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Increasing the Value and Expanding the Market for Renewable Energy and Energy Efficiency With Clean Air Policies

by Debra A. Jacobson

Editors' Summary: Around the United States, trading programs to limit greenhouse gas emissions are developing. Federal, state, and local governments are searching for ways to handle emissions, including increased use of renewable or zero-emissions energy sources, such as wind power. However, as Debra Jacobson explains in this Article, it may surprise many to learn that the CAA can diminish the market value of these alternative energy sources. She describes how fossil fuel emissions are displaced by renewable energy, and discusses how the Clean Air Interstate Rule interacts with state authority to regulate emissions. Finally, she concludes with future prospects for emission trading programs.

I. Introduction

Almost everyone knows that wind and solar energy are zero-emissions energy sources and that most other renewable energy sources reduce air emissions dramatically compared to fossil fuel generation. However, many individuals are not aware that the Clean Air Act (CAA) has created impediments to realizing the full environmental value of renewable energy and energy efficiency in the marketplace.

Many renewable energy marketers also have failed to recognize some emerging trends in clean energy/air quality integration that could increase the value and expand the market for renewable energy and energy efficiency products. In the last few years, the U.S. Environmental Protection Agency (EPA) and several states have begun to recognize air emission benefits resulting from energy efficiency and renewable energy in certain circumstances and have begun to implement mechanisms to credit these emission reductions.

In 2003, Montgomery County, Maryland, started the ball rolling with its effort to seek credit for a regional wind purchase as part of the Maryland state implementation plan (SIP) revision to meet the one-hour ozone standard.[1] This effort resulted in the first ever approval by EPA of SIP credit for nitrogen oxide (NO_x) emission reductions resulting from a renewable energy purchase.[2]

The new, more stringent, eight-hour ozone standard has led states that have failed to attain the national ambient air quality standards (NAAQS) for ozone to seek to implement more innovative measures. Some states plan to seek EPA approval for SIP credit from both renewable energy and energy efficiency projects that can demonstrate real NO_x emission reductions on the electric power grid.[3] This approach can result in additional revenue when the power is sold as renewable energy certificates (RECs) to a buyer who is willing to pay to obtain creditable NO_x emission reductions. In addition, this approach can expand the market for renewable power purchases and energy efficiency initiatives when municipalities and other entities that might not otherwise purchase clean power or install energy efficiency and renew-

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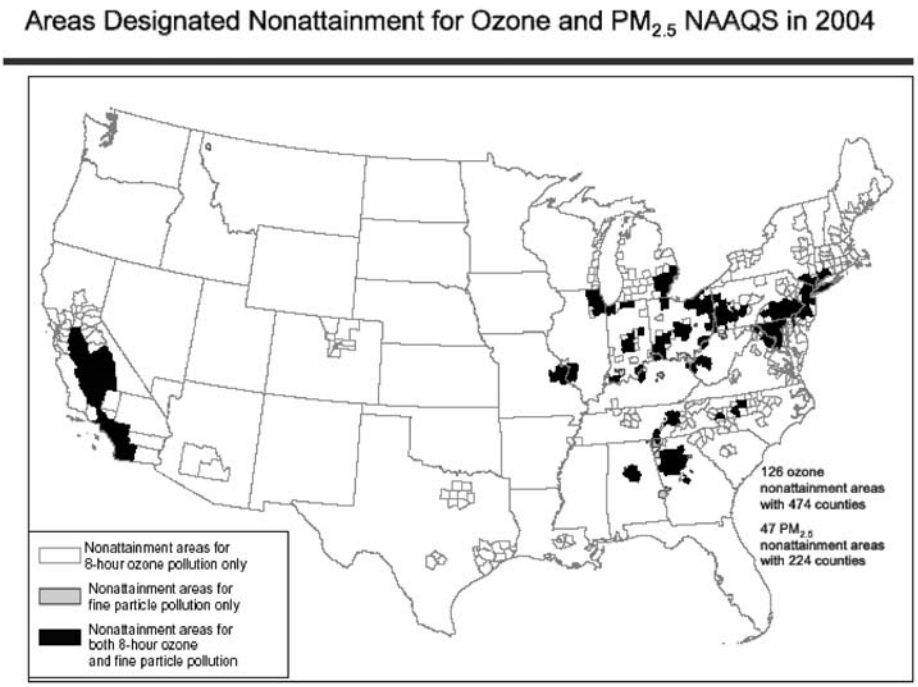
1. *See* METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS, PLAN TO IMPROVE AIR QUALITY IN THE WASHINGTON, DC-MD-VA REGION: STATE IMPLEMENTATION PLAN PREPARED FOR THE DISTRICT OF COLUMBIA DEPARTMENT OF HEALTH, MARYLAND DEPARTMENT OF THE ENVIRONMENT, AND VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, 7-71 to 7-76, 7-77 to 7-80, app. J (Feb. 19, 2004), *available at* http://www.mwcog.org/committee/committee/archives.asp?COMMITTEE_ID=14; *see also* U.S. DOE, *Wind Powering America*, http://www.windpoweringamerica.gov/policy.asp (last visited Nov. 17, 2006).
2. 70 Fed. Reg. 24987 (May 12, 2005).
3. See June 2006 report by DOE entitled "Final Report of the DOE Clean Energy/Air Quality Integration Initiative for the Mid-Atlantic Region," which focuses on the potential for the New Jersey Board of Public Utilities and the New Jersey Department of Environmental Protection to seek SIP credit for projects undertaken by the NJ Clean Energy Program. *See also* METROPOLITAN WASHINGTON AIR QUALITY COMMITTEE, RESOLUTION R-2006-1 (2006), *available at* http://www.mwcog.org/environment/committee/committee/default.asp?COMMITTEE_ID=14.

able energy (EERE) projects are motivated to do so because of the emission reduction benefits.

The scope of ozone nonattainment problems and the opportunity for renewable energy to assist states in meeting their compliance requirements is substantial. Nationwide, EPA has designated areas in 474 counties as nonattainment areas for the eight-hour ozone standard and 224 counties as nonattainment areas for fine particulate matter[4] (see Figure 1). Ozone nonattainment areas include all the eastern states from Maine south to Georgia as well as Alabama, Arizona, California, Colorado, Illinois, Indiana, Kentucky, Louisiana, Michigan, Missouri, Nevada, Ohio, Tennessee, Texas, West Virginia, and Wisconsin.[5] These areas include most of the major metropolitan areas in the East and Midwest.

Figure 1: Air Quality Nonattainment Areas



Source: U.S. EPA

4. See U.S. EPA, *Nonattainment*, http://www.epa.gov/ebtpages/airairqunonattainment.html (last visited Nov. 17, 2006), for a complete listing of the nonattainment areas in the United States.

5. A map of all the nonattainment areas in the United States for ozone and fine particulate matter is provided at the following website: http://www.epa.gov/oar/oaqps/greenbk/mappm25o3.html (last visited Nov. 24, 2006).

Initially, the greatest interest in purchasing renewable energy to help meet air quality standards has come from state and local governments in ozone nonattainment areas, such as the Washington Metropolitan Area (the VA-DC-MD nonattainment area). Although the current focus is on crediting NO_x reductions, the collateral air quality benefits of reductions in carbon dioxide (CO_2) emissions also are important and may ultimately become more valuable. In a regulatory environment that increasingly relies on market mechanisms to meet emission reduction targets, this is good news for both the renewable energy industry and the environment.

II. How Fossil Fuel Emissions Are Displaced

Zero-emission power results in air emission reductions because of the way the electric power system works. Wind and solar power are "must-run" power sources because they have very low operating costs and zero fuel costs. When these renewable sources are available, they will displace generation at fossil-fueled units, which have much higher operating costs.[6] As a result, the emissions from those units are displaced.

Renewable energy generation almost never displaces nuclear power or hydroelectric power on the electric grid because these units also have low operating costs. In addition, nuclear power generation is not displaced because of the high costs involved in shutting down and starting up such plants and other factors. The fossil fuel-fired generation that is displaced varies by time of day and season and with the mix of fossil fuel generation. However, in most power market areas, the generation mix that is displaced includes coal, oil, and natural gas.[7]

The avoided emissions for all the major pollutants tend to be higher in areas with large amounts of coal-fired generation and lower in areas where natural gas is the dominant fuel. The level of emissions also is influenced by the age of the fossil fuel-fired units and their relative levels of energy efficiency. For example, new high-efficiency combined cycle gas turbines with good NO_x control have NO_x emission rates of less than 0.1 pounds per megawatt-hour (lb./MWh). In comparison, older, uncontrolled coal plants have NO_x emission rates as high as 8.0 lbs./MWh.

In areas where coal is the major load-following source, such as in the western and southern parts of the Pennsylvania, New Jersey, Maryland (PJM) Interconnection Area and parts of the Midwest, renewable energy can have average avoided NO_x emission rates of 5 lbs./MWh or more. In comparison, in areas such as New England, where the load-following units are more likely to be fired by natural gas or oil, the average avoided emission rates are less than 1 lb./MWh. These regional differences are similar for CO_2 emissions control although less accentuated than the NO_x variations.[8]

Figure 2a shows the hourly average annual avoided emissions rate that was produced by typical wind power projects in the PJM Interconnection Area in 2004. Figure 2b shows the mix of fossil fuel generation (by month) associated with the emissions portrayed in Figure 2a.[9]

Figure 2a: Estimated Average Hourly Avoided NO_x Emissions in PJM 2004

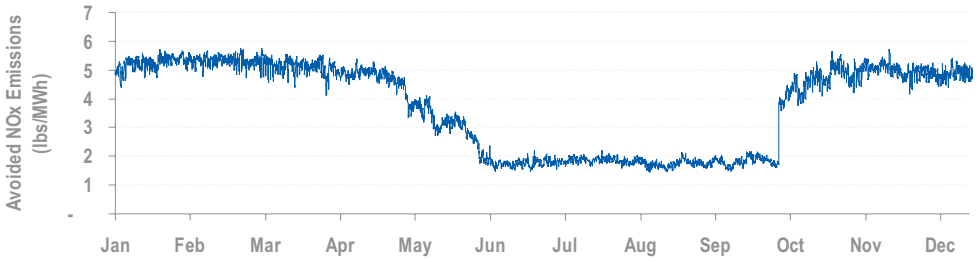
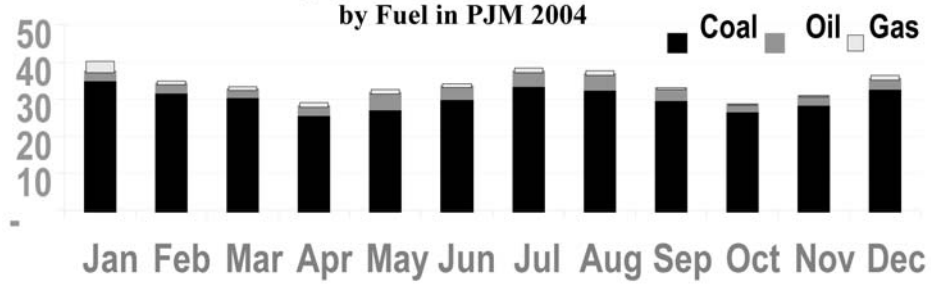


Figure 2b: Monthly Generation by Fuel in PJM 2004



6. *See* Resources Systems Group, Final Report: Estimation of Nitrogen Oxide Avoided Emission Rates Resulting From Renewable Electric Power Generation in the New England, New York, and PJM Interconnection Power Market Areas 1 (2006). The report was prepared for Environmental Resources Trust and Connecticut Smart Power with funding from DOE.

7. *Id.*

8. *Id.*

9. *Id.* at 7.

III. Existing Emissions Trading Programs and Avoided Emissions

Although it is clear that renewable energy displaces fossil fuel-fired generating units, the story is more complicated for pollutants such as NO_x and sulfur dioxide (SO_2) that are subject to regulation under cap-and-trade emissions trading programs. In the states where cap-and-trade programs have been implemented, emissions of specific pollutants from electric generating units are effectively limited by the availability of allowances. Each allowance permits a power plant to emit one ton of NO_x in a specified year.

EPA assigns a certain number of NO_x and SO_2 allowances to each state, and each state determines how its allowances will be allocated. Under Title IV of the CAA—the acid rain provisions regulating emissions of SO_2—the U.S. Congress has required that all allowances be allocated to fossil fuel-fired generators.[10] Moreover, states must allocate SO_2 allowances on a permanent basis. Thus, the owners of fossil fuel units that were in existence on November 15, 1990, continue to receive an allocation of SO_2 allowances even after these units have shut down.

As EPA stated in the preamble to the Clean Air Interstate Rule (CAIR), "[f]or SO_2 . . . , States will have no discretion in their allocation approach since the CAIR SO_2 cap and trade program uses title IV SO_2 allowances, which have been already allocated in perpetuity to individual units by title IV of the CAA."[11]

As a result of the SO_2 allocation system, the addition of renewable energy to the grid on the margin does not result in the reduction of SO_2 emissions. Although renewable energy generation displaces specific fossil fuel-fired generating units, the owner of the units still retains the allowances (the authorization to emit one ton of SO_2). The air emissions of SO_2 will not be reduced because the owner of the allowances will either sell the allowances in the trading market to a party that expects to exceed their emissions limit, transfer them to another unit under their control, or bank them for future use. In other words, the renewable energy generator is actually making it easier for the coal generator to meet its emissions control requirements. As a result, a renewable energy generator located in an area subject to SO_2 trading cannot make a regulatory claim for environmental benefits from reducing SO_2 emissions.

However, much greater flexibility is provided under the emissions trading programs for NO_x. This flexibility is available because the NO_x emissions trading program is authorized by a much more general grant of authority under Title I of the CAA.[12] Under Title I, Congress has not restricted the allocation of NO_x allowances to only fossil fuel-fired generators.

Nonetheless, under the NO_x regulations in effect in most states under the so-called NO_x SIP Call, most states have allocated all allowances to fossil fuel generators.[13] The major difference between the regulation of SO_2 and NO_x in these states is that the allowances are generally reallocated on a periodic basis. In other words, the allowances are not allocated in perpetuity like SO_2 allowances.

Under most existing state NO_x emissions trading regulations, NO_x allowances are allocated on the basis of heat input, and the allowance allocations are updated every three to five years. In many states, the updating process has a lag time that often approaches one decade. The end result is that the incumbent fossil fuel generators are likely to use existing NO_x allowances freed up by new renewable plants for their benefit for a substantial period.

Moreover, even after the retired unit loses its authorization to receive NO_x allowances, the allowances are reallocated to other fossil fuel units—not retired from future use. Thus, the current regulatory structure in many states distorts market signals and greatly diminishes the air quality benefits of renewable generation.

An example from Michigan's existing NO_x allocation regulations[14] highlights this serious problem. Assume a developer brings a new wind plant online in 2005, and the "must-run" wind plant backs down NO_x emissions from a coal-fired unit. As a result, the owner decides to shut down the coal-fired unit. Under the current Michigan regulations, the owner of the coal-fired unit will continue to receive NO_x allowances and have the right to sell such allowances to other polluters until 2013 even though the coal-fired unit was retired in 2005.[15] Moreover, in 2013, the NO_x allowances from the retired coal unit will be added back into the overall pool of allowances and redistributed to other fossil fuel generators on a heat-input basis.

IV. Clean Air Interstate Rule

The good news is that there is currently a window of opportunity to change state rules governing NO_x allowance allocation. This opportunity is available because all states must modify their current NO_x emissions trading rules governing electric generating units to implement EPA's CAIR.[16] CAIR will apply to 28 states and the District of Columbia[17] (see Figure 3).

10. 42 U.S.C. §§7651-7651o.

11. 70 Fed. Reg. 25161, 25278 (May 12, 2005).

12. 42 U.S.C. §7410(a)(2)(D)(i).

13. Only seven states have adopted regulations setting aside a percentage of allowances to owners and operators of renewable energy and/or energy efficiency projects. *See* U.S. EPA, Climate Protection Partnerships Division, Office of Atmospheric Programs, State Set-Aside Programs for Energy Efficiency and Renewable Energy Projects Under the NO_x Budget Trading Program: A Review of Programs in Indiana, Maryland, Massachusetts, Missouri, New Jersey, New York, and Ohio (2005), *available at* http://www.epa.gov/cleanenergy/pdf/eere_rpt.pdf.

14. Michigan Department of Environmental Quality (DEQ), Air Quality Division, Air Pollution Control: Part 8. Emission Limitations and Prohibitions—Oxides of Nitrogen, *available at* http://www.deq.state.mi.us/documents/deq-aqd-air-rules-apc-part8.pdf (last visited Nov. 24, 2006).

15. This result occurs because of the substantial lag time built into the regulations. The regulations require that the state allocate allowances based on "the unit's average of the 2 highest heat inputs for the ozone control period in the 5 years immediately preceding the year in which the department is required to submit the oxides of nitrogen allocations." *Id.* R336.1810(3)(b). Under the Michigan regulations, the DEQ will update allowance allocations in 2004, 2007, 2010, and 2013. *Id.* R336.1810(2). Even though the wind plant comes on line in 2005 and results in the closure of the coal unit, the coal unit continues to receive NO_x allowances until the 2013 ozone season.

16. 70 Fed. Reg. at 25162 et seq.

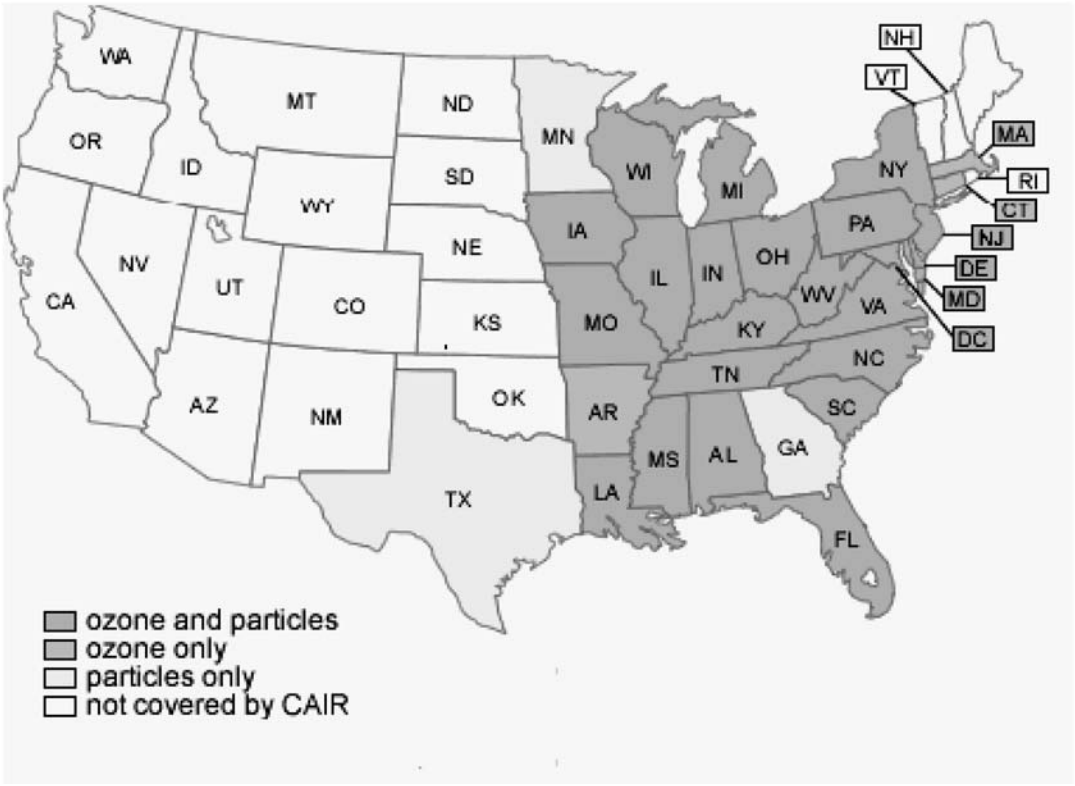
17. The states to be covered by CAIR include Alabama, Arkansas, Connecticut, Delaware, the District of Columbia, Florida, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia, and Wisconsin.

In the preamble to CAIR, EPA has emphasized that states have complete authority to allocate NO_x allowances to not only fossil fuel-fired generators but also to owners and operators of wind farms and other renewable energy generators.[18] EPA stressed that "[f]or NO_x allowances, each State has the flexibility to allocate its allowances however they choose, so long as certain timing requirements are met."[19]

EPA has clarified the NO_x allocation methodology elements for which states have flexibility, including the following:

- the cost of the allowance distribution (e.g., free distribution or auction);
- the frequency of allocations (e.g., permanent or periodically updated);
- the basis for distributing the allowances (e.g., heat input or power output); and
- the use of allowance set-asides and their size, if used (e.g. new unit set-asides or set-asides for energy efficiency, for development of Integrated Gasification Combined Cycle generation, for renewables, or for small units).[20]

Figure 3: CAIR - Affected Region and Emission Caps



Source: U.S. EPA

18. *See* 70 Fed. Reg. at 25278.

19. *Id.*

20. 70 Fed. Reg. at 25279.

Each of the 28 states covered by CAIR is required to develop a revised SIP to implement CAIR, including its plans for allowance allocation, by September 2006. However, even if a state misses this deadline, regulations for EPA's federal implementation plan allow each state until March 31, 2007, to submit abbreviated SIP revisions and until April 30, 2007, to submit an initial set of NO_x allocations (if the state meets the March 31st deadline).[21]

The value of EERE projects will be increased or the market will be expanded if states adopt CAIR regulations that allocate NO_x allowances to owners and operators of EERE projects. There are a number of options available to achieve this objective. These options include:

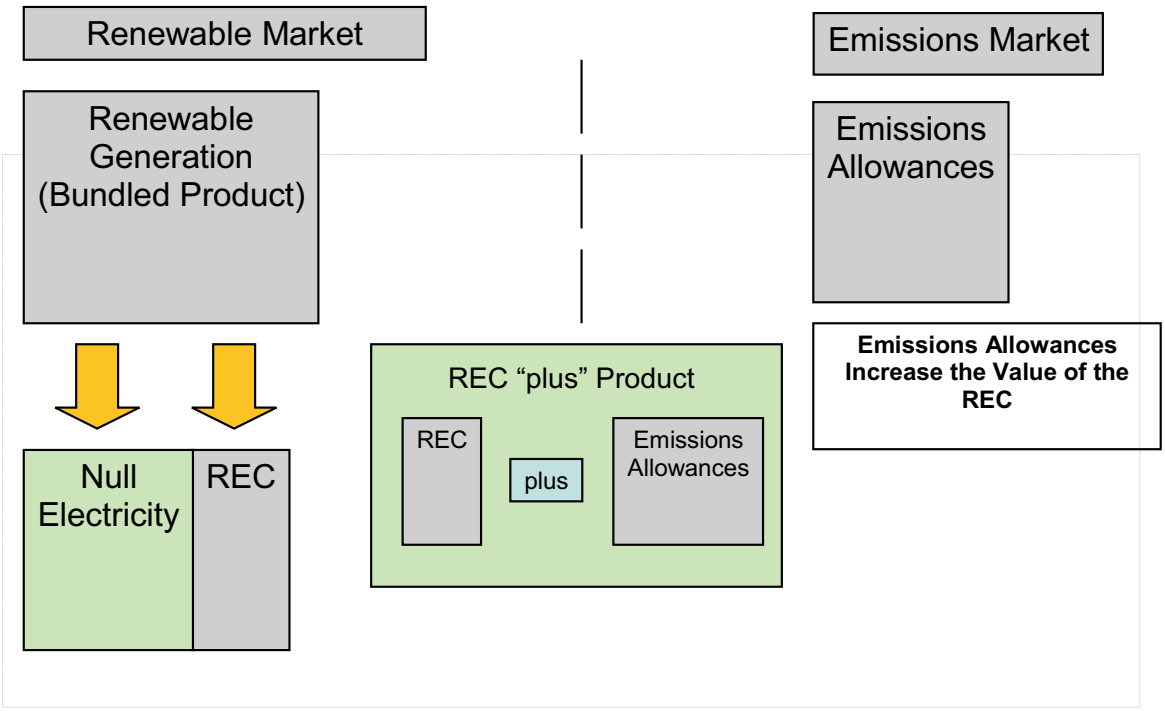
- Allocation of allowances to all sources based on power output (MWh);
- Allocation of allowances to new sources based on power output and to existing sources based on heat input[22]; and
- A set-aside of a percentage of total allowances to the owners and operators of renewable energy projects or both renewable energy and energy efficiency projects.

If allowances are provided to the owners and operators of renewable energy projects, the value of such projects will be increased or the market will be expanded because the generator can participate in a number of emission markets. These markets include:

- selling the renewable energy or REC bundled with the allowances to a state or municipality that plans to retire the allowances, thereby receiving emission reduction credit in its SIP;
- selling the allowance directly into the NO_x emissions market to receive additional revenue[23];
- bundling the NO_x allowance with RECs for sale into the voluntary market; and
- bundling the NO_x allowance to meet the REC compliance requirements in a state that requires that all "environmental attributes" be included with the REC.[24]

Figure 4 shows the elements of these alternative approaches.

Figure 4: Renewable Energy Certificates and Emissions Markets



21. 70 Fed. Reg. 71612 (Nov. 29, 2005).

22. The current approach in most states allocates all allowances on a heat input basis, thereby restricting eligible sources to combustion sources that burn oil, coal, or natural gas.

23. In this case, the generator cannot claim a reduction in NO_x emissions.

24. Letter from Elizabeth Salerno, Policy Analyst, American Wind Energy Ass'n, to Kathleen McGinty, Secretary, Pa. Dep't of the Env't (June 16, 2006).

Of course, these approaches are mutually exclusive. However, the key point is that a generator cannot participate in any of these markets unless the state regulations provide authority to allocate NO_x allowances to renewable energy generators.

The owners of fossil fuel plants often have resisted regulatory approaches that reduce allowances currently allocated to fossil-fueled units. But as major electric utilities become involved in renewable energy generation, we are observing increased support for renewable energy set-asides or output-based allocations for new sources. The renewable energy industry needs to advocate at the state level for this result.

V. Design of State Clean Air Interstate Rules

Experience with the existing set-asides of NO_x allowances for EERE projects in seven states has demonstrated that the proper design of an allowance trading regulation is crucial in achieving real incentives for renewable energy projects. This is definitely a case where "the devil is in the details." Therefore, it is essential for states to avoid these past problems as they design new regulations under CAIR. It is important to have multi-year and predictable allowance allocation.

Design flaws in existing regulations and recommendations to overcome these flaws in the new CAIR rules also are underscored in two recent reports. These reports include an August 2006 report of the U.S. Department of Energy's Clean Energy/Air Quality Integration Initiative pilot project for the Mid-Atlantic Region[25] and a July 2006 report of the National Renewable Energy Laboratory analyzing the seven existing EERE set-aside regulations.[26]

One of the design flaws highlighted in these recent reports involves the failure to allow aggregation of small renewable energy projects or purchases. This problem occurs because most existing EERE set-aside regulations require a minimum allowance allocation of one ton. Since many small solar, wind, and efficiency projects do not result in one ton of emissions reductions, the EERE set-asides in these states have not been fully utilized.

Regulations providing authority for project aggregation are essential to overcome this problem. Massachusetts provides a model for successfully addressing this problem in its current NO_x trading regulations under the NO_x SIP Call.[27] It is noteworthy that Massachusetts is the only state that has fully utilized the NO_x allowances under its EERE set-aside.

In addition, under these existing rules, small cities and counties generally do not purchase enough wind energy or RECs to qualify for an allocation of NO_x allowances. Their purchase results in only a fractional part of the one ton minimum NO_x allowance. However, this obstacle can be overcome with an aggregation approach. Thus, the small purchases can be aggregated and the NO_x allowance proceeds or benefits can be shared among the aggregating partners.

Currently, Environmental Resources Trust (ERT)[28] is working with Smart Power to develop this innovative approach of aggregating the wind power purchases of small Connecticut municipalities. The participating municipalities would own the NO_x allowances and CO_2 reduction benefits, and ERT would assist the Connecticut Department of Environmental Protection by aggregating the allowances. If a municipality sells or retires the NO_x allowances, the benefits would accrue to the member municipalities in a fractional amount corresponding with the fractional participation of each municipality. ERT also would list the aggregated CO_2 reduction in its emission registry (GHG Registry®[29]) for the participating municipalities.

VI. State Implementation Plans to Demonstrate Attainment of the Ozone and Fine Particulate Matter Standards

In 2004, EPA designated several hundred counties in the United States as nonattainment areas for failing to meet NAAQS for either ozone (eight-hour ozone standard) or fine particulate matter ($PM_{2.5}$) or both. Under the CAA, each state is required to develop a revised SIP detailing the measures that the state plans to take to come into attainment with the ozone and fine particulate matter standards by 2010. The revised SIPs are due on: (1) June 2007 for the ozone standard; and (2) April 2008 for the particulate matter standard (see Figure 5).

25. U.S. DOE, Final Report on the Clean Energy/Air Quality Integration Initiative for the Mid-Atlantic Region (2006), http://www.eere.gov/wip/clean_energy_initiative.html.

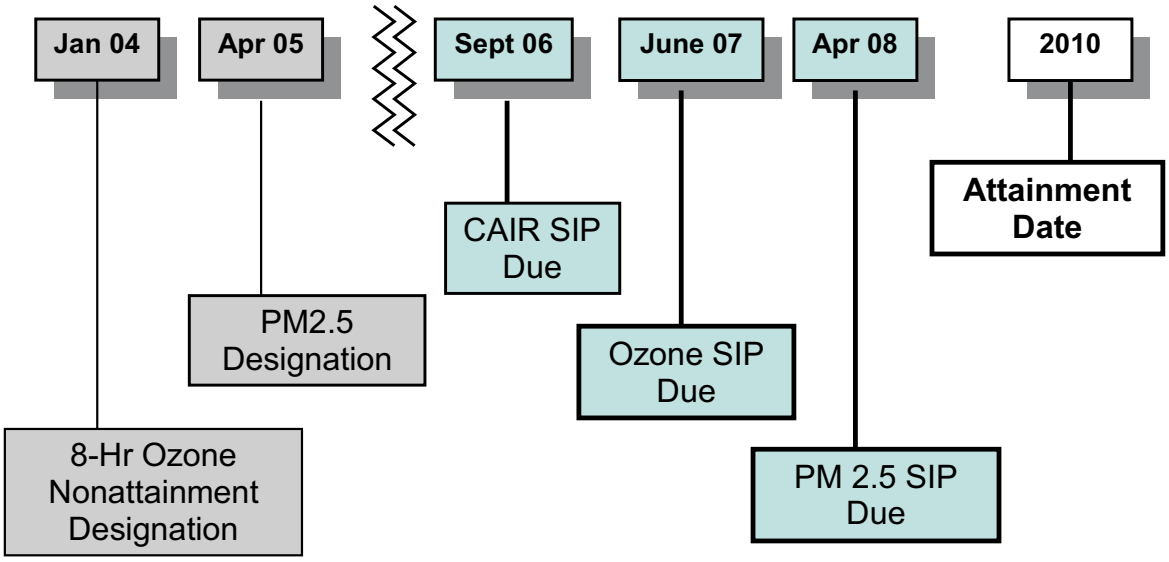
26. National Renewable Energy Laboratory, Incorporating Wind Generation in Cap and Trade Programs (2006) (NREL/TP-500-4006), *available at* http://www.nrel.gov/docs/fy06osti/40006.pdf.

27. 310 C.M.R. 7.28(6)(b)11.b.

28. *See* Environmental Resources Trust, Inc., http://www.ert.net (last visited Nov. 17, 2006).

29. *See* Environmental Resources Trust, Inc., http://www.ert.net/ghg/index.html (last visited Nov. 24, 2006).

Figure 5: State Implementation Plan Timeline



Many states and municipalities are interested in purchasing RECs or undertaking EERE projects to help meet these air quality standards. Under guidance issued by EPA in 2004,[30] states generally will be required to obtain and retire NO_x allowances or to omit a certain fraction of allowances from distribution (thereby lowering the NO_x emissions cap at the outset) in order to receive SIP credit for EERE projects.

The justification for EPA's approach requiring the reduction of the emissions cap or the retirement of allowances is that EERE projects are unlikely to result in emission reductions of a capped pollutant, particularly in the near term, unless the state lowers the cap directly or the state retires allowances (the authorization to emit one ton of NO_x) to account for the reduction in demand from fossil fuel generators caused by the EERE measures. According to EPA, the cap-and-trade program allows the same amount of emissions from fossil fuel-fired generation, no matter how much generation these sources are called upon to meet demand. EPA is concerned that fossil fuel generators are likely to take the allowances made available when coal, natural gas, or oil generation is displaced by EERE measures and either use such allowances or sell them to other generators, resulting in the continued emissions of NO_x at the capped amount and the failure to provide surplus emission reductions.

As EPA states in its *Guidance*:

> Cap and trade programs are enforced through the issuance of a limited number of allowances (authorizations to emit) that are equal to the emissions cap. Through trading and banking of these allowances, individual sources can vary their emissions as long as the aggregate emissions for all sources does [sic] not exceed the allowances issued. By limiting total mass emissions for the category of sources, cap and trade programs automatically account for any action that reduces emissions, including energy efficiency and renewable energy.[31]

VII. What Is an Allowance Worth?

The allocation of allowances to spur clean energy projects can increase the value of renewable energy or expand the market in two ways:

- a well-structured program can enhance the financing of clean energy projects; and
- allocation of NO_x allowances to clean energy projects can help states realize the air quality benefits of such projects in their SIPs.

Thus, additional revenue can accrue to the renewable energy generator: (1) by selling the allowances directly into the marketplace to achieve additional revenue (but without clean air benefits); and (2) by selling a REC with their associated NO_x allowances, thereby commanding a higher price in the marketplace because the purchase includes air emission reduction benefits of the capped pollutant.

The price of any allowances allocated to wind energy will be set by the market depending on local conditions of supply and demand. Recent market prices for NO_x allowances have ranged from approximately $1,000 to $3,000 per ton.[32] At a price of $2,100 per ton, if the wind power project was cred-

30. U.S. EPA, Guidance on SIP Credits for Emission Reductions From Electric-Sector Energy Efficiency and Renewable Energy Measures (2004), *available at* http://www.epa.gov/ttn/oarpg/+1/memoranda/ereseerem_gd.pdf.

31. *Id.* at 9.

32. *See* Evolution Markets, Inc., http://www.evomarkets.com (last visited Nov. 17, 2006) and Argus Air Daily, http://www.argusmediagroup.com (last visited Nov. 17, 2006).

ited with the full value of the emission reduction at a rate of 1.5 lbs./MWh, then the reduction would be worth about $1.58 per MWh. For NO_x, the range in the northeastern states would be between $0.74 and $6.00 per MWh.

Recent market prices in the United States for voluntary CO_2 emissions reduction have ranged at market prices between approximately $1.00 to $5.00 per ton. At these market prices, the value to renewable energy developers would be between $1.00 and $5.00 per MWh. These are very substantial potential sources of revenue for renewable energy projects.

In addition, the developer can transfer the allowances to the buyer for retirement, creating valuable power marketing products (see Figure 4). The value of the NO_x allowances and possibly the CO_2 allowances could be higher for certain buyers. If a buyer, such as a local government, a university, or even a corporation, has an internally or externally imposed requirement to reduce emissions, they may be willing to pay higher prices for RECs that include associated NO_x allowances because other options for directly reducing emissions are not available or are more expensive. These factors spurred the wind energy purchase by the Montgomery County buying group in 2004. This purchase has reached 40,845,139 kilowatt hours in 2005 and 2006—one of the largest municipal wind power purchases in the United States. In addition, it is noteworthy that the Montgomery County Council voted in 2006 to increase its renewable energy purchases from 5% to 10% of the county's electric supplies by 2007 and to 20% by 2011.[33]

VIII. Future Prospects for Emission Trading Programs

The emissions regulatory environment is changing rapidly. The rulemaking for CAIR has already started a process in which a variety of stakeholders are becoming involved at the state level. It is likely that CAIR, plus an array of state and regional programs and climate action plans, will extend the market-based approach from NO_x to include CO_2.

As new emissions trading programs are developed, particularly greenhouse gas emission trading programs, it is essential for policymakers to understand that the details of the program design will greatly impact the potential value of renewable energy and energy efficiency projects in the marketplace. Some program design will provide very little value for efficiency and renewable energy projects while other program designs will provide substantial monetary value.

Wind and other renewable energy industries now have an opportunity to benefit from their zero-emissions electric generation technology and to gain additional revenue and markets. However, the EERE industries and their environmental supporters will need to engage actively in state, regional, and federal rulemakings and legislative deliberations to achieve this objective.

33. Montgomery County Council Resolution, 15-1529, adopted July 11, 2006.