

Climate Change in the United States: Benefits of Global Action

FREQUENTLY ASKED QUESTIONS

GENERAL

What is CIRA?

A new report, *Climate Impacts in the United States: Benefits of Global Action*, quantifies the physical effects and economic damages of climate change under two scenarios: a future with significant global action on climate change and a future in which greenhouse gas emissions (GHG) continue to rise. The report is designed to answer the question: What are the benefits to the U.S. of global climate action? These analyses are the product of the Climate Change Impacts and Risk Analysis (CIRA) project, an EPA-led collaborative modeling effort among a number of analytical teams within the federal government and scientists from a number of academic institutions and consulting firms. The peer-reviewed report estimates 20 specific impacts categorized into six broad sectors: health, infrastructure, electricity, water resources, agriculture and forestry, and ecosystems. Importantly, this report analyzes only some of the impacts of climate change, and therefore estimates just a portion of the total benefits of reducing GHGs.

What is new and unique about CIRA?

The CIRA project is among the first multi-sector studies to quantify the projected benefits (avoided climate change damages) in the U.S. of global-scale greenhouse gas reductions using a consistent set of assumptions. Consistent socioeconomic, emission, and climate inputs facilitate comparisons across all sectors to understand the basic scale of the difference between a world with and without global climate action. The approach also helps to advance the science by exploring changes in the impacts across key sources of uncertainty.

Is this an assessment like the National Climate Assessment?

No. Climate change science assessments, such as those by the Intergovernmental Panel on Climate Change (IPCC) and U.S. Global Change Research Program (USGCRP), look across the scientific literature as a whole to develop consensus conclusions about the state of climate change science. The CIRA project, on the other hand, is narrowly focused and is designed to answer the targeted questions of what the physical and economic damages of climate change will be in the U.S., and how reducing global GHG emissions would reduce or avoid these impacts.

Does the CIRA report discuss the costs of reducing GHG emissions?

No. The CIRA report focuses on the benefits to the U.S. of a significant, but illustrative, level of global action on climate change. There are multiple policy approaches that could be undertaken to achieve any particular emissions reduction target, but this report does not discuss those or the costs of implementing a particular policy or policies. There is a robust literature on climate mitigation costs, such as the IPCC's Working Group III's contribution to the Fifth Assessment Report, [Climate Change 2014: Mitigation of Climate Change](#). The CIRA report provides a complementary set of information regarding the benefits of GHG mitigation, but does not constitute a cost-benefit assessment of climate policy.

What emissions scenarios were used in the CIRA project?

To allow for a better understanding of the potential benefits of global-scale GHG mitigation, the CIRA results presented in the report consider two emissions scenarios: a business-as-usual future in which GHG emissions continue to increase unchecked, and a mitigation scenario in which global GHG emissions are substantially reduced. This mitigation scenario focuses on a future where the increase in average global temperature is limited to 2° Celsius above preindustrial levels, a goal relevant in international climate discussions. Importantly, the CIRA emissions scenarios provide illustrations for analytical comparison and do not represent specific policies.

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FREQUENTLY ASKED QUESTIONS (CONTINUED)

CIRA REPORT PROCESS & RESULTS

What is the precision of the results?

While projecting decades into the future involves uncertainty, this report shows a substantial difference between a world with and without global climate action, making a clear case that acting now is worth it to the U.S. Using peer-reviewed and scientifically rigorous methods, the estimates in the report provide insights to the direction and magnitude of climate change impacts and the benefits (avoided impacts) to the U.S. of global GHG reductions. However, none of the estimates presented in this report should be interpreted as definitive predictions of future impacts at a particular place and time.

What was the review process for this report—was it peer reviewed?

The CIRA report builds on two layers of peer review. First, the report summarizes more than 35 studies that were individually peer reviewed in scientific journals. These papers describe the underlying methods and results for different aspects of the overall project. Second, the summary report itself then underwent an external, independent peer review to ensure that the contents were appropriately summarizing and communicating the methods and results of the underlying papers.

Does this report cover all climate change impacts, or all the benefits of mitigation?

No. The report describes some important impacts of climate change, but many others are not included due to data availability and resource constraints. In addition, for some sectors in the report, only part of the impact or damage is included in the estimate. For example, for wildfires, only the costs associated with suppressing them and reducing fuels are included in CIRA, while damages to homes and other impacts of wildfire are not. Impacts occurring in Alaska and outside of U.S. borders are not included since the primary focus of analysis is the contiguous U.S. Lastly, the results do not quantify the additional benefits to air quality and health that would stem from the co-control of traditional air pollutants along with GHGs (both are emitted from many of the same sources). Including these would further increase the benefits by a significant amount.

Does the report consider the positive effects of climate change on the U.S.?

Yes, the analyses described in the report evaluate both negative as well as positive effects of unmitigated climate change. In the report, positive effects are, in general, substantially outweighed by the negative effects of unmitigated climate change within their respective sectors. There are specific examples of this. The projected increase in deaths due to more frequent extremely hot days is estimated to be much larger than the projected decrease in deaths due to fewer extremely cold days. The agricultural and forestry analyses capture both adverse and beneficial effects to crop and timber production. Additionally, the economic damages associated with the contraction of recreational fishing for coldwater species outweighs the potential benefits from an expansion in warmwater fishing.

RELATIONSHIP TO THE CLEAN POWER PLAN & OTHER CLIMATE POLICIES

Does this report estimate avoided impacts from the Clean Power Plan or any specific climate change policy?

No. The report examines how the U.S. would benefit from a significant, but *illustrative*, level of action to reduce GHG emissions globally. This report does not evaluate the Clean Power Plan, and should not be interpreted as an evaluation of any specific policy in the U.S. or in other world regions. Benefits of domestic GHG mitigation actions are estimated elsewhere using the [social cost of carbon](#). The CIRA project complements, but is separate from, those efforts.

Why doesn't the report evaluate the benefits to the U.S. of specific domestic emission reductions, rather than global-scale reductions?

Slowing and preventing human-induced climate change requires global-scale action; the U.S. must do its part but cannot act alone. Unmitigated climate change is projected to profoundly affect human health, the economy, and the environment in the U.S. The CIRA results demonstrate that near-term global action on climate change can reduce or avoid many of these far-reaching impacts and damages in the U.S.