The Cayman Institute

Charting our Future

CAYMAN ISLANDS ENERGY

The Renewable Path to Energy Security

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A Definition of Energy Security

Maintaining necessary access to energy resources without risking the state's survival now and in the future.

Energy Security in the Cayman Islands

The Cayman Islands face a pending and potentially devastating energy supply crisis. Immediate action is required to research, formulate, and plan cohesive public policy on energy supply. When correctly conceived and implemented, such policy will promote the country's future as a secure location of finance and banking, and promote Cayman as a premier, high-market tourist destination. Such a policy will be necessary to continue to be a land of considerable investment opportunity; a country offering its citizens sustainable, well-paying employment and broad career opportunities. Economic growth is necessary for our Government to have the revenues required to enrich healthcare, educational and social programs, but economic growth alone is not sufficient to secure Cayman's future. To sustain the Cayman Islands' cherished heritage and culture it must act soon to put in place measures that will allow it to sustain its environment. If energy policy is ignored or delayed, a prosperous and sustainable future for the Cayman Islands will undoubtedly be compromised.

Energy is essential to the way we live. Whether it is in the form of oil, gasoline or electricity, the Cayman Islands' prosperity and welfare depends on having access to reliable and secure supplies of energy at affordable prices. Energy keeps us cool, fuels our transport, powers our economy, and connects us to the rest of the world.

Not only is the type and quantity of energy we consume important, but the standards and behaviours by which we consume energy is a part of the legacy we will leave to our children and our children's children. As Cayman Islanders we take pride in our natural environment. Improving how we acquire, produce, and consume energy is central to the Cayman Islands becoming economically and environmentally responsible and sustainable.

According to recent edition of the *Global Sustainable Energy Initiative Newsletter*, "many of the small island states are economically vulnerable to external factors such as fluctuations in energy prices, with record high oil prices. Secure supplies of affordable and reliable energy are an essential element of economic and social development. However, energy systems in most Small Island Developing States (SIDS) are inefficient and expensive, and add to national economic vulnerability. Electricity prices are generally between 20 and 35 cents (US) per kilowatt-hour, which is much higher than prices in the USA or Europe."[1]

Also, a recent report [2] by the *United Nations Economic Commission for Europe* concluded that global energy security risks have increased sharply because of:

- steeply rising oil import demand in developing countries,
- the narrowing margin between oil supply and demand that has driven up prices,
- the volatility of oil prices arising from international tensions,
- supply disruptions,
- the concentration of known hydrocarbon reserves and resources in a limited number of the world's sub-regions,
- restricted access to oil and gas companies to the development of hydrocarbon reserves in some countries.

It recommends that governments mitigate these risks by promoting investments in the alternative energy sector. This could help meet future demand by providing the legal frameworks and regulatory environments, and through fiscal incentives promote fair and transparent processes that foster the kinds of public-private partnerships needed to encourage and protect investments in alternative energy sources and technologies.

In Cayman, we face two major energy challenges: one short term; one long term. The short-term challenge is to deliver secure, clean energy at affordable prices that can support our economic development, while being environmentally responsible. The long-term challenge is to respond to the potentially devastating effects of climate change by tackling carbon emissions that we contribute to through our energy production and consumption.

To promote economic growth while being environmentally responsible we must keep in mind that the Cayman Islands are dependent on petroleum, not only for transportation (to, from, and on the islands), and the generation of electricity, but perhaps even more importantly, for its production of potable water through its electricity-based (where the electricity is produced by oil-driven generators) desalination systems. The risk this presents is clearly evident. Were the political and social instability in the world's oil producing regions to deteriorate sufficiently, the price of oil would escalate dramatically and the potential for restricted supply could have secondary effects on the ability to produce electricity and potable water on the Cayman Islands.

Responding to global climate change - with its inevitable environmental effects on Cayman - is intimately linked to the risk from oil-dependence and the potential insecurity of energy supplies. The Cayman Islands Government must seriously consider implementing innovative legislation, policies, procedures and guidelines in the near future that will address the myriad of complex scenarios this country may face.

Cayman is not alone in facing this challenge. All developed countries are implementing, to various degrees, programs that are targeting the reduction of carbon output. The Cayman Islands has to do their part in this initiative. It could be argued that the Green House Gas (GHG) emissions from this small country are insignificant. However, the output from the region taken as a whole is a significant contributor to global

carbon emissions when considering all sources of carbon dioxide and methane. As the most affluent economy in the region, it is incumbent on Cayman to take a leadership role in environmental responsibility.

The failure of the Cayman Islands to implement an environmentally sustainable, legal and social infrastructure in a timely and proactive manner will increase the risk of a national economic downturn in the near future. With the advent of peak oil pricing, the availability of sufficient supply to meet Cayman's needs is more likely, however, if an oil shock were to occur, the price would be much higher. High, economically destabilizing, rates of inflation will result. Given Cayman's high degree of dependence on oil for essential utilities - water and electricity - there will be negative economic impacts from much higher energy and utility prices if these potentialities are not addressed *post haste*.

With the advances being made in new technologies and the rising cost of traditional sources of energy, there will come a point at which it becomes more financially viable to produce electricity via non-traditional means - i.e., other than by using non-renewable resources. For instance, if the price of oil were to double, current alternative energy technologies would become more economical. However, to wait for such a price-point to be realized before putting in place the necessary legislative, policy, and program measures would limit Cayman's ability to effectively respond to such an economically and socially devastating impact.

The Policy Challenge

Energy policy should underpin government policies on economic development, transportation, resource management, climate change, and research and development. It must also support wider government objectives for sustainable development and economic transformation as Cayman faces the next stage of its economic development.

The policy challenge is complex given the vulnerability of our energy system's dependence on the international energy market and, more positively, the opportunities arising from advances in new fuels and technologies. The fuels that are required for electrification and transportation dominate the Cayman Islands' energy use and the country has no other source of such energy. Even those who do have easy and cheap access to such fuels - i.e., OPEC members - are investigating alternative sources of energy for their own countries[1]. The challenge, and the requirement to change, is inevitable. Putting in place the policy necessary to create a low-carbon economy and to strike the right balance between Cayman's environmental, economic, and social objectives takes thoughtful research and planning.

[1] http://www.world-nuclear-news.org/nuclearPolicies/110407Nuclear_energy_an_option_for_Gulf_states.shtml

Regulatory clarity and stability are important in ensuring a well-functioning energy system. Given the economic and environmental risk, government must clearly signal the strategic direction it is setting for the energy sector, and back this up with sound policies and programs to achieve it. Clearly articulating the direction of energy policy and implementation is necessary to ensure that consumers respond to, and support, the strategic direction in a financially and environmentally responsible manner. In doing so, the government should consider to a number of guiding principles. For instance, the policies will:

- protect the economy,
- protect the wellbeing of the country's population,
- protect security of supply,[3]
- promote energy efficiency measures,
- promote low emissions energy sources,
- protect the environment, and
- contribute to a resilient community.

Similar regulatory leadership to provide incentives for producers and consumers to accept alternative energy sources could put the Cayman Islands at the forefront of sustainable development and long-term energy independence. "The real challenge of sustainable development is driving the necessary amounts of change**,** not setting targets or being 'optimal.' Sustainable development requires a conscious driving of societal change towards specific goals over limited timescales –this is an unprecedented human project. The transition to sustainable development will only be possible if we can change the fundamental 'operating system' underpinning political choices and institutions."[2]

New energy policy will require revisions to existing legislation and the introduction of new legislation that encourages innovation and change by producers and consumers alike. For instance, creating incentives for producers to use new technologies - hydrogen and electricity generation by solar, wind, ocean or thermal conversion – that can "feed back" to the grid will require innovative legislation that the Cayman Islands Government could spearhead.

Supplemental forms of energy are required to support a secure and reliable finance and banking sector. Alternative forms of energy are required to boost the Cayman Islands' reputation as a natural, eco-tourism destination.

Many governments approach the issues of climate change and energy policy by introducing legislation to satisfy their immediate political agenda, but do little to solve the pending crisis. One example is where governments give their support for electric and hybrid vehicles. If the country is fully supplied by alternative energy (from solar, wind, tidal, geo-thermal, etc.) such a policy is viable and has a positive impact to energy use and climate change. However, in countries that continue to use fossil fuels and oil

[2] http://www.e3g.org/index.php

products to generate electricity such policies exacerbate the problem, unless carbon sequestration is implemented. Generating, transmitting, distributing, transforming, and storing electricity (e.g., in car batteries) from oil-based generators is much less efficient than burning the same amount of energy in an internal combustion engine. That is to say, more gallons of oil products are consumed and wasted in the overall process for every mile driven. An added detriment is that building and manufacturing greater redundancy in vehicles only wastes valuable assets and hinders investment. Convincing consumers to switch to smaller and more fuel efficient vehicles would be a better direction for Cayman policy.

Another example of the leadership role the Cayman Islands Government could play is in utilizing alternative energy through retrofitting their existing buildings, using environmental designs for future buildings, and implementing energy reduction plans for its vehicles and facilities.

More immediately, considering alternatives to exacerbating Cayman's long-term oil dependence resulting from CUC's plan for another generator, would send a signal to the public, and business, that the Government is leading a new approach to energy use.

These are examples of concrete initiatives that could be undertaken by the Government in creating a resilient, sustainable, energy and economic future for Cayman.

In summation, the Cayman Islands Government urgently needs to undertake research and discussion around implementing an National Energy Security Plan to take the country towards energy independence. The failure to do so could have far reaching negative consequences. Many countries, from the United States to New Zealand to Ireland to China, are addressing energy security. If the Cayman Islands Government acts now by beginning to address the issues mentioned in this brief report the Cayman Islands could find themselves in an enviable position in relation to regional states, but also globally. The stark truth that one sees on examining the scientific data and reports[3] is that energy, or the lack thereof, will change our world in ways that we can barely conceive. It is time for us - as responsible, global citizens - to come to grips with our energy reality.

[3] http://www.ipcc.ch/

Recommendations to Cabinet

- **Encourage investment in solar, wind, geo-thermal and other forms of alternative energy generation by providing legislative and policy frameworks.**

- **Reduce / remove import duty on all alternative energy products.**

- **Create regulations to the Electricity Law to provide for "Net Metering" / Push to Grid.**

- **Encourage "alternative fuel" vehicles.**

- **Encourage the use of alternate energy sources by Caribbean Utilities Company Ltd. to reduce the costs associated with diesel fuel and its continuously escalating price.**

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