

Linking air pollution and climate change: The case for controlling methane

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Abstract

Methane emission controls are found to be a powerful lever for reducing both global warming and air pollution via decreases in background tropospheric ozone. Reducing anthropogenic methane emissions by fifty percent nearly halves the incidence of U.S. high-ozone events and lowers global radiative forcing by 0.37 W m^{-2} (0.30 W m^{-2} from CH_4 , 0.07 W m^{-2} from O_3) in a 3-D model of tropospheric chemistry. A 2030 simulation based upon IPCC A1 emissions projections shows a longer and more intense U.S. ozone pollution season despite domestic emission reductions, indicating that intercontinental transport and a rising ozone background should be considered when setting air quality goals.

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