

Policy brief on NDC mitigation targets of the CARICOM member states

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Introduction

This policy brief provides a contextual overview of the CARICOM member countries with respect to key characteristics that influence their mitigation potential, a regional overview of the NDCs, and tabular summaries of key mitigation indicators in their NDCs. Of the 14 countries reviewed, seven utilized energy policies, low-carbon development strategies and/or climate policies as a basis for producing the mitigation components of their NDCs. In this sense these seven NDCs can all be considered highly coherent with national climate and energy policies. Two countries refer to such policies in their NDCs and three mention the existence of such policies. Only two of the 14 countries make no mention of energy or climate policies in their NDCs.

These aspects of the NDCs are useful metering sticks for gauging a country's preparedness for implementing its NDC and for accessing international support to do so. Particular attention is paid to renewable energy (RE) resources for power supply, as reducing dependence on imported fossil fuels for power generation is of strategic importance for development in the region, the natural resources for doing so are, in general, plentiful, and RE investments are central to all but one of the 14 NDCs.

From INDC to NDC

Of the 15 Caribbean Community (CARICOM) members, all except Montserrat, a British Overseas Territory, submitted INDCs to the UNFCCC in the latter part of 2015.¹ The table below shows the current status of ratification of the Paris Agreement for these countries that have deposited their instruments of ratification, acceptance, approval or accession and the consequent transition of their Intended Nationally Determined Contribution (INDC) to their first Nationally Determined Contribution (NDC). The resulting NDCs are commitments under the Paris Agreement. However, it should be noted that: of the CARICOM countries, only Belize submitted a modified INDC as an NDC (the others re-submitted identical copies of their INDCs) upon ratification and; the 'obligations' / 'commitments' made in most of the NDCs are, often to a significant extent, conditional upon the receipt of international support, i.e. only a portion of their 'commitments' are unconditional.

¹ As a British Overseas Territory, Montserrat is not a Party to the Paris Agreement and therefore did not submit an INDC. Therefore, Montserrat is not included in this study.

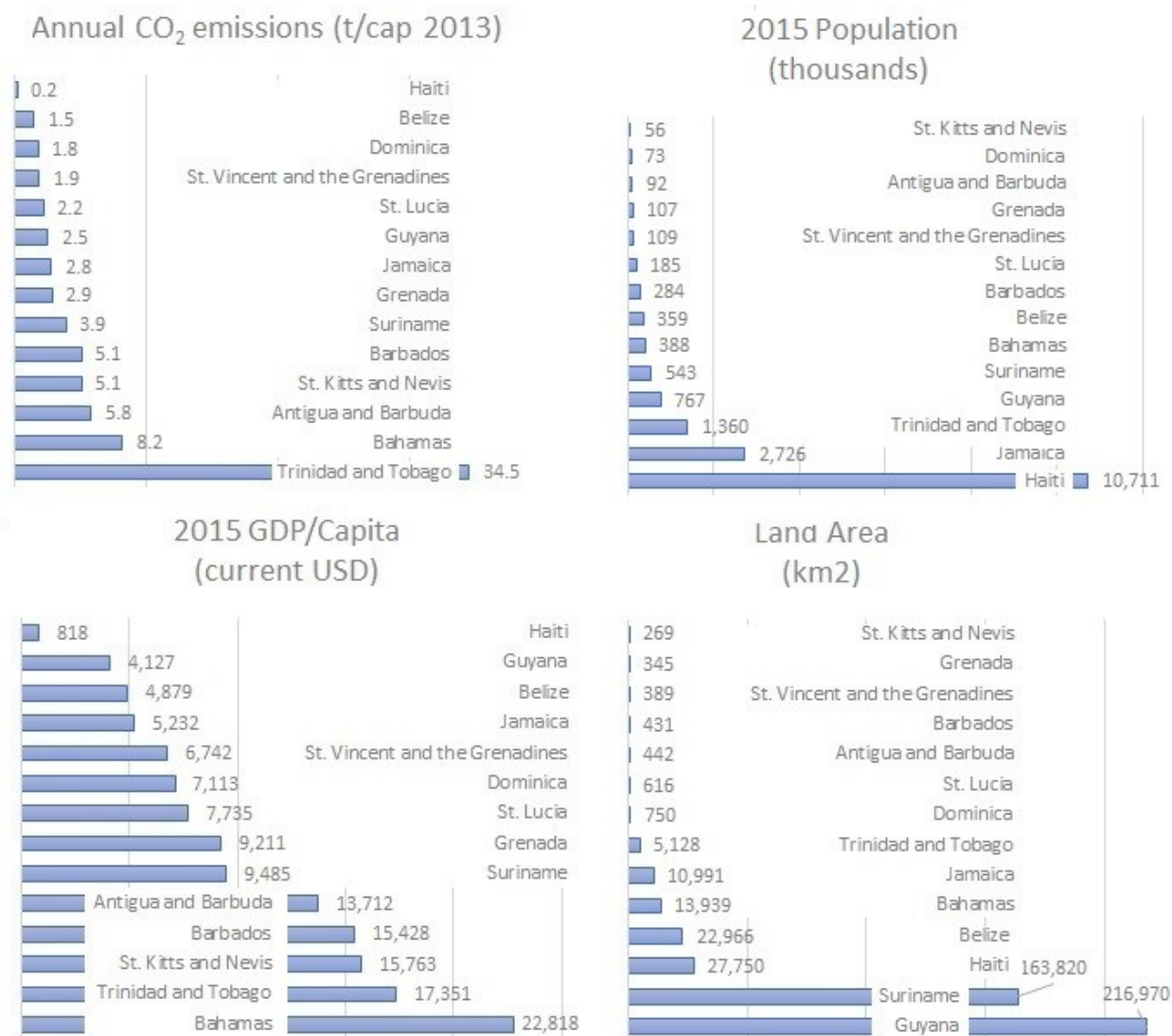
CARICOM Countries	Ratified Paris Agreement	NDC registered
Antigua and Barbuda	Y	Y
Bahamas	Y	Y
Barbados	Y	Y
Belize	Y	Y
Dominica	Y	Y
Grenada	Y	Y
Guyana	Y	Y
Haiti	N	N
Jamaica	N	N
St. Kitts and Nevis	Y	Y
St. Lucia	Y	Y
St. Vincent and the Grenadines	Y	Y
Suriname	N	N
Trinidad and Tobago	N	N

This observation is underlined in an NDC survey report just released that states in its general conclusions that: “The majority of countries are looking for support in implementing their NDCs”; “When it comes to mobilizing finance, ... public entities should be playing a key role ... in creating the appropriate enabling conditions. At the same time, the public sector recognizes that the private sector plays a key role in boosting finance mobilization, especially in countries with limited national budget”, and; “There seems to be a general preference among countries to receive support in the power sector”. The conclusions for Caribbean countries in particular state that most “...mentioned the need for national governments to receive support to enable them to develop appropriate legal and regulatory frameworks to drive/promote private sector interventions and participation in mitigation action. This seems to be fundamental in complying with mitigation commitments and reporting obligations under the Paris Agreement.”

This report has been prepared with the above thoughts in focus. Also, considering the period of ongoing transition from INDCs to NDCs, the rest of the report will use the acronym NDC as a generalized chapeau.

Regional overview – context

Beneath the surface commonality amongst the CARICOM countries – that they are all small-island or coastal low-lying developing states with low emission levels from a global perspective, and they are all heavily dependent on, imported, fossil fuels – there is considerable diversity: they differ with respect to land area, topography, population, income levels, and emission levels (see figure below).²



They also differ considerably with respect to physical renewable energy (RE) potential and public- and private-sector preparedness and potential to harness these resources. Only Trinidad and Tobago has significant fossil-fuel resources. The countries' income levels also

² The seemingly high per capita emissions in Trinidad and Tobago are a result of the country's petroleum industry and relatively developed industrial sector compared to other countries in the region rather than high per capita consumption of carbon-intensive products. Trinidad and Tobago has in fact one of the lowest emission factors for electricity, as it has already converted all of its electricity production to natural gas. Data sources: Per capita emissions, Population and GDP, World Bank <http://data.worldbank.org/country> Accessed January 2017; Land area, CARICOM, <http://caricom.org/about-caricom/who-we-are/our-governance/members-and-associate-members/> Accessed January 2017

influence the sources of international support for which they are eligible to apply. Haiti is an LDC, while The Bahamas, Barbados, St. Kitts and Nevis and Trinidad and Tobago are no longer recipients of official development assistance (ODA) and are therefore not eligible to seek support from, for example, the NAMA Facility.³ These characteristics have significant bearing on the countries' respective potential to attract financial support that would help to reduce their reliance on fossil fuels by becoming more energy efficient and utilizing renewable energy resources.

While all of the countries have solar, the national potentials for other RE resources vary considerably. As elaborated below, the "big" physical RE resources measured in MWs are geothermal and wind, followed by solar photovoltaics (PV). The countries with biomass and hydro potential are exceptions. However, despite considerable RE resource potential in the region, very little of it has been tapped.

The estimated geothermal potential in the region exceeds 900MW. However, this potential is centralized in four countries (Dominica, Grenada, St. Kitts and Nevis, and St. Lucia), with one additional country expected to have a high resource potential (St. Vincent and the Grenadines).^{4,5,6,7,8} Geothermal energy is particularly interesting because, where there are geothermal resources, they tend to far exceed the country's domestic needs. Therefore, geothermal energy offers regional promise inter-island energy solutions through export to other nearby island states. In addition, geothermal energy provides baseload (i.e., non-intermittent) power. However, geothermal resources are the most difficult to harness with respect to finance, due to their very high development costs (for both determining feasibility and costs of the investment (especially for exploratory drilling), and upfront capital investment requirements), lack of modularity (i.e., not appropriate for smaller and gradual modular investments) and lengthy development periods. Because of these hurdles, no geothermal power plants have been installed in the region to date. International finance is critical to the development of this resource and to RE development in the region as a whole. Taking geothermal out of the picture would make a huge difference in the total regional RE potential.

The World Bank's Energy Sector Management Assistance Program (ESMAP) recognizes the cost and risk of exploratory drilling as "the primary obstacle to geothermal expansion."⁹ As part of the Global Geothermal Development Plan "ESMAP is supporting identification, preparation, and supervision of 8 geothermal investment operations" including operations

³ Antigua and Barbuda may become ineligible for ODA in 2017. OECD, "DAC List of ODA Recipients," downloaded: <http://www.oecd.org/dac/stats/documentupload/DAC%20List%20of%20ODA%20Recipients%202014%20final.pdf> January 2017

⁴ NREL, Energy Transition Initiative, "Energy Snapshot Dominica," March 2015

⁵ NREL, Energy Transition Initiative, "Energy Snapshot Grenada," March 2015

⁶ NREL, Energy Transition Initiative, "Energy Snapshot The Federation of Saint Christopher and Nevis," March 2015

⁷ NREL, Energy Transition Initiative, "Energy Snapshot Saint Lucia," February 2015

⁸ NREL, Energy Transition Initiative, "Energy Snapshot St Vincent and the Grenades," August 2015

⁹ The World Bank, ESMAP, "Global Geothermal Development Plan: Providing Renewable and Reliable Power for Developing Countries," April 2016

in Dominica.¹⁰ However, the output of this support is limited to a “Gap Analysis for assessing the progress to date with Dominica's geothermal development program and identify the additional work required to complete the development of the first operation in-line with industry and international standards.”¹¹ This support does not include finance for exploratory drilling, although future support.

In October 2016, the Global Climate Fund approved finance through the Inter-American Development Bank for the Sustainable Energy Facility (SEF) for the Eastern Caribbean, which is an eight-year program intended to support geothermal development in Dominica, Grenada, St. Kitts and Nevis, St. Lucia and St. Vincent and the Grenadines.¹² The summary for this program states that, “To date, there is however no operating GE plant in any of the five Eastern Caribbean countries (ECC) of DOM, GRE, SKN, SL and SVG, due to barriers such as: (i) very high cost of undertaking projects; (ii) lack of access to capital at appropriate terms; (iii) inadequate legislative, regulatory and policy frameworks; (iv) limited fiscal space for governments to acquire new public debt; (v) insufficient specialized technical skills; (vi) lack of economies of scale; and (vii) high uncertainty during early development stages that the private sector is unable to bear due to GE resource risk.”¹³ The SEF program consists of two components: the GeoSmart Initiative, initiated by the Caribbean Development Bank (CDB), which will “offer timely and tailored financial instruments to enable sub-projects to advance step by step, through plant construction” and; regulatory framework, institutional strengthening and capacity building, which will provide “technical assistance for strengthening capacity building ... to the CDB” as well as “support to improve regulatory frameworks and institutional capacity ... to DOM, GRE, SKN, SL and SVG.”¹⁴ The SEF program anticipates resulting in “60MW of geothermal power generation capacity installed in projects facilitated or financed at some stage,” and associated emission reductions, reduction in oil imports for electricity generation, reduced spending on oil imports and reduced average electricity generation costs.¹⁵

Most of the CARICOM countries have significant identified untapped on-shore wind potential. None appear to be considering off-shore wind. The National Renewable Energy Laboratory (NREL) has published quantified estimates of the wind potential in eight of the countries.¹⁶ For these, there is an estimated total untapped physical wind potential of over

¹⁰ Ibid.

¹¹ World Bank, ESMAP, “Project at a Glance: Geothermal Development in Dominica,” July 2015

¹² https://www.greenclimate.fund/-/sustainable-energy-facility-for-the-eastern-caribbean?inheritRedirect=true&redirect=%2Fprojects%2Fbrowse-projects%3Fp_p_id%3D101_INSTANCE_Hreg2cAkDEHL%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3D_118_INSTANCE_4ZRnUzRWpEqO_column-2%26p_p_col_count%3D1%26_101_INSTANCE_Hreg2cAkDEHL_delta%3D30%26_101_INSTANCE_Hreg2cAkDEHL_keywords%3D%26_101_INSTANCE_Hreg2cAkDEHL_advancedSearch%3Dfalse%26_101_INSTANCE_Hreg2cAkDEHL_andOperator%3Dtrue%26p_r_p_564233524_resetCur%3Dfalse%26_101_INSTANCE_Hreg2cAkDEHL_cur%3D1 Accessed February 2017

¹³ Green Climate Fund, “Consideration of funding proposals – Addendum III, Funding proposal package for FP020,” September 2016

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Antigua and Barbuda, The Bahamas, Belize, Dominica, Grenada, Jamaica, St. Kitts and Nevis, and St. Lucia

800MW, but only 68MW of installed capacity. Two additional countries are considered to have high wind potential that is yet to be quantified.¹⁷ Most of the installed capacity is in Jamaica, which has 65.7MW installed and an additional 34MW in the pipeline.¹⁸ Dominica, Grenada and St. Kitts and Nevis have small wind installations. Guyana notes in its NDC that preliminary approvals have been given for a 26MW wind farm and St. Kitts and Nevis has 5.4MW of wind installations in the pipeline and an additional 20MW planned.¹⁹ In 2015 the Ministry of Energy and Energy Affairs in Trinidad and Tobago was undertaking a wind resource assessment to identify up to five potential development sites for utility-scale wind power projects.²⁰

Most of the attention to solar PV in the NDCs is to highly-decentralized installations, but there are a few cases where utility-scale investments are envisioned. Although the most equally-distributed RE resource in the region with the lowest per unit upfront capital-cost requirement (due to a very high level of modularity), according to NREL's Energy Transition Initiative "Energy Snapshot" reports as of June 2015 there was only just over 15MW of installed solar PV in the 11 CARICOM island states. Of this, the majority is installed in Dominica (6.6MW), Barbados (3.5MW), and Jamaica (3MW).^{21,22,23} Jamaica and Antigua and Barbuda have large solar PV capacity increases in the pipeline (55 and 7MW, respectively).²⁴

Although less talked about, five countries (Belize, Dominica, Haiti, Jamaica, and St. Vincent and the Grenadines) have significant untapped physical hydropower potential (collectively over 180MW).^{25,26,27,28,29} In addition, Guyana has an estimated potential of 7,000MW.³⁰ Together, Suriname, Belize, Haiti and Jamaica have over 240MW of installed capacity.^{31,32,33,34} In addition, Dominica and Saint Vincent and the Grenadines respectively have 6.5 and 5.6MW installed. Similarly, Belize, Guyana, Jamaica and Suriname have significant biomass potential, and in 2015 Belize already had 27.5MW of installed capacity.³⁵

¹⁷ Haiti and St. Vincent and the Grenadines

¹⁸ See NREL, Energy Transition Initiative, "Energy Snapshot Jamaica," April 2015, and <http://wrbenterprises.com/energy/jamaica-28mw-content-solar-project/> Accessed January 2017

¹⁹ Government of the Co-operative Republic of Guyana, "Guyana's Revised Intended Nationally Determined Contribution" submitted to the UNFCCC November 2015 and Op cit. ref. 6

²⁰ NREL, Energy Transition Initiative, "Energy Snapshot Trinidad and Tobago," May 2015

²¹ Op cit. ref. 4

²² NREL, Energy Transition Initiative, "Energy Snapshot Barbados," June 2015

²³ NREL, Energy Transition Initiative, "Energy Snapshot Jamaica," April 2015

²⁴ <https://cleantechnica.com/2016/06/28/jamaica-will-add-150-mw-renewable-energy-capacity-year/> and <http://www.pvenergyltd.com/de/news/overview/6pr.html> Accessed January 2017

²⁵ NREL, Energy Transition Initiative, "Energy Snapshot Belize," March 2015

²⁶ Op cit. ref. 4

²⁷ NREL, Energy Transition Initiative, "Energy Snapshot Haiti," June 2015

²⁸ Op cit. ref. 23

²⁹ Op cit. ref. 8

³⁰ Guyana National Development Strategy, Chapter 7: <http://www.ndsguyana.org/document.asp> Accessed February 2017

³¹ IRENA, "Renewable Energy Policy Brief Suriname," June 2015

³² Op cit. ref. 25

³³ Op cit. ref. 27

³⁴ Op cit. ref. 23

³⁵ Op cit. ref. 25

Despite the significant renewable energy resources in the region and the high dependence on fossil fuels for power production, the CARICOM countries did not capitalize on the Clean Development Mechanism (CDM) to any great extent as a source of carbon finance to support the implementation of RE projects. A review of the UNFCCC Clean Development Mechanism registry of registered CDM projects and PoAs reveals that only four CDM projects (in the Bahamas, Belize and Jamaica) and three CDM Programs of Activities (PoAs, in Haiti and Trinidad and Tobago) have been registered. Of these only one of the projects has resulted in issuances of CERs, and the last issuance was for 2012.

Regional overview – NDCs

The NDCs of the CARICOM members are as diverse as the countries themselves. They vary with respect to sectoral focus, levels of ambition, relative scale and transparency of targets, approaches to renewable energy, extent of attention to energy efficiency, anticipated use of carbon markets to finance investment, extent of conditionality, and, importantly, the level of specificity with respect to how the targets may be achieved. For example, all but one of the countries express a quantified RE target, but the targets are not easily compared. Some are expressed as a percentage of the overall energy mix, some as a percentage of the electricity and/or peak power mix, and some in megawatts (MW) of installed capacity. From development, investment and mitigation perspectives, energy efficiency is critical because the extent to which energy is wasted is a significant determinant of supply requirements. The more you waste, the more you must supply. In general, much less attention is devoted to energy-efficiency in the NDCs than to RE, and only seven provide quantified EE targets.³⁶ Only four include quantified unconditional targets.³⁷ Three include unconditional measures.³⁸ All of the countries have energy amongst their prioritized sectors (although some narrow this to power) but a few also prioritize the forest sector and a few have a broader sectoral focus.

There is a wide range of specificity in the NDCs with respect to how the intended emission reduction (ER) targets are expected to be achieved: some are very general, some provide indications of required investments, measures and tools, and one (Dominica) ties emission reductions to specific activities.

The ability to quantify emission trends and scenarios that describe outcomes with and without mitigation efforts (policies, programs and specific investments) is prerequisite to being able to reasonably estimate the potential ERs of specific measures. To produce such a quantified description one must have: a business-as-usual (BaU) scenario that breaks down the energy supply and demand sectors with respect to fuels and technologies for specific end uses; a reasonable estimate of RE potential by resource, and; an understanding of and political agreement on the policy measures and tools that can be used to stimulate changes in investment and consumption behavior.

³⁶ Barbados, Belize, Dominica, Grenada, Haiti, St. Kitts and Nevis, and St. Vincent and the Grenadines

³⁷ Haiti, Jamaica, St. Vincent and the Grenadines, and Trinidad and Tobago

³⁸ Antigua and Barbuda, Belize, Suriname

Most, but not all, of the countries express their emission-reduction targets as percentages of a BaU scenario for 2030. Some provide the physical emissions (in Mt CO_{2eq}) associated with the BaU scenario. The percentage-based targets are not as comparable as the numbers would appear to indicate. How “ambitious” the targets are and their “significance” with respect to quantities of avoided emissions depends on several things, including: the quantities of emissions in the countries; the base year chosen for the BaU scenario, and; the conservativeness of the BaU scenario calculations projecting 2030 emissions. They are not comparable with respect to the inherent challenge of achieving the targets either, which is influenced by a number of things including: how well developed their policy environment is; their institutional capacity to promote and support mitigation efforts; their natural resource base; their level of economic development, and; the strength of their private sector and its technical expertise.

Key mitigation indicators of the CARICOM member state’s NDCs

With the exception of Belize, the information in the following tables has been summarized by the authors from the INDCs submitted by the countries under the UNFCCC in the latter part of 2015. These documents were re-submitted as first NDCs by those countries that have ratified the Paris Agreement. Belize submitted a revised document as their first NDC upon their ratification. The full text INDCs (for those countries that have not ratified) and NDCs are available on the respective portions of the UNFCCC web site.^{39,40}

Antigua and Barbuda

Indicators	Quantified values	Comments
Emission-reduction target	Not specified	Conditional: by 2030, achieve an energy matrix with 50MW of electricity from renewable sources both on and off-grid in the public and private sectors
Priority sector(s)		Energy, health, tourism, agriculture, waste, water, transportation, and forestry and land use change
NDC implementation tools		<p>Conditional:</p> <p>By 2020, establish efficiency standards for the importation of all vehicles and appliances</p> <p>By 2020, finalize the technical studies with the intention to construct and operationalize a waste to energy (WtE) plant by 2025. (WtE target not considered part of the 50MW RE target)</p> <p>Unconditional:</p> <p>Enhance the established enabling legal, policy and institutional environment for a low carbon emission development pathway to achieve poverty reduction and sustainable development</p> <p>By 2020, update the Building Code to meet projected impacts of climate change</p>
RE target		<p>50MW of publicly and privately owned RE power generation capacity in energy matrix by 2030, including on- and off-grid</p> <p>By 2020 finalize technical studies with intention to construct a WtE plant by 2025</p> <p>By 2030 produce 100% of electricity demand for water services (including desalination) from off-grid RE sources</p>
EE target	Not specified	

³⁹ <http://www4.unfccc.int/Submissions/INDC/Submission%20Pages/submissions.aspx>

⁴⁰ <http://www4.unfccc.int/ndcregistry/Pages/Home.aspx>

Use of carbon market planned?	Yes
NAMA Registry and NAMA Database	None
Related policy documents	Antigua and Barbuda National Energy Policy Antigua and Barbuda Sustainable Energy Action Plan Renewable Energy Act A National Adaptation Strategy and Action Plan to Address Climate Change in the Water Sector in Antigua and Barbuda

The Commonwealth of the Bahamas

Indicators	Quantified values	Comments
Emission-reduction target	30% of 2030 BaU	Economy-wide target, entirely conditional
Priority sector(s)		Energy (wind, solar, waste-to-energy and biomass), forestry, and transport (incorporated under energy)
NDC implementation tools		Refers to National Energy Policy Implementation of “various national policies and initiatives” PPPs for RE investments Residential energy self-generation program Establishing supporting transport legislation and infrastructure for biofuels Taxation of vehicle imports tied to fuel consumption and engine capacity Lowered import duties on hybrid and electric cars Measures intended to influence vehicle use, fuels, traffic and availability of public transit EE building code Establishing a permanent National Forest Estate
RE target	30%	30% minimum of RE in the energy mix by 2030
EE target	Not specified	
Use of carbon market planned?		Open to consideration
NAMA Registry and NAMA Database		Energy Efficiency and Climate Change Planning National Energy Policy (2013-2033)
Related policy documents		National Policy for the Adaptation to Climate Change ⁴¹ Forestry Act

Barbados

Indicators	Quantified values	Comments
Emission-reduction target	44% of BaU by 2030	Conditional: Barbados intends to achieve an economy-wide reduction in GHG emissions of 44% compared to its business as usual (BAU) scenario by 2030. This translates to a reduction of 23% compared with the baseline year, 2008 Interim target: economy-wide reduction of 37% by 2025 (equivalent to a reduction of 21% compared to 2008)
Priority sector(s)		Energy (includes transport), industrial processes and product use, waste, agriculture, LULUCF
NDC implementation tools		Tax incentives to be used to encourage adoption of alternative vehicles and fuels (CNG, LPG, ethanol, NG, hybrid and electric)

⁴¹ This policy document is dated 2005. The Bahama’s INDC refers to a “National Climate Adaptation Policy” from 2006. We have been unable to locate the latter document.

RE target	RE to contribute 65% of total peak electrical demand by 2030 RE sources to be utilized include: solar PV (distributed and centralized), WtE, biomass, wind, and landfill gas capture and use for electricity generation
EE target	"Electrical EE": a 22% reduction in BaU by 2029 "Non-electrical EE": a 29% reduction compared to BaU by 2029 (includes transport)
Use of carbon market planned?	Yes
NAMA Registry and NAMA Database	NAMA in renewable energy and energy efficiency; Energy Efficiency and Climate Change Planning
Related policy documents	National Sustainable Energy Policy National Climate Change Policy

Belize

Indicators	Quantified values	Comments
Emission-reduction target	Total ER not quantified	Unconditional Enabling the existing policies, laws and projects, staff time and integration of development and climate change objectives Conditional All other Transport target: "at least a 20% reduction in conventional transportation fuel use by 2030" RE and EE targets defined (see below)
Priority sector(s)		Energy, solid waste management, transport and LULUCF
NDC implementation tools		Protection of forest reserves and sustainable forest management Reduction of fuel wood consumption Protecting and restoring mangrove forests Implementing the Sustainable Energy Strategy and Action Plan Develop transport policy and implement transport master plan Promote energy efficiency in the transport sector through appropriate policies and investments Develop and implement the National Solid Waste Management Policy
RE target	Up to 4,252Mt CO ₂ cumulative to 2030	Increasing the share of RE in its electricity mix to 85% by 2030
EE target	Not specified	Cookstoves fuel-wood target: reduction fuel wood consumption by 27 – 66% (target date not indicated) Electricity transmission and distribution: reduce losses from 12 to 7% by 2030 See also transport comment under implementation tools
Use of carbon market planned?		Willing to explore. Already working with MRV & CDM
NAMA Registry and NAMA Database		None but working with NAMAs
Related policy documents		The national development framework: Horizon 2010-2030 National Energy Policy Framework Strategic Plan 2012-2017: Integrating energy, science and technology into national development planning and decision making to catalyze sustainable development Sustainable Energy Action Plan 2014-2033 National Climate Resilience Investment Plan 2013 National Solid Waste Management Policy Growth and Sustainable Development Strategy 2016-2019 A National Climate Change Policy, Strategy and Action Plan to Address Climate Change in Belize 2015-2020

Dominica

Indicators	Quantified values	Comments
Emission-reduction target	44.7% of 2014 emissions by 2030	164.5 Gg Conditional: The target is entirely conditional Interim targets: 17.9% by 2020; 39.2% by 2025 Dominican forests will continue to sequester 100 Gg of national GHG emissions on an annual basis during the period 2020 to 2030
Priority sector(s)		Energy, transport, manufacturing and construction, and the commercial, residential, agricultural, forestry, fishing, and solid waste sectors
NDC implementation tools		RE investments in geothermal, solar PV, off-grid micro-hydro and wind Policy to gradually replace all government vehicles with hybrids Introduce incentives for private-sector purchases of hybrid vehicles Reducing the volume of organic wastes entering the national landfill Replacing streetlights in Portsmouth with LED fixtures EE retrofits program targeting lighting, air conditioning and appliances A vigorous education and awareness drive EE building code complemented with a training and CB program
RE target	>68 Gg	Of which: <ul style="list-style-type: none"> Geothermal power generation: 39.3Gg Solar PV for Hotel Sector: 0.24Gg Solar PV for schools, universities, hospitals, commercial buildings, manufacturing plants, government buildings, municipal facilities: 0.86Gg Off-grid Hybrid Micro-hydro, Wind, Solar PV, and DG Back-up for Ross University: 1.71Gg Three RE-powered mini-grids for South-East and East Coast of Dominica: 2.92Gg Promoting hybrid vehicles: 12Gg Reduce CH4 emissions from landfill: >11Gg
EE target	5.2 Gg	Of which: <ul style="list-style-type: none"> LED Streetlights in Portsmouth: 0.36Gg
Use of carbon market planned?		Yes
NAMA Registry and NAMA Database		Low Carbon Climate Resilient Development Strategy in Dominica
Related policy documents		Low-carbon Climate-resilient Development Strategy (2012-2020) National Energy Policy (draft) Sustainable Energy Plan (draft)

Grenada

Indicators	Quantified values	Comments
Emission-reduction target	30% of 2010 emissions by 2025	Conditional Committed target: 30% reduction compared to 2010 by 2025 Indicative 2030 target: 40% of 2010 emissions
Priority sector(s)		Electricity, transport, waste, forestry
NDC implementation tools		Building codes Fuel taxes and EE standards in transport sector (see EE target)
RE target	One third of the 30% total target	New RE installed capacity by 2025: 10MW solar, 15MW geothermal, 2MW wind Landfill CH ₄ capture and use for electricity: to reduce landfill CH ₄ emissions by 90%

EE target	Two thirds of the 30% total target	20 of the 2025 30% ER target comes from EE improvements in electricity use, of which building retrofits (20% reduction), building codes (30% reduction), EE in hotels (20%) Fuel blends (LNG and diesel), fuel taxes and EE standards in transport sector to reduce sectoral emissions by 20% by 2025
Use of carbon market planned?		Willing to explore
NAMA Registry and NAMA Database		None. Energy sector NAMA under development with support from the UNDP-LECB program
Related policy documents		National Energy Policy National Climate Change Policy and Action Plan (2007-2011)

Co-operative Republic of Guyana

Indicators	Quantified values	Comments
Emission-reduction target	Total ER not quantified	Conditional: Avoided deforestation: 48.7 Mt CO _{2eq} annually Energy: 100% renewable power supply by 2025
Priority sector(s)		Forests, Energy
NDC implementation tools		Forestry policies --Forest monitoring/ reduce illegal logging --Implement the Voluntary Partnership Agreement (VPA) under EU-FLEGT --Strengthen support for indigenous communities' stewardship of their lands/ REDD+ activities --Equity between the extractive sector and indigenous peoples Policies to encourage energy efficiency and the use of renewable energy --Building codes --Net-metering of residential RE --RE power for six newly established townships --Remove import duty and tax barriers for RE equipment (CFL & LED lamps) to incentivize energy efficiency --Conduct energy audits and replace inefficient lighting at public, residential and commercial buildings --Public education, awareness and tools to reduce energy consumption and expenditure
RE target		Increase share of RE by 100% by the 2025 (several RE investments in pipeline)
EE target	Not specified	
Use of carbon market planned?		Existing agreement with Norway Has MRV system Interested in green consumer markets
NAMA Registry and NAMA Database		None. Energy sector NAMA under development with support from the UNDP-LECB program
Related policy documents		National Low Carbon Development Strategy Climate Change Action Plan

Republic of Haiti

Indicators	Quantified values	Comments
Emission-reduction target	31% of BaU by 2030	Unconditional: 5% by 2030 compared to BaU (10Mt CO _{2eq}). Includes 37.5MW new hydro by 2020 and the control and regulation of used vehicle imports Conditional: Additional 26% (35Mt CO _{2eq})
Priority sector(s)		Energy, AFAT (Agriculture, Forestry and Allocation of Land), Waste
NDC implementation tools		Promoting EE stoves & charcoal production Distribution of EE lamps (see EE target)
RE target	47% increase by 2030	Increasing share of RE in electricity system to 47% by 2030, of which: 60MW hydro (24.5%), 50MW wind (9.4%), 30MW solar (7.5%) and 20MW biomass (5.6%)
EE target		Reduce fuelwood consumption by 32% by 2030 (partly through promoting the use of energy efficient stoves and partly through increasing the efficiency of charcoal production) Distribution of 1M low-consumption lamps to replace incandescent bulbs.
Use of carbon market planned?		Yes
NAMA Registry and NAMA Database		None
Related policy documents		Haiti Energy Sector Development Plan 2007 - 2017

Jamaica

Indicators	Quantified values	Comments
Emission-reduction target	10% of BaU by 2030 ⁴²	Corresponds to an emission reduction of 1.4 Mt CO _{2eq} , of which 1.1 Mt are unconditional
Priority sector(s)		Energy (includes transport)
NDC implementation tools		Jamaica will implement its NDC through the Climate Change Policy Framework and the National Energy Policy 2009-2030 Jamaica has developed a NAMA for the scale-up of renewable electricity that will be central to the full implementation of its NDC Will continue to pursue energy conservation and efficiency
RE target	20%	Increasing the share of renewables in the primary energy mix to 20% by 2030
EE target	Not specified	
Use of carbon market planned?		No
NAMA Registry and NAMA Database		Jamaica Renewable Energy NAMA
Related policy documents		Jamaica's National Energy Policy 2009 – 2030 Climate Change Policy Framework for Jamaica Vision 2030 Jamaica

⁴² The base year for Jamaica's BaU scenario is 2005, which is the most recent year for which a complete inventory of Jamaica's GHG emissions exists.

Federation of Saint Christopher and Nevis

Indicators	Quantified values	Comments
Emission-reduction target	35% of BaU by 2030	Entirely conditional Target: 35% of absolute projected BaU emissions (equivalent to an estimated 296 Mt CO ₂ reduction) Interim target: 22% by 2025 (148 Mt CO ₂)
Priority sector(s)		Electricity generation and transport
NDC implementation tools		See EE target comments
RE target	50% increase	Increase in use of RE by 50%, of which: 35MW geothermal, 1.9MW solar, 7.6MW wind, 0.5MW WtE
EE target		Reduce electricity losses by at least 50% (through metering measures) 5% reduction in national energy consumption 5% reduction in fuel consumption in the transport sector (combination of incentives and disincentives to promote purchases of fuel-efficient vehicles and retrofits of inefficient ones)
Use of carbon market planned?		Yes
NAMA Registry and NAMA Database		None
Related policy documents		National Energy Policy

Saint Lucia

Indicators	Quantified values	Comments
Emission-reduction target	23% of BaU by 2030	Entirely conditional Target: 23% reduction relative to BaU by 2030 (equivalent to an estimated 188 Mt CO _{2eq}). Base year 2010. Interim target: 16% by 2025 (121 Mt CO _{2eq})
Priority sector(s)		Energy demand, electricity generation, transport
NDC implementation tools		Proposed EE interventions: EE buildings, appliance, water distribution and network efficiency (no specific targets) Transport interventions: EE vehicles and expanded public transport (no specific target).
RE target	50% of generation by 2050	35% of energy generated using RE by 2025, 50% by 2050. Sources: geothermal, wind and solar (no source-specific targets)
EE target	Not specified	
Use of carbon market planned?		Yes
NAMA Registry and NAMA Database		None. NAMA to increase renewable energy and energy efficiency solutions and technologies in school buildings in St. Lucia under development with support from the UNDP-LECB program
Related policy documents		National Energy Policy The Saint Lucia Climate Change Adaptation Policy

Saint Vincent and the Grenadines

Indicators	Quantified values	Comments
Emission-reduction target	22% of BaU by 2025	All unconditional 22% ER compared to BaU by 2025 (2010 base year. 2025 estimated BaU 407 Mt CO _{2eq})
Priority sector(s)		EE (including domestic transport); energy generation; industry; agriculture; LULUCF; and waste management
NDC implementation tools		New building code Labelling of appliances Reducing import duties for Low Emission Vehicles (LEVs)
RE target		50% of electricity supply coming from geothermal. Renovation of hydro. Enabling and encouraging small-scale solar PV
EE target		15% reduction in electricity consumption by 2025 compared to BaU (focus: retrofit of streetlights, new building code, labelling of appliances) Transport: ~10% ER over 10 years, by reducing import duties for LEVs
Use of carbon market planned?		Yes
NAMA Registry and NAMA Database		None. Transport sector NAMA under development with support from the UNDP-LECB program
Related policy documents		Energy Action Plan for St. Vincent and the Grenadines Sustainable Energy for SVG: The Government's National Energy Policy

Republic of Suriname

Indicators	Quantified values	Comments
Emission-reduction target	Not specified	Conditional 62MW from thermal energy Only other specification is the RE target for the energy sector which may already have been met
Priority sector(s)		Forests, Renewable energy
NDC implementation tools		Unconditional Consumer awareness programs to promote EE light bulbs and building designs Removal of tariffs on RE products (done) Solar PV introduced in hinterland Study on WtE at national landfill Establishment of an energy authority
RE target	25% RE by 2025	Conditional: Further studies to explore potential of biofuels A 168MW hydropower plant A biofuel project to blend ethanol in gasoline for 60% of vehicles plus 25MW of power
EE target	Not specified	
Use of carbon market planned?		Possible use
NAMA Registry and NAMA Database		None. Transport sector NAMA under development with support from the UNDP-LECB program
Related policy documents		National Energy Plan National Climate Change Policy, Strategy and Action Plan

Republic of Trinidad and Tobago

Indicators	Quantified values	Comments
Emission-reduction target	15% of BaU in priority sectors by 2030	Conditional (partly): 15% below cumulative BaU in the three priority sectors by 2030 (equivalent to 103 Mt CO _{2eq}) Unconditional: of this, 30% ER in public-transport sector compared to BaU by 2030
Priority sector(s)		Transport (public-transport is unconditional) Power generation (conditional) Industry (conditional)
NDC implementation tools	Not specified	
RE target	Not specified	
EE target	Not specified	
Use of carbon market planned?		Yes
NAMA Registry and NAMA Database		None. Three NAMAs, in the petrochemical & heavy industry, oil & gas, and transport sectors, under development with support from the UNDP-LECB program
Related policy documents		Carbon Reduction Strategy National Climate Change Policy