

WINDLETTER

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Wind Power and Air Quality Regulations

Increased use of wind power in a region lowers emissions of smog- and acid-rain-causing pollutants, right? Maybe not as much as one would think. The degree to which a wind farm will actually reduce emissions depends to some extent on our system of pollution regulation. This is an especially problematic issue in states where pollutants are regulated using a “cap-and-trade” system. Since the level of the cap does not change, polluters could, in theory, emit more to bring the level of pollutants up to the cap. Whether that actually happens is the subject of some debate.

The U.S. Environmental Protection Agency (EPA) currently regulates sulfur dioxide (SO₂) nationally and nitrogen oxides (NO_x) in a portion of the eastern half of the country with cap-and-trade systems. Under such a system, the state is allocated a certain total level of emissions within industry sectors. The states then determine how they will distribute their total allocations to individual electric generators within the state. A system for allocating and trading emissions allowances is then established so that a company can achieve its emission level through a combination of actual emission reductions and/or purchase of reduction credits from other companies in the trading program that have reduced their emissions below their budget level. The allowances are generally awarded on the basis of fuel inputs—and therefore exclude renewables—except in a few instances where wind and other renewables

have been granted allowances from a special set-aside bank.

The cap-and-trade system is generally seen as a cost-effective way to lower emissions in a region. The success that the SO₂ cap-and-trade system has had in reducing emissions at a much lower cost than anticipated has made this form of regulation a popular one among program designers, and it is likely that it will be used in more states and for more pollutants in the future. Therefore, wind energy advocates must be actively engaged as new rules are written to make sure that they are written to recognize the contribution that wind projects make in reducing these emissions.

Within the SO₂ cap-and-trade system, there was a program to set aside and award allowances for renewables. However, it failed to stimulate project development, because participation was limited to utilities and allowances were awarded at an inappropriately low rate. Therefore, utilities had cheaper compliance options available. The set-aside program expired at the end of 2000. It serves as a model for how *not* to design a program to incorporate the benefits of wind projects.

One case study that has been closely watched by renewables advocates is the Washington Council of Governments (Wash-COG) state implementation plan (SIP). The Wash-COG SIP was submitted to the Environmental Protection Agency (EPA) at the beginning of March. If approved by the EPA, it will become the first case in the U.S. in which wind power purchases by a local government are credited for reducing air emissions under a regional air quality plan.

Montgomery County is planning to purchase 5% of its energy requirements from wind energy beginning in July. In this case, the state of Maryland will award renewable energy set-aside allowances to the wind power projects in the region, which will transfer to Montgomery County proportionally for the amount of wind power purchased. Montgomery County will then retire those allowances, reducing the overall amount of NO_x emitted in the region. In addition to reductions in ozone-causing NO_x, this wind energy purchase will reduce pollutants that are not regulated, such as mercury and carbon dioxide (CO₂), a key greenhouse gas that contributes to climate change.

“The great thing about this plan,” noted Alden Hathaway, director of green power programs at Environmental Resources Trust (ERT), a nonprofit organization that initially introduced the measure, “is that a marker has been set down in the Mid-Atlantic region that purchases of renewable energy by local governments provide significant value in terms of local air quality benefits.”

Some questions remain to be worked out by stakeholders in the market. On a separate track, a market for renewable energy credits (RECs) is now emerging. Each REC represents the environmental benefits associated with one megawatt-hour (1,000 kilowatt-hours) of certified renewable energy generation. They are now primarily being sold on a voluntary basis apart from the cap-and-trade emissions markets. In some cases, they are being used to implement state renewable portfolio standards. If wind advocates succeed in having air quality regulations written so that wind power can receive credits for one or more of its pollution-reduction attributes, can the owner of the wind plant continue to sell what is left as a “green credit”? Existing rules—such as the Green-E certification that the Center for Resource Solutions has developed—would not allow the “disaggregation” of the REC for the residential market. There may be a place for separate REC and allowance products in the commercial or industrial markets, but such a market would only work with credible tracking systems that are not fully developed.

On the plus side, the market for emissions allowances could be lucrative and could stimulate a large number of projects. David Wooley, when presenting on behalf of AWEA at the sixth annual green power marketing conference, estimated dollar figures for each of the main pollutants if wind were able to cash in on its emission-free profile: SO₂ could go for 0.12 cents/kWh, NO_x could sell for 0.15 cents/kWh, and CO₂ could be the main prize at 0.3 cents/kWh if carbon markets continue to develop. Kevin Rackstraw of Clipper Windpower believes the range for NO_x allowances could sell for as much as 0.3-0.4 cents/kWh. He will be presenting his findings at the Global WINDPOWER conference on Tuesday, March 30 at the “Definition and Control of Green Attributes” session.

On the other hand, some fear that breaking up a green tag into its many component parts would be too confusing for the market to bear and that, without a certificate registry, there is the potential for fraud, or the appearance of fraud.

To avoid any consumer confidence issues and to clarify a murky market, several jurisdictions are now establishing tracking systems for renewable energy credits. The New England Independent System Operator has developed a generation information system that will track where, when, and from what source each kilowatt-hour is generated. Texas has developed a REC tracking system that it uses for compliance with its renewable portfolio standard. The National Wind Coordinating Committee has also developed RECs trading principles and guidelines (available at <http://www.nationalwind.org>).

Exactly what the wind power community would like from various regulatory programs needs to be clearly defined by market stakeholders so that wind energy advocates can participate in a number of regulatory proceedings that are coming up within the year. The threat is that if cap-and-trade systems do not provide meaningful allowances for wind and other renewables, one of the main drivers for project development—the promise of maximum reduction in harmful emissions—could be taken away. The promise if wind is able to win set-asides or other allowances is increased value for wind-generated electricity because companies will be able to use wind power to comply with air quality regulations.

The EPA is pursuing two rules to achieve some of the objectives of the Administration’s proposed Clear Skies Initiative bill through rulemaking under existing Clean Air Act authority. The rules would regulate NO_x, SO₂, and mercury through the cap-and-trade approach. They are scheduled to be finalized by December. In both rules, individual states will have significant potential to allocate allowances to renewable energy.

The Interstate Air Quality Rule (IAQR) is designed to dramatically reduce and permanently cap emissions of sulfur dioxide (SO₂) and nitrogen oxides (NO_x) from electric utilities. It would cover 29 eastern states and Washington, D.C. The full text of the proposed rule and supplemental (when issued in April), fact sheet, press release, and public hearing information are available at <http://www.epa.gov/air/interstateairquality/rule.html> . The comment period for the initial IAQR proposal closes at the end of March. A supplemental proposal with more details is scheduled for release in April, with comments due 45 days later.

The Utility Mercury Reductions Rule (UMRR) is designed to reduce and permanently cap emissions of mercury from power plants across the U.S. The UMRR rulemaking proposes two alternatives for achieving the reductions: installation of controls known as “maximum achievable control technologies” (MACT), or the creation of a market-based cap-and-trade program. The full text of the proposed rule and supplemental (when issued), fact sheet, press release, and public hearing information are available at <http://www.epa.gov/mercury/actions.htm> .

The comment period for both initial and supplemental proposals for UMRP closes at the end of April. Additional public hearings will be held on both rules.

In general, by filing official comments on these two rules renewable energy advocates demonstrate their interest in the proceedings and make a claim to participation in further involvement in decisions concerning these rules. Other approaches for making their interests and views known to EPA on these rules include participation in the public hearings and requesting meetings with EPA officials in the Clean Air Markets Division (CAMD).

The AWEA Board of Directors has recently formed a new subcommittee called, “the Credit Trading Subcommittee” to tackle these issues. Board member Rackstraw is spearheading an effort to submit comments to the upcoming IAQR proceeding.

In addition to the EPA proceedings, last summer New York Governor George Pataki spearheaded efforts to get 10 northeastern states to start work on a program to reduce regional CO₂ emissions from power plants. Leaders from states participating in the regional initiative will next convene in September to begin detailed discussions on the development of the initiative. The overall goal of the group is to reach an agreement by April, 2005, on a flexible, market-based cap-and-trade program.

AWEA has also been working with the Business Council for Sustainable Energy in support of Clean Air regulations that would distribute tradable emissions allowances to all generators and efficiency measures based on how much energy output they provide or save consumers. Sen. Tom Carper (D-Del.) introduced a bill in April of last year that would regulate emissions of NO_x, SO₂, mercury, and CO₂ with output-based cap-and-trade systems.

For further reading:

The official web site for the Clean Air Markets Division (CAMD) of EPA is where you can find latest updated info on EPA rules: <http://www.epa.gov/airmarkets/> .

The AWEA Web site has some basic information on green power at <http://www.awea.org/greenpower> .

Many of the ideas in this article were explored by Ed Holt in the Green Power Newsletter, Number 8, available online at <http://www.raponline.org/Pubs/GrenPric/GP8.pdf> .

David Wooley’s presentation is available at <http://www.eere.energy.gov/greenpower/conference/6gpmc01/dwooley01.pdf> .

The Center for Resource Solutions has recently produced a document entitled *Regulators Handbook on Tradable Renewable Certificates*, available at <http://www.resource-solutions.org/Libraryindex.htm> .

The Renewable Energy Policy Project summarizes existing Clean Air Act programs that directly or indirectly promote renewable energy at <http://www.repp.org> . David Wooley wrote a paper for REPP entitled, *A Guide to the Clean Air Act for the Renewable Community*. It is available for download at http://www.repp.org/repp_pubs/pdf/caaRen.pdf .