School Wind Energy Project Ideas for Supplemental Environmental Project (SEP) Settlements

Wind & Hydropower Technologies Program
Harnessing America's abundant natural resources for clean power generation

Introduction

The Spirit Lake Community School District in Spirit Lake, Iowa, uses energy from the wind to fund its educational programs. The district's two wind turbines not only power the school buildings with clean energy, but they also provide revenue for the district (the local utility purchases the excess energy generated by the turbines).

Spirit Lake funded its wind turbines with grants and low-interest loans, but school districts faced with budget cuts and a diminishing tax base have another funding option: Supplemental Environmental Projects (SEPs). SEPs are a policy vehicle designed by the U.S. 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. SEP settlement negotiations for many types of violations can be used to fund wind project development.

This list of project concepts is offered in the spirit of brainstorming. Some project ideas may not apply to all jurisdictions.

1 **Provide an onsite dedicated wind turbine.** A school or community with a good wind resource can benefit from an onsite dedicated turbine to meet energy needs. An onsite wind turbine can reduce a school's energy bills, allowing these funds to be used for other purposes. If the turbine provides more energy than the school requires, the excess can be sold back to the utility, further improving the economics of the project.

2 **Add a turbine to a wind farm.** Using SEP funds to support the addition of a turbine to an existing wind farm would leverage existing infrastructure costs, including challenges such as siting, and operations and maintenance responsibilities. The turbine (and its energy production) could be dedicated to the school. Net revenue generated from the sale of electricity could be used to reduce the costs of school programs.

3 **Install a turbine on state lands.** A school might not have a good onsite wind resource. However, most states have state lands that are suitable for wind turbines. SEP funds could be used to install turbines on state lands, with the understanding that revenue from the power generated would be returned to the school in offsets or in actual revenue for school programs.

Susan Innis, Western Resource Advocates/PIX12800

University of Colorado (CU) students voted to increase student fees by $1 per semester for 4 years to purchase wind power from Public Service Company of Colorado's Ponnequin wind farm. The increase in fees raised $50,000 per year to purchase the output of a wind turbine (seen here decorated with CU's buffalo mascot).

4 **Fund a district project.** A utility-scale wind turbine can be a large project for an individual school, but it may be more manageable for a school district. A district also has more lands available, offering a greater number of siting opportunities. SEP funds could be used for any portion of such a project: feasibility analysis, site selection, installation, or even training local students or staff to maintain the turbine. This community-based effort would benefit the school system in energy cost savings and, if power is sold to the grid, in revenue that could be used for school programs.

5 **Blend wind energy with energy efficiency**. Studies have shown that total energy and energy cost savings are maximized per unit investment when efficiency measures are combined with renewables installations. SEP funds could be used to produce an investment/sizing tool that optimizes the benefits of blending energy efficiency with wind energy for schools and to develop some demonstrations of those benefits.

6 Fund wind power for a local school application. SEP funds could address specific needs of a school by providing wind-generated electricity directly to the school for that purpose. The best applications would be highly visible, such as lighting for school activities, water heating for showers, and space heating for hallways.

These direct applications are more accessible and understandable to the public and decision-makers involved and can provide higher benefit to the school by offsetting energy with a higher value than the utility may be willing to credit.

7 Fund the development of a wind energy booth/tabletop exhibit/kiosk for state and county fairs. The idea is to 1) raise the consciousness of and support for wind power options in rural areas, and 2) support local and regional action directed toward installing a wind power facility in the area.

A compelling kiosk could include:

- Attractive background or graphics
- Turbine/tower hardware showing possible configurations
- Animated graphics (video or slide show with technical and policy information)
- Gift (cardboard wind blade toy, etc.)
- Wind information handouts.

8 Purchase the wind "premium" for a local school. A utility might charge more for wind energy than for energy from traditional sources. SEP funds could be used to pay for this wind premium (cents/kWh) for a school for a certain time period. The premium is determined as the cost of wind energy less avoided cost.

Spirit Lake Community School District/PIX11342

The 250-kW wind turbine (left) at Spirit Lake Community School District in Spirit Lake, Iowa, provides all of the electricity for the elementary school. After paying for itself, the turbine has provided about $25,000 in revenue from sales of electricity to the utility company, which is reinvested in the school's instructional programs. The 750-kW turbine (right) is connected to the grid in a net-metering arrangement that provides power to the remaining buildings in the school district, including the high school, the middle school, the administration building, a technical building, the bus barn, and the football stadium's lights.

Further Information

For further information on using SEP funds for school wind energy projects, please contact:

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9 Purchase green tags[1] (or buy down green tags). SEP funds could be used to purchase green tags for schools or to reduce the cost of the green tags, thus increasing the amount of tags the school could purchase. Funds could be placed in an escrow account to pay for a specified amount of green tags during an agreed-upon time frame.

10 Address local economic development by identifying and developing wind power job opportunities and associated curriculum needs. The benefits of new wind power jobs in the rural sector are optimized when local residents participate. SEP funds can be used to identify existing academic and vocational resources. Community colleges and vocational schools can develop curricula that will train students for wind power jobs, including construction, routine turbine maintenance, operational trouble-shooting, and facilities sizing and planning. Installing a wind turbine at the educational or training facility can be a natural extension of this education and training.

[1] "Green tags," or renewable energy credits (RECs), are the environmental attributes of clean energy. They are purchased separate from the actual power. This option is desirable in a number of situations—for example, in jurisdictions in which there is no green power to purchase or in situations in which the violator operates in areas where emissions are capped or across several states. Green tags are easy to negotiate and are easily applied to small or large penalty amounts.

A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

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