

Supplemental Environmental Projects Using Renewable Energy: A New Approach to Addressing Air Quality Violation Penalties

Supplemental environmental projects can help companies mitigate all or part of penalties imposed as a result of air pollution violations. Supplemental environmental projects, or SEPs, are environmentally beneficial projects that offer pollution prevention, energy efficiency, green energy, and community-based programs that may include investment in cost-effective alternative energy technologies, such as wind energy.

In Colorado, one company is successfully mitigating 80% of a penalty through a SEP that takes advantage of the utility's wind energy program by purchasing wind energy for a minimum of 5 years. To meet the additional demand, the utility will need to add another turbine to its existing wind farm. The environmental benefits that result from this increased capacity include sustained emission reductions, including carbon dioxide (CO₂), nitrogen oxides (NO_x), and sulfur dioxide (SO₂). In addition, the increased capacity will increase the diversity of the utility's energy portfolio and take further advantage of a free, renewable energy source.

A Colorado Case Study

During routine inspections, a large Denver company was found to be in violation of air pollution prevention regulations and was required to pay a noncompliance penalty of \$30,065. In addition, the company was assessed a civil penalty of \$395,000. Because it cooperated with the state, the company's civil penalty was reduced to \$316,000. To offset this penalty, the company developed a SEP through which it would purchase wind energy for a minimum of 5 years at a cost of \$303,360, or 80% of the civil penalty.

To receive approval from the Colorado Department of Public Health & Environment, Air Pollution Division, the

company had to certify that this SEP was developed exclusively for mitigation of the current violation and it cannot be applied to any past or future violations. In addition, the SEP cannot be used to meet the requirements of federal, state, or local laws and regulations.

To ensure smooth implementation of the SEP after it was approved, the company consulted with local environmental stakeholders. To minimize accounting

Environmental Benefits

The environmental benefits associated with using electricity generated from wind range from air emission reductions to non-emission reductions. Air emission reductions include reductions in NO_x, SO₂, CO₂, particulates, and mercury. Non-emission reductions include reductions in the need for landfill disposal and wastewater treatment.

Air emission reductions that will result from the Colorado SEP are estimated to be:

- Total NO_x avoided—97 tons per year
- Total SO₂ avoided—73 tons per year
- Total CO₂ avoided—3,640 tons per year

In general terms, these reductions are roughly equivalent to:

- 1,820 tons of coal NOT burned per year
- 1,011 acres of trees planted (one-time occurrence)

The emission reductions for the Colorado SEP were calculated assuming that:

Amount of penalty = \$303,360

Wind premium = 2.5 cents per kilowatt-hour (kWh) or \$2.50 per 100 kWh

Total number of kWh = 12,134,400

Length of wind purchase = 5 years

kWh per year for 5 years = 2,426,880

Number of blocks purchased per month = 2,022

Pollution avoided from the purchase of wind energy in Colorado:

NO_x = 8 lbs per 100-kWh block

SO₂ = 6 lbs per 100-kWh block

CO₂ = 300 lbs per 100-kWh block.

State air quality enforcement officials who would like a detailed analysis of the value of their SEPs can use the Environmental Protection Agency's (EPA's) detailed analysis modeling tool—PROJECT. A copy of the PROJECT computer program software and PROJECT User's Manual may be purchased by calling that National Technology Information Service at (800) 553-6847, and asking for Document #PB 98-500408GEI, or they may be downloaded from the World Wide Web at <http://www.epa.gov/oeca/models/> or <http://es.epa.gov/oeca/models/project.html>



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costs, the company submitted the entire amount of its SEP purchase to the utility. The utility placed the money in an interest-bearing escrow account from which it will manage the funds. The utility will use the money in the account to pay the premium it charges for energy

purchased by the company under the utility's WindSource Program for up to 5 years. If there are funds left in the escrow account after the 5th year, the utility will use the balance to continue paying the premium for the company.

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Web sites

Green Power Network — www.eren.doe.gov/greenpower/apcd_0900_pr.html
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