



## VIRGINIA WIND FOR SCHOOLS: PROJECT FUNDING FACT SHEET

### FUNDING OVERVIEW

Through the Wind for Schools program at JMU, there is no funding provided for the purchase or installation of the turbine at the school. The state facilitator will help schools to find funding sources for the cost of the turbine and installation. Finding an installer that is willing to work with the school at little to no cost is very helpful in this process.

### SYSTEM COMPONENTS

The base wind turbine suggested for the Wind for Schools program is the Skystream 3.7 from Southwest Windpower. This is a 2.4kW system that sits on a tower up to 70 feet in height. The school will need to have an area large enough to house this turbine while complying with the city or county set back requirements, usually a distance equal to or higher than the maximum height of the turbine (76 feet for a Skystream with a 6' blade on a 70' tower).

Below is a list of the hardware required:

Item	Details	Cost (educational discount)
<i>Wind turbine</i>	Skystream 3.7	\$11,995 (55' tower)
<i>Tower</i>	45', 55' or 70' monopole tower	
<i>Foundation</i>	SMaRT foundation	\$1,057
<i>Shipping</i>	Freight Charge to Virginia	\$1,000
<b>TOTAL</b>		<b>\$14,052</b>

Also necessary are a fused disconnect and junction box at the base of the turbine, a location for electrical connection to the school, a disconnect and junction box at the school, and an empty spot in the 240V or 208V electrical panel for interconnection.

The turbine comes with the SkyView Monitoring Software that can be used for monitoring the turbine's performance on a dedicated computer in the school. Some funding should also be set aside as needed for a dedicated computer and some schools add in funds for a large screen to display the data in a public area like the cafeteria, main office, or main hallway.

### MAINTENANCE COSTS

Annual maintenance is required on the turbine. For a Skystream, the facilities team should perform an annual visual inspection to check the blades for clean leading, trailing edges, and any potential damage. The team should also check the electrical components not in the turbine itself (standard electrical inspection of the disconnect, service panel connection, etc.). It is not necessary to open up the nacelle. The cost of this maintenance is simply the cost of the time for your facilities team to inspect the system. Training outside of what is given at installation is not necessary for this maintenance. These steps are spelled out specifically in the manual. Any service work necessary for the turbine itself would be done by the installer. Skystream turbines are under a 5 year limited warranty on all components. After that time, any service costs would be the responsibility of the school.

### INSTALLATION COSTS

The installation of the turbine will vary depending on the installer you are working with and how much of the services and materials you can get donated by members of the community.

Below is a list of those services and materials and their estimated costs:

Item	Estimated Cost
<i>Permitting</i>	\$400
<i>Concrete (7.4 cubic yards)</i>	\$760
<i>Backhoe rental and operator (4 hr day)</i>	\$550
<i>Crane rental and operator (4 hr day)</i>	\$2,000
<i>Trenching for cable (150 ft)</i>	\$300
<i>Electrical conduit</i>	\$200
<i>Wire</i>	\$2,000
<i>Disconnect switch/ground bar</i>	\$100
<i>Electrical meter</i>	\$300
<i>Electrical meter housing</i>	\$300
<b>TOTAL</b>	<b>\$6,910</b>

### FUNDING SOURCES

There are many funding options for schools that want to a wind turbine on campus. Remember that the members of your community, parents, and other family members of your students are usually very willing to help in any way they can. Soliciting them for donations of equipment or services associated with the installation, listed above, is a good place to start. To fund the remaining system component costs, explore grants and approach businesses looking to “green” their image.

Some ideas are listed below:

- JMU has received cost matching from **BP Wind** to support Wind for Schools projects and we are working on securing more of this kind of support from businesses in Virginia.
- In 2010 the Virginia **State Energy Office** offered funds from the American Recovery and Reinvestment Act to help schools install small wind systems on their campuses. JMU is hoping that the State Energy Office will be able to find funds in years to come to continue to help fund these worthy projects.
- **Appalachian Regional Commission** and **Tobacco Commission**: Schools in the Appalachian Regional Commission and the Tobacco Commission territory may also be eligible for funding for projects.
- The **US Department of Agriculture** has two grants, **REAP EEI** and **RBEG**, which could be used to fund renewable energy projects at schools in rural areas.
- The **Lowes Tool Box** grant is commonly used for projects in other Wind for Schools states.
- Large businesses in the state will purchase the environmental attributes associated with the first 10 years of operation of a small wind turbine on school property, called a **Green Energy Certificate**, for about \$2,500. Schools will want to identify possible companies in their area and write letters to invite them to sponsor your project. JMU can help with this process as well.
- **Supplemental Environmental Project (SEP) Settlements** are a policy vehicle designed by the US Environmental Protection Agency (EPA) to give violators an alternative to standard fines for noncompliance. Instead of paying the full amount of its fines, the company can volunteer to fund environmentally friendly projects. JMU can help get schools in touch with the right contact at the Virginia Department of Environmental Quality.

### CONTACT INFORMATION

Taylor Moellers  
Project Facilitator and Education Coordinator  
State Facilitator, Virginia Wind for Schools Program  
1401 Technology Drive, Suite 120, MSC 4905  
Harrisonburg, VA 22807  
540-568-8768  
moelletm@jmu.edu  
<http://wind.jmu.edu/education/wfs.html>