

Carbon Emissions from the “Country of Permafrost”:

A Top-10 Emitter for the Global Stocktake

WHAT: UNFCCC Press Conference

WHEN: Friday 10 June 2022, 10.45 – 11.15 CET

WHERE: Nairobi Room 04, World Conference Center, Bonn, Germany

AND Livestreamed at <https://unfccc.int/SB56#schedule>

For immediate release

Permafrost urgently needs to be counted as governments measure progress – or lack thereof – towards the Paris Agreement goals, scientists urged on Friday. In recognition of this, they have made an *ad hoc* submission for the “[Country of Permafrost](#)” during the latest round of climate negotiations, taking place this week and next in Bonn, Germany.

Emissions from rapidly-thawing permafrost already are adding as much greenhouse gas emissions as a large top-ten emitting country, such as Japan. But if continued fossil fuel use causes temperatures to exceed the 1.5°C Paris limit – let alone go higher – these emissions “could become nearly the single largest source of carbon emissions on the planet,” said Dr. Gustaf Hugelius, Co-director of the Bolin Centre at Stockholm University. “Worse still, these emissions will continue for centuries, meaning we’re placing a terrible burden on future generations to somehow offset the emissions we’re causing to happen today, by our failure to act in time.”

“Right now, at about 1.1°C, we are already committed to losing about 25% of surface permafrost,” said Dr. Rachael Treharne of the Woodwell Climate Research Center. At current emissions growth, it is likely that near-surface permafrost soils will largely disappear globally, she said. “That’s an essentially permanent change on human timescales – the rebuilding of new permafrost soils takes thousands of years.”

Stefan Rucht-Crowley, a former climate negotiator now with the International Cryosphere Climate Initiative, noted the importance of including permafrost modelling in carbon budgets, to ensure this huge source of carbon dioxide (CO₂) and methane is included in international climate policy. “It is crucial that permafrost thawing, and ensuing emissions due to global warming are fully reflected in the negotiations, including in the Global Stocktake,” a two-year Paris benchmarking process that began this week, he said. “Negotiations must urgently and fully take into account permafrost emissions. In case of overshoot of the 1.5°C Paris temperature limits, these emissions from permafrost could cause us to exceed any carbon budget. It means the situation is truly critical -- we have no time to waste in decreasing fossil fuel use.”

Thawing permafrost is not only a concerning source of additional CO₂ and methane – a great deal of infrastructure, particularly in the Arctic and on the Tibetan Plateau, risks damage and destruction as permafrost foundations thaw, especially affecting Arctic and mountain Indigenous communities. This is not the only disruption these communities face: permafrost thaw also threatens access to traditional food sources, the ability to travel around safely, and the integrity of culturally important sites.

Much of the current interest in permafrost focuses on uncertain and highly speculative events such as a “methane bomb” of sudden emissions release, but the scientific reality is far more pernicious, concluded Hugelius. “Once permafrost thaws, we have no way to stop those emissions,” he said. “The only reliable means to prevent them is to keep temperatures within Paris limits by urgently reducing greenhouse gas emissions – and not in some distant future, but now.”

Speakers:

Dr. Gustaf Hugelius, Co-director, Bolin Centre for Climate Research, Stockholm University

Dr. Rachael Treharne, Woodwell Climate Research Center

Dr. Lisa Koperqualuk, Vice-president - International Affairs, Inuit Circumpolar Council
Canada

Stefan Rucht, International Cryosphere Climate Initiative

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