

Ignoring climate change just got more expensive

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If President-elect Donald Trump stops taking climate change into account when making federal energy policy, he'll do so just as a leading projection of climate-related costs rises sharply.

William Nordhaus of Yale University is a central figure in the study of climate change and economics. In the early 1990s he developed what became the leading computer model for studying the effects of warming on the global economy. The Dynamic Integrated model of Climate & the Economy, or DICE, has long given resource economists, students, and policymakers an opportunity to test how different scenarios might lead to quite different future climates.

Nordhaus recently updated DICE. He published results of an early test-drive of it this week in a National Bureau of Economic Research working paper, titled "Projections and Uncertainties About Climate Change in an Era of Minimal Climate Policies."

Readers of recent headlines might be forgiven for assuming the "era of minimal [climate policies](#)" referred to is about the next four years. In fact, Nordhaus suggests, the "minimal policy" era is the one we're currently in. (Nordhaus couldn't be reached for comment.)

The paper's findings "pertain primarily to a world without climate policies, which is reasonably accurate for virtually the entire globe today," he writes. "The results show rapidly rising accumulation of ([carbon dioxide](#)), temperature changes, and damages."

Even after adjusting for uncertainty, he writes, there is "virtually no chance" that nations will prevent the world from warming more than 2 degrees Celsius (3.6 Fahrenheit), the upper bound for avoiding cascading catastrophes. With revisions to methods and data in the model, he estimates that the price associated with each ton of carbon dioxide emitted should be about 50 percent higher than the previous version of DICE.

His simulations echo findings of analyses such as the Climate Action Tracker project, which suggest current policies might lead to average warming of 3.6 Celsius. The United Nations Environment Program estimates that the world needs to slash emissions about 25 percent below what's projected in 2030.

DICE is one of three major "integrated assessment models" used by governments and the private sector to estimate the cost, in today's dollars, of the damage [climate change](#) will cause. The Obama administration relied on these models to produce the "social cost of carbon" (SCC) at the heart of dozens of energy-related federal rules. The measure is expressed in dollars per ton of carbon dioxide emitted. The current U.S. estimate is about \$40.

The SCC, paradoxically, has become semi-famous just by being so obscure. It has always drawn attention within the climate policy world because it's so influential and complicated. Different assumptions entered into the models can yield dramatically different results. The measure has popped up at least twice since the 2016 election. Once, in a questionnaire that a Trump transition official sent to the Department of Energy (the document was later disavowed by the transition team). It also appeared on a post-election energy-policy wish list of the Institute for Energy Research, or IER, a nonprofit, which said the estimates should no longer be used. IER's president, Thomas Pyle, a former Koch Industries lobbyist, became head of the Trump Energy Department

transition last month.

The National Academies has undertaken a major study of how best to update the SCC, with the final report due early next year. The current process was approved by a federal court as recently as August.

Tea-leaf-reading aside, the new administration's actual intentions and priorities will become clear only after Jan. 20. The planet, meanwhile, seems to have intentions and priorities of its own, judging by the unprecedented warm Christmas near the top of the world.

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