



# Project Information Document (PID)

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Concept Stage | Date Prepared/Updated: 13-Dec-2022 | Report No: PIDC34857

**BASIC INFORMATION****A. Basic Project Data**

Country Latin America	Project ID P179519	Parent Project ID (if any)	Project Name Caribbean Efficient and Green-Energy Buildings Project (P179519)
Region LATIN AMERICA AND CARIBBEAN	Estimated Appraisal Date Apr 19, 2023	Estimated Board Date Jun 29, 2023	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing	Borrower(s) Grenada Ministry of Finance and Economic Development, St Lucia Ministry of Finance, Economic Development and Youth Economy	Implementing Agency Grenada Ministry of Climate Resilience, the Environment and Renewable Energy, Organisation of Eastern Caribbean States Commission, St Lucia Ministry of Infrastructure, Ports, Energy, and Labour	

**Proposed Development Objective(s)**

To enhance efficiency of energy use in public buildings and increase renewable energy supply for public buildings in Eastern Caribbean countries.

**PROJECT FINANCING DATA (US\$, Millions)****SUMMARY**

<b>Total Project Cost</b>	61.23
<b>Total Financing</b>	61.23
<b>of which IBRD/IDA</b>	60.00
<b>Financing Gap</b>	0.00

**DETAILS****World Bank Group Financing**

International Development Association (IDA)	60.00
IDA Credit	56.00



IDA Grant	4.00
<b>Non-World Bank Group Financing</b>	
Trust Funds	1.23
Canada Clean Energy and Forest Climate Facility Trust Fund	0.73
Support for Small Island Developing States (SIDS) DOCK Suppo	0.50

Environmental and Social Risk Classification

Moderate

Concept Review Decision

Track II-The review did authorize the preparation to continue

Other Decision (as needed)

## B. Introduction and Context

The proposed Caribbean Efficient and Green Energy Buildings Program is structured as a regional Series of Projects (SoP) designed to address common challenges in the energy sector that countries in the region face. The SoP’s programmatic framework is scalable, allowing countries in the region to join at different times. This Concept Note describes the overall approach of the SoP and the proposed first project in the series: The Caribbean Efficient and Green-Energy Buildings Project (hereafter referred to as the Project), for Grenada and St. Lucia, supporting investments in energy efficiency (EE) measures and distributed solar photovoltaic (PV) systems installed on rooftops or in public spaces (hereafter referred to as DPV systems)

### Regional and Country Context

**The countries in the Eastern Caribbean Region have economies that are highly vulnerable to changes in global commodities markets and their geographical location makes them prone to natural disasters.** The small size of the countries in this region limits access to economies of scale, diversification, and the scope of international trade. Economic activities are concentrated in a few sectors, most notably tourism, which contributes over 40%, on average, to the gross domestic product (GDP) of the region and represents approximately 45% of total employment. The Covid-19 pandemic has underscored vulnerabilities, causing a reduction in tourism. It has been followed by higher prices for imported commodities. The countries in the region vary in terms of their eligibility for World Bank funding. Among the eleven countries belonging to the Organization of Eastern Caribbean States (OECS), four countries --Grenada, St. Lucia, Dominica, and St. Vincent and the Grenadines (SVG)-- are upper-middle-income blend countries, eligible for International Development Association (IDA) borrowing under the World Bank’s Small Island Economy Exception (hereafter referred to as “OECS IDA member countries”). Two other countries --Antigua and Barbuda and St. Kitts and Nevis (hereafter referred to as “OECS IBRD member countries”) are eligible for IBRD financing. The OECS IDA countries are Small Island Developing States (SIDS) with a population in 2021 ranging between 72,172 (Dominica) and 184,401 (St. Lucia).<sup>1</sup>The average per capita national incomes ranged between US\$17,364 (Dominica) and US\$ 30,484 (St. Lucia) in 2019.

<sup>1</sup> <https://data.worldbank.org/indicator>



**The rise in commodity prices following the COVID-19 pandemic has restrained economic recovery.** During the Covid-19 pandemic, starting in early 2020, a near shutdown in tourism, the region's main source of economic activities, caused severe economic contraction in the region. GDP contraction in 2020 was the highest in St. Lucia at 20.7%. It was around 14.2% and 16.8% in Grenada and Dominica, respectively, and less severe in SVG, at 5.6%. The economic recovery in 2021 saw a GDP growth in the range of 4.9% to 6.3% due to the revival of tourism. However, in 2022, the rise in food and fuel prices due to the war in Ukraine began offsetting positive impacts from the tourism recovery. At the same time, public debts sharply increased in 2020-2021 due to significant COVID-19-related borrowing and economic contraction. As a result, the Eastern Caribbean is among the world's most indebted regions, with limited fiscal space to face continuous external commodity price shocks or natural disasters. The economies in the region are expected to recover gradually with real GDP projected to return to its 2019 level by 2023-24. But the recovery is subject to a high level of uncertainty over the medium term.

**In recent years, extreme weather has damaged infrastructure and impeded economic activity, with losses and repair costs amounting to a large portion of GDP.** Located in the Atlantic hurricane belt, the Eastern Caribbean is highly exposed to recurrent extreme weather events such as hurricanes and floods, as well as rising sea levels. In addition, most countries in the region are exposed to substantial seismic activities and associated risks such as earthquakes and volcanic eruptions. Disasters are estimated to have cost the Eastern Caribbean countries an average of 3.6 percent of GDP between 1997 and 2016, well above the average for small states. And, in some countries, the costs of natural disasters have been astronomical. For example, the damages caused by Hurricane Ivan caused a loss equivalent to 210 percent of Grenada's GDP in 2004. And, and Hurricane Maria caused a loss equivalent to 226 percent of Dominica's GDP in 2017. Hence, strengthening of resilience against the negative impacts of hurricanes and climate change is a critical element for sustainable economic growth and development of countries of the Eastern Caribbean.

**Regional integration has helped overcome certain challenges faced by small economies and there is potential for further cooperation.** The OECS Commission is an inter-governmental organization comprising eleven small-island states of the Eastern Caribbean, including the OECS as well as IDA and IBRD member countries. It is responsible for the administration and coordination of all the organs of the OECS: the Authority, Council of Ministers, OECS Assembly, and Economic Affairs Council. The countries in the region are also part of a monetary union known as the Eastern Caribbean Currency Union (ECCU) and share a common currency, the Eastern Caribbean Dollar (XCD). The ECCU's governing body is the Eastern Caribbean Central Bank (ECCB). The countries in region are also members of the Caribbean Community (CARICOM).<sup>2</sup>There is large potential for further integration to effectively address shared challenges through collective actions and the harnessing of synergies among countries to promote a clean-energy transition.

#### Sectoral and Institutional Context

**Heavy dependence on imported fossil fuels despite the availability of indigenous renewable energy resources, has threatened energy security and led to high electricity prices.** In 2017, imported petroleum products, most of which were used for electricity generation,<sup>3</sup> accounted for around 87 percent of total energy consumption in the Eastern Caribbean despite significant renewable energy (RE) sources in these countries. Dependency on imported oil makes the countries in the region vulnerable to volatility in global energy markets, particularly price shocks. Among the OECS countries, Grenada and St. Lucia are the most vulnerable. Over 96% of the power generation capacity consists of diesel-fired power plants. As a result of heavy dependence on fossil fuels for power generation and inability to take advantage of economy of scale due to the small market sizes of individual island states, electricity tariffs in the countries have been extremely high, fluctuating

<sup>2</sup> CARICOM represents 15 countries: the Bahamas, Barbados, Belize, Guyana, Haiti, Jamaica, Montserrat, Suriname, Trinidad and Tobago in addition to the six OECS countries.

<sup>3</sup> <https://www.imf.org/external/pubs/ft/wp/2016/wp1653.pdf>



between US\$ 0.28-0.38 per kWh, with crude oil prices at around US\$66 to US\$100 per barrel. These tariffs are among the highest in the world.

**Power infrastructure in the region has been constrained due to inadequate maintenance or devastated by hurricanes.** For many OECS countries, electricity generation relies on fleets of generators running on diesel or heavy fuel oil and their operation is constrained by their age and inadequate maintenance. The power grids in the countries are ageing and their operations have been constrained by insufficient investment, inadequate maintenance, and exposure to climate hazards. The cost to rebuild the electrical grid of Grenada following heavy damage and losses in 2004 caused by Hurricane Ivan, represented 6% of GDP. In 2017, Hurricane Maria caused a complete blackout in Dominica, with more than 75 percent of Dominica's electricity distribution network damaged. The total damages amounted to around US\$33 million, equal to 65% of total net book-value of assets in 2016. In addition, revenue losses of the power company were estimated at US\$26.9 million. The financing required to repair and/or rebuild the power system following Hurricane Maria in Dominica was estimated at US\$80.68 million,<sup>4</sup> more than double the power company's total revenues in 2016.

**Countries in the region have committed to meeting substantial Nationally Determined Contributions (NDC) for transition toward a low-carbon economy but implementation progress has been slow.** The strategy consists of updating national energy policies and regulatory frameworks to support the transition, reducing reliance on imported fuels, and increasing energy-system resilience. Grenada submitted its second NDC in November 2020, targeting a reduction of greenhouse gas emissions (GHG) at 30% of the 2010 level by 2025, of which 20% will come from implementing energy efficiency (EE) measures and 10% from adding RE into the production mix. In January 2021, St. Lucia published its updated NDC, targeting a seven percent reduction of GHG relative to 2010, in the energy sector, by 2030. This level is far above the two percent targeted in St. Lucia's first NDC submission. Grenada and St. Lucia are updating their National Energy Policy and Implementation Action Plan. Both countries, with support from donors, developed their National Green Cooling Strategies in 2020. SVG has submitted its Intended NDC with a 2025 target of reducing GHG emissions by 22% compared to its business-as-usual scenario. However, despite these promising commitments results so far have been insignificant. Implementation by the government agencies has not been consistent or effective. Adequately functional regulatory frameworks to support the energy transition are not yet in place.

**The countries in the region have key legal frameworks in place for energy transition and have begun the process of address regulatory gaps for investment in EE and RE with several pilot programs under implementation.** In 2016/2017, Grenada enacted the Electricity Supply Act (ESA), which established the legal framework for the country's energy transition, and an act creating Public Utilities Regulatory Commission (PURC). The PURC became operational in July 2019. It is responsible for developing the regulatory framework to implement the ESA. The PURC has developed a modern tariff setting methodology and regulations on competitive procurement for RE generation, in line with the ESA's principles. To promote the scaling up of RE, in April 2021, PURC launched a pilot self-generation program<sup>5</sup> and based on its results, plans to develop a more extensive program. In St. Lucia, the Electricity Act, amended in 2016, has created the opportunity for electricity generation from RE by independent power producers and has established a regulator - the National Utilities Regulatory Commission (NURC). Several secondary regulations under the Act to guide implementation have been drafted with support from donors but these are still in the development stage and are not formally approved. The Net Metering Program, launched in 2009 by LUCELEC, St Lucia's electric utility, has allowed consumers to connect their photovoltaics

<sup>4</sup> Post Disaster Needs Assessment for Dominica after Hurricane Maria in 2017, GFDRR

<sup>5</sup> The Pilot Self Generator Program has PV system capacity limit of 120% consumption level for residential consumers and 60% for non-residential consumers. which allows all consumers to generate power primarily for personal consumption and sell excess to the grid with a net metering mechanism<sup>5</sup>. The program has reached the targeted limit of 1 MWp by November 2022 with 103 permits granted to household and commercial consumers and expected to be completed by April 2023.



(PV) systems and sell extra electricity to the grid. However, the program allows very limited PV capacity. It cannot exceed 5 kW for residential consumers and 25 kW for commercial customers. Since 2015, the Caribbean Development Bank (CDB) has been implementing a regional pilot project --Sustainable Energy for the Eastern Caribbean (SEEC). This project involves the six OECS countries that are members of the World Bank. Financed by a \$23 million blend of loan and grant funding, the project supports investment in energy efficiency audits and investment pilots for enhancing the EE of public buildings, the installation of PV systems, and energy-efficient street lighting.<sup>6</sup>

**The market in the region for energy-efficient equipment, distributed renewable energy equipment, and related services is limited in number, scope of services, and availability.** Surveys of the Caribbean islands in 2022, have indicated that there is no Energy Service Company (ESCO) available in the region, although there are suppliers of lighting equipment, air-conditioning services, as well as installers of renewable-energy systems. Many of these businesses are based in Barbados and St. Lucia. They are available but very few on other islands, such as Dominica and SVG. And, Grenada lacks any such services. Similarly, skill labor force in EE and distributed RE technologies is modest in the region and not equally available in some countries. Interviews with service providers have revealed that despite some improvements, such as the introduction of light-emitting diode (LED) lighting, progress in fostering EE has been limited. The adoption of LED lighting by households was partially motivated by the use of energy-efficient street lighting. According to the survey, the growth in distributed rooftop solar systems in St Lucia has been constrained by limits on the maximum capacity and multiple permits required by the utility under the net metering mentioned above. The capacity limit is considered insufficient to service commercial consumers or justify their investment in solar PVs.

**National utilities lack sufficient integration capacity and financial incentives to support solar generation systems.** The ability of electricity grid to absorb, integrate and delivering solar electricity to end users is constrained by the variability of the available solar power. In the Caribbean the challenge is higher due to the small and isolated national grid, the lack of spinning reserves, outdated networks, the absence of automation in dispatch, forecast and operate the system and adequate grid codes. Utilities in the region have limited knowledge and experience in planning and operation of solar generation. Hence, the companies are reluctant to integrate a larger volume of solar generation without adequately upgrading of the dispatch and system operation to ensure supply security and reliability. Further, the current pilot net metering schemes in several countries do not provide financial incentives to make such investments.

**Energy audits of public buildings have indicated major benefits to investing in EE and RE.** Given the limited land availability due small size and mountainous terrain in most OECS countries for large-scale, centralized, solar-powered electricity generation, EE interventions and distributed RE options, such as solar rooftop photovoltaic (PV) systems, are highly attractive in the short-and-medium terms. The results from the audits of 22 typical public buildings in St. Lucia and of 15 public buildings in Grenada, conducted in 2022, indicate that investment in EE measures and distributed rooftop solar systems are economically viable. The combined payback period of EE measures with distributed solar PV for the surveyed buildings was estimated to be less than five years. However, the constraints on distributed rooftop solar systems size in St. Lucia, noted earlier, need to be addressed to obtain the full benefits of such investment.

**By investing in EE and distributed rooftop PV systems in public buildings and facilities<sup>7</sup> (hereafter referred to as public buildings), the countries can reduce dependency on imported fuel, lower electricity costs and enhance resilience of critical public services.** Public buildings typically represent 10 percent of total electricity consumption in the OECS countries. The investment in EE and distributed solar PV systems for public buildings can have multiple benefits. First, for

<sup>6</sup> As of October 2020, the SEEC Program reported to complete 152 energy audits, nearly 21 thousand streetlights were replaced, and 400 kW of PVs were installed.

<sup>7</sup> Government buildings and facilities which include central and municipal administrative buildings, universities and schools, hospitals and clinics, stadiums, orphanages, museums and other publicly owned facilities.



the public sector, such investments can reduce electricity consumption and electricity costs, allowing the government to use financial resources saved to address other urgent public needs. This saving is particularly attractive at present given the limited fiscal space of the government budgets in the post-COVID period. Second, the consumption of less imported fuel for electricity generation, thereby reducing the need for fossil-fuel imports, can have a positive impact on the trade balance. Third, investment in EE and distributed solar systems can increase the resilience of electricity supply to critical public services in the event of grid outages due to natural hazards, provided that the installed PV systems are built with hurricane standards.

**The SOP will accelerate regional integration by multiplying benefits of a coordinated approach given the common challenges the countries are facing.** The SoP will generate benefits of the economy of scale, reduce costs and set up new technological and price benchmarks in EE and DRE which would be extended to all consumers in the region. The program is also expected to stimulate development of the regional market, create local jobs and build skill capacity for EE and DRE equipment and services across the region. The provision of technical assistance to OECS Commission as the regional entity will help to reach effectively all relevant public institutions, regulators and utilities and create a regional platform for harmonization of regulatory framework, technical and service standards, grid codes and capacity building which are key to scale up regional integration. Building capacity at the regional level and through a regional entity is most efficient way to develop, adopt region-wide technical standards and tools and to implement the project activities. Finally, a regional approach will also help expand mobilization of concessional funds with Regional IDA on top of the countries' limited fiscal space to support capacity building and infrastructure investment as part of the SoP.

**The proposed SoP is built on and will scale up the World Bank's past support in accelerating a resilient energy transition at regional and country levels, through policy, planning, regulatory, and capacity-building efforts.** The World Bank began supporting Grenada and St. Lucia in establishing their respective regulatory bodies through the first regional initiative – the Eastern Caribbean Energy Regulatory Authority (ECERA) Project (P101414), which closed in 2018. This operation was followed by the Solar PV Demonstration and Scale Up Project (P153404) in Grenada, St. Lucia, and SVG, completed in 2019. The Bank's support program has continued with the financing of investment projects in the region, such as the Dominica Geothermal Risk Mitigation Project (P161149), and the St. Lucia Renewable Energy Sector Development Project (P161316), along with extensive technical assistance programs in all four of the aforementioned countries to accelerate the development of RE and increase EE measures in support of the green transition. The governments of St. Lucia and Grenada have received parallel technical assistance to update their national energy policies. Grenada's regulatory commission has received capacity-building assistance to finalize several regulations under the Electricity Act to facilitate investment in RE. Also, St. Lucia and Grenada have received technical assistance to identify the scope of, and to design the implementation approach for, investments in EE measures and distributed rooftop solar PVs, with a focus on buildings that are government-owned and occupied. Finally, Grenada, St. Lucia, and SVG have received capacity-building assistance for increasing the electricity system's resilience and its capacity to integrate renewable energy, supporting efforts to prepare or enhance the countries' Integrated Resource Plans.

#### Relationship to CPF

The SoP is aligned with the Regional Partnership Framework (RPF) for the Eastern Caribbean countries during FY2022-FY2025 (Report No. 160349-LAC), which the World Bank's Board of Directors approved in May 2022.<sup>8</sup> The overarching objective of the RPF is to support green, resilient, and inclusive development. The RPF also promotes economic competitiveness of the countries belonging to the OECS, as these countries recover from the COVID-19 crisis. In addition to addressing their medium-term development priorities, the RPF is designed to build resilience of these countries to the

<sup>8</sup> <https://documentsinternal.worldbank.org/Search/33805694>





adverse effects of climate change and other external shocks. Therefore, the SoP is also aligned with the World Bank Group’s Green, Resilient and Inclusive Development (GRID)<sup>9</sup> (October 2021) and the Strengthening Policies, Institutions, and Investments for Rebuilding Better Pillar in the World Bank Group Global Crisis Response Framework (GCRF)<sup>10</sup> (July 2022). Specifically, the SoP is aligned with the following higher-level Outcome 1: Strengthened resilience to climate change and other shocks. The Project, as the initial operation of the SoP will help to reduce the region’s reliance on fossil fuels through investments in EE measures to reduce energy consumption by the public sector. It will also increase RE generation through the installation of rooftop solar-PV systems in public buildings, to serve their own demand and sell any surplus energy to the national grid, in order to reduce the consumption of imported fuels. The Project will also increase the resilience of energy supply for critical public facilities, such as hospitals, emergency services, schools etc., against extreme climate conditions, such as hurricanes, by reducing their reliance on imported fuel and on-grid supply, which is highly vulnerable to external fuel prices and climate extremes.

### C. Proposed Development Objective(s)

**The objective of the Series of Projects and Project Development Objective (PDO)** are to enhance the efficiency of energy use in public buildings and increase the RE supply for public buildings in Eastern Caribbean Countries.

Key Results (From PCN)

The key results and performance indicators of the Project consist of the following:

Key Results	Indicators
Increase in the efficiency of energy use in public buildings and facilities	Annual energy savings from EE improvement (kWh/year).
Expansion of resilient and green energy supply for public buildings and facilities.	Clean-energy generation from PV systems (kWh/year) in public buildings and facilities. The share of green energy use by public services. (% of total energy use)
	Number of harmonized regional regulations, standards, and tools in EE and RE adopted and implemented
Both of the above results	Lifetime GHG emissions reduced or avoided (kg of CO <sub>2</sub> eq).

### D. Concept Description

#### A. Series of Projects

The SOP is expected to include at least two operations over the period of 2023-2030. The first operation of the series will include Grenada and St Lucia. Other countries will join the subsequent operation(s) of the SoP when they are ready. All operation in the SOP will share the same PDO, similar scope of work and investment amount at national level and apply similar implementation arrangement with the regional platform to be created at the first operation. The follow-up

<sup>9</sup> <https://openknowledge.worldbank.org/bitstream/handle/10986/36322/Green-Resilient-and-Inclusive-Development.pdf?sequence=5&isAllowed=y>

<sup>10</sup> <https://documents1.worldbank.org/curated/en/099640108012229672/pdf/IDU09002cbf10966704fa00958a0596092f2542c.pdf>





operation will be benefited from the capacity building, investment planning and preparation support at the regional level by the OECS commission under the initial operation.

## **B. Project Concept**

### **A. Series of Projects**

The SoP is expected to include at least two operations over the period of 2023-2030. The first operation of the series will include Grenada and St Lucia. Other countries will join the subsequent operation(s) of the SoP when they are ready. All operations in the SoP will share the same PDO, and have a similar scope of work and investment amount at national level. And they will apply similar implementation arrangements with the regional platform to be created for the first operation. Any follow-up operation will benefit from the capacity building, investment planning and preparation support at the regional level by the OECS commission under the initial operation.

### **B. Project Concept**

The Project will be the first operation of the SoP. The selection of Grenada and St Lucia as the first two participating countries was based on their request for support, a high level of national priority given to the PDO, and readiness to implement project components. Grenada, St. Lucia, and the OECS Commission have indicated their commitment to jointly implement the Project and intend to sign a Memorandum of Understanding (MoU) agreeing to a regional institutional and procurement arrangement

The Project will assist the OECS Commission in developing regional policy and harmonizing the regulatory framework for EE and RE to support the region's energy sector strategy. The OECS Commission will ensure that the countries adopt and adhere to the policy and regulatory frameworks developed under the Project and that they will benefit all countries in the region. The Commission will also support other countries in identifying and prepare priority investments to get ready for follow-up operations of the SoP.

The economic benefits of the SoP will extend beyond country boundaries through: (i) economies of scale in procurement and transaction costs, (ii) expansion of the regional market for EE and solar PV equipment; (iii) creation of local jobs for installation, operation and maintenance services of EE and DPV systems and (iii) development of a regional public good by knowledge-sharing in activities such as procurement, operations and maintenance, and capacity-building.

The Project will support investments in EE retrofits, distributed renewable energy (DRE) systems for public buildings, as well as technical assistance at both regional and country levels.

The EE retrofits will include active and passive EE measures along with improvements in building-control systems. Active EE measures will include the replacement of existing inefficient building equipment and appliances, or installation of new energy-efficient equipment and appliances, such as lighting systems, air-conditioning equipment, ceiling fans, and refrigerators or freezers using refrigerants with low or no global-warming potential (no-GWP), where possible. Passive EE measures will include energy-efficient windows, shading, wall and roof insulation, and cool surfaces etc. Improvements in control systems will include smart controls, sensors, and energy-management systems to meet EE objectives. The Project will also support safe disposal of used equipment and materials.

The DRE systems will include DPV systems and solar water-heating systems for public buildings, along with battery storage of energy for critical public buildings, to enhance the energy resilience of these buildings and support optimal delivery of solar electricity generated to the power grid. Support also includes building the capacity of power utilities to integrate and manage energy supplied to the grid from DPVs by installing additional battery storage as necessary and modernizing their energy management systems.



Technical assistance under the Project will support the development of policies as well as regulatory frameworks for EE and RE; capacity-building for investment planning, implementation, and operation of the EE and RE systems, and strategy for safe disposal of used equipment; and materials at the regional and country levels.

The Project is envisaged to consist of the following three components:

**Component 1: Promoting investment in EE measures and distributed renewable energy systems for public buildings** (estimated cost of US\$50 million IDA loan). This component will consist of two subcomponents, as described below.

**Subcomponent 1.2. St Lucia EE retrofits and DRE systems in public buildings.** Activities under this component will include:

- (i) Technical assistance for identification, design, construction, and operation phases, such as elaboration of energy investment grade audits; preparation of technical, legal, and economic feasibility studies; for project management and technical expertise; support for verifications/certifications, etc.
- (ii) Investments in passive and active EE measures, improvements in building control systems, DPV systems, solar water heater systems and battery storage for selected public buildings as well as safe disposal of used equipment and materials.
- (i) Support capacity building to help the power utility integrate and manage DPV systems connected to the grid including the development of modern energy-management solutions and systems.

**Subcomponent 1.2. Grenada EE retrofits and DRE systems in public buildings.** Activities will include:

- (i) Technical assistance for identification, design, construction, and operation phases, such as elaboration of energy investment grade audits; preparation of technical, legal and economic feasibility studies; for project management and technical expertise; support for verifications/certifications, etc.
- (ii) Investments in passive and active EE measures, improvements in building-control systems, installation of DPV systems, solar water heating systems and battery storage for selected public buildings, as well as safe disposal of used equipment and materials.
- (iii) Support capacity building to help the power utility integrate and manage DPV systems connected to the grid, including the development of utility-scale battery storage as necessary and modern energy-management solutions and systems.

**Component 2: Regulatory Framework Development and Gender Support** (estimated cost of US\$ 5.25 million including US\$ 4 million from IDA, US\$ 0.5 million grant from Support for Small Island Developing States DOCK (SIDS DOCK) Facility and \$0.75 million grant from Canadian Clean Energy and Forest Climate Facility (CCEFCF Trust Fund.) This component will comprise technical assistance for the development of the institutional and regulatory framework to support EE and RE investments, market development, and capacity to implement the investments at regional and national levels. Activities under this component will include but not be limited to measures such as:

- (i) Support for the development of EE building codes for new buildings, guidelines for EE building retrofits, EE and appliance Minimum Energy Performance Standards (MEPS), EE labeling, and existing buildings' benchmark regulations.
- (ii) Development of regional standardized tools for implementation of EE retrofit projects in existing buildings, including but not limited to energy-audit templates and guidelines, and support for Energy Savings Performance Contracting (ESPC), including preparation of tools and templates, sample contracts, and Energy Savings Measurement and Verification (M&V) protocol.
- (iii) Support for the development of tariff regulations on distributed RE, such as net billing, standardized grid codes and contract agreements, etc.
- (iv) Design of a regional waste management strategy.
- (v) Capacity-building of key public and private stakeholders.



- (vi) A gender-focused program to support educational, training and employment opportunities for women in the energy sector of the Caribbean region.

**Component 3: Project Implementation Support, Pipeline Development, and Capacity-Building (\$6 million from IDA).**

This component will support national and region project implementation units (PIUs) in the management and implementation of the Project and associated activities. Each PIU will be strengthened through the hiring of expert consultants in key areas such as project management, technical advisory, procurement, financial management, environmental and social safeguards, monitoring and evaluation, and strategic communications as required. The regional PIU will also provide support to build investment pipelines in the region for the next project in the series, and capacity development of participating regional institutions and regional knowledge sharing events and forums.

*Table 1. Cost Estimates and Financing, in US\$ million*

Component	OECS		St Lucia	Grenada	Total
	IDA	TF	IDA	IDA	
Component 1: Investment of EE measures and DPV systems in public buildings					50
1.1 St Lucia Investment in EE and DRE			25		
1.2 Grenada investment EE and DRE				25	
Component 2: Regulatory Framework Development and Gender	2	0.5 (SIDS DOCK) 0.75(C)	1	1	5.25
Component 3: Implementation Support, Pipeline Development and Capacity Building	2		2	2	6
<b>Total</b>	<b>4</b>	<b>1.25</b>	<b>28</b>	<b>28</b>	<b>61.25</b>

**Implementation arrangements.** The Project will be implemented at the national and regional level, under a regional coordination framework. The implementation arrangements are designed to ensure strong ownership of the PDO and the implementation of components by the participating countries, facilitate synergy and economies of scale, and strengthen coordination among OECS member countries at the regional level. At the national level, the line ministries responsible for the energy sector of the two participating countries will be responsible for execution of the Project, working in close collaboration with the Ministry of Finance (MOF) and other ministries in the national cabinets for their respective project sub-components. Each participating country will have a PIU that will be responsible for planning and implementing all activities in the country under the designated activities and reporting to the responsible line ministry.

**For St Lucia.** The existing PIU under the St. Lucia Ministry of Infrastructure, Port, Transport, Physical Development and Urban Renewable (MIPTPDUR) will be strengthened with additional professional experts for implementation of the St Lucia activities under the Project. A Project National Coordinating Committee (NCC) will be created in St Lucia to include representatives of MOF, relevant ministries, National Utilities Regulatory Commission, associations of districts and municipalities, etc. The NCC will oversee the project activities at country level.

**For Grenada.** A new PIU will be created under the Grenada Ministry of Climate Resilience, the Environment and Renewable Energy (MCRERE) for implementation of the project activities in Grenada. Like St Lucia, a Grenada’s NCC will be created to include representatives from the MOF, other relevant ministries, Public Utilities Regulatory Commission etc.

**For the OECS Commission.** A regional PIU with project officers and international consultants will be created under the Sustainable Energy Unit of the OECS commission. The regional PIU will provide implementation support, overall coordination, and monitoring of the project activities by the national PIUs of the participating countries and manage the



gender program. A regional steering committee (RSC) will be created at OECS for regional coordination, standardization, and other regional related activities. The OECS Sustainable Energy Unit will serve as the secretariat of the RSC. The final structure for project execution will be elaborated upon and agreed with the participating countries and the OECS Commission during project preparation.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

Environmental risk is classified as Moderate. Key environmental risks are related to waste management, construction practices and occupational health and safety. These include generation and disposal of hazardous waste such as asbestos-containing materials, lead-based paints, refrigerants, old appliances, batteries, etc; non-hazardous materials including construction waste, LED bulbs, oil and grease; noise and dust management; and worker health and safety. Retrofitting of roofs for PV arrays may require use of pesticides, mildewcides, or other chemicals. Utility-scale battery storage could involve construction of new structures within existing government premises such as car parking areas, and works to ensure adequate drainage and access control. The Terms of Reference (ToRs) for the TA activities will be reviewed to ensure environmental and social requirements are included to enhance the positive effects. The regional waste management strategy to be developed under the project will cover the safe removal, disposal and management of the equipment, appliances and batteries. Other project risks mostly related to construction will be short-term, localized and reversible and could be addressed through standard mitigation measures and good international industry practice (GIIP) delineated in the WB Group General Environmental, Health and Safety (EHS) Guidelines. The capacity of the borrower contributes to the Moderate risk rating.

The Social Risk is assessed as Moderate. Social risks and impacts are associated with labor and working conditions, occupational health and safety (OHS), community health and safety. As the project involves procurement of solar panels, there is a risk of forced labor in the global supply chain for solar panels and solar components that require specific mitigation measures. Given the small size of the contracts expected under the project, local/national/regional, small or medium sized construction firms are expected to be contracted under the project, and thus the risks related to labor influx are expected to be limited. This will be explored further and confirmed during preparation. In terms of OHS risks, while both St. Lucia and Grenada have OHS legal framework, potential issues may arise during implementation due to weak enforcement.

As the majority of subprojects are expected to be implemented within the existing footprints of public buildings, the project is not expected to have any land acquisition impacts. However, this will be assessed during Project preparation in detail. If land acquisition in one or more subproject sites, appears to be likely, a Resettlement Framework (RF) will be prepared. Strong stakeholder coordination and communication campaigns will be necessary to get all stakeholders on board and raise awareness of energy efficiency. By appraisal, the Borrower is expected to prepare all ESF instruments, including Stakeholder Engagement Plan (SEP) and Labor Management Procedures (LMP).



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**APPROVAL**

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