



PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Medium-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title:	Low Carbon Development Path: Promoting energy efficient applications and solar photovoltaic technologies in streets, outdoor areas and public buildings in island communities nationwide		
Country(ies):	Dominica	GEF Project ID: ¹	5686
GEF Agency(ies):	UNDP (select) (select)	GEF Agency Project ID:	4969
Other Executing Partner(s):	Environmental Coordinating Unit	Submission Date:	2014-01-14
		1 st Resubmission Date:	2014-05-12
		2 nd Resubmission Date:	2014-06-10
GEF Focal Area (s):	Climate Change	Project Duration (Months)	48
Name of parent program (if applicable):		Agency Fee (\$):	164,016
<ul style="list-style-type: none"> For SFM/REDD+ <input type="checkbox"/> For SGP <input type="checkbox"/> 			

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK²:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-Financing (\$)
CCM-2	Outcome 2.1 Appropriate policy, legal and regulatory frameworks adopted and enforced	2.1 Energy efficiency policy and regulation in place	GEFTF	300,990	766,667
	Outcome 2.2 Sustainable financing and delivery mechanisms established and operational	2.2 Investment mobilized		850,000	4,750,000
		2.3 Energy savings achieved			
CCM-3	Outcome 3.1 Appropriate policy, legal and regulatory frameworks adopted and enforced	3.1 Renewable energy policy and regulation in place	GEFTF	175,494	508,333
	Outcome 3.2 Investment in renewable energy technologies increased	3.2 Renewable energy capacity installed		400,000	2,250,000
Total Project Cost				1,726,484	8,275,000

B. INDICATIVE PROJECT FRAMEWORK

Project Objective: the removal of the policy, technical and financial barriers to energy-efficient applications (e.g. lighting, air conditioning, EE appliances) and solar photovoltaic technologies in Dominica's streets, outdoor areas and public buildings nationwide (initially targeting up to 5 communities including Dubic, Boetica, Roseau, Portsmouth, for further scale up)

Project Component	Grant Type ³	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Cofinancing (\$)
1. Institutional and technical knowledge, awareness & capacity for EE applications & Solar PV technologies	TA	1. EE applications (e.g. lighting, air conditioning, EE appliances) & Solar PV institutional & technical knowledge, awareness & capacity through demos in Dominica developed	1.1. EE products & Solar PV technology support and general public outreach nationwide (e.g. 15-20 awareness raising and knowledge dissemination events targeting approx. 30,000-40,000 people in communities throughout Dominica, including vulnerable groups)	GEFTF	100,000	354,183

¹ Project ID number will be assigned by GEFSEC.

² Refer to the reference attached on the [Focal Area Results Framework](#) when completing Table A.

³ TA includes capacity building, and research and development.

			activities to confirm during the PPG phase 1.2. EE products & Solar PV technical training and capacity building for government and technicians (e.g. 30-40 training workshops targeting up to 200 primary/high school teachers, 400-500 science students, 30-50 architects/designers and 150-200 civil servants approx.) to be confirmed in PPG phase			
	Inv		1.3. EE products & Solar PV technology & pilot demonstrations in Dubic, Boetica, Roseau, Portsmouth, others) tbc during the PPG phase		273,262	1,561,932
2. Policy measures and enforcement of EE applications & Solar PV technologies in Dominica	TA	2. EE applications (e.g. lighting, air conditioning EE appliances) & Solar PV technology uptake in Dominica promoted through the adoption of policy and enforcement measures	2.1. Review and adoption of mandatory minimum energy performance standards for indoor and outdoor EE products and Solar PV technologies in Dominica (e.g. new quality standards & labels testing and setting of energy certification and audit systems for the introduction of EE products/solar PV products; building codes; self-generation licensing, rules for electrical installations; mandatory energy audit provisions) tbc at PPG 2.2. Enforcement of new rules and procedures on public sector procurement of EE products and Solar PV technologies in Dominica (e.g. rules on minimum quantity, quality and product type required to qualify for bulk procurement and related import provisions for EE / solar PV products) tbc at PPG	GEFTF	300,000	802,756

3. Financing options and mechanisms for EE applications & solar PV investments	TA	3. EE applications (e.g. lighting, air conditioning EE appliances) & Solar PV investment scaled up in Dominica through financial and institutional mechanisms	3.1. Public sector EE products & solar PV technology programs prepared for towns and island communities nationwide (e.g. initial demos will take place in 3-5 communities including Dubic, Boetica, Roseau each with a program developed for their implementation, based on which a scaled up intervention with additional co-finance is targeted ranging 10-20- tbc at PPG phase)	GEFTF	76,484	118,061
	Inv		3.2. Financial and institutional methods and mechanisms defined to support the implementation of public EE products & solar PV programs (inc. bulk procurement energy performance and savings contracts, mandatory energy audit, amongst other tbc at PPG phase)			
			3.3. Economic and fiscal instruments (e.g. tax exemptions, grants or rebates on the purchase of EE products/solar PV equipment) support and facilitate the execution of EE products and Solar PV technology public sector programs in approximately 70-80 communities nationwide (total 0.6-1 MW during project- approx. 37GWh of savings, 33 ktCO ₂ of direct / 349 ktCO ₂ indirect avoided) incl. public buildings, community areas and streets (75-100km) with indicative cofinancing tbc during the PPG phase (see Part II, paras. 7 & 9)		819,785	4,685,796
Subtotal					1,569,531	7,522,728
Project Management Cost (PMC) ⁴				GEFTF	156,953	752,272
Total Project Costs					1,726,484	8,275,000

⁴ To be calculated as a percent of subtotal.

C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
National Government	Dominica's Government Grants	Cash	7,175,000
Private Sector	EE Lighting/Appliances/Solar PV Suppliers	Cash	750,000
GEF Agency	UNDP	Cash	250,000
Multilateral Agency	CCCCC (CariCom Climate Change Centre)	In kind	100,000
Total Co-financing			8,275,000

D. INDICATIVE TRUST FUND RESOURCES (\$) REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹

GEF Agency	Type of Trust Fund	Focal Area	Country Name/Global	Grant Amount (\$ (a))	Agency Fee (\$ (b))	Total (\$) c=a+b
(select)	(select)	(select)				0
Total Grant Resources				0	0	0

¹ In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table. PMC amount from Table B should be included proportionately to the focal area amount in this table.

² Indicate fees related to this project.

E. PROJECT PREPARATION GRANT (PPG)⁵

Please check on the appropriate box for PPG as needed for the project according to the GEF Project Grant:

	Amount Requested (\$)	Agency Fee for PPG (\$) ⁶
• No PPG required.	--0--	--0--
• (upto) \$50k for projects up to & including \$1 million
• <i>(upto) \$100k for projects up to & including \$3 million</i>	100,000	9,500
• (upto) \$150k for projects up to & including \$6 million
• (upto) \$200k for projects up to & including \$10 million
• (upto) \$300k for projects above \$10 million

PPG AMOUNT REQUESTED BY AGENCY(IES), FOCAL AREA (S) AND COUNTRY(IES) FOR MFA AND/OR MTF PROJECT ONLY

Trust Fund	GEF Agency	Focal Area	Country Name/Global	(in \$)		
				PPG (a)	Agency Fee (b)	Total c=a+b
(select)	(select)	(select)				0
Total Grant Resources				0	0	0

MFA: Multi-focal area projects; MTF: Multi-Trust Fund projects.

⁵ On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

⁶ PPG fee percentage follows the percentage of the GEF Project Grant amount requested.

PART II: PROJECT JUSTIFICATION⁷

A. PROJECT OVERVIEW

A.1. Project Description. Briefly describe the project, including ; 1) the global environmental problems, root causes and barriers that need to be addressed; 2) the baseline scenario and any associated baseline projects; 3) the proposed alternative scenario, with a brief description of expected outcomes and components of the project; 4) incremental cost reasoning and expected contributions from the baseline , the GEFTF, LDCF/SCCF and co-financing; 5) global environmental benefits (GEFTF, NPIF) and adaptation benefits (LDCF/SCCF); 6) innovativeness, sustainability and potential for scaling up

i. THE GLOBAL ENVIRONMENTAL PROBLEMS, ROOT CAUSES AND BARRIERS THAT NEED TO BE ADDRESSED

1. The Commonwealth of Dominica is located between the French island departments of Guadeloupe and Martinique in the Eastern Caribbean. As many other SIDS, Dominica is largely reliant on the use of fossil fuels, with over 90% of its primary energy supply coming from oil (1.84 PJ of a total 2.0 PJ) *—see Annex I*. As fuel imports (US\$41m) represent 17.2% of the country's total imports, any increase in the share of renewables or the efficiency of electricity use would have a positive economic impact on the public budget, from the expected energy savings. The small size of its market (70,000 inhabitants) contributes to its high cost of electricity, due to the lack of economies of scale (US\$0.50/kWh average cost of electricity). The lack of reliability and inefficiency of the grid, run by private-owned national utility DOMLEC also constrain Dominica's development. Several barriers constrain Dominica's energy diversification plans (see below), and their analysis during the PPG stage will be detailed in the project document at the CEO endorsement stage:

Barrier type	Barrier Descriptions
<u>Regulatory</u> <u>Policy / Legal:</u> <i>Lack of policies promoting EE (e.g. lighting, appliances, in buildings) and off-grid renewable energy (e.g. solar) generation</i>	<ul style="list-style-type: none"> • Dominica's climate change mitigation policies and physical planning regulations are not sufficiently developed to promote energy efficiency in the construction of new buildings (e.g. public/social, hotels) and other urban infrastructure (e.g. lights, roads) and appliances (e.g. air conditioning) • Portsmouth "green city" master plan lacks the consideration of energy conservation standards necessary for low emission (energy usage) infrastructure development (e.g. municipality and public sector buildings, tourism investments, community shelters, street lights, waste facilities, social and cultural amenities) and appliances (e.g. air conditioning) • DOMLEC as private firm has little incentive to increase renewable energy generation from hydropower or alternative sources (e.g. wind power, solar energy), other than geothermal for regional exportation purposes, due to the limited economies of scale of producing electricity for a 70,000-populated country • No clarity on most appropriate procurement and licensing processes for off-grid electricity generation and energy efficient lighting/appliances in Dominica to address inclusive growth needs (local value chain), environmental benefits (GHG emissions) and social concerns (health, education, disaster risk reduction) • No restrictions on the quality, wattage and other features (e.g. life-cycle costs) of street, indoor and outdoor lighting products, EE appliances and solar photovoltaic equipment
<u>Institutional / Technical:</u> <i>Limited awareness of the benefits of EE lighting / appliances & RE technologies</i>	<ul style="list-style-type: none"> • Obsolete knowledge and information on local renewable energy endowments (e.g. solar resource assessments) in Dominica • Lack of technical expertise in national government institutions tasked to oversee sustainable energy procurement processes (e.g. quality standards, bulk EE lighting/appliances & solar PV procurement criteria) • Lack of capacity for the local market to absorb and benefit from EE and RE developments (local firms versus foreign investors, no inclusion of energy in secondary, vocational or technical training) • Government agencies responsible for the procurement of public lighting and other electrical appliances lack expertise on technical design, implementation, and financial performance of EE products/solar PV technology
<u>Market / Financial:</u> <i>No investments in low GHG emission infrastructure</i>	<ul style="list-style-type: none"> • Despite high electricity costs (nearly US\$0.50/kWh), the upfront cost of solar PV & EE in buildings/lighting/appliances deters investment in the capital Roseau and several island communities • Lack of fiscal, economic or other financial incentives to promote low carbon development investments • Market size traditionally led to monopolistic context with no incentive for generation, transmission, distribution efficiency (e.g. no feed-in-tariff to assess potential of feeding excess energy back into the grid) • Higher-quality EE & solar PV products are too expensive, so most cities, towns and communities buy conventional incandescent lamps, inefficient air conditioning, and cheaper/lower quality solar PV panel types.

2. This proposal is designed to address the above constraints, promoting low emission developments in Portsmouth and several island communities constrained by high electricity bills. These costs jeopardize Dominica's potential for environmentally sound (e.g. emissions reduced), economically feasible (e.g. local entrepreneurship) and socially inclusive development (e.g. youth, women, indigenous population), so the project contributes to the reduction of public expenditure.

⁷ Part II should not be longer than 5 pages.

ii-iv. THE BASELINE SCENARIO AND ANY ASSOCIATED BASELINE PROJECTS; PROPOSED ALTERNATIVE SCENARIO, WITH A BRIEF DESCRIPTION OF EXPECTED OUTCOMES AND COMPONENTS OF THE PROJECT; AND, INCREMENTAL COST REASONING AND EXPECTED CONTRIBUTIONS FROM THE BASELINE, THE GEFTF, LDCF/SCCF AND CO-FINANCING

3. Dominica wants to pursue a low carbon development path, from the current baseline to a mitigation scenario, as detailed and tabled below. In the business-usual scenario the country is receiving ad hoc donor assistance from various partners, mostly in grant form. China plans to donate 2,500-5,000 street LED lights, the SIDS Dock support program has included Dominica amongst the targeted countries to receive EE (area, street and indoor) lighting assistance (from the US\$1,000,000 currently planned for the Eastern Caribbean, as part of a US\$14,500,000 grant from the Denmark government), while the EU has earmarked funding for solar energy technologies (in amounts and details to be defined from the EDF 11th (European Development Fund 2014-2020)). The general public has limited awareness of the opportunities and benefits of this donor assistance, which does not carry awareness-raising, regulatory or capacity development in its scope; hence, the initial focus on the public sector (Note: the project will consider broadening the scope of the proposal to activities targeting the establishment and enforcement of standards, in order to encompass the use of the EE lighting/appliances and solar PV in the private sector market). The community and institutional beneficiaries lack knowledge on the specific technologies applicable to Dominica (quality, wattage and other features), which also come with none or limited operation, repair and maintenance support. Finally, these technologies are unlikely to make a lasting impact if additional economic and fiscal measures are not introduced by the public sector, to support its replication in the private sector (e.g. domestic/residential, hotel/commercial sectors). The project will build on the current baseline.

Component	Business-As-Usual	GEF Alternative
1. Institutional and technical knowledge, awareness & capacity for EE applications & Solar PV technologies	Grants to procure EE lighting & solar PV equipment from bilateral (e.g. China) and multi-lateral aid (e.g. SIDS DOCK), and the private sector (i.e. suppliers) for the central government (e.g. in Roseau), municipalities (e.g. Portsmouth town) and other local governments (e.g. Dubic, Boetica) lead to bulk procurement of untested products (these installations do not include lamp posts –only bulb & fixtures, but neither the solar PV panels, nor A/C units nor other EE appliances are included in existing initiatives)	Pilot demonstrations test the quality and adequacy of EE lighting/appliances & solar PV products to local conditions (testing, operation, repair and maintenance are not part of the baseline) through the: (a) training of local technicians and suppliers on the installation, operation and maintenance of these technologies; (b) education of the general public (including schools, the media, civil society) on basic features and applications of the technology; and, (c) dissemination of best practices on the long-term benefits of the equipment across government (e.g. central, local) (d) undertaking energy audits to validate, certify and report on the adequacy of EE lighting/appliance retrofits/solar PV installations for Dominica. GEF funding will cover part of the cost of the potential installations in the BAU scenario (e.g. lamp posts/EE lighting/solar PV/EE air conditioning not covered by the existing initiatives), the quality testing/training, the development of energy audit/certification systems and capacity development)
\$3,198,602	\$2,668,387 (incl. PMC)	\$530,215 (incl. PMC)
2. Policy measures and enforcement of EE applications & Solar PV technologies in Dominica	National government and multilateral agency support (e.g. Caribbean Community Climate Change Centre, UNDP) actively promote low carbon development policies with limited specification on EE product & solar PV needs in Dominica, or targets per specific products (PV types, HPS/CFL/LED lights), not including other EE appliances (e.g. A/C)	Energy performance standards reviewed and adopted in Dominica based on regional (e.g. Cuba, Barbados, St. Vincent & the Grenadines) and global (e.g. Latin America, Eastern Europe, Asia-Pacific) policy lessons and best practices for EE lighting/appliances & solar PV products, including their enforcement on bulk public sector procurement drives and phase-out of obsolete products, prior to its replication in the private sector
\$1,102,756	\$802,756	\$300,000
3. Financing options and mechanisms for EE & solar PV investments	Central and local government undertake one-off sample EE equipment retrofits (not including other EE appliances, e.g. A/C) & solar PV product installations on a few towns and island communities nationwide relying on limited donor and private sector grants	EE lighting/appliances & solar PV public investment programs developed to cover streets, indoor and outdoor public areas and buildings throughout Dominica, including package of financial, economic and fiscal instruments to support their funding, implementation and long-term service (incl. instal., operation & maintenance)
\$5,700,126	\$4,803,857	\$896,269
\$10,001,484	\$8,275,000 (incl. PMC)	\$1,726,484 (incl. PMC)

4. The project will reduce Dominica's dependence on fossil fuel-generated electricity through increased off-grid solar PV power production, and energy savings from improved efficiency of lighting and appliance use. The proposed approach (below) intends to address the technical, policy and financing weaknesses underscored above, tackle its root causes and associated risks, with an initial focus on up to 5 communities for piloting purposes (to ensure that any constraints to the deployment of the proposed technologies are addressed before nationwide scale-up)–see further in paras. 5 and 9 below.
5. **Component 1:** Institutional and technical knowledge, awareness & capacity for EE applications & Solar PV technologies – seeking to address the barrier related to limited technical knowledge, capacities and awareness about economic viability, as well as social and environmental benefits of EE lighting/appliances and Solar PV by supporting selection, design and implementation of demonstration projects featuring a range of viable technologies and financial/institutional models for future replication:
 - (1.1) *Energy efficiency products and solar photovoltaic technology support and general public outreach nationwide* – The project will organize media coverage and other public outreach on EE lighting/appliances and solar PV technologies, using completed demo-projects to illustrate and visualize their social, economic and environmental benefits (e.g. 15-20 awareness raising and knowledge dissemination events targeting approx. 30,000-40,000 people in communities throughout Dominica, including vulnerable groups) – Note: the specific activities and targeted audiences will be confirmed at the PPG phase. This awareness- raising will be essential to build support for the national / sub-national and local programs in public buildings, areas and streets;
 - (1.2) *Energy efficiency products and solar photovoltaic technical training and capacity building for government and technicians* – The project will organize and deliver seminars or the equivalent for technical specialists in government agencies and the local private sector on both technologies, covering best practices in EE lighting/appliance and panel design, installation, and monitoring and operations, repair and maintenance (e.g.30-40 training workshops targeting up to 200 primary/high school teachers, 400-500 science students, 30-50 architects/designers and 150-200 civil servants approx.). Training will be delivered in conjunction with planning for and implementation of demonstration projects to maximize learning-by-doing elements (including energy audit and certification of quality standards & labelling systems) and potential for subsequent replication;
 - (1.3) *Energy efficiency products and solar photovoltaic technology pilot demonstrations in island communities and towns (e.g. Dubic, Boetica, Roseau, Portsmouth, others)* – The project will organize the design and execution of pilot demonstrations (e.g. EE product retrofits (including air conditioning) and new LED installations, solar PV panels in (a) central government (i.e. Roseau); (b) municipal entities (e.g. Portsmouth); and, (c) small island communities in Dominica (e.g. Dubic, Boetica, etc). For selected projects, audits will be conducted to provide rigorous information on available energy savings and projected financial returns. The project will also provide technical guidance on project design and will oversee quality control, monitoring, data collection, and compilation and dissemination of results, and address certification/testing issues to be detailed at the PPG stage.
6. **Component 2:** Policy measures and enforcement of energy efficient applications and solar photovoltaic technologies in Dominica – focusing on the development and implementation of policy instruments to promote these technologies nationwide. These include measures to technical standards for EE products; EE products and PV panel provisions in codes on the energy performance and health of streets, public buildings and areas; and procurement law and accompanying rules for public institutions. These policies will support national, municipal and community EE demonstrations (component 1) and investments (component 3). The project will assist in the drafting of legislation, including compilation of technical information, delivery of national and international expertise, definition and justification of proposed provisions, and coordination among partners and other stakeholders, including government ministries as well as other constituencies. Finally, the project will work to promote increased bulk purchasing of EE products and solar PV panels by Dominica that are compatible with national laws, which will need to have technical criteria or energy performance requirements for specific product types. The review will also present international experience with laws, regulations, and enforcement mechanisms, as well as market-based or tax-related incentives for EE lighting/appliances and solar PV:
 - (2.1) *Review and adoption of mandatory minimum energy performance standards for indoor and outdoor EE products and Solar PV technologies in Dominica* –e.g. new quality standards & labels testing and setting of energy certification and audit systems for the introduction of EE lighting/appliances/solar PV products; building codes; self-generation licensing, rules for electrical installations; mandatory energy audit provisions). For instance, by defining a maximum lighting density (Watts per square meter) and other criteria for installations, following a comprehensive review of international experience with laws, regulations, and enforcement mechanisms with regard to EE products and solar PV, as well as market-based or tax-related incentives for these technologies, which provides recommendations and road-map for their gradual introduction in Dominica;
 - (2.2) *Enforcement of new rules and procedures on public sector procurement of EE products and Solar PV technologies in Dominica* – the project will elaborate and deliver recommended processes and criteria, including performance and life-cycle costs for public agencies to use in bulk procurement of EE lighting/appliances and solar PV products based on international best practices (e.g. rules on minimum quantity, quality and product type required to qualify for bulk procurement and related import provisions for EE / solar PV products)–further details on the enforcement mechanisms will be obtained during the PPG phase.

7. **Component 3: Financing options and mechanisms for EE applications & solar PV investments** – drawing upon results of the EE lighting/appliance and solar PV pilot demonstrations, the project will provide both technical assistance and catalytic direct investment to support the replication of selected retrofits and installations in Dominica:

(3.1) *Public sector EE products & solar PV technology programs prepared for towns and island communities nationwide* – Each program will include assessment of potential for energy saving from public lighting/appliance procurement in selected location, estimates of the required investment, proposed EE lighting/appliances and solar PV solutions with justification regarding their cost-effectiveness (e.g. initial demos will take place in 3-5 communities including Dubic, Boetica, Roseau each with a program developed for their implementation, based on which a scaled up intervention with additional co-finance is targeted ranging 10-20-tbc at PPG);

(3.2) *Financial and institutional methods and mechanisms defined to support the implementation of public EE products & solar PV programs* – working with the Environmental Conventions Unit, central government in Roseau, Portsmouth town council and island community authorities (Dubic, Boetica) to advise on potential sources and combination of financing sources and modalities (including bulk procurement, energy performance and savings contracting, mandatory energy audits, amongst other instruments to be considered during the project preparatory stage) with a view of identifying such mix which best suits the risk/reward profile of EE lighting/appliances and solar PV investors;

(3.3) *Economic and fiscal instruments support and facilitate the implementation of EE lighting/appliances and Solar PV technology public sector programs* – for instance, subsidies, grants or rebates; tax and import deductions; bulk EE product / solar PV purchasing. The cost of these incentives will be estimated during the PPG stage (indicative project activities include undertaking techno-economic assessments/sensitivity analyses of the different fiscal incentives to be considered, and how long they would need to be in place). The different alternatives to finance these incentives will be piloted during the GEF-funded period, in order to select those that would trigger future investments. The objective is that these incentives do not need to be in place beyond project completion, as both the public and private sector are aware of the benefits (payback period, net present value) of their investments in EE lighting/appliances and solar PV. Note: nationwide EE lighting scale-up would be possible with currently identified co-financing, additional funding is expected to be identified during the PPG preparatory phase for EE appliances, including air conditioning, as well as solar PV. For all 70-80 pilot demonstrations (to also include up to 75-100km of street lighting), the project will organize the solicitation of proposals from local entities and select projects based on their technical viability, replicability, and co-financing potential.

v. **GLOBAL ENVIRONMENTAL BENEFITS (GEFTF, NPIF) AND ADAPTATION BENEFITS (LDCF, SCCF)**

8. The corresponding global environmental benefits associated to the above outcomes are estimated below (50% average expected energy savings). The MtCO₂e emission reductions will be confirmed during the project preparation stage:

GHG emission reduction	Activity * Emission Factor: 0.9 tCO ₂ e/MWh (avg.) ** Load Factor Range: 12-33% (2-5kWp systems)	Annual energy output (MWh)**		Total energy saving / generation, MWh	GHG emission reduction, tCO ₂ e*		Unit Abated Cost (US\$ / tCO ₂ e)
		BAU	Project		Annual	Total	
Direct *** *** 4yr project lifetime	Pilot demos - EE lighting / appliances retrofits/new fixtures (A/C,LED)	1,906	953	3,812	858	3,431	
	Pilot demos - Solar PV installations (32 x 5kWp)	934	467	1,869	420	1,680	
	Public programs - EE lighting/appliances /Solar PV retrofits (1MW)	15,848	7,924	31,695	7,131	28,525	
TOTAL Direct:						33,636	59.46
Indirect	Policy/financial derisking for EE lighting/appliances /solar PV (10MW) investments (60% causality)	58,400	29,200	350,400	26,280	315,360	6.34
TOTAL Direct + Indirect:						348,996	5.73

vi. **INNOVATIVENESS, SUSTAINABILITY AND POTENTIAL FOR SCALING UP**

9. The UNDP/GEF renewable energy de-risking approach will be combined with energy efficiency market transformation approach for SIDS:

(9.a) *Innovativeness* – Planned solar PV and EE lighting interventions in Dominica, based on expected bilateral grants (e.g. China) or private sector donations (e.g. Phillips) do not consider the any of these market transformation/policy de-risking approaches. Rather, they focus on the procurement of equipment with limited scope for training. The project will address constraints requiring further consideration, for instance, permit risk (e.g. bulk procurement processes), technology/resource risk (e.g. local content/O&M skills) or social acceptance (e.g. reliability), amongst others.

(9.b) *Sustainability* – The project interventions will continue after the GEF-funded period based on the expected energy savings promoting expansion across the public sector (e.g. reduced utility bills), and its scale-up potential in the private sector (e.g. small and medium sized hotels, residential housing). The GEF-funded project is targeting selected public buildings in central government (e.g. Ministry of Environment), local municipalities (e.g. Portsmouth Town Council) and island

communities (e.g. Dubic, Boetica) for pilot purposes. It is expected that the co-financing currently associated to the project, will help cover the entire country, once the GEF intervention addresses the barriers to the successful deployment of EE products and solar energy technologies in Dominica.

(9.c) *Scale-up potential* – The demonstration of the benefits of EE lighting and Solar PV (emission reductions, energy savings) is expected to catalyze public investment across central and local governments in the entire country, to reduce the hefty electricity costs incurred when connected to the grid –cost/benefits at current US\$0.50/kWh bill estimates: (a) solar PV expected to be reduced to US\$0.30/kWh, lower for off-grid installations; (b) EE air conditioning payback period of 2-4 years; and, (c) EE lighting payback period of 3-6 months. In addition, individuals and commercial sectors (e.g. tourism) are also expected to invest in these technologies. The project is supporting the development of a critical mass of local technicians (suppliers, installers) and small-medium ESCOs whose services will be marketed or demanded by both the public and private sectors. The Ministry of Finance in collaboration with ECU will undertake regular reviews of the effectiveness of the fiscal incentives, to ensure these instruments can also support scale up in the private sector beyond the GEF-funded period.

A.2. Stakeholders. Identify key stakeholders (including civil society organizations, indigenous people, gender groups, and others as relevant) and describe how they will be engaged in project preparation:

10. The project will be executed by the Environmental Conventions Unit (ECU), which will provide strategic oversight in collaboration with a range of institutions (see below non-exhaustive list) to ensure the project achieves its objectives. The Ministries of Environment, Finance and Energy will play a crucial role in the development, management and financing of the economic and financial incentives for EE products and solar PV installations proposed by the project. The Ministry of Finance has overseen fiscal policy since the country's independence and will continue to do so after the project is closed (particularly when the project success under the GEF-funded intervention is scaled up nationwide, and its replication is promoted in the private sector (domestic, residential, commercial, and industrial sectors). The amount financing required for these instruments cannot be determined at this point, as it will also depend on the amount of co-funding realized during project implementation from other multilateral donors (e.g. EU) and private sector (e.g. Phillips).

Type	Examples	Expected Roles
<i>Public Sector</i>	MENRPP&F	Host of the ECU/GEF Focal Point, the Ministry of Environment, Natural Resources, Physical Planning & Fisheries will ensure project consistency with Dominica's 2012-2020 Low Carbon Climate Resilient Development Strategy and its ratified UNFCCC obligations.
	MPWE&P	The Ministry of Public Works, Energy & Ports will oversee policy developments and implementation promoted by the project on lighting/appliances & electricity self-supply
	Ministry of Finance	The Ministry will play a crucial in the development of economic and fiscal incentives for the promotion of EE products and Solar PV imports in the public (and later) private sector
	Bureau of Standards	Dominica's Bureau of Standards will be engaged to ensure EE products and solar PV equipment imported meet quality requirements and qualify for any proposed incentives
	IRC	The Independent Regulatory Commission regulates Dominica's provision of electricity services and will be key in the project in its oversight over quality and reliability of supply
	Portsmouth Town Council	Portsmouth municipal entity will ensure the project contributes to the town's green city master plan, and creates the enabling conditions for private sector replication / scale-up
<i>Donor partners</i>	UNDP	GEF agency that will provide implementation oversight, project assurance and support, in addition to co-financing. It will ensure project documentation is completed on schedule.
	SIDS DOCK	The platform hosted by the Caribbean Community Climate Change Centre (5Cs) and supported by UNDP and the World Bank will provide technical and financial assistance.
	Multi/bilateral donors	China has expressed interested in donating 5,000 EE lights (e.g. LEDs) to the government, with other donors (e.g. Denmark, EU) planning similar efforts (via SIDS Dock/ SE4All).
<i>Private sector</i>	DOMLEC	Dominica Electric Services Co. is the private-owned and sole electricity utility, and will be engaged so grid quality does not impact EE products, and off-grid generation takes place.
	EE lighting / appliance/solar PV suppliers	Phillips and other international EE lighting/appliance companies (e.g. Osram, GE) will be engaged to support the pilots, and contribute to the capacity development efforts of local suppliers/installers (e.g. EMS Ltd, others) to ensure effective operation and maintenance.
<i>Civil Society</i>	Dominica NGO network	Dominica National Council of Women, National Youth Council and Dominica Youth Environment Organisation (DYEO) Inc., amongst others will be actively engaged in EE products / solar PV awareness-raising activities.

A.3. Risk. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable):

11. This project faces a number of inherent risks. Attention will be paid to the following key five (5) risks from the project preparation stage. Additional mitigation measures will be considered at CEO endorsement stage, as necessary.

Risks	Likely	Remedial actions
1. Climate variability in Dominica exacerbating extreme weather events, such as hurricanes, severe storms and other patterns leading to infrastructure disruption	High	The climate resilience of the proposed EE lighting/appliance and solar photovoltaic installations will be addressed by ensuring that the design and installation of the systems places emphasis on their ability to withstand extreme conditions. Implementation will target public buildings and infrastructure expected to be used as shelter during extreme weather events (e.g. hurricanes, cyclones, storms). The proposed solar PV installations will be an integral part of the disaster risk management activities led by the Office of the Prime Minister (incl. backup support / emergency function), which will help spread the use of solar PV as another means of climate adaptation for the population of Dominica, particularly as the occurrence of extreme events increases.
2. Lack of coordination amongst various stakeholders and partners with various energy and climate change roles and responsibilities in Dominica	Medium	The project will ensure the coordination and integration of support to energy and climate change objectives, in line with Dominica's Low Carbon Climate Resilient Development Strategy, hosting the project at the Environment Conventions Unit (ECU) of the Ministry of Environment, Natural Resources, Physical Planning and Fisheries. ECU will ensure collaboration with and amongst energy and finance counterpart ministries, the electricity regulator (IRC) and the utility (DOMLEC).
3. Limited public sector uptake after EE lighting / appliance solar PV grant-funded pilot demonstrations take place	Low	The costs and risks associated with the proposed EE lighting/appliance and solar PV infrastructure will be shared between the project, the Government and the private developers who are expected to engage with, and invest in, this project. The project's market transformation approach will primarily focus on addressing the policy de-risking concerns the government may have before committing to investment programs. But the expected energy savings considering government hefty electricity bills provide a strong indication that further public investment will be catalyzed after the pilots.
4. Non approval of expected fiscal, economic and financial incentives to address the first-cost concerns behind EE lighting / appliance and solar PV procurement	Medium	Access to cleaner energy sources has been placed high enough in the government agenda, given the high tariffs charged by DOMLEC to central government, which are later on passed to municipalities and island communities. Therefore, budgetary allocations will be closely monitored to ensure provision is made to support planned energy- efficient lighting/appliance and solar PV investments, with the direct engagement of the Ministry of Finance.
5. Low capacity and awareness to support project formulation, preparation and start-up implementation (e.g. proposal development, tendering, oversight)	Low	The requested project preparation resources will address this concern. Actions will be proposed to ensure above-mentioned government entities and the private sector fully participate in the capacity development interventions, with the required technical and policy oversight of the project and GEF agency. The local private sector will be directly engaged in project implementation; and, the project communication strategy will target all other stakeholders, so they visualize the benefits of the EE lighting/appliances and solar PV installations.

A.4. Coordination. Outline the coordination with other relevant GEF financed and other initiatives

12. The project will coordinate with activities leading to the development of Dominica's Third National Communication (TNC) to the UNFCCC. This task is overseen by the ECU, with assistance from the GEF-financed UNDP/UNEP-supported Umbrella Programme for National Communications to the UNFCCC. The emphasis of the ECU on accurate greenhouse gas inventory will be supported by the project (e.g. demonstration of emission reductions), in line with Dominica's 2012-2020 Low Carbon Climate Resilient Development Strategy. UNDP's implementation support will also ensure scientific, technical and financial coordination with the Caribbean Community Climate Change Centre and

the World Bank, as partners in the SIDS DOCK initiative, with bilateral donor support from Denmark and Japan. Dominica is eligible to grants as a SIDS DOCK member, and the project will engage the partners of the SIDS DOCK Caribbean Energy Efficiency Lighting proposal under formulation and start-up implementation in the first quarter of 2014. During the PPG stage, before CEO endorsement, the project proposal will provide the following details:

- (i) what co-financing will be available for EE appliance activities;
- (ii) how the co-financing will be used to cover the entire country;
- (iii) what form the economic and fiscal instruments will take;
- (iv) what activities the project will implement to ensure that the incentives and subsidies set in place by the project can be sustained beyond project completion;
- (v) how the instruments developed under component 3 will be used for demonstration supported under component 1; and
- (vi) what mechanism the project will support to incentivize private banks in developing lending that they may consider more risky than other ventures.

The project documentation will consider ways to assess the remaining need for incentives before the end of the project and how to deal with them. This exercise will consider all GEF and non-GEF funded interventions taking place in Dominica, including incentives, instruments and alternative public or private co-financing (grant or non-grant).

B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

B.1. National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NCSAs, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.:

13. The project contributes to Dominica's 2012-2020 Low Carbon Climate Resilient Development Strategy. While the country considers its investments in geothermal development that would take generation capacity beyond 100MW, this project plans to contribute to 10MW generation / use through energy efficiency and solar energy sources. The GEF proposal is consistent with Dominica's First and Second National Communications to the UNFCCC, as it addresses both the policy and capacity barriers to renewable energy identified there (including the promotion of solar energy technologies), and implements several mitigation measures to promote energy efficiency (including the adoption of more energy efficient appliances). In addition, it is consistent with Portsmouth Town's Green City master plan, particularly in promoting the adoption of green standards and renewable energy sources for the sustainability of electricity consumption in buildings, public areas and streets. The project will focus on various mitigation options in line with their share of electricity consumption in the targeted demonstration areas (see Annex II), as well as Dominica's 2012-2020 Low Carbon Climate Resilient Strategy (which advocates for harnessing the country's solar energy resources and promoting energy conservation), including but not limited to solar energy technologies (e.g. photovoltaic, water heating), air conditioning and lighting. Dominica is also one of the several signatories of the Barbados Declaration on Achieving Sustainable Energy for All (SE4ALL) in all SIDS of May 2012 (including 20 SIDS from Africa, the Caribbean and Pacific regions). Its SIDS DOCK membership also directly contributes to the Sustainable Energy for All initiative. In line with these global commitments, Dominica's share of emissions of the commercial and institutional sector could well be reduced by 18-25% during the project period and 75-80% thereafter, according to reported estimates (see Annex III). The contribution of this GEF intervention to this intervention by technology, sector and associated costs of existing versus proposed technologies will be estimated during the project preparatory stage.

B.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities:

14. The project is in line with the low carbon development ambitions of Dominica and consistent with GEF-5's Climate Change Mitigation Objective no. 2 (Promote energy efficiency market transformation) and 3 (Promote investment in renewable energy technologies), resulting in an enabling environment for EE lighting/appliance solar PV technology application.

B.3. The GEF Agency's comparative advantage for implementing this project:


15. The project is consistent with UNDP's implementing mandate, capacity and presence, as captured in the 2007 GEF Council document on comparative advantages (GEF/C.31/5). Its emphasis of environmental finance for market transformation is in line with UNDP's Strategic Plan 2008-2011/13 followed in over 150 countries worldwide. The project GEF focal area falls under UNDP's Energy and Environment priority area on "Access to sustainable energy services". UNDP's capacity in this area has been recently codified in the UNDP-GEF Profile document and the UNDP-GEF publication on "Transforming On-Grid Renewable Energy Markets". This project is in line with the Signature Programme no. 1 on clean energy (solar), with the proposed policy and financial de-risking interventions targeting the island of Barbados. It is also central to the 2012-2016 UNDAF for Barbados and the Organization of Eastern Caribbean States (OECS), contributing to a key priority of UNDP's work in the region (UNDAF Outcome 1 "Environment, Energy, Climate Change and Disaster Risk Reduction") with a direct impact on Millennium Development Goal (MDG) no. 7 to "ensure environmental sustainability".

**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND
GEF AGENCY(IES)**

**A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE
GOVERNMENT(S):**

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
His Excellency Mr. Lloyd PASCAL	Director, Environment Coordination Unit	MINISTRY OF ENVIRONMENT AND NATURAL RESOURCES, PHYSICAL PLANNING AND FISHERIES	12/06/2013

B. GEF AGENCY(IES) CERTIFICATION

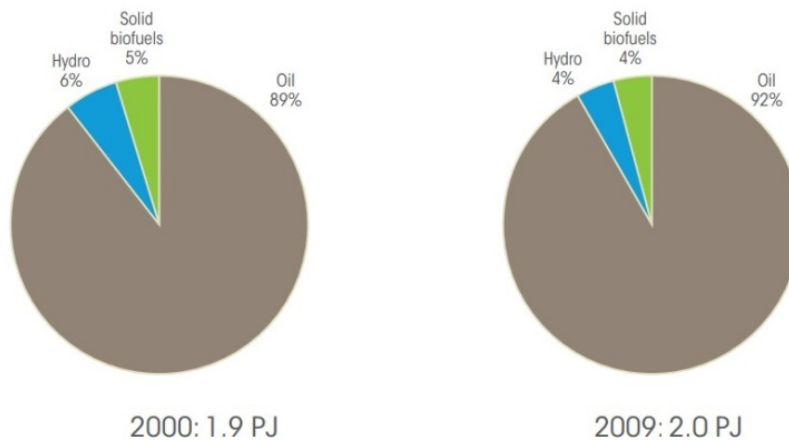
This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.					
Agency Coordinator, Agency name	Signature	DATE (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Adriana Dinu UNDP-GEF Executive Coordinator & Director a.i.		06/10/2014	Raul Alfaro- Pelico, Regional Technical Advisor, EITT	+5073024500	raul.alfaro@undp.org

ANNEXES

I. DOMINICA ENERGY PROFILE:

16. The energy matrix of Dominica is heavily fossil-fuel dependent (see Figure 1) and solar is not part of its energy mix:

Figure 1. Dominica's Primary Energy Supply in 2000 and 2009



Source: IRENA

17. The intensity of fossil-fuel generated electricity use in Dominica is in line with the regional average (see comparisons in Figure 2, below):

Figure 2. Dominica's Electricity Use (kWh) Per Capita



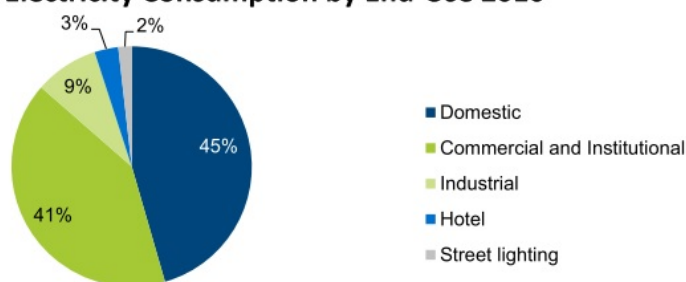
Source: IRENA

II. DOMINICA ELECTRICITY CONSUMPTION:

18. The biggest share of electricity demand is in the domestic sector (approx. 41% of electricity market share); however, Dominica's economy is driven by the services sector –commercial and institutional (approx. 39% of electricity market share, but representing 71.7% of the country's 2010 GDP), where public buildings and other government services fall under (see Figure 2 below)– with the following estimated consumption drivers (to be verified during the preparatory stage of the project): (a) air conditioning (45%), lighting (35%) and other uses/appliances (20%). In addition, street lighting is included due to its higher potential of demonstration of energy savings (estimated to 50%).

Figure 2. Dominica's Energy Demand

Electricity Consumption by End-Use 2010

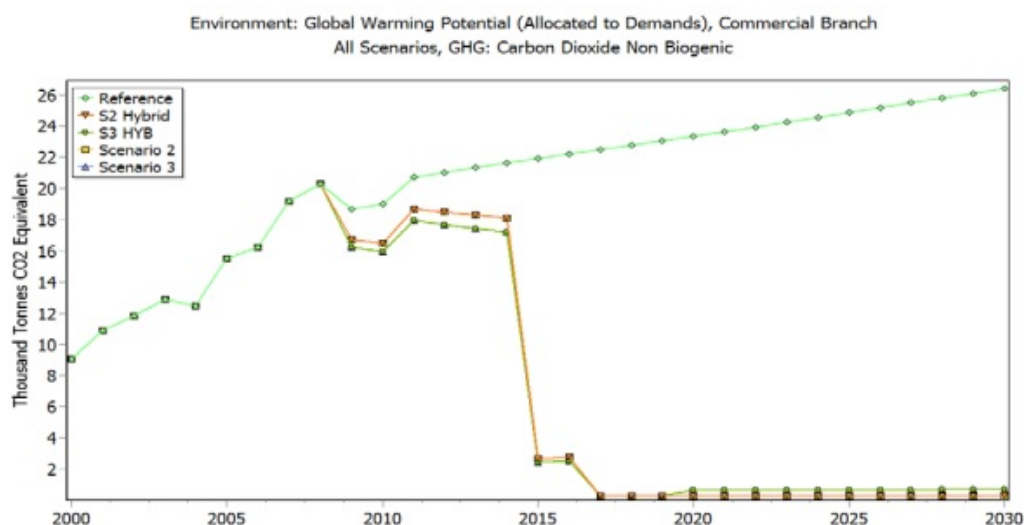


Source: ECONOLER

III. DOMINICA GHG MITIGATION COMMERCIAL SECTOR PROJECTIONS:

19. The mitigation potential within the commercial/institutional sector is significant based on recent reports to the UNFCCC. Under the below depicted scenarios (see Figure 3, below) greenhouse emissions can drop by 80% with a stronger push on general public education and the use of climate mitigation technologies (including efficient air conditioning and other solar technologies) that this project will contribute. However, the neither the Second National Communication nor other reports available at this stage provide sufficiently broken down information (e.g. by cost, sector or technology) to accurately estimate the mitigation potential by cost, sector and technologies to be targeted:

Figure 3. Dominica's GHG Scenarios: Commercial/Institutional Sector



Source: Dominica's SNC to the UNFCCC