

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

**BARBADOS**

**SUSTAINABLE ENERGY INVESTMENT PROGRAM (SMART FUND II)**

**(BA-L1043)**

**AND**

**NON-REIMBURSABLE INVESTMENT FINANCING**

**(BA-G1002)**

**LOAN AND NON-REIMBURSABLE FINANCING PROPOSAL**

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## CONTENTS

<b>PROJECT SUMMARY .....</b>	<b>1</b>
<b>I. DESCRIPTION AND RESULTS MONITORING .....</b>	<b>2</b>
A. Background, Problem Addressed, and Justification .....	2
B. Objective, Components and Cost .....	9
C. Key Results Indicators .....	11
<b>II. FINANCING STRUCTURE AND MAIN RISKS.....</b>	<b>12</b>
A. Financing Instruments.....	12
B. Environmental and Social Risks.....	14
C. Fiduciary Risks .....	14
D. Other Key Issues and Risks.....	15
<b>III. IMPLEMENTATION AND MANAGEMENT PLAN .....</b>	<b>16</b>
A. Summary of Implementation Arrangements .....	16
B. Summary of Arrangements for Monitoring Results .....	20

ANNEXES	
Annex I	Development Effectiveness Matrix (DEM) - Summary
Annex II	Results Framework
Annex III	Fiduciary Arrangements

ELECTRONIC LINKS	
<b>REQUIRED</b>	
1.	<a href="#">Pluriannual Execution Plan (PEP) and Annual Operational Plan (AOP) 2019</a>
2.	<a href="#">Monitoring and Evaluation Arrangements</a>
3.	<a href="#">Environmental and Social Management Report (ESMR)</a>
4.	<a href="#">Procurement Plan (PP)</a>
<b>OPTIONAL</b>	
1.	<a href="#">Cost Benefit Analysis (CBA)</a>
2.	<a href="#">Evaluation of Energy Smart Fund (2485/OC-BA)</a>
3.	<a href="#">CHENACT Technical Note (ATN/OC-11465-RG &amp; ATN/OC-12926-RG)</a>
4.	<a href="#">Technical Assessment for Public Buildings Retrofits and Consumption Analysis</a>
5.	<a href="#">Performance Based Contracting Proposal (Draft)</a>
6.	<a href="#">Lessons Learned from Previous Projects</a>
7.	<a href="#">Gender Analysis</a>
8.	<a href="#">Smart Fund II - Operation Manual Draft</a>
9.	<a href="#">Co-financing proposal (EU-CIF Fiche)</a>
10.	<a href="#">Visibility and Communication Plan</a>
11.	<a href="#">Communication and Visibility Strategy and Required TOR from the EU</a>
12.	<a href="#">Safeguard Policy Filter (SPF) and Safeguard Screening Form (SSF)</a>

ABBREVIATIONS	
€	Euros
A/C	Air Conditioning
ADF	Audited Financial Statements
AOP	Annual Operational Plan
BAU	Business-As-Usual
BL&P	Barbados Light and Power Co. Ltd.
CBA	Cost Benefit Analysis
CDB	Caribbean Development Bank
CIF	Caribbean Investment Facility
CO <sub>2</sub>	Carbon Dioxide
EA	Executing Agency
EE	Energy Efficiency
EFF	Extended Fund Facility
EGFL	Enterprise Growth Fund Limited
ERR	Economic Rate of Return
ESA	Environmental and Social Assessment
ESHS	Environmental Social Health and Safety
ESMR	Environmental and Social Management Report
EU	European Union
GDP	Gross Domestic Product
GHG	Green House Gas
GOB	Government of Barbados
ICAS	Institutional Capacity Assessment
IDB	Inter-American Development Bank
IMF	International Monetary Fund
kWh	Kilowatt hour
M	Million
M&EP	Monitoring and Evaluation Plan
M&V	Measurement and Verification
MEWR	Ministry of Energy and Water Resources
MGDS	Medium-Term Growth and Development Strategy
mmcfpd	Million Cubic Feet per day
MW	Megawatt
NG	Natural Gas
NPV	Net Present Value
OC	Ordinary Capital
ODS	Ozone Depleting Substances
OM	Operation Manual
PBL	Policy-based Loan
PCR	Project Completion Report
PEP	Pluriannual Execution Plan
PEU	Project Execution Unit
PP	Procurement Plan
PSG	Project Specific Grant
PSSEP	Public Sector Smart Energy Program

ABBREVIATIONS	
PV	Photovoltaic
RE	Renewable Energy
SEFB	Sustainable Energy Framework for Barbados
SF	Smart Fund
SME	Small and Medium-sized Enterprise
TC	Technical Cooperation
US\$	Dollars of the United States of America

**PROJECT SUMMARY**  
**BARBADOS**  
**SUSTAINABLE ENERGY INVESTMENT PROGRAM (SMART FUND II)**  
**(BA-L1043 AND BA-G1002)**

Financial Terms and Conditions					
<b>Borrower:</b> Government of Barbados (GOB)				<b>Flexible Financing Facility<sup>(a)</sup></b>	<b>PSG BA-G1002</b>
			<b>Amortization Period:</b>	24 years	N/A
<b>Executing Agency (EA):</b> Ministry of Energy and Water Resources (MEWR).			<b>Disbursement Period:</b>	6 years	6 years
			<b>Grace Period:</b>	6.5 years <sup>(b)</sup>	N/A
<b>Source</b>	<b>Amount (US\$)</b>	<b>%</b>	<b>Interest rate:</b>	Libor-based	N/A
<b>IDB (Ordinary Capital-OC): Loan (BA-L1043)</b>	30,000,000	66	<b>Credit Fee:</b>	(c)	N/A
			<b>Supervision and Inspection Fee:</b>	(c)	N/A
<b>IDB (European Union-EU, Caribbean Investment Facility-CIF): Grant (BA-G1002) <sup>(d)</sup></b>	15,463,142 (€13,260,000)	34	<b>Original WAL:</b>	15.25 years	
			<b>Administrative Fee:</b>	N/A	2%
<b>Total:</b>	<b>45,463,142</b>	<b>100</b>	<b>Currency of Approval:</b>	Dollars of the United States of America (US\$) chargeable to OC	Euros (€)
Project at a Glance					
<b>Project Objective/Description:</b> the general objective of this program is to reduce Barbados' dependency on imported fossil fuels through the increased use of Renewable Energy (RE) and Energy Efficiency (EE) technologies. The specific objectives are to: (i) reduce electricity consumption by implementing RE and EE measures; (ii) reduce Green House Gases (GHG) emissions from liquid fossil fuels used for power generation and transport; and (iii) increase institutional capacity for the management of RE and EE programs.					
<b>Special Contractual Clauses prior to the first disbursement of the loan/grant:</b> the GOB shall provide evidence that: (i) the Project Execution Unit (PEU) has been established and the following positions have been appointed and/or selected: Program Manager, Financial Specialist, and Procurement Specialist; and (ii) the project <a href="#">Operation Manual (OM)</a> of the Energy Smart Fund I (SF-I) Program has been updated, including the sub-loan/sub-grant model agreements and guidelines for the fulfillment of the obligations under the program, including the requirements agreed by the Bank and the EU (¶3.3). See special conditions prior to first disbursement in Annex B of the <a href="#">Environmental and Social Management Report (ESMR)</a> .					
<b>Special Contractual Clauses of execution:</b> (i) prior to the execution of Component I, the GOB shall provide evidence that the subsidiary agreement between the MEWR and the Sub-EA (Enterprise Growth Fund Limited-EGFL) has been signed and entered into effect, in the terms previously agreed with the Bank; and (ii) prior to the execution of all energy efficiency activities that would generate any waste, the Borrower or the E A, as the case may be, shall select or appoint a Social and Environmental Specialist. See environmental and social contractual conditions of execution in Annex B of the <a href="#">ESMR</a> (¶3.4).					
<b>Exceptions to Bank Policy:</b> Partial exceptions to Bank's current Policy for the Procurement of Goods and Works financed by the IDB (GN-2349-9) and Policy for Selecting Consultants financed by the IDB (GN-2350-9) are requested for approval by the Board of Executive Directors, so that a procurement selection method not included in said policy may apply and to recognize EU's restrictive measures (¶3.9).					
Strategic Alignment					
<b>Challenges<sup>(e)</sup>:</b>	SI <input type="checkbox"/>	PI <input checked="" type="checkbox"/>	EI <input type="checkbox"/>		
<b>Cross-Cutting Themes<sup>(f)</sup>:</b>	GD <input checked="" type="checkbox"/>	CC <input checked="" type="checkbox"/>	IC <input checked="" type="checkbox"/>		

<sup>(a)</sup> Under the Flexible Financing Facility (FN-655-1), the borrower has the option to request modifications to the amortization schedule as well as currency and interest rate conversions. In considering such requests, the Bank will take into account operational and risk management considerations.

<sup>(b)</sup> Under the flexible repayment options of the Flexible Financing Facility (FFF), changes in the grace period are possible as long the Original Weighted Average Life (WAL) and the last payment date, as documented in the loan agreement, are not exceeded.

<sup>(c)</sup> The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors during its review of the Bank's lending charges, in accordance with the relevant policy.

<sup>(d)</sup> Grant resources to be provided by the EU are subject to availability and approval by the EU. The funds will be administered by the Bank through a Project Specific Grant (PSG). The EU is expected to commit €13.26 M, which is equivalent to US\$15,463,142 based on the exchange rate of 1.16 US\$/€ as of June 1<sup>st</sup>, 2018. The PSG will be administered by the Bank according to Document SC-114 and under the terms of the "Framework Agreement between the Bank and the European Commission" from 2015 (GN-2605-2). As contemplated therein, the commitment from the EU will be established through a separate contribution agreement (Delegation Agreement). EU resources will be available for disbursement once the Delegation Agreement has been signed between the EU and the Bank, and the funds from the EU are received by the Bank. The Bank will charge an administrative fee (i.e. 2% of the Investment Grant amount) in connection with the administration of the EU resources.

<sup>(e)</sup> SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).

<sup>(f)</sup> GD (Gender Equality and Diversity); CC (Climate Change and Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

## I. DESCRIPTION AND RESULTS MONITORING

### A. Background, Problem Addressed, and Justification

- 1.1 **Macroeconomic context.** Barbados is a small open economy that has been fiscally challenged during the past few years. Low growth and recurring fiscal deficits have resulted in a debt driven financing strategy and rapid rise in debt-to-Gross Domestic Product (GDP) ratios reaching over 155% of GDP in 2018 and falling international reserves below six-seven weeks of imports.<sup>1</sup>
- 1.2 **Structural constraints to the economy also challenge growth.** First, due to low diversification levels, Barbados remains susceptible to fluctuations in international markets and tourism. The dependence on imported energy, especially oil, creates important external vulnerabilities. Oil imports accounted for over 20% of total imports of goods in the past five years, making the economy susceptible to international price commodity shocks.<sup>2</sup> Second, the economy has a weak business climate, ranking 129/190 countries in the Doing Business Report 2019.<sup>3</sup> Third, low competitiveness remains a challenge, particularly with regards to the small size of the market, which is further hindered by elevated trade tariffs. Finally, the economy remains vulnerable to climate change and natural disasters.
- 1.3 In response to the country's macroeconomic and fiscal challenges, the Government of Barbados (GOB) is conducting the reform (Barbados Economic Recovery and Transformation Program) and signed a four-year Extended Fund Facility (EFF) arrangement with the International Monetary Fund (IMF) for US\$290 Million (M). The Inter-American Development Bank (IDB) and the Caribbean Development Bank (CDB) are also supporting these reforms.<sup>4</sup> The planned adjustments include a debt restructuring agreement and a front-loaded fiscal adjustment program which have been designed to increase the primary fiscal balance to 6% of GDP by FY2019/2020 and reduce the elevated debt levels, targeting 60% of GDP by 2033. The GOB will also be carrying out economic measures to reduce central bank financing and promote growth enhancing reforms.
- 1.4 **Energy matrix.** Although a small oil and gas producer, Barbados relies heavily on imported oil products to supply its energy needs. Imported fossil fuels account for 94.63% of Barbados' total primary energy supply and the remaining share being locally produced: oil 0.6%, Natural Gas (NG) 2.27%,<sup>5</sup> biomass 2.44%, and solar

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<sup>1</sup> Central Bank of Barbados. 2019. [Central Bank of Barbados Review of Barbados' Economy in 2018](#).

<sup>2</sup> Data from [the Central Bank of Barbados](#).

<sup>3</sup> World Bank. 2019. [Doing Business Report](#). Washington DC: World Bank.

<sup>4</sup> The EFF signed in October 2018, will provide US\$290 M (equivalent to special drawing right 208 M or 220% of Barbados's quota in the IMF in balance of payments support in eight tranches. The first tranche (US\$49 M) was disbursed shortly after the approval of the EFF. The CDB approved a US\$75 M PBL on October 2018 and will consider additional programmatic interventions. The CDB also approved a loan of US\$40.4 M to upgrade infrastructure and services at the Grantley Adams International Airport on October 2018. The IDB Board approved a US\$100 special development lending on November 2018, which will be disbursed in the next few weeks.

<sup>5</sup> Average domestic NG sales amount to 1.4 Million Cubic Feet per day (mmcfpd), of which: 1.0 mmcfpd is locally produced to supply domestic consumption of approximate 20,800 residential, commercial and industrial customers; and the remainder 0.4 mmcfpd comes from liquefied NG imports.

0.06%. Nearly 37% of the total energy supply is consumed by transportation. Approximately 96.2% of the electricity is generated using liquid fossil fuels and 3.8% with solar Photovoltaic (PV). The dependence on imported fossil fuels has serious implications for energy security, balance of payments,<sup>6</sup> environment and energy-dependent sectors, such as tourism, which is the country's main economic driver that accounts for 13% of GDP, 40.6% when considering indirect spillovers.<sup>7</sup>

- 1.5 **Electricity sector.** Barbados Light and Power Co. Ltd. (BL&P)<sup>8</sup> is a private utility and the sole operator in the country. BL&P has an installed capacity of 256.6 Megawatts (MW), and 85% of its power generation is based on heavy fuel oil and 15% on diesel fuel. However, the number of distributed grid-connected PV increased from 10.4 MW in 2015 to 27 MW by 2017. Since the cost of electricity is directly linked to international oil prices, the high cost has been affecting Barbados in the last two decades, particularly its competitiveness and economic growth. A high number of hotels and commercial buildings operate back-up diesel power generators, accounting approximately for 8% of total installed capacity in Barbados. In 2017, the gross electricity generation was 1,026 Gigawatt hour (GWh), and the total sales were 944.1 GWh/year.<sup>9</sup> Electricity consumption has grown at around 3.6% annually, over the past ten years. The largest consumers are the residential sector (33%) and commercial sector (21%), followed by public sector (16%), tourism and hotel<sup>10</sup> (15%), industrial (9%) and others (6%). Electricity peak demand has grown steadily, from 125 MW in 2000 to 155.2 MW in 2015, at around 3% yearly, and it is expected to reach 208.1 MW by 2036.<sup>11</sup>
- 1.6 **The Small and Medium-sized Enterprises (SMEs)<sup>12</sup>/Tourism Sector and the electricity issues.** Electricity cost is a major concern for the tourism sector (¥1.4), on average represents approximately 40% of a hotel's annual expenditure.<sup>13</sup> According to the audits carried out by the Caribbean Hotel Renewable Energy (RE) and Energy Efficiency (EE) Action Program ([CHENACT](#)), smaller hotels, on average, consume more electricity than larger ones.

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<sup>6</sup> Barbados spent US\$427 M in oil imports in 2014 accounting for 9% of GDP. Barbados Statistical Services.

<sup>7</sup> World Travel and Tourism Council Report, 2018.

<sup>8</sup> In 2014, BL&P Holdings was renamed Emera Caribbean held an 80% stake in it. BL&P has a license until 2028 and a monopoly for power generation, transmission and distribution. While there are no subsidies for electricity consumption, commercial users pay a slightly higher tariff that is used to cross-subsidize rates for domestic users. There are four types of tariffs: (i) Domestic Service; (ii) General Service; (iii) Secondary Voltage Power; and (iv) Large Power.

<sup>9</sup> MEWR.

<sup>10</sup> This includes 84 hotels. Achieving Sustainable Energy in Barbados, Dossier, IDB, 2017.

<sup>11</sup> BL&P. 2012 Integrated Resource Plan.

<sup>12</sup> As defined by the OECD SME and Entrepreneurship Outlook: 2015, OECD Paris, p. 17 [Glossary of Statistical Terms](#).

<sup>13</sup> Hotels expenditure on electricity represents more than 0.5% of total national GDP, in contrast to Trinidad and Tobago (0.1%) and Dominican Republic (0.2%).



**Table 1. EE Index for Barbados Hotels**

Hotel Size (# of Guestrooms)					
		<=50	51-100	101-200	>200
kWh/Guest Night	High	118	87	43	50
	Average	43	44	32	34
	Low	12	18	25	22
# Hotels		13	8	5	4
GN/RN Ratio		1.63	1.79	1.79	1.90

Source: Tetra Tech analysis based on CHENACT energy audits.

- 1.7 High electricity tariffs and overall system inefficiencies result in substantial energy costs which affect the competitiveness of the sector.<sup>14</sup> Consequently, any energy savings that could reflect in a lower electricity bill would ultimately promote a more competitive cost structure for the sector. Based on 144 investment grade audits and 30 walkthrough audits performed under the CHENACT between 2009 and 2010, the estimated savings potential for Barbados is 18,290,715 kWh/year, 19.4% of the total energy used.<sup>15</sup> This represents approximately 30% of the total savings potential in Barbados when related to electricity consumption.
- 1.8 **The public sector buildings electricity consumption.** In 2017, total sales of electricity amounted to 944.1 GWh, of which 151 GWh was consumed by the public sector (16% of the total electricity consumption),<sup>16</sup> costing the GOB approximately US\$33.7 M in electricity bills. The consumption of the targeted public buildings<sup>17</sup> to be retrofitted under Component II represents 61% of the total consumption of electricity of the GOB (¶1.28).
- 1.9 **Public electric mobility.** Approximately 24 M passengers are transported annually via the Barbados Transport Board with 300 diesel powered buses. Maintenance challenges often leaves a significant portion of this fleet unavailable.<sup>18</sup> Addressing the fuel consumption, efficiency and availability challenges is important to achieving the stated objectives of reducing the dependency on imported fossil fuels and reaching the target to decarbonize the transport sector among others by 2030. As such, it is expected that during the next decade the public bus fleet will need to be upgraded from diesel to electric buses. A strategy is currently under discussion as well as a methodology for reinvesting savings generated from the gradual switch to more efficient electric buses. The GOB has engaged with industry stakeholders to explore opportunities for

<sup>14</sup> The 2013 firm-level survey, funded by the private sector Development Programme Compete Caribbean, found that 18.6% of firms identifies electricity costs as the top constraint, second only to tax rates at 33.1%.

<sup>15</sup> Projection based on a sample of 2,207 hotel rooms out of 5,850.

<sup>16</sup> Breakdown: administrative buildings and schools (37%), hospitals and clinics (12%), ports (12%), reservoirs (32%), and public lights (7%). EE retrofit in public lights is excluded from the Smart Fund II (SF-II) since they are being retrofitted under the PSSEP.

<sup>17</sup> Under the SF-I and the PSSEP, 27 and 15 audits respectively, were completed. Some of the electricity consumption challenges within the public buildings identified were: (i) inefficient and obsolete lighting equipment; (ii) inefficient mini-split AC units; (iii) lack of insulation of building envelopes; (iv) manually operated Heating, Ventilation and AC systems and units; (v) inefficient single panel glass windows; and (vi) doors lacking functioning automatic door closers.

<sup>18</sup> MEWR, concept note for the Electric Bus Pilot project under the PSSEP.

transitioning public sector transportation towards electric mobility. The Ministry of Energy and Water Resources (MEWR) has procured eight Electric Vehicles (EV) which is currently being used by government institutions and the Ministry is now incorporating the purchase of electric buses under the Public Sector Smart Energy Program (PSSEP).<sup>19</sup> A comprehensive master plan for electric mobility will be commissioned by the MEWR under the proposed Smart Fund II (SF-II).

- 1.10 **Trained and skilled workforce.** Employment in the RE and EE will require a more trained and skilled local workers to design, install, and maintain RE systems as well as to perform energy audits. Skilled, trained, and certified workers are fundamental for the success of the market growth. The lack of uniformity and inconsistent regulations, and information on labor and wage requirements may contribute to labor installation being costlier and less productive than it otherwise might be. The GOB plans to support the market by: (i) training the local workforce; (ii) aligning (through the Executing Agency-EA) local solar workforce training programs with the activities planned under this operation and facilitating partnerships between training organizations<sup>20</sup> (§1.30); and (iii) establishing rules and promoting greater certification for the energy sector (§1.31).
- 1.11 **Government strategy and regulation.** The GOB established 20 objectives in a Medium-Term Growth and Development Strategy (MGDS) 2013-2020, which includes specific goals concerning economic growth, reforms, social and human development, energy and environmental sustainability. The most relevant for the energy sector are: (i) to reduce the dependency on fossil-fuels, ensuring environmental sustainability and combat climate change; and (ii) to upgrade and modernize the existing infrastructure. The GOB is committed to achieving the target of 100% RE and carbon neutrality by 2030, as outlined in the Barbados National Energy Policy (2019-2030), and the Nationally Determined Contribution to the Paris Agreement. BL&P estimates that adding RE to the grid could reduce its energy production costs by between 5% to 15%, thereby reducing the country's oil consumption by 66,000 to 225,000 barrels of oil equivalent per year.<sup>21</sup> The Barbados' Renewable Energy Rider (RER),<sup>22</sup> an incentive established in 2010, allows domestic customers to sell RE back to the utility under a "sale of excess" or a "buy all, sell all" arrangement. Since then, solar PV installations have increased substantially (§1.4). For Barbados, the areas of RE and EE potential are in the tourism sector and its potential for energy savings; in the transportation sector and its migration towards electric mobility and alternative fuels; and in the public sector by transforming government buildings into energy efficient, resilient, and smart infrastructure.

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<sup>19</sup> As part of the drive to reduce Barbados' dependence on fossil fuels, enhance security and stability in energy supply, improve the economy's competitiveness, and enhance environmental sustainability, the GOB has established a PSSEP which is designed to promote and implement the use of viable RE and EE measures in the public sector.

<sup>20</sup> This can be done by supporting local technical schools and universities to develop best practices and sponsor local instructors with lab equipment, model curricula, and train-the-trainer workshops.

<sup>21</sup> According to "Barbados wind and solar integration Study", 2015, 20 MW of distributed PV, 20 MW of centralized PV, and 15 MW of wind capacity can be added to the grid under current operating conditions with mitigation measures.

<sup>22</sup> As an incentive, the RER allows domestic customers to sell RE back to the utility under a "sale of excess" or a "buy all, sell all" arrangement. The rate is calculated using a resource cost approach which is now \$0.416/ kWh for PV and \$0.315/kWh for wind, for systems up to 500 kW.

- 1.12 **Identification of the problem.** The high dependency on imported fossil fuels for electricity generation has significantly increased BL&P's fuel expenses in the last 15 years, reaching a peak of US\$200 M in 2011, and decreasing to US\$109.3 M in 2015 due to lower oil prices. However, it still accounts for almost two thirds of the utility's operating expenses. BL&P can transfer fuel costs to the electricity tariff<sup>23</sup> resulting in tariffs standing at around US\$0.23 per Kilowatt hour (kWh) in 2017 which is high compared with more diversified countries in the region.<sup>24</sup> Roughly 50% of the electricity bill represents a fuel charge that is a pass-through to consumers. The Fuel Clause Adjustment varies month to month but has been increasing at a normalized annual rate of 3.7% over the past seven years. This link between tariffs and the volatile international oil prices, hinders competitiveness and economic growth, especially during periods of high oil prices. Therefore, increasing RE, EE and reducing GHG emissions will contribute to reduce fuel imports and increase competitiveness. This dependency in oil also makes the fossil-fueled transportation sector more vulnerable. Despite being the largest primary energy consumer, all the efforts from the government have been focused on the electricity subsector. Efforts to change the energy mix, improve efficiencies, and reduce energy consumption should consider ways to shift this sector away from the current oil reliance and include more renewable energy and alternative fuels.
- 1.13 **The RE and EE market barriers.** The Sustainable Energy Framework for Barbados (SEFB) Report identified barriers to the broader introduction of viable RE technologies and the implementation of EE measures, including: (i) absence of commercial viability of certain technologies; (ii) limited access to capital; (iii) limited and uncompetitive equipment supply and/or prices; (iv) incomplete information and lack of market awareness of the potential benefits, viability of commercial technologies and procedures; (v) challenges with planning and permit issues; and (vi) lack of an established tariff structure. This program targets the demand side of electricity consumption in the public sector by promoting a more efficient use of its resources which consequently reduces the electricity bill and generates savings; and from the supply side by promoting investments in RE, diversifying its energy matrix, increasing energy security, and consequently reducing negative environmental impacts.
- 1.14 **Bank experience and lessons learned.** The IDB has been playing an active role in supporting the energy sector transformation in Barbados. Through two Policy-based Loans (2410/OC-BA; 2609/OC-BA), the Bank assisted the process of drafting and enacting policies and regulations to promote EE and RE that contributed to the enactment of the Electric Light and Power Act (ELPA), 2013. The ELPA actualizes legal dispositions to electricity supply, distribution and demand while promoting RE and ensuring security of supply. The act liberalizes the power sector, as independent power producers that can supply the country alongside the BL&P under a licensing scheme where interconnection is promoted. Subsequently, the Bank approved three investment loans, a US\$10 M SF-I (2485/OC-BA), a US\$24.6 M Public Sector Smart Energy Program (PSSEP) (2748/OC-BA), and a US\$34 M Deployment of Cleaner Fuels and Renewable Energies in Barbados (3843/OC-BA). While the SF-I developed financial instruments coupled with technical assistance to promote the introduction of RE

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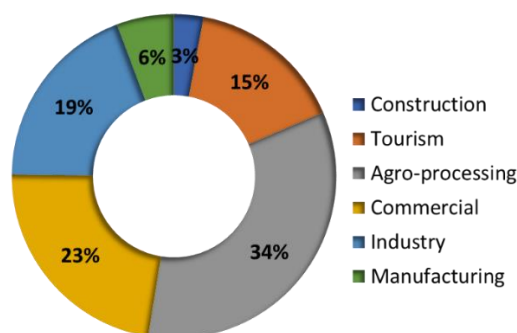
<sup>23</sup> In agreement with Barbados's monthly set Fuel Clause Adjustment.

<sup>24</sup> Average residential electricity tariff in Latin America: \$0.13/kWh, and in the Caribbean region: \$0.21/kWh.

technologies and EE measures in SMEs, the PSSEP allows the retrofitting with EE and RE in public buildings and streetlights. The last loan focuses on diversifying the energy matrix by promoting the use of cleaner fuels for power generation.

- 1.15 The SF-II, builds upon the success and [lessons learned](#) from the SF-I and the PSSEP. The SF-I provided 23 loans that generated annual savings of 4,403 MWh (US\$1.38 M) and installed a total of 1.9 MW of solar PV across various sectors. The main lessons learned<sup>25</sup> are: (i) the SF-I could have reached a greater number of beneficiaries, if awareness campaigns on the fund's financial attractiveness had been implemented from the initial stages of the project execution; (ii) since EGFL operates similarly to a development financial institution requiring collaterals, securities and a thorough application process; many hotels could not meet the requirements and felt discouraged in applying for a loan. Therefore, the need to streamline the application process and revisit the requirements have been taken into consideration under the preparation of the SF-II; and (iii) the SF-I created a demand for a skilled and trained workforce to execute the projects approved by EGFL. The program was able to stimulate the market, thereby, promoting the need for certification programs and continuous training in the sector. The acquired skills will be vital for the successful execution of the SF-II given that a greater number of projects are expected to be approved under this program.

**Figure 2: SF-I Loans by Sector**



- 1.16 SF-II will also build upon the success and lessons learned during the CHENACT and other EE programs in the Caribbean, including the project to retrofit public buildings in Jamaica (3877/OC-JA). SF-II will consider using performance-based contracts<sup>26</sup> through energy service providers<sup>27</sup> that will catalyze investments in EE and RE in public and private buildings and introduce the concept of management of the energy savings.
- 1.17 **Strategic alignment.** This project is consistent with the Updated Institutional Strategy (UIS) 2010-2020 (AB-3008) and is aligned with the development challenge of productivity and innovation, by reducing energy costs for commercial and industrial customers and with the use of cutting edge RE technologies,

<sup>25</sup> For further information see [Project Completion Report \(PCR\)](#).

<sup>26</sup> It is a results-oriented contracting method successfully implemented worldwide (including Argentina, Brazil and Paraguay) in the energy, transport and water sectors. [Open Knowledge Repository. World Bank](#).

<sup>27</sup> Mexico, Brazil, India and United States are some of the countries with outstanding experience implementing energy solutions with energy service providers [Success Stories. Amesco](#).

liberating funds that can be reinvested in other productivity activities. The project is aligned with the cross-cutting themes of: (i) climate change and environmental sustainability, by reducing carbon emissions; (ii) gender equality and diversity, by promoting opportunities for women and young people in RE and EE sector; and (iii) institutional capacity and rule of law, by providing capacity building support on EE and RE to the management teams of the retrofitted buildings, EGFL and other government entities. Additionally, the program contributes to the Corporate Results Framework 2016-2019 (GN-2727-6) indicators: (i) reduction of emissions with support of IDB financing (annual M tons Carbon Dioxide-CO<sub>2</sub> equivalent), by promoting a switch from liquid fossil fuels to RE sources for power generation and reducing electricity consumption by adopting EE measures; and (ii) installed power generation from RE sources. The project is consistent with the Bank's Climate Change Sector Framework Document (GN-2835-3). According to the [joint MDB approach](#) on climate finance tracking, 100% of total IDB funding for this operation result in climate change mitigation activities. This contributes to the IDBG's climate finance goal of 30% of combined IDB Group operational approvals by year's end 2020. The project is in line with the Sustainable Infrastructure for Competitiveness and Inclusive Growth IDB Infrastructure Strategy (GN-2710-5) and its priority area of promoting access to infrastructure services. The project is consistent with the Energy Sector Framework Document (GN-2830-5) with the development of RE sources, improvement of energy security, and strengthening of the governance of the sector in Barbados. The operation is aligned with the Country Strategy with Barbados 2019-2023 (GN-2953-1) as it relates to the objective of reducing the country's dependence on imported fossil fuels by increasing the contribution of clean energy sources including RE and EE, and by promoting investments in SMEs and in the Public Sector.

- 1.18 **Innovation and digitalization:** For the electricity subsector, innovation is an opportunity to significantly improve integration of RE, smart demand, demand flexibility and distributed generation. The program promotes the increased use of innovative technologies in EE, RE, and EV. It particularly funds smart buildings so public buildings can use automated processes to control the buildings' operations including heating, A/C, lighting and security, improving its sustainability. Component II will consider using competitive dialogue as a selection method (¶3.10) and performance-based contracts to hire private energy service providers for public building retrofitting. The proposed financial scheme will allow the reinvestment of the obtained savings in other buildings and, therefore, create a multiplicative effect.
- 1.19 **Local productive development:** This operation will support productive uses of electricity within local SMEs (¶1.7) that can implement EE and RE projects, such as: (i) replacement of the fleets with EV; (ii) installation of EE technologies and solar PVs; and (iii) replacements of inefficient A/C systems, among others (¶1.24) (¶1.25).
- 1.20 **Sustainable infrastructure:** the project will promote and finance investments in efficient and sustainable infrastructures for SMEs, public buildings and electric mobility. These investments are expected to be sustainable in different dimensions: (i) economically and financially, by generating a positive net economic return, as demonstrated by the [Cost Benefit Analysis \(CBA\)](#); (ii) environmentally, by increasing the use of RE, decreasing the consumption of fossil fuels and

reducing CO<sub>2</sub> emissions, while promoting a low-carbon, resilient and resource-efficient economy; (iii) socially, by supporting local community and promoting gender equality; and (iv) institutionally, by strengthening local capacity and contributing the GOB to meet its climate change commitments (¶1.24 to ¶1.29).

## **B. Objective, Components and Cost**

- 1.21 **Objective and components.** The general objective of this program is to reduce Barbados' dependency on imported fossil fuels through the increased use of RE and EE technologies.<sup>28</sup> The specific objectives are to: (i) reduce electricity consumption by implementing RE and EE measures; (ii) reduce GHG emissions from liquid fossil fuels used for power generation and transport; and (iii) increase institutional capacity for the management of RE and EE programs. The program is expected to be executed in a period of six years, and includes the following components and sub-components:
- 1.22 **Component I. Promoting EE and RE in SMEs<sup>29</sup> (US\$13.1 M):**
- 1.23 **Sub-component I.1. Pre-investment studies for SMEs (US\$783,075).** This sub-component will provide grants, through the EGFL, to finance the required pre-investment studies and pilots for EE and RE projects to lower energy costs and improve competitiveness of SMEs (including feasibility studies, detailed technical design and engineering, EE audits, environmental and social assessments, financial structuring and execution planning). The aim is to support the development and execution of projects. Under this scheme, the developer may be required to provide counterpart funding<sup>30</sup> to the total grant awarded, depending on the size and risk of the project, and the track record of the developers/sponsors.
- 1.24 **Sub-component I.2. Implementation of RE and EE projects (US\$11.8 M).** This sub-component will finance, through the EGFL, loans to SMEs to implement selected<sup>31</sup> EE and RE projects. Given the role of the tourism industry both in energy consumption and as driver of the Barbadian economy, the tourism sector<sup>32</sup> will be a priority, particularly for lighting replacement, EE, solar PV installations, energy storage, and EV.<sup>33</sup> These activities will support productive uses of electricity within local SMEs. Financing conditions will be defined in the OM.

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<sup>28</sup> All EE activities will be executed following the established protocols approved in the Environmental Social Health and Safety (ESHS) Plan.

<sup>29</sup> Enterprises that may not traditionally fit the definition of SME shall also be eligible for accessing financial and technical assistance under Component I given their contribution to the local economy and identified potential for energy and financial savings.

<sup>30</sup> The OM defines the percentage of counterpart financing.

<sup>31</sup> Process of selection according to the existing SF-I OM (2485/OC-BA).

<sup>32</sup> The tourism sector includes hotels, restaurants, leisure services and suppliers. The CHENACT project (ATN/OC-12926-RG) identified that of the 96 hotels audited, 65% of potential energy savings come from A/C and lighting replacement. Other measures identified were lighting control, window films, pool pumps, water pumps, and exhaust fans among others.

<sup>33</sup> Measures eligible for financing: (i) For RE: Solar PV, hybrid solar PV/solar water systems, and other small size applications; and (ii) For EE: power monitors, CFLs, efficient refrigerators, public lighting, Heat and Ventilation and A/C systems, electric motors, among other equipment designed to reduce power consumption.

- 1.25 **Sub-component I.3. Air Conditioning (A/C) Rebate Facility (US\$500,000).** This sub-component will finance A/C rebates for SMEs (with a trade-in rebate of up to 50% of the cost of the new A/C system), to replace inefficient A/C systems with new EE certified and Ozone Depleting Substances (ODS) free systems.
- 1.26 **Component II. Promoting EE and RE in Public Sector (US\$28.4 M):**
- 1.27 **Sub-Component II.1. Pre-investment studies for government programs (US\$800,000).** This sub-component will finance pre-investment studies for public entities to carry out retrofitting of buildings with RE and EE technologies: (i) necessary energy audits;<sup>34,35</sup> (ii) hazardous material management studies;<sup>36</sup> and (iii) technical studies for the deployment of innovative RE and EE technologies (smart grids, and/or energy storage), including feasibility analysis, detailed design engineering, compliance of RE/EE building codes and EE standards,<sup>37</sup> and multiuse sheltering facilities,<sup>38</sup> implementation scheme, environmental and social assessments, design of the optimum contractual mechanisms (i.e. performance based contracts) for the implementation and sustainability of the retrofits, and financial structuring in the form of Public-Private Partnership.
- 1.28 **Sub-component II.2. Implementation of EE and RE projects for the public sector (US\$23.25 M).** This sub-component will finance the retrofitting of public buildings including hospitals and clinics, schools, administrative and operational facilities with EE measures and RE technologies.<sup>39</sup> Consideration may be given to the use of a performance-based contract scheme that will promote the management of savings and its reinvestment in additional retrofits. Approximately 100 public buildings are expected to be retrofitted: 97 directly with loan and grant funds and additional three with the reinvestment of savings.<sup>40</sup> This reinvestment will allow the project to retrofit approximately 40 additional public buildings ten years after the project starts (see [Technical Assessment for Public Buildings Retrofits and Consumption Analysis](#)).
- 1.29 **Sub-component II.3. Expand Electric Mobility (US\$4.3 M).** This sub-component will finance the expansion of the EV fleet for the government including EV charging stations. As such, the proposed electric mobility expansion will build upon the EV pilot being carried out under the PSSEP loan.

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<sup>34</sup> Walk through and investment grade audits.

<sup>35</sup> At least 30 public buildings will be audited under the SF-II. Under the PSEEP, existing audits of 15 buildings including the University of West Indies, Cave Hill Campus located in Barbados show that 45% of savings would come from small and large A/C replacement and 31% from fluorescent lights replacement by light-emitting diode. Another 27 audits and pre-investment studies in SME's were also prepared under the SF-I.

<sup>36</sup> Audits from building can potentially show the existence of hazardous materials that will have to be handled. Particularly management of ODS from A/C, mercury from old lighting systems or eventual asbestos findings. A comprehensive waste disposal strategy will be developed with the program funds.

<sup>37</sup> Barbados' Building Code (that includes EE standards) which is currently being updated, is a voluntary standard. There are efforts to establish a National Building Act to make the Building Code and EE standards mandatory in the future.

<sup>38</sup> The retrofitting program will consider resilience and climate proofing measures as a mitigation strategy given that disaster-resistant and EE buildings have common structural benefits, such as greater construction durability and performance. As an adaptation strategy and enhanced focus on resilience, a selected number of public buildings, most likely schools, will be selected to have a multi-use function and serve as shelters.

<sup>39</sup> RE and EE measures include lighting, cooling and heating systems, as well as energy management systems.

<sup>40</sup> The number of retrofitted buildings may vary based on the potential for achieving the expected outcomes for energy and financial savings.



- 1.30 **Component III. Capacity building and institutional support (US\$1.49 M).** This component will finance capacity building and institutional strengthening activities to the Project Execution Unit (PEU), EGFL, the management teams of the retrofitted buildings, government entities with responsibilities related to EE and RE development and implementation, key private sector stakeholders and financial institutions, and energy sector non-governmental organization's stakeholders. These activities include: (i) preparation of communications and visibility program; (ii) campaign focused on EE and RE promotion; (iii) capacity building for the Building Managers of public buildings to be trained in the use and maintenance of EE and RE technologies as well as to reinforce building codes and EE standards; (iv) preparation of sector studies on the deployment of electric mobility; and (v) capacity building and knowledge transfer to financial institutions on innovative financial models schemes.
- 1.31 **Gender mainstreaming.** According to the Country Gender Assessment, carried out by the Caribbean Development Bank (2012-2014), the average Gender Inequality Index figure for Barbados was 0.343, which is considered low compared to other Caribbean countries with an average of 0.193. The assessment reports a labor force participation lower among women than men, and similar percentages are classified as unemployed. In order to support the closing of this gender gap, the following activities are proposed: (i) dissemination of good practices on gender diversity for public institutions; (ii) empowering women and youth economically through technical training-related activities and through the development and implementation of a Young Apprentice Project to create jobs and income opportunities for young people;<sup>41</sup> (iii) encourage equal participation of men and women in the grants and loans provided under Component I, as well as in workshops and training programs; and (iv) support the GOB in collecting and analyzing gender disaggregated data in order to generate information and knowledge useful for the country. See [Gender Analysis](#).
- 1.32 **Project management and other cost (US\$2.18 M).** This component will finance the administrative cost of the PEU including the contracting of technical expertise, financial and procurement management as well as other activities such as monitoring and evaluation, mid-term and final evaluations, and financial audits.

### C. Key Results Indicators

- 1.33 **Expected results.** As indicated in Annex II, the expected outcomes of the program are: (i) 60,155 of barrel of oil saved in imported fossil fuels for electricity generation; (ii) Increase of 41.3% in MW of RE installed capacity; (iii) 90.7 GWh of annual electricity saved; and (iv) 31,004 annual tons of CO<sub>2</sub>e avoided. To obtain these results not only will the loan and grant financing from the IDB and the EU-CIF contribute, but also the reinvestment of savings from retrofitted public buildings will be taken into consideration. After ten years of the project start, the multiplicative effect of the reinvestment of savings from retrofitted buildings would increase by 8% the total GHG emissions avoided.<sup>42</sup>

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<sup>41</sup> The technical and vocational training of young learners consists of theoretical classes and practices (in a company). It will include lectures and courses aimed at broadening participants' knowledge in EE, solar PV, basic electricity.

<sup>42</sup> See [Technical Assessment](#).



- 1.34 **Cost Benefit Analysis.** A [CBA](#) was performed and it concluded that the program is economically viable. The methodology calculated the economic and financial analysis for each major investment separately (Sub-components I.2, I.3, II.2 and II.3) and consolidated as a single program. The aggregate Net Present Value (NPV) of the program at 12% discount rate is US\$18.9 M and an Economic Rate of Return (ERR) of 23% over a 20-year period. If the proposal to reinvest 30% of the savings from public sector building EE investments is implemented, the aggregate NPV will be US\$16 M with an ERR of 19% over a 20-year period. The benefits of the sub-components were calculated based on savings on avoided electricity consumption, substituting liquid fuel generated electricity with electricity generated with RE, and the monetary value of avoided GHG emissions related to the displaced consumption of liquid fuels for electricity generation and for transportation. The evaluation included a sensitivity analysis considering a 20% variation in three main variables used in the economic analysis (price of electricity and diesel,<sup>43</sup> the amount of electricity saved for each dollar of EE, RE and EV invested, and the price of CO<sub>2</sub>). The sensitivities led to similar results and conclusions regarding the robustness of the program as they had positive economic NPVs and economic IRRs greater than 15% for all sensitivities.

## II. FINANCING STRUCTURE AND MAIN RISKS

### A. Financing Instruments

- 2.1 **Financing structure.** The cost of the program is estimated at US\$45,463,142.10. This includes a specific investment loan of US\$30,000,000, to be financed by the Bank with Ordinary Capital (OC) resources and non-reimbursable investment financing, in the amount of €13,260,000.00 (including fees), equivalent to US\$15,463,142.10, using an exchange rate of US\$1.166/€ as of June 1<sup>st</sup>, 2018,<sup>44</sup> to be financed by the Bank with resources to be provided by the EU. The EU contribution payments to the Bank will be made in € and immediately converted to US\$ when received by the Bank's Finance Department. The Finance Department will inform the project team of the exchange rate at which each contribution is converted. Final resources in US\$ will be dependent on the exchange rate of the date when the resources are received by the Bank and converted into US\$. If a significant adverse fluctuation in the exchange rate reduces the amount of US\$ in this budget, the project activities will be decreased appropriately, and the budget will be adjusted accordingly by the project team, in consultation with the EU.<sup>45</sup>
- 2.2 The EU resources for this program will be transferred from the EU to the Bank through a Project Specific Grant. For that purpose, the EU and the IDB will enter into a Delegation Agreement that will be subject to the Framework Administrative Agreement (FAA) between the EU and the IDB dated June 10<sup>th</sup>, 2015 (the EU-IDB

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<sup>43</sup> The analysis showed that even after lowering the electricity and diesel price by 20%, the sub-components remain economically viable, with an aggregate NPV of US\$9.9 M and an IRR of 18% (NPV of US\$6 M and an IRR of 15% if savings are reinvested). In the high electricity and diesel price scenario, the aggregate NPV increases to US\$27.8 M and the IRR to 28% (NPV of US\$27.8 M and an IRR of 23% with reinvestment of savings).

<sup>44</sup> The June 1<sup>st</sup>, 2018 exchange rate was used for the proposal submission and approval by the EU, and it is being used for consistency.

<sup>45</sup> Assuming a real discount rate of 12%.

Framework Agreement).<sup>46</sup> Under such agreement, the EU resources will be administered by the Bank who will charge a 2% administration fee identified in the budget. The administration fee will be charged upon the Bank's receipt of the first payment installment.<sup>47</sup> The administrative fee will be distributed among the relevant departments of the Bank.

**Table 2. Program's Budget (US\$) \***

Components	IDB (Loan)	EU-CIF (Grant)	Total
<b>Component I. Promoting EE and RE in SMEs</b>	6,700,000.00	6,413,822.14	13,113,822.14
<b>I.1 – Pre-investment studies for SMEs</b>	200,000.00	583,074.74	783,074.74
<b>I.2 – Implementation of RE and EE projects</b>	6,000,000.00	5,830,747.40	11,830,747.40
<b>I.3 - A/C Rebate Facility</b>	500,000.00		500,000.00
<b>Component II. Promoting EE and RE in Public Sector</b>	20,800,000.00	7,579,971.62	28,379,971.62
<b>II.1 – Pre-investment studies for government programs</b>	800,000.00	-	800,000.00
<b>II.2 – Implementation of EE and RE projects for public sector</b>	18,000,000.00	5,247,672.66	23,247,672.66
<b>II.3 – Expand Electric Mobility</b>	2,000,000.00	2,332,298.96	4,332,298.96
<b>Component III. Capacity Building and Institutional Support</b>	320,000.00	1,166,149.48	1,486,149.48
<b>Project Management and other costs</b>	2,180,000.00	-	2,180,000.00
<b>Fees</b>		303,198.86	303,198.86
<b>Total</b>	<b>30,000,000.00</b>	<b>15,463,142.10</b>	<b>45,463,142.10</b>

\* The total amount indicated in U.S. dollars in this budget related to the EU contribution is for reference purposes only and may vary due to exchange rate fluctuations depending on the applicable exchange rate at the time when the EU payments of the contribution are received and converted in U.S. dollars by the IDB. If necessary, the budget will be adjusted accordingly to reflect such fluctuations. This Loan Proposal may be included as an annex to the Delegation Agreement, although a consolidated budget (i.e. without detailing the allocation of each of the parties' resources per component) may be used to reflect the fungible nature of the EU contribution and comply with the EU contribution.

- 2.3 Disbursement period.** It is expected that all resources will have a six years disbursement period. Program resources are to be fully disbursed within 72 months from the effective date of the loan agreement. Nevertheless, the SF-II, as an instrument of the GOB to promote RE and EE, will continue beyond the program execution as the reflows from the loans provided by the EGFL to SMEs and Performance-Based Contracting schemes may take longer than six years. In this case, new loans to SME's may continue to be provided with resources from the reflows, following the same terms and conditions of program.

<sup>46</sup> The EU-IDB Framework Agreement amends, supplements, and interprets the EU standard contractual conditions, known as the Pillar Assessed Grant or Delegation Agreement (PAGODA), to adapt them to the specificities of the IDB. Approved by document GN-2610-2, it determined the applicability of certain procurement rules, as well as additional rules on eligibility of expenses, budget modification, reporting and the integration of a communications and visibility plan, among others.

<sup>47</sup> If at the end of the program there is a positive uncommitted and unspent balance related to the EU-CIF resources, such amounts shall be returned by the EA to the Bank, so the Bank transfers such amounts back to the European Commission.

**Table 3: Project Disbursements in US\$ M**

	2020	2021	2022	2023	2024	2025	Total
<b>IDB</b>	0.98	5.58	5.56	7.80	5.43	4.66	30.0
<b>EU</b>	1.25	3.82	2.33	3.16	2.52	2.36	15.46
<b>Total</b>	2.23	9.39	7.90	10.96	7.94	7.02	45.46

## **B. Environmental and Social Risks**

2.4 **Environmental classification.** In accordance, the Bank's safeguards filters (Policy OP-703) the program has been classified as Category B as it will have net positive environmental effects due to the potential impacts in GHG emission reductions, substitution of fossil fuel-based electricity generation and climate change mitigation through the implementation of EE measures and RE technologies. The type of operations currently envisioned for support by the program are likely to have minimal to moderate adverse environmental impact.

2.5 **Environmental risks.** A medium risk identified is contamination to environmental receptors due to inadequate handling and disposal of materials and equipment during the upgrade of public facilities; mitigated with the government's waste disposal guidelines. The PEU will enforce among the beneficiaries, the compliance with the waste disposal guidelines, and the program team will monitor accordingly.

2.6 **Environmental and Social Assessment (ESA).** In compliance with OP-703, an ESA was carried out and an Environmental and Social Management Report (ESMR) was produced. The ESA has been disclosed according OP-102 and a public consultation meeting<sup>48</sup> was conducted on February 19<sup>th</sup>, 2019 in Bridgetown, and it did not identify any additional issues or concerns with regards to the implementation of the project. The PEU will prepare annual reports concerning their environmental and social performance with respect to the Bank's policies and directives. The Bank will have the option to conduct supervision of the environmental and social performance of the program, throughout its duration.

## **C. Fiduciary Risks**

2.7 Based on IDB project team's assessment and experience working alongside the MEWR and EGFL, both institutions demonstrated a solid knowledge of the energy sector and are deemed the most qualified entities to execute the program. However, given the importance of EE and RE in the energy policy of Barbados, the MEWR and EGFL will continue to be strengthened with the required expertise to meet the demand for SF-II resources.

2.8 The fiduciary financial management assessment performed by the IDB project team also indicates that EGFL possesses adequate institutional capacity to manage the execution of component I under the SF-II. The analysis<sup>49</sup> shows that EGFL has acquired significant experience over the years as Fund Manager.

<sup>48</sup> Attendance to the meeting was significant, and approximately 40 attendees actively participated in the discussion, therefore, demonstrating interest and support for the Project.

<sup>49</sup> [Final report/evaluation of the Smart Fund.](#)

Notwithstanding, as it is related to the MEWR there were a few risks as outlined below:

RISKS	CLASSIFICATION	MEANS OF MITIGATION
Weak financial management and procurement capacity.	Medium	<p>The Procurement and Accounting personnel should be recruited and assigned to the program in a timely manner and be suitably skilled and qualified, preferably with experience in managing IDB and donor funded projects.</p> <p>A consultant, with relevant experience implementing Competitive Dialogue, will support from the early stages as such method is being considered.</p>
Lack of awareness of a multi-donor procurement, disbursements and financial reporting procedures.	Medium	Create capacity within the PEU through in-house training on IDB's procurement, financial management procedures and requirements.

#### D. Other Key Issues and Risks

RISK	CLASSIFICATION	MEANS OF MITIGATION
<b>Fiscal Sustainability.</b> Vulnerability of country to external economic (such as a rise in oil prices) and natural shocks with negative consequences on fiscal space (especially under the IMF program) and project implementation priority.	High	<p>Implementation of:</p> <ul style="list-style-type: none"> <li>country's strategy to reduce dependence on imported fuel dependency.</li> <li>resilience measures (i.e. resilient designs of projects to be financed)</li> <li>the components which will generate net savings from investment, reducing fiscal expenses of the public sector.</li> </ul>
<b>Public Management and Governance.</b> Lack of demand from SMEs to participate in the Fund due to a lack of incentives or knowledge.	Medium	<p>Raising awareness campaigns and roadshows to promote the fund and encourage potential investment.</p> <p>Workshops to SMEs and capacity building activities among stakeholders to create awareness on the benefit of EE and RE.</p> <p>Development of strategic outreach/awareness campaigns, which target the tourism sector and highlight the benefits / incentives (savings) that could be obtained.</p>

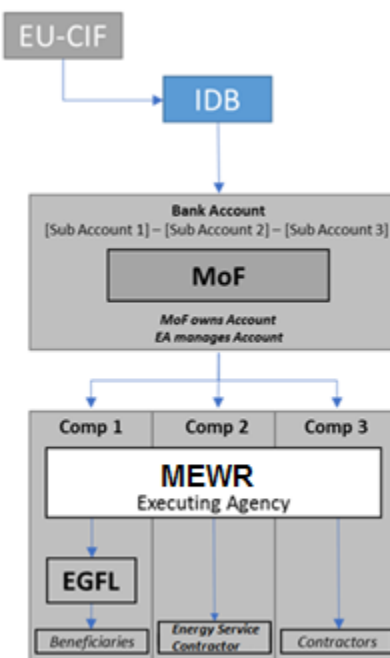
- 2.9 **Sustainability.** In the case of the public-sector, prime retrofitting contractors (together with sub-contractors) responsible for the implementation of the retrofitting plan in public sector buildings, will be tasked to ensure that all purchased and installed EE equipment and RE technologies have associated operational and maintenance guarantees. Once these initial contracts expire, building managers and maintenance personal that have been trained throughout the implementation of the program, will be able to effectively take over these activities.

### III. IMPLEMENTATION AND MANAGEMENT PLAN

#### A. Summary of Implementation Arrangements

- 3.1 **Borrower and EA.** The Borrower will be the GOB and the MEWR will be the EA. The PEU will be located at the MEWR, the same entity responsible for the execution of the SF-I. The PEU is a dedicated entity that will manage all the matters related to SF-II as it did for SF-I, including responsibility for all managerial, technical, economic, and administrative activities of the program. The PEU has demonstrated to have the adequate capacity to carry on the responsibilities and manage the work required to successfully implement the SF-I activities and it is expected it will continue to do so for SF-II. Nevertheless, based on the PCR of SF-I it is critical to continue supporting and strengthening the capacity of the PEU (§1.15 and §3.3). For Component I, EGFL<sup>50</sup> will be the EA (under the responsibility of MEWR and its dedicated PEU).

Diagram 1: Responsibilities of Execution



<sup>50</sup> EGFL also manages the Agricultural Development Fund, the Disaster Relief Revolving Fund, the Industrial, Investment & Employment Fund, among others.

- 3.2 **Financial intermediary.** In January 1998, the EGFL started operations as a limited liability company<sup>51</sup> to provide venture capital to the SME sector. The total capitalization of funds currently managed by EGFL is US\$108,914,055. The loan financing and venture capital (equity financing) provided by EGFL from its own capital account ranges from US\$100,000 to US\$1.5 M, and the target group consists of dynamic, Barbadian SME's in the productive sectors. Furthermore, EGFL provides business advisory services and technical assistance to its client companies. Given EGFL's track record,<sup>52</sup> and its role and experience in the development of the country and its mandate to promote business for SMEs, in addition to lower transaction costs, the GOB has chosen EGFL to sub-execute the Component I of the program.
- 3.3 **Special contractual clauses prior to the first disbursement of the loan/grant.** The GOB shall provide evidence that: **(i) the PEU has been established and the following positions have been appointed and/or selected: Program Manager, Financial Specialist, and Procurement Specialist;** to ensure that the execution of the program will be carried out in accordance with the provisions of the Operation Manual (OM), Annual Operational Plan (AOP), chronogram, and that the required staffing is in place and available; and **(ii) the project OM of the SF-I program has been updated, including the sub-loan/sub-grant model agreements and guidelines for the fulfillment of the obligations under the program, including the requirements agreed by the Bank and the EU,** to have clearly defined and adopted the responsibilities, norms and procedures that will govern the execution of the program. The fulfillment of these obligations is crucial for the program's execution.
- 3.4 **Special contractual clauses prior to the execution.** (i) Prior to the execution of Component I: the GOB shall provide evidence that the subsidiary agreement between the MEWR and the Sub-EA (EGFL) has been signed and entered into effect, in the terms previously agreed with the Bank; and (ii) prior to the execution of all energy efficiency activities that would generate any waste, the Borrower or the EA, as the case may be, shall select or appoint a Social and Environmental Specialist.
- 3.5 **Execution arrangements.** For Component I, the EA will sign an agreement<sup>53</sup> with the EGFL for the execution of activities, which represents 30% of the resources of the program. EGFL will be responsible for the interaction with SME clients and the execution of a comprehensive package of financial instruments. The MEWR will be responsible for consolidating all fiduciary management aspects of the project. The execution arrangements details will be contained in the [OM](#), which will include, among others, the description of the fee structure that EGFL will charge to the beneficiaries of loans and grants to cover the management service expenses.
- 3.6 For Components II and III, the PEU will be in charge of the following: coordinating project's activities with participating government agencies, procurement execution

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<sup>51</sup> EFGL shareholder participation: GOB (65.19%), Collections and Recoveries Limited (14.67%), National Insurance Board (5.76%), RBC Royal Bank (Barbados) Limited (2.88%), Sagicor Life Inc. (5.76%) and the Central Bank of Barbados (5.76%).

<sup>52</sup> Since 1998 EGFL has approved 248 loans for US\$141.5 M, with cumulative disbursements around US\$116.5 M.

<sup>53</sup> The agreement between the EA and EGFL will include operating terms and conditions.

(including the hiring of external auditors), contract supervision, internal control and financial management, including the submission of disbursement requests, preparation and submission of Audited Financial Statements (AFS), compliance with local and IDB environmental and consultation requirements in the implementation of program activities, and risk management. MEWR's administrative and financial officers will support the PEU to ensure proper management of loan resources.

- 3.7 **Procurement.** With the exception of the waivers requested below (¶3.9), the procurement of works, goods, services and consultancy services for activities and contracts shall be done in accordance with the Bank Policy for the Procurement of Goods and Works (GN-2349-9), Bank Policy for the Selection and Contracting Consultants (GN-2350-9), and the Bank Policy for use of country systems, as may be amended from time to time. The Procurement Plan (PP) includes details on procurement for the first 18 months of execution. Activities may be amended accordingly, by agreement between the EA and the Bank. The EA will update the PP at least once every 12 months. The procurement supervision method will be determined by the Bank. Additionally, in accordance with the EU-IDB Framework Agreement (GN-2610-2, 4.13 and 4.14), the following will apply: (i) all procurement processes financed partially or wholly with resources from the EU-CIF will be open to supplier, consultants, contractors and service providers from IDB member countries and also from countries recognized by the EU as eligible (countries included in the list published by the EU as an annex to the "Practical Guide to Contract. Procedures for EU External Actions"); and (ii) the borrower shall retain relevant documentation during project implementation for a period of at least five years from the last disbursement date.
- 3.8 Additionally, the EU-IDB Framework Agreement includes additional rules on the eligibility of expenses, budget modification, reporting and timing of reports and the integration of a communications and visibility plan, among others, that the EA will need to comply. Therefore, besides frequent Bank training and capacity building for the PEU in fiduciary and program management, additional Technical Cooperation (TC) resources (ATN/OC-17207-BA) will support the PEU in ensuring the smooth integration of the different sources of funding.
- 3.9 **Exceptions to Procurement Policies.** Two partial exceptions to the Bank's Procurement Policies are requested for approval by the Board of Executive Directors in order to be able to: (i) recognize EU restrictive measures (given the EU's participation in the co-financing of the program); and (ii) apply a procurement selection method not included in said policies. Regarding the first exception, the EU restrictive measures imply that no support or economic resources are to be made available, directly or indirectly, to or for the benefit of entities, individuals or groups of individuals subject to restrictive measures and identified in a list available at [www.sanctionsmap.eu](http://www.sanctionsmap.eu).<sup>54</sup> This eligibility requirement implies a modification to the eligibility requirements contained in the Bank's Procurement Policies.<sup>55</sup> Similar

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<sup>54</sup> The EU Restrictive Measures support specific EU Common Foreign and Security Policy objectives or UN Security Council Resolutions, which are not equivalent to prohibited practices. It should be noted that the Bank is currently negotiating a new Framework Agreement with the EU which will contain a similar provision regarding EU restrictive measures. This new requirement stems from the EU Financial Regulation in force as of August of 2018.

<sup>55</sup> Paragraphs 1.16 and 1.11 of GN-2349-9 and GN-2350-9, respectively.



exceptions related to sanctions lists of co-financiers were approved by the Board of Executive Directors in the context of financing provided by the European Investment Bank for operations in Haiti (4618/GR-HA), Ecuador (2882/OC-EC), and Colombia (4572/OC-CO) for the Metro of Bogota. Additionally, the program will consider using the Competitive Dialogue selection method to select and award a contract for Energy Retrofitting of Public Buildings. The hiring of this activity is best achieved through modern and innovative procedures aligned with the industry practices.<sup>56</sup>

- 3.10 Competitive dialogue is an interactive multistage selection arrangement that allows for dynamic engagement with bidders in cases of complex and innovative procurement. This process has been identified as the most appropriate for carrying out this operation given that the EA has a defined need to satisfy, but the specifications, scope of the works, or detailed methods have not been defined and there are several possible solutions. This selection method is considered best practice in procurement and follows the same procurement principles that guide the Bank's procurement policy: economy, efficiency, transparency, competition, integrity, equality and due process.
- 3.11 Every year during the implementation of the program, the PEU will present an [AOP](#) to the Bank for its no-objection. The AOP will detail the Project's progress and execution of activities including goals, results, budget and implementation schedule for the year ahead. The [Pluriannual Execution Plan \(PEP\)](#) details the program's progress and implementation schedule for the outstanding years of the loan. An initial AOP and PEP were prepared for the first year of program execution.
- 3.12 **Special financial conditions of the contract and reporting.** The following agreements and requirements will be incorporated: (a) Exchange Rate agreed with the EA: If the program's expenditures have been incurred in local currency, the EA and the Bank will agree on the exchange rate to be used in the justification and reimbursement; and (b) Financial Statements and Reports: annual AFS of the program are to be submitted to the Bank within 90 days after the close of each fiscal period, in addition to Final AFS, which are due for submission to the Bank within 90 days of the close (last disbursement date) of the program.
- 3.13 **External control and reporting.** For each fiscal year during project execution, the EA will be responsible for submitting an AFS for the program. These Financial Statements will be audited by an independent public accounting firm approved by the Bank's country office. These financial audits will have to be delivered by the EA to the Bank:<sup>57</sup> (i) Annually: within 90 calendar days after the Barbados' fiscal closing date; (ii) Final Audit: within 90 calendar days after the final disbursement date as defined in the Non-Reimbursable financial agreement; and (iii) Inputs to the Bank's Management Declaration:<sup>58</sup> within 30 calendar days after Barbados' fiscal closing date.

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<sup>56</sup> For additional information about the waiver request, see Annex III.

<sup>57</sup> As agreed in the IDB-EU Framework Agreement Section E.

<sup>58</sup> The objective of the Management Declaration is to inform the EC that the projects financed with the EU resources are being implemented in accordance with the Bank's and EU policies and procedures, as stated in the FA. This Management Declaration doesn't need to be audited.



## **B. Summary of Arrangements for Monitoring Results**

- 3.14 The [Monitoring and Evaluation Plan \(M&EP\)](#) includes monitoring and reporting requirements and program evaluation mechanisms. Administrative monitoring and control will focus on the fulfillment of procedural regulations governing administrative, financial, accounting, and legal matters, in accordance with national guidelines, those of the Bank and the EU, and those specified in the program's OM.
- 3.15 **Data collection and instruments.** To monitor the energy savings in buildings resulting from the EE and RE implementation, data collection and monitoring equipment will be installed in the buildings according to the Measurement and Verification (M&V) protocols that will be defined as part of the program activities and implemented by the contractor. This M&V equipment will assess the impact of each replacement per category according to the technology. With this information, an extrapolation of the results will be made, according to the progress of the installation.
- 3.16 For Component I, financial instruments and tracking will provide annual information on the number of loans provided to SMEs, numbers of pre-investments studies prepared, and A/C rebates processed, and then compared with the baseline data.
- 3.17 The data collection regarding: (i) implementation progress; (ii) M&V equipment; and (iii) data from the MEWR and EGFL for cross-checking the results will be solely responsibility of the PEU. In case a performance-based contracting scheme is put into place; an independent M&V firm will be contracted by the PEU to monitor the progress and oversee management of the savings.
- 3.18 **Annual progress report.** The EA, through the PEU, will: (a) submit annual reports to the Bank within 30 days after the end of each reporting period, as defined in the AOP, which will follow EU requirements for its narrative and financial sections. The narrative section will include information on the: (a) actual results (with an updated table on the project's results matrix); (b) activities carried out; (c) implementation of the [Visibility and Communication Plan](#); and (d) work plan for the following period. The financial section requires tracking and reporting of expenses at the activity level (not by component or sub-component), based on the approved detailed budget structure. The final report shall cover the entire implementation period of the program and include information on the issues mentioned in (a) above. Additionally, it shall provide a summary of the program receipts, payments received and of the acceptable expenditure or eligible costs incurred. It shall include details of transfer of equipment, vehicles and other major supplies, if applicable.
- 3.19 **Semi-annual progress report.** The EA, through the PEU, will send the Bank semi-annual progress reports to be submitted no later than 60 days after the end of each reporting period, as defined in the M&EP. Semi-annual progress reports will explain the degree of fulfillment of the output indicators and progress toward the outcomes of the Results Matrix making it possible for the Bank to monitor these indicators using the Bank's Project Monitoring Report tool. Based on the semi-annual progress reports, an annual report will be prepared consolidating all information collected during the year, including AFS, disbursement requests, the

PEP, AOP and PP, the management declaration in accordance with the EU reporting requirements. Also, the PEU will prepare annual reports concerning the program's environmental and social performance in accordance with the Bank's policy.

- 3.20 **Project evaluation.** As detailed in the M&EP, the PEU will contract external consulting services to undertake a Mid-term Evaluation once 50% of the financing has been disbursed and justified, or after three years from the date of the first disbursement, whichever happens first. This evaluation will focus on analyzing progress achieved, aspects of coordination and execution, and recommendations to attain the proposed targets and investment sustainability. Also, a final evaluation to be submitted to the Bank no later than 120 days after the final disbursement justification. This evaluation will include: (i) degree of fulfillment of the targets specified in the Results Matrix; (ii) ex-post CBA; (iii) assessment of the performance of the EA; (iv) factors affecting implementation; and (v) lessons learned and recommendations for future operations. The final evaluation will allow the Bank to finalize the PCR.

Development Effectiveness Matrix		
Summary		BA-L1043
<b>I. Corporate and Country Priorities</b>		
<b>1. IDB Development Objectives</b>	<b>Yes</b>	
Development Challenges & Cross-cutting Themes	<ul style="list-style-type: none"> <li>-Productivity and Innovation</li> <li>-Gender Equality and Diversity</li> <li>-Climate Change and Environmental Sustainability</li> <li>-Institutional Capacity and the Rule of Law</li> </ul>	
Country Development Results Indicators	<ul style="list-style-type: none"> <li>-Reduction of emissions with support of IDBG financing (annual million tons CO2 e)*</li> <li>-Jobs created by supported firms (#)*</li> <li>-Micro / small / medium enterprises financed (#)*</li> <li>-Installed power generation from renewable energy sources (%)*</li> <li>-Tourism destinations benefited by projects aimed at increasing tourism expenditure, local and social inclusion and/or improving environmental management (#)*</li> </ul>	
<b>2. Country Development Objectives</b>	<b>Yes</b>	
Country Strategy Results Matrix	GN-2953-1	3.3 Reduce the country's dependence on imported fossil fuel
Country Program Results Matrix	GN-2948-2	The intervention is included in the 2019 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
<b>II. Development Outcomes - Evaluability</b>		<b>Evaluable</b>
<b>3. Evidence-based Assessment &amp; Solution</b>		<b>7.1</b>
3.1 Program Diagnosis		2.4
3.2 Proposed Interventions or Solutions		1.7
3.3 Results Matrix Quality		3.0
<b>4. Ex ante Economic Analysis</b>		<b>9.0</b>
4.1 Program has an ERR/NPV, or key outcomes identified for CEA		3.0
4.2 Identified and Quantified Benefits and Costs		3.0
4.3 Reasonable Assumptions		1.0
4.4 Sensitivity Analysis		2.0
4.5 Consistency with results matrix		0.0
<b>5. Monitoring and Evaluation</b>		<b>8.1</b>
5.1 Monitoring Mechanisms		2.2
5.2 Evaluation Plan		6.0
<b>III. Risks &amp; Mitigation Monitoring Matrix</b>		
Overall risks rate = magnitude of risks*likelihood		<b>Low</b>
Identified risks have been rated for magnitude and likelihood		
Mitigation measures have been identified for major risks		
Mitigation measures have indicators for tracking their implementation		
Environmental & social risk classification		<b>B</b>
<b>IV. IDB's Role - Additionality</b>		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)	Yes	Financial Management: Budget, Accounting and Reporting, External Control, Internal Audit.
Non-Fiduciary		
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
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	The TC BA-T1057 is been prepared to provide a comprehensive framework to unlock viable investments in RE and EE, which will support the execution of RE and EE activities under BA-L1043, as well as, other ongoing projects in Barbados

Note: (\*) Indicates contribution to the corresponding CRF's Country Development Results Indicator.

The general objective of the program is to reduce Barbados's dependency on imported fossil fuels through the increased use of Renewable Energy (RE) and Energy Efficiency (EE) technologies. The specific objectives are to: (i) reduce electricity consumption by implementing RE and EE measures; (ii) reduce Green House Gases (GHG) emissions from liquid fossil fuels used for power generation and transport; and (iii) increase institutional capacity for the management of RE and EE programs.

The documentation provides a good description of the country's high dependency on oil for energy generation and its effect on the economy, the energy sector, transportation, and the private sector; the volatility of oil prices affects costs structures and hampers competitiveness. One way to tackle the high dependency on oil is to promote the adoption of RE and EE technologies in the public and private sector. The documentation identifies key barriers to the adoption of these technologies.

To tackle the problems and barriers identified, the program will implement three components: Promoting EE and RE in the tourism sector; Promoting EE and RE in the Public Sector; and Capacity Building and Institutional Support. The proposed solution is clearly linked to the problems identified. The results matrix (RM) reflects the objectives of the program and shows a clear vertical logic. Higher level indicators will measure the reduction in oil imports used for electricity generation, increases RE generation installed, and a decrease in GHG emissions. Lower level indicators reflect the design of the three components. The RM includes SMART indicators at the level of products, outcomes, and impacts, with their respective baseline values, targets, and means to collect the information.

The economic analysis is based on a cost-benefit analysis done at the aggregate level and for each sub-component, separately. The main benefits are a function of savings on avoided electricity consumption by substituting liquid fuel generated electricity with RE supplied electricity, and the value of avoided GHG emissions from the displaced consumption of liquid fuels for electricity generation and transportation. At the aggregate level, the EA finds a net present value (NPV) of US\$18.9 million and an economic rate of return (ERR) of 23%. A sensitivity analysis is done under alternative scenarios modifying key variables that can affect costs and benefits. The conservative scenario finds an ERR of 18%, with an NPV of US\$9.94 million.

The monitoring & evaluation plan proposes a reflexive evaluation and an ex post cost-benefit analysis. The M&E plan also describes two quasi-experimental methods to measure the effectiveness of the program (Difference-in-Differences and Synthetic control), however, not enough information is provided to gauge the feasibility of implementing these two methods.

The risks identified in the risk matrix seem reasonable and are classified as Low (6), Medium (4) and High (1). All medium and high risks include means of mitigation and compliance indicators.

## RESULTS MATRIX

<b>Project Objective:</b>	To reduce Barbados' dependency on imported fossil fuels through the increased use of RE and EE technologies. The specific objectives are to: (i) reduce electricity consumption by implementing RE and EE measures; (ii) reduce GHG emissions from liquid fossil fuels used for power generation and transport; and (iii) increase institutional capacity for the management of RE and EE programs.
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### EXPECTED IMPACTS

Indicators	Unit of Measure	Baseline (2018)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	End of Project	Means of Verification	Observations
<b>Impact #1. Imported Fossil Fuels for Electricity Generation</b>											
<b>Indicator #1.</b> Decrease in imported fossil fuels for electricity generation	# of barrel of oil	0	0	0	1,648	14,562	35,053	60,155	60,155	PEU Report	This indicator will be calculated based on the annual electricity from grid avoided, with 10,200 kj/kWh, and 6,311,532 kj/barrel of oil. See M&E Plan
<b>Impact #2. RE Installed Capacity</b>											
<b>Indicator #2.</b> Increase in RE generation installed	% MW	0	0	0.2	9.7	25.2	33.2	41.3	41.3	PEU Report	This indicator will be calculated as the percentage change from baseline in 2018 (27 MW)
<b>Impact #3. GHG emissions avoided</b>											
<b>Indicator #3.</b> Annual GHG emissions, avoided	tons CO <sub>2</sub> eq.	0	0	0	694	11,965	20,530	31,004	31,004	PEU Report	

### EXPECTED OUTCOMES

Indicators	Unit of Measure	Baseline Value	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	End of Project	Means of Verification	Observations
Outcome #1. RE & EE Solutions Introduced in SMEs												
Indicator #1. Expansion of RE installed capacity	MW	0	2018	0	0.07	0.18	0.32	0.46	0.62	0.62	PEU Report	
Indicator #2. Increase in electricity saved due to EE measures	MWh	0	2018	0	0	905	2,534	4,343	8,505	8,505		
Indicator #3. Increase in electricity saved due to AC rebates	MWh	0	2018	0	0	0	258	568	1,034	1,034		
Indicator #4. Increment in electricity generated from RE sources	MWh	0	2018	0	0	115	400	723	1,393	1,393		
Outcome #2. RE & EE Solutions introduced in Public Buildings and Electric Mobility												
Indicator #5. Expansion of RE installed capacity	MW	0	2018	0	0	2.43	6.49	8.52	10.55	10.55	PEU Report	
Indicator #6. Increase in electricity saved due to EE measures	MWh	0	2018	0	0	0	1,764	5,292	8,820	8,820		
Indicator #7. Increment in electricity generated from RE sources	MWh	0	2018	0	0	0	4,055	10,762.6	17,470.5	17,471		
Indicator #8. Private sector funds leverage	US\$(000)	0	2018	0	0	92	276	369	461	461		
Outcome #3. Institutional Capacity Strengthened												
Indicator #9. Local financial institutions lending for EE/RE projects	# institutions	0	2018	0	0	1	1	0	0	2	PEU Report	
Indicator #10: Implementation of a plan for deployment of electric mobility	# plan	0	2018	0	0	1	0	0	0	1		
Indicator #11. Young people empowered and trained to work on EE and RE	# people	0	2018	0	20	20	20	20	0	80		

## OUTPUTS

Expected	Units	Baseline value (2018)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Final Target (EOP/2024)	Source of Verification/ Comments
Component #1. Promoting EE and RE in SMEs										
Output #1. Pre-investment studies completed	# studies	0	5	10	25	25	25	10	100	PEU Report
Output #2. Credit line used in EE and RE projects	# loans	0	0	5	9	10	11	12	47	PEU Report
										EGFL will report to the PEU bi-annually on loan process on-going and current status
Output #3. A/C Rebate Facility	# A/C rebates	0	0	0	250	300	300	150	1,000	PEU Report EGFL will report on the status of the rebate process, gathering information from retailers
Component #2. Promoting EE and RE in Public Sector										
Output #4. Pre-Investment Studies for government EE/RE programs	# studies	0	5	10	10	10	5	0	40	PEU Report
Output #5. Comprehensive studies for deployment of Innovative RE and EE technologies		0	0	0	1	0	0	0	1	
Output #6. Waste disposal management strategy designed	# strategy	0	1	0	0	0	0	0	1	
Output #7. RE/ EE Retrofits in public buildings functioning	# buildings	0	0	0	20	40	20	20	100	
Output #8. Public buses with charging station systems implemented	# systems	0	0	0	5	0	0	0	5	
Component #3. Capacity Building and Institutional Support										
Output #9. Communication campaigns to promote the use of EE and RE technologies in SMEs and public buildings	# campaigns	0	1	1	1	1	0	0	4	PEU Report

Expected	Units	Baseline value (2018)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Final Target (EOP/2024)	Source of Verification/ Comments
<b>Output #10.</b> Certification program in RE audit implemented	# programs	0	0	1	0	0	0	0	1	
<b>Output #11.</b> Certification program in EE audit implemented	# programs	0	0	0	1	0	0	0	1	
<b>Output #12.</b> Training in O&M and M&E of EE and RE systems implemented	# trainings	0	0	0	1	0	0	0	1	PEU Report with desegregated information by gender and age. These training opportunities will allow men and women to acquire new skills, develop networks and learn about new technologies and good practices, resulting in better job opportunities in the EE and RE sector
<b>Output #13.</b> Comprehensive Study on the Deployment of Electric Mobility in Barbados	# studies	0	1	0	0	0	0	0	1	PEU Report
<b>Output #14.</b> Comprehensive study and capacity building program on Innovative Financial Models for Commercial Financial Institutions	# studies	0	0	0	1	0	0	0	1	
<b>Output #15.</b> Information system on gender for the sector implemented	# systems	0	0	1	0	0	0	0	1	The information system should contain the information on gender of at least 20 institutions (SMEs, ESCO, etc.)
<b>Output #16.</b> Young Apprentice Program created and implemented	# programs	0	0	0	1	0	0	0	1	PEU Report. This certification program is the same one described in Outputs #10 and #11

## **FIDUCIARY ARRANGEMENTS**

**Project Number:** BA-L1043; BA-G1002  
**Project Title:** Sustainable Energy Investment Program (Smart Fund II)  
**Executing Agency (EA):** Ministry Energy and Water Resources  
**Prepared by:** Vinicio Rodriguez, Financial Management Specialist;  
Maria Camilla Padilla, Procurement Specialist; Corey  
Carter; Consultant (FMP/CBA)

### **I. EXECUTIVE SUMMARY**

- 1.1 The fiduciary management evaluation of Smart Fund I was performed during May 2010. Given that the previous project closed in October 2017 and the Bank has continued to work with the same EA in the Public Sector Smart Energy Program (2748/OC-BA) a new evaluation is not necessary.
- 1.2 Regarding Component 1, the EA has requested that EGFL be the financial intermediary responsible for disbursing RE and EE sub-loans EGFL is a government owned, Limited Liability Company and Fund Manager which provides venture capital, loans and technical assistance to the SME sector from the sector-specific funds which it manages.
- 1.3 The Bank is recommending the use of Smart Stream Financial System, for financial administration, and the Auditor General of Barbados for external control (depending on availability) and if unavailable, an independent audit firm acceptable to the Bank.

### **II. EXECUTING AGENCY'S FIDUCIARY CONTEXT**

- 2.1 The EA has a history of implementation of projects, including one involving resources from the EU. It is recommended that the semi-annual progress reports submitted to the Bank include budgetary and execution information by category and source of funding in compliance with the reporting requirements of each financing source and a final audited financial statement(s) of the program audited by the Auditor General of Barbados or a firm of independent public accountants eligible to the Bank be prepared for presentation to the Bank.
- 2.2 EGFL was responsible for the administration of sub-loans under the Smart Fund I and have demonstrated adequate technical and institutional capacity. EGFL is an Approved Financial Intermediary and has the necessary procedures and policies in place to ensure compliance with fiduciary guidelines.

### **III. FIDUCIARY RISK ASSESSMENT AND MITIGATING ACTIONS**

- 3.1 The overall fiduciary risk of the program is deemed to be medium. Notwithstanding, there were a few medium risks as outlined below and which could have an impact on the program, however they do not affect the overall risk.



Risks	Risks Rating	Mitigation Measures
Weak financial management and procurement capacity	Medium	<p>The procurement and accounting personnel should be recruited and assigned to the program in a timely manner and be suitably skilled and qualified, preferably with experience in managing IDB and donor funded projects.</p> <p>A consultant, with relevant experience implementing Competitive Dialogue, has been hired to support the project.</p> <p>Responsibility for implementation: PEU/Borrower Timeline for implementation: Prior to 1<sup>st</sup> disbursement</p>
Lack of knowledge of a multi-donor procurement, disbursements and financial reporting procedures	Medium	<p>Training to the PEU on IDB's procurement, financial management procedures and requirements.</p> <p>Responsibility for implementation: IDB Timeline for implementation: During program design and throughout execution.</p>

#### IV. ASPECTS TO BE CONSIDERED IN THE SPECIAL CONDITIONS OF THE LOAN CONTRACT

- 4.1 In order to facilitate the negotiation of the operation, outlined below are agreements and requirements which will be incorporated into the special conditions:
- 4.2 **Exchange Rate agreed with EA.** If the program's expenditures have been incurred in local currency, the EA and the Bank will agree on the exchange rate to be used in the justification and reimbursement. For purposes of the justification of expenditures (including reimbursement/recognition of expenditures, and local counterpart) the equivalent amount to be reported in the project or disbursement currency will be determined using the effect exchange rate used to convert the funds denominated in the program's currency to the local currency.
- 4.3 **Financial Statements and Reports.** Annual Audited Financial Statements (AFS) of the program are to be submitted to the Bank within 90 days after the close of each fiscal period, in addition to Final AFS, which are due for submission to the Bank within 90 days of the close (last disbursement date) of the program. The AFS should report on the overall program, in the expressed currency of the loan. The AFS of the program should include, in addition to the basic financial statements, an internal control report.

#### V. REQUIREMENTS AND ARRANGEMENTS FOR PROCUREMENT

- 5.1 **Procurement arrangements and exceptions.** Procurement activities will be carried out in accordance with the Policies for the Procurement of Works and Goods Financed by the IDB (GN-2349-9), and the Policies for the Selection and Contracting of Consultants Financed by the IDB (GN-2350-9) of March 2011, and the Loan Contract and the PP. Two partial exceptions to Bank's Procurement Policies are requested for approval by the Board of Executive Directors as follows: (i) in terms of procurement methods to apply a procurement selection method not included in said policies; and (ii) in terms of eligibility to recognize EU's restrictive

measures (given the EU's participation in the co-financing of the program).<sup>1</sup> The EU restrictive measures imply that no support or economic resources are to be made available, directly or indirectly, to or for the benefit of entities, individuals or groups of individuals subject to restrictive measures and identified in a list available at [www.sanctionsmap.eu](http://www.sanctionsmap.eu). This eligibility requirement implies a modification to the eligibility requirements contained in the Bank's procurement policies. Additionally, similar exceptions related to sanctions lists of co-financiers were approved by the Board of Executive Directors in the context of financing provided by the European Investment Bank for operations in Haiti (4618/GR-HA), Ecuador (2882/OC-EC), and Colombia (4572/OC-CO) for the Metro of Bogota.

- 5.2 The resources from the program in its entirety will be open to the procurement of all works, goods, services and consultancy services for activities, both to Bank Member Countries, and to the EU list of eligible countries published in the European Commission website as an annex to its "Practical Guide to Contract Procedures for EU External Actions".
- 5.3 **Procurement of Goods, Works, and Non-Consulting Services.** The contracts subject to International Competitive Bidding will be executed using Standard Bidding Documents issued by the Bank. The technical specifications review during the preparation of the selection process, is the responsibility of the energy specialist.
- 5.4 **Energy Retrofitting of Public Buildings.** An exception to Bank's policy GN-2349-9 is requested for approval by the Board of Executive Directors, so that procurement selection method not included in said policies may apply. The program would be using the Competitive Dialogue selection method to select and award a contract for Energy Retrofitting of Public Buildings.<sup>2</sup> The hiring of this activity is best achieved through modern and innovative procedures aligned with the industry practices.
- 5.5 Competitive Dialogue is an interactive multistage selection arrangement that allows for dynamic engagement with bidders in cases of complex and innovative procurement. Competitive Dialogue requires Borrowers to hold confidential discussions with each bidder on all aspects of its proposal including indicative prices, before finalizing the first stage. For the final stage of Competitive Dialogue, selection documents may be amended, and bidders requested to submit complete price proposals. PEU are inclined to use this selection method when: (i) they have a defined need to satisfy, but the specifications, scope of the works, or detailed methods have not been defined and there are several possible solutions. In this case, these solutions require joint development and discussion between the PEU and the potential contractor; and (ii) due to the complexity and characteristics of the project, does not have the necessary technical resources to reach the level of detail required to formulate the specifications.

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<sup>1</sup> Although this provision is not included in the 2015 EU Framework Agreement, it stems from the new EU Financial Regulation in force as of August of 2018. It should be noted that the Bank is currently negotiating a new Framework Agreement with the EU which will contain a similar provision regarding EU restrictive measures.

<sup>2</sup> The energy retrofitting of public buildings will be carried out through an energy performance contract. This contracting modality will seek to optimize the use of the funds by promoting the reinvestment of obtained savings.

- 5.6 This selection method is considered best practice in procurement and follows the same principles that guide the Bank's procurement policy: economy, efficiency, transparency, competition, integrity, equality and due process.
- 5.7 Given the specialized nature of the energy efficiency solutions, it is expected that the PEU will be interested in learning of the technical or performance specifications and scope offered to satisfy its requirements. In such a case, with the Competitive Dialogue, the PEU enters into dialogue with initially selected bidders, with the aim of better identifying and defining the means best suited to satisfy the requirements before inviting the firms to submit their final proposals.
- 5.8 The Competitive Dialogue usually begins with a prequalification phase, to reduce the number of solutions to be examined during the dialogue phase. Once prequalified bidders are selected, a dialogue with the potential bidders is initiated and consists of confidential clarification meetings to discuss predetermined aspects of the proposal including the details of the solution, the commercial deal, and legal and financial aspects, with the intention to improve the specifications. The dialogue is documented and all progress in the definition of the solution is shared with the prequalified bidders. All prequalified bidders will receive equal treatment and the PEU will avoid giving information that may give advantages to certain bidders. The PEU shall not disclose to the other participants the solutions proposed by a participant or other confidential information.
- 5.9 Once the PEU reaches solutions that can respond to its need, and once declaring the dialogue phase closed, the PEU will modify the bidding document and invite prequalified bidders to present their final offer, based on the solutions presented and specified during the dialogue phase. Bidders will submit their technical and price proposal to a two-stage process. The PEU will evaluate the bids submitted using the award criteria established in the bidding document and will select the most advantageous bid by combining technical and price results.
- 5.10 The project will implement a special procurement strategy for this process similar to the World Bank Procurement Regulations and use IDB adjusted bidding documents to maximize the effectiveness of the chosen procedures.
- 5.11 The Competitive Dialogue selection method can be found in some country systems in the region and has been incorporated by most Multilateral Development Banks<sup>3</sup> in their most recent procurement reforms. As well, it is common practice in Europe having been introduced in EU Directives in 2004.<sup>4</sup> Competitive Dialogue is extensively discussed in the IDB's Publication "[Innovation in the Methods of Public Procurement in Latin America and the Caribbean—Case Studies](#)".
- 5.12 **Procurement of Consulting Services.** The contracts generated under this project will be executed through the use of the Standard Request for Proposals issued by the Bank. The review of terms of reference for the selection of consulting services is the responsibility of the energy specialist.
- 5.13 **Recurring Expenses.** Includes any recurrent, operative or maintenance expense of the PEU.

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<sup>3</sup> World Bank Procurement Regulations for Borrowers Annex XIII: Competitive Dialogue. July 2016.

<sup>4</sup> European Community Directive 18/2004 Article 29.

**Country Threshold Table (US\$ Thousands)** [www.iadb.org/procurement](http://www.iadb.org/procurement)

Method	ICB Works	ICB Goods and Non-consulting Services	Consulting Services International Short List
Threshold	>3,000,000	>150,000	>200,000

\*When procuring simple works and common goods and their amount is under the International Competitive Bidding threshold, Shopping may be used.

- 5.14 **Procurement Plan (PP).** PP will cover 18 months of program execution. It will include the selection method for the procurement of goods, works, non-consulting and consultancy services, including individual consultants for each contract or group of contracts. It will also indicate the estimated cost of each contract and the requirement for prior or post review by the Bank. The PP will be posted on the [Bank's website](#) and will be updated annually or whenever necessary, or as required by the Bank.
- 5.15 **Procurement Supervision.** Supervision method will be determined by the Bank for each selection process. All individual consultants selected competitively will be reviewed ex post. Ex post reviews will be performed every six months according with project Supervision Plan.
- 5.16 **Records and Files.** All records and files will be maintained by the PEU, according EU-CIF requirements, and be kept for up to five years beyond the end of the operation's execution period, this understood as the final disbursement date.

## VI. FIDUCIARY MANAGEMENT

- 6.1 **Programing and budget.** PEU will prepare official annual estimates for the review and approval by the Barbados Cabinet. The estimates will consider the total cost of financing required for program execution. The budget is presented to Parliament before the close of the fiscal year, which runs from April 1<sup>st</sup> to March 31<sup>st</sup>.
- 6.2 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 (AOP), the Financial Plan and the PP.
- 6.3 **Accounting and information systems.** Project accounting will be performed using Smartstream. in accordance with IDB's financial management requirements; the cash basis of accounting. 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 program; the financial execution plan for the next 180 days that will be attached to each request for Advance of Funds. Additionally, the list of commitments will also accompany any request for Advance of Funds.
- 6.4 **Disbursements and cash flow.** Whenever resources from the financing are requested through an Advance of Funds, they will be deposited into a designed project Account at the Central Bank of Barbados in US\$.
- 6.5 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 EA's records and IDB records.

- 6.6 According to EU-CIF policies, only those expenditures that have incurred after the signature of the delegation agreement will be eligible.
- 6.7 The project will provide adequate justification<sup>5</sup> of the existing Advance of Funds balance, whenever 70% of said balance has been spent. Advance of Funds will be made in accordance with Article 19 (Payments) of EU-CIF PAGODA. The following disbursement methodologies will be used for the program:
- a) Reimbursement of Payments Made
  - b) Direct Payment to Supplier
  - c) Advance of Funds
- 6.8 Supporting documentation for Justifications of Advances and Reimbursement of Payments made will be kept at the office of the PEU. Supporting documentation for direct payments will be sent to the Bank for processing.
- 6.9 **Internal control and internal audit.** Project management will assume the responsibility for designing and implementing a sound system of internal control for the program, in its entirety.
- 6.10 **External control and reports.** For each fiscal year during project execution, the EA will be responsible to submit AFS for the program. These Financial Statements will be audited by an independent public accounting firm approved by the Bank's country office. These financial audits will have to be delivered by the EA to the Bank:<sup>6</sup> (i) Annually: within 90 calendar days after the Barbados' fiscal closing date; (ii) Final Audit: within 90 calendar days after the final disbursement date as defined in the Non-Reimbursable financial agreement; and (iii) Inputs to the Bank's Management Declaration:<sup>7</sup> within 30 calendar days after Barbados' fiscal closing date.
- 6.11 **Financial supervision plan.** Financial, Accounting and Institutional Inspection visits will be performed at least once per year, covering, among other things, the following topics:
- a) Review of the bank reconciliation and supporting documentation for Advances and Justifications.
  - b) Review of compliance with the Program OM.
  - c) Conducting ex-post Reviews.
- 6.12 **EU access to project documents.** The Bank will allow the EC, OLAF, and the European Court of Auditors to conduct on-the-spot checks on the use made of EU contributions on the grounds of supporting accounting documents and any other documents related to the financing of the project. These desk-reviews and on-the-spot checks can occur at the Bank's offices and the EA. The European Commission shall inform the Bank of the planned on-the-spot missions by agents appointed by the European Commission in due time in order to ensure that

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<sup>5</sup> According to PAGODA Article 19.1: "(...) provided that at least 70% of the immediately preceding instalment (and 100% of previous instalments if any) has been subject to a legal commitment between the Organization [IDB] or the Sub-delegates and a third party as proven by the relevant report".

<sup>6</sup> As agreed in the IDB-EU Framework Agreement Section E.

<sup>7</sup> The objective of the Management Declaration is to inform the EC that the projects financed with EU resources are being implemented in accordance with the Bank's and EU policies and procedures, as stated in the FA. This Management Declaration doesn't need to be audited.

adequate procedural matters are agreed upon in advance, and the Bank will communicate to EA. These verification visits may be conducted at Bank offices or EA Offices.

- 6.13 **Execution mechanism.** The program execution structure will be composed of PEU which will be established within the EA.
- 6.14 The PEU will have three strategic positions: Program Manager, Procurement Specialist and Financial Specialist. The PEU will be responsible for the administration of loan and grant financing and procurement processes. Specific PEU duties include: (i) semi-annual progress reports preparation; (ii) AOP preparation and implementation; (iii) budget and disbursements preparation; (iv) PP preparation; (v) program financial administration according to accepted accounting principles and presenting audited financial statements; (vi) ensuring the quality and efficacy of procurement processes and their compliance with Bank policies, EU and that of the GOB; (vii) ensuring the consistent alignment of expected program results with day-to-day program; and (viii) being program liaison with the Bank. For execution of Component I, the EA has appointed EGFL as Fund Manager. The EA will sign a MOU with EGFL to be the Fund Manager.

## SUSTAINABLE ENERGY INVESTMENT PROGRAM (SMART FUND II)

**BA-G1002**

### CERTIFICATION

I hereby certify that this operation will be authorized for financing through a Project Specific Grant (PSG) administration agreement or agreements for an amount of up to **US\$15,463,142** to finance the activities described and budgeted in this document.

Donor's commitment does not have validity until the PSG administration agreement between the IDB and the donor is agreed upon and signed for this operation. Therefore, this certification will remain conditional until the corresponding PSG administration agreement or agreements are signed and effective.

Certified by:	(original signed)	March 7, 2019
	_____	_____
	Sonia M. Rivera	Date
	Chief	
	Grants and Co-Financing Management Unit	
	ORP/GCM	

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-\_\_\_/19

Barbados. Loan \_\_\_\_/OC-BA to the Government of Barbados  
Sustainable Energy Investment Program (Smart Fund II)

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 the Government of Barbados, as borrower, for the purpose of granting it a financing to cooperate in the execution of the Sustainable Energy Investment Program (Smart Fund II). Such financing will be for the amount of up to US\$30,000,000 from the resources of the Bank's Ordinary Capital, 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 \_\_\_\_ 2019)



DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-\_\_\_/19

Barbados. Nonreimbursable Investment Financing GRT/\_\_\_-\_\_\_\_\_-BA  
Sustainable Energy Investment Program (Smart Fund II)

The Board of Executive Directors

RESOLVES:

1. That the President of the Inter-American Development Bank (“Bank”), or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such agreement or agreements as may be necessary with the Government of Barbados, for the purpose of granting it a nonreimbursable investment financing for a sum of up to €13,260,000, chargeable to the resources to be granted by the European Union Caribbean Investment Facility, pursuant to the agreement or agreements specified in paragraph 2 below, and to adopt any other measures as may be pertinent for the execution of the project proposal contained in document PR-\_\_\_\_\_.

2. 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 agreement or agreements with the European Union as may be necessary to receive and administer resources, subject to the terms of the Framework Administrative Agreement between the European Union and the Bank dated 10 June 2015, for the purposes described in the project proposal specified in paragraph 1 above, and to adopt any other measures as may be pertinent for the execution of said agreement or agreements.

3. That the authorization granted in paragraph 1 above will be effective once the Bank and the European Union have entered into the corresponding agreement or agreements to which reference is made in paragraph 2.

(Adopted on \_\_\_\_ 2019)