

Researchers find limited economic cost to robust carbon emission goals

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A new paper in *Oxford Open Climate Change* indicates that, while various models to measure the economic impact of reducing carbon emissions show low current economic benefits, after 2050, most

scenarios show higher benefits than costs. These benefits are the largest in developing countries.

Climate stabilization pathways reviewed by the United Nations' Intergovernmental Panel on Climate Change show the challenges and opportunities of reducing carbon emissions to meet the goal of the Paris Climate Agreement. The different scenarios provide information about the transition, including its economic repercussions due to industrial disruption and the implementation of new technology. However, these calculations often do not account for the economic benefits of lowering global temperature. Nevertheless, economic motives for acting to reduce emissions and adapt to climate change play an important role in the national and international negotiations surrounding [emission reductions](#).

Researchers here explored many scenarios to combine the costs of carbon reduction with the growing literature by using 25 different economic damage functions of climate change, predicting the economic impacts of carbon reduction. The researchers found that, comparing the net benefits plans to reduce carbon emissions by 1.5° or 2° Celsius above pre-industrial levels, the two climate targets yield similar economic results. The extra economic costs of tightening the policy by half a degree, are compensated by the additional benefits of reduced temperature. At a conservative estimate, the median net benefits are, respectively 6.0% and 5.4% of GDP for 1.5°C reduction and 2°C reduction. The benefits of a lower temperature target are larger than the costs.

While researchers find that immediate economic benefits of [carbon emissions](#) reductions are limited, most scenarios have net economic benefits after 2050, and the vast majority (more than 75%) by 2080. These benefits are most dramatic for developing countries. Overall, the paper's authors find that, despite considerable uncertainty, the current benefits and costs of attaining temperature goals of 1.5-2° C are of

comparable magnitude and not statistically different from each other. There is a limited net economic cost to the more robust 1.5° C reduction goal.

"Rapid climate action will inexorably generate economic benefits from avoided impacts in the second half of the century," said the paper's lead author, Laurent Drouet. "Those benefits will be much higher than the transition costs for the next decades."

The paper is titled "Net [economic benefits](#) of well-below 2°C scenarios and associated uncertainties."

More information: Laurent Drouet et al, Net economic benefits of well-below 2°C scenarios and associated uncertainties, *Oxford Open Climate Change* (2022). [DOI: 10.1093/oxfclm/kgac003](https://doi.org/10.1093/oxfclm/kgac003)

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