



GOVERNMENT OF THE VIRGIN ISLANDS
OF THE
UNITED STATES

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Public Services Commission

April 12, 2008

**Re: Virgin Islands Energy Needs and Future
Testimony before the Congressional Joint Subcommittees
St. Croix, United States Virgin Islands**

Dear Delegate Christensen, members of the Subcommittees on Insular Affairs and Energy and Mineral Resources, and the Listening Public:

The Public Services Commission of the Virgin Islands thanks you for your attention to these important issues affecting the residents and the economy of the United States Virgin Islands. The Public Services Commission is the U.S. Virgin Islands' regulatory authority with jurisdiction over all public utilities, including electricity, water, waste management, and ferry transportation.

The Virgin Islands are experiencing a serious energy crisis. It is a crisis not of our making, but is the result of federal government monetary and fiscal policies, international events, and other factors, far beyond our control. Unlike the mainland, there are no indigenous sources of oil, coal or natural gas energy available for use here in the Virgin Islands. Neither are there large rivers which can be tapped for hydro-electric power. And, nuclear energy, while in wide-spread use on the mainland, is cost prohibitive given our size and isolation. Accordingly, we are today totally dependent on imported oil. Because oil had been relatively stable and economical until 2003, the Virgin Islands had come to rely on this resource, not only for transportation, but for electrical generation and water production have -- all have been powered by fuel oil here in the Virgin Islands. Oil prices have increased five-fold, from \$22/bbl to \$110/bbl, in just five years. The days of cheap oil appear to be irretrievably over, and changes must occur and quickly.

The Commission has for several years worked with the Virgin Islands Water and Power Authority ("WAPA") to diversify its energy sources and to increase its use of renewable energy. Today, WAPA is in the final stages of completing studies on its current power generation and water production facilities, its options for replacement and/or rehabilitation of existing equipment, and the preparation of a long-term plan. That process was initiated in 2004 and completion is anticipated in a matter of weeks. The first study, the Condition Assessment Study, was conducted based on \$33/bbl oil; however, oil continued its climb throughout the study period and by the time the study was finished oil was above \$50/bbl. As everyone is well aware, that increase has only continued, and oil today is above \$110. WAPA has conducted an initial review of the

2005 study (called a “Fatal Flaw Analysis”), reviewing alternatives for new power generation, and is presently working to complete the updated Condition Assessment Study. We are happy to provide you with any of these documents.

At the present time, Virgin Islands residents pay nearly 34 cents/kWh for power – to our knowledge, the highest rate in the nation. The majority of consumer’s cost is fuel oil, totaling more than 25 cents or approximately 74% of the residential electric rate. It is important to note that this rate is based on \$92/bbl fuel – so we already know that the rate will continue to climb even further. Moreover, as the Virgin Islands do not have substantial surface or ground water, the majority of our water supplies are through rooftop catchment and desalination. Desalination is an energy intensive process, and the Virgin Islands currently rely on an older distillation technology that requires steam for the desalination process. As water is the very essence of life, its cost is a matter of grave concern to the public welfare, and one to which the Commission is paying acute attention.

Currently, the Virgin Islands spend more than \$200,000,000 per year just for fuel oil for its electricity and water. This staggering cost is compounded by several additional factors which include the relatively small size of the Islands’ population, at just over 110,000 and the low per capita income and higher cost of goods and services to Virgin Islands residents. This combination of factors creates a burden that is simply not sustainable. On average, Virgin Island residents consume less than half the electricity of mainland residents, yet an average residential bill now exceeds \$170 per month. To put this into further perspective, mainland power costs for residential consumers range from 6¢/kWh to 15¢/kWh – comparatively, Virgin Island consumers pay more than twice that amount. Since the Virgin Islands per capita income is well below the U.S. average, the extraordinary cost of energy imposes a tremendous burden that simply cannot be continued for the long term. Additionally, the Commission finds these costs especially worrisome for those members of our community who are most affected by these rates, particularly the high level of families with children living in poverty and the numbers of seniors for whom these costs may present an insurmountable burden.

In the Department of Energy’s Memorandum of Understanding with the State of Hawaii on the Clean Energy Partnership, the parties note the enormous burden placed on the local economy by the increases in world oil prices. Hawaii is estimated to suffer a 0.5 percent reduction in GDP for every 10 percent increase in the price of oil – and given the greater percentage reliance on oil here, there is no reason to think that the Virgin Islands suffer less.

In addition to relying solely on oil fired generation for the generation of electricity and the production of water, the Virgin Islands also suffer from an aged and outdated infrastructure, with much of the Islands’ electrical generation capacity being twenty-five years or more old. The Commission views this both negatively and positively. While antiquated plants presents a near term problem, in that our generation facilities are not as

efficient as newer equipment, it also means that we are in an excellent position to develop a modern, environmentally sensitive, and efficient electrical generation and water production plan for the future.

While the Territory is currently dependent on oil-fired processes, the Virgin Islands is ripe for receiving and implementing renewable and environmentally sensitive power production. However, there are additional challenges that must be taken into consideration in addition to the overall need and desire for moving to alternative energy sources. For example, while these Islands are located within the trade winds and can produce steady wind power much of the year this benefit must be weighed against the potential conflict with the Islands' major source of revenue which is tourism. St. Thomas and St. John have little available land that is not already occupied, and are tourist based economies. There is a justifiable concern about the visual impact and potential effects on tourism that are associated with wind energy. Additionally, on St. Croix some of the prime sites for wind generation are also highly visible and in environmentally sensitive areas. Moreover, our location within the tropics also makes these islands vulnerable to hurricanes and tropical storms, and the relative isolation of the Virgin Islands creates additional concerns regarding over-reliance on wind power. Performance guarantees and storm insurance would make wind power a substantially more attractive option for investment.

Solar power would also appear to be a logical addition to the power generation options in the Virgin Islands but, until very recently, it has been cost prohibitive, at least as to photovoltaic power. Solar thermal, which has been successfully used in the desert Southwest also carries some concerns about vulnerability to storm damage, and land area requirements. Because it is so reliably sunny, and well within the tropics, the Virgin Islands should be a prime candidate for any demonstration project for large scale distributed solar project.

Only Hawaii and the Pacific Islands can offer anything comparable to the Virgin Islands' ability to reach both warm tropical waters and cold deep water; in fact, our surface waters are substantially warmer than those surrounding Hawaii, resulting in an even greater temperature differential. But ocean thermal technology does not appear to have reached commercially viable status, and is unlikely to do so without further research and support. The Virgin Islands is the best location for a demonstration Ocean Thermal Energy (OTEC) project in the Atlantic basin.

The Virgin Islands also have a problem addressing waste disposal, which is not surprising given our limited land and many visitors. Waste-to-energy would seem to be a logical response for a limited portion of our energy needs, and this would assist in the resolution of another environmental issue for the islands.

Finally, the Virgin Islands are home to the largest petroleum refinery in the Caribbean, the HOVENSA facility on St. Croix. The presence of this refinery provides a steady

supply of petroleum coke, which is a low cost fuel, but with a very high carbon footprint. The Virgin Islands should be a prime candidate for a demonstration pet coke plant with carbon recapture.

Concluding Remarks:

In order to make progress and overcome the dire energy needs of the Territory, the Virgin Islands could benefit tremendously from federal assistance with and guarantees for long term debt. The Virgin Islands must replace aging plants that are cost effective to retire. This will have the added benefit of retiring aging plants with new and greener technologies that may make carbon credits available.

In addition, the Virgin Islands may require waivers from certain standards – for example, diesel generators may be economically and environmentally sound as back up generators in complement with solar and wind power, but are difficult to permit within the United States. Such units are however, vastly more fuel efficient than the current generators within the Virgin Islands.

The Virgin Islands could also benefit from assistance in making our current system more efficient as we transition to new technologies.

On behalf of the Public Services Commission, I thank you for creating this important forum, wherein the dialogue on the challenges and solutions of our present energy crisis could be discussed. It is our greatest hope that the fruits of this discussion will mean a true transformation for the territory, its infrastructure, and the people of the Virgin Islands.

Thank you,

Donald G. Cole,
Vice Chair
Virgin Islands Public Services Commission