



By Robert N. Stavins

## Local Costs and Global Benefits

In June, the Environmental Protection Agency released its proposed regulation to reduce carbon dioxide emissions from existing electric power sources. It would cut CO<sub>2</sub> emissions by 30 percent below 2005 levels by 2030. By providing great flexibility to the states, the proposal allows for cost-effectiveness, but will the regulation be welfare-enhancing, that is, provide benefits greater than its costs?

GHGs mix globally in the atmosphere, and so damages are spread around the world. Any jurisdiction taking action incurs the direct costs of its actions, but the direct benefits (averted climate change) are distributed globally. Hence, the direct climate benefits a jurisdiction reaps from its actions will inevitably be less than the costs it incurs, despite the fact that global climate benefits may be greater — possibly much greater — than global costs.

But in its Regulatory Impact Analysis of the proposed rule, EPA found that expected benefits would exceed costs. Indeed, it predicts positive net benefits (benefits minus costs) of \$67 billion annually in the year 2030. How can this be? There are two answers to this conundrum.

First, EPA does not limit its estimate of climate benefits to those received by the United States (or its citizens), but uses an estimate of

global benefits. There are surely ethical arguments for employing a global damage estimate, as opposed to a U.S. damage estimate, in a benefit-cost analysis of a U.S. climate policy, but this represents a dramatic departure from the precedent of decades of Regulatory Impact Analyses.

If this practice were applied in a consistent manner — that is, in all RIAs — it would result in some bizarre findings. A labor policy that increases U.S. employment while cutting employment in competitor economies might be judged to have zero benefits! Likewise, if a domestic climate policy had the consequence of causing emissions and economic leakage (through relocation of some manufacturing to other countries), that would not be considered a cost of the regulation — and with diminishing marginal utility of income, it might be counted as a benefit!

Of course, a counter-argument to this line of thinking is that the usual U.S.-only geographic scope of an RIA is simply inappropriate for a global-commons problem. Otherwise, we would simply restate in economic terms the free-rider consequences of a global challenge.

But let's look at what happens if we employ a U.S. climate benefits calculation. EPA estimated (global) climate benefits to be \$31 billion annually. But, based on administration documents, it appears that 7 to 10 percent of global benefits accrue to the United States, yielding about \$2.6 billion of U.S. benefits (contact me if you wish to see my calculations, as well as the various caveats). This is considerably less than the RIA's estimated annual compliance costs of \$8.8 billion. This validates the economic intuition that for any jurisdiction, direct climate benefits will be less than costs.

Second, in addition to quantifying the (global) benefits of climate change impacts associated with CO<sub>2</sub>

emission reductions, EPA quantifies and includes (the much larger) benefits of human-health impacts associated with reductions in other (correlated) air pollutants.

The proposed regulation will reduce the amount of coal that is burned, which means not only less CO<sub>2</sub> emissions, but also less emissions of correlated local air pollutants, including particulate matter, such as PM<sub>2.5</sub>, which affects human morbidity and mortality. The numbers dwarf the climate impacts themselves. Whereas the U.S. climate change impacts of CO<sub>2</sub> reductions due to the proposed rule in 2030 are probably less than \$3 billion per year (see above), the U.S. health impacts (co-benefits) of reduced concentrations of correlated (non-CO<sub>2</sub>) air pollutants are estimated by EPA to be some \$45 billion per year!

The combined U.S.-only estimates of annual climate impacts of CO<sub>2</sub> and health impacts of correlated pollutants greatly exceed the estimated regulatory compliance costs of \$9 billion per year, for positive net benefits amounting to \$39 billion per year in 2030. If EPA's global estimate of climate benefits is employed instead, then we reach

EPA's bottom line estimate of positive net benefits of \$67 billion per year.

Proponents of the administration's proposed rule will probably take this assessment of EPA's economic analysis as evidence of the rule's sensibility, and opponents of the proposed rule will likely perceive my assessment as providing evidence of the foolishness of EPA's proposal. I leave the ultimate conclusion up to you.

**Robert N. Stavins** is the Albert Pratt Professor of Business and Government at the John F. Kennedy School of Government, Harvard University, and Director of the Harvard Environmental Economics Program. He can be reached at [robert\\_stavins@harvard.edu](mailto:robert_stavins@harvard.edu).

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