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Arctic Methane Release Due To Climate Change Could Cost Global Economy $60 Trillion, Study Reports

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REUTERS By Nina Chestney

LONDON, July 24 (Reuters) - A release of methane in the Arctic could speed the melting of sea ice and climate change with a cost to the global economy of up to $60 trillion over coming decades, according to a paper published in the journal Nature.

Researchers at the University of Cambridge and Erasmus University in the Netherlands used economic modelling to calculate the consequences of a release of a 50-gigatonne reservoir of methane from thawing permafrost under the East Siberian Sea.

They examined a scenario in which there is a release of methane over a decade as global temperatures rise at their current pace.

They also looked at lower and slower releases, yet all produced "steep" economic costs stemming from physical changes to the Arctic.

"The global impact of a warming Arctic is an economic time-bomb," said Gail Whiteman, an author of the report and professor of sustainability, management and climate change at the Rotterdam School of Management, part of Erasmus University.

"In the absence of climate-change mitigation measures, the model calculates that it would increase mean global climate impacts by $60 trillion," said Chris Hope, a reader in policy modelling at the Cambridge Judge Business School, part of the University of Cambridge.

That approaches the value of the global economy, which was around $70 trillion last year.

The costs could be even greater if other factors such as ocean acidification were included, the study said, or reduced to some $37 trillion if action is taken to lower emissions.

As much as 80 percent of the costs would likely be borne by developing countries experiencing more extreme weather, flooding, droughts and poorer health as the Arctic melt affects the global climate, the paper said.

Methane is a greenhouse gas usually trapped as methane hydrate in sediment beneath the seabed. As temperatures rise, the hydrate breaks down and methane is released from the seabed, mostly dissolving into the seawater.

But if trapped methane were to break the sea surface and escape into the atmosphere, it could "speed up sea-ice retreat, reduce the reflection of solar energy and accelerate the melting of the Greenland ice sheet," the study said.

It said that could bring forward the date at which the global mean temperature rise exceeds 2 degrees Celsius by between 15 and 35 years - to 2035 if no action is taken to curb emissions and to 2040 if enough action is taken to have a 50 percent chance of keeping the rise below 2 degrees.

Scientists have said the rise in global average temperatures this century needs to stay below 2 degrees Celsius to prevent devastating climate effects such as crop failure and melting glaciers.

However, the International Energy Agency warned last month that the world is on course for a rise of 3.6 to 5.3 degrees Celsius citing record high global carbon dioxide (CO_2) emissions last year.

The Arctic has oil and gas reserves which Lloyd's of London has estimated could draw investment of up to $100 billion within a decade. Environmentalists warn Arctic drilling is too risky and could have devastating consequences for the region. (Editing by Jason Neely)

Filed by James Gerken |