

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

JAMAICA

ENERGY EFFICIENCY AND CONSERVATION PROGRAMME

(JA-L1025)

LOAN PROPOSAL

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Electronic Links
REQUIRED
1. POA http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36340125
2. Monitoring & Evaluation Arrangements http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36321480
3. Safeguard and Screening Form for Screening and Classification of projects (SSF) http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36423873
OPTIONAL
1. EECTA Inception Report http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=35775895
2. EECTA Report #1 http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=35775951
3. EECTA Report #2 http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=35775932
4. EECTA Report #3 http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=35775911
5. Cost-Benefit Analysis (CBA) http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36336167
6. Energy Efficiency and Conservation Master Model http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=36396341

Abbreviations

AC	Air Conditioning
bbl/d	barrels per day
bbl/y	barrels per year
BOE	Barrels of Oil Equivalent
BSJ	Bureau of Standards of Jamaica
CBA	Cost Benefit Analysis
CCB/CJA	Country Office in Jamaica
CFL	Compact Fluorescent Lighting
CO ₂	Carbon dioxide
CPD	Country Programming Document
EA	Executing Agency
EC	Energy conservation
EE	Energy efficiency
EECTA	Energy Efficiency and Conservation Technical Assistance
EECWC	Energy Efficiency and Conservation Working Committee
EECPSC	Energy Efficiency and Conservation Program Steering Committee
ERR	Economic Rate of Return
ESMR	Environmental and Social Management Report
ESS	Environmental and Social Strategy
GCI	Report on the Ninth General Capital Increase
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GoJ	Government of Jamaica
GWh	GigaWatt hour
HVAC	Heating, Ventilation and AC
ICAS	Institutional Capacity Assessment System
IDB	Inter-American Development Bank
IMF	International Monetary Fund
INE/ENE	Energy Division of the IDB
JPS	Jamaica Public Service Company Limited
km ²	Square kilometers
kWh	KiloWatt hour
KMA	Kingston Metropolitan Area
LED	Light Emitting Diode
MEM	Ministry of Energy and Mining of Jamaica
M&E	Monitoring and Evaluation
MW	MegaWatt
NECEP	National Energy Conservation and Efficiency Policy
NPV	Net Present Value
NWC	National Water Commission
OC	Ordinary Capital
ODS	Ozone Depleting Substances
OMP	Operational Manual of the Programme
OUR	Office of Utility Regulations
PCJ	Petroleum Corporation of Jamaica

PFM	Public Financial Management
POD	Proposal for Operation Development
PP	Project Profile
PS	Permanent Secretary
PV	Solar Photovoltaic
SBA	Stand-By Arrangement
SECCI	Sustainable Energy and Climate Change Initiative
SSF	Safeguard and Screening Form for Screening and Classification of Projects
T8	Tube fluorescent light bulbs
TC	Technical Cooperation
UNDB	United Nations Development Business
W	Watt

PROJECT SUMMARY
JAMAICA
ENERGY EFFICIENCY AND CONSERVATION PROGRAMME
(JA-L1025)

Financial Terms and Conditions			
Borrower: Jamaica		Amortization Period:	20 years
		Grace Period:	4 years
Executing Agency: Ministry of Energy and Mining (MEM)		Disbursement Period:	4 years
Source	Amount	Supervision and Inspection Fee:	*
IDB (OC)	US\$20,000,000		
Total	US\$20,000,000	Interest Rate:	Libor based
		Credit Fee:	*
		Currency:	U.S. dollars from the Single Currency Facility of the Bank’s Ordinary Capital.
Project at a Glance			
Project Objective/Description:			
The general objective of this Program is to enhance Jamaica’s energy efficiency and conservation potential through the design and implementation of cost savings Energy Efficiency (EE) and Energy Conservation (EC) measures in the public sector. The Program will: (i) strengthen the institutional capacities of the MEM for implementing EE and EC measures; (ii) invest in EE and EC measures in the public sector; and (iii) increase awareness and knowledge among key public and private stakeholders, together with demand-side management support. As a result of the IDB’s intervention in the energy sector, it is envisioned that Greenhouse Gas (GHG) emissions will also be correspondingly reduced.			
Special contractual conditions:			
Prior to first disbursement: (i) the establishment of the PEU (Project Execution Unit) by the MEM and selection and/or designation of a Project Manager and a Finance Officer(¶3.2); (ii) the establishment of the Energy Efficiency and Conservation Program Steering Committee (EECPSC), chaired by the Permanent Secretary of MEM (¶3.3); and (iii) the approval of the Operational Manual of the Programme (OMP) by the Execution Agency (EA) in the terms previously approved by the Bank (¶3.5).			
Retroactive Financing: Up to the equivalent of US\$400,000 in eligible expenses incurred in or after April 6 th , 2011 (¶3.8) may be recognized retroactively against the loan proceeds.			
Exceptions to Bank policies: None			
Project consistent with Country Strategy:		Yes [X]	No []
Project qualifies for:		SEQ[] PTI [] Sector [] Geographic[]Headcount []	
Procurement: All program procurements will follow Bank policies and procedures as defined in documents GN-2349-9 and GN 2350-9. No exceptions to Bank policies are envisaged (¶2.9).			

(*) The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges, in accordance with the applicable provision of the Bank's policy on lending rate methodology for ordinary capital loans. In no case will the credit fee exceed 0.75% or the inspection and supervision fee exceed, in a given six-month period, the amount that would result from applying 1% to the loan amount divided by the number of six-month periods included in the original disbursement period.

I. DESCRIPTION AND RESULTS MONITORING

A. Background, Problem Addressed, Justification

- 1.1 **Background.** With an area of 11,000 square kilometers (km²) and a population of 2.83 million people, Jamaica is highly-dependent on commodity imports with petroleum representing 34.5% of total imports in 2010 versus 17.8% in 2002, and relies on remittances and tourism, which account for about 15% and 20% of Gross Domestic Product (GDP), respectively.
- 1.2 The economic development of Jamaica has been mostly dependent¹ on imported petroleum as its primary source of energy because Jamaica has limited hydro resources and has no indigenous petroleum or natural gas. Imported petroleum is used mainly in the following three areas: (i) the transport sector, with 37% of petroleum consumption; (ii) bauxite/alumina industry, with 34% of petroleum consumption², and (iii) electricity generation, with 23% of petroleum consumption.
- 1.3 In 2008, total imports of petroleum products were US\$2.71 billion (75,000 barrels per day (bbl/d)), up from US\$0.81 billion in 2003.³ This high level of energy imports exposes Jamaica to fluctuations in international oil prices and significantly contributes to Jamaica's balance of payments deficits while placing additional pressure on foreign exchange reserves and exchange rates.⁴
- 1.4 **Electricity Sector.** Jamaica's national electricity coverage is approximately 92% including rural areas (i.e., rural areas have close to 90% of electricity coverage), of which the Government of Jamaica's (GoJ) Green Paper on Energy policy targets 100% electricity coverage by 2015. The electricity system is small, with 590,000 customers, growing at a rate of 3.7% per year and broken down as follows: (i) industrial and commercial sector represent the largest consumer category with 63.1% of total consumption; (ii) 34% is represented by the residential sector; and (iii) 2.9% correspond to other end-users (mainly municipal lighting).
- 1.5 The Jamaica Public Service Company Limited (JPS) has been the main supplier of electricity since its establishment in 1923 and was privatized in 2001.⁵ JPS

¹ The global economic downturn and increase in the price of petroleum 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 with the International Monetary Fund (IMF) in February 2010. Signs that Jamaica is exiting the recession are increasing even though economic activity remains weak.

² Jamaica is the world's 4th largest producer of bauxite, a highly energy-intensive industry.

³ Oil consumption has grown since 2003 at an annual rate of 3.74%, faster than its population's annual growth rate of 0.48% and faster than its GDP growth in the same period.

⁴ However, even if all the remaining hydropower potential were developed (around 80-MegaWatts (MW) including the biggest site which contributes 50-MW of those 80-MW), it would still amount to a fraction of the demand for energy.

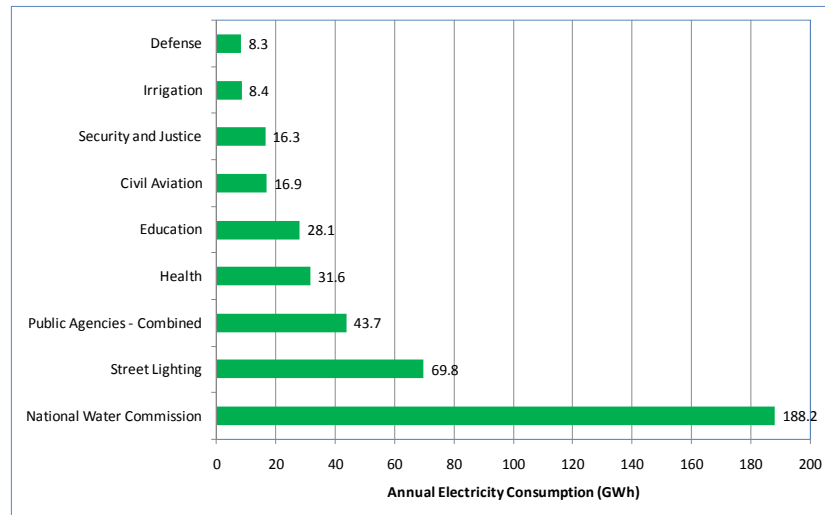
⁵ The ownership structure of JPS is as follows: (i) 80%, Marubeni Corporation and TAQA (Marubeni TAQA Caribbean); (ii) 19%, the GoJ; and (iii) 1%, others.

retains a monopoly on the transmission and distribution of electricity but the production regime has been liberalized to include generation of electricity by private producers for their own use or for sale to the national grid.

- 1.6 Total generating capacity in Jamaica is approximately 818-MegaWatt (MW), which includes 217-MW capacity provided by independent power producers. Total electricity output was estimated at 4,123-GigaWatt hours (GWh) in 2008, of which some 31% was provided by non-JPS sources, up from 28% in 2005.
- 1.7 The regulator of the electricity sector is the Office for Utility Regulations (OUR) which is responsible for setting the tariff structure and planning the electricity sector's long-term expansion. The Jamaican Ministry of Energy and Mining (MEM) provides the policy framework and strategic directions for the energy sector and is responsible for the sustainable development of energy and minerals resources in Jamaica. The Energy Division of the MEM oversees the functioning of the energy sector. It monitors energy supply and is responsible for alternative energy sources identification, Energy Efficiency (EE) and Energy Conservation (EC). The Energy Division of the MEM also collaborates with key stakeholders, including the Petroleum Corporation of Jamaica (PCJ) for petroleum and petroleum products, and with JPS. Currently, there is no agency or institution in charge of designing and implementing EE programs and activities on a national level. Nevertheless, the MEM has indicated a strong interest in defining and implementing such institutional and regulatory changes to increase EE in all economic sectors.
- 1.8 As a country, Jamaica's economy is energy intensive due to a range of factors, including: (i) the high energy use of the bauxite and alumina industry; (ii) inefficient electricity system; (iii) inefficient energy technologies in the manufacturing and other productive sectors; (iv) low public awareness of the importance of EE and EC; and (v) inefficient energy use in the public sector, which accounts for approximately 12% of the national electricity consumption.
- 1.9 The public sector consumption has grown at an average rate of 4% per annum for the past 5 years. As of April 2011, average annual electricity consumption for different public sector entities⁶ are shown in Figure 1.

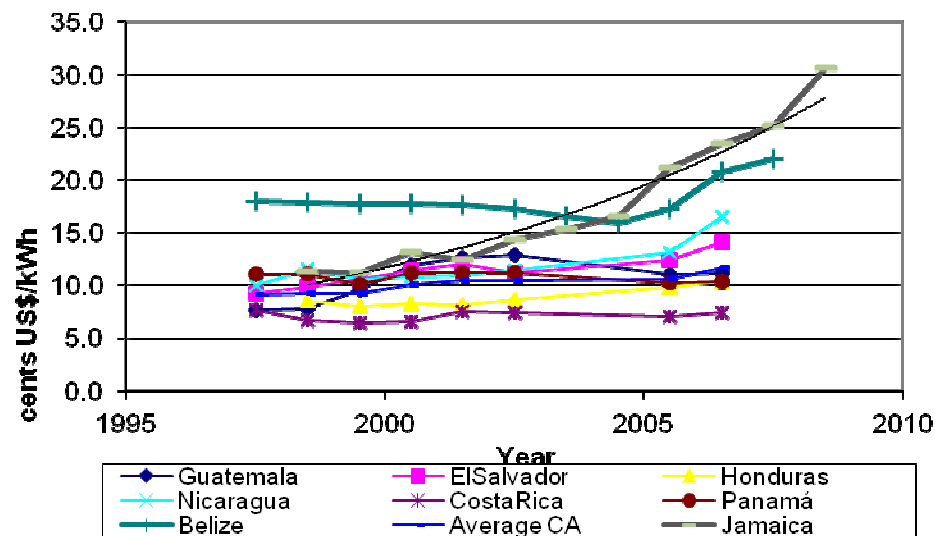
⁶ Public sector figures come from 4,500 public sector facilities that have been categorized by the type of consumption and monthly electricity use, for example: (i) Ministry of Health includes ministry buildings, hospitals, and clinics; (ii) Ministry of Education includes schools, colleges and ministry buildings; (iii) Civil Aviation Authority includes airports and ministry buildings; (iv) Ministry of Security and Justice includes police stations and ministry buildings; and (v) public agencies combined includes Central Sorting Office, Fire Department, Collector of Taxes, Transport and Works, Child Development Agency, Inland Revenue, Correctional Services, Electoral Office, Housing and Labour, and Agriculture.

Figure 1. Annual Electricity Consumption for Public Sector



- 1.10 Average electricity prices in Jamaica have also climbed at a fast pace in the last decade (10.2% per year since 1998 and 14.1% per year since 2004) and are amongst the highest in the region (US\$30 cents/kWh in 2008), which affects the competitiveness of Jamaican firms in international markets. Figure 2 provides a cost comparison of electricity rates in the region.

Figure 2. Central America and Jamaica Average Tariffs⁷



⁷ A comparison of Central American and Jamaica Average Tariffs is due to their similarities in their energy matrix.

- 1.11 As a result of the above, the electricity costs for the public sector are approximately US\$10.4 million/month, equivalent to US\$121 million per year. Table 1 shows the annual electricity costs for the Jamaican public sector.

Table 1. Annual Electricity Costs in the Jamaican Public Sector

Public Agency	Tariff Rates				Total
	R10	R20	R40 & R50	R60	
Street Lighting	-	-	-	2,153	2,153
Defense	5	38	147	-	190
Security and Justice	14	260	151	-	426
Civil Aviation	-	11	369	-	380
Education	120	667	-	-	787
Health	21	158	558	-	736
National Water Commission	-	566	3,690	-	4,256
Public Agencies - Combined	44	549	566	-	1,159
Irrigation	-	68	155	-	223
Total (Million J\$)	206	2,316	5,636	2,153	10,310
Total (Million US\$)	2	27	66	25	121

- 1.12 **Problem addressed.** High and rising electricity costs as demonstrated above have a significant impact on the GoJ's finances and competitiveness and make Jamaica a good candidate for a comprehensive energy program of efficiency improvements. Thus, in order to tackle such issues and reduce both costs and energy consumption, the GoJ requested technical assistance from the Inter-American Development Bank (IDB) to design a program that would craft and recommend measures that would target EE and EC and further help the GoJ in reducing both energy consumption and costs.⁸
- 1.13 To this end, the Energy Efficiency and Conservation Technical Assistance (EECTA), financed through the Sustainable Energy and Climate Change Initiative (SECCI) fund, was approved on June 12th, 2009 for an amount of US\$350,000 (and with additional local counterpart of US\$87,500) and declared eligible on November 5th, 2009 (ATN/MC-11651-JA). The EECTA was designed to: (i) determine energy consumption patterns for public sector buildings; (ii) provide cost assessment of public sector energy consumption; (iii) perform a Cost Benefit Analysis (CBA) of retrofitting buildings and public sector energy demand with EE equipment; and (iv) provide technical specifications for recommended EE and EC measures. As of September 2011, the EECTA had reached 80% disbursement and is expected to be fully disbursed by end 2011.

⁸ It is estimated that Latin America and the Caribbean could reduce energy consumption by 10% over the next decade by investing in widely available technology and equipment. It would cost approximately US\$16 billion to reach that target, which would reduce total energy consumption by some 143,000 GWh in 2018. The investment required for generating the same amount of energy would cost US\$53 billion, with the environmental related impacts. EE and EC programs have been implemented worldwide (including with private sector participation) and have had positive impacts with regard to promoting models of energy efficiency usage and, in particular, when such programs were associated with demand side management activities that further enhanced awareness of EE and EC measures proposed.

- 1.14 The execution of the EECTA included the review of 4,366 government electricity accounts; the completion of 22 energy audits to hospitals and 33 energy audits to other government facilities (see footnote 6 above) and the review of 96,280 street lights and 230 traffic lights pattern and respective cost consumption.
- 1.15 The audits performed and analysis covered 31% of the public sector consumption and identified the main problems that needed to be addressed to reduce the public sector energy consumption and costs, which were: (i) low efficiency of water pump operations;⁹ (ii) lack of management in peak demand and low level of preventive maintenance; (iii) inefficient street lighting and obsolete lighting equipment in public buildings;¹⁰ (iv) inefficient mini-split Air Conditioning (AC)¹¹ units and reach-in refrigerators in the hospitals; (v) lack of insulation of public sector building envelopes (i.e., windows, doors and roofs are prone to energy leakage); (vi) manually operated Heating, Ventilation and AC (HVAC) systems and units (i.e., no timer to manage hours of operation, or programmable thermostat to set the appropriate temperature); (vii) inefficient single panel glass windows allowing heat from the outside; and (viii) doors lacking functioning automatic door closers (see electronic link for energy efficiency and conservation master model).¹²
- 1.16 **Justification.** The GoJ is committed to increase EE and EC within Jamaica and in October 2010, the MEM developed the National Energy Conservation and Efficiency Policy 2010 – 2030 (NECEP), which provides the overarching framework for EE policies development. To support the GoJ's initiative to reduce electricity consumption (and its associated costs) and further the policy mentioned above, the EECTA identified the equivalent of US\$20 million of investments for implementing EE and EC measures and which constitute the proposed Energy Efficiency and Conservation Programme (the Program). The Program is structured as an investment loan based on the EE and EC investments to be carried out during the next 4 years and would yield savings in the public sector for up to US\$6.7 million per year; a 5% reduction of the GoJ energy consumption (estimated in 2010 to 405-GWh/y);¹³ savings of 13,800-barrels per year (bbl/y) and reduction of Greenhouse Gas (GHG) emissions of 19,150-tCO₂/y Carbon

⁹ A separate investment loan in the water and sanitation is currently under preparation (JA-L1035) and will finance specific investment activities to remove inefficient water pumps and install EE and EC ones given that the National Water Commission represents more than 50% of energy consumption in the public sector.

¹⁰ Lighting is primarily provided by T-12 fluorescent lamps of 40-Watt (W) and incandescent bulbs.

¹¹ Through energy audits, it has been estimated that current air conditioning units are about 10 years old.

¹² The energy efficiency and conservation master model was developed with the EECTA resources and provides amongst others, electricity savings, energy cost savings, investments associated required, payback period and reduction in CO₂ emissions that can be achieved with the implementation of the Program. The model was developed using the following inputs: (i) annual public sector electricity consumption based on historical data for about 4500 public facilities; and (ii) energy audits conducted for 33 public facilities (including street lighting) and which captured audit information on equipment inventory, operating hours, equipment capacity, replacement criterion and corresponding costs.

¹³ See ECCTA reports in electronic links.

Dioxide (CO₂) per year. The simple payback of the investment is estimated at 3 years.

- 1.17 **Government of Jamaica (GoJ) Energy Sector Priorities.** The GoJ has called for increasing EC and EE. In the NECEP, the GoJ determined that: (i) energy consumption shall be reduced by 15% in the short to medium term, requiring significant expenditure for energy audits and for implementation of retrofits in order to reduce the recurrent expenditure on energy; (ii) focus shall be on making timely investments designed to achieve energy savings across the GoJ; and (iii) benefits of EE and EC measures in the Jamaican public sector meant that staff will have to be fully engaged in the process, including relevant EE and EC management protocols and mechanisms for accountability and reward.
- 1.18 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 minimum standards; and (iv) make the GoJ a model for responsible use of energy through EC and EE. The proposed Program fits within such priorities.
- 1.19 **IDB's Country Strategy in Jamaica.** The Country Strategy (CS) 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 cost savings resulting from the implementation of EE and EC measures in the public sector and the savings resulting from the Program, will repay the investment and thus, reduce the total energy related fiscal expenses of the public sector.
- 1.20 **Consistency with IDB Priorities and Policies.** The Program 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) (AB-2764), as it contributes to the goal of "supporting development in small and vulnerable countries" (such as Jamaica) and to "assisting borrowers in dealing with climate change, sustainable energy (including renewable) and environmental sustainability".
- 1.21 IDB's support to the energy sector in Jamaica includes two additional complementary technical assistance programs that are currently in execution: Wind and Solar Development Program (JA-X1001) and Program to Promote Energy Efficiency, Energy Conservation and Sustainable Energy (JA-T1031), with Wigton Wind Farm Limited and the Development Bank of Jamaica,¹⁴ respectively.
- 1.22 The IDB has been actively involved in the financing of EE programs and projects in Latin America such as the Energy Efficiency Project (1072/OC-ME) in

¹⁴ JA-T1031 will implement pilots for small and medium enterprises to demonstrate the effects of adopting EC and EE, while developing curricula to strengthen in-house technical capacity.

Mexico, or the National Sustainable Electrification and Renewable Energy Program (PNESER) (2342/BL-NI), in Nicaragua, which provided financing for EE measures in different sectors. The IDB has also implemented technical assistance activities such as Residential Use of Renewable Energy and Energy Efficiency (ATN/JC-11155-ME), which allowed the implementation of cost-efficient EE measures for low income families of Baja California, Mexico.

- 1.23 Lastly, the Program is consistent with the Public Utility Policy (OP-708) given the following: (i) separation of policy formulation, regulatory regime and energy service providers functions; (ii) unbundling of generation with distribution and transmission assets to separate key players; (iii) competitive generation sector where prices are set on marginal costs of generation; (iv) strong private sector involvement; and (v) tariff structure reflecting investment, operation and maintenance costs of generation, distribution and transmission.

B. Objective, Components and Cost

- 1.24 **Program Objectives.** The general objective of the Program is to enhance Jamaica's energy efficiency and conservation potential through the design and implementation of cost savings EE and EC measures in the public sector. The Program will: (i) strengthen the institutional capacities of the MEM for implementing EE and EC measures; (ii) invest in EE and EC measures in the public sector; and (iii) increase awareness and knowledge among key public and private stakeholders, together with demand-side management support. As a result of the IDB's intervention in the energy sector, it is envisioned that GreenHouse Gas (GHG) emissions will also be correspondingly reduced.
- 1.25 **Component I. Institutional Strengthening.** Component I will provide key technical support to the MEM for the execution, management, coordination and supervision of the Program and is structured in four sub-components:
- (i) Sub-component I. Project Executing Unit (PEU) within the MEM to cover the following areas: (a) financial expertise; (b) procurement for the EE and EC investments; (c) project management and coordination; and (d) technical support for the implementation and supervision of the EE measures;
 - (ii) Sub-component II. It includes the assessment and definition of an appropriate institutional framework within the portfolio of the MEM, which will lead in the implementation of EE measures nationwide to achieve national EE goals;
 - (iii) Sub-component III. Energy savings monitoring and verification activities which will validate the effectiveness of EE and EC measures implemented (monitoring of electricity consumption and bills of retrofitted public sector facilities and correlation against the EE and EC measures implemented); and
 - (iv) Sub-component IV. Design and implementation and EE initiatives including the development of Maintenance and Environmental Disposal Manuals for future EE activities.

- 1.26 **Component II. Investments in EE and EC.** Component II will consist in the implementation of EE and EC investment measures in the public sector¹⁵ and is divided in three sub-components:¹⁶
- (i) Sub-component I – Lighting.¹⁷ Replacement of obsolete lighting such as incandescent bulbs and inefficient fluorescent lighting with efficient lighting including Light Emitting Diodes (LED);
 - (ii) Sub-component II –Air Conditioning. Replacement of window units and inefficient mini-split AC with inverter-based mini split units and/or efficient AC central units; and
 - (iii) Sub-component III – Building Envelope. Introduction of building envelop measures such as roof cooling, window seals and door sealants that reduce the heat gain of the buildings including, window and roof insulation and/or measures that reduces energy losses such as automatic door closers, occupancy sensors and programmable thermostats.
- 1.27 **Component III. Demand side management program and EE/EC education awareness.** Component III will finance the following activities:
- (i) Sub-component I. Sub-component I will finance activities to increase awareness among the public and private sector regarding EE and EC cost and benefits, focusing on the following: (a) support the design of EE and EC incentive mechanisms within the public sector as well as the analysis of introducing other demand side management technologies such as Smart Grid or Metering; (b) support the definition of minimum EE and EC standards, in coordination with the Bureau of Standards of Jamaica (BSJ), for specific technologies such as lighting and/or AC; and (c) finance additional technical and regulatory studies needed to implement subsequent EE measures within the public sector; and
 - (ii) Sub-component II. It will finance: (a) workshops and seminars on EE procurement and EE management for private and public stakeholders; and (b) dissemination activities in order to increase awareness among private and public stakeholders and disseminate the main lessons learnt nationally and regionally.

C. Cost and Financing

- 1.28 The total Program cost is US\$20 million as shown in the table below.

¹⁵ The investments contemplated will be directed to improve public sector buildings including municipalities when applicable.

¹⁶ EE and EC measures in the water sector 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.

¹⁷ Sub-component I – Lighting also includes replacement of inefficient street lighting in targeted parishes by efficient high-pressure sodium lights and/or new technology such as LED.

Table 2. Energy Efficiency and Conservation Program Costs

Categories		Approved Financing	Total
	Description	IDB	
1	Component I - Institutional Strengthening	1,698,500	1,698,500
1.1	Project Execution Unit Staffing & Equipment	958,500	958,500
1.4	EE Institutional Framework	300,000	300,000
1.5	Energy Savings Monitoring and Verification Activities	240,000	240,000
1.6	Design and implementation of EE initiatives including development of Maintenance and Environmental Disposal Manuals	200,000	200,000
2	Component II¹⁸ - Investments in EE and EC	17,000,000	17,000,000
2.1	Replacement of Lighting (per unit)	8,503,428	8,503,428
2.2	Replacement of Air-conditioning Systems (per unit)	7,317,005	7,317,005
2.3	Retrofit and Insulation of Building Envelopes (per measure)	1,179,567	1,179,567
3	Component III – Demand Side Management program and EE/EC Education Awareness	980,000	980,000
3.1	Demand side management for EE and EC	680,000	680,000
3.2	Education on EE and EC and knowledge dissemination	300,000	300,000
4	Contingencies and Miscellaneous	321,500	321,500
	Contingencies	231,500	231,500
	Mid and Final Evaluations	60,000	60,000
	Audits	30,000	30,000
	Total Program Costs	20,000,000	20,000,000

D. Results Matrix with Indicators

- 1.29 The Results Matrix (Annex II) provides results indicators associated with Program components. These indicators were developed to evaluate the Program's impact. They were reviewed and agreed upon with the MEM, which will assist in their verification.

II. FINANCING STRUCTURE AND MAIN RISKS

A. Financial Instrument

- 2.1 The Program will be financed with an IDB investment loan for an amount of US\$20 million to the GoJ. This financing will cover all estimated investments, institutional strengthening and demand-side management activities, audits, evaluations and monitoring activities.

¹⁸

US\$17 million amount associated with Component II results from the audits carried out under the EECTA (33 public sector buildings for five end-users category) which was based on: (i) the monthly electricity consumption for the audited facilities; and (ii) the required investment costs associated with replacement of lighting, AC and building envelope for such facilities based on the cost of the replacement technology (including installation) for each measure and which yielded an investment amount of US\$5 million. Such number was then projected to the Program within the financing parameters contemplated. Lastly, the ratio of investment for lighting, AC and building envelope for audited facilities and extrapolated to the five end-users category was then multiplied with the audited equipment inventory to obtain the quantity of equipment corresponding to Component II.

- 2.2 Resources from this Program will specifically finance the implementation of the EE and EC investments across the public sector in the period 2011-2014, in addition to the associated costs for the PEU and demand-side management activities.

B. Risks and Special Considerations

- 2.3 **Environmental and Social Safeguards Risks.** The Program will finance the implementation of EE and EC measures in the public sector to reduce Jamaica energy consumption and costs while having a positive impact on GHG. The Program involves minor physical modifications (insulation of roofs and introduction of other passive insulation mechanisms) to existing buildings and utilities, and therefore no direct or indirect negative impacts are expected as a result from the Program. Nevertheless, the Program considers the replacement of old A/C systems that might use Ozone Depleting Substances (ODS). In order to comply with the Montreal Protocol, the use of non-ODS and its correct final disposal of the hazardous components of A/Cs will be included as conditions for awarding the equipment purchase. The same mechanism will be used for ensuring the safe final disposal of the hazardous chemical content of Compact Fluorescent Lighting (CFL) to be replaced (all inefficient lighting and AC are envisioned to be disposed of and not be redeployed to other public sector facilities).
- 2.4 As a result of the actions derived from this Program, EE and EC measures are expected to be socially and environmentally sustainable and thus the Program will have net positive environmental impacts. Indirectly, this Program will contribute to reduce dependency on oil and provide CO₂ reductions. According to the Environment and Safeguards Compliance Policy, this Program is classified as category “C”.
- 2.5 **Fiduciary Risk.** The Institutional Capacity Assessment System (ICAS or SECI) was used to evaluate the institutional capacity of the MEM in its capacity as Executing Agency (EA). With regard to the procurement system and by extension the Goods and Administration System, SECI determined that the rating was a medium developmental level and medium risk level. One of the factors contributing to this rating, is the existence of an established unit responsible for the procurement processes, operating in compliance with the GoJ procurement norms, guidelines and regulations.
- 2.6 Notwithstanding the latter, SECI found that the procurement activities were limited in scope and amounts. As such, exposure of personnel to specialized and larger procurement has been limited. In addition, the ability to integrate accounting systems with procurement has been lacking and MEM is building capacity to ensure that there are routine monitoring processes for procurement.
- 2.7 Under financial management, SECI determined that the rating was a satisfactory developmental level and a low risk level. The factors contributing to this rating included the existence of an established unit with broad responsibilities for financial administration, budgeting, accounting and treasury, operating in compliance with government regulations and generally acceptable accounting principles.

- 2.8 In light of the foregoing, no significant fiduciary risks are anticipated for the proposed project.
- 2.9 **Procurement Risk.** Procurements for the proposed Program will be carried out in accordance with the Policies for the Procurement of Works and Goods Financed by the IDB (GN-2349-9) of March 2011; and the Policies for the Selection and Contracting of Consultants (GN-2350-9) of March 2011, and with the provisions established in the Loan Contract and the procurement arrangements set forth in the Loan Proposal. In addition, prior to any procurement being initiated for this Program, the MEM will be required to prepare and submit to the IDB a draft of General Procurement Notice for publication on the IDB's website and United Nations Development Business (UNDB).
- 2.10 **Execution Risk.** Execution of the Program presents some challenges given that there is no recent experience with investment programs financed by the IDB in the energy sector in Jamaica. Such risk is mitigated through the track-record obtained under the EECTA, which was approved, disbursed and executed during the two-year period that was originally scheduled in the Plan of Operation.
- 2.11 In addition, the Program should receive full support by the Ministry of Finance during execution given that the estimated payback of the EE and EC investments is three years and that the Program is expected to "create" fiscal space by reducing the total expenses of the GoJ and thus allow the redistribution of these resources to other sectors/areas. Also, a detailed Operational Manual of the Programme (OMP) will be developed to enhance the control environment and the flow of information together with monitoring arrangements that have been programmed to ensure the Program stays on course.
- 2.12 Lastly, the establishment of an Energy Efficiency and Conservation Program Steering Committee (EECPSC) and an Energy Efficiency and Conservation Working Committee (EECWC) (see Section III below) together with the implementation of a PEU (including dedicated project manager and PEU staff that will be responsible for the timely execution of the Program within the 4-year time period envisioned), further mitigates the execution risk.
- 2.13 **Economic Viability.** A CBA¹⁹ was performed to measure the rate of return of the EE and EC measures that will be implemented across the public sector. The following parameters were used: (i) annual electricity saved in MWh; (ii) cost of electricity saved in US\$; and (iii) amount of oil saved due to reduced electricity consumption in public facilities, stemming from EE improvement. Net incremental benefits were calculated over a 20-year project horizon and yielded the following results: (i) 22,609-MWh of annual electricity saved per year; (ii) electricity cost savings of US\$6.7-million/year of the Program; and (iii) 13,886

¹⁹ The life cycle cost benefit analysis methodology has been used. The benefit streams capture the cost of energy saved due to energy efficiency improvements in public buildings as well as oil saved due to reduced energy consumption. The cost streams include the initial investment cost for equipment, the replacement cost over a 20 year project life cycle, and the annual maintenance cost. A discount rate of 12% was utilized.

barrels of oil will be saved annually. As a result of such area of intervention, the Program will also offset CO₂ emissions by 19,150 tons per year.

- 2.14 The CBA shows that, over a period of 20 years, with an initial investment of US\$17 million for installation of EE and EC equipment, the Program will result in electricity savings of 5% over the baseline²⁰ and with a Net Present Value of US\$32 million and an Economic Rate of Return (ERR) of 61%. See CBA links which contains the CBA results.
- 2.15 In addition, a sensitivity analysis was carried out taking into account changes in electricity rate tariff from US\$0.10/kWh to US\$0.30/kWh. The analysis shows that the Program is attractive even at low electricity tariffs as shown in Table 3.

Table 3. Sensitivity Analysis

Change in electricity tariff	NPV	ERR
10 Cents/kWh	(3,666,485)	6%
15 Cents/kWh	5,318,036	19%
20 Cents/ kWh	14,302,557	32%
25 Cents/kWh	23,287,079	45%
30 Cents/kWh	32,271,600	61%

III. IMPLEMENTATION PLAN AND MONITORING MECHANISMS

A. Summary Implementation Arrangements

- 3.1 **Borrower and Executing Agency (EA).** The Borrower is Jamaica. The EA 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 will establish a PEU within its Energy Division, which will be responsible for the implementation, coordination, management and supervision of the Program.
- 3.2 The PEU will be adequately staffed with the necessary number of officers throughout the four-year estimated execution period of the Program including: (i) a Project Manager who will have overall responsibility for the PEU as well as for the coordination and execution of all the components and activities under the Program; (ii) a Procurement Officer who will be in charge of designing and implementing the procurement plan to ensure that it is executed on time and within budget, including overseeing of all procured contracts; (iii) a Finance Officer; (iv) an Energy Efficiency Technical Officer who will develop and review the technical specifications of all EE and EC activities; and (v) one administrative assistant. **The establishment of the PEU by the MEM and selection and/or designation of a Project Manager and Finance Officer, in accordance with terms of reference previously approved by the IDB, will be a condition prior to the first disbursement of the loan.**

²⁰

The baseline considered the total energy consumption of the public sector end-users.

- 3.3 In addition to the PEU and in order to establish an inter-institutional coordination with other participating public agencies and/or ministries in the Program, an EECPSC will be established by the GoJ within the MEM to provide the necessary strategic direction, policy and inter-agency coordination between the various actors that will participate in the EE and EC measures. The EECPSC will be chaired by the Permanent Secretary (PS) of the MEM. For ensuring an effective implementation process, an EECWC will be created and each participating public agency will appoint a technical representative to the EECWC. **The establishment of the EECPSC will be a condition prior to first disbursement of the loan.**
- 3.4 The EA, through the PEU, will be responsible for the following, among others: (i) prepare reports providing evidence that the conditions have been met as well as other reports that the IDB may need to approve the disbursements; and (ii) once the disbursement of the Program is completed, compile and prepare the required information and performance indicators so that the IDB and GoJ can follow up, measure and evaluate the results of the Program.
- 3.5 The Program will be governed by an Operational Manual (Operational Manual of the Programme or OMP), which will include, among others, information regarding responsibilities of the PEU and its members, the composition and responsibilities of the EECPSC and the EECWC. **The approval of the OMP by the EA, on the terms previously approved by the IDB, will be a condition prior to the first disbursement of the loan.**
- 3.6 The loan resources of the Program will be disbursed in a period of 4 years. The disbursement breakdown is shown in the following table.

Table 4. Disbursement Schedule 2012-2015

Year	2012	2013	2014	2015	Total
% Disb.	5%	34%	32%	29%	100%

- 3.7 Financial management will be carried out within the framework of IDB policies OP-273-1 and OP-274-1. The Fiduciary Arrangements (Annex III) provides the details about financial management arrangements/requirements based on the assessed institutional capacities of the MEM.
- 3.8 **Retroactive Financing.** Up to the equivalent of US\$400,000 in eligible expenses executed under contracting processes commenced in or after April 6th, 2011 may be recognized retroactively against the loan proceeds and subject to IDB procurement procedures and policies (OP-504).
- 3.9 Liquidity will be provided to the Program via the disbursement method called Advances. These Advances must be justified within 180 days or when 80% of the resources have been committed. The review method for disbursement recommended for the firsts 12 months of execution is Ex-Post. The Program's financial statements on an annual basis will be duly certified by an independent audit, in accordance with the IDB's policies and procedures.

B. Summary of Arrangements for Monitoring and Evaluation

- 3.10 The EA will be responsible for developing a monitoring system for gathering and maintaining data related to the different indicators included in the Result Framework. Through the Program's monitoring system, the EA will submit semi-annual reports describing the physical progress of the Program made with respect to the indicators measured during the period covered by the Result Framework, lessons learned, and any other information required to ensure the successful implementation of the Program. The Program's monitoring system will also identify critical events and risks for the Program.
- 3.11 The Bank and the EA have agreed to use the indicators of the Result Framework as the main indicators for the Monitoring and Evaluation (M&E) Plan. The details of the M&E arrangements (indicators, timeline, budget) are detailed on the M&E Plan (see electronic link). The M&E Plan will focus on measuring the result indicators and specific benefits achieved by each of the components.
- 3.12 In addition, after 2 years of execution or when 50% of the resources are committed and/or disbursed, whichever come first, a mid-term evaluation will be elaborated to provide project status report, assess the level of completion of the Program indicators in order to identify progress and propose changes, if any, that may be required to attain the Program targets.
- 3.13 **Final Evaluation.** Once 90% of the resources of the Program are disbursed, a final evaluation will be carried out. The final evaluation will evaluate the impact and results obtained by the Program, identify the main lessons learned and will include an (ex-post) cost benefit analysis of the Program (see Monitoring and Evaluation Arrangements electronic link).
- 3.14 The IDB Project Team will be from the Energy Division (INE/ENE) of the IDB based in Washington DC and from the country office in Jamaica (CCB/CJA), which will have fiduciary and disbursement responsibility in the execution of the Program.

Development Effectiveness Matrix			
Summary			
I. Strategic Alignment			
1. IDB Strategic Development Objectives	Aligned		
Lending Program	This operation contributes to the lending program for (i) small and vulnerable countries, (ii) support climate chance initiatives, renewable energy and environmental sustainability; and (iii) regional cooperation and integration through institutional strengthening.		
Regional Development Goals	The operation contributes to the regional development goal of stabilization of CO2 equivalent emissions (metric tons per habitant).		
Bank Output Contribution (as defined in Results Framework of IDB-9)	The operation contributes to the following Bank output: Climate change pilot projects in agriculture, energy, health, water and sanitation, transport, and housing.		
2. Country Strategy Development Objectives	Aligned		
Country Strategy Results Matrix	GN-2422-1 and GN-2617	The operation can be aligned to the country strategy update; the new strategy under preparation includes an objective related to increase management of climate change risks.	
Country Program Results Matrix	GN-2617	The operation is included in the 2011 Country Program Document.	
Relevance of this project to country development challenges (If not aligned to country strategy or country program)			
II. Development Outcomes - Evaluability	Highly Evaluable	Weight	Maximum Score
	9.0		10
3. Evidence-based Assessment & Solution	9.0	25%	10
4. Ex ante Economic Analysis	10.0	25%	10
5. Monitoring and Evaluation	7.1	25%	10
6. Risks & Mitigation Monitoring Matrix	10.0	25%	10
Overall risks rate = magnitude of risks*likelihood	Low		
Environmental & social risk classification	C		
III. IDB's Role - Additionality			
The project relies on the use of country systems (VPC/PDP criteria)			
The project uses another country system different from the ones above for implementing the program			
The IDB's involvement promotes improvements of the intended beneficiaries and/or public sector entity in the following dimensions:			
Gender Equality			
Labor			
Environment			
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project	Yes	Energy Efficiency and Conservation Technical Assistance (JA-T1044).	
The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan.	Yes	Ex-post evaluation will provide information on the main constraint and opportunities to implement a EE program nationwide and will provide information on technical, knoledge or financial requirements to replicate this initiative in other countries of the region.	

This investment loan seeks to enhance Jamaica's energy efficiency and conservation potential.

The diagnosis is complete: main problems and their causes are analyzed on the basis of empirical evidence. The project logic is clear. The results matrix includes output and outcome indicators that are SMART. The project used an ex-ante cost-benefit analysis that used reasonable assumptions. An ex post cost benefit analysis for foreseen as part of the evaluation of the project. Project risks were assessed and mitigation measures planned; they include metrics to monitor their implementation.

ANNEX II RESULTS FRAMEWORK

Project Objective	The general objective of this Program is to enhance Jamaica's energy efficiency (EE) and energy conservation (EC) potential through the design and implementation of cost savings EE and EC measures in the public sector.
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Impact Indicators			
Outcome Indicators	Base Level (2010)	Target Level (2015) ¹	
Energy savings of the public sector (kWh/year)	0	22,609,713 kWh/year ²	Equivalent to a 5% ³ reduction
Energy expenses reduction (US\$/year)	0	US\$6.7 Millions/year	
CO2 emissions of the public sector reduced. (CO2eq-year)	0	19,150 tones/year	
# oil barrels reduced	0	13,886 barrels/year	

Outputs Indicators					
Component I. Institutional Strengthening	Base (2010)	2012	2013	2014	Target 2015
Number of PEU staff	0	4	-	-	-
EE Institutional Framework	0	A EE institutional framework structure developed (1 draft final proposal)	A EE institutional framework structure defined and agreed. (1 final proposal)		-

¹ As mentioned in the Monitoring and Evaluation (M&E Plan) it is expected that at least 10% of the monthly time of the PEU is dedicated to M&E activities

² As mentioned in the M&E Plan the data collection regarding (i) the implementation progress (ii) the data from the M&V equipments and (iii) data from JPSCO for cross-checking the final results will be solely responsible of the PEU.

³ Though the ECCTA assessments the total public energy consumption was estimated to 405 Gwh/y (2010)

Energy Savings Monitoring and Verifications Activities	0	0	3 draft manuals developed ⁴	-	3 manuals completed and approved by MEM	
Design and implementation of EE initiatives including development of Maintenance and Environmental Disposal Manuals	0	0	2 draft manuals developed	2 draft manuals completed and approved by MEM	-	
Component II Investments in EE and EC.	Base (2010)	2012	2013	2014	Target 2015	Total 2012-2015
# of Lighting replaced (per unit)	-	9,772	39,089	24,431	24,431	97,723
# of AC replaced (per unit)	-	503	2,010	1,256	1,256	5025
Square feet of buildings envelope measures implemented (per measure)						
A. Cool roof coating [sq ft]	-	362,388	1,449,553	905,971	905,971	3,623,883
B. Window film [sq ft]	-	7,522	30,087	18,804	18,804	75,217
Component III. Demand Side Management Program and EE/EC education awareness	Base (2010)	2012	2013	2014	Target 2015	
EE and EC incentives mechanisms proposal	0	-	1 draft on regulatory and incentives developed	-	1 final study on regulatory and incentives completed and approved by MEM	
EE Norms & Standards for specific technologies	0	-	1 proposal on EE Standards developed	-	1 EE Norms and Standards completed and approved by MEM	
EE Studies/Audits	0	-	5 Studies/Audits developed	-	5 Audits completed and approved by MEM	

⁴ One per component i.e, lighting, air conditioning and building envelope.

Workshops and seminars of EE Procurement and Management	0	0	At least 1 workshop/seminar carried out	At least 1 workshop/seminar carried out	-
Dissemination Activities	0	0	2	2	-

Notes:

1. The Matrix of Indicators will show the base level values, expected year values, and target values of each indicator;
2. Outputs and outcomes are grouped together to facilitate monitoring of component performance
3. The right hand column can be used for description of output / outcomes and choice of indicator and other explanatory notes
4. In the Results annex/section, this Matrix will be complemented by a detailed account of the arrangements (including institutional responsibilities, operating regulations, terms of reference, hiring of consultants, budgeting) showing how the data will be collected, verified, analyzed and reported to the Bank. The data sources and rationale behind the base line and target values will also be described.

ANNEX III - FIDUCIARY ARRANGEMENTS
(Max. 7 pages)¹

COUNTRY: JAMAICA

PROJECT Nº JA-L1025 **NAME:** Energy Efficiency and Conservation Program

EXECUTING AGENCY: MINISTRY OF ENERGY AND MINING

PREPARED BY: MAGDA THEODATE, GRAHAM WILLIAMS (VPC/PDP), BRODRICK WATSON (PDP/CJA)

I. Executive Summary

The Bank's methodology for Project Risks Assessment (GRP) was utilized to identify the project's risks and to determine the corresponding mitigating measures. The Institutional Capacity Assessment System (ICAS or SECI) was used to evaluate the Institutional Capacity of the Ministry of Energy and Mining (MEM) in the capacity of Executing Agency. MEM has pulled from its skills and expertise pool, a group of individuals who will form the core of the project execution unit (PEU). In addition, for the sole purpose of the project, the PEU will be staffed with consultants such as a Financial Specialist, Engineer Specialist, Project Manager, Procurement Specialist and the necessary administrative support. This PEU will operate within the framework of MEM but will also be aided by persons with the proven project execution skills from the IDB's previous Jamaica PRODEV, all under the direct monitoring of the MEM's Permanent Secretary (PS).

The Country's Fiduciary Systems were evaluated in 2005/2006 through an Integrated Fiduciary Assessment (IFA), comprised of two studies: the Country Financial Accountability Assessment (CFAA) for financial management, and the Country Procurement Assessment Report (CPAR) for procurement. The CFAA was updated in 2007 through a PEFA. These studies acknowledged Jamaica's continued commitment to establishing modern fiduciary systems and outlined specific areas which required attention. The Government of Jamaica continues, with assistance from major donors, to address key issues in its fiduciary systems. The donor community is committed to working with the GOJ to determine the extent to which the country's fiduciary systems can be used for administration of donor-financed projects. This project will be audited by an eligible external audit firm as per the Banks guidelines. .

Executing Agency's Fiduciary Context

The assessment conducted of the MEM within the framework of ICAS/SECI, indicates that the MEM has the necessary institutional capacity to participate in the execution of this project and the fiduciary system is therefore considered adequate.

With regard to the procurement system and by extension the Goods and Administration system, SECI determined that the rating was a medium developmental level and medium risk level. One of the factors contributing to this rating is the existence of an established unit responsible for the procurement process, and that operates in compliance with the GOJ procurement norms, guidelines and regulations. Notwithstanding this, SECI found that the procurement activities were limited in scope and amounts. As such, exposure of personnel to specialized and larger procurement has been

¹ The PTL can request that the length of the Annex be extended or reduced based on the needs of the Project.

limited. In addition, the ability to integrate accounting systems with procurement has been lacking and MEM is building capacity to ensure there is some concrete routine monitoring processes for procurement.

Under financial management, SECI determined that the rating was a satisfactory developmental level and a low risk level. The factors contributing to this rating was that there exists an established unit with broad responsibilities for financial administration, budgeting, accounting and treasury, operating in compliance with GOJ's regulations and the general acceptable accounting principles.

II. Fiduciary risk evaluation and mitigation actions

The Project Team is in the process of developing a preliminary Risk Mitigation Matrix that will be discussed with the Executing Agency. This will outline the necessary mitigative actions to be taken with the PEU. The Bank and the PEU will undertake joint reviews of the Matrix on a yearly basis, and introduce necessary additional mitigative actions as a result of such reviews.

III. Aspects to be considered in the Special Conditions of Contract

a) Special conditions precedent to first disbursement

1. The establishment of the PEU and the contracting of the PEU officers
2. The official establishment of the Project Steering Committee
3. Approval of the Operations Manual of the Project.

b) The application of the exchange rate has been agreed with the Executing Agency as follows:

1. Reimbursement of Expenses made: - the effective rate of exchange on the date of payment of each expenditures, as published by the Central Bank of Jamaica.
2. Rendering of Accounts (Advance Justification):- the effective rate of exchange used in the conversion of the currency of the operation to the local currency.
3. Counterpart: the effective rate of exchange on the date of payment of each expenditure, as published by the Central Bank of Jamaica.

Disbursements in another currency different from the US dollar and the Jamaican dollar: In cases of direct payment and reimbursement of a guarantee of letter of credit, the equivalent of the currency of the operation will be fixed in accordance with the amount effectively disbursed by the IDB

c) Financial reports and audit financial statements (indicate whether they are required and specify the type of report)

The executing agency will be required to submit the financial reports stipulated in the operations manual, as well as annual audited financial statements. The financial statement audit will be conducted in accordance with the Bank's policies, and will be conducted by an eligible external audit firm. The annual audit TOR will also include the audit of procurement activities undertaken.

IV. Fiduciary Arrangements for Procurement Execution

The procurement fiduciary arrangements establish the conditions applicable to all procurement execution activities in the project.

1. Procurement Execution

Procurements for the proposed project will be carried out in accordance with the Policies for the Procurement of Works and Goods Financed by the Inter-American Development Bank (GN-2349-9); and the Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank (GN-2350-9), and with the provisions established in the loan contract and this procurement plan. In addition, for all projects, the Borrower is required to prepare and submit to the Bank a draft General Procurement Notice.

- a) **Procurement of Works, Goods and Non-Consulting Services:** The contracts for Works, Goods, and Non-Consulting Services² generated under the project and subject to International Competitive Bidding will be executed through the use of the Standard Bidding Documents (SBDs) issued by the Bank. The processes subject to National Competitive Bidding (NCB) will be executed through the use of National Bidding Documents agreed to by the Bank as well as the GOJ's procurement system. The technical specifications review during the preparation of the selection process, is the responsibility of the project sector specialist.
- b) A variant of Framework Contracting may be the most efficient and cost effective method for the procurement and installation of the retrofits to be implemented. The project proposes to retrofit a subset of 4,400 GOJ facilities. Of these 36 have been audited to assess the overall profile of energy efficiency opportunities. From this assessment, a menu of energy retrofits have been identified and specified. The overall quantities were developed from a model of the GOJ electricity accounts and consumption patterns. The engagement of resources to visit and audit of each facility was not considered cost effective. The Framework approach would provide for the selection of a bidder who proposes the most competitive menu of retrofits as outlined in the schedule of requirements.

The actual retrofit of a facility will be affected by the selected contractor completing a site assessment and listing of actual quantities in addition to the proposal of an optimal alternative if it will result in greater efficiency and be more cost effective than a one to one retrofit. The work order to proceed will then be issued to the contractor for the execution of the works. The framework agreement will be implemented over the time and will allow for technology refresh. The borrower will therefore benefit from product improvements which become available during contract implementation.

² Policies for the Procurement of Goods and Works Financed by the Inter-American Development Bank ([GN-2349-9](#)) paragraph 1.1: The services different to consulting services have a similar process as procurement of Goods.

- **Procurement of Information Technology (IT) Systems:** *[Delete this title if the project does not include this type of procurement activities].*
- c) **Selection and Contracting of Consultants:** The consulting services contracts for firms generated under this project will be executed through the use of the Standard Request for Proposals (SRFPs) issued or agreed to by the Bank *[or satisfactory to the Bank in case there is no agreement to the date]*. The terms of reference review for the selection of consulting services is the responsibility of the project sector specialist. Identify the direct selection processes³.]
- **Selection of Individual Consultants:** *[There may be cases where the selection and contracting of individual consultants may be requested through local or international advertising in order to create a short list of qualified individual consultants. When applicable, include selection processes for group of consultants with the same terms of reference].*
- d) **Domestic Preference:** Offers for goods originating in the Borrower's country **will** have a domestic preference⁴ of price equal to 15%, in International Competitive Bidding.
- e) **Other:** The IADB has conducted its own national procurement systems evaluation, applying the Guide for the Use of Country Systems which is based on the OECD-DAC, and creating a Fiduciary Technical Note, outlining the strengths and remaining areas for improvement in the national procurement system of Jamaica. Acceptance of the national procurement regime in Jamaica is dependent on a five-step process outlined in the *IADB's Strategy for the Use of Country Procurement Systems*, approved by its Board in June 2010. Resulting actions that can be taken to help bring the national procurement system to an internationally recognized standard of performance and increase competitiveness in their procurements, will lead to full use of national systems. The objective of improving the country's national public procurement framework and operations is currently in implementation. To the extent that the modernization efforts enhance the national procurement framework, the Bank is expected to be able to rely more frequently on national procurement systems for acquiring goods, general services, works, and consulting services.
- f) **Thresholds (miles US\$):** Direct contracting up to US\$2,000 , duly justified in accordance with applicable procurement policies, may be undertaken without consulting the IDB for a no objection. These processes may be reviewed ex post.

Note: Amounts for ex post and ex ante review are applicable based on the capacity of the executing agency and complexity of procurements. These amounts may be adjusted by the Bank, as capacity is improved, or as agreed with the executing agency.

³ Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank ([GN-2350-7](#)) paragraph 3.9 and following: Single Source Selection must be duly justified.

⁴ Policies for the Procurement of Goods and Works Financed by the Inter-American Development Bank ([GN-2349-7](#)) Appendix 2 and the Loan Contract.

2. Main Procurement Activities

Activity	Procurement Method	Estimated Date	Estimated Amount 000'US\$
Goods			
PEU Equipment	NCB	January 2012	50
Measurement & Verification Equipment	NCB	April 2012	100
Works			
Lighting Retrofits	ICB	June 2012	3,503
Air- Conditioning Retrofits	ICB	June 2012	3,000
Building Envelope Retrofit	NCB	June 2012	500
Works			
Lighting Retrofits	ICB	June 2013	5,000
Air- Conditioning Retrofits	ICB	June 2013	4,317
Building Envelope Retrofit	NCB	June 2013	680
Services			
EE institutional framework activities	QCBS or NICQ	June 2014	300
EE and EC incentives mechanisms	QCBS	June 2012	190
Definition of EE Norms & Standards for specific technologies	QCBS	June 2013	150
Additional regulatory studies	QCBS	June 2014	390
Workshops and seminars of EE Procurement and EE management for public and private stakeholders and EE/EC education awareness	QCBS	Jan 2013	250
Energy savings monitoring and verifications activities Implementation and design of EE programs such as maintenance and environmental disposal manuals for EE future activities	QCBS	April 2013	150
	QCBS	Sept 2013	170
Firms			
External Auditor	QCBS	July 2015	30
Individuals			
Project Manager	NICQ	October 2011	288
Finance Officer	NICQ	October 2011	134
Technical Officer	NICQ	October 2011	288
Procurement Officer	NICQ	October 2011	134
Administrative Assistant	NICQ	October 2011	84
Mid-term and final evaluators	NICQ	June 2015	60
Contingencies			
	n/a	n/a	231

Goods and Works: **ICB:** International competitive bidding; **LIB:** limited international bidding; **NCB:** national competitive bidding; **PC:** price comparison; **DC:** direct contracting; **FA:** force account; **PSA:** Procurement through Specialized Agencies; **PA:** Procurement Agents; **IA:** Inspection Agents; **PLFI:** Procurement in Loans to Financial Intermediaries; **BOO/BOT/BOOT:** Build, Own, Operate/Build, Operate, Transfer/Build, Own, Operate, Transfer; **PBP:** Performance-Based Procurement; **PLGB:** Procurement under Loans Guaranteed by the Bank; **PCP:** Community participation procurement. **Consulting Firms:** **QCBS:** Quality- and Cost-Based Selection **QBS:** Quality-Based Selection **FBS:** Selection under a Fixed Budget; **LCS:** Least-Cost Selection; **CQS:** Selection based on the Consultants' Qualifications; **SSS:** Single-Source Selection. **Individual Consultants:** **NICQ:** National Individual Consultant selection based on Qualifications; **IICC:** International Individual Consultant selection based on Qualifications

*To access the 18 month procurement plan, click [here](#)⁵

⁵ To create the hyperlink, click on the right button; edit Hyperlink, and include the IDBDocs number at the end of the link.

3. Procurement Supervision

Except in justified cases, the review method will be ex post. The method of ex ante or ex post review should be determined for each selection process⁶. Ex post reviews will be performed every [12 months] according to the Supervision plan of the project. The ex post review reports will include at least one physical inspection visit⁷, *chosen from the procurement processes subject to ex post review. [At least 10% of the revised contracts should be physically inspected]*.

Threshold for Ex-Post Review		
Works	Goods	Consulting Services
NCB -1,500	NCB -	NCB -200

a. **Country Threshold Table (US Thousands)** www.iadb.org/procurement

Works			Goods			Consulting Services		Limit for Ex-Post Revision
International Competitive Bidding	National Competitive Bidding	Shopping/Price Comparison	International Competitive Bidding	National Competitive Bidding	Shopping/Price Comparison	International Competitive Bid	Short Lists Solely by Nationals	
+ 1,500	150 -1, 500	-150	+ 150	25-150	-25	≤+200	-200	12 months
Ex Ante Review	Ex Post Review	Ex Post	Ex Post Review	Ex Post Review	Ex Post Review	Ex ante	Ex Post Review	
Individual Consultants: will be reviewed ex ante for services at or above US\$50,000. For amounts below US\$50,000, such procurements will be reviewed ex post.								

Note: The established threshold amounts for ex post review is applied based on the fiduciary capacity of the executing agency and can be modified by the Bank, if the level of capacity varies.

4. Other Special Procedures:

With respect to the evaluation of the fiduciary capacity of the executing agency to execute the procurement processes of the project, given the nature and complexity level, the following aspects from the SECI/ICAS recommendations should be taken into consideration:

- a) The assessment conducted of the MEM within the framework of ICAS, indicates that the Ministry has the necessary institutional capacity to participate in the execution of the Energy Efficiency and Conservation Program, currently under preparation by the IDB and the GOJ. Notwithstanding, a number of actions and institutional strengthening activities are hereby recommended to enhance its institutional capabilities, streamline its internal procedures,

⁶ The responsibility, the review support and the methodology are described in the Document [Procurement Ex Post](#)

⁷ The inspection visit verifies the existence of the procurement, leaving the verification of the quality and fulfillment of specifications to the sectorial specialist.

administrative processes and control systems, while supporting the consolidation of its organizational structure.

- b) The design and implementation of an internal “Procurement Manual” tailored to the internal processes, capabilities and institutional structure of the MEM, and within the framework of the GOJ Handbook of Public Sector Procurement Procedures. In particular, the manual should effectively establish the internal controls related to, among others: maps and flowcharts for the entire procurement process from the request to the delivery and accounting of the good, service or work received; a process control routing system in accordance with the administrative and procedural steps, including controls for approval instances and signatures; and the integration of the procurement system to the accounting and budget systems.
- c) The design and implementation of a “Manual of Accounting Policies and Procedures” for the accounting, budget and treasury functions, and taking into consideration the integration to the planning, procurement and other administrative systems and procedures. This should include the implementation of process flow charts for each of the financial administration responsibilities in the Institution along with the pertinent process controls.
- d) The implementation of the full capabilities of the FINMAN application to allow for: (a) the gradual adoption of GOJ’s approved accounting policies and procedures for budgetary control and financial reporting; (b) the preparation of statements of financial position in addition to the budget execution reports/expenditure reports; (c) the integration of payroll and other internal parallel accounting applications utilized by the MEM, including Biz Pay; and (d) the complementary and, if possible, integrated deployment of FINMAN and AccPac to allow for the accounting and financial administration of the resources of the GOJ and IDB.
- e) Strengthening of the internal control system to improve the monitoring, evaluation and administration of the Ministry’ fixed assets and inventories, and consistent with the adoption of accrual accounting standards as well as the strengthening of its assets accounting and safeguards.
- f) The implementation of risk assessment, risk mitigation and contingency plans to guarantee the security and continuous and reliable operation of the Ministry’s internal control systems.
- g) An overall strengthening of the internal control systems to ensure, at all times: (a) planning, administrative and technical processes integration; (b) a clear framework for process controls, approval and verification responsibilities, supporting documentation and means of verification; and (c) an administrative framework focused on the response times and structured management processes. This can only be accomplished through administrative and operating process assessments, and the translation of such results into concrete, Ministry-wide procedures manuals, consistent with internal control objectives as well as all pertinent national legislation.

These recommendations are not aimed solely at enhancing the Ministry’s capabilities in the short run to support its execution responsibilities for the IDB loan, but mostly to begin a process of strengthening of national systems for financial administration and procurement. This is consistent with the objectives to move towards the greater use of national systems for IDB loans

and technical cooperation operations, through the strengthening of the fiduciary, management and control capabilities of the local executing agencies.

5. Records and Files

All records and files will be maintained by the MEM, according to accepted best practices, and be kept for a minimum of three (3) years beyond the end of the operation's execution period, or as stipulated in the loan agreement.

6. Financial Administration

1. Programming and Budget

The Borrower has committed to allocate, for each fiscal year of project execution, adequate fiscal space to guarantee the unfettered execution of the project; as determined by normal operative instruments such as the Annual Operating Plan, the Financial Plan and the Procurement Plan.

Even though no counterpart resources are contemplated in the original project budget, the Borrower will undertake to provide all required resources for the total and effective completion of the project activities.

2. Accounting and Information Systems

Project accounting will be performed using ACCPAC system and will be done under the modified cash basis. However, fixed assets will be capitalized and valued at year end at its replacement value for purposes of assessing insurance coverage adequacy. It is expected that the accounting system will facilitate the recording and classification of all financial transactions, provide information related to: planned vs. actual financial execution for the project; the financial execution plan for the next 180 days that will be attached to each request for Advance of Funds, annual Financial Statements, performance reports, and any other reports, financial or otherwise, audited or unaudited, that may be required by the Bank from time to time (e.g. interim financial reports, report on the compliance with intermediate performance indicators, etc.).

3. Disbursements and Cash Flow

- Whenever resources from the financing are requested through an Advance of Funds, they will be deposited into a Special Account, denominated in US Dollars, established exclusively for the Project in a commercial bank
- As required, resources from this Special Account will be transferred to another bank account in a commercial bank, denominated in Jamaican Dollars to be utilized for payment of expenditures in local currency.
- The PEU commits to maintain strict control over the utilization of the Advance so as to ensure the easy verification and reconciliation of balances between the Executing Agency's records and IDB records (WLMS1).

- Eligible expenditures, authorized by the PEU and incurred prior to the approval of this project will be reimbursed to the Borrower, in accordance with current Bank policy.
- The project will provide adequate justification of the existing Advance of Funds balance, whenever 80% of said balance has been spent. Advances will normally cover a period not exceeding 180days, and no less than 90 days.

In order to request disbursements from the Bank, the Executing Agency will present the following forms and supporting documents:

Type of Disbursement	Mandatory Forms	Optional forms/ information that can be requested by the IDB
Advance	Disbursement Request Financial Plan	List of Commitments Physical / Financial Progress Reports
Reimbursement of Payments made	Disbursement Request Project Execution Status Statement of Expenses	List of Commitments Physical / Financial Progress Reports
Direct Payment to Supplier	Disbursement Request Acceptable Supporting documentation	List of commitments Physical / Financial Progress Reports

Generally, supporting documentation for Justifications of Advances and Reimbursement of Payments made will be kept at the office of the Executing Agency. Support documentation for direct payments will be sent to the Bank for processing. Disbursements will be reviewed within the ex-post modality. The Ex-Post reviews will be conducted on a sample of transactions. Such reviews do not imply a blanket approval of the whole universe of expenditures, based solely on the samples reviewed.

4. Internal Control and Internal Audit

The management of the project, at the level of both the Executing Agency and the PEU, will assume the responsibility for designing and implementing a sound system of internal control for the project.

5. External Control and Reports

For each fiscal year during project execution, and with financial resources from the project, MEM will be responsible to produce the Financial Statements for the project. These Financial Statements will be audited by an eligible external audit firm as per the Bank's guidelines.

6. Financial Supervision Plan

Financial Supervision will be developed based on the initial and subsequent risk assessments carried out for the project and for MEM. Financial, Accounting and Institutional Inspection visits will be performed at least once per year, covering, among others things, the following topics:

- a) Review of the Reconciliation and supporting documentation for Advances and Justifications.
- b) Review of compliance with the Program Operations Manual.
- c) Review of the MEM and the PEU Institutional Strengthening Action Plan.
- d) Conducting Ex Post Reviews.

7. Execution Mechanism

The MEM is named as the Executing Agency for this project. For actual project execution the MEM will create a PEU within its Energy Division in order to ensure accountability and that the project is implemented within the overall energy policy implementation, monitoring and evaluation framework. This PEU will be responsible for the administration of resources and for coordinating and executing the activities of the project. A Steering Committee chaired by the Permanent Secretary of MEM and comprising key project stakeholders will provide guidance and strategic direction to PEU regarding the implementation of the project activities. Due to the wide reach and influence of the project the Steering Committee, it is likely to act as a stabilizing and a coordinating force, as well as pave the way for decision making at the very top levels of government and within the private sector.

The PEU will be headed by a Project Manager, who will directly supervise three main Specialists. The PEU will have a Financing and Procurement Specialist and the necessary administrative support. There will also be an Engineer Specialist who will also be equipped with the necessary technical and administrative support. All personnel of the PEU will be assigned there on a full – time basis.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-___/11

Jamaica. Loan ____/OC-JA to Jamaica
Energy Efficiency and Conservation Programme

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with Jamaica, as Borrower, for the purpose of granting it a financing to cooperate in the execution of an energy efficiency and conservation programme. Such financing will be for an amount of up to US\$20,000,000 from the Single Currency Facility of the Ordinary Capital resources of the Bank, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on _____, 2011)

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