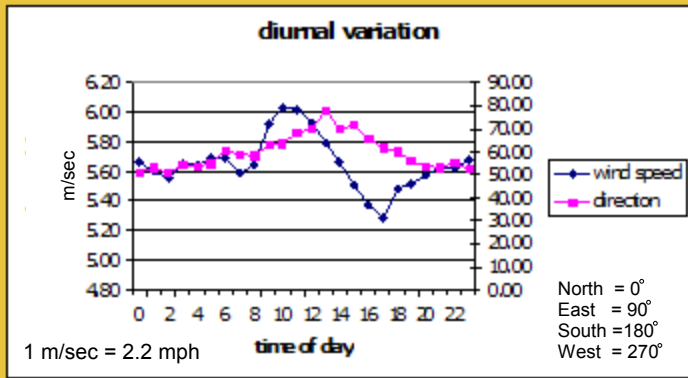
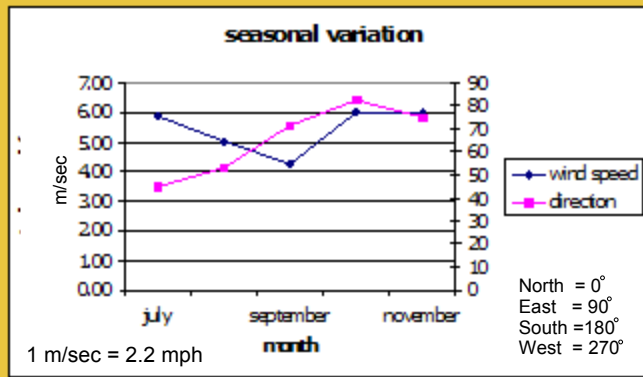


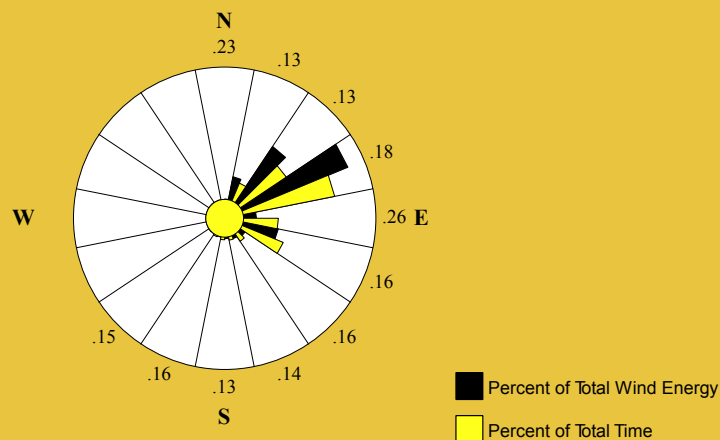
## St. John Data Summary



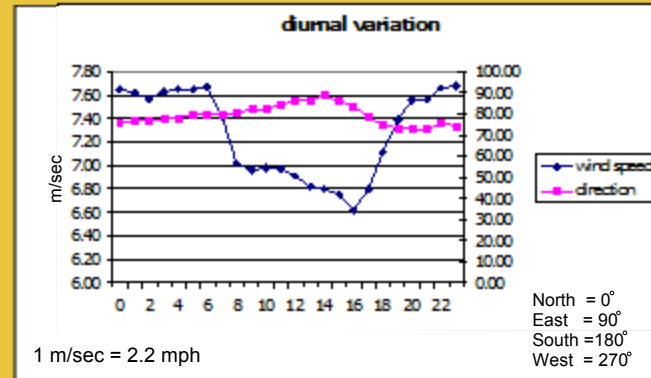
Diurnal Range of Wind Speeds 12.3 mph to 13.2 mph



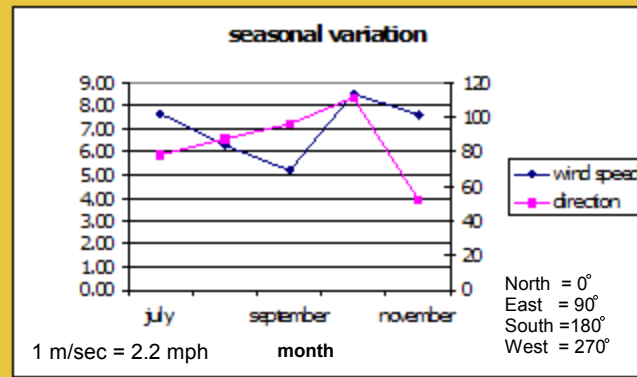
Seasonal Range of Wind Speeds - 9.2 mph to 13.2 mph



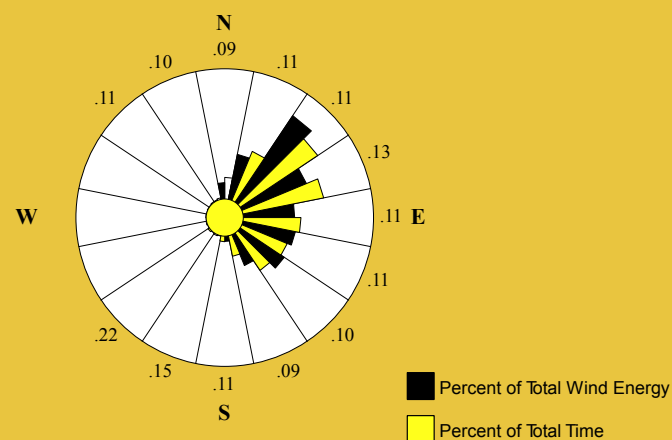
## St. Thomas Data Summary



Diurnal Range of Wind Speeds 14.5 mph to 16.9 mph



Seasonal Range of Wind Speeds 11.4 mph to 18.7 mph



# Wind Resources

## St. Croix, St. Thomas, and St. John US Virgin Islands: Highlights of Assessment Results

Virgin Islands Energy Office  
Department of Planning and Natural Resources



Energy Answers of Puerto Rico  
March 31, 2006

## Project Overview

The Virgin Islands Energy Office (the Energy Office) contracted with Energy Answers Corporation of Puerto Rico (Energy Answers) with Sustainable Systems and Design International (SSDI) in October, 2004, to provide an update of wind resource assessment efforts pursued by the Energy Office in the 1990s and to characterize the constraints and opportunities for wind energy utilization on St. Croix, St. Thomas, and St. John. This brochure provides highlights of the results of this assessment project.

Given that the wind industry recommends a minimum of 12 month of data collection at a proposed wind power-generating site to support the design of the proposed system, the data contained in this document should be used only for general informational purposes. Independent site based wind resource monitoring should be undertaken to support an actual wind power project.

The results of the current wind resource assessment indicate that there is generally good to moderate potential for wind power generation on sites with free access to 24 hour winds (free of nearby tree and building obstructions) at generator hub heights of 30 meters (90 feet) or more. Due to the complexity of the terrain on all three main islands, this potential can vary significantly from site to site and for varying wind generator heights. Again, site based wind resource monitoring (with sensors set at a minimum of 20 meters) should be undertaken to support an actual wind power project.

The following is a summary of wind speed information provided in this brochure: Range of Wind Speeds: St. Croix = 11 to 19.8 mph, St. Thomas = 11.4 to 18.7 mph, and St. John = 9.2 to 13.2 mph.

The Virgin Islands has a long history of harnessing the bountiful trade winds to help meet its energy needs. The early sugar cane mills employed the wind for needed mechanical power. Their stone wind towers continue to dot the landscape today.

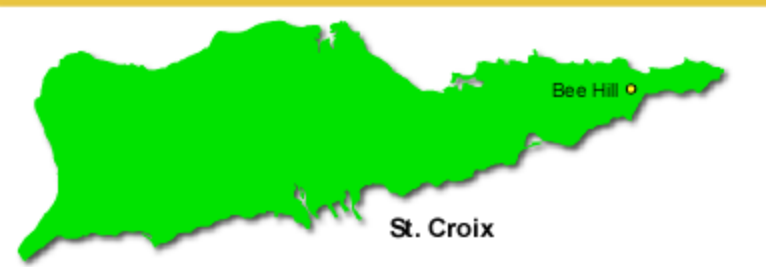


Today, rapidly increasing energy costs in the Virgin Islands and the Territory's continued vulnerability to energy shortages due to its nearly complete reliance on imported fossil fuels are making the expanded use of renewable energy sources, such as wind energy, a top priority.

The Energy Office hopes that the data contained in this brochure will foster expanded, appropriate use of wind energy technology by all sectors of the Virgin Islands community.

## Overview of Wind Monitoring Process

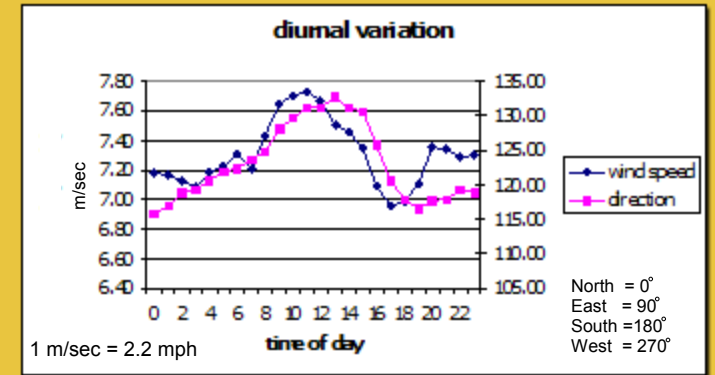
Wind monitoring stations equipped to measure wind speed and wind direction at 2 second intervals on a 24 hour a day basis were installed on each of the three islands to complete the wind assessment. Wind sensors were installed on towers at 10 meters and 30 meters on St. Croix and St. Thomas, and at 30 meters and 60 meters on St. John. Station locations included: Bee Hill, on the east end St. Croix (a 40 meter tower was erected in cooperation with the Divi Carina Bay Resort on resort property); on Crown Mountain in cooperation with Innovative Communications on an existing 60 meter Innovative tower; and on Bordeaux Mountain on St. John in cooperation with Ackley Communications on an existing 70 meter Ackley tower.



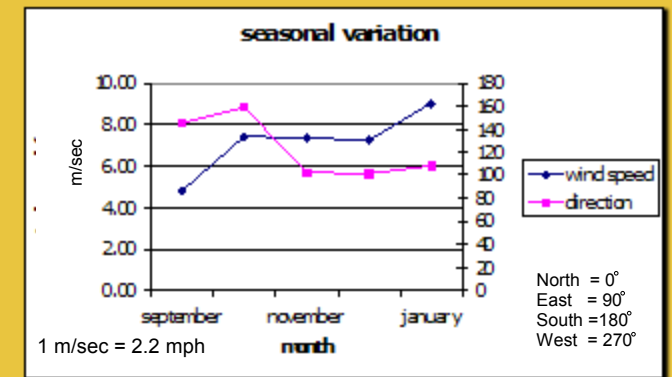
## Monitoring Sites



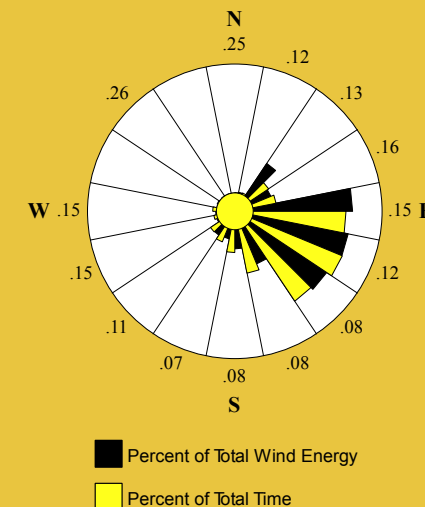
## St. Croix Data Summary



Diurnal Range of Wind Speeds 15.8 mph to 16.9 mph



Seasonal Range of Wind Speeds 11 mph to 19.8 mph



The yellow bars indicate both the direction and percentage of time that the wind blows from a specific direction. The inner yellow circle represents 0% of the time while the outer black ring represents 50% of the time.

The black bars show what percent of the total wind energy comes from a specific direction. Again, the yellow circle represents 0% of the "Total Wind Energy" while the black outer ring represents 50% of the "Total Wind Energy".

The numbers on the outer edge of the chart indicate the "Turbulence Intensity" (TI) from a particular direction. The lower the number the less variation there is in the intensity of the wind (turbulence) from that direction.