The New York Times https://www.nytimes.com/2018/08/23/climate/social-cost-carbon.html

Trump Put a Low Cost on Carbon Emissions. Here's Why It Matters.

By Brad Plumer

Aug. 23, 2018

WASHINGTON — How much economic damage will global warming cause? That's one of the key questions embedded in the Trump administration's recent proposals to weaken Obama-era regulations on greenhouse gas emissions from both vehicles and power plants.

When federal agencies calculate the costs and benefits of climate regulations, they use a figure called the "social cost of carbon," an estimate of the harm caused by releasing more carbon dioxide into the atmosphere and increasing global warming.

In its rollback proposals, the Trump administration argued that each ton of carbon dioxide emitted by a car or a coal plant in 2020 would only cause around $1 to $7 in economic damages. That's far lower than the Obama administration's central estimate, which, after adjusting for inflation, argued that same ton of carbon dioxide would cause roughly $50 in total damages.

That change will make a big difference for the cost-benefit analyses that agencies are required to conduct for new rules. If the Trump administration can successfully claim that carbon dioxide causes relatively little harm to the economy, then it can more easily justify moves like replacing the Clean Power Plan, an ambitious Obama-era program to cut pollution from coal plants, with a less-stringent rule.

So how did the Trump administration conclude that global warming will be much less costly than the Obama administration assumed?

First, the Environmental Protection Agency focused solely on damages from climate change that would occur within the borders of the United States rather than across the entire globe. Second, they used calculations that put less weight on the harm climate change could inflict on future generations.

Trump officials contend that their carbon approach better reflects the way the government has traditionally done cost-benefit analyses. Critics argue that this approach is inappropriate for global, multigenerational problems like climate change, and that newer research suggests the social cost of carbon may be even higher than the Obama administration estimated, not much lower.

Ultimately, the courts could decide which view prevails. "This will be part of the legal challenges to these regulatory rollbacks," said Richard L. Revesz, an expert in environmental law at New York University. "The reasons for why the Trump administration picked these numbers for the social cost of carbon are going to be scrutinized."

Tallying the costs of climate change

Predicting the costs of climate change is a maddeningly complex task, one that has bedeviled economists for years. They have to grapple with uncertainty around population growth, future levels of emissions, the effect of those emissions on the Earth's climate and the economic turmoil that higher temperatures could create.

In 2009, the Obama administration brought 12 federal agencies together to hash out a best estimate of the social cost of carbon. They based their answer on three widely used academic models that tried to quantify the harm to things like human health and coastal property as heat waves increased and sea-levels rose.

These models produce a wide range of estimates. But in 2016, the Obama administration recommended that federal agencies use a central estimate that, in current dollars, pegged the damage from a ton of carbon dioxide emitted in 2020 at around $50 per ton, rising over time.

At the time, some researchers and environmentalists criticized the Obama number for being incomplete. It did not, for example, fully account for many plausible climate impacts like damage from increased wildfires or the loss of diverse ecosystems. In one survey of climate economists from 2015, 51 percent of respondents said the number was probably too low. Only 9 percent said it was probably too high.

The Trump administration's new numbers

When President Trump came to office, he disbanded the interagency team working on this issue. Instead, the E.P.A. under Scott Pruitt came up with its own "interim" estimate of the social cost of carbon.

First, the E.P.A. took the Obama-era models and focused solely on damages that occurred within the borders of the United States, rather than looking at harm to other countries as well. That change alone reduced the social cost of carbon estimate to around $7 per ton.

The reasoning was simple: If Americans are paying the cost of these rules to mitigate climate change, then only benefits that accrue to Americans themselves should be counted.

Critics counter that this approach overlooks two key points. First, many of those climate impacts in other countries could indirectly hurt the United States, say, by roiling the global economy or by increasing the number of refugees. Second, climate change can only be solved by all countries working together. If the United States refused to consider the impacts of its emissions on other countries, other countries could respond in kind.

"The United States is only 14 percent of global emissions, which means that 86 percent of the damages we face will be caused by emissions from other countries," said Richard G. Newell, president of Resources for the Future, an environmental economics think tank. "If we took this domestic-only approach to its logical conclusion, that means other countries should not worry about their impacts on us."

Next, the E.P.A. lowered its estimate of the social cost of carbon further by rethinking how it used an economic concept known as the discount rate.

The discount rate is how economists value costs and benefits across time. People tend to value a dollar today more than a dollar in the future (a dollar today could be invested in the stock market and gain value, for example). The question is how much that future dollar should be discounted. A higher discount rate implies we shouldn't pay as much today to avoid harms far in the future, which, in turn, produces a lower social cost of carbon.

The federal government has long recommended discount rates of 3 percent and 7 percent for valuing costs and benefits across a single generation. But some economists have argued that higher rates are inappropriate for thinking about long-range problems like global warming, where today's emissions can have impacts, like melting ice sheets, that reverberate for centuries.

"If you use a rate above 5 percent, you're essentially saying that we shouldn't worry today about anything that happens 100 years from now," said Maureen Cropper, an economist at the University of Maryland.

The Obama administration opted for lower rates of 2.5 percent, 3 percent, and 5 percent when thinking about climate change. But the Trump administration has returned to the practice of using 3 percent and 7 percent. That higher rate further reduces the social cost of carbon down to $1 per ton.

Arguing in court

The Trump administration may not be finished adjusting the social cost of carbon. In earlier proposals, the E.P.A. said "improved domestic estimates" could be developed in the future.

Most experts agree that the social cost of carbon can be improved by taking into account newer scientific and economic research. "There's been an explosion of research on the impacts of climate change in recent years, and it hasn't been fully reflected in the estimates," said Michael Greenstone, an economist at the University of Chicago who helped craft the Obama administration's original numbers.

Dr. Greenstone was an author of a recent paper that looked more carefully at projected heat deaths from global warming as well as the costs of adapting to higher temperatures, such as buying more air-conditioners. That study concluded that these new estimates could add significantly to the social cost of carbon.

Yet some influential conservative groups, like the Heritage Foundation, have made the opposite case: that the Obama numbers were too high, emphasizing studies that suggest a slower rate of future warming and arguing that it is misguided to focus on damages that will occur centuries from now, when the American economy may look radically different.

Whatever number the Trump administration ultimately comes up with, they will have to defend it in court. Once the proposed rollbacks of vehicle and power plant rules are finalized, environmental groups and states like California plan to sue, including on the process that the administration used to tally costs and benefits.

"Typically, an agency gets some latitude to set standards a bit more or less stringently," said Jody Freeman, director of the environmental law program at Harvard Law School. "But if you can show the agency to be glaringly wrong in its analysis — they ignore obvious counterarguments, they cherry-pick the data to support their outcome, they make numbers up — you can get a court to strike the standards down."

For more news on climate and the environment, follow @NYTClimate on Twitter.