



Institute for Governance & Sustainable Development

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Leaking Methane Could Push World Closer to Abrupt Climate Change

Washington, D.C., March 5, 2010 – Significant amounts of methane found to be leaking from permafrost in the East Siberian Arctic Shelf could push the world closer to the tipping points for abrupt climate changes. According to a study published in *Science* journal this week, about 7-8 million tonnes of methane are being released from the Shelf each year – about the same amount that the entire world’s oceans release annually. Methane is a potent greenhouse gas considered to be one of the largest contributors to climate change. The fear is that should these leaks turn out to be new, due to rising temperatures, it’s possible that considerably larger pockets of methane will be released from thawing permafrost. Further studies will be necessary to determine whether the methane leaks are due to global warming.

“Regardless of the cause, methane is increasing,” said Durwood Zaelke, President of the Institute for Governance & Sustainable Development, “and this gas is more than 20 times more powerful than CO₂ in warming the climate.”

These fast-action measures include reducing emissions of short-lived climate forcers such as black carbon soot, tropospheric ozone, and methane produced from activities such as agriculture, coal mining, and production of oil and natural gas. Because they are short-lived, implementing aggressive mitigation measures can lead to major near-term climate benefits. Expanding biochar production to sequester carbon and increasing urban albedo to reflect solar radiation are also important strategies to reduce the possibility of passing tipping points.

A 2008 study on methane funded by the National Science Foundation found that over 600 million years ago, a sudden release of methane from ice sheets set in motion an abrupt change in climate, transforming the Earth from a cold environment into a much warmer one. While the scientists involved in the study noted that there is no way to determine how much methane it would take to reach that threshold, the current trend of rising emissions is deeply troubling.

“We can’t afford to wait and see what happens,” added Zaelke. “Taking fast action on powerful, short-lived pollutants, capturing carbon through biochar, and reducing the absorption of solar radiation by increasing urban albedo - this group of strategies is our critical insurance policy against abrupt climate change that can offset the effects of CO₂ by as much as 40 years or more.”

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Extensive Methane Venting to the Atmosphere from Sediments of the East Siberian Arctic Shelf, Natalia Shakhova, Igor Semiletov, Anatoly Salyuk, Vladimir Yusupov, Denis Kosmach, Orjan Gustafsson (*Science*, March 2010): <http://www.sciencemag.org/cgi/content/abstract/327/5970/1246>