



CARICOM Perspective: Caribbean Energy Policy

ENERGY CARIBBEAN CONFERENCE, 2016

HILTON, PORT OF SPAIN

WEDNESDAY 12TH OCTOBER 2016

Presentation Outline

1. CARICOM Energy Policy- General Overview
2. Geothermal Development in the Caribbean



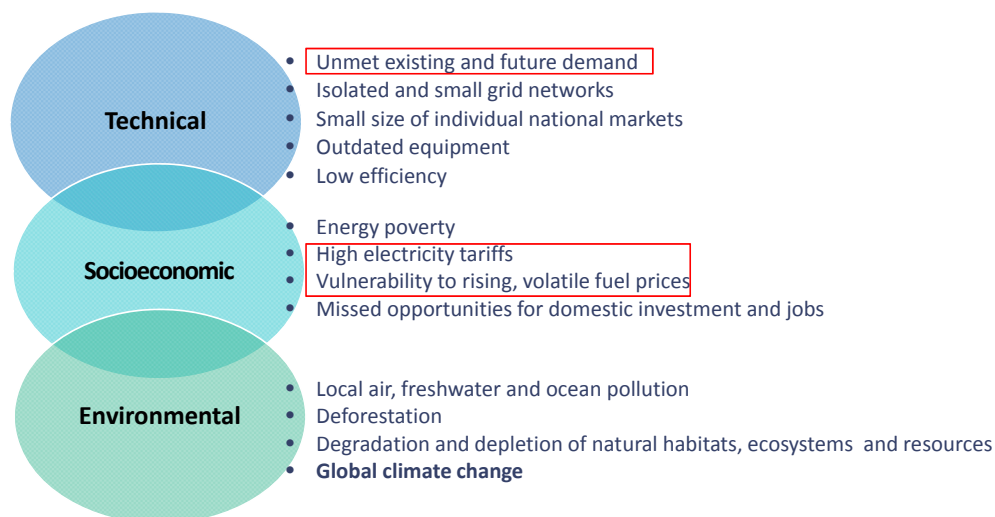
Source: BBC News

Hurricane Matthew aftermath- Haiti

International Context



CARICOM Energy & Development Challenges

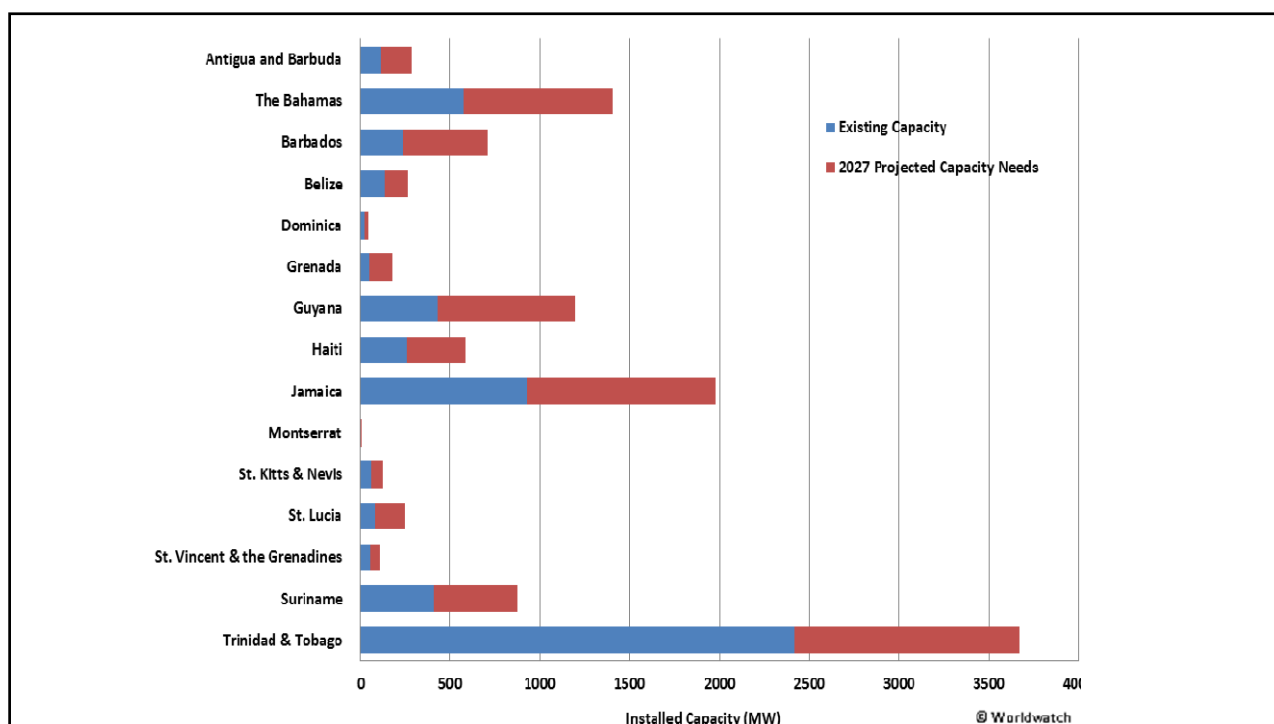


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AVERAGE RETAIL TARIFFS PER UTILITY

COUNTRY	AVERAGE TARIFF (2012)	
Antigua and Barbuda	\$ 0.43	
Bahamas	\$ 0.26	(2010)
Barbados	\$ 0.32	
Dominica	\$ 0.43	
Dominican Republic (east)	\$ 0.20	
Dominican Republic (north)	\$ 0.20	
Dominican Republic (south)	\$ 0.22	
Grenada	\$ 0.40	
Guyana	\$ 0.32	(2011)
Jamaica	\$ 0.36	
Haiti	\$ 0.38	
St. Lucia	\$ 0.38	
St. Vincent and the Grenadines	\$ 0.36	(2011)
Suriname	\$ 0.05	(2011)
Trinidad and Tobago	\$ 0.06	(2011)
AVERAGE	\$ 0.33	

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Infrastructure & Environment / Energy



Why do we need a Regional Energy Policy?

- A **cohesive and coordinated regional approach** will facilitate a broad transition and help achieve sustainable energy goals most efficiently and cost-effectively.
- Some Member States have made significant progress in advancing the production and efficient use of RETs, but regional collaboration presents opportunities to **share best practices, experience, and expertise** while drawing on a common vision and shared resources to drive development more effectively.
- Successful regional cooperation can leverage both the combined economic resources of individual states and the **complementary RE resources of the Region** as a whole.
- Integrated **Regional markets** allowing energy to be produced where it is cheapest, and then traded, can result in cost-effective sustainable energy supply options to the benefit of all participating states

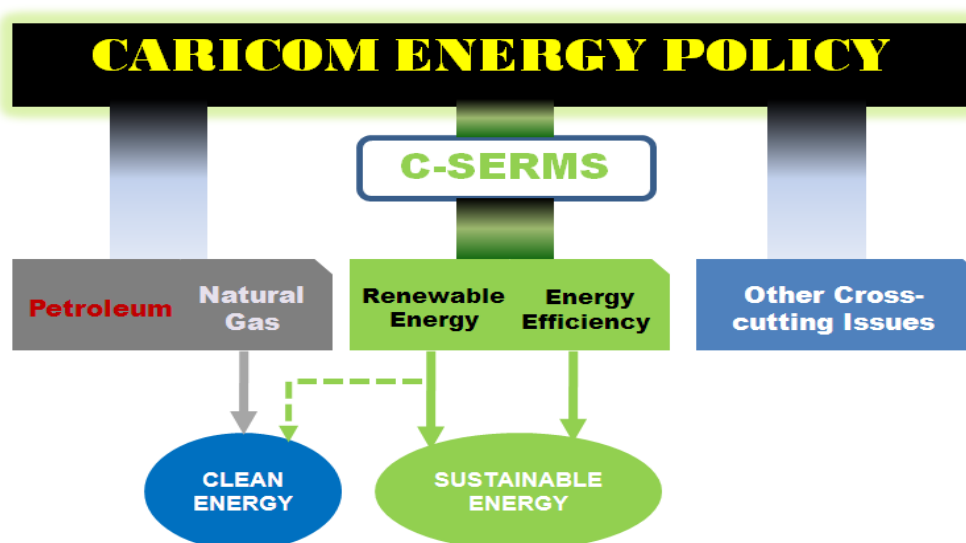
CARICOM Energy Policy

■ Approved in March 2013 at the Forty-First Special Meeting of the COTED on ENERGY

CARICOM Energy Policy Goal/Vision

“Fundamental **transformation of the energy sectors** of the Member States of the Community through the provision of secure and sustainable supplies of energy in a manner which **minimizes energy waste in all sectors**, to ensure that all CARICOM citizens have access to modern, clean and reliable energy supplies at affordable and stable prices, and to **facilitate the growth of internationally competitive Regional industries** towards achieving **sustainable development of the Community.**”

Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS)



CARICOM Targets

Regional Targets for Renewable Electricity Capacity Share

2017: 20%
2022: 28%
2027: 47%

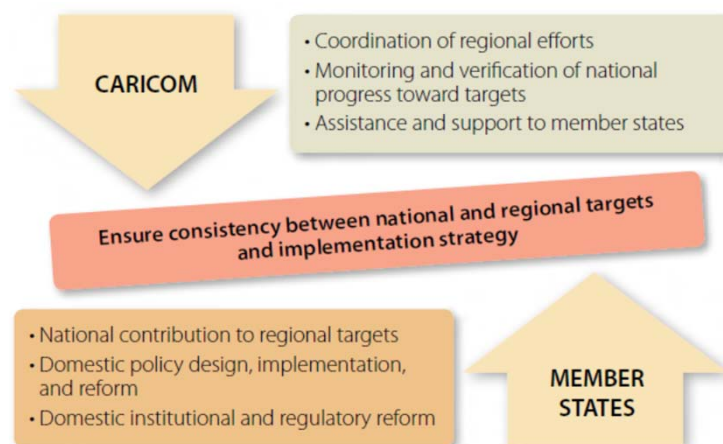
Regional Target for reduction in Energy Intensity

2027: 33%

Regional Targets for reduction in CO2 emissions

2017: 18%
2022: 32%
2027: 36%

Achieving targets through coordinated regional and national efforts



C-SERMS Overarching Goals



Information: Improve the region's energy information network by strengthening existing information systems and building awareness of renewable energy.



Capacity: Build technical capacity among players in the renewable energy field including project developers, financiers, engineers and technicians, policymakers, and planners.



Finance: Identify innovative financing mechanisms for renewable energy projects.



Policy: Support the implementation of regulatory frameworks that enable renewable energy development.

Progress made

- Establishment of Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)
- GIZ Renewable Energy and Energy Efficiency Technical Assistance (REETA) – Development of Minimum Energy Performance Standards
- OLADE CARICOM – Memorandum of Understanding
- Financing Frameworks – Sustainable Energy Facility

Liquified Natural Gas (LNG)

Advantages of LNG for the Caribbean:

- Environmental benefits
- Reduced energy costs
- Energy security and diversity of supply
- Greater flexibility in the energy system to support variable energy production

Considerations:

- costs, infrastructure, market size and scale, pricing, price volatility



CARICOM Energy Policy considerations for LNG

Where feasible, Member States will:

a) Identify and implement alternative methods and measures aimed at:

- (i) creating more efficient means to transport natural gas; and
- (ii) expanding the transportation and trade network for natural gas within the CARICOM-region

b) Co-ordinate shipping arrangements to minimize transportation costs.

➤ Regional and Extra Regional Supply Options

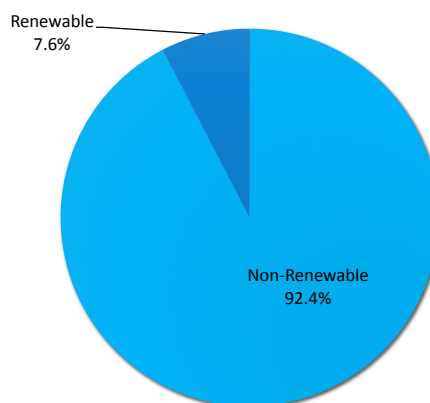
Renewable Energy sources

■ Variable- Wind, Solar

■ Hydro

■ Geothermal

Renewable Share of CARICOM Power Capacity

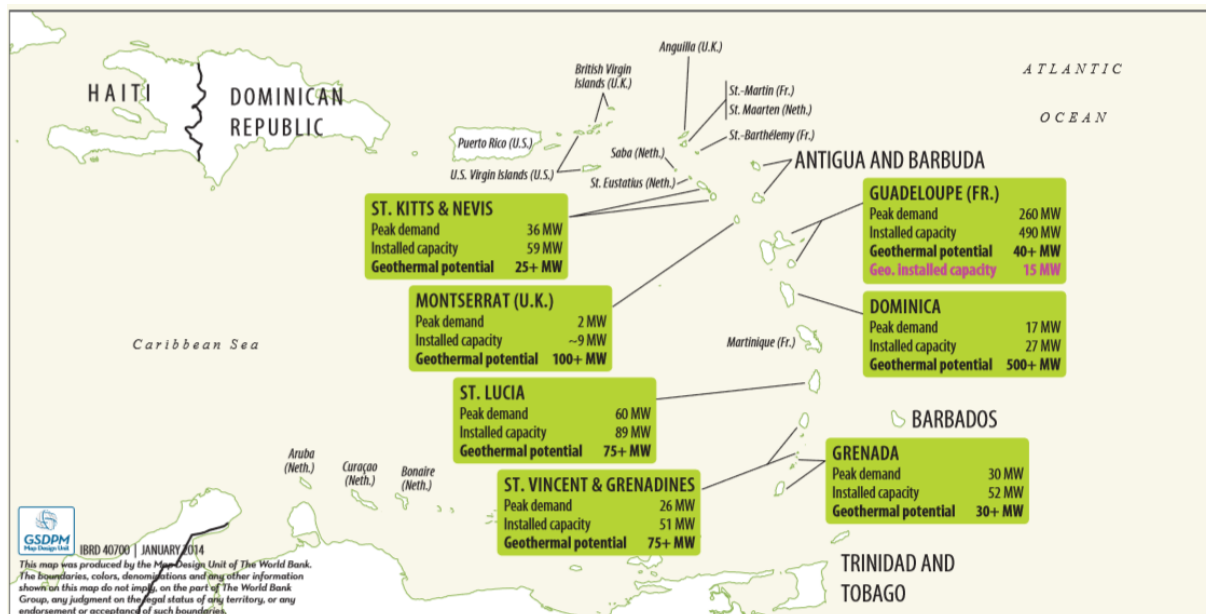


Country	Hydro	Wind	Solar	Geothermal
Antigua and Barbuda	0	400	27	0
The Bahamas	0	229	60	0
Barbados	N/A	40	39.7	0
Belize	70	N/A	42	0
Dominica	17	30	45	1390
Grenada	0.5	20	50	1100
Guyana	7,000	N/A	575.8 million MWh/yr	0
Haiti	896.5	273 GWh	1.7	0
Jamaica	33.4 -56.1	122-1,313	650- 1,876	0
Montserrat	N/A	N/A	1.5	940
St. Lucia	0.15	40	36	170-680
St. Kitts and Nevis	0	6-23.4	16	300-1280
St. Vincent & Grenadines	10	8	23	100-890
Suriname	1,700	N/A	N/A	N/A
Trinidad and Tobago	N/A	50	308	N/A

*MW unless otherwise indicated

Source: C-SERMS Baseline Report and Assessment

Geothermal Development in the CARICOM Region



Source: World Bank

Geothermal Project Status

		Dominica	Grenada	Nevis	Montserrat	St Kitts	St Lucia	St Vincent
	Project size	7MW	12-15MW	6-9MW	3-5MW	12-15MW	30MW	10-12MW
Phase 1	Surface exploration	100%	80%	100%	100%	80%	75%	100%
Phase 2	Exploration drilling	100%	2018	70%	100%	2017	2018	2016/17
Phase 3	Production drilling	100%		2016/7	2016			
Phase 4	Construction	2016/17						
Phase 5	Operation							

Barriers to Geothermal Development

- High initial cost and lack of suitable financing mechanisms
- Risks associated with finance and investment
- Lack of economies of scale and limited opportunities for plant expansion
- Lack of appropriate legislation and regulation for geothermal energy
- Inadequate human resources and technology expertise
- Limited interest of international investors for small scale investments within the isolated, distorted markets of the Caribbean
- Poor information and resources database
- Lack of appropriate regional institutional and coordination mechanism

Areas of support through a Regional strategy

- **Information sharing and knowledge exchange** in critical areas, such as resource assessment; enabling frameworks for investment (including institutional setup, laws and regulations for resource development and exploitation), and supportive policies to attract private investors;
- **Financing issues**, that target the benchmarking of financing schemes; innovative financing and risk mitigation mechanisms; and project financing models; and
- **Capacity building**, through technical assistance programmes, personnel exchange and institutional strengthening

Sustainable Energy Facility (SEF) for the Eastern Caribbean

- **IDB and CDB** have partnered to fund the **Sustainable Energy Facility for the Eastern Caribbean**: which is a **US\$71.5 million loan and grant package** to support the development of renewable energy and energy efficiency in the Eastern Caribbean nations of Antigua and Barbuda, Dominica, Grenada, Saint Lucia, Saint Kitts and Nevis, and Saint Vincent and the Grenadines.
- Under SEF, Eastern Caribbean governments and geothermal developers will be encouraged to form **public and private partnerships**. The PPP approach will encourage private partners to assume the loans and minimize the risks associated with the geothermal development.
- Once the exploration phase is concluded, the SEF will provide **concessional loans for geothermal projects** to develop access roads, production and reinjection wells, power plants, and transmission lines.
- A substantial focus of the SEF will be to provide seed resources to **CDB's GeoSMART Facility**.

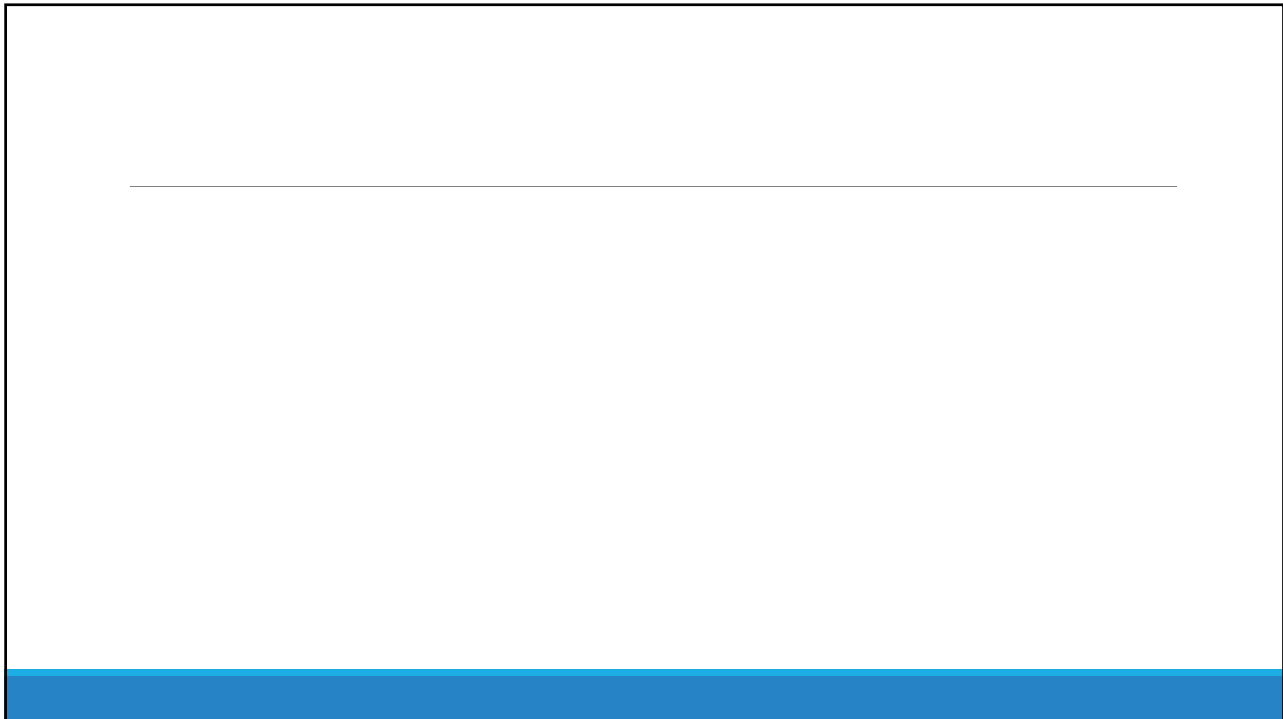
Conclusions

- The **CARICOM Energy Policy and the C-SERMS** are both critical steps towards a more cohesive approach to regional energy planning.
- Full transformation of the energy sector will be a **long term process requiring extensive commitment and dedicated collaboration** among all Member States as well as regional and international actors.
- Successful geothermal development can **positively impact energy security** within the Eastern Caribbean and wider Caribbean Community.
- Important developments occurring: Some concrete and others are still in the early phases.
- C-SERMS Phase II could play a major role in **acquiring high level data** to support investments and new developments.



Thank You

Nadia Mohammed
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C-SERMS PATHWAY

Assessing Current Status and Potential

Energy System Analysis:

- Electricity Sector
- Transportation Sector
- Production, Consumption, Transmission & Distribution
- CO₂ Emissions

Identifying Potential:

- Renewable Resource Potential
- Energy Efficiency Potential
- Infrastructure Needs

Policy Assessment:

- Governance & Administration
- RE and EE Support Goals & Policies
- Emissions Reduction Goals & Policies

Setting a
common vision

2017

Reg'l & Nat'l Targets

- Renewable Power Generation
- Energy Efficiency Improvements
- CO₂ Emissions Reductions

2022

2027

Roadmap for
the Caribbean

Priority Initiatives, Policies, Projects, & Activities (PIPPA)

- Regional Recommendations
- National Recommendations

CONCEPTUAL FRAMEWORK

The C-SERMS Platform will constitute representation from the respective groups

