



Hidden Costs of Climate Change Running Hundreds of Billions a Year

A new report warns of a high price tag on the impacts of global warming, from storm damage to health costs. But solutions can provide better value, the authors say.

By **Stephen Leahy** PUBLISHED September 27, 2017

Extreme weather, made worse by [climate change](#), along with the health impacts of burning [fossil fuels](#), has cost the U.S. economy at least \$240 billion a year over the past ten years, a new report has found.

And yet this does not include this past months' [three major hurricanes](#) or 76 wildfires in nine Western states. Those economic losses alone are estimated to top \$300 billion, the report notes. Putting it in perspective, \$300 billion is enough money to provide [free tuition](#) for the 13.5 million U.S. students enrolled in public colleges and universities for four years.

In the coming decade, economic losses from extreme weather combined with the health costs of air pollution spiral upward to at least \$360 billion annually, potentially crippling U.S. economic growth, according to this new report, [The Economic Case for Climate Action in the United States](#), published online Thursday by the Universal Ecological Fund.

"Burning fossil fuels comes at a giant price tag which the U.S. economy cannot afford and not sustain," said Sir Robert Watson, coauthor and director at the U.K's Tyndall Center for Climate Change Research.

"We want to paint a picture for Americans to illustrate the fact that the costs of not acting on climate change are very significant," Watson, the former chair of the Intergovernmental Panel on Climate Change, told National Geographic.

Watson is quick to point out that extreme weather events, including heat waves, hurricanes, wildfires, and droughts, are not caused by climate change. However, there is no question their intensity and frequency in many cases has been made worse by the fact the entire planet is now 1.8 degrees F (1 degree C) hotter, he said in an interview.

While a 1.8 degree F (1 degree C) increase may seem small it's having a major economic impact on the U.S. According to data provided by the National Oceanic and Atmospheric Administration (NOAA), the number of extreme weather events causing at least \$1 billion in economic losses has increased more than 400 percent since the 1980s. Some of that increase is due to increased amounts of housing and commercial infrastructure along coastlines. "However that doesn't account for big increases in the last decade," Watson said.

And much more global warming is coming—3.6 degrees F (2 degrees C) temperature by 2050 and even greater warming beyond that—unless bigger cuts in fossil-fuel emissions are made than those promised in the 2015 [Paris Climate Agreement](#), said Watson. "The impacts of climate change are certainly going to get more than twice as bad," he said. ([Learn more about why this hurricane season has been so catastrophic.](#))

BILLION-DOLLAR WEATHER

A chart of the most costly U.S weather disasters shows billion-dollar events have been increasing in recent years. The main reason: more people are living on higher-value properties in vulnerable places, such as coasts.

But as the atmosphere warms, scientists expect destructive weather itself to become more common.

Seeking Solutions

The report also looks at low-carbon solutions that can cut emissions and air pollution and benefit the U.S. economy. For instance, doubling the current share of renewable energy could create 500,000 new jobs while substantially cutting the amount of electricity currently generated using coal—improving air quality and reducing health costs.

Renewable energy, even when subsidized, will save America billions of dollars, according to the [first national study](#) of the future costs and benefits of [renewable portfolio standards](#) (RPS). Twenty-nine states have RPS—regulations requiring increased production of energy from renewable energy sources.

If existing RPS programs continue unchanged from now until 2050 they'd generate about 40 percent of U.S. electricity and save \$97 billion in air pollution health costs and \$161 billion in climate damage reductions, the Assessing the Costs and Benefits of U.S. Renewable Portfolio Standards study found. But if all states meet their [Clean Power Plan](#) obligations solely with renewables they'd generate 35 percent of U.S. electricity by 2030 and 49 percent by 2050.

The health benefit savings and climate impact cost reductions in this scenario would be over \$1.1 trillion. However, the Trump Administration signed an Executive Order calling for a review of the Clean Power Plan last March and the new head of the EPA has [told states](#) they no longer have to comply.

RPS policies do increase electric system costs and may increase rates in some states but the overall costs are far less than the health benefits and cost reductions, said lead author Ryan Wiser, a senior scientist at Lawrence Berkeley National Laboratory.

“RPS programs provide a big social benefit to all Americans,” Wiser said in an interview. However, RPS policies are not the most efficient way to reduce fossil fuel use, he added.

“Pretty well every economist will tell you that a [carbon tax](#) or [cap and trade](#) are better.”

In the 1980s acid rain air pollution was [curbed through a cap and trade](#) program championed by George H.W. Bush. It was the first such program in the world and worked quite well, said Wiser.

Additional Benefits to Tackling Emissions

Switching to renewables will also save enormous amounts of freshwater. Electricity generation is the nation’s biggest water user because coal and gas boil large amounts of water to make electricity. If 35 percent of this generation was renewable it would reduce water use enough to meet the needs of 1.9 million homes, according to Wiser’s study. However, the cost benefits of this water savings is not included in the report, nor are other environmental costs and health benefits.

The Economic Case for Climate Action report also doesn’t include a number of climate-related losses such as reduced crop yields from drought. Those amounted to [\\$56 billion since 2012](#). Nor does it include economic losses from health impacts of heat waves or impacts on ecosystems and water resources.

“Our report is an under estimate of the real costs of continued use of fossil fuels,” Watson said.

“Anything we estimate now is an underestimate,” said Amir Jina of the University of Chicago and co-author of yet another new study looking at impacts of climate change on the U.S.

“Climate change is not isolated to small increases in global temperature, but to local impacts to our health and well-being that could be enormous.”

South and Midwest to Be Hardest Hit

[Estimating Economic Damage from Climate Change in the United States](#) is a state-of-the-art analysis that projects future costs and benefits county by county based on current and past data. It found counties in states in the South and lower Midwest would be the hardest hit economically without strong action to curb climate change.

“The Gulf Coast will take a massive hit. Its exposure to sea-level rise—made worse by potentially stronger hurricanes—poses a major risk to its communities. Increasingly extreme heat will drive up violent crime, slow down workers, amp up air conditioning costs,” said co-author Robert Kopp, director of the Institute of Earth, Ocean, and Atmospheric Sciences at Rutgers University.

Programs like federal flood insurance insulate coastal communities from some of these risks but it means citizens a long way from the coast bear the financial costs. The same applies to disaster relief.

Billions of local, state and federal taxpayer dollars will rightly go towards the recovery efforts from the devastating impacts of Hurricanes Harvey, Irma, and Maria. However, those monies could have gone elsewhere to grow our economy and that affects every American, said Jina. "What would we have done with this rebuilding money if we didn't have to use it to rebuild?"

The study shows that these big storms lower the long-run growth of the U.S. economy and that their economic and human impacts ripple through the country for up to two decades. New Orleans hasn't fully recovered from Hurricane Katrina in 2005. Many [small businesses](#) never bounced back. Ten years after the storm the unemployment rate was [still higher](#) than pre-Katrina levels. Research shows that after most hurricanes more people tend to [rely heavily on unemployment insurance and Medicaid](#), increasing the strain on those publicly funded programs, Jina said.

"The 'hidden costs' of carbon dioxide emissions are no longer hidden, since now we can see them clearly in the data," he said.