Loan 2748/OC-BA - Public Sector Smart Energy Program
&
ATN/EX-13316-BA – Support to the Public Sector Smart Energy Program

Terms of Reference

Mid-term Evaluation

I. CONTEXT

1.1 Barbados' energy consumption relies mainly on imported oil. Although Barbados produces some oil, domestic demand (about 10,000-barrels per day (bbl/d)) greatly exceeds local supply (about 800-bbl/d), requiring 9,200-bbl/d of imported oil. This dependency impacts the Barbadian economy at the macroeconomic level and at the consumer level. The international oil price increased 42% during 2011, resulting in significant increase of the fuel import bill. The fuel imports represent a significant expenditure and drain on Barbados' foreign reserves, particularly considering the high degree of volatility in international oil markets. According to the Government of Barbados (GOB), the fuel import bill (approximately 6% of Barbados' GDP) is equivalent to Barbados' expenditures on education.

1.2. The Barbados Light and Power (BL&P) Company can directly pass through fuel costs to consumers by using a Fuel Clause Adjustment (FCA). The FCA reached an all-time high in August 2008 of US$0.25 per kilowatt hour (kWh). This would have meant a monthly electricity bill of about US$158 for a customer consuming 400kWh per month. This figure is striking when compared to other countries in Latin America and the Caribbean (LAC). In 2008, customers were cushioned from the full impact of the increase through a government subsidy on fuel oil used for electricity generation. This subsidy on the FCA cost the GOB approximately US$18 million.

1.3. Therefore, Barbados' high dependence on fossil fuels risks jeopardizing the sustainability of its economic and social development, as well as the competitiveness of the Barbadian economy. Power generation represents the main use of fuel in the country (50%), followed by transport (33%). According to the 2008 report of the Barbados Light & Power Company, the sole electricity provider, the country's electricity is entirely fossil-fuel generated, with 82% from heavy fuel oil, of which 19 % is from steam plants, 63% from low-speed diesel plants and 18% from diesel fuel.

1.4. Given the aforementioned economic challenges, the GOB, through the Division of Energy and Telecommunications (ETD), is committed to promoting sustainable energy practices both on the supply side, mainly using RE sources, and on the demand side, by encouraging EE and energy conservation, as means to reduce the country's dependency on fossil fuels, enhance security and stability in energy

supply, improve the economy's competitiveness, and achieve greater environmental sustainability.

1.5 Since 2009, the Inter-American Development Bank (IDB) has supported the GOB in the implementation of a Sustainable Energy Framework for Barbados (SEFB), utilizing various support methods including policy-based lending; technical assistance; supporting GOB in drafting policies and legislation in RE and EE; and investment loans for the Sustainable Energy Investment Program (Energy Smart Fund), and the Public Sector Smart Energy Program.

1.6 While the Energy Smart Fund (BA-L1020) focuses on developing a package of economic instruments targeting SMEs (private sector only) to address the main market failures that prevent the country from adopting RE and EE, the Government is also implementing the Public Sector Smart Energy (PSSE) Program ("The Program") which focuses on investment initiatives for RE and EE projects in the public sector.

1.7 The PSSE Program is a five-year program whose implementation period is November 15, 2013 to November 15, 2018, and which is being executed by the Division of Energy and Telecommunications in the Prime Minister's Office.

1.8 These Terms of Reference (TOR) outline the services required of an Individual Consultant to conduct a mid-term evaluation of the Public Sector Smart Energy Program.

Public Sector Smart Energy Program

1.9 The general objective of the Program is to reduce Barbados' fossil fuel dependency, promote sustainable energy and therefore contribute to the country's competitiveness.

1.10 The specific objective is to promote the use of Renewable Energy and Energy Efficiency measures in the public sector. To achieve these objectives, the program comprises the following components:

Component 1: Retrofit of government buildings with RE and EE technologies and public lights with EE technologies. This component will finance: (i) the retrofit of public lights with EE technologies; (ii) the retrofit of at least twelve (12) government buildings with EE technologies; and (iii) the installation of solar PV systems on these government buildings. The total capacity of Solar PV systems in the government buildings will amount to 1.14 MW of RE electricity capacity from RE sources (in particular solar PV systems). Regarding the public lighting, this component will retrofit approximately eighty five percent (85%) of Barbados' public lights, including approximately 25,460 street lights and 619 traffic lights. This component could save about 148 GWh of electricity; enable around US$2.4 million

in annual monetary savings and a total of US$24.8 million of net financial savings for the GOBA; and avoid 130,617 tons of CO2 emissions over a 20-year period.

Component 2: A pilot project and studies for encouraging the use of RE. This component will finance: (i) a fleet of government electric vehicles powered by RE sources. This fleet of electric vehicles will be used to promote low carbon transportation technologies in Barbados; and (ii) studies culminating in a business prospectus to facilitate the construction and operation of an ocean power plant. The ocean power studies will serve as a platform for Barbados to assess the feasibility of this technology.

Component 3: Capacity building, institutional strengthening and public awareness. In order to achieve the objectives of the SEFB and generate the transformational effect in Barbados to promote and harness the country's RE and EE potential, capacity building and institutional strengthening will be required at all levels within the energy sector. This component will finance the following subcomponents: (i) capacity building and training to upgrade professional and technical skills; (ii) upgrade of capacity within the GOBA in all sectors related to sustainable energy; (iii) public awareness campaigns at all levels to promote sustainable energy, such as schools, government, media, conventions, conferences and workshops. This subcomponent will allow the GOBA to implement an awareness and education program to promote RE and EE throughout the country, including schools, universities, labor unions, and broader civil society; (iv) a Project Execution Unit (PEU) for the PSSE Program in the ETD as well as software for data collection; and (v) the monitoring and evaluation of the PSSE Program, including the data collection and analysis of the impact, outcomes and output indicators of the results matrix using the methodologies explained in the Monitoring and Evaluation arrangements.

1.11 The PSSE Program is a five-year program (November 15, 2013 to November 15, 2018), with a total budget of US$24.664 million comprising a US$17.0 million loan from the Inter-American Development Bank, as well as a US$7.664 million (EURO 5.81 million) grant from the European Union.

1.12 The executing agency of this Program is the Prime Minister's Office, acting through the Division of Energy and Telecommunications (ETD) which has full responsibility for the overall program management, supervision and evaluation. To fulfil its responsibilities, the Division has established a Project Execution Unit.

1.13 As required by the Agreements governing the PSSE Program, a mid-term evaluation is be prepared after half of the execution period has elapsed or once 50% of the resources have been disbursed, whichever comes first. These Terms of Reference outline the services required by an individual consultant to conduct a mid-term evaluation of the Public Sector Smart Energy Program.

II. OBJECTIVES AND ACTIVITIES OF THE CONSULTANCY

2.1 The objective of the consultancy is to conduct a mid-term evaluation of the PSSE Program and prepare the mid-term evaluation report.

2.2 The specific objective of the mid-term evaluation is to review progress in implementing the PSSE Program against its original goals and operational objectives in order to:

i. Determine the extent to which the objectives as defined in the Results Framework have been met and assess the likelihood of achieving them upon Program completion;

ii. Identify the institutional strengths and weaknesses of the Division of Energy and Telecommunications as the implementing agency of the Program; and

iii. Identify potential options for improving the Program, which can include modification of activities, roles, responsibilities and composition of the ETD's staff and stakeholders, schedule of activities, management arrangements and budget allocations, among others.

2.3 In addition, the Mid-term Evaluation will compare between a Business as Usual (BAU) scenario vs. PSSE Program scenario and an ex-post Cost-Benefit Analysis.

III. SCOPE OF SERVICES

3.1 The midterm evaluation will take into consideration the program's ***continued relevance, efficiency levels, and effectiveness. In addition, the evaluation will provide recommendations to improve the execution and thus the likelihood of achieving its development objectives***. In this context, specifically the evaluation will examine the following aspects:

a. *Changes in context and review of assumptions (relevance):* Is the program's design adequate to address the problem(s) at hand? What internal and external factors have influenced the ability of beneficiary groups, stakeholders and the ETD to meet projected targets? Does the program remain relevant considering possible changes in context? Is there a need to reformulate program design given changes in the country, sector, environment and operational context?

b. *Results in terms of outputs achieved vis-à-vis projected targets (efficiency):* Has the program reached the expected number of beneficiaries (i.e., government, individuals etc.) within the expected time frame? Are the program's activities in line with the schedule of activities as defined by the semi-annual reports and annual operating plans? Are the disbursements and program expenditures in line with expected budgetary plans?

c. *Achievement of projected performance indicators and targets (effectiveness):* What has the performance been of the ETD with respect to their projected performance indicators? Does the current performance indicate probability in achieving the program's purpose (specific objective). Have there been any unplanned effects? What are the key issues which affect program execution? The evaluation should examine the adjustments introduced or proposed to the program design to accommodate these issues, including technical, institutional, financial and economic considerations. A review of the procurement cycle should also be conducted. Recommendations for improving the execution of the program should be provided if deemed necessary.

d. *Preliminary assessment of outcome/impact (effectiveness):* Has the program generated any results that could indicate that the assistance has had an impact on the operation's target beneficiary group?

e. *The BAU vs PSSE Scenario and ex-post Cost-Benefit Analysis:* These analyses will examine the following indicators: (i) savings in Government energy consumption and spending; (ii) avoided CO_2 emissions; (iii) jobs created by the PSSE Program; (iv) reduced fossil fuel use in Barbados's energy matrix; (v) emerging energy technologies demonstrated by wider uptake; and (vi) institutional capacity for sustainable energy programming.

IV. METHODOLOGY

4.1 Review of program documentation. Review, as necessary, of archived material related to the overall program, as well as background material used in program preparation, approved project documents, project monitoring documents, disbursement reports, progress reports, action plans, and other information available.

4.2 Field visits and interviews: (i) In-depth interviews, inspection, and analysis of the program activities; (ii) interviews with the ETD and IDB staff who participated in the program design and execution; (iii) interviews with local stakeholders and final beneficiaries; and (v) interviews with a sample of consultants and/or technical assistance providers who were hired by the ETD. For each of these interviews, the consultant should first develop and present their ideas for the content and format of the survey/interview forms that will be applied to capture the information required, as well as the method to be used in administering them and tabulating the results.

4.3 Collection of data. Data generated from the ETD's monitoring system should be another source of information. The consultant may propose additional methods of conducting the evaluations among other sources.

V. REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES

5.1 In the execution of these tasks, the consultant will be supervised by the Project Manager and work in close coordination with the Project Executing Unit.

5.2 The consultant will submit the following deliverables to the Project Manager:

1. **Inception Report** including work plan – within two (2) weeks of commencement of the consultancy.

2. **Draft Mid-term Evaluation Report** within seven (7) weeks after the start of the consultancy. It should include but not be limited to:

   i. An executive summary

   ii. An analysis of Program relevance

   iii. An analysis of the Program's financial execution by component and financing source;

   iv. Progress in achieving the outputs, outcomes and impacts in the Result Framework and the results of a comparative analysis against the Program baseline;

   v. Effectiveness in meeting the Program purpose;

   vi. The degree of fulfillment of contractual commitments; and

   vii. Identify measures to improve performance.

   A suggested outline of the report is attached in Annex 1.

3. **Final Mid-term Evaluation Report** to be submitted within two (2) weeks of receiving feedback on the Draft Evaluation Report.

5.3 The consultant will participate in an inception meeting with the ETD, the Project Steering Committee and key stakeholders, to be held within the first week of the consultancy. The primary purpose of the inception meeting is to reach a consensus on the scope of work and expected outputs of the required services which should give guidance to Inception Report, inclusive of the work plan.

5.4 Additionally, the consultant is required to participate in a technical meeting (by video/teleconferencing) as necessary to present and discuss the results of the Draft Evaluation Report to the Project Steering Committee and/or other stakeholders. Any matters arising from this meeting should be addressed as necessary and results

incorporated in the Final Mid-Term Evaluation Report. The timing of the meeting will be determined.

5.5 All reports are to be submitted in electronic format (MS Word and PDF) as well as one paper copy of each report.

VI. CHARACTERISTICS OF THE CONSULTANCY

6.1 Duration: It is estimated that the consultancy requirements should be undertaken in no more than forty (40) non-continuous days over a 3 - month period. The consultancy is expected to commence in Q1 of 2017, no later than the second week of January, 2017.

6.2 Type of Consultant: Individual

6.3 Qualifications, knowledge and experience:

i. Minimum of a Master's degree in one of the following: Public Administration; Public Policy; Financial Management; Economics, Business Administration or any of the Social Sciences.

ii. Demonstrated knowledge of current evaluation theory and practice

iii. Minimum of five (5) years practical experience evaluating development projects, preferably on the environment or more specifically in the area of energy and sustainable energy.

iv. A good understanding of the operations and systems of Barbados or countries similar to Barbados and the Inter-American Development Bank and/or international financial institutions would be an asset.

v. The Consultant must be fluent in English.

6.4 Type of contract: Lump sum

6.5 Location: Barbados

VII. PAYMENT SCHEDUILE AND CONDITIONS OF CONTRACT

7.1 The successful consultant will be paid in the following manner:

(i) 20% upon signature of the contract and submission and acceptance of the Inception Report;

(ii) 50% upon submission and acceptance of the Draft Mid-term Evaluation Report; and

(iii) 30% upon submission and acceptance of the Final Mid-term Evaluation Report.

VIII. COORDINATION

8.1 The consultant will work under the direct supervision of the Project Manager during the consultancy. Staff of the Project Execution Unit will provide technical and coordination support to the consultant to facilitate the evaluation.

IX. CLIENT'S INPUT

9.1 The ETD will provide the inputs, program data, reports etc. to facilitate the preparation of the Mid-term Evaluation report.

ANNEX 1

SUGGESTED OUTLINE FOR MID-TERM EVALUATION REPORT

It is suggested that the Mid-term Evaluation Report should include, but is not limited to, the below-listed elements. Other elements should be included as relevant.

I. Executive Summary

II. Introduction

A Background

- Purpose of the Evaluation
- Major Stakeholders

B Program Description

- Summary of Program and comments on its design
- General Status of project execution

C Evaluation Methodology

- Design/general approach
- Sources of data
- Instruments
- Limitations

III. Program Rationale/Relevance

A. Introduction
B. Changes in the Program Context and Review of Assumptions
C. Validity of Program logic
D. Continued Program relevance
E. Implications for Program Continuation/ Reformulation

IV. Efficiency

A. Introduction
B. Management of Program finances
    - Monitoring process/procedures and quality control
    - Costs and cost controls (efficiency vis-à-vis initial program budget)
C. Reports on:
    - Program finances
    - Input scheduling and delivery
    - Achievement of program outputs
    - Program problems and risks
D. Problems in Program Implementation
    - Capacity of Executing Agency to identify problems
    - Capacity of Executing Agency to analyze and propose solutions
E. Conclusions and recommendations

V. Effectiveness

A. Introduction
B. Achievements of Program Outputs
   - Planned and actual to date
   - Implications of any shortfalls

C. Program Outputs and Effects and the Meeting of Program Purpose
   - Planned effects and contribution to purpose
   - Unplanned effects that are nevertheless consistent with program purpose and GOBA priorities

D. Conclusions and Recommendations

V. Business As Usual vs PSSE Program Scenario and ex-post Cost-Benefit Analysis

A. Introduction
B. Description of the Business As Usual Scenario
C. Comparison of the BAU to the PSSE Scenario
D. Cost-Benefit Analysis
E. Conclusion and Recommendations

VII. Conclusion

A. Introduction
B. Continued Program Relevance
C. Measures to Increase Performance

D. Lessons Learned
   - Operational Performance
   - Development Performance
   - Success factors (executing agency capacity, institutional framework, stakeholder commitment, etc.) that need to be met ex-ante to consider supporting similar projects in the future

E. Summary of Recommendations