Improve Regulatory Environment for Clean Energy Development

The team identified the following key findings with respect to Task 1 activities:

[24] Source: "Bangladesh Bureau of Statistics, Ministry of Planning, Report on Labor Force Survey 2010".
[25] Ibid

- Support to BERC has resulted in enhancing the organization somewhat. Examples include the proposed e-docketing system, the Power Plant Regulatory Audit, and the Organizational Development Assessment, and proposed new organizational structure. However, BERC is still a long way from functioning as an independent regulatory body and carrying out all its legally mandated regulatory functions at a level consistent with international best practices.
- Given BERC's critical role in sector regulation, a weak, underperforming BERC will adversely impact the progress toward adoption of clean energy in the country.
- BERC has yet to fully address long-term systemic issues such as the ability to attract appropriately qualified permanent staff, development of an appropriate organizational structure, and sufficient resources to put in place to enhance its performance.
- The current KPI used to measure BERC's development (based on the maturity model) does not appropriately reflect how BERC is progressing toward being an international class regulator. KPIs should be based on BERC's mandated responsibilities.
- Support to BERC should be strategically focused not ad-hoc in nature.

5.8. Findings – Task 2: Strengthen Analytical Capacity for Energy Sector Planning and Policymaking

The findings with respect to Task 2 are:

- CCEB-developed models are recognized as good analytical tools.
- Use of the models by the trained counterparts is limited due to incomplete training and lack of reference materials and resources.

5.9. Findings – Task 3: Promote Industrial Energy Efficiency and Conservation

The following are the evaluation findings with respect to Task 3:

- Market potential for industrial energy efficiency is high (between $3-4 billion).
- There are indications that a market for energy efficiency goods and services is developing. The financial community is already carrying out direct financing of energy efficiency outside of the CCEB.
- The financial community is well aware of the benefits of energy efficiency and is looking to finance energy efficiency projects.
- Accessing financing, either through CCEB or the Bangladesh Bank (BB) "Green Finance," mechanism is procedurally challenging and time consuming.
- Financing transaction costs have been reduced thanks to the acceptance by the financial community of certified energy efficiency professionals and a standardized energy audit methodology.
- Although industries working directly with CCEB have knowledge of clean energy and the benefits of energy efficiency, broader awareness of EE is relatively limited throughout industry.
- By working more closely with trade and industry on outreach activities, CCEB can strengthen the awareness and help catalyze the development of the market for energy efficiency.
- National counterparts need to assume a greater role in leading activities and leveraging CCEB's activities.

5.10. Findings Task 4: Adopt DSM Programs for Electric Utilities

The evaluation team found evidence that CCEB support has been appreciated by the distribution companies; however, activities to expand DSM efforts by the distribution companies will continue to stall without appropriate sector regulation and pricing signals.

5.11. Findings Task 5: Conduct Market Analysis and Development for Improved Cook Stoves

Although the team considered all CCEB's efforts since inception, the evaluation focused on market development activities since the program changed direction to emphasize local manufacture of the ICS rather than imported ICS. In addition to highlighting the findings from key informant interviews with stakeholders along the ICS supply chain to assess the development of the market, the evaluators interviewed five manufacturers, 21 suppliers and 134 end users about the overall program efforts. Major findings are presented below by each stakeholder group and for the market development activities as a whole.

Findings – CCEB support to market development

The following are the key findings with respect to CCEB's supply chain development activities:

- The decision to shift to support local manufacturing of the ICS appears to have been successful based on the number of ICS produced since CCEB began supporting the local manufacturers.
- The decision to help develop testing protocols and support the local manufacturers to produce well-rated ICS products was commendable as it helped catalyze the introduction of the locally manufactured ICS.
- There is not a comprehensive information system across the supply chain to adequately assess the development of the market. Currently, CCEB tracks only one KPI to assess market development, sales by the local manufacturers. This provides limited information on a critical part of the supply chain but does not adequately indicate how the overall market is developing.
- There were some early issues reported related to product quality and design issues that resulted in some stoves being replaced at no cost and the introduction by some manufacturers of warranties. The end user survey also highlighted some of these issues.
- The CCEB intends to conduct an end user survey in the near future.
- ICS end users can potentially be strong advocates for ICS use and have a positive role in creating awareness among other end users.

Findings – ICS Manufacturers

The major findings from the KIIs with the manufacturers were:

- All five manufactures remain committed to producing ICS for the local market.
- Sales by manufacturer range from 400 (Ecostories) to over 10,000 (Luxor Global/Life Engineering).
- The overwhelming sales channel is through distributors, Only 152 have been sold directly to end users.
- The manufacturers do not collect or maintain a database of ICS end users.

- There is limited interaction between the end users and the manufacturers, even though end users can provide significant feedback on design enhancements and product quality.
- Given the projected market size (estimated at about $450 million), there are opportunities for the CCEB-supported manufacturers to scale up production.
- The five manufacturers said they have only limited ability to prepare a bankable business plan to submit and secure financing for any future expansion.

Findings – ICS Suppliers and Distributors

The evaluation team limited its engagement to interacting with 21 suppliers and vendors to obtain information on sales and ICS end user contact details. The following are the findings:

- Suppliers/distributors indicate they do not maintain a comprehensive sales/customer database with contact information, even for customers with warranties.
- At the time of the evaluation, the suppliers/vendors had sold approximately 71 percent of the ICS purchased.

Findings – ICS End Users [26]

The following are the principal findings of the end-user survey:

- The survey provided informative information but has limitations due to the following:
    - The pool of ICS users surveyed may not be representative, as participants were selected based on having contact information (cell phone number) obtained from a limited number of distributors (21).
    - The time for the survey was compressed in part due to local elections.
    - The coverage was limited to three main geographic regions.
    - The participants were mainly from low-middle income communities.
- The majority of persons interviewed were female (69 percent).
- 94 percent reported benefits from using the ICS including energy and cost savings, labor and time savings, improved cooking, health, and less pollution.
- A similar number have shared their experiences with family and community members.

[26] Annex J is the final report of the ICS end user survey undertaken by ACME subcontractor DPC. It provides comprehensive information on ICS end user experiences.

- About 90 percent said they had no problems when purchasing the ICS. The following issues were cited by the 10% who stated there were problems: no installment plan, facility for purchase, no subsidy, scarcity of ICS in market, quality of construction, and high cost.
    - While a limited number of people indicated ICS were not always available in the market, this situation may not be representative, as distributors appear to have about 30 percent of sales in stock currently.
- Issues highlighted included the design (notably the issue of refueling) and construction quality, including the fan shutting off suddenly.
- ICS end users indicated wood pellets, one of the users preferred fuels, were not always readily available in the market. This resulted in the end user having to spend time preparing fuel wood to a specific size for use in the ICS due to the design of the fuel feed.

5.12. Conclusions – Overall

After analyzing and assessing the collected information, the mid-term evaluation team can conclude the program has consistently delivered quality outputs. However, the extent of overall progress to meet its overall goals is hindered by the relative inability of BERC to carry out its mandated functions as the national regulator. The project's outcomes require a more strategic focus if there is to be scalability and sustainability.

It should be noted that the BERC issue is not a new or recent phenomena. Since its creation in 2003, BERC has struggled to provide the anticipated regulatory authority as mandated by law, which has had a detrimental effect on the enabling environment for clean energy. While CCEB support has contributed to BERC's growth, systemic issues remain, notably in BERC's ability to attract, recruit and retain staff with appropriate skill sets. CCEB is facing similar challenges to those experienced by other donor initiatives that supported BERC.

A flawed enabling environment is a threat to the program achieving its objective and ultimately limits the country's overall ability to respond to climate change. The adoption and utility of demand side management (Task 4) activities are the most impacted and the program has appropriately limited Task 4 activities recently. The least impacted are the energy planning (Task 2) and the development of the ICS market development stream (Task 5). The industrial energy efficiency work is impacted. But the program's work to facilitate partnerships with the financial community, in establishing standardized audit protocols and an internationally-recognized certification process for energy efficiency professionals, and the use of grants for energy efficient technologies has meant the program has demonstrated that energy efficiency can benefit industry under the current enabling environment.

Work is still necessary to ensure scalability and sustainability post-CCEB. While CCEB activities align with national policy for clean energy (energy efficiency and ICS market development), they need to be better integrated. For example, in Task 3, sufficient capacity to develop the critical mass of audit professionals will not be created as a result of the project and although the certification process introduced through CCEB is internationally recognized, it is not clear that SREDA will leverage the processes and protocols introduced by CCEB when determining the respective standards. Similarly, the project's grant program has shown that energy savings are achieved when appropriate technologies are deployed, but funding through this program is limited.

The financial community recognizes that energy efficiency represents an opportunity for them to expand their lending portfolio. However, feedback from FGDs and several KIIs indicate that CCEB is not successfully addressing one of the main constraints highlighted—awareness of the benefits energy efficiency practices and technologies by industry at large. If efforts are not made to improve the limited awareness, then wide-scale adoption of energy efficiency will occur over an extended period. CCEB can remedy this relatively easily by facilitating key strategic alliances between SREDA, the financial community, energy-

efficiency service providers and equipment vendors, and industry at large and use industry trade association networks to accelerate awareness creation and facilitate partnerships between industry and investors.

Implementing the above requires the program to operate more strategically and should move the program toward outcomes rather than outputs. This should enhance the likelihood of CCEB achieving its strategic objective—strengthened capacity to reduce emissions—and in doing this will increase the program's contribution to USAID/Bangladesh's DO4. These adjustments are relatively minor and can be done without modification of the existing contract.

6. RECOMMENDATIONS

6.1. Overall Recommendations

Recommendation 1: Develop a Stakeholder-driven Strategic Plan for Sustainability CCEB has laid the foundation for leaving a positive legacy. Given its accomplishments to date, the project can evolve and begin to prepare for the sustainability of certain programmatic activities. The project has also established strong working relationships that can be leveraged. To this end, the project should look to work with key counterparts and stakeholders and assist them in developing a stakeholder-driven strategic plan focused on sustainability and scalability.

Recommendation 2: Emphasize outcomes over outputs to achieve development objectives Although the overall DO is yet to be achieved; CCEB is on track to deliver a meaningful contribution. In its initial stages, CCEB has delivered some quality outputs. Notable examples include the models delivered under Task 2, the certification training for energy auditors and energy audits conducted under Task 3, and the development of local manufacturing capacity under Task 5. With these output accomplishments in place, the program can reorient itself toward development outcomes in the remainder of the life of the program by focusing on sustainability. For example, a national certification standard for energy efficiency auditors, developed by SREDA with CCEB assistance (based on the Association of Energy Engineers (AEE) certification methodology, but adapted to Bangladesh) can help develop a national critical mass of auditors. Similarly, a national energy audit protocol following that currently used by CCEB-trained subcontractors in carrying out investment grade audits will facilitate achievement of the development objective.

Recommendation 3: USAID/Bangladesh should engage with GOB on the future development of the BERC: Although CCEB's activities in Task 1 faced initial challenges; the program has delivered some very sound work that BERC appreciates. BERC, however, still has systemic problems that the program cannot resolve including autonomy and the ability to recruit permanent full-time staffing. A fully functioning BERC that performs its mandated regulatory functions in an effective manner will ultimately be a major driver toward achieving the overall DO, and will help establish a sustainable clean energy market and facilitate the implementation of the 2013 NEEAP and the CAP. Given BERC's critical role in the energy sector, it is recommended that USAID/Bangladesh engage in a dialogue with GOB to understand if the GOB can establish a time-bound commitment to a fully functional regulator.

Recommendation 4: Revise the CCEB M&E Plan to help improve programmatic effectiveness The KPIs relating to CCEB work in Tasks 1, 2, and 5 in the CCEB M&E Plan can be enhanced and provide better information on the outputs and outcomes of CCEB activities. For example, KPI #9, number of cook stoves installed (Task 5), implies information should be collected along the delivery channel. However, currently data collection focuses on the number of sales by ICS manufacturers with no information collected on sales by distributors or on end users. A more robust reporting mechanism could provide a better overview of the development of the market delivery channel. The KPI used for BERC, progress against the maturity model, does not fully reflect how CCEB assistance is enabling BERC to function as an independent, autonomous regulator consistent with international best practices. KPIs that benchmark BERC's performance relative to its legal mandate would be a better reflection on how effective CCEB assistance is helping with the organization's development, as well as the development of an enabling governance framework for sector regulation, a prerequisite for implementing clean energy and energy efficiency at the national level.

Recommendation 5: Leverage outputs strategically to facilitate scalability and sustainability CCEB's activities in Task 3 (certification of 88 energy auditors and energy audits of some 100 industrial companies) are perceived as distinct CCEB activities. However, they are consistent with the 2013 NEEAP

that anticipates a national certification process for energy efficiency professionals and standard protocols for conducting industrial energy audits. CCEB should work closely with SREDA and use the CCEB outputs as the basis for future national standards, thereby facilitating scalability and sustainability and catalyzing the development of an energy efficiency service sector, estimated to be worth $3 to 4 billion.

Recommendation 6: Improve and expand stakeholder partnerships There are several existing mechanisms such as the CAP for ICS and the NEEAP that can be leveraged to enhance the program's potential outcomes. With respect to energy efficiency, CCEB should improve the coordination of its activities with SREDA, GOB in leading the implementation of the action plan to accelerate the adoption of national standards for certification of auditors and energy audit protocols. CCEB should also improve its coordination with national industry and trade associations and the financial community to ensure that these key stakeholders have greater awareness of the benefits of energy efficiency.

The relationships within the CAP for ICS and those created with the financial community can be leveraged to ensure sufficient capacity is developed along the ICS supply chain. For example, assisting the manufacturers, as appropriate, to access financing to expand their business operations can help create sustainable local manufacturing capability that can compete with (potentially) imported cook stoves. The CCEB should also work with policy-makers to revisit the duties imposed on imported cook stoves, given the substantive number of ICS needed to meet the ambitious targets of the CAP.

Recommendation 7: Make capacity building performance-based and strengthen M&E of training activities Capacity building should be strategic with clearly defined goals. It should be tied to performance objectives for the individuals participating. In addition, the effectiveness of capacity building should be assessed to ensure knowledge transfer.

6.2. Task 1 Recommendations

Specific recommendations relating to Task 1 are presented and discussed below. The first recommendation has been discussed in the previous section above and will not be discussed again here.

Sustainability

Recommendation 8: Task 1: USAID/Bangladesh should engage in dialogue with the GOB to establish a "time-bound" commitment to a fully functioning regulator Although CCEB support has contributed to BERC's growth, long-standing, systemic issues remain. These issues include a flawed organizational structure, lack of essential systems and processes such as an "e-docketing" system, and an inability to attract, recruit, and retain staff with appropriate skill sets. Unless the systemic issues are addressed, the impact of the support provided by CCEB, will be marginalized, as has been the situation with prior donor initiatives in supporting BERC. Resolving the systemic issues requires appropriate GOB commitment and actions and it is recommended USAID/Bangladesh engage with GOB to understand the expectations and timeline for BERC becoming a fully functioning regulator as envisioned in its legal mandate.

Programmatic Improvement

Recommendation 9: Task 1: Emphasize regulator function rather than short-term response CCEB's support to BERC during the remaining life of the program should focus on enhancing the organization's capacity to function in accordance with international best practices and minimize responding to ad-hoc assistance requests aimed at resolving short-term problems.

Recommendation 10: Task 1: Develop appropriate KPIs for BERC activities The current KPI (progress relative to improvement against maturity model KPIs) does not reflect how the organization is performing relative to its legally-mandated functions. As such, it may not be an ideal measure of how the effective CCEB support has been or how well BERC is progressing toward delivering on its mandated responsibilities.

6.3. Task 2 Recommendations

Specific recommendations relating to Task 2 are presented and discussed below.

Recommendation 11: CCEB models should be widely disseminated The two models developed by CCEB may well have utility throughout the energy sector and line ministries. Should this be the case, CCEB may wish to consider facilitating distribution to other organizations and providing training in their use.

Recommendation 12: Provide additional capacity building to ensure utility of the models Additional capacity building of Power Cell and BPDB is needed to facilitate use of the models and should include hands-on computer modeling training.

Recommendation 13: Provide a user manual for the models Findings show that trainees did not receive a user manual for either of the models. Without a reference, the long-term utility of the models may be diminished.

6.4. Task 3 Recommendations

Specific recommendations relating to Task 3 are presented and discussed below.

Recommendation 14: Establish a formal mechanism for matchmaking between industry and the financial community to promote implementation of clean energy and energy efficiency measures: Findings indicate there is a nascent market for energy efficiency. In addition, there is evidence that the financial community views the energy efficiency market as an opportunity to expand its lending portfolios. CCEB should work with industry (through trade associations and the chamber of commerce) and the financial community to develop a formal mechanism that can accelerate matchmaking between the two sectors and stimulate and expand the fledging market.

Recommendation 15: CCEB should support SREDA in developing national standards for certification of energy efficiency professionals and audit protocols Findings indicate there is acceptance by industry and the financial community of the audit protocols and the work of certified local energy efficiency professionals. This can be leveraged by working with SREDA, the GOB entity charged with establishing national standards for energy efficiency professionals and auditing protocols. CCEB can support SREDA and help accelerate the development of appropriate national standards.

Recommendation 16: Assist key counterparts and stakeholders to develop financing mechanisms Findings indicate there is a willingness to pay for energy efficiency services as delivered by the CCEB subcontractors and that the financial community views the energy efficiency market as an opportunity to expand its lending portfolios. CCEB can assist these key stakeholders, as well as counterparts such as SREDA, to establish new financing mechanisms for energy efficiency and clean energy. These mechanisms should seek to simplify the application process and reduce time for approval.

Recommendation 17: Assess feasibility of transitioning the CCEB grant program to a sustainable financing mechanism CCEB should consider

the feasibility of transitioning the existing grant program to a sustainable financing mechanism.

Recommendation 18: Transition subcontractor activities to fee-for-service to promote sustainability Findings indicate there is a willingness to pay for energy efficiency services as delivered by the CCEB subcontractors. Given that there is a nascent market for these services, CCEB should examine whether it is appropriate to begin phasing-out its current support to ensure they are not subsidizing services that private sector companies are willing to buy. If appropriate, the project should develop a transition strategy in conjunction with key counterparts and stakeholders to facilitate market expansion.

Recommendation 19: Emphasize market development rather than financing subcontractor energy audit services Given willingness to pay, CCEB should focus on market development rather than just funding a limited number of audits.

Recommendation 20: Facilitate strategic alliances between key counterparts and stakeholders The CCEB-supported activities have fostered acceptance by industry and the financial community and are recognized by key government counterparts. In this next phase of the program, the early successes can be leveraged and used to help engender greater EE awareness through the industrial sector to catalyze implementation in accordance with the goals of the 2013 NEEAP. CCEB can facilitate the development of formal strategic alliances between these key actors as a step to fostering local ownership.

6.5. Task 4 Recommendations

There is one specific recommendation relating to Task 4.

Recommendation 21: Reprogram resources to other tasks Given the findings that indicate the critical role of BERC in facilitating DSM, all activities relating to Task 4 should be put on hold and resources redistributed to other tasks until the GOB demonstrates its commitment to resolving the systemic challenges at BERC.

6.6. Task 5 Recommendations

Specific recommendations relating to Task 5 are presented in the following paragraphs.

Recommendation 22: Establish a formal mechanism for match-making between ICS manufacturers and the financial community to accelerate production and product improvement Findings indicate that the local ICS manufacturers have established credibility and acceptance in the marketplace and the financial is are looking for opportunities to invest in clean energy. The production capacity of the CCEB-supported ICS manufacturers can potentially be expanded given the market potential (estimated at $450 million). As such, CCEB should investigate the feasibility of establishing a formal mechanism to facilitate match-making between the manufacturers and the financial community.

Recommendation 23: Conduct a follow-up survey to determine long term benefits The majority of ICS users had been using the ICS for less than 12 months. A follow-up survey should be completed to determine the long-term benefits and satisfaction with the ICS.

Recommendation 24: Revise the Task 5 M&E reporting to include information on distributor sales: The reporting for the Task 5 component focuses on the manufacturing element of the ICS supply chain only. This provides an incomplete picture of the supply chain and does not provide sufficient, timely feedback to CCEB (and USAID/Bangladesh) on the development of the supply chain. This, in turn, affects program decision-making about where CCEB should be focus its support along the ICS value chain. Expanding the M&E reporting system to include information from ICS distributors with respect to sales can provide valuable information not only for CCEB but also can help inform key stakeholders involved in the CAP for ICS.

Recommendation 25: Use ICS end users as advocates in CCEB promotion activities: Findings from the ICS end users survey indicate that end users discuss their experiences with the ICS not only with direct family members but also with their local community. CCEB should look to use a number of the end users as advocates in their outreach initiatives to facilitate and accelerate village level acceptance of the ICS.

Recommendation 26: ICS use in low-income communities needs to be evaluated The majority of users surveyed were from medium income and medium-low income communities, and did not indicate the purchase of the ICS was a major issue. However, a survey of low-income rural poor communities should be done to determine whether the pricing is appropriate and not a significant barrier to future deployment on a large scale.

Recommendation 27: The design and construction of the ICS needs to be further evaluate A number of users expressed concerns with the ICS designs and construction quality. Requests for improvements included: increased ease of refueling, reduced cooking time, less smoke, and more energy savings. These considerations need further investigation by the respective manufacturers.

Recommendation 28: Increase support toward point of sale to accelerate sales and deployment Findings indicate that there are lags in end user sales relative to distribution from the manufacturers. A review of the sales and marketing should be done to identify improvements. By increasing support to sellers, CEB can accelerate sales and use of the ICS.

Recommendation 29: Try to ensure ICS supply and availability is closely aligned with demand The ICS manufacturers should work more closely with distributors and vendors to ensure production and demand along the supply chain is well managed, mitigating either over- or undersupply.

7. LESSONS LEARNED

Evidence-based lessons learned gleaned from the document review, KIIs, FGDs and the ICS survey are presented below.

7.1. Effectiveness:

Lesson Learned 1: Use a strategic management approach rather than activity-focus to achieve development DO4 The implementation approach to CCEB has emphasized activity over strategy. CCEB may have benefitted from a strategic situational review as an input into their annual work plans.

7.2. Sustainability:

Lesson Learned 2: Counterpart ownership is critical for success and sustainability The main tasks being implemented by CCEB are consistent with major policy initiatives, notably CCEB Task 3 and the 2013 NEEAP and Task 5 and the CAP for ICS. Given that CCEB tasks have emphasized the private sector, there is a risk that the project's achievements are not properly leveraged by key government counterparts. There is limited evidence that GOB policymakers feel ownership of CCEB activities. Within the time remaining, it will be imperative for the project to strengthen its relationship with key counterparts to ensure they can leverage the CCEB activities to enhance sustainability.

Lesson Learned 3: Communication with key stakeholders is essential to scalability and sustainability Key sectors of the economy have limited understanding of the benefits of clean and efficient energy. For example, the majority of the focus group discussion participants cited a "lack of awareness and information on energy efficiency technologies and practices and access to financing." CCEB has done a very good job of demonstrating clean and efficient energy's benefits to direct beneficiaries in industry and the financial sector. However, CCEB has not yet utilized the results to promote long-term sustainability and scalability.

7.3. Program Improvement:

Lesson Learned 4: Capacity building should be strategic To facilitate sustainability, CCEB was expected build the capacity of key counterparts, notably within BERC and the GOB entities, to develop evidence-based policies on low emissions development strategies.

However, the outcome of these efforts is somewhat limited. Capacity building at BERC centered on some of BERC's mandated functional responsibilities but success was hindered by BERC's limited human resources. Positions are often filled by seconding staff from GOBGOB entities for limited periods of time. In addition, these personnel do not see a clear career path, as is present in other GOB entities.

SREDA is a key counterpart with respect to long-term scalability and sustainability of several of CCEB's activities (Task 3, 4 and 5). CCEB should ensure it coordinates very closely with SREDA during the remainder of the project. However, SREDA is a young organization and needs to develop its capacity.

Lesson Learned 5: Capacity building should be evaluated for effectiveness While the project's M&E reporting includes a capacity building indicator, there is no evidence that CCEB is evaluating the long-term effectiveness of capacity building.

Annex A: Gantt Chart of Activities

Activity*	Resources	Activity Location	Week											
			1	2	3	4	5	6	7	8	9	10	11	12
			10/31-11/6	11/7-11/13	11/14-11/20	11/21-11/27	11/28-12/4	12/5-12/11	12/12-12/18	12/19-12/25	12/26-1/1	1/2-1/7	1/9-1/15	1/16-1/22
Inception														
Work plan preparation, document review and situational analysis														
Conference call with ACME COP and team leader	John Dalton (ACME COP) ; Richard P. Smith (TL)	Richard P. Smith (USA); John Dalton (Bangladesh)												
Travel to Bangladesh	Richard P. Smith (TL)	Travel												
Conduct document review	Richard P. Smith (TL); Sattya Bhattacharjee (EE)	Bangladesh												
Develop Evaluation Design Matrix	Richard P. Smith (TL)	Bangladesh												
Develop Evaluation schedule	Richard P. Smith (TL); Sattya Bhattacharjee (EE)	Bangladesh												
Develop survey instruments based on SOW and evaluation questions	Richard P. Smith (TL); Sattya Bhattacharjee (EE)	Bangladesh												
Develop **draft work plan**	Richard P. Smith (TL); Sattya Bhattacharjee (EE)	Bangladesh												
Submit **draft work plan**	Richard P. Smith (TL);	Bangladesh			11/18	11/24		12/5						
Schedule key informant interviews	Tasmin Akanada Ethu (PA)	Bangladesh												

Activity*	Resources	Activity Location	Week											
			1	2	3	4	5	6	7	8	9	10	11	12
			10/31 -11/6	11/7- 11/13	11/14 - 11/20	11/21 - 11/27	11/28- 12/4	12/ 5- 12/ 11	12/12 - 12/18	12/19 - 12/25	12/26 -1/1	1/2 - 1/7	1/9- 1/15	1/16- 1/22
Field Work														
USAID briefings, key informant interviews, data synthesis, analysis, and follow-up														
CCEB evaluation team planning meeting, Dhaka	John Dalton, (ACME COP); Richard P. Smith (TL); Sattya Bhattacharjee (local EE)	Bangladesh		11/10										
In-brief meeting with USAID/Bangladesh to **review draft work plan and finalize schedule of field activities**)	John Dalton (ACME COP); Richard P. Smith (TL); Sattya Bhattacharjee (EE)	Bangladesh			**11/17**									
2nd In-brief meeting with USAID/Bangladesh	John Dalton (ACME COP); Richard P. Smith (TL); Sattya Bhattacharjee (EE)	Bangladesh				11/22								
Finalize work plan	Richard P. Smith (TL); Sattya Bhattacharjee (EE)	Bangladesh					12/4							
Submit **final work plan**	Richard P. Smith (TL); Sattya Bhattacharjee (EE)	Bangladesh						12/ 5						
Conduct key informant interviews, focus group discussions,	Richard P. Smith (TL); Sattya Bhattacharjee (EE); Naba Krishna Muni, (CBES); Tasmin Akanada Ethu, (PA)	Bangladesh				KIIs will be conducted on an intermittent basis								
Complete **Preliminary Observations presentation**	Richard P. Smith (TL); Sattya Bhattacharjee (EE)	Bangladesh					**12/3**							

Activity*	Resources	Activity Location	Week											
			1	2	3	4	5	6	7	8	9	10	11	12
			10/31-11/6	11/7-11/13	11/14-11/20	11/21-11/27	11/28-12/4	12/5-12/11	12/12-12/18	12/19-12/25	12/26-1/1	1/2-1/7	1/9-1/15	1/16-1/22
Field Work														
USAID briefings, key informant interviews, data synthesis, analysis, and follow-up														
Meet with USAID/Bangladesh to present Summary of preliminary observations	Richard P. Smith (CCEB evaluation TL); Engr. Sattya Bhattacharjee (National Energy Expert); John Dalton (ACME COP)	Bangladesh					**12/3**							
Depart from Bangladesh (December 4)	Richard P. Smith (CCEB evaluation TL);						12/4							
Conduct surveys of direct beneficiaries	ACME consultants, DPC Group	Bangladesh												
Return to Bangladesh (December 23)	Richard P. Smith (TL);									12/23				
Data Synthesis	Richard P. Smith (TL); Sattya Bhattacharjee (local EE)	Bangladesh												
Presentation of Findings and Debriefing to USAID/Bangladesh senior management [27]	Richard P. Smith (TL); Sattya Bhattacharjee (local EE)	Bangladesh										**1/7**		
Depart from Bangladesh (January 8, 2016)	Richard P. Smith (TL);											**1/8**		

[27] To be confirmed by USAID/Bangladesh

Activity*	Resources	Activity Location	Week											
			1	2	3	4	5	6	7	8	9	10	11	12
			10/31-11/6	11/7-11/13	11/14-11/20	11/21-11/27	11/28-12/4	12/5-12/11	12/12-12/18	12/19-12/25	12/26-1/1	1/2-1/7	1/9-1/15	1/16-1/22
Produce Evaluation Report														
Conduct follow-up interviews, as needed	Richard P. Smith (TL); Sattya Bhattacharjee (local EE)	Bangladesh												
Develop proposed **outline of Evaluation Report**	Richard P. Smith (TL); Sattya Bhattacharjee (local EE)	Bangladesh									**1/2**			
Draft Evaluation Report. due on January 5, 2016	Richard P. Smith (TL); Sattya Bhattacharjee (local EE)	USA; Bangladesh										**2/8**		
QA/QC draft evaluation report	Richard P. Smith (TL); Sattya Bhattacharjee (local EE)	Bangladesh										**2/9**		
Submit **Draft Evaluation Report**	Richard P. Smith (TL); Sattya Bhattacharjee (local EE) John Dalton (ACME COP)	Bangladesh										**2/10**		
Incorporate comments and feedback from USAID/Bangladesh	Richard P. Smith (TL); Sattya Bhattacharjee (local EE)	USA; Bangladesh												**2/21**
QA/QC final evaluation report	John Dalton (ACME COP)	Bangladesh												**2/22**
Submit **Final Evaluation Report**	John Dalton (ACME COP) and IBTCI HQ	Bangladesh												**2/23**

Activity*	Resources	Activity Location	Week											
			1	2	3	4	5	6	7	8	9	10	11	12
			10/31-11/6	11/7-11/13	11/14-11/20	11/21-11/27	11/28-12/4	12/5-12/11	12/12-12/18	12/19-12/25	12/26-1/1	1/2-1/7	1/9-1/15	1/16-1/22
Program Management														
USAID briefings, progress reporting														
Submit weekly progress report to USAID/Bangladesh	Richard P. Smith (TL);	Bangladesh												
Meet with USAID/Bangladesh to review draft work plan and finalize schedule of field activities	Richard P. Smith (TL); Sattya Bhattacharjee (local EE)	Bangladesh			**11/15**									
Debriefing presentation to USAID/Bangladesh senior management	Richard P. Smith (TL); Sattya Bhattacharjee (local EE) John Dalton (ACME COP)	Bangladesh										**1/6**		
Debriefing presentation to GOB officials (if requested/required by USAID/Bangladesh)	Richard P. Smith (TL); Sattya Bhattacharjee (local EE) John Dalton (ACME COP)	Bangladesh										**1/6**		
*Deliverables are in bold. Timing assumes 5-day work in the in US and 6-day workweek in Bangladesh.														

Abbreviations:

TL	Team Leader
EE	Energy Expert
COP	Chief of Party

Annex B: Evaluation Design Matrix

Evaluation Question	Proposed Data Collection Methodology	Proposed Questions for Data Collection Instrument	Component 1		Component 2		
			Respondent Group – Task 1	Respondent Group – Task 2	Respondent Group – Task 3	Respondent Group – Task 4	Respondent Group – Task 5
1. To what extent is the CCEB project on track, in terms of progress and outcomes, to meet its overall goals for the five tasks under the components A and B?	SDR; KII, FGD and PRA survey (Task 5 only)	1.1 How effective has the program's technical assistance approach been in institutional strengthening, capacity building, and catalyzing clean energy and increasing access to finance? 1.2 How effective has the CCEB program been in achieving results considering the resources expended? 1.3 How has participant training under CCEB built capacity of partner institutions, including capacity of women members, to enhance market development? 1.4 What is the likelihood of achieving the expected results under each task?	USAID; BERC; IP	USAID; IP BPDB	USAID; IP; Subcontractors; Direct Beneficiaries; Financial Community	USAID; IP; BERC; Utilities	USAID; IP; SREDA; donors;; Direct Beneficiaries: Manufacturers, vendors; end users; IDCOL
2. What are the opportunities to enhance programmatic approach and effectiveness plausible under the stipulation of the contract?	DR; KII, FGD and PRA survey (Task 5 only)	2.1 What constraints are not currently being addressed by CCEB? 2.2 What can CCEB do to improve its efforts to catalyze clean energy considering the progress to date and remaining timeline?	BERC; IP; USAID	USAID; IP BPDB	USAID; IP; Subcontractors; Direct Beneficiaries; Financial Community	USAID; IP; BERC; Utilities	IP; SREDA; Direct Beneficiaries: Manufacturers and vendors; end users; IDCOL
3. What have been the major constraints and opportunities with	DR; KII; FGD and PRA survey (Task 5 only)	3.1 What constraints are being addressed by CCEB?	USAID; BERC; IP	USAID; IP BPDB	USAID; IP; Subcontractors; Direct Beneficiaries;	USAID; IP; BERC; Utilities	IP; SREDA; Direct Beneficiaries: Manufacturers

Evaluation Question	Proposed Data Collection Methodology	Proposed Questions for Data Collection Instrument	Component 1		Component 2		
			Respondent Group – Task 1	Respondent Group – Task 2	Respondent Group – Task 3	Respondent Group – Task 4	Respondent Group – Task 5
respect to sustainability of the interventions? What measures should be taken to enhance sustainability?		3.2 How sustainable and scalable are the activities being undertaken by CCEB? 3.3 How can CCEB enhance the likelihood of sustainability post-USAID assistance? 3.4 Are you aware of a sustainability plan post USAID assistance? 3.5 What increase in business activity have subs experienced? 3.6 What sustainability plan do the subs have?			Financial Community		and vendors; end users; IDCOL
4. To date, how effectively has gender been integrated or incorporated in the interventions? What have been the challenges and opportunities, if any?	DR; KII; FGD and PRA survey (Task 5 only)	4.1 To what extent has CCEB promoted and integrated gender into its activities? 4.2 Are any CCEB activities specifically targeted toward gender integration? 4.3 What challenges has CCEB encountered in integrating gender into its activities? 4.4 Are there opportunities that CCEB is using to facilitate and promote gender integration?	USAID; BERC IP	USAID; IP BPDB	USAID; IP; Subcontractors; Direct Beneficiaries; Financial Community	USAID; IP; BERC; Utilities	USAID; IP; SREDA; Direct Beneficiaries: Manufacturers and vendors; NGOs, end users; IDCOL

Annex C: Data Collection Schedule and Data Analysis Methodologies

CCEB Mid-Term Evaluation Field Work Schedule				
Date	**Activity**	**Time Frame**	**Location**	**Activity**
4-Nov	Onboarding		USA	DR
5-Nov	Team call		USA/Bangladesh	ETGA
6-Nov	Off day			
7-Nov	Travel to Bangladesh	All Day		
8-Nov	Travel to Bangladesh	All Day		
9-Nov	Document review	All Day	ACME office	DR
10-Nov	Document review	All Day	ACME office	DR
10-Nov	Team Planning meeting	All Day	ACME office	ETGA
11-Nov	Work plan development	All Day	ACME office	DR
12-Nov	Work plan development	All Day	ACME office	DR
13-Nov	Off day			
14-Nov	Work plan development	All Day	ACME office	ETGA
15-Nov	Work plan development	All Day	ACME office	ETGA
16-Nov	Team Planning meeting	AM	ACME office	ETGA
16-Nov	Deloitte CCEB meeting	PM	CCEB office	KII
17-Nov	USAID/Bangladesh in-brief	AM	USAID Mission	Briefing
17-Nov	Work plan finalization	PM	ACME office	ETGA
18-Nov	Deloitte follow-up meeting	AM	CCEB office	KII
18-Nov	Sodev (Task 3 subcontractor)	PM	Dhaka	KII
19-Nov	Document review/Field work planning	AM	ACME office	DR
19-Nov	DPC meeting on ICS survey	PM	ACME office	ETGA
20-Nov	Off day			
21-Nov	Wellmake (Task 3 subcontractor)	AM	Dhaka 1000	KII
21-Nov	BD Technology (Task 3 subcontractor)	PM	Dhaka 1000	KII
21 Nov	DPC Group	PM	Dhaka	SOW for ICS survey
22-Nov	USAID/Bangladesh in-brief 2	AM	USAID Mission	Briefing
22-Nov	ICS survey SOW	PM	ACME	ETGA
23-Nov	ICS survey SOW update	AM	Dhaka	ETGA
23-Nov	DPC Group	PM	Dhaka	ETGA
24-Nov	Deloitte follow-up meeting - ICS	AM	CCEB office	KII
24-Nov	Finalize work plan	PM	Dhaka	ETGA
25-Nov	Preparation for Focus group meetings Task 3	All day	Dhaka	FGD
25-Nov	Schedule Focus Group Discussions	PM	Dhaka	FGD
25 - Nov	Finalize ICS field survey with DPC Group	PM	Dhaka	ETGA
26-Nov	Revision of ICS survey instruments	AM	Dhaka	KIIs
26-Nov	Meeting with Deloitte	PM	Dhaka	KIIs
27-Nov	Off day			

CCEB Mid-Term Evaluation Field Work Schedule				
Date	**Activity**	**Time Frame**	**Location**	**Activity**
28 Nov	DPC meeting re: ICS survey	AM	Dhaka	ETGA
28 Nov	Finalize schedule for fieldwork	All day	Dhaka	ETGA
29-Nov	SREDA	AM	Dhaka	FGD
29-Nov	BDPC Task 2	PM	Dhaka	KII
29-Nov	Power Cell (Task 2)	PM	Dhaka	FGD
30-Nov	Task 3 Steel Industries	AM	Dhaka	FGD
30-Nov	BERC Task 1, Task 2 and Task 4	AM	Dhaka	KII
30-Nov	Task 3 Financial Community	PM	Dhaka	FGD
1-Dec	Task 3 Industry group 1	AM	Dhaka	FGD
1-Dec	Task 3 Industry group 1	PM	Dhaka	FGD
2-Dec	Observation of DPC training and briefing on CCEB/ICS for ICS surveyors and enumerators	AM	Dhaka	Briefing
2-Dec	Preparation for ICS surveyor briefing and preliminary observations briefing	PM	Dhaka	ETGA
3-Dec	ACME briefing on ACME quality standards for ICS survey enumerators and surveyors	AM	ACME office	ETGA
3-Dec	USAID/Bangladesh progress briefing	PM	USAID Mission	Briefing
5-Dec	Off day			
Dec 6-10	**Task 5 ICS Survey - Manufacturers**			
Dec 13 - 17	**Task 5 ICS Survey - Vendors**			
Dec 20 - 24	**Task 5 ICS Survey - End users and NGO**			
Dec 6 – 31	Additional KIIs with key stakeholders, IP and USAID/Bangladesh			
Dec 26 - 31	**SDR and Data Synthesis**			
Jan 2-4	**Draft Evaluation report**			
5-Jan	Presentation for debriefing	All Day	ACME office	ETGA
6-Jan	USAID/Bangladesh debriefing on Evaluation report	AM	USAID Mission	Briefing
6-Jan	GOB debriefing on Evaluation report	PM	TBD	Briefing

Legend

Survey	
Off day	

Abbreviations

Key Informant Interviews	KII
Focus Group Discussion	FGD
Document review	DR
Secondary data review	SDR
Evaluation team group activity	ETGA
Structured Group Discussion	SGD
To Be Determined	TBD

Data Analysis Methodologies

The data collected on the CCEB included information from KIIS and FGDs with beneficiaries (tasks 1, 2, 3, 4, and 5), key stakeholders (tasks 3 and 4) and key actors (CCEB program task leads for Tasks 1 through 5, the CCEB COP, USAID/Bangladesh COR and Task 3 subcontractors). The names of the responders from each task are included in Annex B Evaluation Design Matrix. The information included both qualitative and quantitative data.

During the KIIs, key informants were asked to provide responses to a series of quantitative questions using a Likert-type scale. The number of responses to each question were summed for all respondents to ascertain the total number of responses to each of the individual evaluation questions and then were compiled into charts. The charts are included in the body of the report.

Responses to qualitative questions were also compiled and analyzed. The replies were analyzed by their relevance to each respective task to identify key findings, recommendations and any lesson learned. Any synergies across tasks were also identified together with any associated recommendations etc. The outputs are presented in the body of the report both by task and for the CCEB as a whole, where applicable.

Annex D: Key Informant Interview Questions

KEY INFORMANT INTERVIEW

Code Number:
Name:
Title:
Organization Name and Location:

Preamble: The Accelerating Capacity for Monitoring and Evaluation program (ACME) is undertaking a mid-term evaluation of the Catalyzing Clean Energy in Bangladesh (CCEB) program being implemented by Deloitte LLP. The evaluation is being carried out at the request of the United States Agency for International Development Mission to Bangladesh The objective of the evaluation is to determine the extent to which the CCEB program is on track (including process and outcomes) to meet its overall goals across the two major CCEB components. The two components are: Component 1: Improve Enabling Environment for Low Emissions Development and Component 2: Increase Energy Efficiency and Conservation.

As part of the evaluation, I, _____ want to ask you some questions about the CCEB. The questions will be on various aspects of the CCEB. To ensure we capture your responses appropriately, my colleague, _____ will be taking notes, and with your permission we would also like to record our discussion so we can accurately capture your responses. Please note, your responses will be treated confidentially and we will not be using your name, official designation or title in our evaluation report.

KEY INFORMANT INTERVIEW

Please categorize you interaction with CCEB	Counterpart	Contractor or vendor	Beneficiary	Donor
Please describe your CCEB interaction (please circle all those that apply)	Policy and regulatory framework	Capacity Building	Project implementation	
Does the capacity exist in the responsible organizations to implement clean energy in the country?	Yes	No	Not sure	
Are you or your organization better able to carry out your responsibilities as a result of CCEB?	Yes	No	Not sure	

Question	**Scale**				
	Not at all	**Not very much**	**Some-what**	**Very Much**	**Extremely**
How aware are you of the Catalyzing Clean Energy in Bangladesh program (CCEB)?					
How aware are you of the CCEB goals and objectives?					
What is your organization's involvement with respect to CCEB program focus areas?					
What was your organization's expectation for the CCEB program?					
What do you see as the key accomplishments of CCEB?					
Given your involvement with CCEB, what do you consider as the key challenges to this program?					
What are the strengths of the program?					
How effectively has the CCEB coordinated with other stakeholders in its implementation?					
What are the key lessons learned from your interactions with CCEB?					
In your opinion, what are the key constraints to promoting clean energy development in the country?					
	Scale				
	Not at all	**Not very much**	**Some-what**	**Very Much**	**Extremely**
How much does CCEB help in addressing the constraints?					
How much impact has CCEB had on the policy and regulatory framework in the country?					
How much impact has CCEB had on building human capacity in clean energy?					
How much impact has CCEB had on increasing clean energy utilization?					
How sustainable are the outcomes of CCEB?					
How much interaction has your organization had with the CCEB?					
Do you use anything you have learned from CCEB as part of carrying out your specific duties?					

MID-TERM EVALUATION QUESTION 1

Question: 1. To what extent is the CCEB project is on track, in terms of progress and outcomes, to meet its overall goals (for the five tasks under the components 1 and 2)?

Question	Scale				
	Not at all	Not very much	Some-what	Very Much	Extremely
1.1 (a) How effective has the program's technical assistance approach been in institutional strengthening?					
Please elaborate					
1.1 (b) How effective has the program's technical assistance approach been in building capacity?					
Please elaborate					
1.1 (c) How effective has the program's technical assistance approach been in catalyzing clean energy development?					
Please elaborate					

1.1 (d) How effective has the program's technical assistance approach been in increasing access to financing?					
Please elaborate					
1.2. How effective has the CCEB program been in achieving outputs or results?					
Question	**Scale**				
	Not at all	**Not very much**	**Some-what**	**Very Much**	**Extremely**
1.3. To what extent has participant training under CCEB been able to build capacity of partner institutions, including capacity of women members, to enhance market development?					
Please elaborate					
1.4 Given the progress to date, to what extent is CCEB on track to achieve the expected results?					
Please elaborate					

MID-TERM EVALUATION QUESTION 2

Question: 2. What are the opportunities to enhance programmatic approach and effectiveness plausible under the stipulation of the contract?

Question	Scale				
	Not at all	Not very much	Some-what	Very Much	Extremely
2.1 Are the constraints to clean energy development you mentioned earlier being addressed by CCEB?					
Please elaborate					
2.1 (a) What constraints are not currently being addressed by CCEB? Please elaborate					
2.2 What can CCEB do in the remaining time period to help remove any constraints and achieve desired results considering the progress to date? Please elaborate					

MID-TERM EVALUATION QUESTION 3

Question: 3. What have been the major constraints and opportunities with respect to sustainability of the interventions? What measures should be taken to enhance sustainability?

Question	Scale				
	Not at all	Not very much	Some-what	Very Much	Extremely
3.1 How sustainable and scalable are the activities being undertaken by CCEB?					
Please elaborate					
Question	**Scale**				
	Not at all	**Not very much**	**Some-what**	**Very Much**	**Extremely**
3.2 Has your involvement in CCEB helped your business activities?					
Please elaborate					
3.3 Are the activities you are undertaking for the CCEB part of your long term business plan and what plan do you have to sustain the activities?					

MID-TERM EVALUATION QUESTION 4

Question: 4. To date, how effectively has gender been integrated or incorporated in the interventions? What have been the challenges and opportunities, if any?

Question	Scale				
	Not at all	Not very much	Some-what	Very Much	Extremely
4.1 To what extent has CCEB promoted and integrated gender into its activities? Please elaborate					
4.2 Are any CCEB activities specifically targeted toward gender integration?					
4.3 What challenges has CCEB encountered in integrating gender into its activities? Please elaborate					
4.4 In your opinion do you see CCEB taking existing opportunities to facilitate and promote gender integration in its activities? Please elaborate					

Annex E: Focus Group Discussion Guides

FOCUS GROUP DISCUSSION GUIDE

Code Number:	
Name: CCEB Evaluation Focus Group Discussions	Participant Group:
Date:	Location:

Welcome: Please let me first thank you for coming today to discuss clean energy and energy efficiency in Bangladesh. My name is Richard P. Smith, and I am joined by Engineer Sattya Bhattacharjee and Ms. Tasim Akanda Ethu. We are from the Accelerating Capacity for Monitoring and Evaluation program (ACME), who has been asked by United States Agency for International Development Mission to Bangladesh (USAID/Bangladesh) to carry out a mid-term evaluation of the Catalyzing Clean Energy in Bangladesh (CCEB) program being implemented by Deloitte LLP. The objective of the evaluation is to determine the extent to which the CCEB program is on track (including process and outcomes) to meet its overall goals.

CCEB Overview: The Catalyzing Clean Energy in Bangladesh (CCEB) program is intended to support energy sector development for energy security, economic growth, and climate change mitigation to Bangladesh and build capacity to design and implement supportive policies and regulations, and increase utilization of clean energy approaches and technologies for energy sector development on a low carbon trajectory.

The CCEB program works across two major Components – Component 1: Improve Enabling Environment for Low Emissions Development and Component 2: Increase Energy Efficiency and Conservation. Under these there are five tasks: improve the regulatory environment for Clean Energy Development, strengthen analytical capacity for energy planning and policy making, promote energy efficiency analysis and adoption, adopt demand-side management programs for utilities and conduct market analysis and development for improved cook stoves.

Ground Rules: We have asked you to participate in this focus group discussion so we can listen to and better understand your thoughts and ideas with respect to clean energy in the country. Please note, there are no right and/or wrong answers – just differences of opinion. I encourage you to share your thoughts and ideas with us even if you do not necessarily agree with what others say. Please also understand we welcome both negative and positive comments – we are here to learn and negative feedback can often help better inform and ultimately lead to better program implementation.

This is one of a number of focus group discussions we are having. You are all here as you have been involved in the activities of CCEB in some way, either as a counterpart, direct beneficiary, or an implementing partner.

My role as moderator is to help guide the discussion and I encourage your active participation. Ms. Ethu will be taking notes and, with your permission, we wish to record our discussion so we can accurately capture your responses. We find we receive very helpful ideas and insights from our group participants. However, we are often unable to write fast enough to capture everything. Please note, we will be using first names only during the discussion and we will not use anyone's complete name in our report. What you say will be treated as highly confidential.

I kindly request you either turn off or mute your cell phones. This will facilitate the discussion for everyone. However, if you need to answer a call I request you excuse yourself and take the call outside of the room.

FOCUS GROUP DISCUSSION – TASK 3

Focus Group Discussion Questions
What are the challenges you face in growing and improving your business?
How do energy issues impact your business?
Are current polices likely to encourage you to adopt clean energy technologies and practices?
Is there sufficient awareness of the benefits of adopting clean energy technologies throughout the country?
Does the country have sufficient human capacity with appropriate training to use clean energy technologies in a sustainable manner?
Can you tell us about any experience with clean energy and energy efficiency outside of your interactions with CCEB?
If you were running the country, and could make one change that would accelerate use of clean energy what would you do?
If you were running the CCEB and could make one change that would accelerate use of clean energy what would you do?

Annex F: ICS Survey Instruments

ICS SURVEY INSTRUMENT

Code Number:
Name:
Title:
Organization Name and Location:

Preamble: The Accelerating Capacity for Monitoring and Evaluation program (ACME) is undertaking a mid-term evaluation of the Catalyzing Clean Energy in Bangladesh (CCEB) program being implemented by Deloitte LLP. The evaluation is being carried out at the request of the United States Agency for International Development mission to Bangladesh. The objective of the evaluation is to determine the extent to which the CCEB program is on track (including process and outcomes) to meet its overall goals across the two major CCEB components. The two components are: Component 1: Improve Enabling Environment for Low Emissions Development and Component 2: Increase Energy Efficiency and Conservation.

CCEB Overview: The Catalyzing Clean Energy in Bangladesh (CCEB) program is intended to support energy sector development for energy security, economic growth, and climate change mitigation to Bangladesh and build capacity to design and implement supportive policies and regulations, and increase utilization of clean energy approaches and technologies for energy sector development on a low carbon trajectory. One of the major areas of focus has been to support the market development for improved cook stoves.

As part of the evaluation, I, _____ want to ask you some questions about your interactions the CCEB with respect to the development of the market for improved cook stoves. To ensure that we capture your responses appropriately, my colleague, _____ will be taking notes, and, with your permission we would also like to record our discussion. Please note, your responses will be treated confidentially and we will not be using your name, official designation or title in our evaluation report.

Please categorize you interaction with the CCEB ICS activities	Manufacturer	Supplier	End user	Donor	Financing organization
Please describe the focus of your work on ICS (please check all that apply)	Policy	Market Delivery	Promotion & Outreach		Financing
1. In your opinion does the capacity exist in the country to achieve the 2030 targets of the Country Action plan for ICS? If no, please elaborate *The question is intended to identify any capacity gaps where CCEB could provide additional training but only as it pertains to the development of the market supply chain*	Yes	No	Don't know		

ICS Survey Instrument – Manufacturers

Question	Answer		
2. What types of business are you classified as?	For Profit	Not for Profit	
3. Is your business woman-owned?	Yes	No	
4. What percentage of your company's revenues is directly attributable to sales of ICS?	Less than 10%	20-50%	Greater than 50%
5. Please categorize your business involvement in the market supply chain	Manufacture only	Manufacture and supply to distributors	Manufacture and sale to end users
6. Was your company producing ICS prior to support from the CCEB?	Yes	No	
7. Please describe the benefits of the support you received from CCEB? (select all that apply)	Helped improved manufacturing process for existing product		
	Helped design and introduce new product		
	Helped expand existing manufacturing capacity		
	Trained and built capacity of staff in management, operations and sales and marketing		
	Increased access to financing for ICS business line		
	Improved marketing and sales processes		
	Improved management of business		
	Reduced manufacturing costs		
8. Has the performance of your Cook Stove (CS) design undergone testing by CCEB and relevant local bodies	Yes	No	
9. Has your CS design received any test/performance certification from relevant local bodies?	Yes	No	
10. Please provide information on your company's gender profile (either in percentage terms or absolute numbers) Staff	Male		Female	
11. Is your business woman-owned?	Yes	No	
12. Has your company added staff as a result of its ICS business?	Yes	No	
If yes, please provide the number of staff added	Male		Female	
13. When did you start selling ICS?	2013	2014	2015
14. Are you willing to share information about your sales?	Yes	No	Do not have information
15. What are your annual number of ICS units sold?	2013	2014	2015
16. What are your sales projections figures in ICS units for the upcoming years?	2016	2017	2018
17. Are you interested in expanding your ICS business activities?	Yes	No	Not Sure
18. Do you have a business plan for expanding your ICS business?	Yes	No	Not Sure

19. Are there constraints that prevent you from expanding your business?	Yes	No	Not Sure
19.1 If yes, what are could be the major constraints to business expansion? (Please circle all that apply)	Lack of access to financing		
	Limited availability of manufacturing equipment		
	Lack of trained staff		
	Lack of demand for ICS product		
	Other – please describe		
20. Do you intend to expand operations into other parts of the market supply chain?	Yes	No	Not Sure

ICS Survey Instrument – Suppliers/NGO Community

Question	Answer			
1. What types of business are you classified as?	For Profit		Not for Profit	
2. Is your business woman-owned?	Yes		No	
3. What percentage of your company's revenues are is directly attributable to sales of ICS?	Less than 10%	20-50%	Greater than 50%	
4. Please categorize your business involvement in the market supply chain	Supplier to end-users only	Supply to other distributors	Advocacy organization and sales to end users	
5. Is or was your organization involved in the CAP for ICS prior to support from the CCEB?	Yes		No	
5.1 If yes, please describe				
6. What has been the outcomes of your organizations interactions with CCEB? Please circle all that apply	Trained and built capacity of staff			
	Increased access to financing for ICS			
	Enhanced marketing and sales processes			
	Improved management of organization			
	Reduced marketing costs			
6.1 If other please elaborate	Other			
7. Please provide information on your company's gender profile (either in percentage terms or absolute numbers)	Male		Female	
8. Has your organization added staff for ICS activities as a result of support from CCEB ICS business?	Yes		No	
8.1 If yes, please provide the number of staff added	Male		Female	
9. Are you willing to share information about your sales?	Yes	No	Do not have information	
10. What are your annual number of ICS units sold?	2013	2014	2015	
11. What are your sales projections figures in ICS units for the upcoming years?	2016	2017	2018	
12. Are you interested in expanding your ICS activities?	Yes	No	Not Sure	
13. Do you have a plan for expanding your ICS activities?	Yes	No	Not Sure	
14. Are there constraints that prevent you from expanding your business?	Yes	No	Not Sure	
15. If yes, what are the major constraints to expansion? (Please circle all that apply)	Lack of access to financing			
	Limited availability of manufacturing equipment			

	Lack of trained staff		
	Lack of demand for ICS product		
	Other – please describe		
16. Do you intend to expand operations into other parts of the market supply chain?	Yes	No	Not Sure

ICS Survey Instrument – Other Stakeholders

Question	Answer				
1. Please categorize you interaction with the CCEB ICS activities	Manufacturer/Supplier	Other	End user	Donor	Financing organization
2. Please describe the area of focus of your work on ICS (please check all that apply)	Policy	Market Delivery	Promotion & Outreach	Financing	
3. Are you aware of the GOB targets under the Country action plan for ICS?	Yes	No	Don't know		
4. If yes, what do you estimate the cumulative number of ICS deployed by the year indicated?	2017	2020	2025		
5. Are you aware of the estimated numbers of ICS deployment as a result of CCEB support?	Yes	No	Don't know		
5.1 If yes, in your opinion does the capacity exist in the market supply chain exist to achieve the CCEB targets?	Yes	No	Don't know		
6. If you are a member of the financial community please describe your role	Micro-financing	Commercial Bank	Development bank		
7. Do you provide access to financing on soft terms?	Yes	No			
7.1 If yes, please describe					
8. Please elaborate who are your target customers?	Manufacturers				
	Suppliers				
	NGO organizations				
	Consumers				
	Rural Communities				
9. Please describe the outcomes of any support you received from the CCEB? (circle all that apply)	Improved understanding of the ICS market				
	Expanded support activities to ICS market				
	Enhanced staff capabilities				
	Increased financing to ICS businesses				
10. Are you interested in expanding your ICS-related activities?	Yes	No	Not Sure		
11. Do you have a plan for expanding your ICS activities?	Yes	No	Not Sure		
12. Are there constraints that prevent you from expanding?	Yes	No	Not Sure		
12.1 If yes, what are the major constraints to expansion? (Please circle all that apply)	Lack of access to financing				
	Limited availability of local ICS manufacturing capacity				

	Lack of trained staff		
	Lack of demand for ICS product		
	Other – please describe		
13. Do you intend to expand your operations into other parts of the market supply chain?	Yes	No	Not Sure
13.1 If yes, please elaborate			

ICS Survey Instrument – End Users

Question	Answer		
1. Do you use your ICS cook stove for all cooking?	Yes		No
1.1 If no, what other cook stoves do you use?			
2. Please describe what you cook with the ICS?			
3. What do you cook with your other cook stoves?			
4. If you have more than one cook stove which do you prefer? Please circle	ICS	Other	No preference
5. Do you pay for your fuel for cooking?	Yes		No
6. How many people are you cooking for?			
7. What fuel/energy sources do you use in your cook stove?	Firewood	Agricultural waste	Other
8. What factors influenced your decision to get a new ICS? (circle all that apply)	Price		
	Design		
	Gift		
	Energy saving		
	Cost saving		
	Time saving		
	Marketing by suppliers		
	Recommendation of other users in community		
	Manufacturer's warranty		
	Cost subsidy		
	Other		
9. Who made the final decision to buy the ICS cook stove? (please circle all that apply)	Principal user/ Cook		
	Head of household		
	The main financial contributor to the family		
	Third party		
	Family/community decision		

10. Do you know the name of the brand or manufacturer of your ICS?	Yes	No	
10.1 If yes, please provide			
11. Were other ICS brand available for you to consider?	Yes	No	
11.1 If yes, please provide the names of the other ICS designs			
12. Do you know if the price of your ICS was subsidized?	Yes	No	Not Sure
13. If you were not the person who made the decision to buy the ICS, do you know what factors influenced the buyer's decision	Yes	No	Not Sure
14. Have you shared your experiences with the ICS with other?	Yes	No	Not Sure
14.1 Please circle who you have shared your experiences with	Other household/family members		
	Other community members		
	Suppliers of ICS		
	Other persons		
15. Have you benefitted from the ICS?	Yes	No	Not Sure
15.1 If yes, please circle all the benefits from using the ICS.	Better quality of cooking		
	Savings in fuel wood use		
	Cost savings		
	Time saving in collecting fuel wood		
	Health benefits		
	Improved home environment due to reduced smoke		
	Other – please describe		
16. What problems have you had with the ICS?	No Availability in market		
	Poor? Quality of construction		
	No saving in cooking time		
	No improvement in quality of cooking		
	No savings in fuel wood		

	No change or improvement in Health		
	No improvement in home environment		
	No cost savings		
	Other – please describe		
17. If cook stoves were available that used alternate fuels which fuel would you prefer?	Bottled Gas	Electricity from renewable sources	Prefer to use traditional fuels
	Electricity from grid	Kerosene	Gas from distribution network

Annex G: Quantitative Results Charts

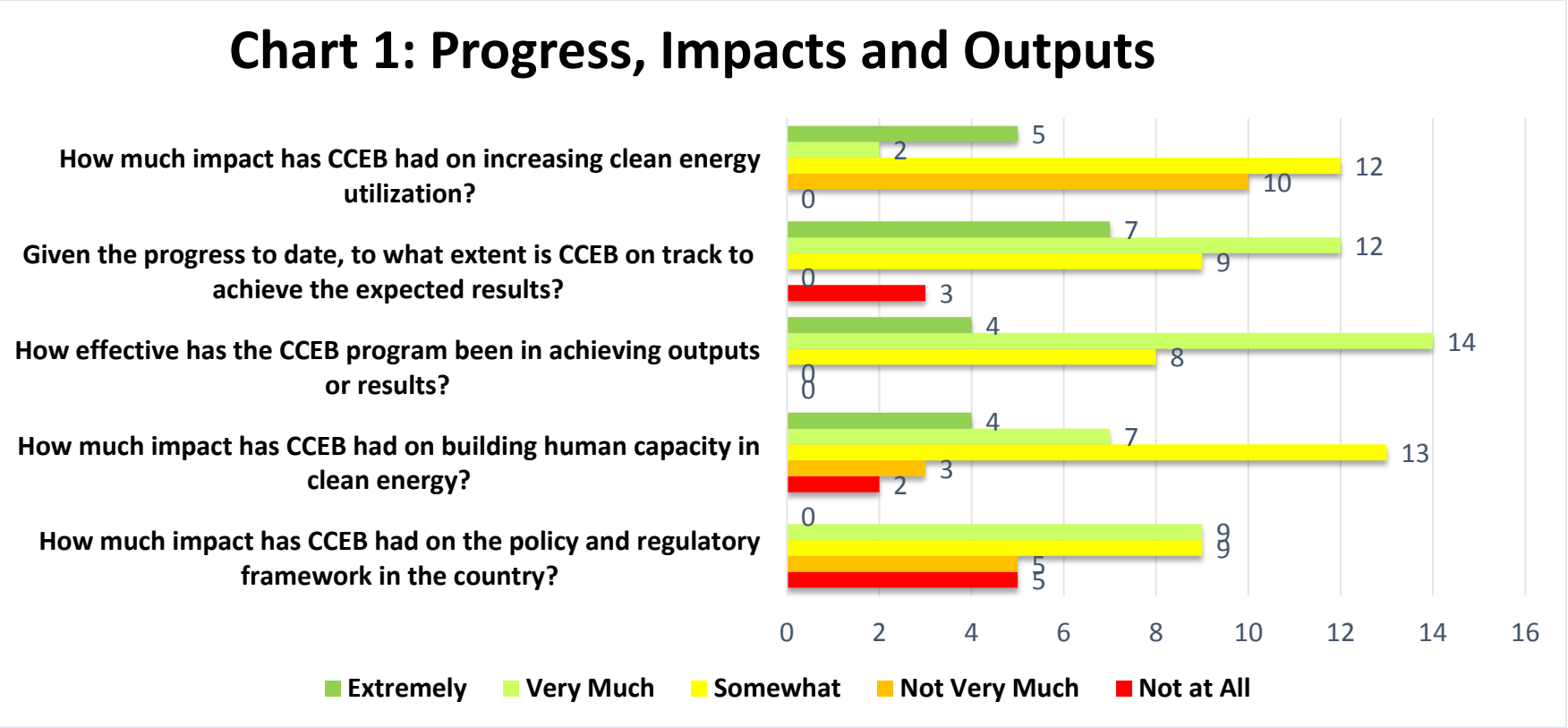

Chart 1 illustrates quantified responses to qualitative questions asked during key informant interviews (KIIs) with key stakeholders and beneficiaries. The numbers on the chart represent the number of responses given. On average 28 to 29 informants responded to each question. It should be noted that most responders were Task 3 beneficiaries. They typically were more optimistic than key stakeholders (Tasks 1, 2, and 4). Most responders believe CCEB is on track to achieve expected results, that it is having an impact, and is increasing clean energy utilization. The most negative responses with respect to progress were given in response to the policy and regulatory area, where almost one-third of responses were negative.

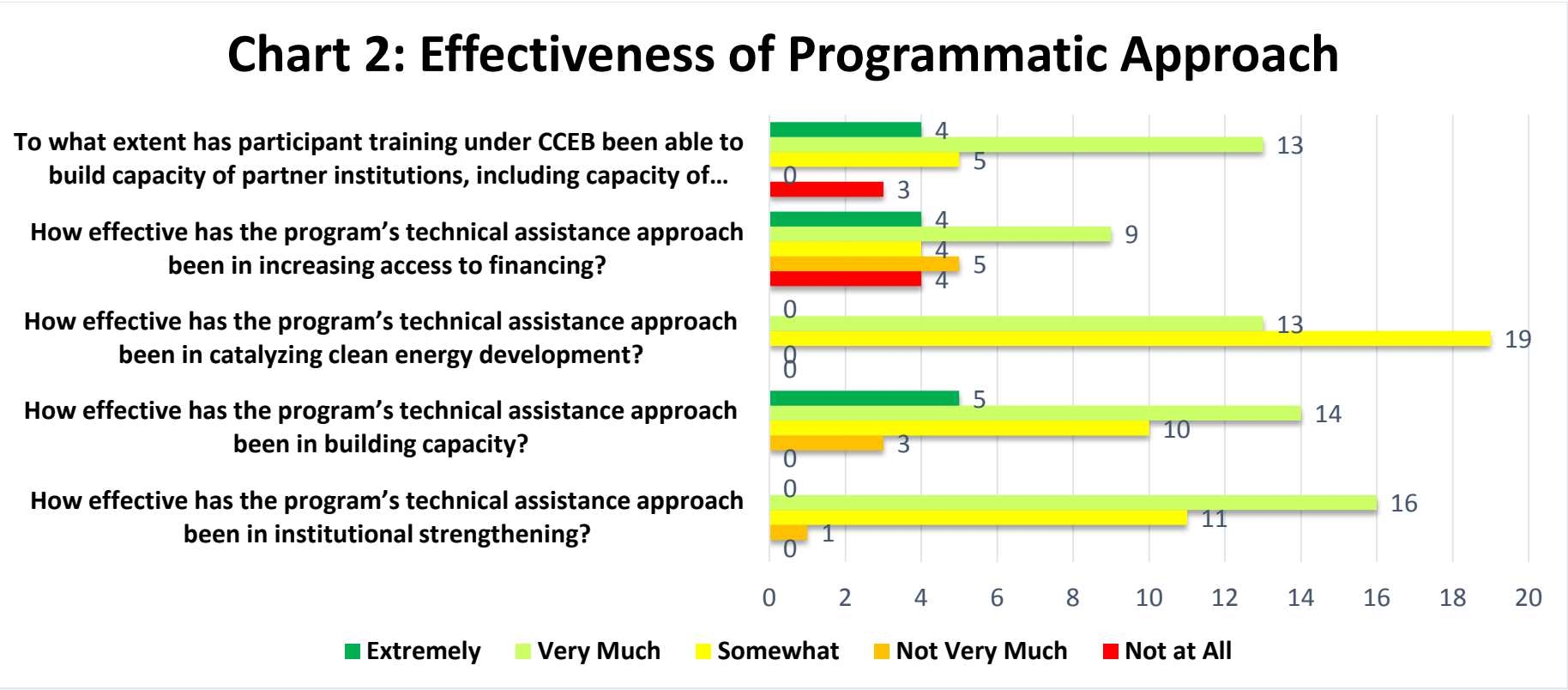

Chart 2 illustrates quantified responses to qualitative questions asked during KIIs with key stakeholders and beneficiaries. The numbers on the chart represent the number of responses given. Between 26 and 32 informants responded to each question. It should be noted that most responders were Task 3 beneficiaries. They typically were more optimistic than key stakeholders (Tasks 1, 2, and 4). Most responders believe CCEB has helped build capacity and has helped somewhat in increasing access to financing. The Task 1 and 4 participants were less enthusiastic about CCEB's financing efforts.

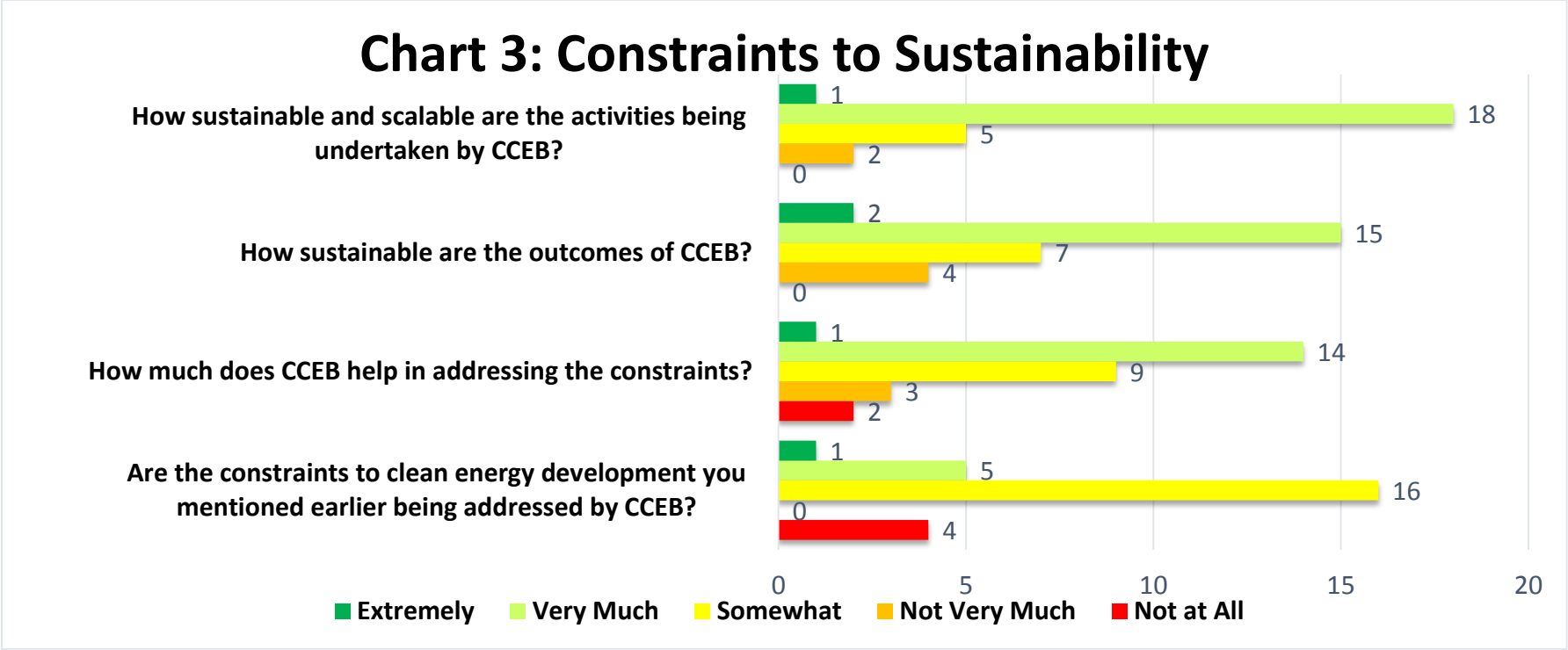

Chart 3 illustrates quantified responses to qualitative questions asked during KIIs with key stakeholders and beneficiaries. The numbers on the chart represents the number of responses given. Between 26 and 29 informants responded to the four questions. It should be noted most responders were Task 3 beneficiaries. While most responders believe CCEB activities are sustainable, there were concerns expressed, most notably from the industrial company representatives that participated in the FGDs, that the program was not addressing some key constraints to sustainability. These included developing awareness among industry at large and concerns that the work with BERC was not improving the enabling environment. Overall, they were more optimistic than key stakeholders (Tasks 1, 2, and 4) with respect to sustainability. Most responders believe CCEB has helped build capacity and helped somewhat in increasing access to financing. The Task 1 and Task 4 participants were less enthusiastic about CCEB's financing efforts.

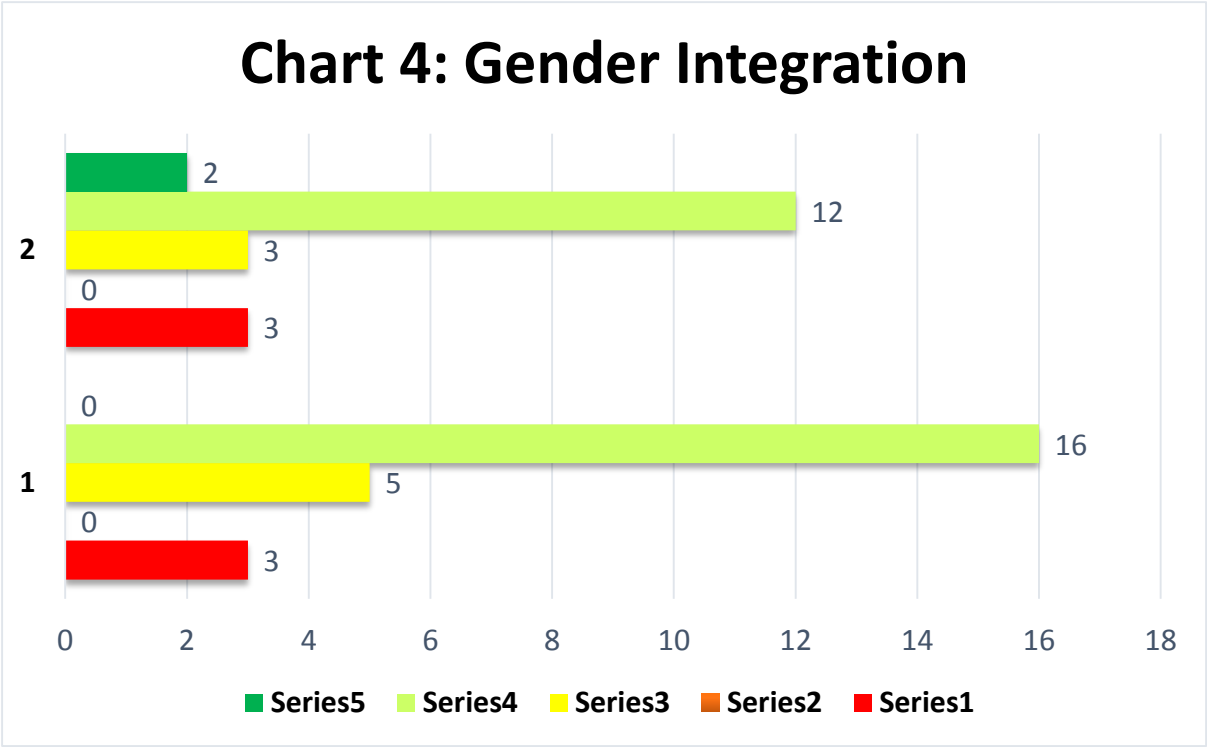

Chart 4 illustrates quantified responses to qualitative questions asked during KIIs with key stakeholders and beneficiaries. The numbers on the chart represent the number of responses given. Between 21 and 24 informants responded to the two questions. It should be noted most responders were Task 3 beneficiaries. While most responders believe CCEB is integrating gender into its activities, more than 12 percent felt CCEB was not doing enough to promote gender integration. A small minority expressed concern that the program was doing too much to promote gender and that CCEB's strategy had impacted participation in the program. Overall, most responders were positive about the strategy used.

Annex H: Document and Information Sources

Name of the documents	Type of Documents
CCEB USAID in brief materials	Activity Gantt Chart
	CCEB FGD Guide Document
	CCEB field work schedule doc.
	CCEB in brief ppt.
	CCEB questionnaires.
CCEB Annual Progress Report	Annex 1 doc
	CCEB Annual Report Year 1 Final Feb 3 2014
	CCEB Annual Report Year 2 Final Revised V1
CCEB PMEP Reports	CCEB Year 1 PMEP Apr 15 2013.
	CCEB Year 2 PMEP April 07 2014.
	CCEB Year 3 PMEP July 29 2015
	CCEB Year 3 PMEP November 17 2014
	CCEB Year 4 Revised Final PMEP 20151027
CCEB Quarterly Progress Report	CCEB 1QFY14 Performance Report Mar 3
	CCEB 1QFY15 Performance Report 15 Jan 2014
	CCEB 2QFY14 Performance Report Apr 21
	CCEB 2QFY15 Performance Report 18 Apr 2015
	CCEB 3QFY14 Performance Report June 29
	CCEB 3QFY15 Performance Report 15 Jul 2015
	CCEB 4QFY14 Performance Report October 15 (Revised October 22)
	CCEB 4QFY15 Performance Report Revised 05 Nov 2015
	CCEB Q1FY13 Performance Report
	CCEB Q2FY13 Performance Report
	CCEB Q3FY13 Performance Report Jul 7
	CCEB Q4FY13 Performance Report
CCEB Work Plan	Task 4 work plan Year 3
	CCEB Year 3 Task 4 Work Plan 15 01 26
	Task 4 Revised Road Map 26Jan2015 Final
	CCEB Year 3 Work Plan Appendix 1 FINAL
	CCEB Year 1 Work Plan Final
	CCEB Year 2 Work Plan Feb 3 2013
	CCEB Year 3 Work Plan FINAL
Contact list	CCEB Counterparts & Stakeholders Contact List
	CCEB contact list
EMMP	CCEB EMMP Oct 29, 2013
Grants	CCEB Grants Manual
	Deloitte Grants Manual CCEB
	Deloitte Grants Manual CCEB Tracker No. 22

Schedule	CCEB Counterparts & Stakeholders Contact List	
	CCEB Field Work Schedule	
Task 1	Task 1 Year 1	BERC Maturity Model Appendix
		Maturity Model BERC 30Sept
		Task 1 Year 1 Report
	Task 1 Year 2	BERC Regulatory Training Proceedings
		CCEB Task 1 - BERC Institutional Capacity Assessment
		CCEB Task 1 Year 2 Appendix
		CCEB Task 1 Year 2 Report (2)
	Task 1 Year 3	CCEB - Report on BERC Organizational Restructure 2015 - Final v3
Task-2	Task 2 Year 1	Assessment of GOB Capabilities
		Baseline Assessment Report
		CCEB Power Sector Screening Tool
		Energy Policy Analysis
		Power Sector GHG Emissions Data Repository
		Power Plant Database
		Task 2.1 Baseline Assessment Report Final
		Task 2.2 Year 1 Report Final
		Task 2.2 Year 1 Report
	Task 2 Year 2	CCEB Power Sector Screening Tool
		CCEB-Task 2 Host Organization Selection Report September 17, 2014
		Final Data Repository Training Proceedings Jul 23, 2014
		GHG Repository Standard Operating Procedures September 17, 2014
		power sector ghg emissions data repository
	Task 2 Year 3	CCEB - Task 2 - Combined Repository and PSPAM OJT Proceedings Final
		CCEB-Task 2-Capability Assessment Report
		CCEB-Task 2-Policy Recommendations Paper Final
		Power Sector GHG Emissions Data Repository - Updated May 2015
		Power Sector Policy Analysis Model-V3.1-05.27.15
		Proceedings from Briefing on Policy Analysis Tools - Revised Final 2015.

Task-3	Task 3 Year 1	Year 1 Audit Report
		CCEB Task 3 Final Report Appendix 5.5
		CCEB Task 3 Final Report Appendix 5
		CEA Training Proceedings
		Deloitte Grants Manual CCEB 20130305 Tracker No. 22
		Task 3 Year-1 Final Report
		Workshop EE in Tex Plants 30 Sep 2013
	Task 3 Year 2	Year 2 Audit Report
		Year 2 Grant Award 5 textile
		CCEB Task 3 Frozen Food Workshop Proceedings 22 Sep 2014
		CCEB TASK 3 Yr 2 FINAL REPORT Latest
		Final-Steel Re-rolling Workshop Proceedings
		Final-WS Proceedings 05 Financing Facilitation May 2014
		Final-WS Proceedings Financing Facilitation 05 May 2014
		Final-WS Proceedings Steel Re-rolling 21 Jul 2014
		Grant Selection Criteria
	Task 3 Year 3	Energy Audit Reports Yr 3
		CCEB - Task 3 - 20 Investment Grade Energy Audits
		CCEB - Task 3 - 30 Walk-Through Audits
		CCEB - Task 3 - EE Financial Institution Training Proceedings-Final
		CCEB-Task 3.1.C-Proceedings on Five Workshops on Best Practices in IEE
		CEA Training Proceedings Final
		Proceedings from CCEB Dec 2014 CEA Training
Task-4	Task 4 Year 1	Load Research and Analysis DESCO Nov 21
		Load Research and Analysis DPDC
		Load System Selection Report DESCO 04 11 2013
		Load System Selection Report DPDC Nov 11
		Task 4 DSM Program Report 9 30 2013
		Task 4 Roadmap Nov 25
	Task 4 Year 3	CCEB Year 3 Task 4 Work Plan 15 01 26
		Task 4 Revised Road Map 26 Jan2015 Final
	Task 5 Year 1	Year-1 Final Report

Task-5	Task 5 Year 2	Meeting Minutes Year 2 Deliverable
		Assessment Report for CDM Financing
		Business Model Workshop Report
		Clean Cook Stove TVC.VOB
		Establishing Linkages Between Entrepreneurs and MFIs - Workshop Report - 5 March
		ICS Workshop Report
		Report on Testing Center Support
		Revised Market Segmentation Summary Report
		Second ICS Market Facilitation Platform Meeting Proceedings Final
		Stakeholder Mapping Report - Final
	Task 5 Year 3	CCEB-Task 5 3 B - ICS Financing Efforts and Successes Revised Final
		CCEB-Task 5- CSR Opportunities Assessment Report
		Task 5- Five Signed LOCs
	CCEB Evaluation draft work plan v8 11-19-2015-USAID comments	
CCEB Contract SOW	CCEB Mod 3 Pg Concerning Task 1	
	CCEB Section C	
	Private Sector Power Generator Policy of Bangladesh	
Policies	Renewable Energy Policy of Bangladesh	
	3- Year Road Map (2008-2010) final	
	Seven Five Year Plan FY2016- FY2020 Accelerating Growth, Empowering Citizens	
	Action Plan For Energy Efficiency & Conservation	
	Country Action Plan for Clean Cookstoves November 2013	
	Bangladesh Country Action Plan (CAP) - Draft	
	Bangladesh Energy & Electricity Research Council Act, 2015	
	Bangladesh Energy Regulatory Commission Act. 2003	
	Bangladesh Climate change Strategy and Action Plan 2009	
	Bangladesh Policy Road Map for Renewable Energy	
	Draft Renewable Energy Policy of Bangladesh	
	ElecAct-Version with comments on 12.5.15	
	National Adaptation Programme of Action (NAPA)- November 2005	
	National Energy Policy 1995	
	Power & Energy Fast Supply (Amendment) Act, 2015	
	Power & Energy Fast Supply Enhancement (Special Provision) Act, 2010	
	Strategic Program for Climate Resilient Bangladesh	
	Proposed Energy Policy by M. Delwar Hossain - SEP 2004	
	Rural Electrification Board Ordinance, 1977	
	SREDA Act Law Vetting	

Prices	Bulk tariff BPDB
	Retail tariff BPDB distribution zones
	Retail tariff DESKO
	Retail tariff DPDC
	Retail tariff REB
	Retail tariff WZPDCL
	Annual Report 2011-2013 (BERC)
Public Financial Management Risk Assessment Framework (PFMRAF) Manual, USAID	
LCG Env. & CC-Overview	
Clean Energy Lending Toolkit The AILEG Project	
Improved Capacity for Energy Access (ICEA) final report 2012	
BERC IRG	
Approved Organogram of Bangladesh Energy Regulatory Commission	
ELIB Presentation Bangladesh CFL program, World Bank	
NARUC report - BERC support 2009	
Powering Progress Project - Final Report (Feb-2013)	
Power Sector Organogram	
Power Sector overview	
USAID BERC support	
Regulatory Audit of Tongi Power Generation Plant, Bangladesh Energy Audit Report (Oct- 2012)	

Annex I: Evaluation Methodology – Risk Assessment Framework (RAF)

The CCEB program activities are being undertaken simultaneously across the clean energy value chain and so it is important to consider the interdependences and linkages between the different activities to appropriately assess the extent that the program is on track to meet the overall development objective. As such, the team collected both quantitative and qualitative information to inform the evaluation findings and then used a Risk Assessment Framework (RAF) to assess the overall progress.

Decision makers typically want to avoid initiatives and interventions when the threats of failure are highly probable with catastrophic consequences or when initiatives are not cost effective. The goal of a risk assessment is to use data to analyze the risks and rewards of a decision or action, thereby reducing the need for intuition and instinct. Risk assessment does not guarantee future success. It is a measurement of the risks associated with a particular intervention decision and the implementation approach used to achieve a given development objective.

Identifying a risk is only a first step. It is imperative to have concrete actions to mitigate any such identified risk. The mitigation options for risks associated with CCEB are included in section 5.

CCEB Risk Assessment Framework

The RAF used for assessing the risk levels for CCEB activities and outcomes considers the probability and impact (severity) of an occurrence. There are four impact levels used: negligible, marginal, serious and catastrophic. With probability, there are also four levels used: remote, occasional, probable, and frequent. Associated definitions are presented in the following tables.

Table H.1: Probability Rating Definitions

Definitions for Impacts and related criteria definitions are presented in the table that follows.

Probability	Quantitative	Qualitative
Remote	Less than a 0.25 probability.	An adverse event is rare or would only occur in exceptional circumstances. There is little or no experience of a similar failure.
Occasional	Probability lies between 0.26 and 0 .50.	An adverse event might occur because the conditions for it exist, but controls exist and are effective.
Probable	Probability lies between 0.51 and 0.75.	An adverse event will likely occur because the controls are inadequate or are applied inconsistently.
Frequent	Probability lies between 0.76 and 0.99.	An adverse event is expected to occur. There is near certainty of occurrence because the controls do not exist or are ineffective.

Table H.2: Impacts, and Associated Criteria Definitions

The Risk Assessment Framework matrix used for CCEB is shown below.

Impact	International Practice	Development Objective	Commitment	Accountability
Catastrophic	There are obvious and material divergences from good international practice.	Realization of an adverse event associated with this risk factor would permit attainment of less than 40 percent of expect program outcomes. Expected effects include failure of the program widespread and severe dissatisfaction by stakeholders.	Political and management commitment to attainment of good international practice is the exception or entirely absent.	Vertical and horizontal responsible institutions have major gaps, or one or the other is severely under-developed. Opposition is organized or widespread and therefore expected.
Serious	Significant elements do not reflect good international practice.	Attainment of 40 to 70 percent of the expected outcomes associated with the development objective can reasonably be expected. Expected effects could include a major delay, limited dissatisfaction by stakeholders.	Political or management commitment to attaining good international practice is inconsistent or questionable.	Weaknesses in the horizontal and vertical responsible institutions are evident or one or the other shows significant gaps. Opposition is evident by some elements within the society.
Marginal	Work broadly reflects good international practice with some gaps or inefficiency present.	Seventy to 95 percent of the development objective can be reasonably assumed to be attained. Expected effects could include minor delays in attainment, minor dissatisfaction by stakeholders, or a non-material financial impact.	Political or management commitment to closing the gaps and eliminating inefficiencies is present.	Weaknesses in the horizontal and vertical responsible institutions may be present or such institutions may be in an early and untested stage of development. Opposition to these institutions not a "given"
Negligible	Work reflects good international practice.	The development objective, in the 95 to 100 percent range of expected program outcomes, can reasonably be assumed to be attained if conditions do not change.	Strong political and management commitment to sound best practice is evident.	Both horizontal and vertical responsible institutions are mature, function routinely, and are not under threat.

Table H.3: CCEB Risk Assessment Framework Matrix

The following table provides a summary of risk mitigation considerations options for each of the four impact classifications used in developing the CCEB RAF.

CCEB Risk Assessment Framework Matrix					
Impact	*Catastrophic*	High	Critical	Critical	Critical
	Serious	High	High	Critical	Critical
	Marginal	Medium	Medium	High	High
	Negligible	Low	Low	Medium	Medium
		Remote	*Occasional*	*Probable*	*Frequent*
		Probability			

Table H.4: CCEB Risk Mitigation Considerations

Impact Classification	Risk Mitigation Consideration
Critical	"Critical" requires stringent mitigating measures only if these have a high probability of success. Otherwise, we will terminate our exposure by delivering the assistance through other means. In rare cases where an effective transfer of risk mechanism exists and is deemed effective, we will consider transfer of the risk, albeit with a risk assessment of the ability of the transferor to deliver on its obligation.
High	"High" requires serious mitigating measures to treat the risk to avoid possible catastrophic and other major failures.
Medium	"Medium "requires mitigating measures but these may be periodic.
Low	"Low" requires monitoring and audit, but treatment of specific risks may be required if they can lead to Medium risk conditions.

Annex J: Interview and Contact Listing

Organization	Address	Name	Position
IBTCI			
ACME	Hs# 01, Rd# 54/A, Gulshan - 2, Dhaka	John Dalton	Chief of Party
ACME	Hs# 01, Rd# 54/A, Gulshan - 2, Dhaka	Naba Krishna Muni	Capacity Building Specialist
ACME	Hs# 01, Rd# 54/A, Gulshan - 2, Dhaka	Nazrul Islam	M&E Specialist Performance Monitoring
ACME	Hs# 01, Rd# 54/A, Gulshan - 2, Dhaka	Farhana Rahman	Financial Analyst Payroll
ACME	Hs# 01, Rd# 54/A, Gulshan - 2, Dhaka	Ninisha Maksud	Knowledge Management coordinator
ACME	Hs# 01, Rd# 54/A, Gulshan - 2, Dhaka	Tasmin Akanda Ethu	CCEB Evaluation Logistic Coordinator
Implementing Partner			
Deloitte	House no. 14 (2nd floor), Road no. 32 Gulshan-1.	Craig Van Develde	Chief of Party
Deloitte	House no. 14 (2nd floor), Road no. 32 Gulshan-1.	Engr. S.M. Jakaria	Senior Energy policy Advisor HBS
Deloitte	House no. 14 (2nd floor), Road no. 32 Gulshan-1.	Mohammad Abdul Jalil	Senior Regulatory Advisor
Deloitte	House no. 14 (2nd floor), Road no. 32 Gulshan-1.	A.K.M. Anowar Hossain Mollah	Deputy Task Leader
Deloitte	House no. 14 (2nd floor), Road no. 32 Gulshan-1.	Engr. S.M. Mahmud Hassan	Senior Advisor, Industrial Energy Efficiency
Deloitte	House no. 14 (2nd floor), Road no. 32 Gulshan-1.	Salman Kamal	Industrial Energy Efficiency Specialist
Deloitte	House no. 14 (2nd floor), Road no. 32 Gulshan-1.	Biplob Kanti Mondal	Monitoring & Evaluation Specialist
Deloitte	House no. 14 (2nd floor), Road no. 32 Gulshan-1.	Md. Kamruzzaman	Senior Industrial Energy Efficiency Specialist
Deloitte	House no. 14 (2nd floor), Road no. 32 Gulshan-1.	Ruaksana Haque	Communication & Training Specialist
USAID			
USAID	American Embassy Madani Avenue, Baridhara, Dhaka	Karl Wurster	Deputy Director-Economic Growth Environment
USAID	American Embassy Madani Avenue, Baridhara, Dhaka	Jeff de Graffenried	Project Development office (Program office)
USAID	American Embassy Madani Avenue, Baridhara, Dhaka	A.K.D. Sher Mohammad Khan (EG office)	Senior Energy Advisor & CCO AARI/EI (EG office)

USAID	American Embassy Madani Avenue, Baridhara, Dhaka	Shayan Shafi	Project Management Specialist (Energy) (EG office)
USAID	American Embassy Madani Avenue, Baridhara, Dhaka	Farzana Yasmeen	Program Management specialist (EG office)
Task- 1			
BERC	TCB Bhaban (3rd floor), 1 Karwan Bazar, Dhaka	A R Khan	Chairman
BERC	TCB Bhaban (3rd floor), 1 Karwan Bazar, Dhaka	Md. Aminur Rahman	Deputy Director (Gas)
BERC	TCB Bhaban (3rd floor), 1 Karwan Bazar, Dhaka	Nishit Kumer	Assistant Director
BERC	TCB Bhaban (Level 4), 1 Karwan Bazar, Dhaka	Rahman Murshed	Member
BERC	TCB Bhaban (Level 4), 1 Karwan Bazar, Dhaka	Dr. Salim Mahmud	Member (Commissioner)
BERC	TCB Bhaban (Level 4), 1 Karwan Bazar, Dhaka	Md. Haronur Rashid	Deputy Director (power)
Task- 2			
DPC Group	House 17, Road 17/A, Block-E, (4th Floor), Banani, Dhaka	MD. Mashiur Rahman	Managing Director
DPC Group	House 17, Road 17/A, Block-E, (4th Floor), Banani, Dhaka	Ansar A Mullaik (Raj)	Manager (Business Development)
BPDB	Room # 503, 5th Floor, WAPDA Building, Motijheel C/A, Dhaka	Md. Monower Zahid Khan	Assistant Engineer
BPDB	Room # 503, 5th Floor, WAPDA Building, Motijheel C/A, Dhaka	Jarifa Khatun	Executive Engineer (System Planning)
BPDB	Room # 503, 5th Floor, WAPDA Building, Motijheel C/A, Dhaka	Roton Kumer Paul	Director (System Planning)
Power Cell	Ministry of Power, Energy & Mineral Resources Bidyut Bhaban (9th Floor) 1, Abdul Gani Road Dhaka	Md. Abdur Rouf Miah	Director (Sustainable Energy)
Power Cell	Ministry of Power, Energy & Mineral Resources Bidyut Bhaban (9th Floor) 1, Abdul Gani Road Dhaka	Abdullah-Al-Mohit	Assistant Director (Contract Management)
GIZ	Road 90, House 10/A, Gulshan 2 Dhaka 1212, Bangladesh.	Al Mudabbir Bin Anam	Senior Advisor Sustainable Energy for development (SED)
Task- 3			
BD Technology Ltd.	House no 02 (2nd floor) 15, New Baily Road, Dhaka	Engr. Mohammad Abdullah	Chief Advisor B.Sc. Eng. (Elect) BUET, FIEB (Former Chief Engineer BPDB & Former Director (Tech)

			WZPDCL) (A Govt. owned company)
BD Technology Ltd.	House no 02 (2nd floor) 15, New Baily Road, Dhaka	Engr. Humayun Kabir	Director, Certified Energy Auditor (AEE, USA)
BD Technology Ltd.	House no 02 (2nd floor) 15, New Baily Road, Dhaka	Engr. Niladri Shekhar Saha	Lead Assessor & Project Coordinator
BD Technology Ltd.	House no 02 (2nd floor) 15, New Baily Road, Dhaka	Engr. Nasim Saba Shommo	Energy Efficiency Auditor
Wellmake	12/B, Purana Paltan Line (2nd Floor), Dhaka	Md. Abdul Alim	Consultant Engineer
Wellmake	12/B, Purana Paltan Line (2nd Floor), Dhaka	Engr. A.F.M Muntasir Safayat	Deputy Manager (Engineering Division)
Wellmake	12/B, Purana Paltan Line (2nd Floor), Dhaka	Engr. MD. Riazul Islam	Asst. Manager (Project Division)
Sodev Consultant International	Hs# 198, Rd# 01, New DOHS Mohakhali, Dhaka	Fazlul Q. Siddique	Managing Director
Sodev Consultant International	Hs# 198, Rd# 01, New DOHS Mohakhali, Dhaka	Zakirul Q. Siddique	Director
Sodev Consultant International	Hs# 198, Rd# 01, New DOHS Mohakhali, Dhaka	A.K.M. Mazharul Islam	Senior Engineer
Sodev Consultant International	Hs# 198, Rd# 01, New DOHS Mohakhali, Dhaka	Kowshic Ahmed Akash	Junior Engineer
FGD Groups			
IDLC	Corporate Head office: Bay's Galleria (1st floor), 57 Gulshan Avenue, Gulshan-1, Dhaka 1212	Md. Shahriar Rahman	Executive Officer Green Banking desk, Corporate division.
IDLC	Corporate Head office: Bay's Galleria (1st floor), 57 Gulshan Avenue, Gulshan-1, Dhaka 1212	Md. Mahbubur Rahman	Manger Green Banking desk, Corporate division.
Southeast Bank Limited	Kawran Bazar Branch Jamuna Bhaban (1st floor) 2, Kawran Bazar C/A, Dhaka -1215.	Md. Salimuzzaman	Vice President & Manager Operation
Southeast Bank Limited	Kawran Bazar Branch Jamuna Bhaban (1st floor) 2, Kawran Bazar C/A, Dhaka -1215.	Md. Mostafa Kamal	Executive Vice President and Head of Branch
City Bank	136, Gulshan Avenue Gulshan-2, Dhaka-1212	Zoheb Ahmed	Associate manager, Structured Finance Corporate Banking Division
City Bank	136, Gulshan Avenue Gulshan-2, Dhaka-1212	Md. Mominul Islam	Senior Manager Project Assessment Unit

Mutual Trust Bank Limited	Mutual Trust Bank Limited Corporate Head office MTB Square (Level-2) 210/A/1, Tejgaon Industrial Area, Tejgaon, Dhaka- 1208	Mohammad Mamunur Rahman	Junior Officer & Credit Analyst SME Banking Division
KNIT CONCERN GROUP	62, Water Works Road, Godnail Narayangonj	Md Arif Hossain Bhyain	Deputy Manager – ES & QA (Chemocal)
KNIT CONCERN LTD. KC APPARELS LTD	62, Water Works Road, Godnail Narayangonj	MD. Imran Sarker	Asst. Manager (Gen.) Dyeing Unit.
SADAT JUTE INDUSTRIES LTD, JANATA JUTE MILLS LTD.	7 Gulshan Avenue (7th floor), Gulshan-1, Dhaka	Mahmudul Huq	Managing Director of SADAT JUTE INDUSTRIES LTD Dy, Managing Director of JANATA JUTE MILLS LTD.
Asian Group of Industries	28, Dilkusha C/A, (4th floor), Suite-404, Motijheel, Dhaka - 1000	Md. Shafiqur Rahman	Executive Director
Crony Group	Corporate office: House# 365/4, Road# 06 (West) Baridhara DOHS Dhaka	Md. Jahangir Alam	Deputy General Manager
The Cloth & Fashion LTD	Off & Fact: Madani Super market (2nd-4th) Floor, Hemayetpur, Savar, Dhaka, Bangladesh.	Md. Mahbub Rahman	Compliance Manager
AZALEA GROUP	47/2, Arambagh, Motijheel, Dhaka- 1000, Bangladesh.	Shabbir m Ashadul Islam	Managing Director
KULIARCHAR GROUP	Head office: Ideal Trade Centre (8th floor), 102 Shahid Tajuddin Ahmed Sarani, Tejgaon, Dhaka-1208, Bangladesh.	Anjan Kumar Saha	General Manager (Seafood division)
Certified Energy Auditor			
H S International	Corporate Office: Level- 3, House-567, Road- 9 (old link road) Mirpur DOHS, Dhaka- 1215	Farhana Akhter Chowdhury	Manager, Operation
SME Foundation	Royel Tower, 4, Panthapath, Dhaka- 1215, Bangladesh	Muhammad Khaleduzzaman Talukder	Program Officer (Technology)
RAHIMAFROOZ	260/B, 5th floor, Tejgaon Industrial area, Dhaka	Md. Shahadat Hossain	Executive, Q A & QMS
Task- 4			
DESCO	House- 22/B, Farrukh Sarani, Nikunja- 2, Dhaka-1229, Bangladesh	Monjurul Haque	Superintendent Engineer
DESCO	House- 22/B, Farrukh Sarani, Nikunja- 2, Dhaka-1229, Bangladesh	Engr. Sazzad Nazmul Alam Miah	Sub- Divisional Engineer MIS, ICT

DESCO	House- 22/B, Farrukh Sarani, Nikunja- 2, Dhaka-1229, Bangladesh	Engr. Md. Ashfaq Ahmed	Executive Engineer
DPDC	Biddyut Bhaban (2nd floor), Dhaka	Abul Kalam Azad	Executive Engineer
Task- 5			
Eco Stories	126/3, Monipuri para, Airport Rd Tejgaon, Dhaka- 1215, Bangladesh	Maqbool ul Hossain	Managing Director
Future carbon	5th Floor, House- 42, Road- 1, Block- A, Niketon, Gulshan- 1, Dhaka- 1212	Mosharraf Hossain	Officer, Projects and Operations.
Future carbon	5th Floor, House- 42, Road- 1, Block- A, Niketon, Gulshan- 1, Dhaka- 1212	Raden Siddiqui	Director of Operations, Strategy and Implementation

Annex K: Final Report on ICS Survey

Mid-term Performance Evaluation of Catalyzing Clean Energy in Bangladesh

Final Report of Improved Cook Stoves End User Survey

January 2016

Prepared for:

Accelerating Capacity for Monitoring and Evaluation (ACME) & The United States Agency for International Development (USAID)

House No. 1, Road 54/A, Gulshan-2, Dhaka, Bangladesh

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ABBREVIATIONS

ACME	Accelerating Capacity for Monitoring and Evaluation
CCEB	Catalyzing Clean Energy in Bangladesh
DOE	Department of Environment
EQS	Environmental Quality Standards
GOBGOB	Government of Bangladesh
IBTCI	International Business & Technical Consultants, Inc.
ICS	Improved Cook Stoves
MOEF	Ministry of Environment and Forestry
NGO	Non-Governmental Organizations
O&M	Operation and Maintenance
SDG	Sustainable Development Goal
ToR	Terms of Reference
USAID	United States Agency for International Development

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Preface

From the ancient period, energy is an inevitable necessity for human beings and the history of human development rests on the availability and use of energy, the transformation from the early use of fire and animal power that improved lives, to the present world with use of electricity and clean fuels for a multitude of purposes. The use of coal in the mid-1700s and the development of steam engines set off fast growth of cities, population, and further inventions, including internal-combustion engines and the discovery and use of oil, natural gas, and electricity. This accelerated growth period, known as the Industrial Revolution, matured by the end of the 19th century with significant use of fossil fuels and further electrification, and resulted in almost-exponential growth of population and energy use.

All over the world, energy is the neglected issue of the development debate, and the lack of access to reliable and clean energy supplies is a major barrier to improving human well-being around the globe. There are an estimated 1.6 billion people living in the rural areas of developing countries who lack access to electricity and so dependence on fossil fuels while burning of fossil fuels produces large amounts of CO_2, an important greenhouse gas. Concurrently the energy source is predicted to be scarce in the coming years as a result of population growth. Therefore, people prefer energy sources that are renewable, clean and cost effective. Energy generation and use are strongly linked to all elements of sustainable development; for instance; economic, social, and environmental including poverty and global warming.

Many research studies create a compelling case for global action despite the fact that household air pollution has been linked to more than 4 million premature deaths annually. The traditional open fires and inefficient cook stoves using solid fuels is the source of a range of harmful impacts that hamper economic and social development and lead to significant loss of life in the developing world. Reality is that three billion people across the developing world cook their food each day over an open flame or on a crude stove using solid fuels like wood, coal, crop residues, and animal dung. In sub-Saharan Africa and Asia, the lack of access to clean cook stoves and fuels for cooking and heating is especially acute, with a third of the urban population and the vast majority of the rural poor using solid fuels to cook their daily meals over open fires or inefficient stoves made from clay, metal, or bricks. In many countries, the rate of solid fuel usage, especially in rural areas, is 80% to 90%, and without interventions to promote the adoption of clean cooking solution.

Air pollutants are really a hazardous problem in Bangladesh. Clean cook stoves and fuels have the potential to reduce deaths from smoke-related illnesses, mitigate climate change, and lower air pollution. They can provide new sources of livelihoods for women while reducing the risk and hard work of fuel collection, and can lower household expenditures on cooking fuel. The Catalyzing Clean Energy in Bangladesh (CCEB) program is a 5-year program (2012-2017) to support and enhance energy security, economic growth and climate change mitigation in Bangladesh. One of the key components of this program is the "Market Analysis and Development for Improved Cook Stoves (ICS)," which focuses on promoting new technology throughout Bangladesh. The DPC Group of Consultants was contracted to conduct a survey as part of the Mid-Term Performance Evaluation of CCEB by the Accelerating Capacity for Monitoring and Evaluation (ACME) project.

Executive Summary

A Mid-Term Performance Evaluation of the Catalyzing Clean Energy in Bangladesh (CCEB) Program has been planned and conducted to assess any constraints and opportunities associated with the achievement of expected program results through the ICS End User Survey. This has been done to provide to specific recommendations for opportunities and constraints to enhance programmatic effectiveness and impact and strengthen the current approach and to determine the extent to which the CCEB activities to support market development are likely to be sustained.

The initial plan was to select the respondents randomly from the over 22,000 cook stove users from various districts of the country. However, details information was not available with the addresses of cook stoves users in due time and seemed that would be difficult to have the complete list and duration of survey was shorter so an alternative approach has to be adopted. Finally, the survey was conducted for 134 respondents at end-users level in three selected districts named Bagerhat, Chapai Nawabgonj and Gaibandha those have been selected with different characteristics of importance as far as user of ICS conditions are concerned. The trained enumerators have done one to one interview with a prescribed questionnaire and documented the answers as per given format. The data has been entered in SPSS program and analyzed in lieu with the requirement of the client and accordingly this report has been prepared.

This has provided an extensive and variety of opportunities to analyze the present program and accommodate all findings, recommendations and lesson learned for improvement. This program has some limitations, among them marketing and construction quality as well as inadequate design and high price of cook stoves mentioned repeatedly. Some of the designs require a special type of fuel which is not available or it takes more time to shape it, which may also explain why some are unenthusiastic to use this ICS for all cooking (Figure 1) and affect the number of times (Figure 2) they use it daily although they purchased it. On the other hand, refueling is also a problem in many cases while almost at the same time (Figure 3) as traditional cooker is needed for cooking and contributes excess smoke. This is found to be not completely environment friendly and in some cases, neither are there cost savings. All these dynamic reasons influence negatively.

Figure 1: Use of ICS for all Cooking

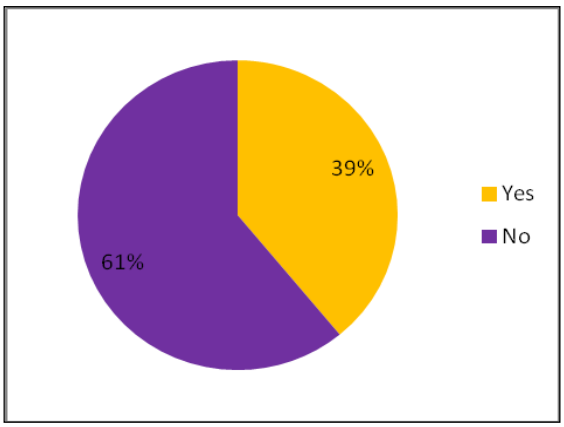


Figure 2: Daily Use of ICS

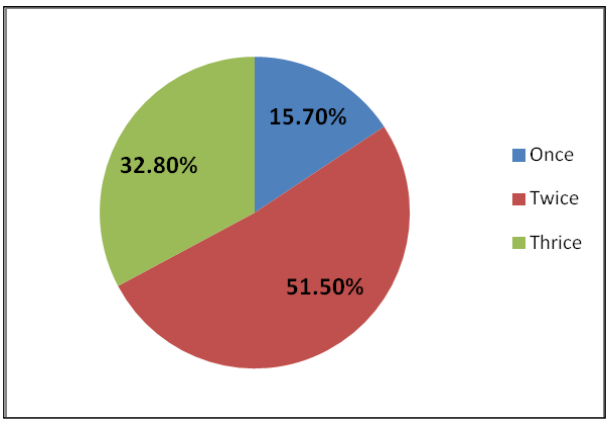
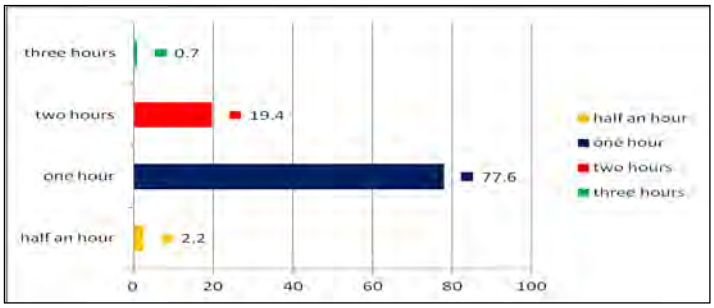


Figure 3: Usual Time Needed for Cooking with ICS



As mentioned earlier, many use ICS as an optional item while they use other traditional cookers as their main support (Figure 4) and major numbers have to buy fuel for ICS (Figure 5) which is not available in some cases due to the specific configuration of fuel type, materials, or size. Therefore, the low-income community who really needs this support cannot it afford at this stage. The urban poor and semi-urban poor who prefer to have piped gas for cooking but it is not available will become a large number of users if there are some measures taken considering their ability and willingness. It is recommended to either decrease the cost of ICS, subsidize, or introduce installment of selling with moveable and modified design (less and available fuel, and shorter time for cooking) to reach the poor and hard-core poor of the community.

Although there are some limitations in construction levels and fuel selection levels reported by the users of ICS, they would want to use it with some modifications and having fuel easily available in their locality. This would have a major impact at the end user level if they get it with lower price and/or subsidy or installment facility. This is mostly used in the medium and lower-medium community and semi-urban areas. Therefore, there is much room for improvement, which all relevant agencies need to discuss and find out the shortcomings within the existing system. It may be appreciable to build up a network between producers, distributors and local NGOs who can assist for subsidy or loan for installments for the poor section of the community. At the same time, more production and highest selling will help to reduce ICS price and increase the accessibility of various income level people. The program also needs to extend all over the country through local contributors, which will help for reducing the effects of climate resilience in an extensive manner with the consideration of users suggestions (Figure-6).

Figure 4: % of Daily Cooking done with ICS

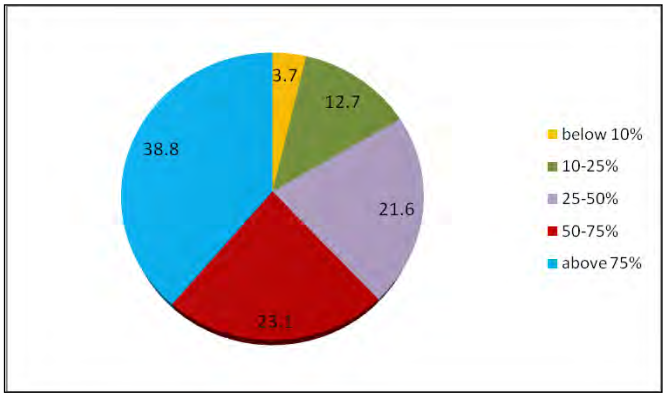


Figure 5: Buy Fuel for Cooking with ICS

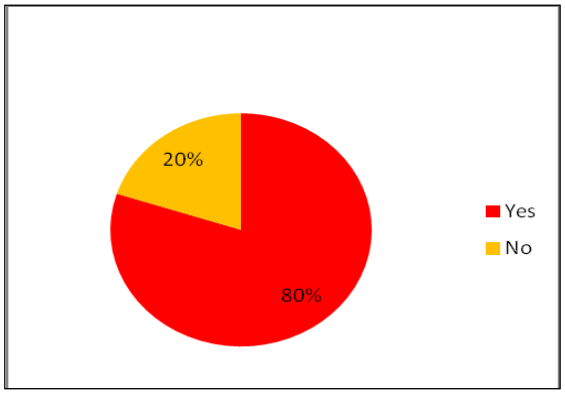
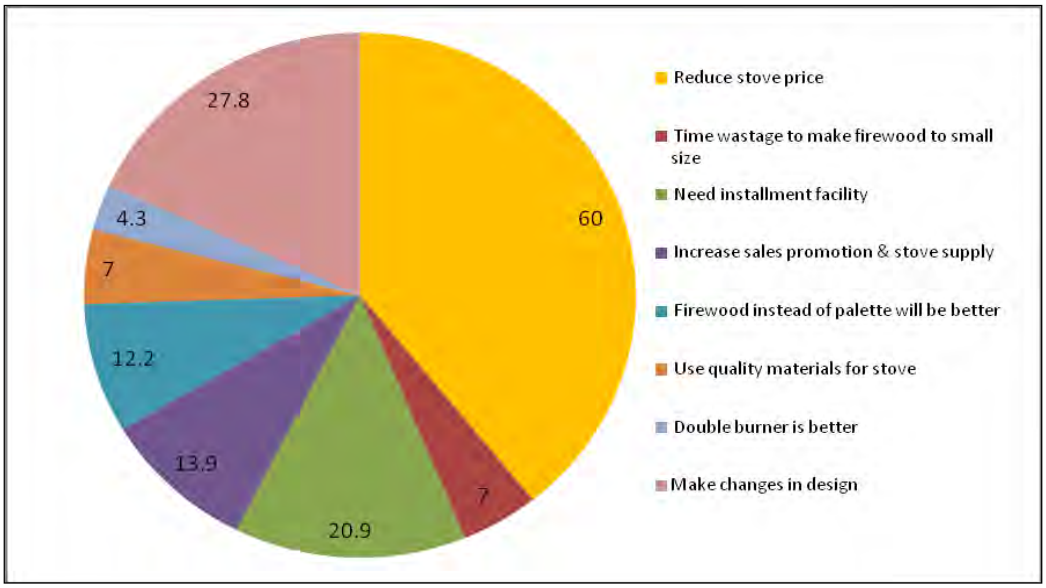


Figure 6: Suggestions from ICS Users (multiple responses considered)



1. Introduction

The goal of Catalyzing Clean Energy in Bangladesh (CCEB) is to promote clean energy development. One of the prime tasks being undertaken by the CCEB program is to assist in building sustainable, improved cook stoves (ICS) market in Bangladesh in order to reduce energy consumption and greenhouse gas emissions.

Market development can be achieved by developing sources of finance for consumers and/or clean energy businesses engaged in supplying the market with improved biomass cook stoves; strengthening businesses involved in the cook stoves supply chain; promoting the benefits of ICS to consumers and by better understanding of consumer behavior to generate market demand. Since program inception, the program has worked with and directly supported many of the key actors in the ICS supply chain.

Over 22,000 improved cook stoves have been put into service due efforts directly attributable to the CCEB program. The results to date are impressive and it is anticipated that a substantial number of additional improved cook stoves will be deployed by the end of and as a result of the CCEB program interventions.

As per requirement, a Mid-Term Performance Evaluation of CCEB was planned while the DPC Group of Consultants was contracted to conduct a survey of beneficiaries who have received support attributable to the CCEB program.

As per the ToR, the purpose of the evaluation is to:

1) assess any constraints and opportunities associated with achievement of expected program results;
2) provide specific recommendations for opportunities to enhance programmatic effectiveness and impact and strengthen the current approach; and,
3) determine the extent to which the CCEB activities to support market development are likely to be sustained.

The findings and recommendations of the evaluation will be used to improve implementation of the program and inform the design of other relevant DO4 projects.

2. Survey Methodology

To obtain consistent and reliable data, the survey had covered 134 respondents who were chosen from the three selected districts namely Bagerhat, Chapai Nwabgonj and Gaibandha as per list provided by the client.

2.1 Sampling

There are four (4) categories of stakeholders on whom it was planned to explore the effectiveness and sustainability of CCEB Cook Stove project. These four categories are:

i) Manufacturers;
ii) Suppliers/NGO Communities;
iii) Other Stakeholders; and
iv) End-Users;

There are over 22,000 users of ICS in different districts of Bangladesh. At first, it was planned to select the respondents randomly from all 22,000 cook stove users. Due to lack of detailed information and not receiving the list of total cook stoves users within given time from suppliers (and getting the impression that it would be difficult to have the complete list), an alternative approach had to be adopted. The required data was collected from the end-users list that was provided by the local suppliers and partner NGOs.

The survey was conducted in three selected districts and a total numbers of sampling were 134 respondents at end-users level; those are 48 from Bagerhat, 47 from Chapai Nawabgonj and 39 from Gaibandha districts selected with different characteristics of importance as far as user of ICS conditions are concerned.

Additionally, all five (5) manufacturers and/or their representatives were also interviewed and held informal discussions to explore the benefits and limitations of ICS market promotion and acceptability.

2.2 Training for Enumerators by DPC and ACME

A training course was organized for enumerators/data collectors and supervisors at DPC office as well as ACME office. The discussion points were as follows:

- **Focus on briefing everyone on the project and the questionnaire on the social aspects.**
  - Briefing of project
  - Purpose of this survey
    - Get view points from the people of the various city/locations
    - Socio-economic situation of the households
    - Willingness/ability to pay for ICS
  - The issues supposed to be covered by this survey

- **Discussion on questionnaire**
  - The questionnaire is the most important tool of the survey and it is meaningful to explore the questionnaire from the beginning to make sure all survey related staff understand, specifically on the technical matters which have been incorporated in several questions;
  - Each of the survey team members was given a copy of the questionnaire and allocated some time to read it and ask any questions if not understandable to them;
  - They were prepared and asked lots of questions, which the Survey Specialist and other senior staff clarified until they became satisfied, as they are the key persons to collect authentic data from the field and have good conversation with respondents while interviewing them.

- **Criteria of success for a survey**
  - The enumerators were experienced, so they already knew the importance of these matters, rights and confidentiality and role of them as data collector. We did not need to go into much detail, but we shortly reminded them of these aspects.
  - Consistency in the collection of data
    - The phrasing of the questions supposed to be clear to each enumerator and not to interpret differently.
    - The words of the questions and attitude of the enumerators must be the same.
  - Important that they feel comfortable in the interview situation and answers as honest as possible. (e.g. not be intimidated by the question)
  - The respondents should be able to answer correctly (e.g. memory)

- **Rights of participants/respondents and confidentiality**
  - They have a right not to participate or not to answer any question they do not want to.
  - They have a right to be anonymous, and it is important that they trust that their anonymity will not be compromised.

- **The role of the data collector**
  - The data collectors understood that they are playing the most important to the results of this survey;
  - It was also important to make them understand the questions, terms, and topics in the same way;
  - It is important to let the rightful respondents answer the questions
    - According to the sample
    - Not to fill out the questionnaire by yourself/enumerators

2.3 Survey Instruments

The basic survey instrument is the questionnaire, which was originally developed in English to exchange views between the stakeholders and was finalized based on the comments from various sources including USAID, ACME and DPC team members. Afterwards the questionnaires were translated from English to Bengali and used for Field Test of Questionnaires by the enumerators that helped them to be acquainted as well as conceptualize the issues; questions were adjusted accordingly in the final version of questionnaire in both languages.

2.4 Survey Staffing Plan

A total of nine enumerators were recruited, trained and engaged in the process of data collection in three selected districts and have been supervised by the senior professionals for ensuring the quality of the field level survey. After completion of the field survey, collected data was entered by the four (4) Data Entry Operators, and the statistician checked and corrected wherever needed. The Survey Specialist acted as Team Leader of the survey team and other senior officials coordinated overall process including liaison with the client. The survey Specialist has taken lead role to write the report while other senior officials also played vital role to make sure the diverse analysis of the collected data.

2.5 Program used for data entry operation and analysis

The ICS end-user data was entered in a customized software using CSPro 6.0 incorporating necessary logical and range checks to minimize data entry error. After the completion of data entry, it was further checked and fixed the errors and was ready for analysis. Dummy tables were prepared and the data was analyzed accordingly in SPSS version 17. The database with all the data is preserved for future references and make it available to client if and when necessary.

3. Constraints and Limitations of the survey

There were some constraints and limitations perceived by the DPC Groups of Consultants during the survey, a few of those are mentioned below:

- The allocated time for this survey was too short; specifically, for finding the respondents at the isolated and inaccessible location of the coastal districts of the country;
- A big part of the Bagerhat district where End Users were identified was hard to reach due to lack of proper communication; so enumerators had to take rickshaw, local boat, even walk a while to collect an interview which limited their work or pushed them to work even at night in other locations to complete the survey within the given time;
- More time was required than assumed to reach the right respondents because the details of the ICS users related to location and specific address were not readily available in many cases;
- It was not common, but in some cases, on-going municipal election became as a major obstacle which controlled the free movement in the locality and sometimes threatened the female enumerators due to unavoidable circumstances;

4. Findings of the survey

The survey conducted with 134 respondents who had been interviewed at the End User level of Improved Cook Stoves. The survey was conducted in three (3) districts namely Bagerhat, Chapai Nawabgonj and Gaibandha. The respondents were scattered in the villages, semi urban areas and urban locations. In Bagerhat district total forty eight (48) interviews conducted while in Chapai Nwabgonj were forty seven (47) and in Gaibandha were thirty nine (39) only. In general, the major findings are positive of purchasing and use of ICS while the users also have reported some problems they faced.

4.1 Specific findings based on data analysis

One of the major findings is that young groups are the main users of ICS as the data shows that about 83% users are between 15-45 years old while 62% of the users are between 15-35 years old; and only 6% users are above 55 years old; and 68% respondents were female and 32% were male (*Reference: Table-1*).

It is a notable finding that the literate people are the main users of ICS. As per *Reference Table-1*, the data shows that only three (3%) percent users are illiterate while 33% has basic education (14% users completed Class I-V and 19% completed Class VI-X); and 64% have obtained at least one certificate (38% are SSC/HSC; 26% are Graduate and above).

All the respondents family are users of ICS, although the duration of using time of ICS is noted around six (6) months only by 96% of respondents, and out of them 59% have been using it for less than three (3) months. However, they use it for the majority of their cooking as 83% of them said they cook for 2-3 times in a day; and average one hour time is required to complete the cooking reported by 78% respondents as stated in the several reference tables (*Reference: Table-2; Table-3; and Table-4*).

Eighty percent (80%) of ICS users have to buy fuel (*Reference: Table-5*) and maximum of them have to use Palette and a specific size of firewood which is not easily available in their locality (*Reference: Table-6*).

The families who consisted of the highest total members (six (6) in the family) that are using ICS, it is a dominating figure (91%) for their cooking while families consisting of less than four (4) members are second highest users as noted at 53% (*Reference: Table-7*); although only 39% use ICS for all cooking (*Reference: Table-8*). Most of them are also using other stoves to complete their daily cooking while the majority (64%) use traditional earthen stove (*Reference: Table-9*), but alternative choices or preference of using other stoves are mainly stoves required natural gases; 45% preferred stove by piped gas and 37% preferred by LPG (*Reference: Table-10*).

The factors influenced (highest to lowest) in purchasing ICS as per *Reference: Table-11*, are as follows:

- Energy saving,
- Time saving,
- Lower cost of energy,
- Attractive design,
- Manufacturer's warranty,
- Lower price,
- Cost subsidy,
- Easily portable, and
- Smokeless cooking

Almost 98.5% of ICS users shared their ideas and experiences of using ICS with others (*Reference: Table-12*) while they shared with other households, neighbors, community members, ICS suppliers and others (*Reference: Table-13)*; 94% of the respondents reported that they are benefitted of using ICS (*Reference: Table-14*). The major benefits of ICS using are mentioned (*Reference: Table-15)* as follows:

- Saving fuel / firewood
- Reduced smoke and improve home environment
- Cost saving
- Health benefit
- Better quality of cooking
- Time saving in collecting fire wood

About 90% of respondents reported that they did not face any problems in purchasing ICS while about 10% of them complained that they faced problems for purchasing ICS (*Reference: Table-16).* The problems faced to buy ICS (*Reference: Table-17)* are mainly as follows:

- No installment facility
- No subsidy
- Scarcity in market
- Quality of construction
- Expensive

It is remarkable that 79% of users (*Reference: Table-18)* said that they do not face any problems for using ICS while 20% of them faced the following problems (*Reference: Table-19)*:

- Problem in refueling
- Takes more time for cooking
- Excess smoke/Kali
- No energy savings
- Not environment friendly
- Fan shuts suddenly
- No cost savings
- Not health friendly

It is significant that 79% of users mentioned that they use 79% firewood; 64% agri-by-product and 19% Palette as fuel for other cook stoves (*Reference: Table-20)*; while 71% users use Palette; 62% firewood and 2.2% agri-by-product as fuel in Improved Cook Stoves (*Reference: Table-21)*. It seems firewood still one of the most important fuels although agri-by-product was reduced a huge amount for ICS.

A total of 78% respondents replied that there were no "other ICS design available during purchase" while only 9% replied affirmative (*Reference: Table-22)*. A total of 78% know the factors influences to buy ICS (*Reference: Table-23)*; the three main factors influences to buy ICS are energy saving, time saving and lower cost of energy (*Reference: Table-24)*. There are five more tables inserted for additional references.

5. Recommendations

There are many areas that can be improved and some other aspects must be improved. Based on the findings and specific comments from the end users the following recommendations are made for future considerations:

a) **The design of the Cook Stove needs modifications** as many of the users mentioned about the design, although with a total of one third of sample households using the ICS for all cooking that is quite a good number. It may be increased if the Cook Stove were to be made in a modified design;

b) **The new design must be easy in refueling, take less time for cooking, produce less smoke, and provide energy savings as well as be environment and health friendly;**

c) **Fuel for ICS must be easily available in the locality or nearby market,** which will help people to increase use of ICS. Some of the users complained about the fuel which must be gotten from a selective source only; i.e. Palette which is not easily available and a specific size of firewood that needs more time to make it in a respective size;

d) **Consider conducting a survey among different income categories.** The ICS survey was concentrated in the medium and lower-medium income communities and semi-urban areas. As such, certain findings may warrant further investigation, notably those relating to the pricing of the ICS in areas of low-income urban users and the rural poor communities, particularly to ascertain if pricing is a significant barrier to deployment.

e) The **ICS must be available as per demand;** at present in some areas there is a shortage of it in the local market where people demand it;

f) **Quality of construction must be maintained** as some of the users reported bad quality of products, which has an effect on new users;

g) **ICS information campaign needs to be improved using appropriate methods and materials** that will help to reach various income groups and different localities as well.

6. Lessons Learned

The following are the lessons learned:

- The ICS survey was concentrated in the medium and lower-medium income communities and semi-urban areas. As such, certain findings may warrant further investigation, notably those relating to the pricing of the ICS.
- Improved Cook Stove is well liked by the majority of users although there are some limitations at the design and construction level and with fuel selection.
- Most end-users have less than 12 months of utilization experience. The performance of the ICS should be further monitored and assessed after the stoves have been in use for at least a year to determine the long-term acceptance for the ICS.
- There are many factors influencing deployment of the ICS and its use. They include:
  - Marketing, availability in the local market and usefulness at the household level.
  - The price of ICS may be a factor particularly for the low-income community.
- Issues pertaining to quality and design should be further investigated.
- Given the overwhelming positive response from end users and given that the majority of the end users indicated they have shared experiences, the potential exists to leverage this in the overall promotion and marketing of the ICS. This could include having selected end users being an integral part of any ICS marketing events.

7. Conclusions

This ICS End User survey is a part of Mid-Term Performance Evaluation of Catalyzing Clean Energy in Bangladesh (CCEB) program, which has been conducted to assess any constraints and opportunities associated with achievement of expected program results; to provide specific recommendations for opportunities to enhance programmatic effectiveness and impact and strengthen the current approach; and to determine the extent to which the CCEB activities to support market development are likely to be sustained.

The findings mentioned above provide a wide range of opportunities to review the existing program and would be helpful for further modifications. This program is well liked although some limitations are there in marketing and construction level, which has a major impact in end user level. The price is a big factor for the low-income community who really need this support but cannot afford at this stage.

It is also important to keep the existing users on track providing operation and maintenance (O&M) services so they can be continued as regular and permanent customer of the product. The users having good results are the ambassador of the product and can be helpful to increase the selling of products in the neighborhood.

It is suggested to develop linkages with the government of Bangladesh (GOBGOB), more specifically with the Department of Environment (DOE) and Ministry of Environment and Forestry (MOEF), as well as maintain Environmental Quality Standards (EQS) to avoid environmental hazards and contribute to achieve Sustainable Development Goals (SDG).

It may be appreciable to build up a network between producers, distributors and local non-government organizations (NGOs) who can assist for subsidy or loan for installments for the poor section of the community. At the same time, more production and highest selling will help to reduce ICS price and increase the accessibility of various income level people. Design of ICS may also need to be modified for reducing fuel consumption, to keep environment less polluted or pollution free, to

be functional for using various size/types of fuel/firewood, user friendly and minimum cooking time. Many users' first choice is a cost effective and portable improved cook stove that will reduce smoke and cooking time.

A total of 24 Reference tables inserted in the next pages are discussed in the findings section of this report and a few more tables were added for further reference that summarize respondent's answers as per survey questionnaires.

References Tables

29. Tables with summary of respondents answer as per survey questionnaires for additional references:

Table 1: Number and Percentage of Respondents showed by Education, Age and Gender

Respondent by Gender	Respondent Age	Respondent Education					Total Respondents
		Illiterate	Grade I-V	Grade VI-IX	SSC /HSC	Graduate or above	
Male (32%)	15-25 years	-	-	1 (33.3)	1 (33.3)	1 (33.3)	3
	26-35 years	-	2 (11.8)	3 (17.6)	6 (35.3)	6 (35.3)	17
	36-45 years	-	1 (6.7)	5 (33.3)	5 (33.3)	4 (26.7)	15
	46-55 years	-	2 (50.0)	-	-	2 (50.0)	4
	56+ years	-	1 (33.3)	-	1 (33.3)	1 (33.3)	3
	Total	**-**	**6 (14.3)**	**9 (21.4)**	**13 (31.0)**	**14 (33.3)**	**42**
Female (68%)	15-25 years	-	2 (11.8)	4 (23.5)	8 (47.1)	3 (17.6)	17
	26-35 years	-	3 (6.7)	7 (15.6)	19 (42.2)	16 (35.6)	45
	36-45 years	2 (15.4)	3 (23.1)	3 (23.1)	3 (23.1)	2 (15.4)	13
	46-55 years	-	3 (27.3)	2 (18.2)	6 (54.5)	-	11
	56+ years	-	2 (40.0)	1 (20.0)	2 (40.0)	-	5
	Total	**2 (2.2)**	**13 (14.3)**	**17 (18.7)**	**38 (41.8)**	**21 (23.1)**	**91**
Grand Total:		**4 (3%)**	**19 (14%)**	**26 (19%)**	**51 (38%)**	**35 (26%)**	**133**

Percentages and total are based on total respondents; here is missing data of one respondent out of 134.

Table 2: Length of Time needed for each Cooking done with ICS

Length of time needed for each cooking	Percent of Cooking done with ICS					Total
	<=10%	10-25%	25-50%	50-75%	>75% *	
Half-an hour	-	-	-	1 (3.2)	2 (3.8)	3 (2.2)
One hour	4 (80.0)	17 (100.0)	23 (79.3)	18 (58.1)	42 (80.8)	104 (77.6)
Two hours	1 (20.0)	-	6 (20.7)	11 (35.5)	8 (15.4)	26 (19.4)
Three hours	-	-	-	1 (3.2)	-	1 (0.7)
Total	**5 (100.0)**	**17 (100.0)**	**29 (100.0)**	**31 (100.0)**	**52 (100.0)**	**134 (100.0)**

Notes: Figures in the parenthesis indicates the percentage; >75% means almost all cooking is done by Improved Cook Stoves

Table 3: Duration of using ICS (month)

Duration of using ICS (month)	Frequency	Percentage of Respondents
1-3 months	79	59.0
4-6 months	50	37.3
7-9 months	4	3.0
>12 months	1	0.7
Total	134	100
Mean ± SD	3.36 ± 1.93	

Table 4: Number of Times usually Cook/Day

Number of times usually cook/day	Frequency	Percentage of Respondents
Once	21	15.7
Twice	69	51.5
Thrice	44	32.8
Total	**134**	**100.0**

Table 5: Buy Fuel for Cooking

Buy fuel for your cooking	**Frequency**	**Percentage of Respondents**
Yes	107	80
No	27	20
Total	134	100

Table 6: Opportunity of Collecting Fuel by category/type of fuel

Fuel type for ICS[a]	Buy fuel for cooking		Total
	Yes	No	
Firewood	64 (59.8)	19 (70.4)	83
Agri-by-product	3 (2.8)	-	3
Palette	86 (80.4)	9 (33.3)	95
Wood dust	1 (0.9)	1 (3.7)	2
Others	6 (5.6)	1 (3.7)	7

a. Group Fire wood in specific size and Palette specially made which is not easily available

* Percentages and totals are based on respondents

Table 7: Cooks for average number of persons daily

Cooks for # of Persons per day	Frequency	Percentage of Respondents
<=4	71	53
5-6	51	38.1
7-8	9	6.7
9+	3	2.2
Total	**134**	**100**
Mean ± SD	4.64 ± 1.59	

Table 8: Percent of Cooking done with ICS

Percent of cooking done with ICS	Frequency	Percentage of Respondents
<=10%	5	3.7
10-25%	17	12.7
25-50%	29	21.6
50-75%	31	23.1
> 75% (Almost all cooking)	52	38.8
Total:	**134**	**100**

Table 9: Type of Other Stoves Use by Respondents

Type of other stoves used	**Frequency**	**Percentage of Respondents**
Earthen stove	64	76.2
Zik chula	1	12
Rice cooker	29	34.5
LPG stove	16	19
Electric heater	5	6
Bondhu chula	5	6
# of cases	**84**	

Table 10: Preference of using other stoves

Preference of using other stoves	Frequency	Percentage of Respondents
Piped gas	59	44.7
LPG	49	37.1
Electricity from grid	10	7.6
Renewable electricity	6	4.5
Traditional fuel	10	7.6
Kerosene	1	0.8
Other	13	9.8
# of cases	**132**	

Table 11: Factors influenced in Purchasing ICS by its benefits of use

Factors influenced in purchasing ICS[a]	Benefits of using ICS[a]									Total
	Better quality cooking	Saving fuel wood	Cost savings	Time saving in collecting fuel wood	Health benefit	Reduced smoke improve home environment	Can do other works/Save time	Portable /Can cook in convenient place	Others	
Energy saving	81 (91.0)	109 (97.3)	95 (94.1)	61 (96.8)	89 (94.7)	101 (93.5)	18 (100.0)	16 (100.0)	4 (100.0)	115
Time saving	80 (89.9)	96 (85.7)	88 (87.1)	60 (95.2)	79 (84.0)	97 (89.8)	17 (94.4)	13 (81.3)	4 (100.0)	109
Lower cost of energy	69 (77.5)	91 (81.3)	89 (88.1)	56 (88.9)	81 (86.2)	90 (83.3)	15 (83.3)	14 (87.5)	2 (50.0)	98
Attractive design	68 (76.4)	81 (72.3)	69 (68.3)	40 (63.5)	70 (74.5)	72 (66.7)	8 (44.4)	6 (37.5)	2 (50.0)	88
Manufacturer's warranty	55 (61.8)	72 (64.3)	65 (64.4)	41 (65.1)	66 (70.2)	67 (62.0)	7 (38.9)	9 (56.3)	2 (50.0)	76
Lower price	20 (22.5)	22 (19.6)	19 (18.8)	18 (28.6)	20 (21.3)	21 (19.4)	-	3 (18.8)	-	22
Cost subsidy	21 (23.6)	21 (18.8)	20 (19.8)	19 (30.2)	21 (22.3)	21 (19.4)	-	-	-	21
Easily portable	7 (7.9)	17 (15.2)	17 (16.8)	5 (7.9)	11 (11.7)	18 (16.7)	10 (55.6)	3 (18.8)	-	18
Smokeless cooking	5 (5.6)	15 (13.4)	12 (11.9)	3 (4.8)	7 (7.4)	15 (13.9)	8 (44.4)	7 (43.8)	1 (25.0)	16
Save time/can do other work simultaneously	-	5 (4.5)	5 (5.0)	2 (3.2)	-	5 (4.6)	4 (22.2)	2 (12.5)	1 (25.0)	5
Gift	3 (3.4)	4 (3.6)	4 (4.0)	4 (6.3)	4 (4.3)	3 (2.8)	-	-	-	4
Recommended by neighbors	3 (3.4)	3 (2.7)	2 (2.0)	2 (3.2)	2 (2.1)	2 (1.9)	-	-	-	3
Supplies at home	2 (2.2)	2 (1.8)	2 (2.0)	1 (1.6)	2 (2.1)	2 (1.9)	-	-	-	2

Factors influenced in purchasing ICS[a]	Benefits of using ICS[a]									Total
	Better quality cooking	Saving fuel wood	Cost savings	Time saving in collecting fuel wood	Health benefit	Reduced smoke improve home environment	Can do other works/Save time	Portable /Can cook in convenient place	Others	
Installment facility	1 (1.1)	2 (1.8)	2 (2.0)	1 (1.6)	1 (1.1)	2 (1.9)	1 (5.6)	-	-	2
Can cook in convenient place	1 (1.1)	-	1 (1.0)	-	-	1 (0.9)	-	-	-	1
Others	5 (5.6)	6 (5.4)	6 (5.9)	6 (9.5)	5 (5.3)	6 (5.6)	1 (25.0)	1 (5.6)	-	6

Note: Percentages and totals are based on respondents.
a. Group

Table 12: Shared experience of using with others

Shared experience of using ICS with others	Frequency	Percentage of Respondents
Yes	132	98.5
No	2	1.5
Total	**134**	**100**

Table 13: Persons Shared ICS Experiences with…

Persons shared the experiences with…	Frequency	Percentage of Respondents
Other HH	125	95.4
Other Community Members	88	67.2
ICS suppliers	27	20.6
Other persons	5	3.8
# of cases	131	

Table 14: Benefitted from ICS use

Benefitted from ICS use	Frequency	Percentage of Respondents
Yes	**125**	**94.0**
No	8	6.0
Total	**133**	**100**

Table 15: Benefits of using ICS

Benefits of using ICS	Frequency	Percentage of Respondents
Better quality cooking	89	71.2
Saving fuel wood	112	89.6
Cost savings	101	80.8
Time saving in collecting fuel wood	63	50.4
Health benefit	94	75.2
Reduced smoke to improve home environment	108	86.4
Can do other works/save time	18	14.4
Portable/Can cook in convenient place	16	12.8
Others	4	3.2
# of cases	**125**	

Table 16: Problems faced in Purchasing ICS

Problem faced in purchasing ICS	Frequency	Percentage of Respondents
Yes	12	9
No	120	89.6
Can't remember	2	1.5
Total	134	100

Table 17: Problems faced in Purchasing ICS

Problems faced in purchasing ICS	Frequency	Percentage of Respondents
Scarcity in market	4	33.3
Quality of construction	2	16.7
No subsidy	4	33.3
No installment facility	7	58.3
Expensive	1	8.3
# of cases	12	

Table 18: Problems faced in using ICS

Problem faced in using ICS	Frequency	Percentage of Respondents
Yes	27	20.1
No	106	79.1
Don't know	1	0.7
Total	134	100

Table 19: Problems faced in using ICS

Problems faced in using ICS	Frequency	Percentage of Respondents
Takes more time	8	29.6
No energy savings	6	22.2
No cost savings	5	18.5
Not environment friendly	6	22.2
Not health friendly	3	11.1
Excess smoke/Smut	7	25.9
Problem in refueling	16	59.3
Fan shuts suddenly	6	22.2
Others	1	3.7
# of cases	27	

Table 20: Type of fuel used in other stoves

Type of fuel used in other stoves	**Frequency**	**Percentage of Respondents**
Firewood	66	78.6
Agri by-product	54	64.3
Palette	16	19.0
Wood dust	5	6.0
LPG	16	19.0
Electricity from grid	36	42.9
# of cases	**84**	

Table 21: Type of fuel used in ICS

Type of fuel used	Frequency	Percentage of Respondents
Firewood	83	61.9
Agri by-product	3	2.2
Palette	95	70.9
Wood dust	2	1.5
Others	7	5.2
# of cases	**134**	

Table 22: Any other ICS design available during purchase

Any other ICS design available during purchase	Frequency	Percentage of Respondents
Yes	12	9
No	104	77.6
Don't know	18	13.4
Total	**134**	**100**

Table 23: Know the influential factors to buy ICS

Know the influential factors to buy ICS	Frequency	Percentage of Respondents
Yes	42	77.8
No	8	14.8
Don't know	4	7.4
Total	**54**	**100**

Table 24: Factors influenced in purchasing ICS

Factors influenced in purchasing ICS	Frequency	Percentage of Respondents
Energy saving	124	92.5
Time saving	118	88.1
Lower cost of energy	105	78.4
Attractive design	90	67.2
Manufacturer's warranty	78	58.2
Lower price	24	17.9
Cost subsidy	22	16.4
Easily portable	21	15.7
Smokeless cooking	20	14.9
Save time/Other work can do simultaneously	8	6.0
Gift	4	3.0
Recommended by neighbors	3	2.2
Supplies at home	2	1.5
Installment facility	2	1.5
Can cook in convenient place	2	1.5
Others	6	4.5
# of cases	**134**	

*** Multiple responses considered**

Table 25: Items usually cooked in ICS

Items usually cooked in ICS	Frequency	Percentage of Respondents
Rice/Ruti	112	83.6
Curry/Dal	125	93.3
Snacks	28	20.9
Tea	45	33.6
Others	6	4.5
# of cases	134	

*** Multiple responses considered**

Table 26: Items usually cooked in other stoves

Items usually cook in other stoves	Frequency	Percentage of Respondents
Rice/Ruti	75	89.3
Curry/Dal	69	82.1
Snacks	23	27.4
Tea	29	34.5
Others	10	11.9
# of cases	**84**	

*** Multiple responses considered**

Table 27: Know if the price of ICS was subsidized

Know if the price of ICS was subsidized	Frequency	Percentage of Respondents
Yes	30	22.4
No	50	37.3
Don't know	54	40.3
Total	**134**	**100**

Table 28: Person who made decision to buy ICS

Person who made decision to buy ICS	Frequency	Percentage of Respondents
Respondent	110	82.1
Main earner	59	44.0
Principal user	40	29.9
HH head	33	24.6
Family/community decision	6	4.5
Others	2	1.5
# of cases	**134**	

*** Multiple responses considered**

Table 29: Suggestions from ICS Users

Sl No.	Suggestions from ICS users	Frequency	Percentage of Respondents
1	Self-needed to insert fuel/ firewood	25	21.7
2	Ensure palette supply	24	20.7
3	Reduce palette price	17	14.7
4	Reduce stove price	69	60.0
5	Time wastage to make firewood to small size	8	7.0
6	Need installment facility	24	20.9
7	Increase sales promotion & stove supply	16	13.9
8	Firewood instead of palette will be better	14	12.2
9	Use quality materials for stove	8	7.0
10	Double burner is better	5	4.3
11	Make changes in design[28]	32	27.8
	# of cases[29]	**116**	

[28] Make Changes in Design includes 'Better fan/charger', 'Enlarged entrance space', 'Enlarge combustion space', 'Make stove a bit higher', 'Include better quality handle' and 'Make body heat resistant'.

[29] Multiple Responses Considered

List of Annexures:

A. Photos of different design of ICS and Users
B. Terms of Reference (ToR) of Survey
C. Original Survey Instruments (English and Bengali version)
D. List of Interviewed Respondents
E. Survey Questionnaires (134)

Annex L: Mid-Term Evaluation SOW

Scope of Work (SOW) for the Catalyzing Clean Energy in Bangladesh (CCEB) Project Mid-Term Performance Evaluation

PROJECT TO BE EVALUATED	
Project Name	Catalyzing Clean Energy in Bangladesh
Contract Number	Contract Number: AID-338-C-13-00001
Original Project Date	October 10, 2012 - October 9, 2017
Original Funding	$14,990,150
Implementing Partner	Deloitte Consulting LLP

I. BACKGROUND

USAID/Bangladesh awarded Contract Number: AID-338-C-13-00001 to Deloitte Consulting LLP to implement the Catalyzing Clean Energy in Bangladesh (CCEB) project on October 10, 2012. CCEB is a five-year project to support energy sector development for energy security, economic growth and climate change mitigation.

Back then, Bangladesh's energy sector was facing a number of challenges. Foremost among them were severe power shortages, skyrocketing natural gas consumption, and rural energy poverty. More than 50% of the population still lacked access to electricity. The electricity supply and demand gap was about 1,500 MW. Natural gas consumption was also growing tremendously. The problems of growing demand and looming shortages in the power and gas sectors were also exacerbated by problems of mismanagement, low energy prices and lack of strong regulatory environment. Despite these challenges, several components of the Bangladesh energy sector were demonstratively strong. Those positive factors, combined with favorable political will of the then government for addressing energy crisis, provided a favorable environment for continued USAID support in this sector, potential alleviation of some of the energy sector crises, and continued movement of Bangladesh along a low carbon development trajectory.

President Obama and the United States Government (USG) have committed to the various goals of the Copenhagen Accord and made Global Climate Change (GCC) a top priority for foreign policy as well as foreign assistance. As part of the Global Climate Change Initiative, USAID supports the USG's Enhancing Capacity for Low Emissions Development Strategies (EC-LEDS) program, of which Bangladesh is a partner country

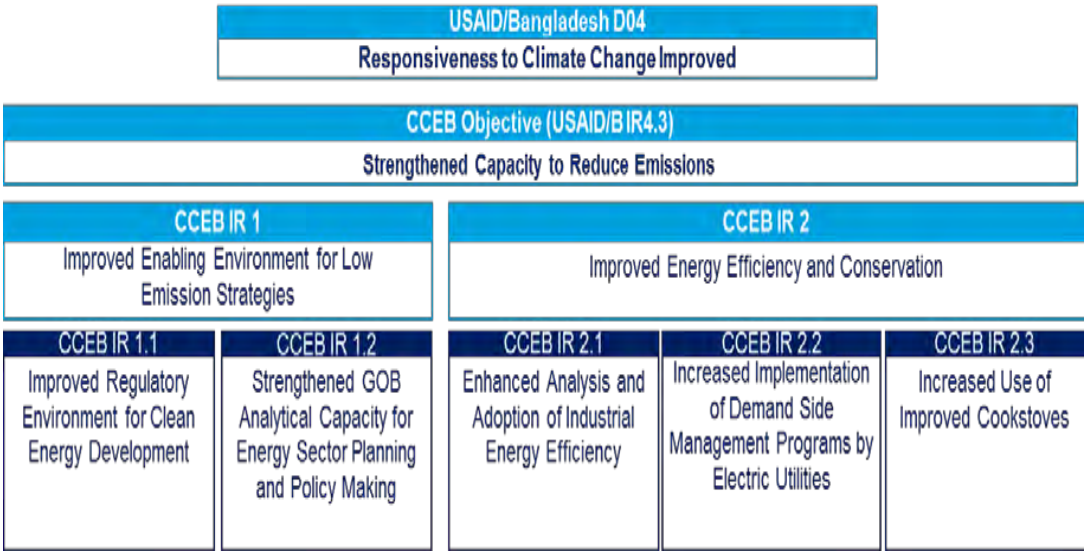
USAID/Bangladesh has a specific commitment to GHG emissions reduction and sequestration. The 2011-2016 Country Development Cooperation Strategy (CDCS) is oriented around four development objectives (DOs). DO4: "Responsiveness to Climate Change Improved" aims to increase the nation's responsiveness, adaptation to climate change, and mitigation of climate change through three inter-related intermediate results (IR):1) improved management of natural resources; 2) enhanced adaptation capacity and resilience to shocks; and 3) strengthened capacity for low emissions development focusing on mitigation.

CCEB contributes to the achievement of CDCS IR4.3: Strengthened Capacity to Reduce Emissions and the sub-IRs 4.3.1: Improved Enabling Environment for Low Emissions Strategies; 4.3.2: Increased Adoption of Renewable Energy; and 4.3.3: Improved Energy Efficiency and Conservation. The results that CCEB contributes to are shown in Figure1 below.

Figure 1. CCEB Results Framework

The CCEB Development Hypothesis is that, USAID support for enhanced planning capacity for energy sector and low-emissions development, increased investment in energy efficiency and renewable

energy, and an improved energy sector regulatory framework will result in strengthened Bangladesh capacity to reduce emissions. The Results Framework depicted above is a graphical depiction of the Theory of Change. Please see Annex 1 for CCEB M&E Plan for more details.



The CCEB program is intended to meet USAID's clean energy directive, through deployment of clean energy. It will also support the EC-LEDS program in Bangladesh by strengthening GOB capacity for energy sector analysis, planning, and policy-making to enable low emissions development. It was envisioned in the Section C-Statement of Work (SOW)[30] of the contract that the CCEB project would address a targeted number of issues that meet the criteria indicated below:

- Support energy sector development for energy security, economic growth, and climate change mitigation to Bangladesh.
- Build capacity to design and implement supportive policies and regulations, and increase utilization of clean energy approaches and technologies for energy sector development on a low carbon trajectory.

The key two results expected under this program are: (i) Enabling environment in place for low emissions development as a result of BERC and building capacity of GOB institutions in energy sector analysis for low-emission planning and policy making, and (ii)Increased energy efficiency and conservation through increased adoption of energy efficiency technologies and practices by industry; implementation of demand-side management programs by utilities; and increased use of improved, more efficient cook stoves.

II. PROJECT COMPONENTS

The CCEB project consists of two components with five tasks:

Component 1: Improve Enabling Environment for Low Emissions Development

Task 1: Improve Regulatory Environment for Clean Energy Development: The program focuses on assisting Bangladesh Energy Regulatory Commission (BERC) in meeting targets as established under the Maturity Model as well completing an end-of-year assessment of BERC's performance. The project will ensure that BERC has a capacity to institute a regulatory framework

[30] Project Description Document (Section C- Description/Specs./Statement of Work; AID-388-C-13-00001, p.7-69)

that supports private sector investment in clean energy. Activities under this task will be implemented in close collaboration with Task 4 that will lead to promoting utility demand-side management (DSM) programs of the electric utilities.

Task 2: Strengthen Analytical Capacity for Energy Sector Planning and Policymaking: Activities under this task directly support USAID's commitment to the U.S. Government's Initiative on Enhancing Capacity for Low Emission Development Strategies (EC-LEDS) in Bangladesh. The project will support enhancing GOB and Bangladeshi stakeholder capacity for energy sector and low emission development analysis and planning so that future energy and climate change plans and policies can be more oriented towards reduced GHG emissions (such plans and policies may include future versions of the BCCSAP, national energy policy, and energy component of the five-year plans).

Component 2: Increase Energy Efficiency and Conservation

Task 3: Promote Industrial Energy Efficiency Analysis and Adoption: This task will focus primarily on privately owned small and medium size industries particularly the ones that are export-oriented. Interventions in this area will focus on catalyzing industry/ enterprise investments in EE through a combination of project development, financing facilitation, and business advisory services/ technical assistance. This activity will assist companies in developing a pipeline of commercially viable projects, bringing projects to financial closure, and providing relevant technical assistance and training to support project sustainability and replication. Activities will also support long-term sustainability and replication by strengthening private and public sector capacity for energy efficiency project development, financing, and implementation, through training of energy service providers.

Task 4: Adopt Demand Side Management Programs for Electric Utilities: Utility led demand side management (DSM) programs have emerged as effective models for wide-scale adoption of energy efficiency and conservation practices. Activities under this task will work with urban distribution utilities to implement demand-side management programs. This work will be done in a sequenced manner with the activities recommended in Task1, supporting BERC in first establishing a regulation requiring utility-DSM projects, and then working with the utilities on cost-effective DSM initiatives and appropriate smart-grid applications.

Task 5: Conduct Market Analysis and Development for Improved Cook stoves: Under this task, a set of activities is envisaged to build a sustainable, improved cook stoves market in Bangladesh in order to reduce energy consumption and green house pollutants, which will be achieved through expanding the market for improved biomass cook stoves by developing sources of finance for consumers and/or clean energy businesses engaged in supplying the market with improved biomass cook stoves; strengthening businesses involved in the cook stoves supply chain; and better understanding consumers in order to generate market demand.

Please see Annex-2 for CCEB Contract Section-C for deliverables and other details and Annex-3 for a list of districts where the project works.

III. EVALUATION OBJECTIVES

The purpose of the CCEB mid-term performance evaluation is to assess the extent to which the CCEB project is on track to meet its overall goals and inform management of any challenges or opportunities that warrant adjustments to the project to ensure the achievement of those results. The findings and recommendations of the evaluation will be used to improve implementation of the project and inform the design of other relevant DO4 projects.

With the exclusion of procurement sensitive sections, USAID intends to disseminate the report to pertinent stakeholders (i.e. Bangladesh Energy Regulatory Commission (BERC), relevant government ministries and agencies, consumer groups etc.) and to general public through the Development Experience Clearinghouse (DEC).

The specific objectives of this evaluation are to:

Determine the extent to which the CCEB project is on track (including process and outcomes) to meet its overall goals across the two major CCEB components. The evaluation will –

1. Identify constraints and opportunities associated with achievement of expected project results.
2. Provide specific recommendations for opportunities to enhance programmatic effectiveness and impact and strengthen the approach within the confines of the CCEB contract
3. Determine the extent to which USAID investments in the CCEB activity are likely to be sustained and make viable recommendations for future (post CCEB) project focus areas.

IV. EVALUATION QUESTIONS:

1. To what extent is the CCEB project on track, in terms of progress and outcomes, to meet its overall goals for the five tasks under the components A and B?
2. What are the opportunities to enhance programmatic approach and effectiveness plausible under the stipulation of the contract?
3. What have been the major constraints and opportunities with respect to sustainability of the interventions? What measures should be taken to enhance sustainability?
4. Till date, how effectively has gender been integrated or incorporated in the interventions? What have been the challenges and opportunities, if any?

V. EVALUATION METHODOLOGY

The M&E contractor for the USAID Bangladesh Economic Growth (EG) office, Accelerating Capacity for Monitoring and Evaluation (ACME), will carry out this evaluation. Based on the SOW from USAID, ACME will recruit and manage the evaluation team. The evaluation work plan and evaluation protocol drafted by the evaluation team will be reviewed and approved by USAID. The detailed methodology of the evaluation will be designed by the evaluation team in the work plan; this will include presentation of a data collection matrix that will explicitly link evaluation questions to particular data collection approaches and data sources. It is suggested that the evaluation team use a mixed- method approach utilizing both qualitative (including non-experimental design) and quantitative analysis (key informant interviews, stakeholder interviews/mini- surveys, and focus group discussions).The evaluation team should develop the best evaluation design methodology in light of the evaluation questions, timeframe, budget, data collection requirements, quality of existing data sources, and potential biases.

The evaluators should utilize several different, yet complementary and inter-related forms of gathering information / data. These are:

Document Review: Evaluation team members will review documents throughout the evaluation process including program reports, relevant studies and evaluations and BERC documents to ensure that comprehensive and grounded best practices will be identified.

Key Informants Interview: The team will conduct one-on-one interviews with a variety of stakeholders including BERC, BPDB and various stakeholders, and other projects supporting energy sector development.

Self-assessment: The IPs will respond to a self-assessment either through a questionnaire or standard interview checklist put together by the evaluation team and approved by USAID before use.

Expert Opinion Survey: Utilizing expert opinion is a technique used increasingly in the energy sector, particularly clean energy. The Evaluation team, with approval of USAID, can apply this method as well.

Participatory Rural Appraisal (PRA): This form of survey method will be applied to seek views and opinion of the local community on the issues related to improved cook stoves program. This qualitative survey requires sufficient triangulation.[31]

Focus Group Discussions (FGD): FGD (small group of 6 to 10 people) will be used to lead open discussion through a skilled moderator to gather semi-structured qualitative data. The preselected participants will discuss issues and concerns based on a list of key theme drawn up by the moderator. No more than 10 questions will be addressed by a group. These sessions will encourage free flowing discussion about the activity.

Social and Economic Analysis: This type of analysis might require sample survey (e.g. ICS acceptability and sustainability). Due to time and resource constraints, it is neither possible nor desirable to carry out a complete census for social and economic analysis. So, a sample size needs to be determined, based on the project area of focus, for the survey, which is statistically sound in terms of ***representativeness*** of the sample, and which is most widely used for ***inferential analysis***. Standard statistical formula which is commonly used to determine a representative sample size stands as follows:

$$n = \frac{X^2 * N * P * (1-P)}{(ME^2 * (N-1)) + (X^2 * P * (1-P))}$$

Where:

n = sample size

X^2 = Chi – square for the specified confidence level at 1 degree of freedom

N = Population Size

P = population proportion (.50 in this table)

ME = desired Margin of Error (expressed as a proportion)

This formula can be applied to estimates sample size at 95% level of confidence with 5% margin of error, which is universally accepted and practiced. The evaluators can use any other standard formula at their own convenience.

In case where total population (universe) data is not available, or available but numbering of each unit of population is not possible, then ***skip interval method*** will be applied to select the primary sample units, say the households. There are three methods of choosing a respondent within the households – the birthday method, quotas and ***Kish Grid***.[32] To obtain the true reflection of the views of all walk of people (man, woman, youth, old) within the households/community, the ***Kish Gridtool*** is widely used. Structured questionnaire will be used to collect data in such cases.

Regardless of data collection and analysis methods, USAID requires qualitative and quantitative data disaggregated by gender.[33]

Methodological limitations and challenges for this evaluation are expected to include:

- Ensuring that samples of interview sources are sufficient to support evaluation findings;

[31] Davis (Davis, A.C.S., *'Participatory Rural Appraisal', Rural Travel and Transport Program*, 2001, 5.6.a, TRL Limited) reveals that PRA triangulation is often carried out in groups of at least 3 (three) to increase the credibility of each survey technique.

[32] Kish, Lesile (1949), 'A Procedure for Objective Respondent Selection within the Households', *Journal of American Statistical Association*, 44(247) 380-387].

[33] *USAID*ADS 203.3.4.3

- Taking systematic actions to counter any biases in (a) reporting by data collection sources and (b) interpretations of collected data by the evaluation team; and ensuring "actual" results can be measured, which will only be possible if data can be gathered and analyzed beyond respondent perceptions.

All the methodological strengths and weaknesses should be explicitly described in the evaluation report.

VI. EXISTING SOURCES OF INFORMATION

The evaluation team should consult a broad range of background documents apart from project documents provided by USAID/Bangladesh. USAID and CCEB project will provide the assessment team with a package of briefing materials which will include the documents indicated below:

- Project Description Document (Section C- Description/Specs./Statement of Work; AID-388-C-13- 00001, p.7-69)
- CCEB Database
- CCEB M&E Plan
- Project Quarterly and Annual reports, work plans, and management review
- DQA reports
- USAID/Bangladesh DO4 Performance Management Plan
- USAID/Bangladesh Country Development Cooperation Strategy 2011 – 2016 (Public version)

The evaluation team must also research any other relevant documents from GOB, Donors and other international organizations pertinent to the sector that CCEB serves.

VII. EVALUATION TEAM COMPOSITION

The evaluation team should consist of two consultants: one international and one national. The international consultant will work as Team Leader who will be assisted by a national expert. Following skills and qualifications are expected from the evaluation team:

1. **Team Leader/ International Energy Expert** (33 person days) Duties and Responsibilities

The Team Leader/International Energy Expert will provide overall leadership for the team, and s/he will finalize the evaluation design, coordinate activities, arrange periodic meetings, consolidate individual input from the other team member, and coordinate the process of assembling the final findings and recommendations into a high quality document. S/he will lead the preparation and presentation of the key evaluation findings and recommendations to the USAID/Bangladesh team and other major partners.

Skills and Qualifications:

- Master's or higher degree in energy, and environmental economics or other related fields;
- Experience in designing, implementing and evaluating projects aiming at capacity development of public institutions, especially in the energy sector
- At least 10 years of experience in implementing and evaluating energy programmes and/or projects for USAID or other international development agencies;
- At least 10 years of experience in conducting quantitative and qualitative evaluations
- Knowledge of USAID regulations and systems including GCC indicators, performance monitoring guidance, evaluation policy, gender policy, annual reporting etc. is essential
- Experience working with government institutions, on policy reform, public administration improvements, infrastructure financing and taxation;
- Knowledge of capacity building approaches and models that have been used to engage institutions in change and change management; Knowledge in Energy audits is a plus;
- Relevant experience in Bangladesh or South Asia preferred
- Strong analytical skills;

- Excellent communications and writing skills in English;
- Excellent coordination and team working skills;
- Knowledge of Bangla is an asset

2. National Energy Expert (28 person days) Duties and Responsibilities:

The National Energy Expert will be responsible for collection of background materials upon request by the evaluation team leader. S/he will actively participate in the desk review of materials and assist the team leader in developing methodologies, work plans and report outlines. The National Energy Expert will assist the Team Leader in setting and conducting interviews with relevant stakeholders and actively take part in these. S/he will participate in team meetings, site visits, and draft the sections of the report relevant to his/her expertise. S/he will also participate in presenting the report to USAID or other stakeholders and be responsible for addressing pertinent comments provided by USAID/Bangladesh or other stakeholders.

Skills and Qualifications:

- Master's degree in energy, natural resource management, environmental economics or other related fields;
- 7-10 years of experience in energy project development, evaluation, or implementation.
- Strong understanding and knowledge of GHG emissions context with regard to energy sector of Bangladesh,including clean energies and conventional energies;
- Experience with USAID GCC/NRM projects is a strong asset;
- Strong analytical skills;
- Strong oral communications and writing skills in English;
- Excellent team working skills;

Conflict of Interest

All evaluation team members will provide a signed statement attesting to a lack of conflict of interest, or describing an existing conflict of interest relative to the project being evaluated. USAID will provide the conflict of interest forms.

VIII. DELIVERABLES

All deliverables are internal to USAID and the Evaluation Team unless otherwise instructed by USAID. Evaluation deliverables are indicated below:

Evaluation Team Planning Meeting: During the meeting**,** the team should review and discuss the SOW in its entirety, clarify team member roles and responsibilities, prepare the work plan, develop data collection methods, review and clarify any logistical and administrative procedures for the assignment and instruments, and prepare for the in-brief with USAID/Bangladesh.

Work Plan: Prior to initiation of the evaluation activities, the evaluation team will provide a detailed initial work plan to the ACME COR. The ACME COR will provide any necessary feedback or edits to the work plan, after which the evaluation team will have three days to submit a final version of the document. The initial work plan will include (a) a task timeline, (b) a description of the methodology to answer each evaluation question, (c) team responsibilities, (d) document review process, (e) key informant and stakeholder meetings, (f) site visits, and (g) draft and final report writing. The work plan will be submitted to the ACME COR at USAID/Bangladesh for approval no later than the 5th day after commencement of evaluation.

In-briefing Meeting: The evaluation team will meet with USAID/Bangladesh within two working days of the Team Leader's arrival in country.

Evaluation Design Matrix: A table that lists each evaluation question and the corresponding information sought, information sources, data analysis methods, and limitations. The matrix should be

finalized and shared with USAID/Bangladesh before evaluation field work starts. It should also be included as an annex in the evaluation report.

Data Collection Instruments: Development and submission of data collection instruments to USAID/Bangladesh during the design phase and after the evaluation is completed.

Regular Updates: The Evaluation Team Leader will brief the ACME COR and any other designated evaluation POC on progress with the evaluation on at least a weekly basis, in person or by electronic communication. Any delays or communications must be quickly communicated to USAID/Bangladesh to allow quick resolution and to minimize any disruptions to the evaluation. Emerging opportunities to strengthen the evaluation should also be discussed with USAID/Bangladesh as they arise.

Preliminary Draft Evaluation Report: The evaluation team will submit a Preliminary Draft Evaluation Report to the ACME COR five working days before the Mission debriefing. Within three working days after receipt, USAID staff will provide preliminary comments prior to the Mission debriefing.

Debriefing with USAID: The evaluation team will present the major evaluation findings to USAID/Bangladesh through a PowerPoint presentation before the team's departure from country. The debriefing will include a discussion of achievements and issues as well as any preliminary recommendations. The team will consider USAID comments and incorporate them in the Draft Evaluation Report.

Draft Evaluation Report: A draft report on the findings and recommendations should be submitted to USAID/Bangladesh 10 days after departure of international team leader. The written report should clearly describe findings, conclusions, and recommendations. The draft report must be of high quality with no grammatical errors or typos. A report is high quality when it represents a thoughtful, well-researched and well organized effort to objectively evaluate what worked in the project, what did not and why. The draft report must have well-constructed sentences that are presented in a way that clearly presents findings, conclusions and recommendations. The report should answer all the evaluation questions and the structure of the report should make it clear how the questions were answered. The draft report must meet the criteria set forth under the Final Report section below. USAID will provide comments on the draft report within 10 working days of submission. The team will then have 5 work days to respond to the Mission's comments and submit Final Evaluation Report to the Mission.

Final Evaluation Report: The evaluation team will submit a Final Evaluation Report that incorporates Mission comments and suggestions no later than 10 working days after USAID/Bangladesh provides written comments on the Draft Evaluation report. The format of the final report is provided below. The report will be submitted electronically in English.

It should be a thoughtful, well-researched and organized effort to objectively evaluate what worked in the project, what did not, and why. The draft report must have well-constructed sentences that are presented in a way that clearly presents findings, conclusions and recommendations. The report should answer all the evaluation questions and the structure of the report should make it clear how the questions were answered.

The total pages of the final report, excluding references and annexes, should be no more than 30 pages. A second version of the evaluation report, excluding any potentially procurement-sensitive information, will be submitted to the Development Experience Clearinghouse (DEC) and disseminated among implementing partners and other stakeholders within ten days following approval from USAID.

All quantitative data, if gathered, should be (1) provided in an electronic file in easily readable format; (2) organized and fully documented for use by those not fully familiar with the project or the evaluation; (3) owned by USAID and made available to the public barring rare exceptions. A thumb drive with all the data could be provided to the ACME COR.

The final report will be edited and formatted by the evaluation team and provided to USAID/Bangladesh 5 working days after the Mission has reviewed the content and approved the final revised version of the report.

IX. REPORTING REQUIREMENTS:

The total pages, excluding references and annexes, should not be more than 30 pages. The following content (and suggested length) should be included in the report:

Table of Contents
List of Acronyms
Executive Summary – concisely state the project purpose and background, key evaluation questions, methods, most salient findings and recommendations (2-3 pp.);

1. **Introduction** – country context, including a summary of any relevant history, demography, socio- economic status, etc. (1 pp.);
2. **The Development Problem and USAID's Response** – brief overview of the development problem and USAID's strategic response, including design and implementation of the CCEB activity and any previous USAID activities implemented in response to the problem, (2-3 pp.);
3. **Purpose of the Evaluation** – purpose, audience, and synopsis of task (1 pp.);
4. **Evaluation Methodology** – describe evaluation methods, including strengths, constraints, and gaps (1 pp.);
5. **Findings and Conclusions** – describe and analyze findings for each evaluation question using graphs, figures, and tables, as applicable, and also include data quality and reporting system that should present verification of spot checks, issues, and outcomes. Conclusions should be credible and should be supported by the findings (12-15 pp.);
6. **Recommendations** – prioritized for each evaluation question; should be separate from conclusions and be supported by clearly defined set of findings and conclusions. Include recommendations for future project implementation or relevant program designs and synergies with other USAID projects and other donor interventions as appropriate (3-4 pp).
7. **Lessons Learned** – provide a brief of key technical and/or administrative lessons on what has worked, not worked, and why for future project or relevant program designs (2-3 pp.);
8. **Annexes** – to include statement of work, documents reviewed, bibliographical documentation, evaluation methods, data generated from the evaluation, tools used, interview lists, meetings, FGDs, surveys, and tables. The Evaluation Design Matrix must be presented as an annex to the report. Annexes should be succinct, pertinent, and readable. Should also include if necessary, a statement of differences regarding significant unresolved difference of opinion by funders, implementers, or members of the Evaluation Team on any of the findings or recommendations.

The report format should be restricted to Microsoft products and 12-point type font should be used throughout the body of the report, with page margins one-inch top/bottom and left/right.

X. TIMELINE AND LEVEL OF EFFORTS:

Work will be carried out over a period of six weeks, during August-September 2015. Below is an estimate of the evaluation level of effort (LOE):

A. Preparatory Work	**Team Leader**	**National Energy Expert**
Comprehensive document collection and review.	3 days	3 days
Travel to Bangladesh	2 days	0 days
Team planning meeting and meeting with USAID/Bangladesh.	1 day	1 day

Development of evaluation work plan (concurrent with document review and initial meetings).	2 days	2 days
Develop preliminary interview instruments and begin scheduling key interviews.	3 days	3 days
B. Data Gathering		
In-country information and data collection. Includes interviews with key informants (stakeholders and USAID staff) and site visits.	18 days	18 days
C. Data Analysis/Drafting Report		
Data analysis in preparation for presentations	3 days	3 days
In-country discussion with USAID and presentation of preliminary analysis and draft of final report.	1 day	1 day
Presentation of preliminary results and recommendations to the USAID/Bangladesh Mission and relevant stakeholders	1 day	1 day
Depart Bangladesh	2 days	0
Analysis of data and draft of final evaluation report. Draft must be submitted within 10 working days after the departure of international team	5 days	5 days
Evaluation team has ten days to update and finalize final evaluation report.	5 days	
Total Estimated Level of Effort	**46**	**37**

XI. SCHEDULING AND LOGISTICS:

Funding and Logistical Support

USAID/Bangladesh's ACME project will be responsible for all off-shore and in-country administrative and logistical support, including identification and fielding appropriate local staff. They will take care of arranging and scheduling meetings, international and local travel, hotel bookings, working/office spaces, computers, printing, and photocopying. A local administrative assistant/coordinator may be hired to arrange field visits, local travel, hotel, and appointments with stakeholders and provide translation services.

Scheduling

Work is to be carried out over a period of approximately 6 weeks, beginning in October, 2015, with field work completed in the same month and final report and close out concluding o/a / November, 2015. See Annex-3 for Bangladesh Mission Holiday Schedule.

A six-day work week (Saturday-Thursday) is authorized for the evaluation team while in Bangladesh. The evaluation team will submit a work plan as part of the evaluation methodology proposal with timeline and develop a GANTT chart displaying the time periods during which activities occur.

Pre-departure arrangements should include: travel approval; airline tickets; visa; lodging; work facility and vehicle transport arrangements; dates for meetings with USAID/Bangladesh EG staff and key contacts, in-country travel agenda; and accommodations.