

PROJECT PROFILE (PP)

JAMAICA

I. BASIC DATA

Project Name:	Energy Efficiency and Conservation Program	
Project Number:	JA-L1025	
Project Team:	Natacha Marzolf (INE/ENE) and Sylvia Larrea (INE/ENE), Co-Team Leaders; Paola Mendez (INE/ENE); Arnaldo Vieira de Carvalho (INE/ENE); Gregory Dunbar (CCB/CJA); Magda Theodate (PDP/CTT); Graham Williams (PDP/CJA) and Javier Jimenez (LEG/SGO), under the supervision of Leandro Alves, Energy Division Chief (INE/ENE) and Ancile Brewster, Representative (CCB/CJA).	
Borrower:	Jamaica	
Executing Agency:	The Ministry of Energy and Mining of Jamaica	
Financing Plan:	IDB	US\$ 20,000,000
	Total	US\$ 20,000,000
Safeguards:	Policies triggered:	OP-703
	Classification:	C

II. GENERAL JUSTIFICATION AND OBJECTIVES

- 2.1 **Economic background.** With an area of 11,000-square kilometers (km²) and a population of 2.83 million people, Jamaica is the third biggest island in the Caribbean, with a Gross Domestic Product (GDP) of US\$11.4 billion. Jamaica is highly-dependent on commodity imports (petroleum represents 88% of total imports) and relies on remittances and tourism, which account for about 15% and 20% of GDP, respectively.
- 2.2 The global economic downturn has placed Jamaica's economy under stress and led to an increase of Jamaica's public debt, estimated currently at about 140% of GDP. The Government of Jamaica (GoJ) adopted a proactive approach to address the challenging economic and fiscal situation and signed a Stand-By Arrangement (SBA) with the International Monetary Fund (IMF) in January 2010. Signs that Jamaica is exiting the recession are increasing even though economic activity remains weak.
- 2.3 **Jamaica energy sector.** Jamaica is heavily dependent on imported petroleum as its primary source of energy, in particular for its bauxite/alumina industry which is highly energy intensive (Jamaica is the world's 4th largest producer of bauxite). Currently over 70% of Jamaica's total energy mix is supplied by imported fuels (mostly oil-based fuels) and over 90% of Jamaica's electricity is supplied by imported petroleum-

- based fuel. In 2007¹, Jamaica imported about 25 million Barrels of Oil Equivalent (BOE) for approximately US\$2.6 billion, which was accounted as follows: (i) 40% for the bauxite industry; (ii) 25% for electricity sector; (iii) 25% for transportation sector, and (iv) the remaining 10% for shipping, aviation and lighting industries combined. As of 2008 (latest numbers available) Jamaica consumed around 75,000 barrels per day (bbl/d). The high level of energy imports² significantly contributes to Jamaica's balance of payments deficits and places additional pressure on foreign exchange reserves and exchange rates in addition to exposing Jamaica to fluctuations in international oil prices.
- 2.4 The public sector in Jamaica accounts for 12% approximately of national energy consumption, which has grown at an average rate of 4% per annum for the past 5 years (except in 2007-2008 when the cost of oil significantly increased due to the global crisis). Monthly costs for the GoJ are estimated at approximately US\$10.4 million, equivalent to US\$130 million per year. As a result of this situation, the GoJ has formulated a set of policies focusing on energy savings for the country and consisting in: (i) lowering the cost of electricity through fuel switching (from oil to gas in electricity generation); (ii) developing renewable energy programs; and (iii) implementing energy efficiency (EE) and energy conservation (EC) measures in the public sector. These last two points were highlighted in Jamaica's "National Energy Policy 2009-2030"; the "National Energy Conservation and Efficiency Policy (ECEP) 2010-2030" draft and the "National Renewable Energy Policy 2010-2030" draft under the auspices of the Ministry of Energy and Mining (MEM). Key measures set forth by the GoJ include: (i) implementing a sustained EE and EC program to reduce electricity consumption in the public sector; (ii) developing EE mechanisms to promote lifestyle changes; (iii) encouraging installation of equipment standards; and (iv) make the GoJ a model for responsible use of energy through EC and EE.
- 2.5 In order to accomplish the above, the GoJ requested assistance from the Inter-American Development Bank (IDB) to design and implement EE and EC measures within the public sector. A non-reimbursable Technical Cooperation (TC) operation, the Energy Efficiency and Conservation Technical Assistance (EECTA), financed through the IDB's Sustainable Energy and Climate Change Initiative (SECCI) fund, was approved in 2009 to support the GoJ, via the MEM, in these efforts. The objectives of the EECTA were to design and develop all the upstream EE and EC activities for the public sector and provide the key inputs for the preparation of an IDB loan (the currently proposed Program) which will finance the physical implementation of such proposed measures.
- 2.6 **Issues.** The main problems identified by the EECTA during the walk-through and detailed energy audits performed in hospitals, pumping stations and various government buildings are: (i) low efficiency of water pump operations, old motors, lack of management of peak demand and low level of preventive maintenance (the National Water Commission (NWC) accounts for over 50% of energy expenditures in the public sector); (ii) inefficient street lighting and obsolete lighting equipment in public buildings (lighting is primarily provided by T-12 fluorescent lamps of 40-watt

¹ Latest figures available via Petrojam and Ministry of Energy and Mining (MEM).

² Oil consumption in Jamaica has grown per year since 2003 at 3.74% per annum.

- (W) and incandescent bulbs), mini-split Air Conditioning (AC) units and reach-in refrigerators in the hospitals; (iii) lack of insulation of public sector building envelopes (i.e. windows, doors and roofs are prone to energy leakage); (iv) Heating, Ventilation and AC (HVAC) systems manually operated, and (v) single pane glass windows allowing heat from the outside.
- 2.7 The EECTA has identified the equivalent of US\$90 million of capital expenditures for EE and EC, however, given the current fiscal constraint faced by the GoJ as per the SBA multilateral debt requirements, an investment operation for an amount of up to US\$20 million was agreed with the GoJ to develop such measures, the Energy Efficiency and Conservation Program (the Program).
- 2.8 Preliminary calculations for the Program confirm the potential for energy savings in the public sector of up to US\$7 million per year. This would result in a 6.7% reduction of government energy consumption³, which would translate into savings of 44,000 barrels of oil per year and reduction of Green House Gas (GHG) emissions of 16,600-tons CO₂ per year. Estimated payback period vary according to the investments on EE and EC measures implemented and range from less than a year (for water pumps) to 4 years or more for more costly EE and EC investments such as lighting and HVAC retrofitting.
- 2.9 **Program Objectives.** The general objective of this Program is to support the reduction of Jamaica's dependency on oil consumption through the design and implementation of cost savings EE and EC measures in the public sector and reduce GHG emissions. The Program also aims at materializing the potential for EE and EC in public buildings and thus subsequently reduces the GoJ's energy consumption.
- 2.10 The specific objectives of the Program are to: (i) design and implement EE and EC measures in the public sector; (ii) reduce Jamaica's energy consumption, and (iii) decrease Jamaica's energy consumption costs.
- 2.11 **Coordination with Country Strategy/Programming objectives.** The Country Strategy with Jamaica for 2006-2009 (GN-2422-1) was approved on July 31st, 2006, later updated in 2008 (GN-2422-3) and updated again in 2010 (GN-2570 approved on June 2, 2010 by the IDB Board of Executive Directors). The Program is consistent and coherent with the Jamaica CS update (GN-2570) under the priority area of "getting better value for public expenditures" as it will achieve greater efficiency of public expenditures in the energy sector through costs savings resulting from the implementation of EE and EC measures. The operation also reflects the IDB's institutional priorities as outlined in the Report on the Ninth General Increase in Resources for the Inter-American Development Bank (GCI) (AB-2764) as it contributes to the goal of "supporting development in small and vulnerable countries" (such as Jamaica) and to that of "assisting borrowers in dealing with climate change, sustainable energy (including renewable) and environmental sustainability". Lastly, the Program is also in line with the IDB Country Strategy currently under preparation for Jamaica (2011-2015) and with the 2011 Country Programming Document (CPD). IDB's support to the energy sector in Jamaica includes two additional complementary

³ It will also contribute to the target of 25% reduction in public sector electricity consumption by 2015 as set forth in the Jamaica CPD Energy Sector target.

TC programs that are also currently in execution, Wind and Solar Mapping Technical Assistance Program (JA-X1001) and Energy Efficiency Technical Assistance Program (JA-T1031) with the Development Bank of Jamaica to provide training for EE auditors for small and medium enterprises.

III. DESIGN ASPECTS AND SECTOR KNOWLEDGE

- 3.1 The Program will be structured as an Investment Loan for an amount of US\$20 million to be funded through the IDB Ordinary Capital (OC) Resources. Final design for the Program is at an advanced stage of preparation given the solid technical results obtained under the EECTA and the subsequent associated EE and EC measures identified and preliminarily agreed with the MEM. The Executing Agency will be the MEM which has overarching responsibility for the development of the energy sector in Jamaica, including the development of strategies, programs and projects to ensure the successful implementation of the National Energy Policy with a focus on the promotion of EE and EC. The MEM, through the establishment of an Executing Unit, will be responsible for the implementation, coordination, management and supervision of the Program.
- 3.2 **Component I. Institutional Strengthening.** Component I will consist in providing key technical support to the MEM for the execution, management, coordination and supervision of the Program. To this end, an Executing Unit is envisioned to be established within the MEM and will be staffed to cover the following areas: (i) financial and accounting; (ii) procurement for the EE and EC investments; (iii) fiduciary/disbursement aspects; (iv) project management; and (v) capacity building for monitoring and evaluation of indicators and targets for EE and EC (including measure and verification protocols).
- 3.3 **Component II. Investments in EE and EC.** Component II will consist in the implementation of EE and EC measures in the public sector as follows⁴: (i) installation of efficient street lighting and indoor lighting such as solar lighting, sodium vapor lamp, high-efficiency Compact Fluorescent Lighting (CFLs) and/or Light Emitting Diode (LED); (ii) window and door sealing (such as automatic door closers, occupancy sensors, programmable thermostats); (iii) windows and roofs insulation, reflective window/roof coating, double paned window and roof ventilation products; (iv) solar hot water systems; (v) high efficiency mini-split AC; and (vi) solar Photovoltaic (PV) systems when economically feasible.
- 3.4 **Component III. Demand side management program and EE/EC education awareness.** Component III will: (i) provide education awareness to public sector end users under the Program to conserve energy; (ii) design EE and EC incentives mechanisms within the public sector; (iii) provide preventive maintenance education; and (iv) initiate the drafting of EE and EC technology standards. It will also fund additional technical and regulatory studies needed to be carried out by the MEM in order to continue advancing the sustainable energy agenda (such as smart grid study).

⁴ Water energy efficiency and conservation measures that were identified and designed under the EECTA, such as efficient water pumps and motors, will be included under the Kingston Metropolitan Area (KMA) Water Supply Improvement Project (JA-L1035) currently under preparation by the Water and Sanitation Division.

The Program is also envisioned to include the corresponding evaluation and monitoring arrangements.

IV. SAFEGUARDS AND FIDUCIARY SCREENING

- 4.1 **Environmental Aspects.** The Program will finance the implementation of EE and EC measures in the public sector in order to reduce Jamaica energy consumption and costs while having a positive impact on GHG. The Program involves only minor physical modifications to existing buildings and utilities, and therefore no direct or indirect negative impacts are expected to result from the Program. On the contrary, as a result of the actions derived from this Program, all EE and EC measures are expected to be socially and environmentally sustainable. Indirectly, this Program will contribute to reduce dependency on oil and provide CO₂ reductions as well. According to the Environment and Safeguards Compliance Policy, this Program is classified as category “C”.
- 4.2 **Fiduciary Aspects.** Procurements for the proposed Program will be carried out in accordance with the Policies for the Procurement of Works and Goods Financed by the Bank (GN-2349-7) of July 2006; and the Policies for the Selection and Contracting of Consultants (GN-2350-7) of July 2006, and with the provisions established in the Loan Contract and the procurement plan that will be developed during the analysis stage and incorporated in the Proposal for the Operation Development (POD). In addition, prior to any procurement being initiated for this Program, the Borrower will be required to prepare and submit to the Bank a draft General Procurement Notice for publication on the IDB’s website and United Nations Development Business (UNDB).
- 4.3 In response to diagnostics carried out by the major multilateral partners and as a condition for continued fiscal support, Public Financial Management (PFM) in Jamaica is currently undergoing a multifaceted course of change and development. The Fiscal Responsibility Act, recently passed in parliament, has set in place a broad set of fiscal parameters which are geared to produce best practice results in all areas of public financial management. It is expected that, as a consequence of improvements of all the PFM subsystems, and the institutional enhancement now being implemented within the public sector, the IDB can rely on the country’s systems in the future. The existing Executing Agencies in the portfolio, with the agreement of the GoJ, have embraced the IDB’s fiduciary reform initiatives.

V. RESOURCES AND TIMETABLE

- 5.1 Annex V sets forth the timeline for the preparation of the Program, where the POD due date is envisioned to be in May 2011, Draft Loan Proposal in June 2011 and presentation to the Board of Executive Directors in September 2011. Two additional missions, an economic cost-benefit analysis, fiduciary analysis and environmental analysis (if necessary) are expected to be required for the preparation of the Program for an approximate cost of US\$56,798.