

Research highlights urgency of reducing carbon dioxide emissions

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Just-published research from Victoria University of Wellington and the University of Oxford highlights the urgency of reducing global emissions of carbon dioxide.

The release of the report, one of two published online in the leading scientific journal *Nature Climate Change*, coincides with international government ministers gathering in Warsaw for the latest round of [climate change](#) negotiations.

The paper, led by Niel Bowerman from the Department of Physics at Oxford University with David Frame, Professor of Climate Change in the New Zealand Climate Change Research Institute at Victoria University as co-author, looks at the impact of measures to cut emissions of other global warming agents such as methane and soot.

The scientists argue that the impact of reductions in short-lived climate pollutants, such as methane, depends strongly on their timing.

Professor Frame explains the key result: "This research shows that taking action today on emissions of short-lived climate pollutants will have relatively little impact on peak warming, unless [carbon dioxide emissions](#) are reduced at the same time.

"So action on these other pollutants does not 'buy time' to delay action on carbon dioxide."

Professor Frame says the findings have strong policy relevance for countries like New Zealand in which agriculture figures largely in emissions profiles.

"The reality is that today's [methane emissions](#) matter little for peak warming unless carbon dioxide emissions drop rapidly in the coming decades. As long as carbon dioxide emissions are not falling, methane emissions can have little impact on the overall magnitude of warming."

In a second paper, Professor Myles Allen from Oxford University and Professor Thomas Stocker from the University of Bern assess the impact of further delay in reducing carbon dioxide emissions.

"Unless we assume the long-suffering taxpayers of the 2020s somehow manage to compensate for continued procrastination now, peak carbon-dioxide-induced warming is increasing at the same rate as [carbon dioxide](#) emissions themselves—almost two percent per year—much faster than observed warming," explains Professor Allen.

"So if we delay our goal to limit warming to two degrees for five years, starting in 2015 rather than 2010, that delay has already cost us two tenths of a degree which is equal to the observed warming that has taken place since the early 1990s."

More information: "The role of short-lived climate pollutants in meeting temperature goals." Niel H. A. Bowerman, David J. Frame, Chris Huntingford, Jason A. Lowe, Stephen M. Smith & Myles R. Allen. *Nature Climate Change* (2013) [DOI: 10.1038/nclimate2034](https://doi.org/10.1038/nclimate2034). 21 November 2013

"Impact of delay in reducing carbon dioxide emissions." Myles R. Allen, Thomas F. Stocker. *Nature Climate Change* (2013) [DOI: 10.1038/nclimate2077](https://doi.org/10.1038/nclimate2077) . 21 November 2013

Provided by Victoria University of Wellington

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