

Heating from carbon dioxide will increase five-fold over next millennia

January 29 2009



(PhysOrg.com) -- Scientists at the University of Liverpool have found that heating from carbon dioxide will increase five-fold over the next millennia.

Scientists studied the impact that current carbon emissions have on the delicate balance between air and sea carbon exchange. They found that the ocean's ability to store excessive amounts of carbon dioxide over thousands of years will affect the long-term heating of the planet.

The ocean acts as an enormous carbon sink which naturally absorbs any extra carbon dioxide added to the atmosphere. Its ability to store more carbon dioxide than both the atmosphere and land provides long-term storage for the carbon dioxide emitted by human activities.

Scientists at Liverpool, however, have found that if all conventional coal, oil and gas carbon reserves are exhausted, the excessive amounts of carbon dioxide in the atmosphere will begin to alter the ocean's natural chemistry and hinder its ability to absorb and exchange the gas.

Professor Ric Williams, from the University's School of Earth and Ocean Sciences, explains: "It is accepted that rising atmospheric carbon dioxide concentrations lead to an increase in heating around the globe. It was, however, unclear as to how the ocean's ability to store carbon could affect the future overall heating of the earth.

"The excessive amount of carbon in the atmosphere will make the oceans more acidic and hamper the ability of the oceans to absorb further carbon from the atmosphere. The extra carbon dioxide remaining in the atmosphere will lead to an increase in the overall heating of our planet, making sea levels rise and exacerbating the melting of the Arctic ice caps.

"To prevent a situation like this from happening scientists are working to develop carbon-capture techniques, which aim to remove excess carbon from identifiable sites, such as the atmosphere around fossil fuel plants, and permanently store them away."

The paper is published in *Nature Geosciences*.

Provided by University of Liverpool

Citation: Heating from carbon dioxide will increase five-fold over next millennia (2009, January 29) retrieved 26 April 2024 from <https://phys.org/news/2009-01-carbon-dioxide-five-fold-millennia.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.