

New climate study argues for carbon fee

March 1 2016

A new study reports that current rising temperatures already noticeably load the 'climate dice', with growing practical impacts. As a bottom line, the lead author, Dr James Hansen, argues that a carbon fee is needed to spur replacement of carbon fuels with clean energy.

The findings are reported today, 2nd March 2016, in the journal *Environmental Research Letters*.

The researchers plotted the shift in the "bell curve" describing seasonal mean local temperatures for both summer and winter in many regions around the globe. They found that the bell curve shift is becoming important in many places.

"We see that climate change is becoming noticeable at mid-latitudes, especially in summer" explains Hansen. "And we can already see large effects at tropical and subtropical latitudes".

The summer bell curves for the United States and (North and Central) Europe are shifted by more than one standard deviation.

"This means extreme events - more than two standard deviations higher than the mean temperature - are now more frequent" continues Hansen. "We're talking about a change from about 1% of the time to more than 10% of the time."

Changes are harder to notice in winter, because winter temperature has high natural variability. Large winter variability is caused by the strong

north-south temperature gradient and fluctuations of the upper air jet stream location that alter the direction of surface winds.

Hansen believes that these findings have implications for the 2°C (3.6°F) target for global warming discussed at the recent United Nations Conference of Parties (COP) in Paris.

"Warming of 2°C would shift the bell curves three times more than the shift that occurred over the past 50 years" he explains.

Warming that large would make it difficult to work outdoors in subtropics such as southern U.S., the Middle East and Mediterranean during a lengthening summer season, and year round in the tropics.

Increased warming in these regions would also have economic effects, because half of the employment, including agricultural and construction activities, occurs outdoors.

"Our analysis shows that 2°C is not a safe guard-rail. What the science actually tells us is that fossil fuel emissions must be phased out as rapidly as practical."

The study also notes that warming allows disease-carrying vectors such as blood-sucking mosquitoes and ticks to expand their range to higher latitudes and greater altitudes.

Hansen believes that the way to stop global warming lies in a rising carbon fee, collected from fossil fuel companies with the money distributed to the public.

"Emission targets and caps that COP talked about have been tried before and found to be ineffective" he continues. "For me, it is as sure as the law of gravity - as long as [fossil fuels](#) seem to be cheap, people will keep

burning them."

"The economically sensible approach is for the price of fossil fuels to include their full cost to society - the costs from air and water pollution, and climate change."

"The way I see to achieve this is by introducing a carbon fee - something COP didn't address. I'm not talking about a tax - it's a tax if the government keeps the money. A tax depresses the economy. But the fee spurs the economy if the money is distributed uniformly to the public, rewarding the person who does better than average in limiting his fossil fuel use."

More information: James Hansen et al. Regional climate change and national responsibilities, *Environmental Research Letters* (2016). [DOI: 10.1088/1748-9326/11/3/034009](https://doi.org/10.1088/1748-9326/11/3/034009)

Provided by IOP Publishing

Citation: New climate study argues for carbon fee (2016, March 1) retrieved 7 July 2024 from <https://phys.org/news/2016-03-climate-carbon-fee.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.