

**Sustainable Eleuthera:
Eleutherans' Views of Energy and Climate Change**

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Executive Summary

Freedom 2030 is an initiative put forth by the Cape Eleuthera Institute to generate all of Eleuthera's electricity from renewable sources and to develop Eleuthera into a model sustainable island. Freedom 2030 supports the Bahamian government's plan to "brand" some of the Family Islands to develop tourism around a consistent theme. Given Eleuthera's unique unspoiled beauty, many people hope and expect that it will be selected by the government to be an ecotourism island. An investment in solar and wind energy on Eleuthera will be essential to the plan for sustainable development and to the preservation of the island's natural beauty. The Cape Eleuthera Institute is now seeking funding for a team of experts to perform a study and develop an action plan for renewable energy generation. However, it has been unclear whether the Eleutherans themselves will get behind the initiative or if they are even conscious or concerned about these issues.

This research project aimed to inform the Freedom 2030 proposal by compiling the views of Island residents' toward their current energy system in order to assess their knowledge and awareness of climate change and to gauge their support for renewable energy. A research team of 10 college students and one professor conducted 104 randomly sampled interviews from Hatched Bay to Wemyss Bight over a five day period in January 2009. The Cape Eleuthera Institute will use these findings to support its efforts to obtain funding.

In the words of Earl McPhee of the Bahamas Ministry of Tourism, "The Bahamas are a nation in denial about sea level rise."¹ One of the most significant findings of this report is Eleutherans' general lack of knowledge about climate change. Given the low elevation of the Bahamas and its vulnerability to projected sea level rise, it was surprising to find little awareness or concern for the issue. In contrast, the Maldives, a similarly low-elevation island nation, is actively seeking a new homeland for its people in anticipation of being deluged by rising seas. Like the Maldives, rising sea level is a threat to the Bahamas, where over 80 percent of the landmass is within 5 feet of the average sea level.²

Why are the Bahamas relatively complacent about climate change? Why is the government paying so little attention to this issue? And why are so many people on Eleuthera, and probably on the other islands as well, largely unaware of climate change and its impacts? The answers to these questions are complicated and lie in the complexities of the culture, government, and economics of the country. This research did not discover the answer, but we hope that the findings will illuminate the need for education about climate change and for immediate action to reduce carbon emissions and prepare for climate impacts on Eleuthera and surrounding islands.

Despite low levels of climate change awareness, the study found that residents have a strong interest and desire for solar and wind energy on the island. Even though many respondents did not recognize a clear connection between energy generation and climate change, most had a positive view of renewable energy and a majority believed that all of Eleuthera's energy could be generated from solar and wind power. We found that of the respondents who were familiar with the phenomenon of climate change, most were concerned about its potential impacts on Eleuthera and were also proponents of renewable energy projects. In short, awareness is strongly correlated with concern and a desire for government action.

¹ Earl McFee, personal communication, 14 Jan. 2009.

² BEST Commission. "Bahamas First National Communication on Climate Change." BEST website, "Publications." 2001: 43.

The Eleutherans we interviewed were generally unhappy with the island's electricity situation as it stands, though the basis for their dissatisfaction was ambiguous at times. It was often difficult to tell whether concerns about affordability or climate change (of both) were steering their opinions on electricity and alternative energy. What was clear is who Eleutherans see as responsible for dealing with these issues—the government. It was strongly felt that the government should do more to provide more affordable and reliable electricity. A majority also named the government as the party that should address climate change in Eleuthera. These findings highlight the tendency of Eleutherans to see the government as the central actor for instituting change and to undervalue private, non-profit, and grassroots forces.

Introduction

The Bahamas have abundant energy resources. Sun, wind—and even tidal movements—hold immense promise in terms of sustainable energy production. Unfortunately, the country's electricity is primarily derived from fossil fuels—which are not only environmentally harmful, but inefficient and expensive. The high costs have left thousands of Bahamians unable to pay their electric bills, and in 2008 the government had to institute payment relief programs to those who have had their power shut off.³ According to a report by Cape Systems, the Bahamas consume 27,000 barrels of oil each day, all of which must be imported from foreign reserves. The cost of generating electricity ultimately drains 12% of the nation's annual GDP, and releases 700,000 metric tons of carbon emissions into the atmosphere.⁴ As a country that is particularly susceptible to global climate change, as well as to the financial burden of imported oil, sources of alternative energy should be a critical part of the Bahamas' future.

Eleuthera Island, located 50 miles east of Nassau, shares the problems faced by the nation as a whole, but also represents the potential to be an electrically independent community. This is the theoretical foundation of Cape Eleuthera's Freedom 2030 initiative, which aims to have one hundred percent of the island's energy "generated from clean renewable sources" in the next twenty years.⁵ The Freedom 2030 Plan calls for a mix of customer generated wind and solar energy and large utility scale renewable power plants. Cape Systems predicts that investments in wind and solar energy could be achieved at no cost to the utility in terms of expanding capacity. This benefit is in addition to lower consumer prices, and better quality energy.⁶ At present, Eleuthera imports over 10,000 gallons of fuel each day for its old diesel generators—which costs the Bahamas Electricity Corporation (BEC) an estimated \$9.125 million a year. This cost is on top of the \$1 million spent annually to maintain the diesel generators.⁷

BEC powers Eleuthera with #2 diesel imported from Panama. Its power stations are located in Rock Sound, Hatchet Bay, and Harbor Island, and collectively produce 45,000-megawatt hours each year.⁸ The low-grade nature of the fuel, in addition to the pollution and emissions associated with its

³ Brent Dean. "Renewable energy proposals under review." *The Bahama Journal*. 23 Oct. 2008. Retrieved 16 Jan 2008 from <<http://www.jonesbahamas.com/news/47/ARTICLE/18566/2008-10-23.html>>.

⁴ Kenworthy et al. "Pilot Project: 1MW Solar Photovoltaic Plant Eleuthera, Bahamas." Cape Systems, Ltd. Mar. 2008: 2.

⁵ "Freedom 2030 – A Model for the Caribbean and Beyond." Cape Eleuthera Institute and Cape Systems. Feb. 2008: 2.

⁶ Ibid.

⁷ Neil Hartnell. "Renewable energy key as power prices rise 10% per year." *The Tribune*. 14 Feb. 2008: 3B.

⁸ Larry Smith. "Renewable Energy Can Free the Bahamas." *Bahama Pundit*. 28 Nov: 2007. Retrieved 16 Jan 2009 from <<http://www.bahamapundit.com/2007/11/bahamas-could-s.html>>.

transportation, makes the island's current system for generating power particularly inefficient and therefore environmentally damaging. Eleuthera's geography—it is 110 miles long and barely a mile wide in some places—has given rise to an electrical system transmitted on a radial feed system, rather than a loop fed grid. Miles of above-ground power lines renders the system inefficient, and places tremendous pressure on BEC's production capabilities. With a base load of 6MW, the BEC is often unable to meet the island's peak electrical demand of 10MW--usually occurring at 9 a.m., noon, and 9 p.m.⁹ This has resulted in brown-outs, unreliable electrical service, and steep consumer prices. The BEC charges a flat fee as well as fuel adjustment surcharges. In 2007, high electricity prices caused many Eleuthera residents to lose their service.¹⁰

Studies predicting future energy consumption in the Bahamas suggest a ten-year trend of ten percent annual escalation. From 1995 to 2002 in the Bahamas, electrical demand increased from 400 million KWh to 1886 million KWh, and that number continues to climb.¹¹ This alarming rate of increased consumption, coupled with the dwindling supply of fossil fuels and fluctuating prices, should make securing sources of alternative energy a priority. Not only does it make sense environmentally, it will ultimately cut costs for the islands and their people.

Fuel Use and Carbon Footprint

Eleuthera has three power plants, all owned and run by the Bahamas Electric Corporation (BEC). The largest power plant is in Rock Sound and the two smaller ones are located in Hatchet Bay and Harbor Island. The Island School, which has a special pilot agreement with BEC, is the only other notable energy producer on the island. All other electricity generation is prohibited. The BEC plants burn approximately 10,000 gallons of diesel fuel per day or 3,650,000 gallons a year. In theory, diesel burned on Eleuthera per year should generate 148,555,000 kWhr of energy but the plants produce only 55,588,132 kWhr of energy¹². Scaled down to consider the frequent scheduled and unscheduled outages, BEC's ultimate power delivery is between 50,029,319 and 52,808,725 kWhr. This means electricity production on Eleuthera has an average efficiency rate of around 34.6 percent, over 10 percent less than a typical diesel plant¹³. Most residents get their power from Rock Sound via poorly insulated above ground power lines, contributing to inefficiency because a large amount of electricity is lost in transit. Consumers pay for the electricity that is lost from the wires even though the energy never reaches their houses.

For an island of its size, Eleuthera has a significant carbon footprint. The largest sources of carbon emissions are electricity production, car fuel, and construction, in that order. The annual carbon footprint per capita of the Bahamas is estimated to be 6.7 metric tons¹⁴, which would make it the sixth highest per capita emitter in the world in the CDIAC 2006 rankings (it was ranked 62nd due to inaccurate data)¹⁵. Interestingly, the top eight highest per capita emitters of CO₂ in these rankings are all small nations, and three are Caribbean islands (Trinidad and Tobago, Netherlands Antilles,

⁹ Kenworthy. "Pilot Project." 2-3.

¹⁰ Haley & Aldrich. "Renewable Energy Resources in the Bahamas." Aug. 2007: 14.

¹¹ Ibid., 14.

¹² BEC. "Request for Proposals: Technical Statistics."

¹³ "Wasa Pilot Power Plant (WPPP), Diesel Engine Combined Cycle, Finland." *Power Technology*. Retrieved 16 Jan. 2009 from <<http://www.power-technology.com/projects/wasa/>>.

¹⁴ Al Binger. "Report to the Inter-American Development Bank (IDB): Caribbean Renewable Energy, Energy Efficiency, and Bioenergy Action Program." November 2008: 2.

¹⁵ CDIAC. "Ranking of the world's countries by 2006 per capita fossil-fuel CO₂ emission rates." Retrieved 29 June 2009 from <<http://cdiac.ornl.gov/trends/emis/top2006.cap>>.

and Aruba). The United States was ranked ninth with a carbon footprint of 5.18 metric tons p.c., while some industrialized European countries such as Norway (2.35 metric tons p.c.) and Switzerland (1.52 metric tons p.c.) were ranked 47th and 72nd, respectively.

Electricity production alone is believed to account for at least half of the Bahamas' carbon emissions. The Watts per person per day is between 14 to 18 kWh, which equates to 580 and 750 watts per hour per person. However, these estimates do not include the CO₂ emitted by other fuels such as aviation gasoline, ships, kerosene (jet fuel), bunker C, and gas oil. According to the Eleuthera Customs Office, between 35 and 40 commercial jets and about 15 private planes fly into Eleuthera each month, which would add significantly to the carbon footprint.

Demographics

The population of the Bahamas is made up of 309,156 people inhabiting 30 of the country's long string of islands.¹⁶ In addition, there are about 4.6 million visitors to the Bahamas each year.¹⁷ The median age of a Bahamian is 28; 85 percent of the population is Black, 12 percent White, 15 percent Hispanic and the remaining 3 percent Asian.¹⁸ The majority of the population is Christian (96 percent), with Baptist being the largest denomination (35 percent). In research gathered from 2006, 181,900 people comprise the country's workforce, with exactly half working in tourism; the unemployment rate hovers around 7.6% overall, with significantly higher unemployment in the isolated islands away from population centers. Employment opportunities influence the migration of Bahamians to the big cities of Nassau, Freeport, and even Miami, Atlanta, and New York.¹⁹

Eleuthera is sparsely populated. According to the *Eleuthera News*, 11,165 people inhabit the island.²⁰ This figure is probably a more accurate estimate than the 2000 Census, which accounts for only 7,999 people. Anecdotally, it is generally understood that a high number of Haitians migrate to the island illegally to find work, which may account for the some three thousand people absent from data.²¹ However, it should be noted that in-depth demographic analysis is only available from the 2000 Census data. With regard to education, 2,194 individuals currently attend school full time.²² Of the 4,913 people who have had some schooling, 3,566 have attended at least one year of high school, 411 have attended at least one year of college, and 154 have attended four years or more years of college or university level education. Among employed people, over 50 percent earn \$15,000 or less per year.²³ Many residents—2,409—own their homes.²⁴

In terms of the labor activity on the island, only 41 percent reported having some employment; of whom, 58 percent are male.²⁵ The largest sources of employment are construction (507 people) and the hotel and restaurant business (494 people). While about 300,000 cruise ship tourists from the

¹⁶ CIA. *The World Factbook*. 26 June 2009. Retrieved 9 July 2009 from < <https://www.cia.gov/library/publications/the-world-factbook/geos/BF.html> >.

¹⁷ CARIBSAVE. "Eleuthera Profile." Powerpoint presentation. Retrieved 2 July 2009 from <<http://caribsave.org/index.php?id=4>>.

¹⁸ CIA. *The World*.

¹⁹ Christian Henry, personal communication, January 2009.

²⁰ <http://www.eleutheranews.com/abouteleu.html>

²¹ Gathered anecdotally from various sources, including Alan Dhalstrom.

²² Government of the Bahamas. *The 2000 Census of Population and Housing Report: Eleuthera*. 6 Feb 2008, 14.

²³ Ibid, 24.

²⁴ Ibid, 28.

²⁵ Ibid, 23.

Princess line visit Eleuthera each year, they almost never leave “Princess Cay,” and therefore provide very little benefit to the island economy. About 27,000 people each year visit the rest of Eleuthera.²⁶

The drug trade on Eleuthera has had a substantial impact on the economy and on earnings that are not counted in the census.²⁷ Eleuthera is a stage for repackaging cocaine coming north from South America and marijuana from nearby Jamaica. While the majority of the people do not play great roles in the drug trade or earn large sums from it, there are apparently ample opportunities to participate in small drug-related jobs, which is a source of extra money for some people. Drugs have been embedded deeply in the political and economic realms of the Bahamas for years. The controversy boomed in 1983 as an investigation led to the discovery that the small island of Norman’s Cay had been transformed into an intricate drug smuggling operation; this sparked additional investigations which trailed corruption into the Bahamas’ upper leadership.²⁸

Energy in the Bahamas

Energy Prices

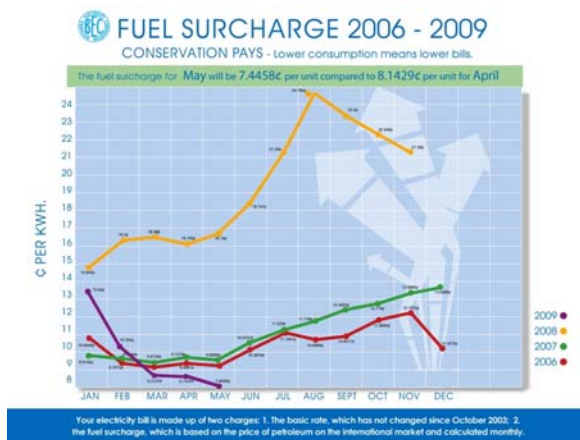


Figure 1, BEC website

Electricity is expensive on Eleuthera and is also unreliable with frequent blackouts. The current rate is \$0.15/kWh for residential service under 800kWh per month; the surcharge drives the effective cost to around \$0.23 per kWh as of May 2009 (Figure 1). The cost of imported oil to generate electricity in the Bahamas was around \$900 million in the 2008²⁹, and high prices are a hardship for many. Over 5000 residential customers in Nassau who had previously had their energy supply cut off by BEC for non-payment had their service restored by order of the Cabinet in September 2008. The vast majority of this group had outstanding bills of less than \$1,000, and they were granted

²⁶ McFee, personal communication.

²⁷ Gathered anecdotally from various sources.

²⁸ Joel Brinkley, “Drugs and graft main issue in Bahamas vote.” *New York Times*, 14 June 1987. Retrieved 16 Jan. 2009 from < <http://www.nytimes.com/1987/06/14/world/drugs-and-graft-main-issue-in-bahamas-vote.html?sec=&spon=&pagewanted=3>>.

²⁹ Hartnell. “Renewable energy.”

“amnesty” with lenient repayment terms over the course of 2 years.³⁰ Since this ruling, electricity rates have fallen about 40 percent, making it easier for most customers to keep up with their energy bills.

Bahamas Electricity Corporation

The Bahamas Electricity Corporation (BEC) is over 50 years old and provides 85 percent of Bahamian consumers with their electricity. It is a public utility with 29 plants on 25 islands, and it currently supplies all of the electricity on Eleuthera (with the exception of Spanish Wells at the northern tip of the island). BEC has been struggling with the costs of electricity almost as much as its customers, and is alternately viewed as a roadblock and proponent for new energy proposals. According to a 2005 editorial and recent conversations, BEC has been responsible for fairly frequent blackouts and residents are quite upset about this.³¹ BEC is currently undertaking a power plant upgrade on Eleuthera in Hatchet Bay to meet the demand that they are currently unable to provide.³² According to the BEC website, this upgrade will involve the installation of four MAN 3.8 megawatt generators for an increased capacity of 15.2 megawatts.

As a result of energy conferences held throughout the Bahamas and the Caribbean, both BEC and the Bahamian government have formed committees dedicated to energy issues. BEC’s Renewable Technologies Committee published a *Renewable Energy Implementation Plan* in February 2008. The plan focused on a combination of solar and wind energy to replace more conventional sources in the Bahamas. The BEC’s Committee only considered utility-scale projects in their plan. For example, they proposed that large photovoltaic (PV) units be constructed on the larger islands, and that smaller islands such as Eleuthera and Andros be connected to this source by submarine cables.³³ This plan has been criticized as being expensive and unnecessarily inefficient since each island has its own renewable energy resources.³⁴ For every 9 megawatts of traditional plant constructed, the Committee recommended that 1 megawatt of renewable plant be installed.³⁵ However, there was no mention of any renewable aspect to the aforementioned plant upgrade in Hatchet Bay, which is much larger than 9 megawatts.

In 2008, BEC issued a Request for Proposals (RFP) for renewable projects involving solar, wind, hydrokinetic, and biomass energy. As of October 2008, BEC had reviewed a number of proposals for energy solutions, mostly due to concerns regarding the cost and availability of fuel.³⁶

Request for Proposals (RFPs) for Renewable Energy

³⁰ Saunders & Inderia “BEC considers drawing hard-line.” *The Nassau Guardian*. 2 Dec. 2008. Retrieved 18 Jan. 2009.

³¹ Mindell Small. “Gomez: Seek energy alternatives.” *Nassau Guardian*, 9 September 2005. Retrieved 18 Jan. 2009 from <http://archive.nassauguardian.net/archive_detail.php?archiveFile=2005/September/05/NationalNews/235536.xml&start=0&numPer=20&keyword=alternative+energy§ionSearch=&begindate=1%2F1%2F2002&enddate=1%2F9%2F2009&authorSearch=&IncludeStories=1&pubsection=&page=&IncludePages=1&IncludeImages=1&mode=allworl&archive_pubname=None%0A%09%09%00>.

³² “BEC announces construction of new plant in Eleuthera to start.” *The Eleutheran*, 22 December 2008. Retrieved 18 Jan. 2009 from <<http://www.eleutheranews.com/local/232.html>>.

³³ BEC Renewable Technologies Committee. *Renewable Energy Implementation Plan* February 2008, 6-7.

³⁴ Freedom 2030 symposium, 8 Feb. 2008.

³⁵ BEC RTC. *Renewable Energy*, 5.

³⁶ Brent Dean. “Renewable.”

The renewable energy proposals submitted to the BEC are from private firms that are expected to provide the capital and expertise necessary for developing and maintaining the infrastructure to generate up to 10 percent of any Bahamian island's electricity needs. These RFPs aim to comply with BEC's long-term planning 9:1 megawatt ratio of conventional power to renewable sources. In October 2008 BEC had received responses from 30 major international renewable energy firms; they are currently reviewing them and expect to have chosen their provider(s) by mid-2009.³⁷ (See Appendix C)

BEC is also promoting energy efficiency at customer education events around the country. The first energy fair was held on Abaco and the next will be on Eleuthera at a date yet to be determined. The idea is to push conservation measures that ordinary consumers can take, like replacing incandescent bulbs with CFLs. Experts say that such measures alone could reduce energy costs by a third.³⁸

The Role of the Government

The Bahamas Environment, Science and Technology (BEST) Commission

The Bahamas Environment, Science & Technology Commission (BEST) was established in 1994 as a coordinator for environmental efforts. Although it does not specifically mention climate change anywhere in its mandates³⁹, BEST provides valuable information about the Bahamian approach to climate change up until this point. BEST's most recent report is the *National Policy for the Adaptation to Climate Change* (March 2005), co-authored with the National Climate Change Committee. According to this publication, the involved parties accept IPCC findings about climate change and acknowledge that the Bahamas are vulnerable to its effects. However, the report focuses primarily on adapting to the impacts of climate change rather than mitigating its occurrence. It also briefly mentions the energy implication of global warming, proposing the creation of a National Energy Policy to bring renewable sources into play and grant tax incentives to promote them.⁴⁰ (See Appendix D for more information on BEST publications).

Ministry of the Environment (MOTE)

In July 2007, the Governor of the Bahamas announced the creation of a Ministry of the Environment to be headed by the Hon. Earl Deveaux.⁴¹ Since his appointment, Deveaux has demonstrated support for alternative energy and energy conservation. At the Caribbean Regional Sustainable Energy High Level Seminar in February 2008, Deveaux referred to BEC as a monopoly with a "culture dependent on fossil fuels." He asserted that this culture must be changed for the benefit of the people of the Bahamas and spoke about the committees currently at work on a national energy policy.⁴² Deveaux also publicly discussed the use of energy-saving lightbulbs and

³⁷ Larry Smith. "BEC officials working on RFP shortlist." *Bahamas Eco-Forum*, 4 Oct. 2008. Retrieved 16 Jan. 2009 from < <http://www.bahamasecoforum.com/2008/10/bec-officials-w.html>>.

³⁸ Larry Smith, full cite not available.

³⁹ BEST Commission. "About Us." 2007. Retrieved 17 Jan. 2009 from <http://www.best.bs/about_us.html>.

⁴⁰ BEST Commission. *National Policy for the Adaptation to Climate Change*, March 2005: 15.

⁴¹ Hubert A. Ingraham. "Statement by The Rt. Hon. Hubert A. Ingraham, Prime Minister: 30 June, 2008." 21 Nov. 2008. Retrieved 18 Jan. 2009 from < <http://www.bahamas.gov.bs/bahamasweb2/home.nsf/vContentW/21433A4D7963573F85257479007014B8!OpenDocument&Highlight=0,earl%20deveaux>>.

⁴² Viraj Perpall. "BEC a roadblock?" *Bahama Journal*, 26 July 2008. Retrieved 16 Jan. 2009 from < <http://www.jonesbahamas.com/news/45/ARTICLE/17890/2008-07-26.html>>.

solar hot water heaters, and said that the government is looking into helping with upfront costs through the “the Global Environment Facility, the Inter-American Development Bank and a company out of California.”⁴³ Despite all of his talk, Deveaux has taken no serious action on these fronts.

National Energy Policy Committee (NEPC)

The National Energy Policy Committee had its first meeting in May 2008 and was given 45 days to come up with a preliminary report.⁴⁴ As of August 2008, the report was supposedly under review and the Ministry of Environment was in the process of “collecting presentations from the conference to compare with the energy policy committee.”⁴⁵ This final review was scheduled to be completed by October 2008. While Bahamian commentator Larry Smith reported that the NEPC’s first report was submitted to the MOTE in November 2008, we were unable to locate a publicly circulated report. According to Smith, the first report “outlines a series of short-, medium-, and long-term policy targets aimed at...developing alternative energy sources, expanding financial opportunities in the energy sector, increasing energy efficiency and managing the demand for fossil fuels.” Notable initiatives supposedly mentioned in the report include a public education campaign, a replacement program for incandescent light bulbs, a requirement that all new construction use solar water heaters, and the use of green design in new public housing projects.⁴⁶ While this news is encouraging, the NEPC has yet to publicly release a report or any policy recommendations.

Cape Eleuthera Institute (CEI) and Cape Systems, Ltd. (CSL)

The Cape Eleuthera Institute (CEI) was established in 2003 as an offshoot of the Island School. Along with its sister company, Cape Systems Limited (CSL), CEI works to develop sustainable systems in Eleuthera and throughout the Bahamas. Together, they have designed and engineered the Island School/CEI campus to be almost entirely energy independent and are now working to extend their innovations to public and private clients. The campus is powered 100 percent by a wind/solar hybrid system, and its 31.2 kilowatt photovoltaic array is “the first and only grid-connected renewable energy system in The Bahamas”⁴⁷. According to the CEI website, “this project marked the culmination of five years of effort by CEI to develop a working partnership with Bahamas Electricity Corporation, Ministry of Energy and Environment and the Office of the Prime Minister.” The campus also features 100 percent solar hot water, biological wastewater treatment, passively cooled buildings, biodiesel powered vehicles, rainwater catchment and storage for all freshwater, and 75 percent local and recycled materials use for building and furniture construction⁴⁸. They developed the first biodiesel production facility in the Bahamas, which now produces over

⁴³ Quincy Parker. “Energy saving deal in the works.” *Bahama Journal*, 16 Oct. 2008. Retrieved 10 Jan. 2009 from <<http://www.jonesbahamas.com/news/45/ARTICLE/18491/2008-10-16.html>>.

⁴⁴ Quincy Parker. “Government exploring biodiesel.” *Bahama Journal*, 2 May 2008. Retrieved 10 Jan. 2009 from <<http://www.jonesbahamas.com/?c=47&a=16897>>.

⁴⁵ Thea Rutherford. “National Energy Policy Committee holds first meeting.” *Nassau Guardian*, 1 May 2008. Retrieved 10 Jan. 2009 from <http://archive.nassauguardian.net/pubfiles/nas/archive/images_pages/05012008_A02.pdf>

⁴⁶ Larry Smith. “Bahamas Green Energy Initiatives.” *Bahamas Eco Forum*. 26 Jan. 2009. Retrieved 22 June 2009 from <<http://www.bahamasecoforum.com/2009/01/bahamas-green-energy-initiatives.html>>.

⁴⁷ Cape Systems Limited. “About—Purpose.” Retrieved 23 June 2009 from <<http://capesystemslimited.com/about-purpose.html>>.

⁴⁸ Ibid.

18,000 gallons a year of ASTM grade fuel for use by CEI, the Island School, and nearby Deep Creek Middle School⁴⁹.

In 2009, Cape Systems received government approval to begin biofuel production at a commercial-scale plant in Nassau⁵⁰. CEI and Bahamas Waste had proposed a partnership in 2007 to build a facility in New Providence for transforming waste cooking oil into a “usable, ‘cleaner’ alternative fuel, meant to replace the diesel Bahamas Waste garbage trucks run on now”.⁵¹ This waste oil was to be collected from businesses and cruise ships, and the proposal included selling the fuel generated to Bahamian business and retail customers.

Spring 2009 saw students at the Island School and Deep Creek Middle School head up an energy conservation project for replacing incandescent light bulbs with CFLs throughout Deep Creek. Impressed by their success, Minister of Tourism Vincent Vanderpool-Wallace announced during a recent visit to the Island School that the government is looking to lead a pilot project involving CFL switches on Harbour Island and suggested that the next step could be spreading the initiative to Nassau.⁵²

International Collaboration

Inter-American Development Bank's Promotion of Sustainable Energy Project

In January 2009, the Inter-American Development Bank (IDB) granted the Government of the Bahamas financing to support the development of sustainable energy. The BEST Commission and the MOTE released a Request for Proposals in April 2009 limited to six shortlisted international consultants. The RFP called for the provision of (i) assistance in achieving energy efficiency in public, residential, and commercial sectors; (ii) research and pilot projects for renewable energy; (iii) development of a Waste to Energy program, and; (iv) improvement of institutions and publication of findings⁵³. More specifically, the project involves research on energy conservation, solar water heaters, solar and wind power, bioenergy, ocean thermal energy, waste-to-energy, and current policies and institutions in the Bahamas. In the Terms of Reference, MOTE explicitly named Eleuthera as a potential candidate for bioenergy or ocean thermal energy.⁵⁴ The TOR required that these services be fulfilled between June 2009 and June 2010.⁵⁵

In April 2009, BEST announced that the Government of the Bahamas had signed two Technical Cooperation (TC) agreements with the IDB. The two projects they established are Strengthening the Energy Sector in the Bahamas (BH-T1012) and Promoting Sustainable Energy in the Bahamas

⁴⁹ Cape Eleuthera Institute. “Sustainable Design: Renewable Energy & Biofuels.” Retrieved 23 June 2009 from <<http://www.ceibahamas.org/renewable-energy.html>>.

⁵⁰ Grant Seiner, email, June 2009.

⁵¹ Cape Systems Limited. *Biodiesel From Used Cooking Oil, Bahamas: Project Plan*. Retrieved 23 June 2009 from <<http://capecystemslimited.com/projects-biofuels.html>>.

⁵² “Tourism minister visits Island School at Cape Eleuthera—hints at government energy saving initiative in the works.” *The Eleutherian*, 1 June 2009. Retrieved 29 June 2009 from <<http://www.eleutheranews.com/local/429.html>>.

⁵³ BEST Commission. “Section 1: Letter of Invitation.” *Request for Proposals: RFP #1016-1-1: Promoting Sustainable Energy in the Bahamas*, 6 April 2009: 1.

⁵⁴ BEST Commission. “Section 5: Terms of Reference.” *Request for Proposals: RFP #1016-1-1: Promoting Sustainable Energy in the Bahamas*, 6 April 2009: 62.

⁵⁵ Ibid.

(BH-T1016). The former will review BEC and current energy regulations to establish a plan for the expansion and diversification of the electricity sector, while the second will work to achieve the goals mentioned in the previous paragraph. The press release also included a short list of six international firms for each project and set the due date for proposals at May 2009. BEST expects each project to last about one year.⁵⁶

CARIBSAVE

The Caribbean Community Centre for Climate Change (CCCCC) and the University of Oxford formed a partnership December 2008 to “address the impacts and challenges surrounding climate change, the environment, tourism and related sectors throughout the Caribbean region.”⁵⁷ The project was named CARIBSAVE and it is to be funded by multiple donors, including the UK Department for International Development (DFID). CARIBSAVE hopes to raise \$35 million US over the next 3 to 5 years to mitigate the effects of climate change on tourism in the Caribbean. In March 2009, CARIBSAVE announced that it would be conducting a six-month pilot study of two locations, one of which is Eleuthera. The study will forecast Eleuthera’s changing climate through 2100 and the physical and socioeconomic impacts of these changes.⁵⁸ According to Bahamian Director of Sustainable Tourism Earl McPhee, the objectives of this project are “to assist in contributing to the region’s efforts to achieve greenhouse gas (GHG) reduction and energy efficiency” and “to review appropriate adaptation measures to reduce vulnerability to climate change” in an effort to transform the Bahamas into a carbon-neutral destination for tourists⁵⁹.

Alternative Energy in Eleuthera

Solar Energy

Haley & Aldrich (2007) calculate that 5.5 kWh/m³ of solar energy strikes the Bahamas each day, making solar “an excellent resource” for the country.⁶⁰ Energy from the sun can be used to produce solar electricity and solar hot water, both of which have great potential on Eleuthera. Solar photovoltaic (PV) cells absorb solar energy and convert it into electricity, while solar water heaters collect, heat, and store water outdoors for household use. Both methods can be easily integrated into new or old structures and pay for themselves in just a few years.

Haley & Aldrich classify solar photovoltaic and solar thermal as “high availability” energy sources in the Bahamas whose development would achieve a “high impact” with “low difficulty.” They estimate the cost of solar PV at around \$0.15/kWh and of solar water heat (SWH) at around \$0.02/kWh.⁶¹ However, a more recent report for the IDB (Binger 2008) concluded that solar PV is incapable of supplying base load power in the Bahamas and recommended that it be used on a small scale on the Family Islands (e.g., Eleuthera). The same report indicated that hot water heating

⁵⁶ BEST Commission. “IDB Technical Cooperation (TC): (BH-T1012) – Strengthening the Energy Sector in the Bahamas, (BH-T1016) – Promoting Sustainable Energy in the Bahamas.” Press Release, Ministry of the Environment. April 2009. Retrieved 2 July 2009 from <http://www.best.bs/sustainable_energy_projects.html>.

⁵⁷ CARICOM. “CARICOM and Oxford University launch CARIBSAVE project.” CARICOM Press Release. 17 Dec. 2008. Retrieved 2 July 2009 from <<http://www.caribsave.org/index.php?id=6>>.

⁵⁸ Dr. Murray Simpson. “Caribbean islands test \$35m carbon neutral project –The race is on.” CARIBSAVE. 24 March 2009. Retrieved 2 July 2009 from <<http://www.caribsave.org/index.php?id=6>>.

⁵⁹ Earl McPhee, email, 26 March 2009.

⁶⁰ Haley & Aldrich. *Renewable*, 5.

⁶¹ *Ibid.*, 5.

accounts for 10 to 15 percent of power use in the Bahamas, suggesting that SWH has the potential to significantly reduce energy consumption. SWH can also help to diminish the evening power peak, which is often responsible for the brownouts Eleutherans complain of.⁶²

While private power generation and net metering (feedback into the electricity grid) are illegal in the Bahamas, Cape Systems has provided SPV and SWH units to several resorts in Eleuthera. Cotton Bay Estates and Villas have made SWH standard in their villas, clubhouse, and laundry. Powell Pointe on Cape Eleuthera is looking to install SWH systems for their showers, laundry, restaurant, and bar as well as a solar pumping system for irrigation and solar security lighting. French Leave Resort also plans to use solar hot water heating from Cape Systems.⁶³ A number of our survey participants mentioned solar energy being used in private residences despite laws against it.

According to General Manager Basden, BEC will revisit the installation of solar street lighting, which was tried in Nassau on an experimental basis some 15 years ago but never pursued due to maintenance problems. BEC's substations and public parks on New Providence may also be fitted with solar lights.⁶⁴

Wind Power

Wind power is the world's fastest-growing renewable energy technology with global capacity currently at about 94 gigawatts; however, BEC's investigation of wind resources in 1991 concluded that the costs did not justify an investment in utility-scale generation. Recently, the BEC committee has called for a re-examination of the country's wind resources in the light of current technology and costs.⁶⁵ Cape Systems describes solar and wind energy as "abundant" on Eleuthera and has proposed a nine-month, island-wide feasibility study aimed at the creation of a "totally unique, self-sufficient island."⁶⁶

Haley & Aldrich classify wind energy as having "medium to low availability" in the Bahamas with "medium difficulty" to achieve "medium impact." On top of that, its estimated cost of \$0.15-0.25/kWh makes it more expensive than both forms of solar energy.⁶⁷ Haley & Aldrich came to the conclusion that while wind in the Bahamas is insufficient to support a utility-scale plant, small-scale production could be feasible in certain places.⁶⁸

Biofuels

Biofuels include diesel made from animal or vegetable oils as well as ethanol or methanol made from plant materials. All sorts of organic waste can be used to produce biodiesel, leaving Eleuthera with a number of options for the development of biofuels. The quality of the liquid diesel fuel that is produced by these waste-to-energy technologies meets both current EU and US standards for

⁶² Binger. "Report to the IDB," 16-18.

⁶³ Cape Systems Limited. "Projects." Cape Systems Limited website. Retrieved 23 June 2009 from <<http://capesystemslimited.com/projects-ceis.html>>.

⁶⁴ Smith (full cite unavailable)

⁶⁵ Smith (full cite unavailable)

⁶⁶ Hartnell. "Renewable energy."

⁶⁷ Haley & Aldrich. "Renewable Energy," 10.

⁶⁸ Ibid., 6.

mineral diesel oil, and it can be used as fuel for motor vehicles, heating, power generation, and other applications. The project can be designed to fully operate on a small percentage of the diesel it generates and provides several advantages, including high conversion efficiency with low operating costs.⁶⁹

At least two proposals are on the table to provide multi-million-dollar waste-to-energy facilities by working with the Ministry of Health, which is responsible for landfills and solid waste collection and disposal. Both proposals essentially call for the government to privatize solid waste management, and promise huge benefits in terms of both waste disposal and power generation. Estimated capital costs are about \$50 million and operating costs of \$25 million, and the plans seek to integrate local waste disposal firms into some form of public-private partnership.⁷⁰

At the urging of the Bahamian government, Binger recommended in his report to the IDB that waste-to-energy be the focus of renewable energy initiatives in the Bahamas. The Minister of the Environment Earl Deveaux apparently has expressed his concern over the management of solid waste nationwide, especially the cost and environmental impacts of landfills. A waste-to-energy program could solve these problems while providing power to the Bahamas. Binger called for the development of waste-to-energy facilities in New Providence and Grand Bahama as well as feasibility studies in the Family Islands. Furthermore, he identified Eleuthera as having potential for biofuels and solid waste-to-energy. The total cost of these initiatives is estimated to reach \$200,000.⁷¹

Climate Change in Eleuthera and the Bahamas

The Intergovernmental Panel on Climate Change's (IPCC) most recent report featured a section dedicated exclusively to small islands like Eleuthera. After reviewing their own projections and those of independent researchers, the IPCC concluded with "very high confidence" that sea-level rise (SLR) would "exacerbate inundation, storm surge, erosion and other coastal hazards, thus threatening vital infrastructure, settlements, and facilities that support the livelihood of island communities" and that "water resources in small islands are likely to be seriously compromised".⁷² While sea level throughout the Caribbean rose an average of 1 mm/year during the past century (with large regional variations)⁷³, global sea level is expected to rise 5 mm/year throughout the 21st century.⁷⁴ Projections for SLR specific to the Bahamas involve a number of uncertainties, but the low average elevation of islands like Eleuthera suggests that the country will be hit hard. The IPCC estimates a rise of 0.43 to 1.8 feet between 1980 and 2090 in the Caribbean, while other respected studies predict a rise of up to 4.9 feet during this period.⁷⁵ The Caribbean is already seeing some effects of climate change, including a warming between 0° and 5° C per decade between 1971 and

⁶⁹ **AlphaKat Brochure**

⁷⁰ **Smith**

⁷¹ Binger. "Report to the IDB," 4-12.

⁷² N. Mimura, L. Nurse, R. F. McLean, J. Agard, L. Briguglio, P. Lefale, R. Payet and G. Sem. "Small Islands." *Climate Change 2007: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. M. L. Parry, O.F. Canziani, J. P. Palutikof, P. J. van der Linden and C. E. Hanson, Eds., Cambridge University Press, Cambridge, UK (2007): 689.

⁷³ Ibid., 690.

⁷⁴ Ibid., 692.

⁷⁵ Carol McSweeney. "Climate change scenarios for tourist destinations in the Bahamas: Eleuthera." CARIBSAVE. Powerpoint presentation. Retrieved 2 July 2009 from <<http://caribsave.org/index.php?id=4>>.

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2004, an increase in the percentage of days with unusually high maximum or minimum temperatures since 1950, and an increase in “heavy rainfall events.” All but two of the hurricane seasons in the Caribbean since 1995 have been above average.⁷⁶

Climate change is expected to affect many vital areas of Eleutheran life. The IPCC report projected that agricultural production and commercial fisheries will be negatively impacted by changes in El Nino-Southern Oscillation (ENSO) events and by sea-level rise and soil salinization. Increases in beach erosion and coral reef bleaching are also expected to hurt tourism in the Caribbean. Because these three sectors account for the majority of employment on Eleuthera, the income of most Eleutherans will be greatly impacted by climate change.

Hurricanes are known to cause extensive destruction, including huge losses of life and property, throughout the Caribbean. The damage caused when Hurricane Ivan made landfall in Grenada in September 2004 is estimated to have set the island’s development back by at least ten years.⁷⁷ In the coming century, the increasing incidence of extreme weather events expected due to climate change and sea level rise will give Caribbean islands like Eleuthera less time to recover before being hit again. The IPCC warns that “sequential extreme events may mean that recovery is never complete.”⁷⁸

Despite the high vulnerability of the Bahamas to climate change, adaptation is not currently a priority of the Bahamian government. The fact that there is now a scientific consensus on the certainty of global sea level rise means that inaction is no longer justifiable. Because mitigation and adaptation plans take years to implement, the Bahamas must act now to reduce the effects of SLR. The high initial expenses will be outweighed by the long-term benefits of prompt action.

Sea Level Rise Adaptation Measures

Protective structures such as dikes, levees, seawalls, revetments, and so on are best for keeping water out of developed urban areas. While hard structures do not need to be installed far in advance, they are much less flexible to changing environmental conditions than other approaches.⁷⁹

An alternative to hard protection is the engineering of the natural landscape (“soft protection” or “beach nourishment”) to prevent flooding. The Pew Center on Global Climate Change describes beach nourishment as more suitable for solving the “fundamental problem of a diminishing sediment resource” through the “artificial addition of sediment and/or improved sediment management...to increase the size of the beach or wetland.” Because it does not spoil coastal vistas as do hard structures, beach nourishment is ideal for “highly developed areas with popular beaches and valuable beachfront real estate” such as Eleuthera.⁸⁰ Engineered dunes are also better at accepting and absorbing waves, especially those of unexpected magnitude, than more stiff structures.⁸¹

⁷⁶Nimura et al. “Small Islands,” 691-692.

⁷⁷Ibid., 701.

⁷⁸Ibid., 693.

⁷⁹James E. Neumann et al., Gary Yohe, Robert Nichollas. “Sea-level rise & Global climate change: A review of impacts to U.S. coasts.” Pew Center on Global Climate Change, Feb. 2000: 18

⁸⁰Ibid., 19.

⁸¹Victoria H. Wolff. “Storm Smart Planning for Adaptation to sea level rise: Addressing coastal flood risk in East Boston.” (MA thesis, Mass. Institute of Technology, 2009): 18.

Land-use planning and coastal zone management is another important adaptation measure with the ability to prevent coastal hazard zones. Density restrictions or coastal setbacks are mechanisms for “planned retreat” of development from areas in danger of flooding. The elevation of existing and future structures can also help to accommodate sea level rise.⁸²

Naturally, it is almost always appropriate for more than one of these methods to be used in conjunction with each other in order to achieve maximum flood protection.

Adaptation in Eleuthera

According to a link on the Government of the Bahamas website, “after The Bahamas sustained major damage from Hurricane Andrew in 1992 and Hurricane Floyd in 1999, the Government decided to enter into a loan agreement with the Inter-American Development Bank to not only replace the damaged infrastructure, but to fortify it against future attacks by hurricanes.” The funds from the IDB were used to construct around 8,500 feet of seawall at ten sites throughout Eleuthera in 2006. Since the completion of this project, there has been little talk about installing additional protection against sea level rise.

On June 19, 2009, a new Planning and Subdivision Bill with several environmental provisions was introduced in Bahamian Parliament. Some of the bill’s objectives are to “promote sustainable development in a healthy natural environment,” “maintain and improve the quality of the physical and natural environment,” and “protect and conserve the natural and cultural heritage of The Bahamas.” If passed, the bill will prevent areas in danger of “flooding, erosion, subsidence...” and so on from being developed. Local Study Areas will also be designated as needing “special planning consideration” for environmental or other reasons. These measures have the potential to prevent development in coastal zones at risk from sea level rise.

Island Case Studies

The following islands have had success and can serve as a model for the Bahamas in the areas of renewable energy and adaptation to sea level rise.

Bonaire: Wind and Biodiesel

Located in the Lesser Antilles with a population comparable to that of Eleuthera (12,000 permanent residents), Bonaire is one of the best models for the Freedom 2030 project. In November 2007 an agreement was signed between EcoPower Bonaire (a Dutch-German consortium) and WEB (the government-owned utility company) to build and operate a new sustainable wind-diesel power plant by 2009. Ecopower is to supply WEB with electrical power for fifteen years beginning in 2009 with the hopes of getting all power for Bonaire from renewable source within five years.⁸³

For the first phase of the project, a wind turbine was installed in 2007 to help reduce short-term dependence on oil. The second phase of the project will be completed by the end of 2009,

⁸² Neumann et al. “Sea-level,” 20-21.

⁸³ Graham Seiner. “Bonaire to rely on renewable energy.” *Bahamas EcoForum*. 25 March 2008. Retrieved 10 Jan. 2009 from <<http://www.bahamasecoforum.com/2008/03/bonaire-to-rely.html>>.

involving the construction of a wind-diesel plant made up of a 10 MW wind farm and a 13 MW biodiesel plant. The project hopes to achieve complete sustainable electricity by the extraction of biofuel from algae. This combination of wind turbines, a new plant, and biofuel productions will also create jobs and boost the local economy. The investment is expected to be partially recuperated via carbon credits.⁸⁴

Bonaire is one of the most popular diving destinations in the Caribbean, and the widespread adoption of renewable energy has made it an ecotourism destination as well. In 2008, Bonaire received the *Islands Magazine*/Caribbean Tourism Association Sustainable Tourism Award for its recent efforts⁸⁵. Bonaire thus serves as an excellent example of how an island can achieve energy independence and boost tourism through the development of renewable energy projects.

Samsøe: Wind and Biomass

Samsøe's conversion into a renewable energy island began when it won a competition between five Danish Islands in November 1997. Since then, it has transformed from almost complete reliance on fossil fuels to self-sufficiency at levels of 100% for electricity and 70% for heating. Electricity needs of its 4,300 inhabitants are fully met by energy from 11 onshore wind turbines, while heat is supplied from solar power, wood chips, and straw. Samsøe's ten year energy transition plan also involved expanding the individual use of solar panels and small wind turbines and modifying the energy use habits of residents to reduce consumption and increase efficiency. In an effort to become even more sustainable, Samsøe is currently exploring the use of renewable energy in its transport sector. The island's energy system has opened it up to ecotourism, drawing around 1,000 visitors a year.⁸⁶

Barbados: Solar Water Heating

The Caribbean island of Barbados (pop. 270,000) and its achievement of a national solar water heating (SWH) project is a well-known renewable energy success story. The initiative for the program came from the energy crisis of the 1970s, which pushed then Prime Minister Tom Adams to explore alternatives to the current energy system. Under his administration, the government of Barbados began to provide tax incentives for the importation and consumption of solar water heaters. The number of SWH units in Barbados has grown from 12 in 1974 to over 35,000 in 2002, equivalent to around one in every three households.⁸⁷ The systems save Barbados about 65 million kWh, or 130,000 barrels of oil, annually.⁸⁸ They also save consumers around \$19.2 million US/year and save the country about \$6.8 million US/year in foreign exchange. Average pay-back time for the units is estimated at less than three years. The total number of SWH units in Barbados currently

⁸⁴ Matt J. Weiss. "Bonaire strives to be first Caribbean island powered by 100% sustainable energy." *Dive Photo Guide.com*. 17 Feb. 2009. Retrieved 29 June 2009 from <http://www.divephotoguide.com/news/bonaire_strives_to_be_first_caribbean_island_powered_by_100_sustainable_energy>.

⁸⁵ Ibid.

⁸⁶ "Case: Samsøe Renewable Energy Island." Denmark Government website. 4 March 2009. Retrieved 29 June 2009 from <<http://www.denmark.dk/en/menu/About-Denmark/Environment-Energy-Climate/Fact-Sheets/Where-Does-Your-Energy-Come-From/CaseSamsøeRenewableEnergyIsland.htm>>.

⁸⁷ Ole Langnib and David Ince. "Solar Water Heating: A viable industry in developing countries." *reFOCUS*. May/June 2004: 19.

⁸⁸ Binger. "Report to IDB," 17.

exceeds that of all other Caribbean countries combined, indicating enormous potential for similar programs to be implemented throughout the region.⁸⁹

Maldives: Sea Level Rise

An archipelago of almost 1,200 islands in the Indian Ocean, the Maldives has an average elevation of four feet above sea level; its maximum elevation of eight feet makes it the lowest country in the world. Recently, the Maldives has become the most prominent small island nation contending with rising sea levels, mostly through the efforts of President Mohamed Nasheed. When Nasheed assumed office in November 2008, one of his first acts was to announce that he would be seeking a new, safer home for all Maldivians, some 300,000 people.⁹⁰ This was one of several increasingly desperate efforts to direct the attention of the international community towards the plight of the Maldives and other low-lying nations. As far back as 1992, former president Maumoon Abdul Gayoom referred to Maldivians as “an endangered people” at the United Nations Earth Summit. Gayoom acted by surrounding the capital city of Male, home to one-third of the country’s population, with a immense seawall of concrete tetrapods financed by the Japanese government. Gayoom also commissioned the construction of an artificial island, Hulhumale, to address both rising sea levels and overcrowding in Male. The population goal for Hulhumale stands at 50,000, but the island is currently inhabited by only several thousand.⁹¹

The country was greatly affected by the 2004 tsunami, which the BBC reported “hit the Maldives harder than any Asian country, both economically and in terms of the percentage of landmass affected.”⁹² Of the 199 inhabited islands, only nine escaped flooding and twelve were lost to submersion or devastation. Almost one-third of Maldivians were “severely affected” by the tsunami; seven percent were left homeless. According to the United Nations Development Programme (UNDP), the tsunami set the development of the Maldives back twenty years.⁹³ This disastrous event was a sobering preview of the sort of devastation that future sea level rise might bring.

In 2006, the Ministry of Environment, Energy, and Water released its “National Adaptation Programme of Action.” The report reviews and ranks possible measures for adaptation to sea level rise. Top-ranking strategies include coastal zone management and flood control, consolidation of population, increases in local food production, and incorporation of climate change adaptation into national disaster management.⁹⁴ The Ministry has also developed the Safer Island Strategy, under which the population is encourage to migrate to ‘safe islands’ equipped to adapt to rising seas and natural disasters. These islands will have coastal protection, easy access to air travel for evacuation, space for population growth, proximity to another island, social services, and so on.⁹⁵

⁸⁹ Langnib & Ince. “Solar Water,” 19.

⁹⁰ Nicholas Schmidle. “Wanted: A new home for my country.” *New York Times*, 8 May 2009. Retrieved 29 June 2009 from <http://www.nytimes.com/2009/05/10/magazine/10MALDIVES-t.html?_r=1>.

⁹¹ Jon Hamilton. “Maldives builds barriers to global warming.” *NPR*. 28 Jan. 2008. Retrieved 29 June 2009 from <<http://www.npr.org/templates/story/story.php?storyId=18425626>>.

⁹² “Maldives still facing tsunami recovery funds shortfall.” *BBC Monitoring South Asia*. 25 Dec. 2005. Retrieved 30 June 2009 from LexisNexis Academic database.

⁹³ Ibid.

⁹⁴ “National Adaptation Programme of Action.” The Government of the Maldives, Ministry of Environment, Energy and Water. 2006: 43.

⁹⁵ Ibid., 52.

President Nasheed made a second important announcement in 2009, proclaiming his resolution to make the Maldives “the first carbon-neutral country in the world.”⁹⁶ Because the Maldives contributes only 0.0012 percent of global carbon dioxide emissions, Nasheed’s pledge is more symbolic than anything. When asked in a *New York Times* interview if his vows were just a publicity stunt to spur on the industrial countries, Nasheed responded, “Sure. This is to tell them: ‘No, not at this cost.’”⁹⁷ The Maldives has been taking steps to both protect itself and promote international awareness for over a decade, giving all small island states something to strive for.

The Netherlands: Sea Level Rise

Considered by many to be “the world’s best flood engineers,” the Dutch have built an intricate system of hard and soft barriers to keep their country, half of which lies below sea level, from being overcome by coastal waters. Their combination of dams, levees, barricades, canals, pumps, and natural barriers have protected the Netherlands for centuries, but the threat of rising sea levels has driven the Dutch to explore further means of coastal defense. The plan they have come up with is ambitious—extend the country westward by adding around 400 square miles of beach. The project would be carried out over the course of the next century, with dredging ships continuously transporting sand from the seafloor offshore to the coast.⁹⁸ Although this strategy may seem impractical, it is an example of what the most experienced minds in the realm of flood control are now looking towards. Countries will need to be as creative, forward-thinking, and open-minded as the Netherlands in order to meet climate change head-on.

Methodology

The survey measured public views on three topics: 1) electricity service and energy issues, 2) awareness, concern, and knowledge of climate change and its impacts, and 3) interest in, and understanding of, renewable energy. After conducting background research on these issues as they relate to the Bahamas, we developed a semi-structured interview instrument containing 38 questions. The questions were mainly designed for positive or negative responses, with some ordered responses, and space for open-ended comments. See Appendix A for the survey with raw data and Appendix B for the open-ended comments.

The survey was administered as a personal interview to 104 Eleutherans over five days in January 2009. The survey locations were Hatchet Bay, James Cistern, Governors Harbor, Rock Sound, Green Castle, Deep Creek, Wemyss Bight, and Cape Eleuthera. Respondents were chosen by random sampling. Gas stations, shops, bars, docks, streets and other community centers were targeted because of their greater population density. An effort was made to administer the survey to a diverse range of Eleutherans in terms of age, sex, occupation, and geographic location, although children were not interviewed because the survey is designed for adults. Interviewing was performed in teams of two, with one interviewer asking questions and the other taking notes. Most respondents were eager to discuss these issues with us. Each interview lasted ten to twenty minutes.

The results show a balance of respondents by gender, age, and geographical location, which suggests our results are representative of the general population (Fig. 2).

⁹⁶ Schmidle. “Wanted.”

⁹⁷ Ibid.

⁹⁸ David Wolman. “Turning the tides.” *Wired*. Jan. 2009. Retrieved 2 July 2009 from LexisNexis Academic database.

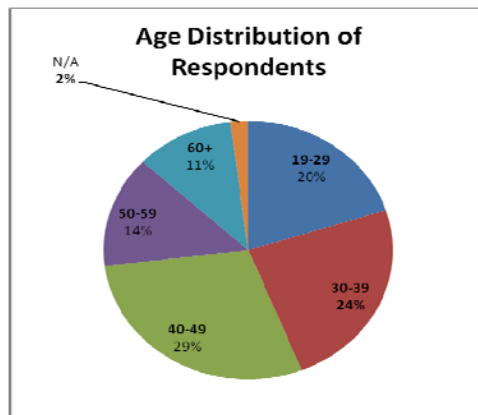
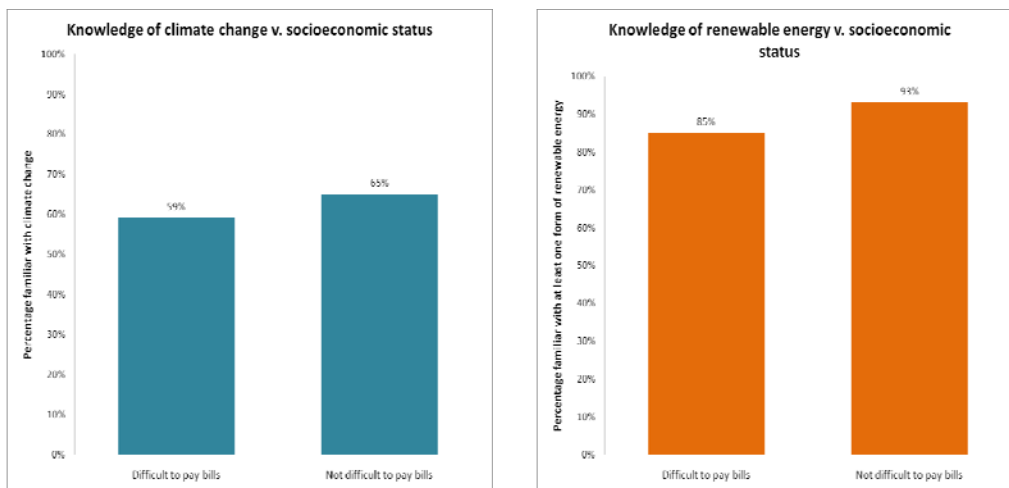


Figure 2

Discussion of Findings

**Note About Demographics

Before the survey results are discussed, an important finding needs to be noted. If participants' response to Question 3 (Do you ever find it difficult to pay your electric bills?) is used as an analogue for socioeconomic status (with an affirmative answer indicating lower income and education level), then results indicate that lower socioeconomic status is correlated with less knowledge of climate change and renewable energy. Respondents were 13 percent more likely to be unfamiliar with climate change (Fig. 3) and 12 percent less likely to know at least one form of renewable energy (Fig. 4) if they had trouble paying their electric bill. Because the two key influences on the survey responses are believed to be affordability and climate change, this connection will fundamentally influence many of the findings discussed in the section below.



Figures 3 and 4

Personal Electricity

Eleutherans are generally unhappy with their electricity situations. While the majority of those surveyed (58%) said they were “satisfied” or “very satisfied” with BEC’s service, other statistics indicate widespread dissatisfaction. Of those “satisfied” respondents who chose to comment, 31% expressed that BEC service was passable, 15% described it as unreliable or expensive, and 23% explained that they had no other options. Comments ranged from “BEC has done a remarkable job” to “There’s a lot of room for improvement” to “I am very angry.” As one former parliamentarian put it, “We don’t have any options, so we have to be satisfied.”

In response to Question 2 (“Do you think the electricity rates are fair?”) the vast majority (76%) responded negatively. Once again, those respondents who answered affirmatively and chose to comment still had something negative to say about BEC or deemed it merely passable. Many comments indicated that rates had their “ups and downs” or that they had been falling recently. At the time the surveys were administered in January 2009, BEC’s fuel surcharge was coming down

from an extreme high of \$0.25/kWh (\$0.40/kWh total price) in August 2008. Prices have now reached a four-year low (a 39% drop from December 2008), suggesting that current public opinion on BEC prices is probably more positive than was indicated in the surveys (Fig. 1).

At 2008 rates, 57 percent of respondents found it difficult to pay their electric bills and one-third had had their service cut off due to not being able to pay bills. This implies that electricity rates are imposing a serious financial hardship on Eleutherans and possibly affecting their ability to pay for other necessities. One respondent commented, “I haven’t eaten but the lights stay on.”

Only half (49%) of respondents were able to identify diesel as the fuel used by BEC power plants. Of those who knew of its use, 73 percent answered that the fuel was “fine” or had no opinion. Participants were 18 percent more likely to be against burning diesel for electricity if they did not find it hard to pay their electric bills (Fig. 4). It is unclear whether this finding indicates that Eleutherans believe burning diesel is the cheapest option or if it is a function of poorer Eleutherans being less aware of climate change and energy alternatives. Of those who chose to comment, 23 percent expressed that diesel was the only option, 21 percent that it was cheap, 17 percent that it was expensive, 10 percent that it was unclean, and 13 percent that alternatives were better. 22 percent of all respondents were unsure of their opinion on burning diesel, with one woman admitting, “I wouldn’t know the difference.”

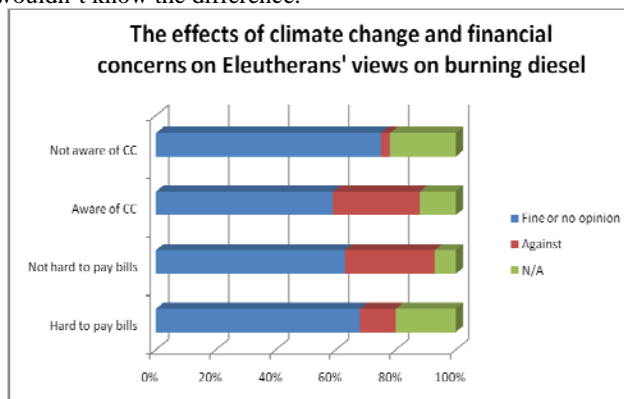


Figure 4

Respondents were 26 percent more likely to be against burning diesel if they were familiar with climate change (Fig. 4) and 31 percent less likely to approve of it if they were aware of at least one form of renewable energy. Once again, it is uncertain how views on the affordability of diesel and the correlation between wealth and knowledge are influencing each other. The markedly weaker impact of concern about climate change (“somewhat worried” or “very worried”) on the likelihood of participants to disapprove of burning diesel (only 7% more likely) suggests that affordability is the primary influence on opinions about diesel. However, 100 percent of those who did not support burning diesel would support an alternative power plant for Eleuthera, indicating that disapproval of diesel is strongly correlated with awareness of renewable energy.

Opinions on the reliability and affordability of electricity did not seem to affect whether those surveyed supported the new BEC power plant in Hatchet Bay. Respondents were 19 percent less likely to approve of the new plant if they were aware of climate change. Because affordability was shown not to be a factor, concerns about climate change seem to outweigh concerns about price in

this case. Many comments also suggested the need for new power plants to support Eleuthera's growing electricity requirements: "We need more power for hotels."

Almost all Eleutherans who participated in the survey (91%) said that they tried to conserve energy, and the findings indicate that this behavior is tied to both preventing climate change and saving money. Those who were familiar with climate change were 16 percent more likely to conserve electricity than those who are not, while those who found it difficult to pay their electricity bills were 13 percent more likely to conserve than those who did not (Fig. 5). The former correlation may demonstrate an understanding by Eleutherans of the connection between the global problem and how their own actions relate. Conservation practices thus bode well for progress in further dialogues about climate change and to garner support for renewable energy. Open-ended comments show that by far the most common form of conservation is turning things off (72%), followed by the use of CFLs (9%). Twelve percent indicated using both of these methods.

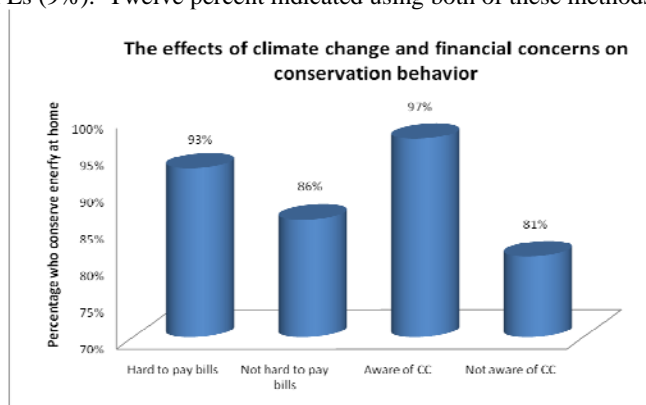


Figure 5

Only 35 percent had looked into alternative ways to supply energy to their homes. The alternatives mentioned most often in comments were solar panels (22%), generators (17%), solar hot water heaters (8%), and stove boiling water (11%). Thirteen percent indicated the consideration or use of multiple alternative energy supplies. Bahamian law prohibits residential electricity production, so the fact that a number of people had investigated it suggests that when and if it becomes legal, many residents might pursue it. Those who did not find electricity bills troublesome were 18 percent more likely to explore alternatives than those who did, and those who were "somewhat" or "very much" concerned about climate change were 22 percent more likely to look into alternatives than those worried "a little" or not at all. This suggests that the consideration of alternatives is influenced by climate change concerns but also that wealthier Eleutherans are more likely to look into alternatives. The latter finding can possibly be explained by the greater awareness of climate change and energy alternatives among the wealthy and/or by a conviction that alternatives are too expensive among the poor. As one construction worker explained, "I'm waiting for prices to go down. The investment is too high."

It was strongly felt among survey participants (86%) that the government should do more to make electricity affordable and reliable, and most suggestions involved actions to reduce costs (27%) or find alternatives (32%) (Fig. 6). For example, several individuals suggested that the government should "cap or drop BEC prices and surcharges" or "find other sources of energy." One woman lamented that officials should have begun looking into solar "five to ten years ago." Others

proposed that the government “use the Island School as a resource” or “look to The States.” Eleven percent of comments indicated that the government could or should not do anything, with one person remarking that “the government has no money...it would be nice if they could [do more].” The overwhelming desire of Eleutherans for government action illustrates that the government has inadequately addressed the energy needs of Eleutherans, and consequently has imposed a financial burden. Due to Eleuthera’s low population and relatively small tourism industry, it is possible that the Bahamian government does not prioritize Eleuthera’s economic problems or have a long-term solution to the expensive and inefficient electricity system.

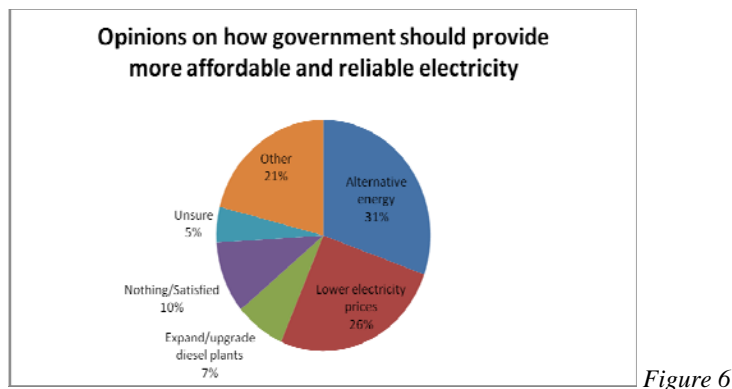


Figure 6

Climate Change Awareness

The majority of those surveyed (61%) identified themselves as being familiar with climate change and global warming. One survey subject even proffered that “over there in Alaska they’re losing the polar bears.” Of the people who were aware of climate change, most believe that Eleuthera is vulnerable to its impacts (63%) and that action should be taken to combat these effects (68%). However, when asked if they were aware of any laws or programs established to alleviate global warming, few people had heard of such initiatives occurring in the Bahamas (14%): Eleutherans are aware that global warming is happening, but have not observed any actions, private or governmental, to mitigate its effects.

Considering the very high vulnerability of Eleuthera to the effects of climate change, especially sea level rise, the levels of awareness and concern among those surveyed are troubling. Only 46 percent of those familiar with climate change could correctly identify one cause and only 41 percent could correctly identify a possible effect on Eleuthera. While people were aware of some of the impacts of climate change to Eleuthera, some felt that because the Bahamas are not a major contributor of greenhouse gases, they will not be as affected by the impacts of climate change. This assumption indicates that some people believe the impacts of climate change are caused by changes in the regional environment instead of global changes. The results show that almost one-third (33%) of those aware of climate change are not worried that Eleuthera is vulnerable, which suggests that climate change seems like a global, more distant problem that will not have any imminent consequences on the island. This mistaken belief about the safety of Eleuthera is also revealed in many of the open-ended comments, including “The sea wind takes away smoke, so there are no effects of global warming here” and “We’re the last to know.” When asked whether they were

worried that Eleuthera is at risk to climate change, respondents remarked “No more than any other place” and “I don’t want to think about it.”

Fortunately, many people were aware of their ignorance and expressed a desire to learn more about climate change and its effects. Of those who commented on what should be done to address climate change, a plurality called for more education (27%), followed by environmental action (18%) and a strengthening of infrastructure (9%). However, many of the comments still indicated a lack of awareness of the dangers posed by climate change. One person expressed that action should be taken “just in case [climate change] happens,” while another commented that “people don’t worry about climate change around here.” Fifteen percent of commenters incorrectly asserted that the effects of climate change were unavoidable, arguing that “You can’t control the weather.”

The majority (54%) of those who chose to comment on who should address climate change placed the government (including ministries, committees, and schools) in charge. Fifteen percent called for a multi-sectoral effort and only 10 percent recommended the combined efforts of “everyone.” This suggests that Eleutherans see the government as wholly responsible for addressing the issue and that they fail to recognize the impact of their personal behaviors on climate change.

When the awareness of climate change was correlated with gender, 66 percent of women and 56 percent of men were aware of climate change. This result suggests a possible knowledge gap between the sexes. This gender gap could reflect the disparity in education level, as women in general have had more years of schooling than men. Also, many of the women surveyed work in stores and offices while many of the men interviewed were laborers or fisherman.

Results indicate that people who are the most aware of climate change are under the age of 40, with 72 percent of 19-29 year olds and 71 percent of 30-39 year olds being familiar with the term, compared to only 47 percent of 40-49 year olds and 57 percent of 50-59 year olds (Fig. 7). This indicates that such information is reaching people who will be managing business and government affairs in the near future, and suggest that younger generations may discuss these issues more often. Unfamiliarity in the older people could be attributed to either a lack of education as few people 55 and older have had any education beyond high school. It could also indicate a reluctance to confront the changing global environment.

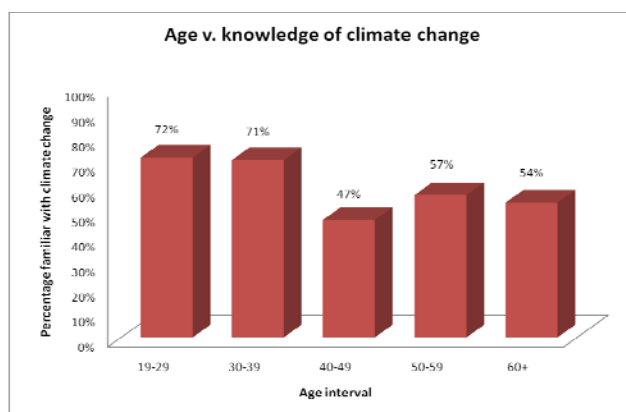


Figure 7

Renewable Energy

Eighty-eight percent of respondents had heard of at least one form of renewable energy, making the survey pool 27% more aware of alternative energy than climate change. Solar energy was the most well-known (87%), followed by wind energy (65%) and biofuels (54%). Seventy percent of respondents had heard of at least one of these forms of energy being used on Eleuthera. While most comments cited the Island School as the only alternative energy user on the island, respondents also mentioned private homes in Governor's Harbor and Harbor Island, as well as the Cape Eleuthera Resort. Many also indicated that the Island School was the solitary source of knowledge about alternative energy on Eleuthera and expressed a need for more education about local energy issues; some suggested that educators "go to the schools" and "get the Island School involved in the community." It is possible that the prominence of the Island School and its use of alternatives may account for the large disparity between knowledge of climate change and knowledge of renewable energy on Eleuthera.

Of those surveyed, 85 percent would support a solar, wind, or biomass power plant on Eleuthera. And among those who believe that something should be done to address climate change, 97 percent support an alternative energy plant on Eleuthera. However, less than half of respondents (40%) would support such a plant if it would result in higher electricity prices and 17 percent were unsure. Affordability is definitely an issue, with those who do not find their electricity bills difficult 17 percent more likely to be willing to pay more for electricity from renewable sources (Fig. 8). One woman asked, "Isn't it supposed to be cheaper?" Several stated that they would be willing to pay higher upfront costs as long as prices went down over the long term: "If you could afford the initial expenses, the resources would be free."

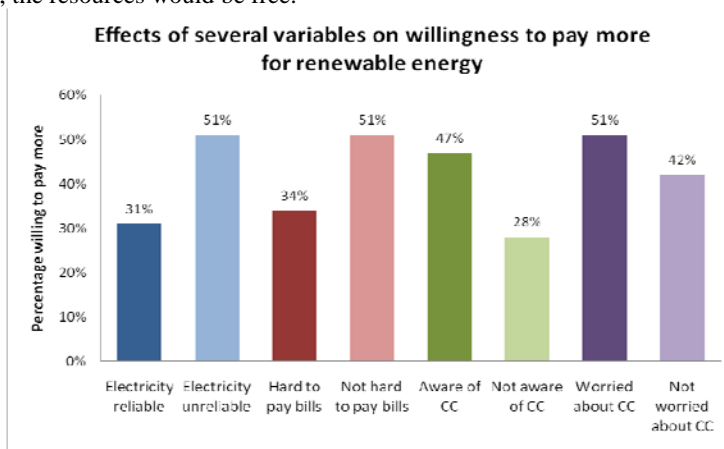


Figure 8

Participants were 19 percent more likely to be willing to pay more if they were familiar with climate change (Fig. 8), but this could again be a function of the connection between wealth and awareness. The influence of concern about the vulnerability of Eleuthera to climate change on willingness to pay more, however, is much weaker (9%), implying that money is indeed the more powerful influence (Fig. 8). These results suggest that although there is widespread support for alternative energy, it may not be directly tied to concerns regarding climate change. Again, respondents' concern for the environment seems to be clouded by their concern about costs, since even those who are aware of climate change still are more concerned with their personal finances.

Satisfaction with services provided by BEC only slightly affected the willingness of individuals to pay more for renewable energy. 49 percent of “dissatisfied” customers would pay more, compared to 41 percent of those who were “satisfied” and 40 percent who were “very satisfied.” However, those who found BEC electricity unreliable were 20 percent more willing to pay more for alternatives (Fig. 8), indicating that concerns with service did have some influence. As one man remarked, ““The sun doesn’t leak—you don’t have to go up there with a torch and weld it.”

65 percent of those surveyed believed that Eleuthera could meet all of its energy needs using renewables and 49 percent thought that was a good idea, with responses ranging from “It’s a necessity” to “It’s a useless quest.” Many expressed concern over the viability of alternative energy given the climate and geography of Eleuthera, indicating that education is needed on the functioning of solar and wind energy and biofuel.

Summary/Conclusions

Because of the high level of dissatisfaction with the current energy situation, alternatives appear to be a viable option with considerable support, which has powerful implications for Freedom 2030. There already exists a high level of interest and support for exploring and implementing alternative energy projects, and most opposition seems to stem from either a lack of education or mistaken beliefs about climate change and renewable energy. There is much room for improvement in public awareness of the fuel used in power plants, the consequences of burning diesel, the causes and effects of climate change, climate change mitigation, and renewable energy. Wealthier Eleutherans are generally more supportive of alternative energy and climate change projects, although it is uncertain whether this is because they are more likely to be informed about them or more likely to believe they are affordable.

The development of alternative energy of Eleuthera would make Eleuthera energy independent and energy secure by reducing reliance on energy imports. It would also help to achieve some of the island’s development goals by protecting the economy from fluctuating oil prices and reducing the drain of money out of the country.

Recommendations

The results from our surveys lend support to the long-term goals of Freedom 2030, and also indicate several important areas in which actions can be taken to further promote renewable energy. After receiving positive feedback on the vast possibilities for renewable energy, our recommendations are based upon both our quantitative and qualitative data and cover a variety of facets related to climate change in Eleuthera.

- Raise general awareness of climate change.

In order for the Freedom 2030 proposal to be successful, its proponents need the awareness and support of the local citizens. With this need in mind, it seems necessary for the involved organizations to spearhead efforts for better community involvement to improve education about climate change, renewable energy sources. Because a large contingency of the population who are largely unaware are beyond school age, reaching this population will require accessing social networks rather than schools. Some recommendations for locations are churches, community organizations, and social events.

Most respondents displayed familiarity with the terms “climate change” and “global warming,” but frequently indicated a lack of knowledge about of the causes, the effects, or the expected impacts to Eleuthera. Awareness could be improved through an education initiative involving programs such as workshops held in local community centers, schools, or businesses. CEI could work in cooperation with towns across Eleuthera to decide on the best approaches for specific areas.

- Alleviate the hardship caused by high electricity bills.

A high percentage of respondents felt that BEC’s rates were not fair and that they had struggled to pay their electricity bills at times. The surveys also revealed that nearly 90 percent of Eleutherans think that the government should do more to provide affordable and reliable electricity. Respondents were widely aware of energy conservation and over 90 percent were already taking measures to reduce their use of electricity. It is widely thought that renewable energy would be cheaper than the diesel-fueled electricity provided by BEC in the long run, although many respondents commented that the start up costs would be high and expressed doubt that BEC would build a renewable energy plant. The data show that Eleutherans would definitely support a renewable energy power plant. The Freedom 2030 initiative should take the economics into account when pitching and planning specific projects, and each effort should be related as much as possible to reducing resident’s electricity costs.

- Increase preparedness for climate change impacts.

A little over half of those surveyed were familiar with the term climate change or global warming. Of that subset, 63 percent believe that Eleuthera is vulnerable to its impacts and 68 percent feel that action should be taken to combat these effects. Previously, the Bahamas Environment, Science & Technology Commission (BEST) and the National Climate Change Committee were working with the Caribbean Disaster Emergency Response Agency (CDERA) to assist in planning and development, but this collaboration ended with the conclusion of the Mainstreaming Adaptation to Climate Change (MACC) initiative in 2007. Since the Bahamas have “low elevation with more than 80% of the landmass within 5 ft (1.5 m) of mean sea level” (BEST 1st National Communication), it is especially crucial that this partnership is restored to address the concerns of Eleutherans and to formulate community response plans for these events. The Stern Review on *The Economics of Climate Change* found in 2006 that “the benefits of strong, early action [against climate change] considerably outweigh the benefits.”⁹⁹ Thus, the planning choices made now are decisive of future impacts.

- The government should take action.

The survey results, especially the open-ended comments, reveal much skepticism about the government’s commitment to addressing climate change, their interest in transitioning to renewable energy, and the ability to address climate-change related disasters. If the government is indeed committed to these goals, it would serve them well to issue an energy action plan, to commit to generating a certain percent of renewable energy by a specific date, to widely publicize the commitment, and to take speedy and visible steps toward implementation. This would restore the public’s faith in the government with regard to these issues. Bahamians have a right to know what their country is facing and that their

⁹⁹ Stern Review. “Executive Summary.” *The Economics of Climate Change*. 2006: ii.

government is taking the necessary steps to protect them. While other sectors such as private corporations and non-profit groups have the potential to lead, the cooperation of the Bahamian government is essential.

In conclusion, our survey results show that Eleutherans are strongly in support of renewable energy and therefore would be in favor of the Freedom 2030 Initiative. To encourage these efforts, improvements must be made in climate change education, reductions in electricity costs, and emergency preparedness by allowing communities to work with CEI, BEC, CDERA, and any other relevant groups who are equipped to address these shortcomings. Cooperation between the communities and politicians of Eleuthera and these broader organizations in these areas will be a valuable tool for the island as it pursues Freedom 2030 over the upcoming decades.

Appendix A

Date: _____

Location: _____

Interviewer: _____

Note-taker: _____

Eleuthera Energy Survey
CEI/Williams College, Jan. 2009

“Hi, we’re college students with the Island School and we’re looking at energy issues on Eleuthera; we’d like to hear what you think about BEC and electric rates on so on. Do you have a few minutes to talk with us? Your responses will be anonymous and confidential.” Introduce yourself by name.

1. Do you find the electricity here to be reliable? YES: 55 (52.9%)

NO: 49 (47.1%)

2. Do you think the electricity rates are fair? YES: 24 (23.1%) NO: 79

(76.0%) NA: 1 (1.0%)

3. Do you ever find it difficult to pay your electric bills? YES: 59 (56.7%) NO: 44 (42.3%)

NA: 2 (1.9%)

4. Have you ever had your service cut off due to not being able to pay the bills? YES: 34 (32.7%)

NO: 68 (65.4%) NA: 2

5. How satisfied are you with the service provided by the BEC?

Very Satisfied: 6 (5.8%) Satisfied: 54 (51.9%) Dissatisfied: 42 (40.4%) DK: 2

(1.9%)

Comment: _____

6. About how much of your household expenses go to pay your electric bill?

OVER HALF: 9 (8.7%) HALF: 27 (26%) ¼: 30 (28.8%) LESS THAN ¼: 22 (21.2%)

NA: 16 (15.4%)

7. Do you know what sort of fuel the power plants on Eleuthera use?

YES: 51 (49%) NO: 43 (41.3%) DK: 10 (9.6%)

8. What do you think about burning diesel fuel to generate electricity?

FINE WITH ME: 44 (42.3%) NOT A GOOD IDEA: 20 (19.2%) DK: 23 (22.1%)

Comment:

9. With oil cheaper than a few months ago, do you expect the electricity prices to drop?

YES: 66 (63.5%)

NO: 28 (26.9%)

DK: 10 (9.6%)

Comment:

10. Do you try to conserve electricity at home? YES: 95 (91.3%) NO: 8 (7.7%) NA: 1 (1.0%)

IF YES,

HOW? _____

11. Have you ever looked into other ways to supply electricity or hot water to your house?

YES: 36 (34.6%)

NO: 62 (59.6%)

NA: 6 (5.8%)

IF YES, WHAT? _____

12. Do you think the new BEC power plant planned for Hatchet Bay a good idea?

YES: 62 (59.6%)

NO: 22 (21.2%)

DK: 20 (19.2%)

Comment: _____

13. Do you think building new diesel electric plants is a good idea?

YES: 53 (51.0%)

NO: 23 (22.1%)

DK: 23 (22.1%)

NA: 5

(4.8%)

Comment: _____

14. Should the government do more to provide affordable and reliable electricity?

YES: 92 (88.5%)

NO: 6 (5.8%)

DK: 5 (4.8%)

NA: 1 (1.0%)

15. IF YES, what do you think government should do?

16. Are you familiar with the terms "climate change" or "global warming"?

YES: 63 (60.6%)

NO: 36 (34.6%)

DK: 5 (4.8%)

17. IF YES, what are some of the **causes** of climate change?

18. IF YES, what are some of the possible **impacts** of climate change on Eleuthera?

19. Do you worry that Eleuthera is at risk or vulnerable to climate change?

VERY MUCH: 14 (13.5%) SOMEWHAT: 15 (14.4%) A LITTLE: 14 (13.5%) NOT AT ALL: 19 (18.3%) NA: 42 (40.4%)

20. Do you think Eleuthera is prepared to handle extreme climate change events?

YES: 6 (5.8%) NO: 44 (42.3%) DK: 6 (5.8%) NA: 48 (46.2%)

21. Should anything be done to address climate change/global warming?

YES: 44 (42.3%) NO: 5 (4.8%) DK: 7 (6.7%) NA: 48 (46.2%)

Comment:

22. What agency or group should address climate change in Eleuthera?

23. Do you know of programs or laws that have been implemented in Eleuthera to prevent or lessen the effects of climate change? YES: 9 (8.7%) NO: 40 (38.5%) DK: 3 (2.9%)

NA: 58 (55.8%)

Comment:

24. Are you familiar with solar energy? YES: 90 (86.5%) NO: 10 (9.6%) DK: 3 (2.9%) NA: 1 (1.0%)

25. Are you familiar with wind energy? YES: 68 (65.4%) NO: 29 (27.9%) DK: 6 (5.8%) NA: 1 (1.0%)

26. Have you heard of biofuels? YES: 56 (53.8%) NO: 44 (42.3%) DK: 3 (2.9%) NA: 1 (1.0%)

27. Do you think any of these forms of energy are a good idea for Eleuthera?

SOLAR: 79 (76.0%) WIND: 58 (55.8%) BIOFUELS: 45 (43.3%)

DK: 10 (9.6%) NONE: 2 (1.9%) NA: 11 (10.6%)

Comment:

28. Have you heard about any of these forms of energy being used on Eleuthera?

YES: 73 (70.2%) NO: 15 (14.4%) DK: 5 (4.8%) NA: 11 (10.6%)

Comment:

29. Would you support a solar, wind or biomass power plant for Eleuthera?

YES: 88 (84.6%) NO: 7 (6.7%) DK: 6 (5.8%) NA: 6 (5.8%)

30. Would you be willing to pay more for electricity from one of these sources?

YES: 42 (40.4%) NO: 36 (34.6%) DK: 18 (17.3%)

NA: 8 (7.7%)

31. Do you think Eleuthera could produce all of its own electricity through wind and sun and other renewables?

YES: 68 (65.4%) NO: 17 (16.3%) DK: 12 (11.5%)

NA: 7 (6.7%)

32. IF YES, do you think that's a good idea? YES: 51 (49.0%) NO: 3 (2.9%) DK: 8

(7.7%) NA: 42 (40.4%)

Comment:

33. Is there anything else you'd like to add?

And to end, I have just a few more questions:

34. Where do you live? _____

35. How old are you? ____ (Average age: 41)

36. How many people are in your household? ____ (Average household size: 3.6 people)

37. What do you do? _____

~~~~~  
~~~~~


38. Gender : Male 57 (54.8%) Female 44 (42.3%) (don't ask!) NA: 3 (2.9%)

I ENJOYED SPEAKING WITH YOU. THANK YOU VERY MUCH FOR
TAKING THE TIME TO TALK WITH US.

Open-Ended Survey Comments

Responses to Question 1: Do you find the electricity here to be reliable?

- (Y) “Except a little during the summer.” (7) Female, 32, beautician, Wemyss Bight
- (Y) “There are problems with wires.” (13) Male, 58, power plant operator, Governor’s Harbor
- (Y) “Three quarters gotten better.” (29) Male, 32, truck driver, Governor’s Harbor
- (Y) “At times.” (41) Male, 21, carpenter, Deep Creek
- (Y) “60 percent.” (57) Female, 41, Island School secretary, Green Castle
- (Y) “Most of the time.” (84) Male, 48, store manager, Rock Sound
- (Y) “97 percent reliable.” (96) Male, 70, parliamentarian/businessman, Tarpum Bay
- (Y) “Most of the time.” (101) Male, 73, bartender, Deep Creek

- “Winter yes, summer no.” (16) Male, 37, carpenter/mason/fisherman, James Cistern

- (N) “It’s terrible.” (9) Male, 47, resort manager, Cape Eleuthera (American ex-pat.)
- (N) “Most of the time.” (54) Female, 50, sales clerk, Governor’s Harbor

Responses to Question 2: Do you think the electricity rates are fair?

- (Y) “It’s going down now.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay
- (Y) “Now, but not before.” (54) Female, 50, sales clerk, Governor’s Harbor
- (Y) “Too high.” (61) Female, 50+, teacher, Rock Sound
- (Y) “So-so.” (71) Female, 25, sales clerk/photographer, Bluff
- (Y) “Right now.” (72) Female, 60, sales clerk, Governor’s Harbor
- (Y) “Now, yes.” (89) Female, 28, video store manager, Tarpum Bay

- (N) “One hundred times no.” (12) Female, 49, café owner, James Cistern
- (N) “It depends on fuel prices.” (13) Male, 58, power plant operator, Governor’s Harbor
- (N) “The power goes off too often.” (15) Male, 49, mechanic, James Cistern
- (N) “Too high.” (29) Male, 32, truck driver, Governor’s Harbor
- (N) “Not now.” (34) Female, 38, secretary of local government, Green Castle
- (N) “There are ups and downs.” (44) Male, 39, construction, Governor’s Harbor
- (N) “They are very high.” (46) Male, 23, Princess Keys employee, Wemyss Bight
- (N) “No, because it goes off so much.” (48) Male, 17, student/intern, Governor’s Harbor
- (N) “They’re too high. They’ve just gone down in the past two months.” (64) Female, 44, librarian, Governor’s Harbor
- (N) “Fuel already dropped and the bills are still sky high.” (79) Male, 42, sales clerk, Rock Sound
- (N) “No—the surcharge!” (85) Male, 75, exporter, Rock Sound
- (N) “No—the fuel charge.” (86) Male, 51, owns bar/real estate/funeral parlor, Tarpum Bay

- (N) “Not at all.” (94) Female, 30, shop owner, James Cistern

Responses to Question 3: Is it ever difficult to pay your electric bills? (10 comments)

- “The bills don’t always come.” (9) Male, 47, resort manager, Cape Eleuthera (American expat.)
- “For the store during this past August it was especially tough.” (12) Female, 49, café owner, James Cistern
- “Some people have problems.” (13) Male, 58, power plant operator, Governor’s Harbor
- “No, I pay in stages.” (16) Male, 37, carpenter/mason/fisherman, James Cistern
- “At times, the prices go uphill.” (24) Female, 41, secretary of local government, Wemyss Bight
- “It’s gone down but it used to be hard.” (30) Female, 46, administrative clerk, Palmetto Point
- “Sometimes, in the past six to seven months.” (34) Female, 38, secretary of local government, Green Castle
- “Sometimes. It depends on work.” (44) Male, 39, construction, Governor’s Harbor
- “Sometimes. The economy is slowing.” (46) Male, 23, Princess Keys employee, Wemyss Bight
- “Yes, due to falling wages.” (64) Female, 44, librarian, Governor’s Harbor

Responses to Question 4: Have you ever had your service cut off due to not being able to pay the bills?

- “Some people spend money elsewhere, don’t pay bills, get cut off.” (13) Male, 58, power plant operator, Governor’s Harbor
- “I haven’t eaten but the lights stay on.” (88) Restaurant worker, 29, Rock Sound

Responses to Question 5: How satisfied are you with the service provided by the BEC? (52 comments)

BEC excellent

- (VS) “BEC has done a remarkable job.” (26) Male, unemployed, Green Castle
- (VS) “You can depend on them—they do get the power back on.” (34) Female, 38, secretary of local government, Green Castle
- (S) “BEC provides very good service.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay

BEC improving

- (S) “I’m happy with the new plant...hopes of better reliability.” (3) Male, 36, contractor, Harbour Island
- (S) “It’s less expensive than Grand Bahama.” (8) Male, 32, Island School employee, Deep Creek
- (S) “It’s not going off as often now.” (12) Female, 49, café owner, James Cistern
- (S) “Reliable but too heavy a load in the summer.” (16) Male, 37, carpenter/mason/fisherman, James Cistern
- (S) “80 percent rating...there’s not as many shut offs as there used to be.” (29) Male, 32,

truck driver, Governor's Harbor

- (S) "It's cheaper lately." (30) Female, 46, administrative clerk, Palmetto Point
- (S) "Rates are going down." (86) Male, 51, owns bar/real estate/funeral parlor, Tarpum Bay

BEC passable

- (S) "So-so." (32) Male, 39, electrician
- (S) "Halfway." (36) Female, 49, boutique owner, Rock Sound
- (S) "Fifty-fifty." (46) Male, 23, Princess Keys employee, Wemyss Bight
- (S) "Okay, it's okay." (64) Female, 44, librarian, Governor's Harbor
- (S) "It could improve." (68) Sales clerk, 42
- (S) "70 percent." (84) Male, 48, store manager, Rock Sound
- (S) "5 out of 10." (100) Female, 32, desk attendant, Deep Creek
- (S) "It could improve some more." (102) Male, 27, custom work, Rock Sound
- (D) "60 percent out of 100." (66) Male, 23, lobsterman and fisherman
- (D) "40 out of 100." (75) Male, 40, diesel mechanic, Gregory Town
- (D) "It could be better." (88) Restaurant worker, 29, Rock Sound
- (D) "There's a lot of room for improvement." (92) Male, 46, business owner, Rock Sound (English ex-pat)
- "Half and half." (93) Male, 67, club owner, Green Castle

BEC unreliable/expensive

- (S) "I don't like the power going off." (15) Male, 49, mechanic, James Cistern
- (S) "Except for when the power goes off." (54) Female, 50, sales clerk, Governor's Harbor
- (S) "I'm annoyed by brown outs...wonder if power will come back on...refrigerator food has gone bad." (62) Male, 34, store manager
- (S) "It's on and off and the appliances are messed up." (94) Female, 30, shop owner, James Cistern
- (D) "I want to see prices go down with gas prices." (7) Female, 32, beautician, Wemyss Bight
- (D) "Awful...blackouts...expensive." (38) Female, 78, retired, Cotton Bay
- (D) "Blackouts...it's expensive." (65) Male, 26, construction, Tarpum Bay
- (D) "They turn off the energy a lot. They just like money." (69) Female, 19, customs office, Governor's Harbor
- (D) "They blew out the fridge and stove last summer due to brownouts...\$3000 lost." (73) Female, 50s, librarian, Governor's Harbor
- (D) "You think everything is good, then pfff." (74) Male, 44, hardware store clerk, Rock Sound
- (D) "Shut off without warning." (77) Female, 34, sales clerk, Tarpum Bay
- (D) "Electronics damaged." (78) Male, 18, supermarket clerk, Waterport
- (D) "Blackouts." (97) Male, 68, mason, Deep Creek
- (D) "I'm not satisfied with recent blackouts." (99) Resort security guard, 34, Deep Creek
- (D) "They charge too much for fuel." (18) Male, 41, fisherman, Rock Sound

- (D) “Unpredictable rates.” (98) Male, 60, restaurant owner, Deep Creek
- (D) “The price is too high, electricity goes off.” (103) Female, 58, sales clerk, Rock Sound
- (D) “Thumbs down.” (24) Female, 41, secretary of local government, Wemyss Bight
- (D) “I used to be, but now things got different.” (67) Male, 67, retired
- (D) “I am very angry.” (70) Female, 20, receptionist, Governor’s Harbor

BEC a monopoly

- (S) “I need electricity and I don’t know where else to get it.” (23) Male, 21, fisherman/construction, Wemyss Bight
- (S) “There are no other alternatives.” (33) Male, 55, construction worker, Tarpum Bay
- (S) “It’s the only thing around.” (41) Male, 21, carpenter, Deep Creek
- (S) “There is no other choice.” (94) Female, 30, shop owner, James Cistern
- (S) “There’s no other choice.” (95) Female, 34, caterer
- (S) “We don’t have any options, so we have to be satisfied.” (96) Male, 70, parliamentarian/businessman, Tarpum Bay
- (D) “We don’t have a choice.” (59) Male, 20, parts salesman, Rock Sound
- (D) “Rates would be lower if there was competition.” (71) Female, 25, sales clerk/photographer, Bluff

Other

- (D) “It’s better on [Eleuthera] than Nassau, but not better than home [U.S.].” (9) Male, 47, resort manager, Cape Eleuthera (American ex-pat.)
- (D) “They should provide more information.” (81) Female, 31, resort maid, Waterford

Responses to Question 6: How much of your household expenses go to pay your electric bill? (12 comments)

- “\$150 to \$300.” (1) Male, 33, librarian and clerk, Rock Sound
- “Less than \$200.” (3) Male, 36, contractor, Harbour Island
- “\$60 to \$80.” (5) Male, 48, construction worker, James Cistern
- “\$250 a month.” (13) Male, 58, power plant operator, Governor’s Harbor
- “\$70...it’s expensive.” (19) Male, 29, mechanic/construction, Deep Creek
- “\$300 per month.” (26) Male, unemployed, Green Castle
- “As much as \$1000 a month.” (29) Male, 32, truck driver, Governor’s Harbor
- “A lot.” (45) Female, teacher, Green Castle
- “It’s the biggest bill.” (57) Female, 41, Island School secretary, Green Castle
- “\$100 a month.” (58) Female, 39, cook, Wemyss Bight
- “300-something a month. It’s the biggest expense.” (79) Male, 42, sales clerk, Rock Sound
- “\$600 to \$800 a month.” (98) Male, 60, restaurant owner, Deep Creek

Responses to Question 7: Do you know what sort of fuel the power plants on Eleuthera use?(1 comment)

- “They never taught me.” (62) Male, 34, store manager

Responses to Question 8: What do you think about burning diesel fuel to generate electricity? (48 comments)

Diesel the only option

- (F) “We’ve used it all our lives. Until somebody comes with a better plant, we can’t do much.” (3) Male, 36, contractor, Harbour Island
- (F) “We don’t have anything else.” (14) Male, 44, electrician, Palmetto Point
- (F) “Unless they come up with another choice.” (29) Male, 32, truck driver, Governor’s Harbor
- (F) “There’s no other choice.” (43) Male, 52, mechanic, Brisos Bay
- (F) “There are no other options.” (53) Male, 53, supply chain, Rock Sound
- (F) “We’ve gotta burn diesel.” (66) Male, 23, lobsterman and fisherman
- (F) “That’s the way they’ve always done it. It’s probably okay except the price of gas keeps going up.” (73) Female, 50s, librarian, Governor’s Harbor
- (F) “It’s the only thing.” (90) Male, 50, Ministry of Education, Rock Sound
- (F) “I guess we don’t have an alternative, do we?” (96) Male, 70, parliamentarian/businessman, Tarpum Bay
- (N) “It’s fine until we can do better...expensive tax...exorbitant costs...it would be better to save money.” (4) Male, 72, hardware store manager, Governor’s Harbor
- (DK) “I’m not sure if other options would work.” (12) Female, 49, café owner, James Cistern

Diesel cheap

- (F) “It’s cheaper.” (16) Male, 37, carpenter/mason/fisherman, James Cistern
- (F) “It’s the cheapest engine you can buy.” (19) Male, 29, mechanic/construction, Deep Creek
- (F) “It’s cheaper than gas.” (23) Male, 21, fisherman/construction, Wemyss Bight
- (F) “It’s less expensive.” (27) Female, 76, homemaker
- (F) “It’s much cheaper than gas. It’s a better deal.” (47) Male, 33, unemployed, Cotton Bay
- (F) “It’s much cheaper.” (63) Female, 47, sales clerk, Wemyss Bight
- (F) “It’s the least expensive.” (65) Male, 26, construction, Tarpum Bay
- (F) “It’s cheaper.” (68) Sales clerk, 42
- (F) “It’s more cheap.” (74) Male, 44, hardware store clerk, Rock Sound
- (F) “It’s cheaper.” (79) Male, 42, sales clerk, Rock Sound

Diesel expensive

- (F) “But diesel is expensive.” (15) Male, 49, mechanic, James Cistern
- (F) “Diesel costs more, but gas is high too.” (98) Male, 60, restaurant owner, Deep Creek
- (N) “It’s expensive.” (35) Female, 24, teacher, Tarpum Bay
- (N) “It’s too expensive.” (52) Female, 31, store clerk, Rock Sound
- (N) “Diesel’s more expensive.” (70) Female, 20, receptionist, Governor’s Harbor
- (N) “It’s expensive for the government.” (83) Male, 20, Island School carpenter, Deep Creek

- (DK) “It’s expensive.” (34) Female, 38, secretary of local government, Green Castle
- “It costs more for shipping.” (69) Female, 19, customs office, Governor’s Harbor

Diesel unclean

- (N) “It does not burn clean.” (1) Male, 33, librarian and clerk, Rock Sound
- (DK) “It’s not very clean, but it’s what they do.” (9) Male, 47, resort manager, Cape Eleuthera (American ex-pat.)
- (N) “It’s bad for the environment.” (33) Male, 55, construction worker, Tarpum Bay
- (N) “It has a big impact on the environment.” (48) Male, 17, student/intern, Governor’s Harbor
- (N) “It’s bad for the environment.” (56) Female, 32, resort manager, Deep Creek

Alternatives better

- (N) “It’s not developed yet but we need more resources to do renewable energy.” (8) Male, 32, Island School employee, Deep Creek
- (F) “A solar system would be better.” (26) Male, unemployed, Green Castle
- “Solar would be better.” (32) Male, 39, electrician
- (DK) “Maybe something else.” (40) Male, 53, Friendly Bob’s owner, Deep Creek
- “I would prefer wind or solar.” (76) Female, 30, homemaker, Windy Bay
- (N) “With fuel prices up, it’s bad. If they could find an alternative that would be good.” (84) Male, 48, store manager, Rock Sound

Other

- (F) “It’s more convenient.” (10) Female, 42, sales clerk, James Cistern
- (F) “You get a lot of power, it burns slower than gas.” (59) Male, 20, parts salesman, Rock Sound
- (F) “It’s better than gasoline.” (86) Male, 51, owns bar/real estate/funeral parlor, Tarpum Bay
- (F) “It’s efficient but it’s terrible.” (88) Restaurant worker, 29, Rock Sound
- (N) “I don’t like the smell.” (11) Female, 44, nurse, Wemyss Bight
- (DK) “I’m not too familiar with it.” (24) Female, 41, secretary of local government, Wemyss Bight
- (DK) “Prices are going down.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay
- (DK) “I wouldn’t know the difference.” (95) Female, 34, caterer

Responses to Question 9: With oil cheaper than it was a few months ago, do you expect the electricity prices to drop? (40 comments)

Prices rising

- (N) “They’re starting to go up.” (21) Female, 43, sales clerk, Deep Creek
- (N) “Prices are currently climbing.” (44) Male, 39, construction, Governor’s Harbor
- (N) “Gas prices are rising.” (71) Female, 25, sales clerk/photographer, Bluff

Prices stable

- (Y) “That’s what’s unfair—they haven’t dropped them or readjusted to sell fuel at new lower prices even though they bought it at a higher price.” (9) Male, 47, resort manager,

Cape Eleuthera (American ex-pat.)

- (Y) “But they haven’t come down yet.” (16) Male, 37, carpenter/mason/fisherman, James Cistern
- (Y) “They haven’t dropped yet.” (35) Female, 24, teacher, Tarpum Bay
- (N) “The bill is not going down.” (41) Male, 21, carpenter, Deep Creek
- (N) “The bills are not getting lower.” (46) Male, 23, Princess Keys employee, Wemyss Bight
- (N) “It should but it does not drop.” (47) Male, 33, unemployed, Cotton Bay
- (N) “No change yet.” (49) Female, 30, self-employed, Rock Sound
- “They haven’t dropped prices even though gas is cheaper.” (79) Male, 42, sales clerk, Rock Sound

Prices falling

- (Y) “It dropped.” (24) Female, 41, secretary of local government, Wemyss Bight
- (Y) “Gas prices are going down.” (33) Male, 55, construction worker, Tarpum Bay
- (Y) “It’s already dropped.” (54) Female, 50, sales clerk, Governor’s Harbor
- (Y) “It’s been dropping a little. Gas is cheaper.” (66) Male, 23, lobsterman and fisherman
- (Y) “It’s already dropped this past month.” (99) Resort security guard, 34, Deep Creek

Hopeful

- (Y) “I hope so.” (27) Female, 76, homemaker
- (Y) “I’m hoping they will have seen a little change for December.” (34) Female, 38, secretary of local government, Green Castle
- (Y) “The government is supposed to mandate a flat rate this month.” (56) Female, 32, resort manager, Deep Creek
- (Y) “I hope so.” (74) Male, 44, hardware store clerk, Rock Sound
- (Y) “They should.” (77) Female, 34, sales clerk, Tarpum Bay
- (Y) “Some, not a significant amount.” (92) Male, 46, business owner, Rock Sound (English ex-pat)
- (Y) “The surcharge will do down.” (96) Male, 70, parliamentarian/businessman, Tarpum Bay
- (Y) “But they don’t...I’m hoping they will.” (98) Male, 60, restaurant owner, Deep Creek
- (Y) “I hope so.” (100) Female, 32, desk attendant, Deep Creek
- (DK) “I hope so.” (20) Female, 47, unemployed, Deep Creek
- (DK) “I hope so.” (97) Male, 68, mason, Deep Creek

Skeptical

- (Y) “But it’s not going to...” (63) Female, 47, sales clerk, Wemyss Bight
- (Y) “They say so, I gotta wait to see it.” (75) Male, 40, diesel mechanic, Gregory Town
- (Y) “I don’t believe it.” (76) Female, 30, homemaker, Windy Bay
- (N) “I’ve never heard of bills going down.” (7) Female, 32, beautician, Wemyss Bight
- (N) “BEC said they will.” (8) Male, 32, Island School employee, Deep Creek
- (N) “Not soon.” (10) Female, 42, sales clerk, James Cistern

- (N) “Smaller profits for BEC.” (50) Male, 55, gardener, Rock Sound
- (N) “I think they may go up. I listen to the news.” (64) Female, 44, librarian, Governor’s Harbor
- (N) “It never does.” (81) Female, 31, resort maid, Waterford
- (N) “Just from experience, the prices stays up.” (84) Male, 48, store manager, Rock Sound
- (N) “They never change.” (85) Male, 75, exporter, Rock Sound
- (N) “They should.” (91) Female, 24, sales clerk, Waterford
- (DK) “They said so, but we’ll wait and see.” (72) Female, 60, sales clerk, Governor’s Harbor
- (DK) “It depends on how much gas they’re sitting on.” (73) Female, 50s, librarian, Governor’s Harbor

Responses to Question 10: Do you try to conserve electricity at home? (73 comments)

Turn things off/use less (54 comments)

- “I’m quick with the stove and hot water heater...I don’t water the flowers.” (1) Male, 33, librarian and clerk, Rock Sound
- “I unplug or turn off appliances.” (6) Male, 45, port officer, Governor’s Harbor
- “I don’t let the water run.” (7) Female, 32, beautician, Wemyss Bight
- “I keep all lights off...only run fridge and TV.” (10) Female, 42, sales clerk, James Cistern
- “I unplug appliances.” (14) Male, 44, electrician, Palmetto Point
- “I turn off lights.” (15) Male, 49, mechanic, James Cistern
- “I turn off water heater.” (16) Male, 37, carpenter/mason/fisherman, James Cistern
- “I turn outside lights off.” (19) Male, 29, mechanic/construction, Deep Creek
- “I turn things off.” (20) Female, 47, unemployed, Deep Creek
- “Turning off lights, pulling plugs, turning heater off.” (21) Female, 43, sales clerk, Deep Creek
- “I turn the TV off, iron everything at once.” (24) Female, 41, secretary of local government, Wemyss Bight
- “I turn off hot water heater during day, turn off unnecessary electronics.” (25) Female, 43, sales clerk, Wemyss Bight
- “I do less stuff.” (26) Male, unemployed, Green Castle
- “No air conditioner.” (27) Female, 76, homemaker
- “I don’t use much.” (28) Male, 20, fisherman/construction
- “I turn the lights off.” (31) Male, 30, unemployed
- “I turn off the water heater.” (35) Female, 24, teacher, Tarpum Bay
- “I turn off things.” (38) Female, 78, retired, Cotton Bay
- “I turn off all lights.” (40) Male, 53, Friendly Bob’s owner, Deep Creek
- “I turn stuff off.” (44) Male, 39, construction, Governor’s Harbor
- “I turn stuff off.” (46) Male, 23, Princess Keys employee, Wemyss Bight
- “I only leave on the radio.” (47) Male, 33, unemployed, Cotton Bay
- “I turn off things.” (51) Male, 45, businessman, Bannerman Town

- “I turn lights off, I only use air conditioning in the summer.” (56) Female, 32, resort manager, Deep Creek
- “I turn things off when I’m leaving the room.” (59) Male, 20, parts salesman, Rock Sound
- “I keep the lights off at nighttime, but it’s difficult.” (62) Male, 34, store manager
- “I don’t leave plugs in if I’m not home. When the power goes on and off, it can mess with them.” (63) Female, 47, sales clerk, Wemyss Bight
- “I pull plugs, keep the lights out.” (64) Female, 44, librarian, Governor’s Harbor
- “I turn off the lights when I’m not in the room.” (66) Male, 23, lobsterman and fisherman
- “I turn off the lights and appliances.” (69) Female, 19, customs office, Governor’s Harbor
- “I turn the computer, fan, lights off.” (71) Female, 25, sales clerk/photographer, Bluff
- “No air conditioning unless absolutely necessary...LED lights...turn off lights.” (73) Female, 50s, librarian, Governor’s Harbor
- “I turn off lights, everything with electricity at night.” (74) Male, 44, hardware store clerk, Rock Sound
- “I turn it off, use it when I have to, unplug the fridge.” (75) Male, 40, diesel mechanic, Gregory Town
- “I turn things off.” (76) Female, 30, homemaker, Windy Bay
- “If no one is in the room, I turn it off.” (77) Female, 34, sales clerk, Tarpum Bay
- “I turn things off when I’m not around.” (79) Male, 42, sales clerk, Rock Sound
- “I only use the fan lights, turn off the fridge at night.” (80) Female, 29, sales clerk, Wemyss Bight
- “I turn things off.” (81) Female, 31, resort maid, Waterford
- “I turn things off.” (83) Male, 20, Island School carpenter, Deep Creek
- “I turn the lights off. I teach my kids to do that. I turn off the pumps at night.” (84) Male, 48, store manager, Rock Sound
- “I turn off the lights, everything except the TV.” (85) Male, 75, exporter, Rock Sound
- “I keep things off.” (86) Male, 51, owns bar/real estate/funeral parlor, Tarpum Bay
- “Turning off lights, unplugging.” (86) Male, 51, owns bar/real estate/funeral parlor, Tarpum Bay
- “Lights.” (90) Male, 50, Ministry of Education, Rock Sound
- “I turn the lights off.” (91) Female, 24, sales clerk, Waterford
- “I turn off the lights.” (93) Male, 67, club owner, Green Castle
- “I turn off the lights, unplug outlets.” (94) Female, 30, shop owner, James Cistern
- “Somewhat—I turn everything off.” (95) Female, 34, caterer
- “We have ‘lights out time’.” (96) Male, 70, parliamentarian/businessman, Tarpum Bay
- “I use just necessary stuff.” (98) Male, 60, restaurant owner, Deep Creek
- “Keeping the lights off.” (101) Male, 73, bartender, Deep Creek
- “I use less power, keep the lights off, don’t use the microwave.” (102) Male, 27, custom work, Rock Sound
- “I turn off the lights, the water heater.” (103) Female, 58, sales clerk, Rock Sound

Use CFLs

- “Lights.” (8) Male, 32, Island School employee, Deep Creek

- “CFLS, putting PVs on floodlights.” (9) Male, 47, resort manager, Cape Eleuthera (American ex-pat.)
- “CFLs.” (11) Female, 44, nurse, Wemyss Bight
- “Energy saver bulbs.” (13) Male, 58, power plant operator, Governor’s Harbor
- “CFLs.” (17) Male, 52, Ministry of Agriculture, Green Castle
- “CFLs” (18) Male, 41, fisherman, Rock Sound
- “Lightbulbs.” (65) Male, 26, construction, Tarpum Bay

Both

- “Bulbs...I turn off lights...reduce appliance use.” (4) Male, 72, hardware store manager, Governor’s Harbor
- “I shut outside lights off, use energy-saving light bulbs at work and at home, don’t leave appliances running.” (12) Female, 49, café owner, James Cistern
- “I conserve water, yellow mellow, energy-saving lightbulbs.” (33) Male, 55, construction worker, Tarpum Bay
- “We cut back on the microwave and got CFL bulbs. We use candles.” (57) Female, 41, Island School secretary, Green Castle
- “I pull out the plugs, use energy-saving bulbs.” (68) Sales clerk, 42
- “Light bulbs, unplug appliances, keep lights off.” (88) Restaurant worker, 29, Rock Sound
- “Energy-saving light bulbs. I turn off the lights.” (89) Female, 28, video store manager, Tarpum Bay
- “CFLS, timers.” (92) Male, 46, business owner, Rock Sound (English ex-pat)
- “I turn off lights and appliances, use bulbs.” (100) Female, 32, desk attendant, Deep Creek

Other

- “Yes, not all the time, though. It’s hard with kids.” (34) Female, 38, secretary of local government, Green Castle
- “I have kids...I can’t conserve electricity at home. We use a lot.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay
- “I collect water, I don’t use the heater to heat water. I have a big electric stove.” (48) Male, 17, student/intern, Governor’s Harbor
- “Surge protectors.” (50) Male, 55, gardener, Rock Sound
- “Battery-powered lights.” (104) Female, 31, janitor, Green Castle

Responses to Question 11: Have you ever looked into other ways to supply electricity or hot water to your house? (36 comments)

Water heater

- “Hot water heater.” (3) Male, 36, contractor, Harbour Island
- “Water heater.” (5) Male, 48, construction worker, James Cistern
- “Solar water heater.” (6) Male, 45, port officer, Governor’s Harbor

Generator

- “Gas back-up generator.” (1) Male, 33, librarian and clerk, Rock Sound
- “I thought about a generator.” (7) Female, 32, beautician, Wemyss Bight
- “A generator.” (19) Male, 29, mechanic/construction, Deep Creek

- “A generator.” (47) Male, 33, unemployed, Cotton Bay
- “A generator but BEC said, ‘No.’” (48) Male, 17, student/intern, Governor’s Harbor
- “My own generator.” (85) Male, 75, exporter, Rock Sound

Solar

- “There’s lots of solar on buildings here.” (9) Male, 47, resort manager, Cape Eleuthera (American ex-pat.)
- “Solar panels.” (14) Male, 44, electrician, Palmetto Point
- “Solar panels like the Island School.” (50) Male, 55, gardener, Rock Sound
- “I looked into solar energy.” (56) Female, 32, resort manager, Deep Creek
- “Solar panels.” (57) Female, 41, Island School secretary, Green Castle
- “Solar but I haven’t looked into it.” (73) Female, 50s, librarian, Governor’s Harbor
- “Solar energy—it’s expensive.” (74) Male, 44, hardware store clerk, Rock Sound
- “The Cape Eleuthera Institute did a study for solar at our house.” (92) Male, 46, business owner, Rock Sound (English ex-pat)

Stove boiling

- “I boil water on the stove.” (22) Female, self-employed, Wemyss Bight
- “The stove—boiling water.” (25) Female, 43, sales clerk, Wemyss Bight
- “I boil water on the stove.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay
- “I boil water instead of the heater.” (78) Male, 18, supermarket clerk, Waterport

Multiple

- “Converters, solar.” (75) Male, 40, diesel mechanic, Gregory Town
- “Wind turbine, water heater, solar.” (76) Female, 30, homemaker, Windy Bay
- “A personal generator. I was thinking about solar but the costs are higher.” (84) Male, 48, store manager, Rock Sound
- “Hot water heaters, solar alternative.” (96) Male, 70, parliamentarian/businessman, Tarpum Bay
- “A hand pump for water, a small solar light.” (103) Female, 58, sales clerk, Rock Sound

Other

- “CFL bulbs.” (26) Male, unemployed, Green Castle
- “I thought about propane for hurricanes.” (29) Male, 32, truck driver, Governor’s Harbor
- “Yes, I’m waiting for prices to go down. The investment is too high.” (33) Male, 55, construction worker, Tarpum Bay
- “I don’t know about them. I have heard of and use CFLs though.” (34) Female, 38, secretary of local government, Green Castle
- (N) “I thought about it.” (40) Male, 53, Friendly Bob’s owner, Deep Creek
- “I get water from an outside pump.” (42) Farmer, 41, Deep Creek
- “Cisterns to collect rainwater, but they’re expensive.” (59) Male, 20, parts salesman, Rock Sound
- “No. If it was cheap or easy I would, though.” (64) Female, 44, librarian, Governor’s Harbor
- “Island School model.” (83) Male, 20, Island School carpenter, Deep Creek
- “Here especially, there are not many options.” (88) Restaurant worker, 29, Rock Sound

Responses to Question 12: Do you think the new BEC power plant planned for Hatchet Bay is a good idea? (42 comments)

New plant necessary/positive

- (Y) “Excellent.” (1) Male, 33, librarian and clerk, Rock Sound
- (Y) “There is a great need!” (4) Male, 72, hardware store manager, Governor’s Harbor
- (Y) “We need power for new hotels.” (13) Male, 58, power plant operator, Governor’s Harbor
- (Y) “We need power.” (15) Male, 49, mechanic, James Cistern
- (Y) “Good, fit, cheaper...it supports all of Eleuthera.” (23) Male, 21, fisherman/construction, Wemyss Bight
- (Y) “They need it.” (68) Sales clerk, 42
- (Y) “We need more energy.” (77) Female, 34, sales clerk, Tarpum Bay
- (Y) “Maybe better for people up north.” (104) Female, 31, janitor, Green Castle
- “It won’t affect us down here; it’s a good idea for the North.” (93) Male, 67, club owner, Green Castle

New plant will increase reliability

- (Y) “More reliable energy...keep energy flowing.” (3) Male, 36, contractor, Harbour Island
- (Y) “Anything to make it more reliable.” (7) Female, 32, beautician, Wemyss Bight
- (Y) “It’ll help with the load.” (16) Male, 37, carpenter/mason/fisherman, James Cistern
- (Y) “It will be more reliable.” (18) Male, 41, fisherman, Rock Sound
- (DK) “Maybe it will cut down the load on Rock Sound.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay
- (Y) “We’ll get more reliable power.” (46) Male, 23, Princess Keys employee, Wemyss Bight
- (Y) “It will take the load off here.” (79) Male, 42, sales clerk, Rock Sound
- (Y) “They need a back-up.” (81) Female, 31, resort maid, Waterford
- (Y) “It takes some of the load off of the Rock Sound plant.” (86) Male, 51, owns bar/real estate/funeral parlor, Tarpum Bay
- (Y) “Better service.” (97) Male, 68, mason, Deep Creek
- (Y) “It will lessen the load.” (98) Male, 60, restaurant owner, Deep Creek
- (Y) “It will relive the overload that causes blackouts.” (99) Resort security guard, 34, Deep Creek
- (Y) “It will take a load off the South.” (102) Male, 27, custom work, Rock Sound

Conditional/unsure

- (Y) “If it is going to be better.” (56) Female, 32, resort manager, Deep Creek
- (Y) “It’s possible.” (69) Female, 19, customs office, Governor’s Harbor
- (Y) “If it will make things better.” (100) Female, 32, desk attendant, Deep Creek
- (DK) “Jobs.” (10) Female, 42, sales clerk, James Cistern
- (DK) “It depends if the rates change.” (17) Male, 52, Ministry of Agriculture, Green Castle

- (DK) “I haven’t heard anything about it.” (24) Female, 41, secretary of local government, Wemyss Bight
- (DK) “It depends on if they put on good generators.” (29) Male, 32, truck driver, Governor’s Harbor
- (DK) “If it helps the community, it’s a good idea.” (64) Female, 44, librarian, Governor’s Harbor
- (DK) “Only if the service gets better.” (103) Female, 58, sales clerk, Rock Sound
- (N) “Not if rates will be the same.” (40) Male, 53, Friendly Bob’s owner, Deep Creek

Hatchet Bay plant a bad idea/skeptical

- (N) “It needs to be centrally located.” (6) Male, 45, port officer, Governor’s Harbor
- (N) “It’s not good for the whole island.” (27) Female, 76, homemaker
- (N) “It’s a bunch of crap.” (50) Male, 55, gardener, Rock Sound
- (N) “They could find cheaper.” (65) Male, 26, construction, Tarpum Bay
- (N) “Efficient is always needed.” (88) Restaurant worker, 29, Rock Sound
- (N) “It’s more money.” (91) Female, 24, sales clerk, Waterford
- (N) “It will cause a number of people to lose their jobs, go elsewhere.” (96) Male, 70, parliamentarian/businessman, Tarpum Bay
- (DK) “I don’t think they’re being totally honest.” (59) Male, 20, parts salesman, Rock Sound
- (Y) “For now, it’s going to have to work.” (92) Male, 46, business owner, Rock Sound (English ex-pat)
- (Y) “I toured the Island School—solar and wind.” (78) Male, 18, supermarket clerk, Waterport

Responses to Question 13: Do you think building new diesel electric plants is a good idea? (45 comments)

Diesel plants the only option

- (DK) “Until we can find other ways of generating energy, that’s all we can do.” (4) Male, 72, hardware store manager, Governor’s Harbor
- “It’s the only technology available, so it’s better than nothing.” (9) Male, 47, resort manager, Cape Eleuthera (American ex-pat.)
- (Y) “We have no choice.” (14) Male, 44, electrician, Palmetto Point
- (Y) “I can’t see the government changing it; they say alternatives cost too much.” (29) Male, 32, truck driver, Governor’s Harbor
- (Y) “There’s not much choice.” (53) Male, 53, supply chain, Rock Sound
- (DK) “What else?” (90) Male, 50, Ministry of Education, Rock Sound
- (Y) “We can’t get away from diesel at the moment. It takes a lot of time to work towards an alternative.” (96) Male, 70, parliamentarian/businessman, Tarpum Bay

Diesel plants necessary

- (Y) “More power.” (69) Female, 19, customs office, Governor’s Harbor
- (Y) “They need more generators.” (75) Male, 40, diesel mechanic, Gregory Town
- (Y) “To meet demand.” (99) Resort security guard, 34, Deep Creek

More plants improve prices/reliability

- (Y) “I heard diesel is cheap.” (7) Female, 32, beautician, Wemyss Bight
- (Y) “It’s more cheap.” (12) Female, 49, café owner, James Cistern
- (Y) “Lower bills, more reliable.” (17) Male, 52, Ministry of Agriculture, Green Castle
- (Y) “They’re very cheap.” (28) Male, 20, fisherman/construction
- (Y) “It’s cheaper than gas.” (30) Female, 46, administrative clerk, Palmetto Point
- (Y) “The costs of diesel are going down.” (46) Male, 23, Princess Keys employee, Wemyss Bight
- (Y) “It’s affordable.” (74) Male, 44, hardware store clerk, Rock Sound

Diesel plants bad

- (Y) “It’s more reliable but diesel fuel is bad.” (8) Male, 32, Island School employee, Deep Creek
- (N) “They should look for something cheaper.” (27) Female, 76, homemaker
- (N) “It’s not good for the environment.” (49) Female, 30, self-employed, Rock Sound
- (N) “It’s expensive.” (103) Female, 58, sales clerk, Rock Sound
- (N) “I don’t like the smell.” (104) Female, 31, janitor, Green Castle

Alternatives better

- (N) “We need to change fuel overall.” (1) Male, 33, librarian and clerk, Rock Sound
- (N) “We need look at alternative ways of providing electricity.” (6) Male, 45, port officer, Governor’s Harbor
- (DK) “Maybe a windmill, but it’s diesel right now.” (44) Male, 39, construction, Governor’s Harbor
- (N) “No, because of the environment. Biodiesel would be better.” (56) Female, 32, resort manager, Deep Creek
- (N) “Solar panels instead.” (59) Male, 20, parts salesman, Rock Sound
- (N) “Solar energy is better.” (61) Female, 50+, teacher, Rock Sound
- (N) “But biodiesel, yes.” (70) Female, 20, receptionist, Governor’s Harbor
- (DK) “They should try solar.” (71) Female, 25, sales clerk/photographer, Bluff
- (Y) “Solar, if it was more affordable, would be better for the community; also, individually for homeowners.” (84) Male, 48, store manager, Rock Sound
- (DK) “Island School stuff is cool.” (93) Male, 67, club owner, Green Castle

Conditional

- (DK) “Only if they make it on the island.” (50) Male, 55, gardener, Rock Sound
- (DK) “It depends on money.” (91) Female, 24, sales clerk, Waterford
- (Y) “If the price is cheaper.” (95) Female, 34, caterer
- (Y) “If there are no other means.” (98) Male, 60, restaurant owner, Deep Creek

Unsure

- (DK) “I have to see what actually happens.” (11) Female, 44, nurse, Wemyss Bight
- (DK) “It depends on the plants.” (20) Female, 47, unemployed, Deep Creek

- (DK) “Probably...it could be.” (35) Female, 24, teacher, Tarpum Bay
- (DK) “I don’t know enough about diesel.” (38) Female, 78, retired, Cotton Bay
- (DK) “I don’t know if it would make a difference.” (94) Female, 30, shop owner, James Cistern

Other

- (Y) “It might create competition [if it was not BEC].” (34) Female, 38, secretary of local government, Green Castle
- (Y) “It’s good to have more.” (63) Female, 47, sales clerk, Wemyss Bight
- (N) “They should focus on giving people a break.” (78) Male, 18, supermarket clerk, Waterport
- (Y) “The more the merrier, competition is always good.” (86) Male, 51, owns bar/real estate/funeral parlor, Tarpum Bay

Responses to Question 15: What do you think government should do [to provide more affordable and reliable electricity]? (73 comments)

Alternative energy

- “Find other sources of energy...the Minister of the Environment should find other ways of dealing with it...but need money, capital.” (4) Male, 72, hardware store manager, Governor’s Harbor
- “Feasibility studies...data collecting...use Island School as resource...renewables.” (6) Male, 45, port officer, Governor’s Harbor
- “Look into windmills and other reliable sources.” (9) Male, 47, resort manager, Cape Eleuthera (American ex-pat.)
- “They conducted studies...talked about wind turbines.” (14) Male, 44, electrician, Palmetto Point
- “Solar panels.” (17) Male, 52, Ministry of Agriculture, Green Castle
- “Renewable energy.” (27) Female, 76, homemaker
- “More renewable energy, wind power.” (33) Male, 55, construction worker, Tarpum Bay
- “Build a windmill, conserve energy, do different things.” (44) Male, 39, construction, Governor’s Harbor
- “More solar energy.” (49) Female, 30, self-employed, Rock Sound
- “Look into solar and wind and biofuel.” (57) Female, 41, Island School secretary, Green Castle
- “Sell it [biodiesel].” (70) Female, 20, receptionist, Governor’s Harbor
- “Solar is better, cheaper.” (71) Female, 25, sales clerk/photographer, Bluff
- “Solar. The government should have done it 5 to 10 years ago.” (73) Female, 50s, librarian, Governor’s Harbor
- “Give people a break who want to go renewable—drop the duty on panels.” (76) Female, 30, homemaker, Windy Bay
- “Introduce solar energy, wind energy.” (78) Male, 18, supermarket clerk, Waterport
- “Solar, wind.” (83) Male, 20, Island School carpenter, Deep Creek

- “Look into going solar; biodiesel.” (96) Male, 70, parliamentarian/businessman, Tarpum Bay
- “Look into solar.” (100) Female, 32, desk attendant, Deep Creek
- “Try to find alternatives.” (103) Female, 58, sales clerk, Rock Sound

Lower energy prices

- “They should use different fuel that is cheaper.” (20) Female, 47, unemployed, Deep Creek
- “Pay more of the surcharge.” (30) Female, 46, administrative clerk, Palmetto Point
- “Everyone is having a hard time [global recession] so they should try and get cheaper fuel and provide it to people.” (34) Female, 38, secretary of local government, Green Castle
- “BEC is charging too much.” (46) Male, 23, Princess Keys employee, Wemyss Bight
- “Subsidize.” (51) Male, 45, businessman, Bannerman Town
- “Cut the surcharge.” (54) Female, 50, sales clerk, Governor’s Harbor
- “Mandate an even rate.” (56) Female, 32, resort manager, Deep Creek
- “The government can do more...subsidize fuel surcharges.” (61) Female, 50+, teacher, Rock Sound
- “Fuel prices are too high. The surcharge is killing us.” (63) Female, 47, sales clerk, Wemyss Bight
- “Regulate the price—it’s out of control.” (66) Male, 23, lobsterman and fisherman
- “Keep it low [prices].” (72) Female, 60, sales clerk, Governor’s Harbor
- “Cut down bills.” (74) Male, 44, hardware store clerk, Rock Sound
- “Drop BEC prices. The economy’s in trouble.” (79) Male, 42, sales clerk, Rock Sound
- “Prices should go down.” (80) Female, 29, sales clerk, Wemyss Bight
- “Get rid of fuel surcharges.” (84) Male, 48, store manager, Rock Sound
- “Get fuel prices under control.” (85) Male, 75, exporter, Rock Sound
- “Preserving electricity. Help with costs.” (94) Female, 30, shop owner, James Cistern
- “A better rate on diesel.” (102) Male, 27, custom work, Rock Sound

Expand/upgrade diesel plants

- “Make generators more efficient.” (7) Female, 32, beautician, Wemyss Bight
- “Buy more generators.” (28) Male, 20, fisherman/construction
- “A third generator.” (43) Male, 52, mechanic, Brisos Bay
- “Use more modern equipment.” (47) Male, 33, unemployed, Cotton Bay
- “Build more diesel plants.” (62) Male, 34, store manager

Nothing/satisfied

- “The government actually stepped in in August and forgave bills. They’re the poor man’s friend...trying as much as they can.” (12) Female, 49, café owner, James Cistern
- “They’ve been good lately.” (25) Female, 43, sales clerk, Wemyss Bight
- “No, they have a lot of responsibility.” (29) Male, 32, truck driver, Governor’s Harbor
- “I don’t think they can do any more.” (36) Female, 49, boutique owner, Rock Sound
- “The government has no money...it would be nice if they could.” (38) Female, 78, retired, Cotton Bay
- “It’s a hardship for lots of people but there are not any jobs and the economy is down so the government can’t or won’t do anything.” (58) Female, 39, cook, Wemyss Bight

- “They’re trying their best now for the good of the people.” (64) Female, 44, librarian, Governor’s Harbor
- “They’re doing pretty good right now.” (86) Male, 51, owns bar/real estate/funeral parlor, Tarpum Bay

Multiple

- “Be more upfront with supplying better sources...they should give more back.” (16) Male, 37, carpenter/mason/fisherman, James Cistern
- “Drop prices or use solar.” (32) Male, 39, electrician
- “Upgrade plants, use better energy.” (65) Male, 26, construction, Tarpum Bay
- “Raise awareness of alternative energy, cap gas surcharges, packages for broken families.” (88) Restaurant worker, 29, Rock Sound
- “Private utilities, provide incentives for renewables.” (92) Male, 46, business owner, Rock Sound (English ex-pat)

Other

- “The government and companies must do more...more reliable service...watch employees more closely.” (1) Male, 33, librarian and clerk, Rock Sound
- “Put in lighting.” (2) Male, 46, unemployed, Green Castle
- “Recycle used oil.” (3) Male, 36, contractor, Harbour Island
- “I don’t know enough about electricity.” (10) Female, 42, sales clerk, James Cistern
- “They’re doing what they can...government assistance to senior citizens.” (11) Female, 44, nurse, Wemyss Bight
- “They should look into it.” (15) Male, 49, mechanic, James Cistern
- “We need more jobs.” (23) Male, 21, fisherman/construction, Wemyss Bight
- “Make more jobs...progress for the poor, the small man.” (26) Male, unemployed, Green Castle
- “They need to find something!” (35) Female, 24, teacher, Tarpum Bay
- “The cost of living is very high in the Bahamas. We need to look for ways of conserving energy.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay
- “The problem at Harbour Island...the government is not doing enough. The government did improve when people voted.” (48) Male, 17, student/intern, Governor’s Harbor
- “The water is bad.” (52) Female, 31, store clerk, Rock Sound
- “Change the lines.” (59) Male, 20, parts salesman, Rock Sound
- “Look to the States.” (75) Male, 40, diesel mechanic, Gregory Town
- “We need warning for power shortages.” (77) Female, 34, sales clerk, Tarpum Bay
- “Have a back-up plan, be honest.” (81) Female, 31, resort maid, Waterford
- “Blame the managers at the power plant.” (89) Female, 28, video store manager, Tarpum Bay
- “There is no talk of introducing green energy.” (90) Male, 50, Ministry of Education, Rock Sound
- “We need it [electricity]! They need to come up with something.” (99) Resort security guard, 34, Deep Creek
- “More jobs.” (104) Female, 31, janitor, Green Castle

Responses to Question 16: Have you ever heard the terms “climate change” or “global warming”? (2 comments)

- “On TV news, not here.” (44) Male, 39, construction, Governor’s Harbor
- “A little, through my daughter.” (57) Female, 41, Island School secretary, Green Castle

Responses to Question 17: What are some of the causes of climate change? (40 comments)

Correct

- “Fumes...smoke in the atmosphere.” (3) Male, 36, contractor, Harbour Island
- “Generation of electrical power.” (4) Male, 72, hardware store manager, Governor’s Harbor
- “Icebergs melting, rising tides, fuel emissions, day-to-day actions like slash and burn.” (6) Male, 45, port officer, Governor’s Harbor
- “Pollution in the air.” (21) Female, 43, sales clerk, Deep Creek
- “Too much carbon, but Eleuthera does not make much and there is a breeze.” (29) Male, 32, truck driver, Governor’s Harbor
- “Fumes, carbon emissions.” (32) Male, 39, electrician
- “Gases, emissions from vehicles.” (35) Female, 24, teacher, Tarpum Bay
- “Too much dumping and pollution in the world. Emissions from vehicles, especially in cities, like Nassau. Energy use and production.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay
- “Carbon gas.” (48) Male, 17, student/intern, Governor’s Harbor
- “The old system...carbon emissions.” (51) Male, 45, businessman, Bannerman Town
- “Fossil fuels.” (53) Male, 53, supply chain, Rock Sound
- “Burning diesel, pollution...not so much on the Family Islands.” (56) Female, 32, resort manager, Deep Creek
- “Pollution.” (61) Female, 50+, teacher, Rock Sound
- “All sorts of fuel.” (65) Male, 26, construction, Tarpum Bay
- “Burning gas. Too much gas.” (69) Female, 19, customs office, Governor’s Harbor
- “Pollution.” (73) Female, 50s, librarian, Governor’s Harbor
- “Pollution.” (76) Female, 30, homemaker, Windy Bay
- “Pollution.” (78) Male, 18, supermarket clerk, Waterport
- “Car fumes.” (80) Female, 29, sales clerk, Wemyss Bight
- “Diesel.” (83) Male, 20, Island School carpenter, Deep Creek
- “Pollution.” (85) Male, 75, exporter, Rock Sound
- “More vehicles, higher temperature.” (86) Male, 51, owns bar/real estate/funeral parlor, Tarpum Bay
- “Huge cars, energy overdone.” (88) Restaurant worker, 29, Rock Sound
- “Temperature, pollution.” (90) Male, 50, Ministry of Education, Rock Sound
- “Greenhouse gases.” (92) Male, 46, business owner, Rock Sound (English ex-pat)
- “BEC plants, burning stuff.” (100) Female, 32, desk attendant, Deep Creek

Partially correct

- “Emissions from oil and fuel...pesticides.” (1) Male, 33, librarian and clerk, Rock Sound
- “CO₂, insecticide.” (7) Female, 32, beautician, Wemyss Bight
- “Burning trash, diesel, cars, no recycling.” (9) Male, 47, resort manager, Cape Eleuthera (American ex-pat.)

Incorrect/uninformed/vague

- “It’s trickling down from the U.S.” (8) Male, 32, Island School employee, Deep Creek
- “Only the Lord knows.” (23) Male, 21, fisherman/construction, Wemyss Bight
- “Mother nature.” (27) Female, 76, homemaker
- “I’m not convinced that humans are causing it...natural phenomenon.” (38) Female, 78, retired, Cotton Bay
- “Humans.” (59) Male, 20, parts salesman, Rock Sound
- “Change in itself.” (66) Male, 23, lobsterman and fisherman
- “Nature, God.” (68) Sales clerk, 42
- “Careful with what we do...look at long haul...burning trees...protect what we got.” (77) Female, 34, sales clerk, Tarpum Bay

Other

- “Year after year is getting different. The winter has changed.” (12) Female, 49, café owner, James Cistern
- “Over there in Alaska they’re losing the polar bears.” (50) Male, 55, gardener, Rock Sound
- “Let’s put it like this: you would die regardless.” (95) Female, 34, caterer
- “I never paid attention, never thought about it.” (99) Resort security guard, 34, Deep Creek

Responses to Question 18: What are some of the possible impacts of climate change on Eleuthera? (39 comments)

Correct

- “Extra hot summers.” (3) Male, 36, contractor, Harbour Island
- “Flooding, deforestation, desertification, erosion, low rainfall.” (6) Male, 45, port officer, Governor’s Harbor
- “Coral, droughts.” (8) Male, 32, Island School employee, Deep Creek
- “Reefs, fisheries.” (9) Male, 47, resort manager, Cape Eleuthera (American ex-pat.)
- “It will be hotter.” (14) Male, 44, electrician, Palmetto Point
- “More heat causes us to use more air conditioning.” (26) Male, unemployed, Green Castle
- “Beach erosion.” (29) Male, 32, truck driver, Governor’s Harbor
- “Iceberg melting, tsunamis.” (33) Male, 55, construction worker, Tarpum Bay
- “Coral bleaching, Arctic melting. It will affect bonefish reproduction, it will affect fish populations.” (48) Male, 17, student/intern, Governor’s Harbor
- “High tides.” (50) Male, 55, gardener, Rock Sound
- “Fishing, agriculture.” (51) Male, 45, businessman, Bannerman Town
- “More hurricanes and sea level rising.” (57) Female, 41, Island School secretary, Green Castle
- “Farmers worry because their crops wouldn’t be able to go.” (62) Male, 34, store manager
- “More electricity for air conditioning.” (65) Male, 26, construction, Tarpum Bay

- “The water level has risen since we were kids.” (66) Male, 23, lobsterman and fisherman
- “Brush fires from heat in the summer.” (69) Female, 19, customs office, Governor’s Harbor
- “Hurricanes.” (71) Female, 25, sales clerk/photographer, Bluff
- “Hurricanes stronger...catastrophic.” (73) Female, 50s, librarian, Governor’s Harbor
- “Hotter summers...the sand is hot.” (77) Female, 34, sales clerk, Tarpum Bay
- “Crops dying.” (78) Male, 18, supermarket clerk, Waterport
- “Temperature change.” (83) Male, 20, Island School carpenter, Deep Creek
- “Less rain, hotter summers.” (84) Male, 48, store manager, Rock Sound
- “Higher tides, hurricanes.” (85) Male, 75, exporter, Rock Sound
- “Rising sea levels.” (92) Male, 46, business owner, Rock Sound (English ex-pat)

Partially correct

- “Polar ice caps melting, cancer, changing water level.” (7) Female, 32, beautician, Wemyss Bight
- “Colder winters, hotter summers.” (27) Female, 76, homemaker
- “We might not have the same seasons. We don’t see the rainy season in May anymore...bigger droughts and dry stretch. Winter’s not as long now either.” (34) Female, 38, secretary of local government, Green Castle
- “Cooler winters and hotter summers.” (68) Sales clerk, 42

Incorrect/uninformed/vague

- “Bad.” (1) Male, 33, librarian and clerk, Rock Sound
- “It’s dangerous.” (17) Male, 52, Ministry of Agriculture, Green Castle
- “Pollution, littering, closed beaches.” (70) Female, 20, receptionist, Governor’s Harbor
- “Pollution.” (76) Female, 30, homemaker, Windy Bay
- “Cooler weather.” (101) Male, 73, bartender, Deep Creek

Eleuthera safe

- “I don’t believe it’s really happening.” (38) Female, 78, retired, Cotton Bay
- “We don’t see too many effects.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay
- “The sea wind takes away smoke, so there are no effects of global warming here.” (44) Male, 39, construction, Governor’s Harbor
- “I have not seen the effects yet.” (56) Female, 32, resort manager, Deep Creek
- “I haven’t thought about it much.” (63) Female, 47, sales clerk, Wemyss Bight
- “We’re the last to know.” (90) Male, 50, Ministry of Education, Rock Sound

Other

- “The ozone layer is affected; refrigerator cases are bad—freon.” (96) Male, 70, parliamentarian/businessman, Tarpum Bay

Responses to Question 19: Do you worry that Eleuthera is at risk or vulnerable to climate change? (8 comments)

- (AL) “In summers.” (3) Male, 36, contractor, Harbour Island
- (AL) “No more than any other place.” (8) Male, 32, Island School employee, Deep Creek
- (AL) “I don’t want to think about it.” (33) Male, 55, construction worker, Tarpum Bay

- (N) “I worry about hurricanes.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay
- (N) “I’m not at a point to worry about it because of the wind.” (44) Male, 39, construction, Governor’s Harbor
- (N) “I don’t think about it.” (64) Female, 44, librarian, Governor’s Harbor
- (V) “We need to stop cutting down and burning trees.” (77) Female, 34, sales clerk, Tarpum Bay
- (S) “The whole world is, but there are lots of resources here so we’re not seeing it yet.” (84) Male, 48, store manager, Rock Sound

Responses to Question 20: Do you think Eleuthera is prepared to handle extreme climate change events? (10 comments)

- (Y) “There was a big hurricane in 1992.” (8) Male, 32, Island School employee, Deep Creek
- (N) “The Bahamas and the world aren’t ready. They’re not taking advantage of possible technologies...it goes back to money.” (9) Male, 47, resort manager, Cape Eleuthera (American ex-pat.)
- (N) “Not now.” (44) Male, 39, construction, Governor’s Harbor
- (N) “45 percent prepared. Graveyards are on beaches and hurricanes pull up bodies and we have caskets on the street and bodies in the trees.” (57) Female, 41, Island School secretary, Green Castle
- (N) “To a certain extent.” (59) Male, 20, parts salesman, Rock Sound
- (DK) “Droughts.” (62) Male, 34, store manager
- (N) “Not educated.” (65) Male, 26, construction, Tarpum Bay
- (N) “It’s difficult to get forces here to help.” (73) Female, 50s, librarian, Governor’s Harbor
- (N) “People are dying.” (77) Female, 34, sales clerk, Tarpum Bay
- (N) “Not at all.” (88) Restaurant worker, 29, Rock Sound

Responses to Question 21: Should anything be done to address climate change/global warming? (33 comments)

Education

- “Education.” (1) Male, 33, librarian and clerk, Rock Sound
- “Education, workshops, drills and exercises.” (6) Male, 45, port officer, Governor’s Harbor
- “Education.” (7) Female, 32, beautician, Wemyss Bight
- “More education at school.” (56) Female, 32, resort manager, Deep Creek
- “Education.” (61) Female, 50+, teacher, Rock Sound
- “Education on the issues.” (64) Female, 44, librarian, Governor’s Harbor
- “Education.” (65) Male, 26, construction, Tarpum Bay
- “Education.” (71) Female, 25, sales clerk/photographer, Bluff
- “Education for the Earth, recycling.” (77) Female, 34, sales clerk, Tarpum Bay

Environmental action

- “Stop lighting fires.” (3) Male, 36, contractor, Harbour Island
- “Protect the reefs.” (50) Male, 55, gardener, Rock Sound
- “Clean electricity, recycling.” (76) Female, 30, homemaker, Windy Bay

- “Recycle, not burning trash.” (78) Male, 18, supermarket clerk, Waterport
- “Stop polluting.” (85) Male, 75, exporter, Rock Sound
- “Burn less diesel.” (102) Male, 27, custom work, Rock Sound

Infrastructure

- “Protective shelter.” (17) Male, 52, Ministry of Agriculture, Green Castle
- “Medically, communications.” (59) Male, 20, parts salesman, Rock Sound
- “Improve infrastructure.” (90) Male, 50, Ministry of Education, Rock Sound

Action unnecessary

- “There’s not much you can do.” (16) Male, 37, carpenter/mason/fisherman, James Cistern
- “You can’t do anything about it—its nature.” (66) Male, 23, lobsterman and fisherman
- “You can’t control the weather.” (68) Sales clerk, 42
- “It’s not possible to change it.” (69) Female, 19, customs office, Governor’s Harbor
- “What can be done?” (94) Female, 30, shop owner, James Cistern

Other

- “Any action is better than waiting.” (4) Male, 72, hardware store manager, Governor’s Harbor
- “I don’t think we’ll see it.” (9) Male, 47, resort manager, Cape Eleuthera (American expat.)
- “Warned but nothing is being done.” (14) Male, 44, electrician, Palmetto Point
- “It should be investigated.” (27) Female, 76, homemaker
- “Yes, that’s something the whole world should be doing.” (32) Male, 39, electrician
- “If it is possible, but people don’t worry about global warming here.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay
- “The government needs to act.” (48) Male, 17, student/intern, Governor’s Harbor
- “I’m not sure what the Bahamas can do. Bigger countries should take the action.” (73) Female, 50s, librarian, Governor’s Harbor
- “Should it come upon us rapidly, we will have to find our way out.” (96) Male, 70, parliamentarian/businessman, Tarpum Bay
- “Yes, just in case it happens.” (100) Female, 32, desk attendant, Deep Creek

Responses to Question 22: In your opinion what agency or group should address climate change in Eleuthera? (39 comments)

The government

- “Ministry of Health.” (3) Male, 36, contractor, Harbour Island
- “Minister for the Environment; Minister for Energy.” (4) Male, 72, hardware store manager, Governor’s Harbor
- “Minister of the Environment.” (9) Male, 47, resort manager, Cape Eleuthera (American expat.)
- “Environmental Health Services.” (21) Female, 43, sales clerk, Deep Creek
- “The government.” (24) Female, 41, secretary of local government, Wemyss Bight
- “Ministry of Environmental Health.” (35) Female, 24, teacher, Tarpum Bay

- “Ministry of Environmental Health.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay
- “The Minister of Health.” (44) Male, 39, construction, Governor’s Harbor
- “The Ministry of Fisheries.” (48) Male, 17, student/intern, Governor’s Harbor
- “The local government.” (51) Male, 45, businessman, Bannerman Town
- “The government.” (69) Female, 19, customs office, Governor’s Harbor
- “The government.” (76) Female, 30, homemaker, Windy Bay
- “Social services.” (83) Male, 20, Island School carpenter, Deep Creek
- “The government.” (84) Male, 48, store manager, Rock Sound
- “Environmental Control Ministry.” (85) Male, 75, exporter, Rock Sound
- “The government.” (90) Male, 50, Ministry of Education, Rock Sound
- “Department of the Environment.” (96) Male, 70, parliamentarian/businessman, Tarpum Bay
- “The government.” (100) Female, 32, desk attendant, Deep Creek

Everyone/many

- “Interest groups, NGOs, PTAs, civil groups, churches, citizens...people get things done, the government only talks...multi-sectoral efforts!” (6) Male, 45, port officer, Governor’s Harbor
- “Everybody.” (8) Male, 32, Island School employee, Deep Creek
- “Everybody.” (22) Female, self-employed, Wemyss Bight
- “People do it.” (28) Male, 20, fisherman/construction
- “Everybody.” (29) Male, 32, truck driver, Governor’s Harbor
- “Everybody should be involved.” (64) Female, 44, librarian, Governor’s Harbor
- “All of the Bahamas.” (65) Male, 26, construction, Tarpum Bay
- “Private citizens and the government, consumers.” (92) Male, 46, business owner, Rock Sound (English ex-pat)
- “The public and the government.” (17) Male, 52, Ministry of Agriculture, Green Castle

Other

- “The media, schools.” (7) Female, 32, beautician, Wemyss Bight
- “Environmental groups.” (27) Female, 76, homemaker
- “The Island School.” (50) Male, 55, gardener, Rock Sound
- “Environmental committees.” (53) Male, 53, supply chain, Rock Sound
- “School, government agencies.” (61) Female, 50+, teacher, Rock Sound
- “Farmers.” (62) Male, 34, store manager
- “Many would have to come together...BEC and the hurricane committee.” (73) Female, 50s, librarian, Governor’s Harbor
- “Environmental agencies in schools.” (77) Female, 34, sales clerk, Tarpum Bay
- “An environmental group.” (78) Male, 18, supermarket clerk, Waterport
- “There aren’t any.” (80) Female, 29, sales clerk, Wemyss Bight
- “There aren’t any, just conscious individuals.” (88) Restaurant worker, 29, Rock Sound
- “Organize a local group.” (95) Female, 34, caterer

Responses to Question 23: Do you know of programs or laws that have been implemented in Eleuthera to prevent or lessen the effects of climate change?

- (N) “Nobody gets in trouble for vehicles and the government burns the dump.” (1) Male, 33, librarian and clerk, Rock Sound
- (Y) “Lighting fires.” (3) Male, 36, contractor, Harbour Island
- (N) “Any laws would address all of the Bahamas, not just Eleuthera.” (4) Male, 72, hardware store manager, Governor’s Harbor
- (Y) “There are not many...it’s still in discussion.” (6) Male, 45, port officer, Governor’s Harbor
- (N) “I just came here from Nassau.” (7) Female, 32, beautician, Wemyss Bight
- (Y) “No burning.” (8) Male, 32, Island School employee, Deep Creek
- (DK) “They’re discussing it...nothing’s being done...it’s on the agenda.” (14) Male, 44, electrician, Palmetto Point
- (Y) “You can’t cut down mangroves...good idea.” (28) Male, 20, fisherman/construction
- (N) “I’ve never heard of any.” (35) Female, 24, teacher, Tarpum Bay
- “Other than the Island School, no. There are organizations that are trying to address it.” (48) Male, 17, student/intern, Governor’s Harbor
- (Y) “It’s in the making.” (72) Female, 60, sales clerk, Governor’s Harbor
- (Y) “Solar systems are duty-free.” (73) Female, 50s, librarian, Governor’s Harbor
- (Y) “Laws against burning smokes in the community.” (78) Male, 18, supermarket clerk, Waterport
- (N) “They tell people to prepare for hurricanes.” (80) Female, 29, sales clerk, Wemyss Bight
- “Go to the schools.” (95) Female, 34, caterer

Responses to Questions 24-26: Have you heard of solar energy, wind energy, biofuels?

- “I’m not sure, but I maybe saw something on TV about it.” (62) Male, 34, store manager

Responses to Question 27: Do you think any of these forms of energy [solar, wind, biofuels] are a good idea for Eleuthera? (1

- “Lots of wind and sun.” (1) Male, 33, librarian and clerk, Rock Sound
- “Not wind...no constant breeze.” (4) Male, 72, hardware store manager, Governor’s Harbor
- “They’re all good!” (6) Male, 45, port officer, Governor’s Harbor
- “Huge initial capital.” (9) Male, 47, resort manager, Cape Eleuthera (American ex-pat.)
- “I’ve heard that you burn less electricity with these...should test them out, though.” (10) Female, 42, sales clerk, James Cistern
- “You can’t depend on wind.” (13) Male, 58, power plant operator, Governor’s Harbor
- “On the southeast side lots of wind and solar would work.” (14) Male, 44, electrician, Palmetto Point
- “We would not have to use as much diesel.” (15) Male, 49, mechanic, James Cistern
- “Solar is a good source.” (16) Male, 37, carpenter/mason/fisherman, James Cistern

- “They’re more with the times.” (27) Female, 76, homemaker
- “Solar for a short time, maybe. Wind is better.” (29) Male, 32, truck driver, Governor’s Harbor
- “Solar—good climate.” (30) Female, 46, administrative clerk, Palmetto Point
- “Solar would be good.” (32) Male, 39, electrician
- (DK) “I’m interested in knowing more.” (34) Female, 38, secretary of local government, Green Castle
- “Yes, it would conserve energy.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay
- “Yes, right now.” (40) Male, 53, Friendly Bob’s owner, Deep Creek
- “I think so.” (42) Farmer, 41, Deep Creek
- (N) “Because of the way the island is set up.” (43) Male, 52, mechanic, Brisos Bay
- “Great savings.” (44) Male, 39, construction, Governor’s Harbor
- “Using the climate would be cheaper because it’s Mother Nature.” (46) Male, 23, Princess Keys employee, Wemyss Bight
- “There is plenty of sun for solar. Biofuel makes the car slow.” (48) Male, 17, student/intern, Governor’s Harbor
- “Also tidal energy for the Bahamas.” (50) Male, 55, gardener, Rock Sound
- “They’re all good.” (52) Female, 31, store clerk, Rock Sound
- “Solar in particular.” (61) Female, 50+, teacher, Rock Sound
- “There’s a lot of sun here, but they’d need a lot of money.” (62) Male, 34, store manager
- “Probably so.” (64) Female, 44, librarian, Governor’s Harbor
- “A lot of wind and solar.” (65) Male, 26, construction, Tarpum Bay
- “Biofuels are expensive.” (71) Female, 25, sales clerk/photographer, Bluff
- “I’m not sure wind looks attractive.” (73) Female, 50s, librarian, Governor’s Harbor
- “We had wind.” (75) Male, 40, diesel mechanic, Gregory Town
- “Yes, I do!” (77) Female, 34, sales clerk, Tarpum Bay
- “They really need them!” (79) Male, 42, sales clerk, Rock Sound
- “They don’t pollute.” (80) Female, 29, sales clerk, Wemyss Bight
- “We used to operate windmills for water.” (86) Male, 51, owns bar/real estate/funeral parlor, Tarpum Bay
- “We have the space; it’s a perfect idea.” (88) Restaurant worker, 29, Rock Sound
- “I’d support anything that’s going to be an alternative [to diesel].” (96) Male, 70, parliamentarian/businessman, Tarpum Bay
- “Yes, I hope that costs will go down.” (98) Male, 60, restaurant owner, Deep Creek
- “I don’t know enough to say, but it could be a good idea.” (7) Female, 32, beautician, Wemyss Bight

Responses to Question 28: Have you heard about any of these forms of energy [solar, wind, biofuels] being used on Eleuthera? (57 comments)

Island School/Cape Eleuthera (33)

- “Only the Island School.” (1) Male, 33, librarian and clerk, Rock Sound
- “The Island School.” (3) Male, 36, contractor, Harbour Island
- “The Island School.” (17) Male, 52, Ministry of Agriculture, Green Castle
- “The Island School.” (19) Male, 29, mechanic/construction, Deep Creek
- “On Cape Eleuthera.” (20) Female, 47, unemployed, Deep Creek
- “Solar—the Island School.” (24) Female, 41, secretary of local government, Wemyss Bight
- “The Island School.” (25) Female, 43, sales clerk, Wemyss Bight
- “At Island School only.” (29) Male, 32, truck driver, Governor’s Harbor
- “Cape Eleuthera.” (34) Female, 38, secretary of local government, Green Castle
- “The Island School.” (40) Male, 53, Friendly Bob’s owner, Deep Creek
- “The Island School.” (41) Male, 21, carpenter, Deep Creek
- “Cape Eleuthera. That’s good, man.” (47) Male, 33, unemployed, Cotton Bay
- “At the Island School.” (49) Female, 30, self-employed, Rock Sound
- “At the Island School.” (50) Male, 55, gardener, Rock Sound
- “The Island School only.” (56) Female, 32, resort manager, Deep Creek
- “The Island School.” (61) Female, 50+, teacher, Rock Sound
- “The Island School.” (68) Sales clerk, 42
- “Cape Eleuthera.” (74) Male, 44, hardware store clerk, Rock Sound
- “Americans.” (75) Male, 40, diesel mechanic, Gregory Town
- “Island School only.” (77) Female, 34, sales clerk, Tarpum Bay
- “Island School.” (78) Male, 18, supermarket clerk, Waterport
- “Island School.” (81) Female, 31, resort maid, Waterford
- “Island School.” (82) Male, 18, odd jobs, Deep Creek
- “Island School.” (83) Male, 20, Island School carpenter, Deep Creek
- “Island School.” (88) Restaurant worker, 29, Rock Sound
- “Island School.” (90) Male, 50, Ministry of Education, Rock Sound
- “Only at Island School.” (91) Female, 24, sales clerk, Waterford
- “Only Island School.” (93) Male, 67, club owner, Green Castle
- “Only Island School.” (98) Male, 60, restaurant owner, Deep Creek
- “Only Island School.” (99) Resort security guard, 34, Deep Creek
- “Island School.” (101) Male, 73, bartender, Deep Creek
- “Island School.” (102) Male, 27, custom work, Rock Sound
- “Island School only.” (104) Female, 31, janitor, Green Castle

Private residences(6)

- “One private plant.” (42) Farmer, 41, Deep Creek
- “One person.” (51) Male, 45, businessman, Bannerman Town
- “Solar is being used a few places, some households. Whatever’s more convenient.” (64) Female, 44, librarian, Governor’s Harbor
- “Private houses—electricity and hot water.” (69) Female, 19, customs office, Governor’s Harbor
- “A friend’s house.” (72) Female, 60, sales clerk, Governor’s Harbor

- “Some people have it in their homes.” (103) Female, 58, sales clerk, Rock Sound

Combination/multiple (8)

- “The Island School and some private people.” (8) Male, 32, Island School employee, Deep Creek
- “The Island School, a phone booth in Nassau.” (11) Female, 44, nurse, Wemyss Bight
- “The Island School. A few people use solar panels.” (33) Male, 55, construction worker, Tarpum Bay
- “Resorts use solar, people use biofuel.” (48) Male, 17, student/intern, Governor’s Harbor
- “Island School trucks. There is much talk about small solar. Some people do solar off-grid, but they complain it’s so expensive.” (73) Female, 50s, librarian, Governor’s Harbor
- “Hot Point, Governor’s Harbor.” (92) Male, 46, business owner, Rock Sound (English expat)
- “The Island School...I think in Harbour Island.” (94) Female, 30, shop owner, James Cistern

Other (11)

- “Yes, but not familiar which.” (12) Female, 49, café owner, James Cistern
- “Just biofuel.” (14) Male, 44, electrician, Palmetto Point
- “Back in the ‘50s.” (15) Male, 49, mechanic, James Cistern
- “A wind mill.” (28) Male, 20, fisherman/construction
- “At Governor’s.” (43) Male, 52, mechanic, Brisos Bay
- “Biofuel—a Harbour Island plant.” (66) Male, 23, lobsterman and fisherman
- “Cable Bahamas.” (70) Female, 20, receptionist, Governor’s Harbor
- “Solar energy.” (79) Male, 42, sales clerk, Rock Sound
- “A solar water heater.” (86) Male, 51, owns bar/real estate/funeral parlor, Tarpum Bay
- “Not specifics.” (96) Male, 70, parliamentarian/businessman, Tarpum Bay
- “Here at the resort on buildings.” (100) Female, 32, desk attendant, Deep Creek

Responses to Question 29: Would you support a solar, wind, or biomass power plan for Eleuthera?

- (Y) “Yeah, 100 percent.” (24) Female, 41, secretary of local government, Wemyss Bight
- (Y) “There is not enough property for solar. Wind might work, only if the government pays.” (29) Male, 32, truck driver, Governor’s Harbor
- (DK) “Solar is more conservative.” (64) Female, 44, librarian, Governor’s Harbor
- (Y) “Not strong.” (66) Male, 23, lobsterman and fisherman
- (Y) “Yes, 100 percent.” (75) Male, 40, diesel mechanic, Gregory Town

Unsure/conditional

- (Y) “If it cost the same.” (10) Female, 42, sales clerk, James Cistern
- (Y) “If it’s cheaper.” (16) Male, 37, carpenter/mason/fisherman, James Cistern
- (Y) “If it costs less.” (68) Sales clerk, 42
- (Y) “If it was efficient, if it was as clean as they say it is—yes.” (88) Restaurant worker, 29, Rock Sound
- (Y) “As long as I’m fully aware of what it’s about.” (34) Female, 38, secretary of local government, Green Castle

- (DK) “I want to see how it works first.” (62) Male, 34, store manager
- (DK) “I don’t really know how it works.” (99) Resort security guard, 34, Deep Creek

Responses to Question 30: Would you be willing to pay more for renewable energy? (30 comments)

- (Y) “All prices would just go up.” (26) Male, unemployed, Green Castle
- (Y) “Yes, because you save in the long run and take care of the next generation.” (57) Female, 41, Island School secretary, Green Castle
- (Y) “For back-up.” (79) Male, 42, sales clerk, Rock Sound
- (DK) “No one wants to pay more, but it can’t cost more than BEC.” (86) Male, 51, owns bar/real estate/funeral parlor, Tarpum Bay

Only initial expenses

- (Y) “The price will go down after that.” (21) Female, 43, sales clerk, Deep Creek
- (N) “If you could afford the initial expenses, the resources would be free.” (33) Male, 55, construction worker, Tarpum Bay
- (Y) “In the short term.” (39) Female, 33, supermarket floor supervisor, Tarpum Bay
- (Y) “I understand the rates will drop.” (44) Male, 39, construction, Governor’s Harbor
- (Y) “When you buy it, that’s it.” (75) Male, 40, diesel mechanic, Gregory Town
- (Y) “It would go down later.” (78) Male, 18, supermarket clerk, Waterport
- (N) “If startup was high but then lessened, it would be okay.” (84) Male, 48, store manager, Rock Sound

Conditional

- (Y) “If it is reliable.” (15) Male, 49, mechanic, James Cistern
- (DK) “It depends on how much more.” (41) Male, 21, carpenter, Deep Creek
- (Y) “If it’s beneficial.” (53) Male, 53, supply chain, Rock Sound
- (Y) “If it’s more reliable” (63) Female, 47, sales clerk, Wemyss Bight
- (Y) “If it makes electricity more reliable.” (65) Male, 26, construction, Tarpum Bay
- (Y) “It depends on how much more.” (70) Female, 20, receptionist, Governor’s Harbor
- (Y) “If it was more reliable.” (71) Female, 25, sales clerk/photographer, Bluff
- (Y) “If it’s reliable.” (74) Male, 44, hardware store clerk, Rock Sound
- (Y) “If it’s gonna help out and be productive it would be better for everyone.” (77) Female, 34, sales clerk, Tarpum Bay
- (Y) “If it’s the same and better service.” (100) Female, 32, desk attendant, Deep Creek

Energy already too expensive

- (DK) “Gas is in short supply, but I would not like to pay more.” (7) Female, 32, beautician, Wemyss Bight
- (N) “If it was cheaper.” (24) Female, 41, secretary of local government, Wemyss Bight
- (N) “It should be less.” (27) Female, 76, homemaker
- (N) “It’s already too high.” (58) Female, 39, cook, Wemyss Bight
- (N) “Prices need to come down.” (61) Female, 50+, teacher, Rock Sound
- (N) “Isn’t it supposed to be cheaper?” (64) Female, 44, librarian, Governor’s Harbor
- (N) “BEC rates are already too high.” (73) Female, 50s, librarian, Governor’s Harbor

Uneducated

- (DK) “I need more knowledge.” (30) Female, 46, administrative clerk, Palmetto Point
- (DK) “I would have to experience it first. People have to understand it more.” (62) Male, 34, store manager

Responses to Question 31: Do you think Eleuthera could produce all of its own electricity through wind and sun and other renewable? (12 comments)

- (Y) “I’m hoping so.” (11) Female, 44, nurse, Wemyss Bight
- (Y) “It could if they tried.” (24) Female, 41, secretary of local government, Wemyss Bight
- (Y) “A combination.” (61) Female, 50+, teacher, Rock Sound
- (Y) “But it may be too expensive.” (73) Female, 50s, librarian, Governor’s Harbor
- (Y) “It could; we’ve got a lot of breeze and sun.” (75) Male, 40, diesel mechanic, Gregory Town
- (N) “Power needs fluctuate a lot.” (13) Male, 58, power plant operator, Governor’s Harbor
- (N) “There would be uproar if you changed the way electricity was made.” (47) Male, 33, unemployed, Cotton Bay
- (N) “80 percent.” (51) Male, 45, businessman, Bannerman Town
- (N) “Sometimes it stops working or gets cold.” (64) Female, 44, librarian, Governor’s Harbor
- (N) “The island is too long. We need multiple systems.” (68) Sales clerk, 42
- (N) “Certainly we can go a long way to what we do use.” (96) Male, 70, parliamentarian/businessman, Tarpum Bay
- (DK) “It could cost a lot.” (98) Male, 60, restaurant owner, Deep Creek

Responses to Question 32: If yes, do you think [Eleuthera producing all of its own electricity using renewables] is a good idea? (25 comments)

- “Anything that’s good for the environment is good.” (1) Male, 33, librarian and clerk, Rock Sound
- “It’s good to try and invest.” (9) Male, 47, resort manager, Cape Eleuthera (American expat.)
- “If done correctly.” (11) Female, 44, nurse, Wemyss Bight
- “Try and see.” (12) Female, 49, café owner, James Cistern
- “We have it all.” (14) Male, 44, electrician, Palmetto Point
- “We have some serious wind.” (15) Male, 49, mechanic, James Cistern
- “There are complaints in the summer...TVs and radios blowing up... long processes.” (16) Male, 37, carpenter/mason/fisherman, James Cistern
- “If it’s cheaper.” (25) Female, 43, sales clerk, Wemyss Bight
- “There’s a lot of sun!” (28) Male, 20, fisherman/construction
- “But only certain locations.” (32) Male, 39, electrician
- “It’s a clean idea.” (33) Male, 55, construction worker, Tarpum Bay

- “I don’t know if it’s affordable.” (36) Female, 49, boutique owner, Rock Sound
- “Solar, tidal.” (48) Male, 17, student/intern, Governor’s Harbor
- “They need to get people educated.” (56) Female, 32, resort manager, Deep Creek
- “It’s a necessity.” (59) Male, 20, parts salesman, Rock Sound
- “It’s good for the environment, will lessen pollution.” (61) Female, 50+, teacher, Rock Sound
- “Nothing is going to stop nature from coming.” (62) Male, 34, store manager
- “It will take a long time.” (70) Female, 20, receptionist, Governor’s Harbor
- “It’s change, it’s something.” (72) Female, 60, sales clerk, Governor’s Harbor
- “It’s a useless quest.” (74) Male, 44, hardware store clerk, Rock Sound
- “If it’s good for us.” (80) Female, 29, sales clerk, Wemyss Bight
- “Change is good.” (86) Male, 51, owns bar/real estate/funeral parlor, Tarpum Bay
- “Let’s get crackin’.” (92) Male, 46, business owner, Rock Sound (English ex-pat)
- “Get the funds together.” (95) Female, 34, caterer
- “We have a lot of sun. Anything to make it cheaper.” (103) Female, 58, sales clerk, Rock Sound

Responses to Question 33: Is there anything else you’d like to add?

- “We will follow trends...we’re waiting for someone to start.” (1) Male, 33, librarian and clerk, Rock Sound
- “[Energy issues should be addressed for] security reasons.” (4) Male, 72, hardware store manager, Governor’s Harbor
- “We need to look at people as our greatest resource. We need the right people in place.” (6) Male, 45, port officer, Governor’s Harbor
- “I’m hoping to get more biodiesel here.” (9) Male, 47, resort manager, Cape Eleuthera (American ex-pat.)
- “We need to get the Island School involved in the community.” (14) Male, 44, electrician, Palmetto Point
- “They try their best. The government could make it better.” (15) Male, 49, mechanic, James Cistern
- “I want more tourists...life to get better.” (26) Male, unemployed, Green Castle
- “Energy is way too expensive.” (27) Female, 76, homemaker
- “They should make more affordable energy.” (33) Male, 55, construction worker, Tarpum Bay
- “Each island can generate its own energy. The government must lead,...town meetings.” (44) Male, 39, construction, Governor’s Harbor
- “BEC really sucks.” (48) Male, 17, student/intern, Governor’s Harbor
- “It’s cleaner.” (50) Male, 55, gardener, Rock Sound
- “The sun doesn’t leak—you don’t have to go up there with a torch and weld it.” (50) Male, 55, gardener, Rock Sound
- “Get the word out there, then go for it.” (51) Male, 45, businessman, Bannerman Town

- “Send your report to the government and tell them to wake up to address climate change to protect the people here.” (57) Female, 41, Island School secretary, Green Castle
- “I’ve been years without electricity.” (67) Male, 67, retired
- “Brownouts are messing with everyone’s appliances. We have to put surge protectors on everything.” (73) Female, 50s, librarian, Governor’s Harbor
- “I want a price drop.” (75) Male, 40, diesel mechanic, Gregory Town
- “We need some people to organize it, an open forum to get everyone informed.” (77) Female, 34, sales clerk, Tarpum Bay
- “Prices are too high!” (79) Male, 42, sales clerk, Rock Sound
- “Wind is a good idea.” (80) Female, 29, sales clerk, Wemyss Bight
- “CEI is doing a great job.” (92) Male, 46, business owner, Rock Sound (English ex-pat)
- “Solar energy is a great idea.” (93) Male, 67, club owner, Green Castle
- “We’re all willing to invest in renewable ventures.” (95) Female, 34, caterer
- “It’s good that the surcharge has already dropped. I wish that BEC would not increase the surcharge!” (99) Resort security guard, 34, Deep Creek

Appendix C

Prospective Investors (BEC RFP)

At the end of 2008, Schneider Power Inc., a renewable energy company in Canada, and WINSO Company of Nassau, announced the joint-venture and launch of the Bahamas Renewable Energy Corporation (BREC), which is proposing three renewable power generation facilities that will generate a total of 24 MW. The projects are diversified across two technologies—wind and solar—and three islands—New Providence, Abaco, and Harbour Island.¹⁰⁰ This joint venture will also likely offer homeowners the option of rooftop solar panels and windmill generators that are increasingly common in Canada and the United States. Schneider is proposing a \$60 million dollar investment, 25% equity, and the remainder from financing.¹⁰¹ Schneider has only one major similar project currently running in its home province of Ontario, and the scale of the proposed Bahamian operation would actually dwarf that existing operation, which itself is being expanded in stages. The proposed project for the three Bahamian islands will likely be on a combination of privately-held and commonwealth land offered on a long-term lease, but realizing any of these proposals is entirely dependent on the Bahamian government's approvals that have yet to come.¹⁰² The BREC is hoping to form a private-public partnership and, as one of 13 companies shortlisted from the 30 that submitted proposals to the government in October 2008, is currently the developer for several potential sites, among them Harbor Island.¹⁰³

Renewable Energy Holdings (REH) of the United Kingdom is proposing to finance a submarine cable from Eleuthera to transmit electricity produced by sunlight, ocean waves, wind, or some combination of each. The company owns and is developing wind farms in Germany, Poland, and Britain. REH also owns a landfill gas project in Wales and has developed advanced wave power technology that pumps high-pressure sea water ashore to supply a reverse osmosis desalination plant, or to generate zero-emission electricity. REH has offered to build such a plant off the Atlantic coast of Eleuthera, and this relatively new technology is currently being tested in a prototype plant in Australia.¹⁰⁴

Caribbean Alternative Energy Ltd. (CAEL) has put forth a plan for underwater wind turbines that would be based off Current Island (in North Eleuthera). “While it could also be used as a main energy source, Stubbs' proposal will focus on providing backup power for the overburdened power grid on mainland Eleuthera and Harbour Island.”¹⁰⁵

¹⁰⁰ BREC website. Retrieved 11 Jan. 2009 from <<http://www.bahamasrec.com/operations-overview>>.

¹⁰¹ Vernon Jones. “Bahamian energy proposal heads stateside for funding.” *Nassau Guardian*. 22 July 2008.

¹⁰² Ibid.

¹⁰³ Kendea Jones. “\$60 million for renewable energy.” *Bahama Journal*. 4 Dec. 2008. Retrieved 10 Jan. 2009 from <<http://www.jonesbahamas.com/news/45/ARTICLE/18822/2008-12-04.html>>

¹⁰⁴ **Larry Smith**

¹⁰⁵ Jones. “\$60 million.”

Appendix D

The Bahamas Environment, Science and Technology Commission (BEST) Publications

National Policy for the Adaptation to Climate Change, March 2005

Policy goals listed include: “avoid, minimize, or respond to” climate change; “encourage efficient use of energy, reduce dependency on imported fossil fuels, and develop the use of renewable energy sources”; “explore and access mitigation and adaptation technologies”; and “institutionalize the National Climate Change Committee.”¹⁰⁶ BEST and the Committee also express a desire to collaborate with the Caribbean Community Climate Change Centre (CCCCC) and the Caribbean Disaster Emergency Response Agency (CDERA) to “ensure that society, at all levels and in all sectors, is adequately informed on Climate Change issues and their implications for the nation through a programme of Public Education and Outreach.”¹⁰⁷ This partnership was a part of the CCCCC’s Mainstreaming Adaptation to Climate Change (MACC) project, which ended in 2007.¹⁰⁸

The report’s discussion on energy states that “electrical power in The Bahamas is generated by the importation of liquid fossil fuels, and this accounts for some 65% of The Bahamas’ emissions of carbon dioxide,”¹⁰⁹ but it does not quantify the contributions of aircraft or ships.¹¹⁰ A response should include, according to the 2005 document: developing a National Energy Policy, promoting alternative fuels, and complying with the Kyoto Protocol.¹¹¹ The report furthermore states that “the transport sector is very dependent on fossil fuel imports and consumption and is therefore a major contributor to carbon emissions” so it would be beneficial to “explore the use of synthetic (non-fossil) fuels so as to reduce greenhouse gas emissions.”¹¹²

The First National Communication on Climate Change, 2001

The First National Communication on Climate Change indicates that there was not much concern about the actual amount of greenhouse gas emissions, since it is stated that the Bahamas “contribution to the GHG emissions is low by global standards,”¹¹³ but that there was awareness of the potential economic impacts. Options given for improving energy generation and local transport sectors include: increasing power plant efficiency; changing types of lighting; finding cleaner fuels; and looking into energy alternatives.¹¹⁴ This report also states that: “the use of fossil fuels is a major drain on the foreign exchange reserves of the Bahamas. The formulation of a National Energy Policy, with the objectives of reducing the loss of foreign exchange earnings, reducing GHG emissions, improving efficiency, the adoption of renewable technologies and reducing energy costs, should be considered.”¹¹⁵ Economic analysis recommendations are given and climate change

¹⁰⁶ BEST. *National*, 6-7

¹⁰⁷ *Ibid.*, 7-8.

¹⁰⁸ “Mainstreaming Adaptation to Climate (MACC) Project.” CARICOM website. Retrieved 16 Jan. 2009 from <<http://www.caricom.org/jsp/projects/macc%20project/macc.jsp>>.

¹⁰⁹ BEST. *National*, 14.

¹¹⁰ *Ibid.*, 27.

¹¹¹ *Ibid.*, 15.

¹¹² *Ibid.*, 26-28.

¹¹³ BEST. “Bahamas First,” 43.

¹¹⁴ *Ibid.*, 77.

¹¹⁵ *Ibid.*, 79.

awareness is also considered in coordination with the CCCCC's project Caribbean Planning for Adaptation to Climate Change (CPACC),¹¹⁶ which took place between 1997 and 2001 and focused primarily on monitoring and adaptation.¹¹⁷

Other

BEST also details the functions of their partner for these documents, the National Climate Committee,¹¹⁸ which include: working with CPACC (at least in the past); undertaking an inventory of the country's greenhouse gases; a mitigation analysis; and coordinating a National Action Plan. Further information on this Committee did not appear to be readily available. The most recent inventory of greenhouse gases was done in 1994, so it is outdated at this point, although it indicates that the Bahamas have previously cooperated with the United Nation's Framework Convention on Climate Change.¹¹⁹

BEST is apparently working on a *Second National Communication on Climate Change* as well, but no current information was found regarding its progress.

¹¹⁶ Ibid., 66.

¹¹⁷ "Caribbean Planning for Adaptation to Climate Change (CPACC) Project." CARICOM website. Retrieved 16 Jan. 2009 from <<http://www.caricom.org/jsp/projects/macc%20project/cpacc.jsp>>.

¹¹⁸ "International Conventions: Environmental Management." BEST website. Retrieved 16 Jan. 2009 from <http://www.best.bs/environment_management.html>.

¹¹⁹ "GHG Data." UNFCCC website. Retrieved 16 Jan. 2009 from <http://unfccc.int/ghg_data/items/3800.php>.

WORKS CITED

“BEC announces construction of new plant in Eleuthera to start.” *The Eleutheran*, 22 December 2008. Retrieved 18 Jan. 2009 from <<http://www.eleutheranews.com/local/232.html>>.

BEC Renewable Technologies Committee. *Renewable Energy Implementation Plan*. February 2008

BEST Commission. “About Us.” 2007. Retrieved 17 Jan. 2009 from <http://www.best.bs/about_us.html>.

BEST Commission. “Bahamas First National Communication on Climate Change.” BEST website, “Publications.” 2001.

BEST Commission. “IDB Technical Cooperation (TC): (BH-T1012) – Strengthening the Energy Sector in the Bahamas, (BH-T1016) – Promoting Sustainable Energy in the Bahamas.” Press Release, Ministry of the Environment. April 2009. Retrieved 2 July 2009 from <http://www.best.bs/sustainable_energy_projects.html>.

BEST Commission. *National Policy for the Adaptation to Climate Change*, March 2005.

BEST Commission. “Section 1: Letter of Invitation.” *Request for Proposals: RFP #1016-1-1: Promoting Sustainable Energy in the Bahamas*, 6 April 2009: 1.

BEST Commission. “Section 5: Terms of Reference.” *Request for Proposals: RFP #1016-1-1: Promoting Sustainable Energy in the Bahamas*, 6 April 2009: 53-68.

Binger, Al. “Report to the Inter-American Development Bank (IDB): Caribbean Renewable Energy, Energy Efficiency, and Bioenergy Action Program.” Commonwealth of the Bahamas, Nov. 2008: 1-20.

Brinkley, Joel. “Drugs and graft main issue in Bahamas vote.” *New York Times*, 14 June 1987. Retrieved 16 Jan. 2009 from <<http://www.nytimes.com/1987/06/14/world/drugs-and-graft-main-issue-in-bahamas-vote.html?sec=&spon=&pagewanted=3>>.

Cape Eleuthera Institute. “Sustainable Design: Renewable Energy & Biofuels.” Retrieved 23 June 2009 from <<http://www.ceibahamas.org/renewable-energy.html>>.

Cape Systems Limited. “About—Purpose.” Retrieved 23 June 2009 from <<http://capesystemslimited.com/about-purpose.html>>.

Cape Systems Limited. *Biodiesel From Used Cooking Oil, Bahamas: Project Plan*. Retrieved 23 June 2009 from <<http://capesystemslimited.com/projects-biofuels.html>>.

Cape Systems Limited. “Projects.” Cape Systems Limited website. Retrieved 23 June 2009 from <<http://capesystemslimited.com/projects-ceis.html>>.

“Caribbean Planning for Adaptation to Climate Change (CPACC) Project.” CARICOM website. Retrieved 16 Jan. 2009 from <<http://www.caricom.org/jsp/projects/macc%20project/cpacc.jsp>>.

CARIBSAVE. “Eleuthera Profile.” Powerpoint presentation. Retrieved 2 July 2009 from <<http://caribsave.org/index.php?id=4>>.

CARICOM. “CARICOM and Oxford University launch CARIBSAVE project.” CARICOM Press Release. 17 Dec. 2008. Retrieve 2 July 2009 from <<http://www.caribsave.org/index.php?id=6>>.

“Case: Samsoe Renewable Energy Island.” Denmark Government website. 4 March 2009. Retrieved 29 June 2009 from <<http://www.denmark.dk/en/menu/About-Denmark/Environment-Energy-Climate/Fact-Sheets/Where-Does-Your-Energy-Come-From/CaseSamsoeRenewableEnergyIsland.htm>>.

CDIAC. “Ranking of the world's countries by 2006 per capita fossil-fuel CO₂ emission rates.” Retrieved 29 June 2009 from <<http://cdiac.ornl.gov/trends/emis/top2006.cap>>.

CIA. *The World Factbook*. 26 June 2009. Retrieved 9 July 2009 from < <https://www.cia.gov/library/publications/the-world-factbook/geos/BF.html>>.

Dean, Brent. "Renewable energy proposals under review." *The Bahama Journal*. 23 Oct. 2008. Retrieved 16 Jan 2008 from <<http://www.jonesbahamas.com/news/47/ARTICLE/18566/2008-10-23.html>>.

"GHG Data." UNFCCC website. Retrieved 16 Jan. 2009 from <http://unfccc.int/ghg_data/items/3800.php>.

Government of the Bahamas. *The 2000 Census of Population and Housing Report: Eleuthera*. 6 Feb 2008

Haley & Aldrich. "Renewable Energy Resources in the Bahamas." Aug. 2007.

Hamilton, Jon. "Maldives builds barriers to global warming." *NPR*. 28 Jan. 2008. Retrieved 29 June 2009 from <<http://www.npr.org/templates/story/story.php?storyId=18425626>>.

Hartnell, Neil. "Renewable energy key as power prices rise 10% per year." *The Tribune*. 14 Feb. 2008: 3B.

Henry, Christian. Personal communication, January 2009.

Ingraham, Hubert A. "Statement by The Rt. Hon. Hubert A. Ingraham, Prime Minister: 30 June, 2008." 21 Nov. 2008. Retrieved 18 Jan. 2009 from < <http://www.bahamas.gov.bs/bahamasweb2/home.nsf/vContentW/21433A4D7963573F85257479007014B8!OpenDocument&Highlight=0,earl%20deveaux>>.

"International Conventions: Environmental Management." BEST website. Retrieved 16 Jan. 2009 from <http://www.best.bs/environment_management.html>.

Jones, Kendea. "\$60 million for renewable energy." *Bahama Journal*. 4 Dec. 2008. Retrieved 10 Jan. 2009 from <<http://www.jonesbahamas.com/news/45/ARTICLE/18822/2008-12-04.html>>

Jones, Vernon. "Bahamian energy proposal head stateside for funding." *Nassau Guardian*. 22 July 2008.

Kenworthy et al. "Pilot Project: 1MW Solar Photovoltaic Plant Eleuthera, Bahamas." Cape Systems, Ltd. Mar. 2008: 2.

Langnib, Ole, and David Ince. "Solar Water Heating: A viable industry in developing countries." *reFOCUS*. May/June 2004: 18-21.

"Mainstreaming Adaptation to Climate (MACC) Project." CARICOM website. Retrieved 16 Jan. 2009 from <<http://www.caricom.org/jsp/projects/macc%20project/macc.jsp>>.

"Maldives still facing tsunami recovery funds shortfall." *BBC Monitoring South Asia*. 25 Dec. 2005. Retrieved 30 June 2009 from LexisNexis Academic database.

McPhee, Earl. Email, 26 Mar. 2009.

McPhee, Earl. Personal communication, 14 Jan. 2009.

McSweeney, Carol. "Climate change scenarios for tourist destinations in the Bahamas: Eleuthera." CARIBSAVE. Powerpoint presentation. Retrieved 2 July 2009 from <<http://caribsave.org/index.php?id=4>>.

Mimura, N., L. Nurse, R. F. McLean, J. Agard, L. Briguglio, P. Lefale, R. Payet and G. Sem. "Small Islands." *Climate Change 2007: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. M. L. Parry, O.F. Canziani, J. P. Palutikof, P. J. van der Linden and C. E. Hanson, Eds., Cambridge University Press, Cambridge, UK (2007): 687-716.

"National Adaptation Programme of Action." The Government of the Maldives, Ministry of Environment, Energy and Water. 2006: 1-150.

Neumann, James E. et al., Gary Yohe, Robert Nichollas. "Sea-level rise & Global climate change: A review of impacts to U.S. coasts." Pew Center on Global Climate Change, Feb. 2000: 1-38.

Parker, Quincy. "Energy saving deal in the works." *Bahama Journal*, 16 Oct. 2008. Retrieved 10 Jan. 2009 from <<http://www.jonesbahamas.com/news/45/ARTICLE/18491/2008-10-16.html>>.

Parker, Quincy. "Government exploring biodiesel." *Bahama Journal*, 2 May 2008. Retrieved 10 Jan. 2009 from <<http://www.jonesbahamas.com/?c=47&a=16897>>.

Perpall, Viraj. "BEC a roadblock?" *Bahama Journal*, 26 July 2008. Retrieved 16 Jan. 2009 from <<http://www.jonesbahamas.com/news/45/ARTICLE/17890/2008-07-26.html>>.

Rutherford, Thea. "National Energy Policy Committee holds first meeting." *Nassau Guardian*, 1 May 2008. Retrieved 10 Jan. 2009 from <http://archive.nassauguardian.net/pubfiles/nas/archive/images_pages/05012008_A02.pdf>

Saunders & Inderia "BEC considers drawing hard-line." *The Nassau Guardian*. 2 Dec. 2008. Retrieved 18 Jan. 2009.

Schmidle, Nicholas. "Wanted: A new home for my country." *New York Times*, 8 May 2009. Retrieved 29 June 2009 from <http://www.nytimes.com/2009/05/10/magazine/10MALDIVES-t.html?_r=1>.

Seiner, Graham. Email, June 2009.

Seiner, Graham. "Bonaire to rely on renewable energy." *Bahamas EcoForum*. 25 March 2008. Retrieved 10 Jan. 2009 from <<http://www.bahamasecoforum.com/2008/03/bonaire-to-rely.html>>.

Simpson, Dr. Murray. "Caribbean islands test \$35m carbon neutral project –The race is on." CARIBSAVE. 24 March 2009. Retrieved 2 July 2009 from <<http://www.caribsave.org/index.php?id=6>>.

Small, Mindell. "Gomez: Seek energy alternatives." *Nassau Guardian*, 9 September 2005. Retrieved 18 Jan. 2009 from <http://archive.nassauguardian.net/archive_detail.php?archiveFile=2005/September/05/NationalNews/235536.xml&start=0&numPer=20&keyword=alternative+energy§ionSearch=&begindate=1%2F1%2F2002&enddate=1%2F9%2F2009&authorSearch=&IncludeStories=1&pubsection=&page=&IncludePages=1&IncludeImages=1&mode=allwor al&archive_pubname=None%0A%09%09%00>.

Smith, Larry. "Bahamas Green Energy Initiatives." *Bahamas Eco Forum*. 26 Jan. 2009. Retrieved 22 June 2009 from <<http://www.bahamasecoforum.com/2009/01/bahamas-green-energy-initiatives.html>>.

Smith, Larry. "BEC officials working on RFP shortlist." *Bahamas Eco-Forum*, 4 Oct. 2008. Retrieved 16 Jan. 2009 from <<http://www.bahamasecoforum.com/2008/10/bec-officials-w.html>>.

Smith, Larry. "Renewable Energy Can Free the Bahamas." *Bahama Pundit*. 28 Nov: 2007. Retrieved 16 Jan 2009 from <<http://www.bahamapundit.com/2007/11/bahamas-could-s.html>>.

Stern Review. "Executive Summary." *The Economics of Climate Change*. 2006.

"Tourism minister visits Island School at Cape Eleuthera—hints at government energy saving initiative in the works." *The Eleutheran*, 1 June 2009. Retrieved 29 June 2009 from <<http://www.eleutheranews.com/local/429.html>>.

"Wasa Pilot Power Plant (WPPP), Diesel Engine Combined Cycle, Finland." *Power Technology*. Retrieved 16 Jan. 2009 from <<http://www.power-technology.com/projects/wasa/>>.

Weiss, Matt J. "Bonaire strives to be first Caribbean island powered by 100% sustainable energy." *Dive Photo Guide.com*. 17 Feb. 2009. Retrieved 29 June 2009 from <http://www.divephotoguide.com/news/bonaire_strives_to_be_first_caribbean_island_powered_by_100_sustainable_energy>.

Wolff, Victoria H. "Storm smart planning for adaptation to sea level rise: Addressing coastal flood risk in East Boston." (MA thesis, Mass. Institute of Technology, 2009): 1-69.

Wolman, David. "Turning the tides." *Wired*. Jan. 2009. Retrieved 2 July 2009 from LexisNexis Academic database.