

Curb soot and smog to keep Earth cool, says UN

June 14 2011, by Marlowe Hood



Smoke belches from a coal powered power plant in Linfen in China's Shanxi province, regarded as one of the cities with the worst air pollution in the world. Sharply reducing emissions of soot and smog could play a critical role in preventing Earth from overheating, according to a UN report.

Sharply reducing emissions of soot and smog could play a critical role in preventing Earth from overheating, according to a UN report released on Tuesday.

Curbing these pollutants could also boost global food output and save millions of lives lost to heart and lung disease, said the report from the UN Environment Programme (UNEP) and the World Meteorological Organisation (WMO).

Even as [climate talks](#) remain deadlocked on how to share out the task of

cutting CO₂, parallel action on "black carbon" particles and ground-level ozone would buy precious time in the quest to limit global temperature rise to 2.0 degrees Celsius (3.6 degrees Fahrenheit), it said.

Record output in 2010 of carbon from energy use and unprecedented [CO₂ levels](#) in the atmosphere suggest that efforts to maintain the 2.0 C cap, widely seen as a threshold for dangerous warming, may already be doomed, say scientists.

On current trajectories, temperatures are set to go up 1.3 C (2.3 F) -- on top of the 0.9 C (1.6 F) jump since human-induced warming kicked in -- by 2050, bringing the total compared to preindustrial levels to 2.2 C (4.0 F).

But quickly tackling black carbon and smog-related ozone could slash 0.5 C (0.9 F) off the [temperature increase](#) projected for 2030, putting the two-degree [target](#) back on track, the new findings suggest.

"There are clear and concrete measures that can be undertaken to help protect the [global climate](#) in the short and medium term," said Drew Shindell, a researcher at NASA's Goddard Institute for Space Studies and one of the 50 scientists behind the new assessment.

"The win-win here for limiting climate change and improving air quality is self-evident and the ways to achieve it have become far clearer."

The report was unveiled in Bonn as delegates from more than 190 nations under the UN [Framework Convention on Climate Change](#) (UNFCCC) struggle to make headway in the deeply stymied negotiations.

Black carbon, found in soot, is a byproduct of incomplete burning of fossil fuels, wood and biomass, such as animal waste. The most common

sources are car and truck emissions, primitive cook stoves, forest fires and industry.

[Soot](#) suspended in the air accelerates global warming by absorbing sunlight. When it covers snow and ice, white surfaces that normally reflect the Sun's radiative force back into space soak up heat instead, speeding up the melting of mountain glaciers, ice sheets, and the Arctic ice cap.

The tiny particles have also been linked to premature death from heart disease and lung cancer.

Ground-level, or tropospheric, ozone -- a major ingredient of urban smog -- is both a powerful greenhouse gas and a noxious air pollutant. It is formed from other gases including methane, itself a potent driver of global warming.

A threefold increase in concentrations in the northern hemisphere over the last century has made it the third most important greenhouse gas.

Unlike carbon dioxide, which lingers in the atmosphere for centuries once emitted, black carbon and ozone disappear quickly when emissions taper off.

"The science of short-lived climate forcers has evolved to a level of maturity that now requires ... a robust policy response by nations," said Achim Steiner, Executive Director of UNEP.

Measures recommended for reducing black carbon include mandatory use of diesel filters on vehicles, phasing out wood-burning stoves in rich countries, use of clean-burning biomass stoves for cooking and heating in developing nations, and a ban on the open burning of agricultural waste.

For ozone, the report calls for policies that curb organic waste, require water treatment facilities to recover gas, reduce methane emissions from coal and oil industries, and promote anaerobic digestion of manure from cattle and pigs, both major sources of methane.

The report estimates that nearly 2.5 million deaths from outdoor pollution, mainly in Africa and Asia, could be avoided every year by 2030 if [black carbon](#) levels dropped significantly.

Far less ground-level ozone could also avoid important losses in global maize, rice, soybean and wheat production, it said.

(c) 2011 AFP

Citation: Curb soot and smog to keep Earth cool, says UN (2011, June 14) retrieved 23 April 2024 from <https://phys.org/news/2011-06-curb-soot-smog-earth-cool.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.