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*Toward a Sustainable Energy Future:
A continuing partnership with the
Caribbean*

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The Current Energy Regime: Key Challenges

- Nearly 100% of the electricity and transportation in the Caribbean is fueled by **imported petroleum products** (T&T is the exception)
- **Electricity and gasoline costs are high and rising**; due to international petroleum prices and small scale of handling/generation facilities
- **Environmental impacts** associated with diesel generators and transportation fleets have negative effects on the environment and tourism economy



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Energy Sector Vulnerability in the Caribbean

- **Fuel supply disruptions** (weather threats to shipping, minimal storage capabilities, etc.)
- **Fuel price fluctuations** (economic hardships associated with rising costs)
- **Climate risk** (Hurricanes, sea level rise, increased frequency/strength of extreme weather events, etc.)



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Power Generation in the Caribbean

Country	Thermal	Hydro	TOTAL
Antigua and Barbuda	51	0	51
Barbados	210	0	210
Cuba	3,901	57	3959
Dominica	14	8	22
Dominican Republic	4,184	542	4726
Grenada	32	0	32
Haiti	181	63	244
Jamaica*	1,325	24	1349
Saint Lucia	57	0	57
Saint Kitts & Nevis	47		47
St. Vincent and the Grenadines	18	6	24
Trinidad and Tobago	1,416	0	1416

Source: Energy Information Administration (EIA), 2004

*Wind: Jamaica accounts for 20 MW.



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Recent Energy Sector Trends in the Eastern Caribbean

- Push to open electricity markets to competition
- Seek alternative arrangements to secure coal, oil, gas, and other fuels
- Establish policies, plans, strategies, laws, etc. that favor sustainable energy
- Promote the development and use of biofuels and bio-electricity
- Promotion of increased energy efficiency



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On-Going Sustainable Energy Programs/Initiatives in the Region: OAS Activities

- Global Sustainable Energy Islands Initiative (GSEII)
 - Geo-Caraïbes
 - St. Lucia Geothermal Project
 - Dominica Geothermal Project
 - Nevis Geothermal Project
 - US-Brazil Biofuels Partnership
 - St. Kitts and Nevis Bio-energy technical assistance
 - Dominican Republic and Haiti Biofuels (and El Salvador)
 - European Union Energy Initiative (EUEI)
- > CREBAP



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On-Going Sustainable Energy Programs/Initiatives in the Region: OAS Regional Activities

Global Sustainable Energy Islands Initiative (GSEII)

- Collaboration of Donors, Countries and other Partners
 - OAS, UNIDO, Climate Institute, ESG
 - UNF, RBF, USAID, UK-FCO/REEEP
- Comprehensive Approach
 - Established **Sustainable Energy Plan** processes: Grenada, Dominica, St. Lucia, St. Kitts and Nevis
 - Delivery of technical and policy assistance, human and institutional capacity development, and project identification activities
 - Support market transformation through project development activities



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On-Going Sustainable Energy Programs/Initiatives in the Region: OAS Regional Activities

- Eastern Caribbean Geothermal Development Project (Geo-Caraïbes) – GEF+ Funded
 - St. Lucia, St. Kitts and Nevis, Dominica
 - Partners: UNEP, OAS, AfD
 - In response to multiple previous development efforts
 - Resource exploration, Policy preparation, and Subsidized drilling risk finance
 - Catalyze multiple commercial geothermal projects and inter-island electricity transmission





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Eastern Caribbean Geothermal Development Project (Geo-Caraibes)

Key Activities

- **Technical:** Assess the resource/technical potential for the several sites and electricity interconnection scenario = **Reduce resource uncertainty and development risks**
- **Policy/Legal:** Reform legal framework and Develop Local/Regional Capacity = **Reduce contract/policy uncertainties, expedite licensing/permitting, and strengthen local inputs**
- **Financial:** Prepare Geothermal Drilling Risk Fund = **Reduce financial risks associated with initial commercial exploration**





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Eastern Caribbean Geothermal Development Project (Geo-Caraibes)

Status of Project Developments:

- St. Lucia
- Dominica
- St. Kitts and Nevis





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On-Going Sustainable Energy Programs/Initiatives in the Region: OAS Regional Activities: USA-Brazil Biofuels Partnership

- Bush-Lula agreement to cooperate and support Biofuels development in several “third-party countries”
 - Dominican Republic, Haiti, El Salvador, St. Kitts and Nevis
- OAS providing technical assistance
 - Policy/Market Reform
 - Economic analysis
 - Feasibility Studies
 - Capacity Building



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St. Kitts & Nevis Bio-Energy Feasibility and Development Program

- SKN sugar industry closed in 2005
- OAS/GSEII team assessed biomass to energy alternatives (sugar and municipal waste) (2006)
- Options could include ethanol, electricity, other byproducts





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Sugarcane Quantities and Characteristics for St. Kitts & Nevis

Parameter	Typical	Value range	Unit
Available cultivable area	6,000	5,500 – 6,500	acres
Sugarcane yield	24.5	20.5 – 32.3	tons/acre
Average distance of fields to mill	12.4	10–15	Miles
Sugarcane production	147,000	112,750 – 209,950	tons/yr
Sugarcane production	1,225	805 – 2,100	tons/day
Sugarcane fiber content (d.m.)	18.5	-	% d.m.
Projected bagasse production	27,930	21,423 – 39,891	dry tons/yr
Average length of grow cycle	303	303 – 365	days/yr
Duration of crushing/harvesting season	120	100 – 150	days/yr
Amount of reaping per ratoon planted	5	5 – 6	reaping/ratoon
Estimated cost of sugarcane as delivered to the processing plant	32.7	32.7-49.5	US\$/ton
Amount of reaping per ratoon planted	5	5 – 6	reaping/ratoon



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St. Kitts and Nevis

- Current developments
 - On-going technical assistance to Ministry (Dr. Albert Binger)
 - Reduction of available land figures (4,500 acres)
 - Preparation of land use map (Brazil/FGV)
 - Articulation/commitment to bioenergy development strategy
 - St. Kitts commitment to developer for fuel cane to energy (electricity and bio-diesel)
- Also, non-biofuels and non-geothermal developments:
 - St. Kitts MOU for 10 MW wind
 - Nevis MOU and Pending PPA for 1 MW wind



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On-Going Sustainable Energy Programs/Initiatives in the Region: OAS Regional Activities

EUEI Program: *Increasing the Sustainability of the Energy Sector in the Caribbean through Improved Governance and Management*

- Three year program to support sustainable energy development in the Caribbean
- Services: Technical assistance, capacity building, policy and planning, project identification and assessment
- Countries: Antigua & Barbuda, St. Vincent & Grenadines, Grenada, Bahamas, Dominica, St. Lucia, St. Kitts & Nevis
- Project Partners: OAS, CARICOM, CARILEC, and REEEP



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EUEI Program: Increasing the Sustainability of the Energy Sector in the Caribbean through Improved Governance and Management

Key Objectives:

1. Establish sustainable energy goals/targets through the adoption of national Sustainable Energy Plans (SEPs) in all project countries
2. Support the implementation of activities as outlined in each national SEP that addresses specific challenges or barriers.



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EUEI Program: Increasing the Sustainability of the Energy Sector in the Caribbean through Improved Governance and Management

Key Project Components:

- Establishment of a Regional Coordination Unit (RCU) in CARILEC offices, St. Lucia
- Establishment of national offices/focal points
- Development of key sustainable energy policies
- Organization of national and regional training events (including electric utility staff training, banker training and study tour to Europe)
- Project identification, assessment and preparation activities
- Transition project to CDB, IADB, others for project development
- Link to CREBAP



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Other On-Going Sustainable Energy Programs/Initiatives in the Region

- Caribbean Renewable Energy Development Project (CREDP) @ CARICOM and GTZ
- CARICOM Regional Energy Policy
- OECS Sustainable Energy Policy
- Other Bilateral and multilateral energy assistance programs (Iceland, CIDA, UK, UNDP, CCCCC...)
- [Link to the Caribbean Renewable Energy, Energy Efficiency, and Biomass Assistance Program \(CREBAP\)](#)





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Thank you!

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