



Alternative energy

Wind power studies being conducted in VI

ELLY ANDERSON

ST. CROIX — With a vision of one day being able to harness Caribbean winds as a form of renewable energy, the Virgin Islands Energy Office (VIEO) has teamed up with Energy Answers Corporation of Puerto Rico to conduct a wind energy case study on all three of the U.S. Virgin Islands.

VIEO is now gathering data on wind resources at three locations — Bee Hill on St. Croix, Crown Mountain on St. Thomas and Bordeaux Mountain on St. John.

The purpose is to offer a distributed generation approach where up to 1 megawatt of wind energy could be developed in three or more locations for availability to the VI Water and Power Authority (WAPA).

On Saturday, a group of interested individuals — including representatives from VIEO and WAPA, — gathered at Divi Carina Bay to learn about the wind measurement towers and to see the newly-installed tower on a hill overlooking the resort, located on St. Croix's southeast side.

"The Virgin Islands Energy Office is proud to take the leading role in promoting renewable energy technology for the residents of

the territory. With your support ... we can reduce our dependence [on] imported fuel by utilizing more indigenous resources," said Bevan Smith Jr., VIEO director.

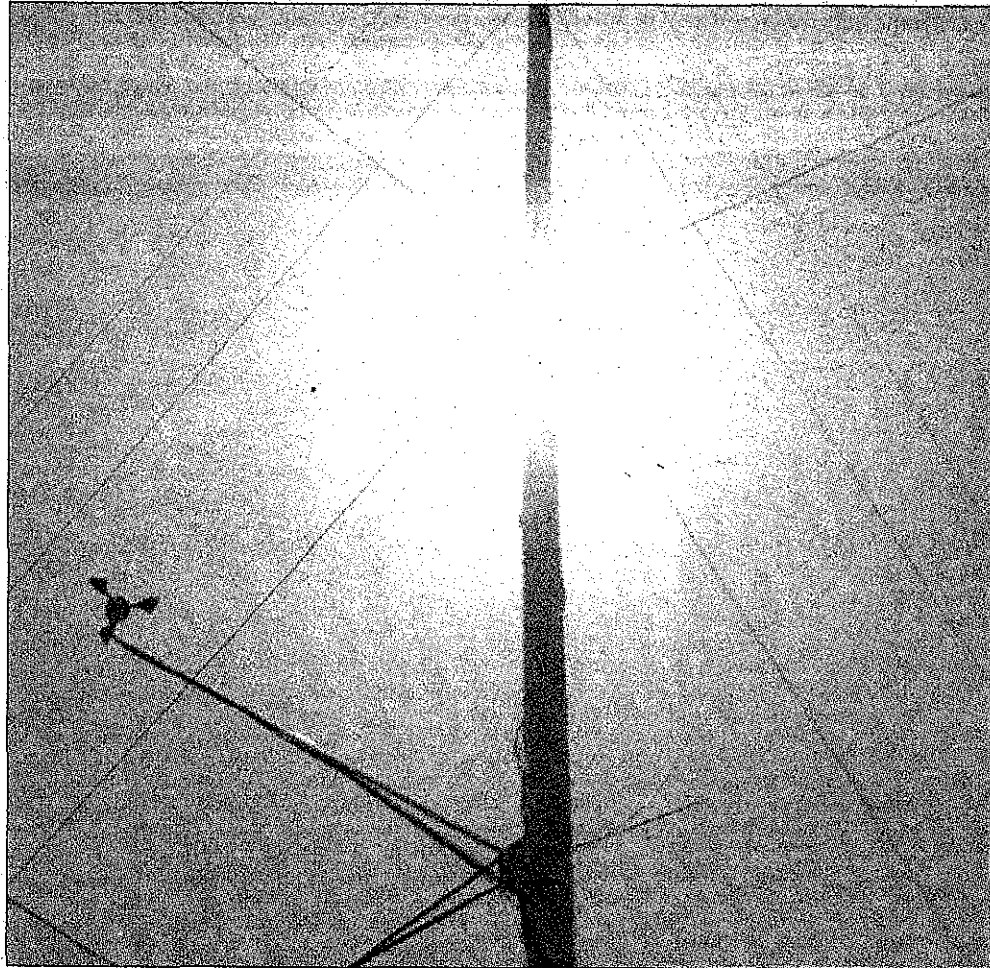
The State Energy Program (SEP) special project was made possible through a grant from the U.S. Department of Energy, with matching funds provided by VIEO, a division of the Department of Planning and Natural Resources (DPNR). Energy Answers was awarded the professional services contract to fulfill the objectives of the grant.

Sustainable Systems and Design International (SSDI), a sub-contractor of Energy Answers, is providing the project's technical services.

"In this time of escalating energy costs and fuel prices, and with concern for global warming, renewable energy sources have become very important alternatives to fossil fuel energy generating facilities," Smith said.

Basically, the wind measurement towers are designed to find out what the best wind resources are in the territory — and at what height the wind is strongest and most consistent.

WIND, PAGE 2



Kristin Duncan

A wind measurement tower sits atop Bee Hill on St. Croix.

WIND:

FROM PAGE 1

SSDI has constructed and/or installed three assessment towers throughout the territory to measure wind speed and direction at 10 and 30 meters high, with computerized collection of data at least every 10 seconds, with hourly and daily averages on a 24-hour-a-day basis. The St. John tower, however, will soon be measuring wind speed and direction at 30 and 60 meters.

Data acquired by this system will allow wind energy producers to ascertain whether there is enough wind at these sites for power production.

"It's a pleasure to be working on this," said Patrick Mahoney, a licensed engineer and president of Energy Answers Corporation.

A resident of St. Croix for the past four years, Mahoney said it is obvious there are wind resources in the territory, since at one point the sugar cane plantations used windmills as an important and necessary aspect for their success.

STEPS FOR DETERMINING THE PRACTICALITY OF A WIND SYSTEM:

1. Evaluate potential legal and environmental problems.
2. Evaluate your energy requirements. (A small home-sized wind machine has rotors between 8 and 25 feet in diameter and stands upwards of 30 feet and can supply the power needs of an all-electric home or small business.)
3. Evaluate the wind resource at the proposed location.
4. Evaluate the application.
5. Select system components.
6. Evaluate the cost of the system with federal and state incentives. (The following formula is a mathematical representation of the cost estimation process: Total annual system cost in dollars/annual energy output (kWh) = cost of energy (cents per kWh).
7. Re-evaluate energy requirements and legal and environmental impacts, if necessary, and evaluate alternatives in buying, installing and owning a wind system.

— Information provided by the Virgin Islands Energy Office (VIEO)

SSDI President Onaje Jackson said the earlier collection of wind resource data began in June. On St. Thomas and St. John, they have been collecting information for about three months, and on St. Croix, for about two weeks. The plan is to gather data for up to a year.

Margo Guda, a consultant to the project from Energy Foundation, was instrumental in gathering wind resource data in Curacao and in the development of 12 megawatts of wind power on that island. She said Curacao has a very strong resource.

"Everybody knows that the wind blows," she said. "So we said, we should use this energy."

Guda said Curacao now has two successful wind farms — the first which started in 1993 and the second only a few years ago.

"They were innovative and progressive," she said. "It came very beautifully together."

Guda said that the wind farms contribute about 6.5 percentage of the electrical energy on Curacao. That may not sound like much to most people, but to utility providers, that is "sizeable," she said.

Alberto Bruno-Vega, WAPA executive director, was also present Saturday. He said that looking at renewable energy resources like wind and solar energy are "a giant leap for the Virgin Islands community as a whole."

He said by using such options, residents of the territory would be able to "break away from the shackles of our total dependence on imported fuel."

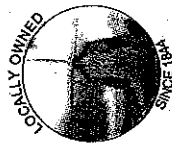
Bruno-Vega said that WAPA gives 100 percent support to this project and that "hopefully,

the future will be brighter."

According to a VIEO newsletter, wind energy is a form of solar energy produced by uneven heating of the earth's surface. Wind resources are best along coastlines and on hills, but usable wind resources can be found in most areas. Wind energy as a power source is less predictable than solar energy, but it is also typically available for more hours in a given day.

Wind energy should be considered more carefully than solar energy, according to VIEO, because wind resources are influenced by terrain and other factors that make it more site specific than solar energy.

The VIEO has conducted wind speed and direction observations at various locations throughout the Virgin Islands. Readings collected from the Renewable Energy Data Acquisition System (REDAS) towers offer some definitive numbers. The REDAS towers are located in Frederiksted, the Howard M. Wall Boy Scouts Camp on the South Shore and at the Nature Conservancy in Estate Princesse, Christiansted.



St. Croix Avis



75¢

SUNDAY-MONDAY, SEPTEMBER 18-19, 2005, NO. 219

USVI 161st YEAR

EDITORIAL:

Good idea!

It's no real secret that the VI has two elements in vast abundance:

Winds and sun.

So, it's a no-brainer that the VI Energy Office would investigate harnessing at least one — or both — of these alternative sources of fuel in order to provide residents with some relief from the paycheck-sucking attributes of the Water and Power Authority.

Avis reporter Elly Anderson accompanied VIEO and Energy Answers Corporation (a Puerto Rico-based company) as they installed testing equipment on the big island.

The equipment will basically measure the wind's strength and other attributes at different elevations. After the rounds of testing — which will also be conducted on St. Thomas and St. John, VIEO will have a good idea at what elevations wind-gathering turbines can be installed to take advantage of the Caribbean trade winds.

The tests will take about a year to complete. Putting up the wind mills would take a bit longer, provided that the testing reveals the viability of such a plan.

We think it's pretty much a no-brainer that the tests will be successful. After all, there are very few days in the Caribbean when the wind is not soothing us with her caress.

The ultimate goal, of course, is to encourage the island to take advantage of both firms of renewable energy — and giving us the means with which to lessen our dependence on WAPA — and the fossil fuels the local plant consumes.

Other areas are trying to take advantage of these kinds of resources and it's nice to see the VI work its way into a leadership role.

It's a not-so-well-kept secret that the nation's dependency on oil is having a tremendous affect on our economy. As the price skyrockets — and there's every indication that it will continue to do so — our electricity bills go higher and higher.

So it's in everyone's best interests to investigate the possibilities of harnessing the region's sunlight and winds. The trick, of course, will be not only harnessing the energy, but making it less expensive for the average resident to convert his/her home to take advantage of the renewable energy source.

We won't necessarily make WAPA obsolete, but the agency will not have the impact on our paycheck as it has of late.