

BARBADOS

Project Profile (PP)

I. BASIC DATA

Project Name:	Public Sector Smart Energy (PSSE) Program		
Project Number:	BA-L1025		
Project Team:	Christiaan Gischler (INE/ENE), Team Leader; Laura Rojas (INE/ENE); Adriana Valencia (INE/ENE); Christel Saab (CCB/CBA); Alejandro Taddia (INE/TSP); Carlos Guaipatin (IFD/CTI); Matías Bendersky (ORP/ORP); Claudia Oglialoro (ORP/GCM) Rochelle Franklin (CCB/CBA); Genevieve Beaulac (VPS/ESG); Shirley Gayle (FMP/CTT); Denise Salabie (FMP/CTT) and Javier Jimenez (LEG/SGO); under the supervision of Leandro Alves (INE/ENE).		
Borrower:	Government of Barbados		
Executing Agency:	Energy and Telecommunications Division (ETD) within the Prime Minister's Office		
Financing Plan:	IDB – Investment Loan		US\$ 17,000,000
	European Community (EC) – Grant ¹ :		US\$ 7,664,000
	Total		US\$ 24,664,000
Safeguards:	Policies triggered: B.01; B.02; B.03; B.04; B.05; B.07; B.09; B.17		
	Classification: B		

II. GENERAL JUSTIFICATION AND OBJECTIVES

- 2.1 Since 2009, the Inter-American Development Bank (IDB) has supported the Government of Barbados (GOBA) in the implementation of a Sustainable Energy Framework for Barbados (SEFB), through a package of policy-based lending², technical assistance

¹ Resources to be received from the European Community (EC) through a Project-Specific Grant (PSG). The EC is expected to commit 5,810,000 in Euros, which is equivalent to 7,664,000 in U.S. Dollars, based on the exchange rate of April 13, 2012. A PSG is administered by the Bank according to Document SC-114. As contemplated in these procedures, and in the “Framework Agreement between the European Commission and the Inter-American Development Bank,” dated July 19, 2011, the commitment from EC will be established through a separate “Standard Contribution Agreement” (“Contribution Agreement”). EC resources will be available once the Contribution Agreement is signed with EC and the funds from EC are received by the Bank. As contemplated in document GN-2605, paragraph 12 “To avoid incurring into currency exchange losses any contributions received from the EC shall be maintained and reported in Euros. All commitments and disbursements shall also be administered and executed only in Euros.” Therefore, the amount in US Dollars associated to the EC contribution is provided for reference purposes only.

² On September 15, 2010, the Board of Directors of the IDB approved the first operation in a series of two independent policy based loans under a programmatic approach (2410/OC-BA; BA-L1022) for US\$45 million, which was disbursed in a single tranche on November 23, 2010. The second operation in the series (2609/OC-BA; BA-L1021), for US\$70 million, was approved on November 2, 2011 and disbursed in a single tranche on December 12, 2011.

programs³, and an investment loan, the Smart Fund, which helps small businesses acquire state-of-the-art RE and EE equipment⁴. Within this framework, the IDB is also implementing, with funding from the Global Environmental Facility (GEF), an energy pilot program of solar photovoltaic (PV) panels and compact florescent lamps (CFLs) across the country⁵. Furthermore, the IDB technical assistance supports institutional strengthening, capacity building and public awareness programs. This holistic approach will allow Barbados to reduce its oil imports by 30%, and by extension will allow a reduction of cumulative costs over 20 years from US\$ 2.648 billion to US\$ 1.978 billion. The SEFB is expected to obtain the following results over the next 20 years: (i) a net benefit of US\$283.5 million in electricity cost savings (5% of Barbados' GDP); and (ii) a reduction in monthly electricity bills by 15-20%^{6,7}.

- 2.2 ***Barbados Energy Sector.*** In addition to the effects of the economic crisis of 2009, Barbados' high dependence on fossil fuels jeopardizes the sustainability of its economic and social development, as well as the country's competitiveness. All of the country's electricity is fossil-fuel generated, including heavy fuel oil (82%, of which 19% with steam plants, and 63% with low-speed diesel plants), and diesel fuel (18%), according to the 2008 report of the Barbados Light & Power Company (BL&P), the sole electricity provider. Power generation represents the main use of fuel in the country (50%), followed by transport (33%). Barbados produces some oil, but domestic demand (about 10,000-barrels per day (bbl/d)) greatly exceeds local supply (about 800-bbl/d). This results in imports in excess of 9,200-bbl/d, which represent a significant expenditure and drain on Barbados' foreign reserves, particularly considering a recent high degree of volatility in international oil markets. Barbados' fuel import bill in 2011 was estimated at BDS\$787.1 million.

A. Program Justification

- 2.3 To advance the implementation of RE projects and EE measures and in order to reduce its dependency on fossil fuels, Barbados is taking the lead to show how both the private and public sector can reduce the usage of fossil fuel. The PSSE Program⁸ will focus on

³ Technical assistance in: assessing the potential for Renewable Energy (RE) and Energy Efficiency (EE) for the SEFB, ATN/OC-11473-BA; supporting the Government of Barbados in drafting policies and legislation in RE and EE, ATN/OC-12737-BA; energy audits in Barbadian Hotels with the Caribbean Hotel Energy Efficiency Action Program CHENACT, ATN/OC-11465-RG; and support studies for the Upgrade and Expansion of the Natural Gas Network (ATC/OC-11995-BA), which contributes to the analysis of the efficient use of fossil fuels.

⁴ Sustainable Energy Investment Program or Smart Fund, 2485/OC-BA; BA-L1020.

⁵ SEFB Pilot Program, GRT/FM-12075-BA.

⁶ The long-term results have been assessed with the SEFB Cost-Benefit Analysis, financed with the ATN/OC-11473-BA.

⁷ In a Keynote Address delivered at the opening of the Caribbean Renewable Energy Forum held in Barbados on October 13, 2011, the Prime Minister of Barbados, The Honourable Freundel J. Stuart, Q.C., M.P., mentioned that the SEFB is being energetically pursued by Barbados, as a means to become a country with a lower carbon footprint and a cleaner environment. This statement illustrates the interest of Barbados, not only in reducing its energy bill and protecting its citizens from the impact of imported fossil fuels, but in becoming a green economy.

⁸ A new Programmatic Energy Policy Based Loan (BA-L1024; or Energy PBP) of two phases is being prepared simultaneously with the PSSE Program. While the PSSE is a stand-alone Program, it will have some synergies

investments initiatives for RE⁹ and EE projects in the public sector, while in parallel, the Energy Smart Fund (BA-L1020, already in execution) is 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. Consequently, both the private and public sectors of the country will be actively contributing to the achievement of the overall objective of reducing the country's fossil fuel dependency. By developing this program the GOBA is both setting an example for the region and also saving fiscal resources on the order of US\$ 3.4 million/year that could be used for other purposes. The final structure of the PSEE Program will be defined in the Project Operational Document (POD).

- 2.4 ***Coordination with Country Strategy / Programming objectives.*** The Program is fully consistent with the energy priority area of the IDB Country Strategy with Barbados (2009-2013) (GN-2539). In particular, the Program will contribute to the strategy's objective of achieving "expansion of programs to support EE and RE," and to the specific expected result associated with that objective of "expanded demand-driven funding for RE and EE initiatives."
- 2.5 The operation also reflects the IDB's institutional priorities as outlined in the report on the Ninth General Capital Increase in Resources for the Inter-American Development Bank (GCI-9) (AB-2764) as it contributes to the goals of (i) "supporting development in small and vulnerable countries" (such as Barbados) and (ii) "assisting borrowers in dealing with mitigation and adaptation to climate change, sustainable energy (including renewable energy and energy efficiency) and environmental sustainability." As such, the program is in line with the Integrated Strategy for Climate Change Adaptation and Mitigation, and Sustainable and Renewable Energy (GN-2609-1).
- 2.6 ***Project Objectives.*** The objective of this project is to promote the use of RE and implementation of EE measures through the creation of the Public Sector Smart Energy Program, which will facilitate funding for investments in RE and EE in government buildings, public lighting, renewable energy pilot projects and capacity building. Ultimately the project will help reduce Barbados' fossil fuel dependency, promote sustainable energy and therefore contribute to the country's competitiveness. The program will have the following components:
- 2.7 ***Component 1: Retrofit of government buildings and public lighting with RE and EE.*** This component will finance the retrofit of at least twelve (12) government buildings and enhancement of public lighting through RE and EE technology. With this component the

with the Energy PBP, by creating opportunities for RE & EE projects. The new Energy PBP will continue to strengthen the regulatory and policy framework required to promote EE and RE.

⁹ Among base load (firm capacity of power generation) renewable energy available options, Barbados has the possibility of using the energy from solid waste, which has been recommended as economically viable technology. Waste-to-energy options are currently being studied and the best option in this context should be selected during 2012. In addition, Barbados is surrounded by sea, with tidal variances and depth representing an important potential for all types of ocean power technologies. Ocean power options are: Ocean Thermal Conversion (OTEC), oscillating columns technology and Pelamis wave power among others. However ocean power has been omitted because of its high prices and lower penetration in the renewable energy market. It is considered that the potential ocean power could be investigated in the future.

GOBA will be able to reduce its yearly electricity bill.

- 2.8 ***Component 2: Pilot projects using renewable energy.*** This component will encourage and support the design, pre-investments studies, tendering process, start up and operation of two pilot programs: (i) for electric vehicles powered by renewable energy sources and (ii) ocean power up of at least 1-MW of installed capacity. Both pilot programs will be developed in collaboration with the university and research entities.
- 2.9 ***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. This component will finance: (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; and (iii) public awareness campaigns at all levels to promote sustainable energy, such as schools, government, media, conventions, conference and workshops.
- 2.10 ***Co-financing.*** The EC will provide a grant for the GOBA to promote RE and EE, using the IDB as a financial intermediary¹⁰. The EC funds will co-finance components 1 through 3, pursuant to the terms of the Contribution Agreement to be entered into between EC and the IDB. In accordance with the "Framework Agreement between the European Commission and the Inter-American Development Bank," the resources of the EC shall be maintained and reported in Euros, and all commitments and disbursements shall also be administered and executed only in Euros. Therefore, the total amount indicated in U.S. dollars in this budget related to the EC contribution is for reference purposes only and may vary due to exchange rate fluctuations. If necessary, the budget will be adjusted accordingly by the team leader to reflect such fluctuations.
- 2.11 ***Expected Results.*** According to the Program's Cost Benefit Analysis, the PSSE Program may generate net benefits estimated at US\$10.3 million over a twenty-year period, compared to a business-as-usual (BAU) scenario that involves no additional investments in sustainable energy for public lighting, public buildings, and RE pilot projects. The benefits of the Program will stem from savings on electricity bills, revenues from the sale of excess electricity to the grid, and revenues from the sale of tickets for tourists to use solar PV-powered electric vehicles. The average annual electric yearly bill of the public sector is US\$9.7 million. This includes public buildings and public street lighting¹¹. The PSSE Program could reduce this electricity bill by 32% per annum, which translates into savings of about US\$3.14 million per annum. In addition, the Program would abate 437,000 tons of CO₂. The GOBA has plenty of available roof space on public buildings to install solar PV systems to generate electricity both for self-consumption and to sell the

¹⁰ In accordance with the Contribution Agreement to be entered into between EC and the Bank, these resources will be administered by the IDB and the IDB will charge an administrative fee for this purpose. The details of administrative fee will be included in the Project Operational Document (POD) of this operation and the PSG.

¹¹ Although the GOBA is not the owner of the post and public lighting, the GOBA does pay the monthly electricity bill for this public service. Barbados has approximately 30,000 street lights and 620 lamps used in traffic lights.

excess to the grid.^{12,13} Considering that the technical potential for the twelve public buildings¹⁴ is conservatively estimated at about 1 MW of installed PV systems, the energy and financial savings from the PV installations could be up to about 1.8 GWh/year¹⁵ and 0.52 million US\$/year¹⁶ respectively.

III. TECHNICAL ISSUES

- 3.1 The GOBA has acquired extensive knowledge of the energy sector in Barbados through the background information acquired during the series of two Energy PBPs accompanied by a series of technical assistance operations financed by the IDB¹⁷.

IV. SAFEGUARDS AND FIDUCIARY SCREENING

- 4.1 ***Environmental Aspects.*** Overall, the project will have net positive environmental effects due to the potential impacts in GHG emission reductions, substitution of fossil fuel based electricity generation and climate change mitigation brought by the implementation of EE and RE measures. However, component 2 of the project which involves the start up of a pilot wave farm of 1-MW, may pose potential environmental and social impacts. Ocean power is a very recent technology and the magnitude of these impacts is not yet clearly understood. Given this and taking into account the rich marine environment of Barbados, this project is classified as category B. Further information is available in the ESS.
- 4.2 ***Fiduciary Aspects.*** The GOBA will be the borrower and the Energy and Telecommunications Division (ETD) within Prime Minister's Office will be the executing agency. During the project preparation process, the execution mechanism, the institutional capacity and the counterpart resources requirements will be analyzed.

V. RESOURCES AND TIMETABLE

- 4.3 Three additional missions and two consultancies will be required for the preparation of this project, with an estimated value of US\$ 50,000. The estimated POD due date for this Project is May 1st, 2012. The expected approval date for this Project is June 27, 2012.

¹² Solar power is an economically viable option for renewable energy in Barbados: thanks to an excellent availability of the primary solar energy resource in the country, and provided with low-cost financing through the SEFB, the long-run marginal cost of solar PV (about 0.20 US\$/kWh) is below the avoided cost of fuel of BL&P (about 0.21 US\$/kWh). Gischler C. and Janson N. (2011), "Perspectives and Trends in the Distributed Generation of Renewable Energy in Latin America and the Caribbean: Analysis of Case Studies for Jamaica, Barbados, Mexico, and Chile. Discussion Paper No. IDB-DP-208."

¹³ Thanks to the Renewable Energy Rider approved by the Fair Trading Commission (FTC), BL&P can buy the electricity generated by small power producers up to 50kW per client at 0.16 US\$/kWh. BL&P's retail price is 0.31 US\$/kWh. This new regulation was part of the Energy PBP.

¹⁴ Based on an estimated 966kW for twelve public buildings assessed under the SEFB (1.Government Headquarters, 2.Government Office Complex, 3.Geriatric Centre, 4.Ministry of Agriculture, 5.Ministry of Education, 6.Ministry of Foreign Affairs, 7.Parliament Building, 8.National Housing Corporation, 9.Queen Elizabeth Hospital, 10.Sir Frank Walcott National Insurance Scheme (NIS) Building, 11.Lloyd Erskine Sandiford (LES) Conference Centre, 12.Harrison College).

¹⁵ Assuming a 19% capacity factor (1,700kWh/kW/year) for thin film solar PV panels.

¹⁶ Assuming a General Service Tariff of US\$0.36/kWh avoided thanks to half of the solar PV systems' generation; and a Renewable Energy Rider of US\$0.26/kWh obtained for selling a remaining excess half of the generation.

¹⁷ The operational support (OS) (ATN/OC-12737-BA) is currently expanding the analysis of technical, regulatory and institutional issues surrounding the implementation of this operation.

ANNEX I - CONFIDENTIAL

SAFEGUARD POLICY FILTER REPORT

This Report provides guidance for project teams on safeguard policy triggers and should be attached as an annex to the PP (or equivalent) together with the Safeguard Screening Form, and sent to ESR.

1. Save as a Word document. 2. Enter additional information in the spaces provided, where applicable. 3. Save new changes.

PROJECT DETAILS	IDB Sector	ENERGY-ENERGY CONSERVATION
	Type of Operation	Investment Loan
	Additional Operation Details	
	Investment Checklist	Generic Checklist
	Team Leader	Gischler Blanco, Christiaan (CHRISTIAANG@iadb.org)
	Project Title	Smart Energy Program for the Public Sector
	Project Number	BA-L1025
	Safeguard Screening Assessor(s)	Boulet, Emmanuel Andre (EMMANUELBA@iadb.org)
	Assessment Date	2012-03-05
	Additional Comments	

SAFEGUARD POLICY FILTER RESULTS	Type of Operation	Loan Operation	
	Safeguard Policy Items Identified (Yes)	Activities to be financed in the project area are located within a geographical area or sector exposed to natural hazards (Type 1 Disaster Risk Scenario).	(B.01) Disaster Risk Management Policy– OP-704
		The Bank will make available to the public the relevant Project documents.	(B.01) Access to Information Policy– OP-102
		The operation is in compliance with environmental, specific women's rights, gender, and indigenous laws and regulations of the country where the operation is being implemented (including national obligations	(B.02)

		established under ratified Multilateral Environmental Agreements).	
		The operation (including associated facilities) is screened and classified according to their potential environmental impacts.	(B.03)
		There are Associated Facilities (see Policy definition) relating to the investments being financed by the Bank.	(B.04)
		An Environmental Assessment is required.	(B.05)
		The Bank will monitor the executing agency/borrower's compliance with all safeguard requirements stipulated in the loan agreement and project operating or credit regulations.	(B.07)
		Conversion of Natural Habitats in project area of influence (please refer to the Integrated Biodiversity Assessment Tool for more information).	(B.09)
		Suitable safeguard provisions for procurement of goods and services in Bank financed projects may be incorporated into project-specific loan agreements, operating regulations and bidding documents, as appropriate, to ensure environmentally responsible procurement.	(B.17)
	Potential Safeguard Policy Items(?)	No potential issues identified	
	Recommended Action:	<p>Operation has triggered 1 or more Policy Directives; please refer to appropriate Directive(s). Complete Project Classification Tool. Submit Safeguard Policy Filter Report, PP (or equivalent) and Safeguard Screening Form to ESR.</p> <p>The project triggered the Disaster Risk Management policy</p>	

		(OP-704). A more limited and specific Disaster Risk Assessment (DRA) may be required (see Directive A-2 of the DRM Policy OP-704). Please contact a Natural Disaster Specialist in VPS/ESG or INE/RND for guidance.
	Additional Comments:	

ASSESSOR DETAILS	Name of person who completed screening:	Boulet, Emmanuel Andre (EMMANUELB@iadb.org)
	Title:	
	Date:	2012-03-05

SAFEGUARD SCREENING FORM

PROJECT DETAILS	IDB Sector	ENERGY-ENERGY CONSERVATION
	Type of Operation	Investment Loan
	Additional Operation Details	
	Country	BARBADOS
	Project Status	
	Investment Checklist	Generic Checklist
	Team Leader	Gischler Blanco, Christiaan (CHRISTIAANG@iadb.org)
	Project Title	Smart Energy Program for the Public Sector
	Project Number	BA-L1025
	Safeguard Screening Assessor(s)	Boulet, Emmanuel Andre (EMMANUELB@iadb.org)
	Assessment Date	2012-03-05
	Additional Comments	

	Project Category: B	Override Rating:	Override Justification:
			Comments:
PROJECT CLASSIFICATION SUMMARY	Conditions/ Recommendations	<ul style="list-style-type: none"> Category "B" operations require an environmental analysis (see Environment Policy Guideline: Directive B.5 for Environmental Analysis requirements). The Project Team must send to ESR the PP (or equivalent) containing the Environmental and Social Strategy (the requirements for an ESS are described in the Environment Policy Guideline: Directive B.3) as well as the Safeguard Policy Filter and Safeguard Screening Form Reports. These operations will normally require an environmental and/or social impact analysis, according to, and focusing on, the specific issues identified in the screening process, and an environmental and social management plan (ESMP). However, these operations should also establish safeguard, or monitoring requirements to address environmental and other risks (social, disaster, cultural, health and safety etc.) where necessary. 	

SUMMARY OF IMPACTS/RISKS AND POTENTIAL SOLUTIONS	Identified Impacts/Risks	Potential Solutions
	Minor or moderate conversion or degradation impacts to natural habitats (such as forests, wetlands or grasslands).	Ensure Proper Management and Monitoring of the Impacts of Natural Habitat Loss: A Biodiversity Management Plan (BMP) should be prepared that defines how impacts will be mitigated (roles and responsibilities, monitoring, budget, etc.) and could be incorporated in the ESMP. Depending on the financial product, the BMP should be referenced in appropriate legal documentation (covenants, conditions of disbursement, etc.). Confirmation should be obtained from competent experts that they are confident that the plan can mitigate impacts and also that the relevant authorities have approved the BMP.

DISASTER SUMMARY	Details	Actions
	The Project should include the necessary measures to reduce disaster risk to acceptable levels as determined by the Bank on the basis of generally accepted standards and practices. Alternative prevention and mitigation measures that decrease vulnerability must be analyzed and included in project design and implementation as applicable. These measures should include safety and contingency planning to protect human health and economic assets. Expert opinion and adherence to international standards should be sought, where reasonably necessary.	A more limited and specific Disaster Risk Assessment (DRA) may be required (see Directive A-2 of the DRM Policy OP-704). Please contact a Natural Disaster Specialist in VPS/ESG or INE/RND for guidance.

ASSESSOR DETAILS	Name of person who completed screening:	Boulet, Emmanuel Andre (EMMANUELB@iadb.org)
	Title:	
	Date:	2012-03-05

BA-L1025

ENVIRONMENTAL AND SOCIAL STRATEGY¹ – DRAFT

I. PROJECT DESCRIPTION

- 1.1 Project Objectives.** The objective of this project is to promote the use of RE and implementation of EE measures through the creation of the Public Sector Smart Energy Program, that will facilitate funding for investments in RE and EE in government buildings, public lighting, renewable energy pilot projects and capacity building. Ultimately the project will help reduce Barbados' fossil fuel dependency, promote sustainable energy and therefore contribute to the country's competitiveness. The program will have the following components: **Component 1: Retrofit of government buildings and public lighting with RE and EE.** This component will finance the retrofit of at least twelve (12) government buildings and enhancement of public lighting through RE and EE technology. With this component the GOBA will be able to reduce its yearly electricity bill. **Component 2: Pilot projects using renewable energy.** This component will encourage and support the design, pre-investments studies, tendering process, start up and operation of two pilot programs: (i) for electric vehicles powered by renewable energy sources and (ii) ocean power up of at least 1 MW of installed capacity. Both pilot programs will be developed in collaboration with the university and research entities. **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. This component will finance: (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; and (iii) public awareness campaigns at all levels to promote sustainable energy, such as schools, government, media, conventions, conference and workshops.

II. KEY POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS

- 2.1** Overall the Project will have net positive environmental effects due to the potential impacts in GHG emission reduction, substitution of fossil fuel based electricity generation and climate change mitigation by the implementation of energy efficiency and renewable energy measures. However, component 2 of the Project involves the start up of

1. This Environmental and Social Strategy (ESS) is being made available to the public in accordance with the Bank's Policy on Disclosure of Information. The ESS has been prepared based primarily upon information provided by the project sponsors and does not represent either the Bank's approval of the project or verification of the ESS's completeness or accuracy.

a pilot wave farm of 1 MW which could represent some environmental and social impacts. Worldwide, the installation of wave farms is still very incipient and as such its technology and impacts generated are not well mastered. The first commercial wave farm was installed in 2008 in Portugal, it had a capacity of 2.25 MW but after two years, the installation was decommissioned due to technical failures.

- 2.2** The environmental impacts and the physical footprint of an ocean power installation vary depending of the technology that it is used to capture the energy of the waves. The technology chosen also determines the location as some devices can be installed only on the shoreline, other near shore and other well offshore. As such, the type of impact impacts can vary. Given that it is unclear at this stage which technology will be used, the following general potential impacts are the following: 1) Biophysical impacts : perturbation to the benthic habitat, to the fish population, to marine mammals and to coral reefs; 2) Socio-economic impacts: change in the visual landscape (particularly important if the devices are installed in a touristic area), alteration to commercial and recreational fishing activities, noise pollution and, the devices may also represent hazards to navigation.
- 2.3** The due diligence will determine with more certainty the extent of anticipated impacts of the Project if the technology chosen is known. It is expected that best mitigation measures for this component of the project, will be applied.

III. ENVIRONMENTAL AND SOCIAL DUE DILIGENCE STRATEGY

- 3.1** Taking into account the requirements outlined in IDB's OP 703 Environment and Safeguards Compliance Policy, the fact that wave farm technology is relatively new and impacts are not well mastered and considering the sensitivity of the marine environment, the Team proposes that this Project be classified as a Category B operation
- 3.2** The Environmental and Social Due Diligence will specifically look upon the incorporation of precautionary measures by the developers of the pilot wave farm. Such measures will included (but not limited to) the following: environmental assessment of the sensitivity of the site i.e. presence of coral reef, fish population, presence of marine mammals and/or if the site is a migratory corridor for such species, general characterization of the benthic habitat, presence of fishing activities and marine navigation. Specific site mitigation measures are expected to be followed by the developers and as such the Bank reserved its right to incorporate in the call of tender specific measures. These measures will be determined once the technology is selected.
- 3.3** As part of the ESDD process, the Project Team will prepare an Environmental and Social Management Report ("ESMR").

Support for Sustainable Energy Framework for Barbados (SEFB) III
Public Sector Smart Energy (PSSE) Program
(BA-L1024 and BA-L1025)
INDEX for completed and proposed sector work

Issues	Description	Expected Dates	References & hyper links to Technical files
Country level sector study	Comprehensive Report on the Sustainable Energy Policy Framework (Volume I and II). ATN/OC-11473-BA	Completed - 2010	IDBdocs No. 35232781 IDBdocs No. 35232784
Technical options and design	Studies and/or documents developed. ATN/OC-12737-BA: National Sustainable Energy Policy ; RE Policy and EE Policy; RE Bill; Phase out plan for energy inefficient lighting; Strategic assessment of sugar cane industry in Barbados; Studies on natural gas network; Capacity and institutional strenghtening plan (CISP).	Completed - 2011	IDBdocs No. 36504071 IDBdocs No. 36504126 IDBdocs No. 36504129 IDBdocs No. 36504152 IDBdocs No. 36504341 IDBdocs No. 36504345 IDBdocs No. 36504354
	Additional support to the Sustainable Energy Framework for Barbados (e.g., RE tender process, CISP, etc) - ATN/OC-11473-BA and GEF project	April 2012	
Analysis of project cost and economic viability	Cost Benefit Analysis for the Sustainable Energy Policy Framework. (BA-L1025)	April 2012	To be linked to the POD

Financial management/fiduciary issues and control environment	Details of the financial analysis undertaken for the photovoltaic projects (BA-L1025). ATN/OC-11473-BA	April 2012	
Institutional analysis/personnel, procedures other aspects of implementation capacity	Support to the National TVET Council In the development of National Vocational Qualifications (NVQs) and Caribbean Vocational Qualifications (CVQs) in RE and EE. Recommendations on organisational management options to the ETD to enable It to best manage the sustainable energy sector; recommendations for staff positions and the requisite Job descriptions; recommend skills and training needs and means by which these needs can be met. TC ATN/OC-11473-BA	April 2012	
Stakeholders and political environment	Project team missions (identification, orientation analysis). First Mission completed in February 16, 2012	February 2012- May 2012	
Social and environmental safeguards	Energy inefficient equipment disposal plan	April 2012	
Other key issues, such as donors, gender, sustainability, country/sector issues			

ANNEX V - CONFIDENTIAL