Small Wind Training & Testing Facility

Overview

The Small Wind Training and Testing Facility (SWTTF) will serve a variety of purposes and address a range of needs associated with the development of a small wind workforce in Virginia. The facility will conduct training and K-16 education to advance the development and deployment of wind power in the Commonwealth.

At the 2010 Virginia Statewide Wind Symposium at JMU, Lt. Governor Bolling announced an award of $800,000 to JMU to design and construct the SWTTF. This is matched by nearly $250,000 by JMU.

The SWTTF is a successful culmination of hard work by numerous companies without whom the completion of the facility would not have been possible.

- Price Studios
- HCYU
- Lantz Construction
- Mid Valley Electric
- Maust Enterprises
- Baker Energy
- Dean Steel Erectors
- Bergy Windpower
- Southwest Windpower
- Gaia/Talc Electronics
- MetOne
- ASC
- Rohn Tower
- Outback Inverters
- Weatherbug
- Lee Hi Crane and Rigging

The SWTTF construction was completed in April 2012 and a ribbon cutting ceremony to celebrate the opening of the facility took place in June 2012.

Advancing small wind development through workforce training and technology testing
The SWTTF provides an independent testing capability in the region. The nearest small wind testing facility to JMU is situated at Appalachian State University in Boone, North Carolina. Virginia does not presently offer a capability for testing of small wind turbines; however, such a facility will be very useful to characterize and field-test new technologies, attract small wind manufacturing to Virginia, and to provide to students at four-year, two-year, and K-12 levels as well as the established and developing installer base the opportunity to learn the skills associated with testing of wind power technologies.

Testing Capabilities
- Power performance verification, prototype "shakedown" testing, research & improvements on existing technologies
- Robust met monitoring and wind assessment capability plus WeatherBug Professional to serve campus at large
- Turbine testing programs to be developed and led by interdisciplinary student team with faculty supervision

Equipment and Facilities
- Rohn 120-ft lattice tower topped with Bergy XL-R 7.5-kW turbine
- System hybridized with 750W of solar PV
  - Interior and exterior lighting is high-efficiency LED
- RE systems can operate in either grid-tied or stand-alone (coupled with battery bank) manner

The SWTTF is equipped with a robust suite of measuring/monitoring equipment including:
- Suite of 6 anemometers, 4 wind vanes, and 2 3-D sonic sensors installed at three elevations coupled to data acquisition
- WeatherBug Professional system
- All systems are web-interfaced

Installer Education Center

The Small Wind Training and Testing Facility at JMU provides the primary resource in Virginia for training developers and installers of small wind power projects and others from other trades who support such efforts. The curriculum package developed in conjunction with SED, Inc. of Rochester, NY offers the following modules:
1. Business Planning
2. Technical Sales
3. Technology Selection
4. Permitting
5. System Design
6. Construction
7. Operations & Maintenance

Educational Goals
- Provide a resource unique to the region
- Train future workforce for small wind industry
- Provide hands-on, experiential curriculum for all education levels (K12, 2-yr, 4-yr)
- Engage professionals who seek to enter the wind energy field
- Emphasize safety, site assessment, installation, and troubleshooting

Contact Information
We offer tours of this new facility! If you or your organization is interested in coming out and learning more, please contact Deanna Zimmerman:
zimmerdl@jmu.edu or 540-568-8764

Interested in participating in the installer education course? Contact Remy Pangle:
panglerm@jmu.edu or 540-568-8768

Interested in working with our facility to test your turbine/equipment? Contact the Virginia Center for Wind Energy:
vacenter4windenergy@jmu.edu or 540-568-8770