



## Resurrecting Clear Skies

By Ted Gayer

*After failing to make it out of Senate committee in March, the future of the president's Clear Skies bill is uncertain. While the bill contains some flaws, most of its opponents criticized the virtues of Clear Skies, thus making it more difficult to fix the real problems and to strike a compromise. There is still some hope that the bill will pass later this congressional session. In lieu of Clear Skies, the Environmental Protection Agency recently promulgated two administrative rules to tighten regulations on power plant air pollution. These rules are certain to be litigated and thus delayed. With Clear Skies, we get a greater guarantee that the air quality goals will be met, and we get greater regulatory certainty that leads to lower costs.*

On March 9, the president's Clear Skies bill failed to make it out of the Senate Environment and Public Works Committee for a floor vote. After contentious debate, the committee was evenly split and unable to resolve the deadlock. The prospects for the bill are now uncertain. Failure to pass the bill will be the capstone to a sad history for Clear Skies: The original bill, proposed by the president on February 14, 2002, was a sensible attempt to address important air pollution problems. While the original proposal certainly contained flaws, opponents frequently (and sometimes stridently) criticized the virtues of Clear Skies, thus diluting any reasonable attempts to fix the real problems and come to a compromise. Even more sadly, along the way the bill has been amended in a way that has detracted from its original virtues. The House Committee on Energy and Commerce is scheduled to begin debate of Clear Skies in April. Though not perfect, the bill still warrants approval by the House and reconsideration later this session in the Senate. For if Clear Skies fails to pass, then we will miss an opportunity to move away from the inflexible and costly approach we now take to environmental policy.

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### The Virtues of Clear Skies

Clear Skies is a sensible plan for improving air quality. Its very design is based on core economic principles: it sets firm limits on emissions from electric utilities yet allows plants flexibility in achieving these limits. Too often, our environmental statutes and regulations prescribe specific, restrictive technologies to polluters. By instead giving polluters flexibility in how to reach the pollution reduction targets, Clear Skies reduces the cost of improving air quality. With lower costs, it is possible to reduce pollution by more than is practicable using the inflexible regulatory means frequently in use today.<sup>1</sup>

Clear Skies relies on a market-based framework known as cap-and-trade. That framework, used with enormous success in the 1990 Clean Air Act's Acid Rain Program, establishes annual caps on emissions from covered sources. The annual caps are set below current emission levels and decline over time. The Environmental Protection Agency (EPA) is charged with issuing pollution "allowances" equal to the cap level. Each polluter must own one allowance for each unit of annual emissions. Since the allowances permit an aggregate level of emissions lower than the current level, total pollution is reduced. The cost savings arise because of both intra- and inter-firm flexibility

in meeting the caps. That is, firms have the flexibility to choose any means to reduce pollution to meet their allowance allocation (rather than being tied to a rigid EPA regulation), and firms have the flexibility to buy allowances from other firms, thus achieving pollution reduction at the firms that can do it more cheaply.

For a cap-and-trade approach to work best, two main conditions should be met. First, the emissions should come from sources that are relatively easy to monitor. A cap-and-trade system for agricultural pesticide runoff would be difficult to monitor, and thus would be less effective. Second, the cost savings of trading allowances are more likely to result if there are many covered sources to serve as potential trading partners. A cap-and-trade system with only a few sources would not result in much cost savings and indeed may lead to anticompetitive features in the allowance market. Neither of these concerns is present in Clear Skies because it covers electric utilities, which are relatively easy to monitor and are numerous enough to lead to a rich trading market for allowances. What is more, the very simplicity of Clear Skies would require only minimal bureaucratic oversight.

Clear Skies sets annual caps on electric utility emissions of sulfur dioxide, nitrogen oxides, and mercury. There are separate caps for each of these pollutants, and each is capped in two phases. For sulfur dioxide, the first phase begins in 2010, when annual emission allowances are capped at 4.5 million tons (current annual emissions are approximately 11 million tons). The second-phase sulfur dioxide cap begins in 2018, when annual emission allowances are capped at 3 million tons. For nitrogen oxides, the first phase begins in 2008, when annual emission allowances are capped at 2.1 million tons (current annual emissions are approximately 5 million tons). The second-phase nitrogen oxides cap begins in 2018, when annual emission allowances are capped at 1.7 million tons. For mercury, the first phase begins in 2010, when annual emission allowances are capped at 34 tons (current annual emissions are approximately 48 tons). The second-phase mercury cap begins in 2018, when annual emission allowances are capped at 15 tons. In sum, the Clear Skies' caps are set at approximately 70 percent below current electric utility emission levels. These represent substantial cuts—far greater than what has been achieved in the past using the existing Clean Air Act.

Critics sometimes point out that the annual allowance caps may not be met in any given year. While their point is correct, they fail to acknowledge that this is a virtue of Clear Skies, not a drawback. There are two reasons why

annual emissions might not equal the annual cap level. First, if a firm's annual emissions are less than the number of allowances it owns, Clear Skies allows the firm to "bank" the unused allowances to use later. Thus, in addition to the intra- and inter-firm flexibility discussed above, Clear Skies allows across-time flexibility. A firm can over-comply one year and thus under-comply in a later year. The over-time pollution caps are met, yet the flexibility reduces costs. The banking mechanism effectively changes the jagged declines in emissions into a lower-cost smooth decline in emissions. Given that the Office of Management and Budget's regulatory guidelines<sup>2</sup> require that future benefits be discounted, the banking provision increases benefits because it creates an incentive for reductions to occur earlier than they would without banking.

The second means by which annual emissions may exceed annual allowances is through the "safety valve" provision. The safety valve is a set price in which the EPA is willing to sell allowances above and beyond the cap. This is meant to address a concern with the cap-and-trade approach. By restricting the number of emissions, the cap is binding even if the price of compliance increases drastically in a given year due to an economic shock. The safety valve relaxes the cap should this price spike occur.<sup>3</sup> Importantly, whenever the cap is loosened through the safety valve, Clear Skies protects long-term environmental quality by requiring that the cap be tightened one-for-one in the following year. Thus, the safety valve provides another flexibility measure to reduce costs, yet protects long-term environmental quality. (There is one reasonable criticism of the Clear Skies safety valve that is discussed later.)

The cap-and-trade structure of Clear Skies, combined with the banking and safety valve provisions, make for a low-cost means of reducing air pollution. It is reasonable to debate whether the cap levels and timing of the caps are too restrictive or not restrictive enough, but instead opponents of Clear Skies frequently choose to criticize the cap-and-trade approach, which is in fact the bill's main virtue. It would take a much longer article to assess whether the target levels of Clear Skies are near-optimal, but it is worth pointing out that the caps call for a reduction of approximately 70 percent in the annual emissions of the three pollutants over the next fifteen years. This is a greater percent reduction of sulfur dioxide and nitrogen oxides than has been achieved in the past thirty years of the Clean Air Act. It is also the first-ever attempt to reduce mercury from electric utilities, and an analysis I

conducted with my colleague Bob Hahn<sup>4</sup> shows that the mercury reductions are overly restrictive, in that the costs far outweigh the benefits.

Yet setting aside the discussion of the appropriate cap levels, the brunt of the opposition has been about the very structure of the cap-and-trade approach of Clear Skies. Critics contend that Clear Skies represents a “roll-back” of the existing pollution protection of the Clean Air Act.<sup>5</sup> This demonstrates an affinity on the part of the critics for rigid regulations that involve excessive litigation and greater bureaucratic oversight, and it reflects a naiveté of the unintended (yet easily predictable) negative consequences of heavy-handed regulations.

The reference to “rolling back” the Clean Air Act typically refers to three aspects of Clear Skies: (1) Clear Skies loosens the regulatory burden on new and modified electric utility sources, (2) Clear Skies allows some areas with air quality standards below the required amount to delay regulatory actions, and (3) Clear Skies delays the speed by which states can petition the EPA to take action against other states for their downwind pollutions. Let us address these criticisms in turn:

### **Criticism 1**

*Clear Skies loosens standards for new and modified sources.* Under the existing Clean Air Act, new sources must meet a higher level of regulatory stringency than existing sources. The motivation for this was that legislators found it politically easier to impose regulations on firms that did not yet exist rather than existing firms. Of course, this presented a perverse incentive for firms to keep old units in operation longer than would otherwise be desirable. The Clean Air Act thus stipulated that plants undergoing “routine maintenance” would continue to be exempt from the greater regulatory burden, but those plants engaging in “substantial modifications” would be considered a “new source” and subject to the regulations. This triggered a bureaucratic mess, as it required thousands of pages of guidance on what constitutes compliance with what is known as “New Source Review.” Most problematic is determining what constitutes “routine maintenance,” an issue that has been debated across administrations, has frequently been decided on a case-by-case basis, has led to much litigation, and has left industries with great uncertainty in their capital planning decisions.<sup>6</sup>

While advocates of New Source Review correctly point out that these regulations lead to pollution reduction from new and modified sources, they ignore the

potential countervailing increases in pollution that results from the built-in disincentive for firms to modify their equipment. New and modified equipment tends to be environmentally cleaner, so preventing its development could harm the environment. Whether there is a net gain or loss to the environment is ambiguous, though the high costs and regulatory uncertainty are not.

But most important, the cap-and-trade approach makes New Source Review unnecessary. The virtue of cap-and-trade is that it sets strict limits on emissions. As far as the environment is concerned, it makes no difference whether pollution comes from new, modified, or existing sources. With the traditionally used inflexible environmental regulations, there is an argument (albeit a weak one) to be made for restricting pollution from new sources. Without such restrictions, aggregate pollution can increase over time as new sources appear. With a cap, new sources can only operate if they own enough allowances to match their emissions, so emissions are just spread thinner across more firms. Clear Skies replaces rigid, costly new source regulations on electric utilities with a cap on their emissions that protects the environment without blocking the competition provided by new firms.

### **Criticism 2**

*Clear Skies delays “non-attainment” status.* The focus of the Clean Air Act is on establishing air quality standards for different areas, and requiring states to put in place stringent regulatory standards should any area not meet the standards (i.e., should they be in “non-attainment”). Clear Skies designates as “transitional” the areas that are not in attainment but are expected to be in attainment by the end of 2015, thus delaying the regulatory response. This is reasonable because allowing the cap-and-trade approach to reach its pollution reduction goals is preferable to the protracted negotiations between a state and the EPA required by the Clean Air Act.

### **Criticism 3**

*Clear Skies delays state petitions against other states.* The Clean Air Act allows states to petition the EPA to address any upwind emissions emanating from other states, should these emissions contribute to non-attainment. Clear Skies delays the time in which the EPA must respond to such petitions concerning electric utility emissions, in order to first allow the second-phase caps to address the transport issue without direct EPA involvement. This is an effort to allow violating states time for

the electric utilities' cap-and-trade approach to take effect before being subject to the petition and the ensuing protracted regulatory response. While it is understandable that critics would want to avoid delaying any such petitions, it is also true that such petitions have seldom been used and are of questionable effectiveness.

All three of these criticisms fail to recognize that the approach of Clear Skies is to substitute clear, environmentally improving targets coupled with compliance flexibility for the more traditional approach that relies on a burdensome regulatory process, inevitable lawsuits and delays, and a disincentive to move towards newer, cleaner plants.

## The Flaws of Clear Skies

Nonetheless, Clear Skies is not perfect. As discussed earlier, it is reasonable to debate whether Clear Skies sets the caps too stringently or not stringently enough. One small problem with the caps is that they do not begin until 2008 (for nitrogen oxides) or 2010 (for mercury). (A sulfur dioxide cap exists before 2010 as part of the Acid Rain Program of the Clean Air Act.) It would make more sense for Clear Skies to set up a cap (at existing emission levels) prior to the phase one caps. This would sustain air quality, and would allow firms the flexibility to reduce emissions immediately to bank allowances to use when the caps become more restrictive. This would help the transition to the caps and lead to early reductions.

Another possible problem with Clear Skies is that the safety valve for mercury emissions is set at \$2,187.50 per ounce. As discussed earlier, the safety valve is meant to hedge against the possibility of short-term spikes in the cost of compliance. Without a safety valve, the emissions cap must be met even if the price of doing so becomes extremely expensive in any given year. The Clear Skies safety valve prevents the cost of reducing from exceeding \$2,187.50 per ounce of mercury. What is more, should the safety valve be triggered, allowances from the following year are reduced in order to sustain the over-time reduction in pollution. The problem arises because, if the safety valve is binding year after year, allowances will be reduced to below zero, and there is nothing to prevent indefinite borrowing of future allowances. Although unlikely, this scenario may occur with the mercury safety valve, since some models predict that it would be binding in perpetuity, thus preventing reaching the target

mercury reduction goal. In other words, whereas the safety valve is meant to offer a hedge in case of a short-term price spike, the safety valve price set by Clear Skies is lower than the cost of emissions reduction predicted by some models. The way to address this problem is to raise the safety valve price so that it truly represents a hedge against spikes in prices. A more nuanced approach would be to keep the same initial safety valve price, but to explicitly set the safety valve price each subsequent year as a function of the amount of allowance borrowing that has taken place.

Another problem with the structure of Clear Skies is the existence of performance standards for new or modified sources. As discussed earlier, critics claim that these performance standards are too weak and thus represent a "rollback" of the existing Clean Air Act standards. This view indicates a misunderstanding of the cap-and-trade approach, under which the cap must be met regardless of any performance standards, so new sources can only operate if they obtain allowances from existing sources. The net result is no impact on the environment due to new sources. The performing standards for new sources increases the overall costs of compliance, inhibits competition by placing new firms at a competitive disadvantage, and does nothing to improve the environment.

## The Changes to Clear Skies

The original bill has undergone some deleterious changes. For example, the original bill offered an innovative way to distribute the allowances. Rather than give them all away for free, it allowed for auctioning a subset of the allowances each year, with the proportion of auctioned allowances increasing each year. From an environmental point of view, it makes no difference whether allowances are given away or auctioned. From an economic point of view, the costs of the two approaches, the incentive to reduce emissions, and the electricity production decisions are the same regardless of whether the allowances are given away or auctioned. The only difference between an auction and a giveaway is who gets the revenue. The auction provides a means of acquiring government revenue, which, depending on what it is used for, can be advantageous. Unfortunately, this innovation was eliminated in the November 2003 markup by Senator James M. Inhofe (R-Okla.).

Another unattractive change to Clear Skies was the addition of "early reduction" allowances. As discussed earlier, the way to give firms an incentive to reduce

immediately is to establish a cap on emissions effective before the first-phase cap. Rather than take this approach, the latest version of Clear Skies allows utilities to receive allowances before the first phase if they install certain approved technologies. This is a step in the wrong direction, as it emulates the rigid technological standards in place today. The elegance and effectiveness of a cap-and-trade system rests on eliminating the need for bureaucratic prescriptions about acceptable technologies. What is more, since these early reduction allowances are voluntary, they undoubtedly will lead to cases in which firms acquire emission credits for taking actions they would have done in the absence of Clear Skies. The early reduction allowances thus do little for the environment (indeed, they may worsen the environment), yet they contribute to the bureaucratic morass.

While the desire to gain some votes has led to these unattractive changes to Clear Skies, it is worth pointing out that some bad ideas were not adopted. Critics of Clear Skies argue that it should also cap greenhouse gases. Aside from being a sure-fire way to sink the bill when it comes up for a full vote, this idea lacks merit because Clear Skies covers only electric utilities, which account for less than a third of U.S. greenhouse gas emissions. Including greenhouse gases in the bill would thus be more expensive than a comprehensive bill and would do little to address climate change issues. The decision to regulate greenhouse gases should be debated separately and should not be a justification to torpedo attempts to improve the Clean Air Act (which itself does not regulate greenhouse gases).

## Conclusion

In recent weeks, the EPA has promulgated two rules that attempt to mirror the goals of Clear Skies. The first rule, known as the Clean Air Interstate Rule, sets caps on sulfur dioxide and nitrogen oxides emissions from electric utilities in twenty-eight states plus the District of Columbia. The second rule, known as the Clean Air Mercury Rule, sets a national cap on mercury emissions from electric utilities. While these rules move us partially toward the goals of Clear Skies, they do not obviate the need for the bill. Aside from doing less to move us away from the

inflexible and costly aspects of existing law, the biggest shortcoming of the rules is that they are certain to be litigated and thus delayed. With Clear Skies, we get a greater guarantee that the air quality goals will be met, and we get greater regulatory certainty for firms subject to the caps.

The future of Clear Skies is uncertain. Even though it failed to make it out of Senate committee, it is scheduled to be considered in the House soon, and there is some indication that it might be reconsidered in the Senate later in this congressional session. A compromise is perhaps possible, yet any such compromise should focus on the proper level of the emission caps and the safety valve and should not tamper with the low-cost structure of the bill. Should this Congress fail to pass Clear Skies, it will miss a rare and much-needed opportunity to improve our environmental laws.

## Notes

1. For an economic analysis of market-based approaches to pollution reduction, see the following: J. D. Dales, *Pollution, Property and Prices* (Toronto: University of Toronto Press, 1968); and David W. Montgomery, "Markets in Licenses and Efficient Pollution Control Programs," *Journal of Economic Theory* 5, no. 3 (1972): 395–418.

2. See Office of Management and Budget's Circular A-4, September 17, 2003.

3. For an early theoretical treatment of why a mixed permit-fee scheme might dominate a permit approach, see M. J. Roberts and M. Spence, "Effluent Charges and Licenses Under Uncertainty," *Journal of Public Economics* 5 (1976): 193–208.

4. Ted Gayer and Robert Hahn, "Thinking Through Mercury Regulation: Some Lessons for the Design of Environmental Policy," *Regulatory Analysis* 05-01, AEI-Brookings Joint Center for Regulatory Studies, March 2005.

5. For example, during Senate hearings on Clear Skies on February 2, 2005, Senator James Jeffords (I-Vt.) said, "I am not putting it mildly when I state that S.131 [Clear Skies] eviscerates the Clean Air Act. S. 131, as introduced, represents the biggest rollback of the Act ever presented to this Committee."

6. The problems with "New Source Review" are discussed by Steven Hayward in "Making Sense of 'New Source Review,'" *AEI Environmental Policy Outlook*, July–August 2003.