Accounting for the Vagaries of the Wind

BY TIM SABLIK

On April 29, the U.S. Supreme Court upheld the Environmental Protection Agency's Cross-State Air Pollution Rule (commonly called the Transport Rule), the agency's third attempt in two decades to address the "Good Neighbor" provision of the Clean Air Act. That provision poses a tricky puzzle for regulators, requiring them to prohibit air pollutants emitted by sources in one state from "significantly" interfering with the ability of a downwind state to meet clean air standards.

The Transport Rule applies to 27 states in the eastern half of the United States that were found to have contributed at least 1 percent of sulfur dioxide (SO_2) and nitrogen oxides (NOx) pollution to at least one downwind state. These upwind states were given an "emissions budget" for the pollutants, which took into account the cost effectiveness of implementing pollution controls within each state. A number of affected upwind states and power companies challenged the Transport Rule in the U.S. Court of Appeals for the D.C. Circuit. They argued, among other things, that the EPA's use of cost-effectiveness as a guide for pollution reduction would require some states clean up more than their "fair share" of downwind pollution.

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In the case, *Environmental Protection Agency v. EME Homer City Generation*, the Supreme Court ruled that the EPA's cost-based approach was an "efficient and equitable solution" to the problem of cross-state pollution. Justice Ruth Bader Ginsburg, who delivered the majority opinion, noted that assigning blame to each state proportionally would require regulators to "account for the vagaries of the wind" — a nigh impossible task. For example, West Virginia contributes significantly to air pollution in a dozen states, and it receives pollution from about half a dozen.

This challenge is a classic example of what economists call a negative externality. The costs of a polluting coal-burning power plant, for instance, are not fully borne by the residents who receive its electricity because some pollutants blow downwind and damage residents in other states. This can artificially lower the price of the plant's electricity, leading to overproduction of both the electricity and the pollution byproduct.

There are a variety of ways to address such externalities. One proposed by early 20th century English economist Arthur Pigou is to place a tax on the polluter equal to the cost of the externality, thus requiring producers to account for the full cost of their products. Determining the right tax level is the challenge. Making the tax too low would fail to fully address the externality problem, and setting it too high would be costly and inefficient. Expecting regulators to determine the proper level may be unrealistic.

In light of this, Nobel prize-winning economist Ronald Coase proposed an alternative solution. In his famous 1960 paper "The Problem of Social Cost," he argued that externalities should be viewed simply as a market transaction. As with any transaction, externalities involve two sides: the producer of the externality and the recipient. As long as property rights were well-defined and transaction costs were minimal, both parties could negotiate an efficient solution to the problem. For example, if it were cheaper for downwind residents to pay a factory to stop polluting than to accept the pollution or relocate themselves, they would do so, and vice versa. In either case, the externality would be mitigated efficiently.

The EPA's Transport Rule incorporates some of Coase's insights by using cost-effectiveness to determine pollution limits. But by making those determinations itself, the agency has opened itself up to criticism from some states that may have to clean up more than their share of downwind pollution if that is the most cost-effective option. "Most economists are going to say that the least-cost sources of pollution should be cleaned up first," says John Whitehead, chair of the department of economics at Appalachian State University. "But it's hard to argue with the fact this approach might not turn out as fair as some people would like."

In the case of other pollutants, such as carbon dioxide (CO_2), states have established regional pollution credit markets to facilitate the negotiation envisioned by Coase. The first of these programs, the Regional Greenhouse Gas Initiative, covers northeastern states from Maryland to Maine. Polluting factories in these regions can either reduce their pollution to comply with environmental mandates or purchase offset credits from other factories, ensuring that overall pollution is reduced efficiently. Whitehead says a similar approach for SO_2 and NOx would be optimal, and the EPA's Transport Rule does allow states to adopt this solution. Unlike harm from CO_2, however, the damage caused by SO_2 and NOx varies by distance traveled, making it harder to price pollution credits in a regional market.

This summer the EPA filed to lift the stay on the Transport Rule in light of the Supreme Court's decision, and the U.S. Court of Appeals for the D.C. Circuit granted that request on Oct. 23. Other challenges to the rule remain, however, and are scheduled for hearings through early 2015. **EF**