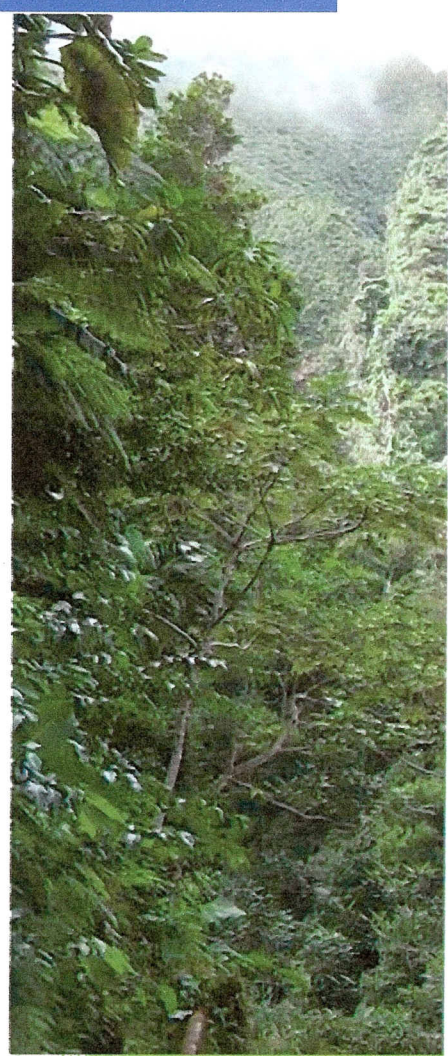
2011

National Energy Policy St. Kitts and Nevis



St. Kitts and Nevis

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Introduction

Dear reader,

This National Energy Policy is intended to clarify the position of the Government of St. Kitts and Nevis regarding the nation's energy development. It is also intended to foster the development of an appropriate legal, institutional and economic framework as well as management mechanisms for enabling sustainable and sound economic energy activities and services. The overarching goals are strengthening the competitiveness of the economy of St. Kitts and Nevis, establishing or transitioning towards a strong competitive position as a leading nation regarding sustainable energy development, and addressing international climate change mitigation and adaptation issues.

The Federation of St. Kitts and Nevis' vision is "to become the smallest green twin-island nation in the Western Hemisphere" where the principle goal is "*to become an twin-island nation with a sustainable energy sector where reliable, renewable, clean and affordable energy services are provided to all its citizens*".

This vision will require a comprehensive transition strategy towards a more sustainable energy balance, where everybody – government, utilities, businesses, NGOs, and citizens – should take part and will benefit.

The energy challenges in St. Kitts and Nevis are both national and international in nature, and therefore require a holistic and coordinated approach to address the changes needed in the types of fuel used, the types of energy carriers, the consumption patterns, and the infrastructure and management needed to enable the transition to a more sustainable energy sector.

This transition is currently driven by the incrementally higher electricity rates, high transportation fuel prices, and global climate change awareness and concerns in St. Kitts and Nevis. The aforementioned factors impact businesses and citizens alike, and they should be made aware of the need for energy efficiency and conservation, as well as socio-environmental responsibility and increased investments in renewable energy technologies (RETs).

The principle guiding pillar of the St. Kitts and Nevis Government's National Energy Policy is considering energy as a tool to achieve Sustainable Development, or in other words, "***Energy for Sustainable Development***".

This encompasses a holistic and integrated approach that reflects the best interests of the country's economy, social well-being and environment with regards to energy sources, supply, conversion, use and export. Adequate provisions and reliable energy services at affordable costs, in a secure and environmentally benign manner, and in conformity with social and economic development needs are of paramount importance.

This National Energy Policy document is comprised of three main sub-documents or sections. First the St. Kitts and Nevis Energy Sector Digest (Section A) is presented where the energy sector statistics, conditions and development projections are summarized.

This is followed by the National Energy Policy (Section B), in which the Government of St. Kitts and Nevis showcases its vision for energy development in the Federation and highlights its policy goals and objectives.

Finally, the potential pathways, solutions and tools for short-, medium- and long- term actions are stipulated in the National Energy Action Plan (Section C), which forms an integral part of this National Energy Policy document as a means to implement and enforce the Policy.

The Energy Sector Digest (Section A) and the National Energy Action Plan (Section C) need to be seen as dynamic documents that will be published as separate sub-documents that should be reviewed and adopted every three years in order to account for changes and to steadily guarantee the appropriate enforcement of the overall Energy Policy.

In summary, with this vision in mind and this National Energy Policy in place we as the Government of the Federation of St. Kitts and Nevis are confident it will serve to foster the development of an appropriate legal, institutional and economic framework as well as management mechanisms that would enable sustainable and sound economic energy activities and services for all living and working in the Federation.

Honourable Dr. Earl Asim Martin

1. Energy Outlook

1.1 Global

1. Oil is the principal source of energy in the world. About 87% of total primary energy consumption comes from fossil fuel and about 40% from oil. World oil prices have been increasing in the last decade. In 2007, they nearly doubled those of 2003 in real terms. During the 2008 oil crisis the crude oil prices reached US$147 per barrel in mid-July and, although the crisis was short lived, current prices in international markets have toppled US$100. Prior to 2000, the average spot price per barrel was about US$20. In March 2011, the average spot price was US$103 per barrel. According to the U.S. Energy Information Administration, the International Outlook Series published by the International Energy Agency (EIA) and other international refereed sources, forecast increase of the crude oil spot price to reach about US$150 per barrel in 2014 and US$200 per barrel by 2025.

2. The 2009 edition of the World Energy Outlook projected that, by 2030, total primary energy demand will increase by over 50%. The demand for oil and natural gas is attributable to the increasing consumption levels of emerging developing countries and emerging economies like China and India. It is expected that global demand for oil to grow by 41% by 2030. Such increases in demand will drive up oil and gas prices in international markets.

3. Since 2005 the members of the Organization of the Petroleum Exporting Countries (OPEC) have not increased their oil production but have increased the oil prices. The cost of oil exploration and development, across-the-board increases in commodity prices and a weaker U.S. dollar have all served to drive up prices.

4. Consumption of petroleum products globally has fuelled environmental concerns particularly as they relate to climate change. The smaller island states of the Caribbean are only minor contributors to greenhouse effects through the release of CO2, but are vulnerable to sea level increase and changes in climate conditions, such as lower precipitation and a higher occurrence and intensity of hurricanes. Several international conventions such as the Kyoto Protocol, attempt to secure commitments to reduce global emissions from energy related activities. In parallel, there have been important technological advances designed to minimize adverse environmental impacts.

5. The global challenge is the identification of plausible ways to maintain reasonable energy prices, mitigate the adverse effects of high petroleum prices, minimize fossil fuel supply disruptions, lower the rate of increases in consumption of fossil fuels and minimize the deleterious effects of climate change and greenhouse gas emissions.

1.2 Regional

5. The Caribbean Community (CARICOM) is an organization that comprises of 15 full members, 5 associate members and 7 observer members. CARICOM is comprised mainly of small island developing states. Most of its member states have limited natural

resources, small populations, small economies, but widely different energy realities, including St. Kitts and Nevis.

6. The fifteen CARICOM states are almost entirely dependent on imported oil and gas. It is estimated that up to 95% of commercial energy consumed in the CARICOM region is derived from fossil fuels, primarily oil. That figure represents about 90 million barrels of oil equivalent in a year.

7. CARICOM countries are essentially net importers of crude oil and refined products with the exception of Trinidad and Tobago and, to a lesser degree, Belize —largely because of extra regional sources. Specifically, CARICOM member states source petroleum products from Trinidad and Tobago (PETROTRIN), Curação (PDVSA), Puerto Rico (Shell), St. Croix (Hovensa) and through the Energy Cooperation Agreement PETROCARIBE with Venezuela.

8. CARICOM member states experience the strong negative economic effects stemming from increasing international demand for petroleum and rising petroleum prices. In order to counteract said effects, CARICOM established the Petroleum Stabilization Fund in 2004, and in 2005 certain member states signed the Energy Cooperation Agreement PETROCARIBE.

9. Within the PETROCARIBE energy cooperation agreement, provisions have been made to allow member countries to purchase oil on preferential financing terms. The price of the world markets has increased, and so has the value of PETROCARIBE loans to importing countries. PETROCARIBE has become the single largest source of concessionary finance to the Caribbean Region. PETROCARIBE credits to importing countries from June 2005 to December 2007 amounted to $1.17 billion, and are expected to reach $4.5 billion by 2015.

10. A draft CARICOM regional energy policy has been under development for some years with the

11. St. Kitts and Nevis is also a member of the Organization of Eastern Caribbean States (OECS). OECS provides technical support via their sustainable development unit to help improve energy security and, advises and promotes cooperation and coordination among its member countries.

12. Also at the sub-regional level there is an initiative to develop a sub-regional energy policy that aims to consolidate the collective resources to address common energy development challenges of the Eastern Caribbean States.

2. National Energy Policy Rationale

The Government of St. Kitts and Nevis recognizes that:

1. Energy is fundamental to the nation's economic development goals as diversifying the economy, eradicating poverty, and securing a competitive and resilient economy that brings about the sustainable or "green" development of the Federation.

2. Energy challenges in the Federation are both national and international in nature, and therefore require a holistic and coordinated approach to address the changes needed in the types of fuel used, the types of energy carriers, the consumption patterns, and the infrastructure and management needed to enable the transition to a more sustainable energy sector.

This transition is currently driven by the incrementally higher electricity rates, high transportation fuel prices, and global climate change awareness and concerns in St. Kitts and Nevis. The aforementioned factors impact businesses and citizens alike, and they should be made aware of the need for energy efficiency and conservation, as well as socio-environmental responsibility and increased investments in renewable energy technologies (RETs).

3. Vision and Guiding Principles

3.1 Vision

The Federation of St. Kitts and Nevis wants "to become the smallest green nation in the Western Hemisphere" where the Government's vision for the Energy Sector is "*to become an twin-island nation with a sustainable energy sector where reliable, renewable, clean and affordable energy services are provided to all its citizens*".

This will require a comprehensive transition towards a more sustainable energy balance where everybody – government, utilities, businesses, NGOs, and citizens – should take part and will extract benefit. This flexible and enabling policy environment or framework allows the nation to transition from the status-quo or business-as-usual to "an island nation with a sustainable energy sector", and to adapt to the rapidly changing international and local energy market conditions.

3.2 Guiding Principle and Strategy Pillars

The National Energy Policy is based on the principle that energy services must become **cleaner**, more **reliable** and **affordable** by the following strategy pillars:

A) **Increased diversification**: increased utilization of renewable energy technologies and added value generation by indigenous or regional renewable energy sources as part of the energy matrix need to be considered as well as alternative energy supply routes, cleaner energy sources and the power interconnection between the islands of St. Kitts and Nevis and with neighboring countries. Furthermore the impacts of energy import, generation, transmission, distribution and consumption on the environment, economy and society have to be reduced, particularly in costs.

B) **Promoting smarter, efficient and innovative approaches**: the energy demand and supply should be better synchronized and managed by building adequate knowledge capacity and awareness, introducing systems and technologies that reduce energy loss, change and improve energy generation and consumption patterns, and facilitate both, larger scale centralized and smaller scale decentralized energy generation, interconnection and supply options.

These energy policy strategy pillars are used to delineate the policy framework since it is hard to predict energy demand and prices, and prioritize specific energy technologies, due to changing market conditions, and technology development. Therefore it is important, not to exclude any (alternative or futuristic) energy technology, and stimulate continuous exploration and development of new energy technologies, supply systems, and promote behavioral changes, within a continuous changing and dynamic environment. Lower costs and socio-environmentally responsible energy services as a goal of this national energy policy will stimulate business opportunities for increased macro-economic competition and resilience; incentivize job creation; and address national security and socio-economic challenges.

4. Policy Objectives and Statements

4.1 Energy Sector Management

The growing importance being accorded to energy issues require the need to ensure that there is the ability to effectively plan and manage the national energy sector so as to assist in reducing the uncertainty in decision making for the public and private sector. Through this policy Government will strengthen its capacity to formulate, implement and monitor energy policies and programs in a coordinated manner.

For this task to be fulfilled effectively it is essential that the database on all relevant aspects of the energy sector is complete and consistent and continuously kept up-to-date. In addition, the implementation of the National Energy Policy and the coordination of individual actions require an appropriately staffed designated authority within the Government and it may be necessary to create and develop new sections and add new staff positions within the public sector and increase the involvement of specialized entities from the private and civil society sector.

The principal policy objective for the management of the energy sector is to guarantee:

"Efficient and well-coordinated planning and management activities to achieve sustainable supply, generation, distribution and use of energy"

Policies

1. Ensure a transparent, inclusive and informed decision-making process regarding energy sector challenges and opportunities and encourage more effective co-ordination of energy sector planning and management.
2. Ensure that energy planning and management addresses the efficient, cost-effective and sustainable use and handling of imported and indigenous natural energy sources.
3. Continuously improve, expand, update, analyze and disseminate all energy statistics and energy-relevant aspects.
4. Promote the delivery of efficient and cost-effective energy services under a fair, competitive, coherent and clear regulatory regime.
5. Guarantee an adequate institutional framework with clearly defined allocation of legal authority to department(s), unit(s), or public entities critical to the management of the energy sector.
6. Facilitate and secure appropriate staff and resources for departments, units or other entities within the Government or Ministry in charge of Energy.

7. Promote increased know-how and awareness among key stakeholders and the general public relating to energy sector issues, including and in particular, conservation, efficiency and use of renewable energy sources.

8. Continuously review and elaborate (and regularly update) the National Energy Action Plan detailing potential energy sources and technologies, responsibilities, timescales and investments required to service the Federation's growing energy demand in a sustainable manner.

9. Revise and ensure that international funding and technical assistance is made available and the energy development strategy is developed within the context of global and regional treaties, approaches and objectives.

10. Promote research and development and/or exploitation of new and renewable energy resources and energy conservation measures leading to increasingly efficient and sustainable energy services and a more competitive economy.

4.2 Energy Supply or Imports

Importation of petroleum products, including diesel and gasoline as transport fuels, jet fuel and kerosene as aviation and maritime fuels, and LPG for household cooking purposes, accounts for a significant and steeply increasing proportion of total national imports of SKN. Moreover, they are fundamental to SKN's socio-economic development and will continue to be so for the foreseeable future. Therefore maintenance of a reliable and cost-effective supply of petroleum products is essential.

The cost of fuel imports per unit should be minimized through good supply contract negotiations and management. The overall volume of petroleum derivate imports should increase at a lower rate than economic growth through appropriate conservation and efficiency measures to achieve decoupling of energy consumption vis-à-vis economic development, and by substituting the use of petroleum with renewable energies.

As a clean environment and increased energy independence is crucial to the economic and social well-being of the people of SKN indigenous Renewable Energy Sources (RES) in the form of solar, wind, hydro and geothermal are deemed the most appropriate mid to long-term alternative sources to replace imported petroleum products for electricity generation, heat production and as transport fuel in SKN. Key issues regarding renewable energy development in SKN include a lack of technical expertise and relatively weak institutional structures that would allow public or private investors to tap such resources in a timely manner and secure environment. The current situation is further defined by insufficient knowledge about the RES potentials, lack of financial commitment and support to renewable energies as well as insufficient public-private-partnerships and private sector investment.

Furthermore irresponsible use and handling of petroleum products can cause significant damage, particularly in the islands' fragile coastal and marine environments that are heavily dependant on tourism.

For this reason, the proper importation, handling, storage and use of petroleum products and their waste derivates (mainly lubricants) is also an important issue.

The goal for improved energy supply, import and use is achieving:

"Safe, reliable and affordable supplies of fuels and their efficient and clean handling while in parallel significantly increasing the deployment, access and utilization of renewable energy in the Federation of St. Kitts and Nevis"

Policies

11. Ensure a secure and reliable supply and access to imported fuels at lowest import costs available, conforming to agreed licensing, product quality standards, environmental specifications and respecting supply security concerns.

12. Encourage fuel conservation and efficient end-use, thereby achieving improved decoupling of primary energy use and economic growth and reducing dependence on imported petroleum products.

13. Ensure that adequate fuel storage and handling facilities are available throughout SKN at strategic locations and conform to standards approved for SKN.

14. Promote the collection, transportation, environmentally responsible re-use, disposal, or removal of waste oil and other petroleum by-products to minimize adverse impacts on soil, ground-water, and near-shore fisheries.

15. Facilitate the cost benefit assessment of potential renewable energy sources and alternative energy supply options and fuels (including electrical interconnections) on around and between both islands of the Federation taking into account both commercially proven and future innovative technologies.

16. Promote the increased and coordinated use of centralized and decentralized energy technologies where appropriate, which are technically and commercially cost-effective, renewable and environmentally friendly.

17. Stimulate and facilitate the development of local expertise in the production, installation, operation, management and maintenance of both technically and economically proven and futuristic innovative renewable energy systems.

18. Encourage private sector participation and establishment of public-private-partnerships in the development, financing and management of renewable energy projects.

19. Stimulate Renewable Energy Technologies or alternative fuels to become market competitive or achieve grid parity, taking into account socio-economical and environmental benefits from the use of such technologies.

4.3 Electricity Generation

Reliable and affordable electricity is essential for the economic and social development of St. Kitts and Nevis. Key issues include increasingly high costs for imported fuel for power production and the option to use cost-efficient centralized and decentralized approaches to electricity generation and use from natural or indigenous resources, such as wind, solar, waste and geothermal energy.

Further problems arise from the nation-wide inexperience of using such resources, the partially inefficient generation of electricity with older or existing diesel powered systems and the inefficient consumption of electricity.

The goal for improving the electricity generation is securing a:

"Safe, efficient, reliable, affordable and environmentally friendly electricity generation and access for all consumers in St. Kitts and Nevis"

Policies

20. Facilitate the introduction and use of tools and measures to improve the efficiency of power production, transmission and distribution.
21. Stimulate and facilitate the exploration of renewable energy sources for electricity generation and investigation of innovative electricity generation technologies.
22. Support the introduction of commercially proven electricity generation technologies that are environmentally, economically, financially and socially proper and viable.
23. Guarantee fair access to the transmission/distribution grid for both centralized and decentralized electricity generation (including small scale household power generation) and provide a competitive basis for a stronger involvement of the private sector in electricity generation.
24. Continuously properly collect, monitor, analyze and report on greenhouse gas emissions by the electricity production sector.

4.4 Transportation

Road, air and marine transport provide an essential mobility service that enables economic and social development. The transportation sector in SKN consumes a large proportion of the imported petroleum products in the form of gasoline, diesel and aviation kerosene. Clearly the introduction of measures that conserve transport fuels, assessing alternative means of transportation, and increase the efficiency of their use will have long-term economic and environmental benefits for the Federation.

The goal for a sustainable transport sector is having:

"Efficient, environmentally clean, safe and cost-effective transportation"

Policies

25. Promote and support measures for improvement of fuel conservation and efficiency for the land and marine transport sectors.

26. Minimize the impact of petroleum product consumption in the transport sector on land, atmosphere and marine environment.

27. Promote and support improvements of the public transport system, traffic management and infrastructure as alternative to individual vehicle use.

28. Stimulate and facilitate the introduction and use of fuel-efficient or alternative-powered passenger cars and other transport vehicles.

29. Promote the continued cost benefit assessment of substituting the use of gasoline and diesel by alternative powered vehicles, and imported or indigenous produced fuels.

30. Minimize the import of outdated and/or high-fuel consuming cars.

31. Continuously properly collect, monitor, analyze and report on greenhouse gas emissions by the transport sector.

32. Support measures to improve the regular monitoring of motor check-ups to avoid unnecessary emissions and limit the loss fuel consumption efficiency.

4.5 Energy Use

Energy efficiency is a cross-cutting issue that touches the generation, distribution and consumption of electricity, heat, use of fuel in the transport sector and other means of energy use. From society's perspective, achieving greater energy efficiency generally requires less investment than does new generation, and also means less energy-related environmental impact. From an individual's perspective, it can mean significant savings over the mid to long term. However, despite the obvious benefits, there has historically been a lack of energy-efficiency initiatives in the Federation.

The goal for energy use is:

"Minimize energy input and achieve lowest possible energy intensity of economic services in all sectors of the society"

Policies

33. Promote sound energy efficiency and conservation practices for all energy consumers.

34. Promote and facilitate energy audits for key energy consuming sectors, such as industries, hotels, restaurants and public buildings.

35. Minimize the import of outdated, second hand, or high-energy consuming machinery, equipments, devices, light bulbs and appliances.

36. Strengthen civil society and consumer information and awareness on purchase and behavioral and technical use of energy-efficient appliances.

37. Stimulate the execution of studies on consumption patterns in different sectors of the economy to be used in the design of appropriate energy-efficiency measures.

38. Enforce the establishment or adaptation of building codes and standards for the improved energy efficiency and use, e.g. incorporate design for passive cooling or insulation of new buildings that will be equipped with (solar) air-conditioning systems.

39. Investigate and promote the mandatory installation of solar thermal collectors for all major users of hot water.