

# U.S. Greenhouse Gas Emissions Reductions: What are the Opportunities, At What Price, and Through What Policies?

The same day that the U.S. Senate embarked on what RFF President Phil Sharp referred to as “a heavy-duty debate” on the Lieberman-Warner bill, a capacity crowd gathered at RFF to listen to a related debate sparked by the recently released McKinsey & Company report, *Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?*.

At a time when scientists are calling for dramatic reductions in emissions, government forecasts predict a 35 percent increase by 2030 if the current trend prevails. And if, according to Sharp, addressing climate change is “the issue that is front and center in this country and around the world,” then the pivotal sequela in the United States is the cost of reducing greenhouse gas (GHG) emissions and how to design policies to achieve reductions at the lowest possible cost.

Senior Fellow and RFF’s Director of Energy and Natural Resources Billy Pizer moderated the June 4 event that examined how the McKinsey report arrived at its conclusions to those questions. Joining him were McKinsey & Company Director Ken Ostrowski; Congressional Budget Office’s Senior Advisor for Climate Policy Terry Dinan; and RFF University Fellow Richard Newell, a professor at Duke University’s Nicholas School of the Environment and Earth Sciences.

The McKinsey report joins a long series of reports that assess individual opportunities for energy efficiency and combine them in a bottom-up approach to determine the overall price of such reductions. However, this approach—so different from the traditional one spawned by microeconomic theory that looks

at market responsiveness to higher energy prices to derive a top-down price for reductions—has drawn criticisms and concerns from the economic community, some of which surfaced at the RFF event.

Most of the event centered on a single graph in the McKinsey report that separates various GHG reduction opportunities into negative and positive abatement, with an outlay less than \$50/ton, for a total reduction of up to 4.5 gigatons. Negative abatement comes from energy efficiency opportunities that save more than they cost, such as residential lighting, where the long-term savings from more expensive energy-efficient bulbs outweigh the lower price of regular bulbs.

Essentially, if all of the McKinsey report’s projected energy efficiencies were captured, they would offset about 80 percent of the incremental growth in the demand for electricity by 2030. In dollars, the projected capital outlay in the McKinsey report totaled \$1.4 trillion over 25 years, set against roughly \$1 trillion of capital investment.

So why aren’t the economists and policymakers breathing at least a small sigh of relief? Well, according to Dinan, negative abatement measures aren’t new and have spurred a longstanding debate over why they haven’t been used. At least part of the problem has been consistently low energy prices in previous decades, diluting the motivation to seek out low-cost alternatives. But the lack of action doesn’t necessarily indicate a market failure or the need for a standard or subsidy, and Dinan cautioned that identifying true market failures is a prerequisite to determining the need for a

supplemental price policy. However, she noted, the numerous technology options in the report “really underlines the need for an economy-wide, uniform policy such as a cap-and-trade program or a tax.”

But before a policy is created, Newell urged that models and analyses of specific policies be used to assess the overall costs of GHG mitigation. Each model has multiple possible scenarios, and each of those can translate into dramatically different costs: from less than \$50 in the McKinsey report to more than \$80 according to the Energy Information Agency analysis of Lieberman-Warner, almost doubling the projected expense of emissions abatement.

Many experts expect both the marginal and total costs of substantial reductions to be positive and significant rather than zero, making climate policy expenditures highly uncertain and raising the value of measures containing costs and allowance prices. In addition, while the debates will inevitably continue, it may well be impossible to know the total cost.

“The wide range of opinions about the expense of any given reduction really highlights the need for a price ceiling and a price floor,” Dinan concluded. “In a sense, it’s kind of an academic debate whether or not for \$50 a ton you’re going to get a lot of reductions or a minor amount of reductions. You set the price and then you see how far you go.”

Newell may have summed it up best when he said the danger in a study like McKinsey’s is the message that “we can do climate policy at zero cost. That’s the one-line message, and that one-line message is incorrect.” And, since we’re not going to be able to monitor total cost, “we should figure out what we’re willing to pay incrementally and, if we get a lot free from energy efficiency . . . then we should go beyond that because protecting the climate is valuable.”

With the Senate unable to resolve anything in their debate on June 4, and failing to pass Lieberman-Warner on June 6, formulating and approving a climate policy is at a temporary standstill, leaving a very clear need to keep the conversation going elsewhere. ■

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