



Fact Sheet #6: Energy Efficiency & Renewable Alternatives

What's the Situation?

Fossil fuels burned for energy production are the main contributors of carbon dioxide in the atmosphere and a leading cause for man-made climate change. In 2013, imported oil products in Grenada provided 93% of overall energy supply,¹ and in 2011, transportation accounted for 50% and electricity accounted for 40% of energy use.²

Though its overall contribution to global energy usage is very small – the Caribbean and Latin America together contribute only 11% to global GHG emissions³ -- Grenada's oil imports cost an average of 83.3 million EC dollars per year,⁴ and the country remains heavily dependent on these imports.⁵

Reducing fossil fuel imports would save money as well as reduce Grenada's carbon footprint. The Grenadian government has set ambitious targets to reduce greenhouse gas emissions (GHGs) through a combination of energy efficiency and introduction of renewable energy, including wind, solar, or geothermal. In its National Energy Policy, Grenada has pledged to reduce GHGs emissions by 20% and to be getting at least 20% domestic energy from renewable sources by 2020.⁶ Grenada's goal is to have 100% green energy by 2030.⁷

However, as with many Small Island Developing States, Grenada's shift to renewable options has faced technological challenges, a shortage of low-cost financing, and problems of economies of scale.⁸ Renewables are, however, imperative for a sustainable future, and outdated policies are beginning to change. In Grenada, the utility company GRENLEC has pledged that between 2013 and 2015, it will shift to providing 11% of energy from renewables.⁹

GRENLEC's 2014 strategic plan identified a range of alternative energy projects – wind, solar-wind hybrid, geothermal, and photovoltaic -- that it plans to launch within five years.¹⁰ A number are already up and running, including two photovoltaic (PV) installations for the National Water and Sewage Authority; one of which paid for itself within one year.¹¹ A ground-mounted solar system built in Petite Martinique has a 30kW PV capacity, which represents 20% of peak electricity demand,¹² while a wind energy project scheduled for completion in Carriacou in 2016 has the capacity to generate almost 60% of Carriacou's energy.¹³

Negative Tourism Impacts:

Grenada's tourism industry is the island's largest, as well as the biggest contributor to GHG emissions. Over 98% of tourists arrive in Grenada by plane or cruise ship,¹⁴ which means they have created a considerable carbon footprint even before they set foot on the island. Within Grenada, CARIBSAVE

estimates that the tourism sector is responsible for as much as 59% of the island's emissions¹⁵. This figure includes aviation and accommodation, but excludes the cruise sub-sector and waste disposal on land. Energy and water, along with wages, are typically a hotel's largest cost centers. Despite this, the tourism industry is often extravagant and careless in electricity consumption: lights are left on in hotel rooms, fossil fuels are used to heat water, and air conditioning is considered essential.

Tourism Solutions:

The tourism industry has begun to make considerable advances in energy efficiency and transitions to renewables. Consumer demand studies reveal that tourists are also seeking to offset carbon emissions from flights, stay in environmentally friendly hotels, and enjoy more sustainable vacations overall.¹⁶ Throughout the Caribbean, a number of tourism businesses, specifically hotels, have made energy efficiency and use of renewables a priority. The Caribbean Hotel Energy Efficiency and Renewable Energy Action (CHENACT) is available to members of the Caribbean Hotel & Tourism Association, which has the goal to "improve the competitiveness of small and medium sized hotels (<400 rooms) in the Caribbean region through improved use of energy with the emphasis on energy efficiency, renewable energy, and micro-generation." Energy and water audits of participating hotels show a savings potential of 20-30%, with payback periods of less than 5 years when implementing recommended changes.¹⁷

Sustainable tourism certification programs, such as Green Globe, LEED, and Earth Check, are also helping to drive both energy conservation and the shift to renewables. In Grenada, a growing number of hotels have been certified through one of these internationally-recognized 'green' programs.

In 2014, the tourism mapping company Skyviews, together with the Center for Responsible Travel (CREST) launched a voluntary sustainability award program which measures five core environmental and social areas. Under this program member businesses conduct annual audits of energy usage and management based on the Global Sustainable Tourism Council's international benchmarks. Skyviews' first map featuring this sustainability program was produced for Grenada.¹⁸ Businesses that show exemplary work in energy or any of the other core areas are recognized with special symbols on the Skyviews map. This program allows companies to measure and showcase their best practices, as well as to better understand how they can take concrete steps to reduce their carbon footprints.

In the Caribbean, Aruba has what is widely considered the most robust plan for addressing climate change. In 2010, Prime Minister Mike Eman announced the "Green Aruba Challenge" and pledged that Aruba would become carbon neutral by 2020. By June 2014, Aruba had a 30 megawatt wind farm, which was providing about 15% of the country's total energy consumption. When opened, a second wind farm will increase Aruba's renewables to 40%, putting it in first place globally for percentage use of energy renewables.¹⁹ A new waste-to-energy plant opened in 2014 is slated to produce 2 megawatts of electricity during the first phase in 2015 and will eventually process up to 70% of the island's household waste.²⁰ Tourism, Aruba's leading industry, is contributing to the Green Challenge in a number of ways. Some examples include:

- **KLM Flight, Aruba:** KLM Royal Dutch Airlines recently completed a 10-hour flight from Amsterdam to Aruba using sustainable jet fuel. This marks the longest biofuel flight to date by an Airbus plane. The sustainable fuel was partially made by used cooking oils. KLM plans to reduce carbon emissions by 20% by 2020.²¹
- **Solar Airport Car Park, Aruba:** In 2014, solar panels were installed on top of the car park at Aruba's airport. A total of 14,000 solar panels can produce 3.5 megawatts of electricity, providing green energy for 500 households.²²
- **Bucuti & Tara Beach Resorts, Aruba: In 2000,** Bucuti & Tara became the first hotel in Aruba to be Green Globe certified, and is also the first hotel in the Americas to be certified ISO 14001. The resort's energy saving measures include motion sensor lights that are used in many common spaces, including the fitness center, which is also open air with no A/C or fans. In the cafeteria, lights are turned off by 7pm, and the A/C is used from 7am to 7pm only and in administration offices from 7am – 6pm only. Energy-Star appliances are used throughout the resort, water is solar heated and energy saving bulbs are utilized. The environmental policy is posted through the resort for the benefit of both staff and guests, and maintenance staff tracks daily energy consumption. Guests are encouraged to ask environmental questions on their comment cards.²³
- **Aruba Management Institute for Sustainable Tourism & Development (AMISTAD):** Marriott International has partnered with the government of Aruba, University of Aruba, University of South Carolina, and The Hague Hotel Management School to create a school for sustainable tourism. AMISTAD's "products and services are geared towards providing state-of-the-art executive education and professional training, and lead cutting-edge research and consulting on sustainable tourism and development."²⁴ Aruba is therefore one of the few countries in the Caribbean with a technical institute to support its carbon neutral pledge and other 'green' innovations.

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² International Renewable Energy Agency, "Grenada Renewables Readiness Assessment," 2012, http://www.irena.org/DocumentDownloads/Publications/Grenada_RRA.pdf

³ Inter-American Development Bank, "Latin America and the Caribbean face massive economic damages from global warming, report warns," June 5, 2012, http://www.iadb.org/en/news/webstories/2012-06-05/latin-america-and-the-caribbean-global-warming_10011.html

⁴ Caribbean Journal, "How Does the Oil Price Decline Affect the Eastern Caribbean?" January 30, 2015, <http://www.caribjournal.com/2015/01/30/how-does-the-oil-price-decline-affect-the-eastern-caribbean/#>

⁵ Inter-American Development Bank, "Grenada Energy Market," 2012, <http://blogs.iadb.org/caribbean-dev-trends/2013/12/23/grenada-energy-market/>

⁶ CARIBSAVE, "The CARIBSAVE Climate Change Risk Atlas (CCCRA)," March 2012, www.caribbeanclimate.bz

⁷ UN Sustainable Development Knowledge Platform, "Grenada Vision 2013 goal – 100% green electricity and transport," <https://sustainabledevelopment.un.org/index.php?page=view&type=1006&menu=1348&nr=225>

⁸ UNEP, UN DESA and FAO, "SIDS-FOCUSED Green Economy: An Analysis of Challenges and Opportunities," 2012, http://www.unep.org/pdf/Green_Economy_in_SIDS.pdf

⁹ CARIBSAVE, "The CARIBSAVE Climate Change Risk Atlas (CCCRA)," March 2012, www.caribbeanclimate.bz

¹⁰ Scientific Research Council, "GRENLEC ramps up renewable and alternative energy development in Grenada," August 12, 2014, <http://www.ceis-caribenergy.org/grenlec-ramps-up-renewable-and-alternative-energy-development-in-grenada/>

¹¹ The Meeeco Company, "Success story from Grenada: off-solar installation saves fuel and associated costs," 2012, <http://www.meeeco.net/blog/lang/en/2012/03/21/success-story-from-grenada-off-grid-solar-installation-saves-fuel-and-associated-costs/#.VQMijeHA3fd>

¹² GRENLEC, "Renewable Energy," 2015, <http://www.grenlec.com/YourEnergy/RenewableEnergy.aspx>

¹³ GRENLEC, "Carriacou Wind Project Moving Ahead," September 18, 2014, <http://www.grenlec.com/ResourceCenter/MediaReleases/TabId/125/ArtMid/661/ArticleID/21/Carriacou-Wind-Project-Moving-Ahead.aspx>

¹⁴ Grenada Tourism Data (2002-2012), <http://www.grenadaworld.com/InvestorsGuide/SectorProfiles/tabid/110/Default.aspx#tour>.

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- ¹⁵ CARIBSAVE, "The CARIBSAVE Climate Change Risk Atlas (CCCRA)," March 2012, www.caribbeanclimate.bz
- ¹⁶ CREST, "The Case for Responsible Travel: Trends & Statistics," March 2014, http://www.responsibletravel.org/home/documents/2014_Trends_&_Statistics_Final.pdf
- ¹⁷ CHENACT, "Energy Efficiency in Caribbean Hotels," (Presentation by Loreto Duffy-Mayers, Regional Programme Manager, CHENACT – AP, 3rd Symposium for Innovators in Coastal Tourism, Grenada, July 8 – 11, 2014)
- ¹⁸ Skyviews, Inc., 2014, <http://bluegreenmatters.org/>
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- ²⁰ Prime Minister Mike Eman, "Leading the Way by Turning Waste to Energy," January 24, 2015, <http://www.pmoaruba.com/energy/lead-the-way-to-wast-eneergy/>
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