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## Members of Congress met to discuss the costs of climate change. They ended up debating its existence.

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A hearing held Tuesday by several House subcommittees was meant to be an examination of the methods used to calculate an oft-contested metric known as the social cost of carbon, a way of quantifying the costs — environmental, health-related or otherwise — of emitting an additional ton of carbon dioxide into the atmosphere. Yet by its close, the conversation had disintegrated into yet another debate about the extent to which man-made climate change exists.

It's not the first time such an incident has occurred under the new Congress. Just a few weeks ago, the House Science Committee held a hearing intended to focus on the future of the Environmental Protection Agency and how it may incorporate the best available scientific evidence in its regulatory processes. At that hearing, multiple attendees took the opportunity to express doubt about the seriousness of human-caused climate change and the effectiveness of the EPA's climate policies — many of which were developed with the social cost of carbon in mind.

A controversial metric

The social cost of carbon is set at about \$36 per ton of carbon dioxide. The calculations, developed by a federal working group in 2009, rely on a set of models that determine how carbon emissions may affect the climate in the future. They then calculate the monetary costs of any damages associated with those climatic changes, and have been used in dozens of federal environmental rules in the years since.

Tuesday's hearing, convened by the environment and oversight subcommittees of the House Science Committee, was intended to “examine the methods and parameters used to establish the social cost of carbon” with input from witnesses on how the calculation process could be improved. And indeed, the hearing did begin with a discussion of some of the common issues Republicans have raised about the calculation.

These include the fact that the metric focuses on global costs, not just domestic ones, as well as concerns about the climate-related assumptions included in the models. Many conservatives have also criticized a component of the calculations known as a discount rate, suggesting it could be

higher. (The discount rate is a kind of interest rate that helps reflect the fact that carbon emitted today may affect the climate years in the future.)

At Tuesday's hearing, many of these complaints were raised again by Republican members of the subcommittees and the witnesses they called to testify, including climatologist Patrick Michaels of the Cato Institute, statistician Kevin Dayaratna of the Heritage Foundation and economist Ted Gayer of the Brookings Institution.

"The federal government should not include faulty calculations to justify faulty regulations," said Rep. Lamar Smith (R-Tex.), chair of the House Science Committee, in his opening remarks. "Instead, it should eliminate the use of the social cost of carbon until a credible value can be calculated."

However, such criticisms were contested during the hearing by Democratic attendees and witness Michael Greenstone, an economist at the University of Chicago and former chief economist for President Barack Obama's Council of Economic Advisers, who helped convene the first federal working group to begin developing the social cost of carbon in 2009. In fact, many experts have suggested that the current value of the social cost of carbon has been underestimated.

"The approach has been judged valid," Greenstone said in his opening remarks at the hearing. "Last August, a federal court of appeals rejected a legal challenge to the metric. Furthermore, the Government Accountability Office has said the working group's methods reflected key principles that ensured its credibility. It used consensus-based decision-making, relied largely on existing academic literature and models and disclosed limitations and incorporated new information by considering public comments and revising the estimates as updated research became available."

#### A climate debate renewed

Methodological debates aside, any discussion about how to calculate the social cost of carbon necessarily relies on the assumption that putting carbon into the atmosphere has an effect in the first place — in other words, that carbon dioxide emissions affect the climate in ways that can be quantified. And it soon became clear that not everyone at the hearing strongly felt this to be true.

A number of committee members, as well as several of the majority witnesses, eventually began to express views suggesting that human-caused emissions are not the primary driver of climate change, or that natural climate variations may play a larger role.

"Can anyone on the panel give me a date certain, even a year certain, that there was absolutely no climate change on this planet since the forming of it?" Rep. Bill Posey (R-Fla.) asked the witnesses at one point.

"Since the release of CO<sub>2</sub>, it has been changing more rapidly," Greenstone responded, to which Posey responded, "That's speculative," while an unidentified voice among the committee

members added, “That’s not true.” Witnesses Dayaratna and Michaels both responded that they thought the climate has been changing since the planet was formed.

Later asked to clarify his stance on the primary driver of current climate change, Michaels responded: “The fact that we live on a fluid, discontinuous earth with long-period oscillations. The biggest climate change that you and I know of is an ice age oscillation, and I don’t think CO2 is going to be capable of doing that — and those occurred without human influence.” He noted that he does think that human activity is a “component” of modern climate change.

Others questioned whether an increase in atmospheric carbon dioxide concentrations might lead to net benefits for the planet, causing an increase in plant growth and agricultural production. At various points during the hearing, Michaels pointed to the fact that certain parts of the planet are becoming greener, presumably thanks to an increase in carbon dioxide levels. And Dayaratna suggested the possibility that factoring in increased agricultural yields — an issue he says has been mostly “unexplored” in calculations of the social cost of carbon — could produce a negative value, or a net monetary benefit associated with the emission of a ton of carbon.

But although greening is indeed occurring in some places, and increased carbon dioxide concentrations may benefit plants up to a point, research overwhelmingly suggests that the overall impact of climate change — which will have effects far beyond the agricultural sphere — will be resoundingly negative. And even when it comes to agriculture, the benefits brought by increased carbon dioxide will likely be offset by the stress of rising temperatures in many places, especially parts of the world that have warm climates today.

The surfacing of these kinds of climate doubts at Tuesday’s hearing only raise more questions about the future of the social cost of carbon, which — until now — has mostly been used to inform policies intended to combat climate change. It was an integral component of the Clean Power Plan, for instance, which is one of many environmental regulations the Trump administration has expressed an interest in dissolving.

Up to this point, experts have been skeptical about the Trump administration’s ability to eliminate the social cost of carbon altogether, or even significantly reduce its value, without being struck down in court. But with members of both the Trump administration and Congress increasingly questioning its very purpose — to help account for the dangers of climate change — its future is looking ever more uncertain.