

PRESS ANNOUNCEMENT

New AMAP scientific assessments support calls for action on short-lived climate pollutants to reduce climate warming in the short-term, as a complement to action on carbon dioxide

Short-lived climate pollutants (SLCPs) are air pollutants that, like carbon dioxide, are causing the Earth's climate to warm. The Arctic Monitoring and Assessment Programme (AMAP) has examined the Arctic climate impacts of the SLCPs methane, black carbon and tropospheric ozone. The new AMAP assessments outline key findings regarding: how global and regional reductions in SLCPs may influence projected Arctic warming and which emission sources and regions contribute most to Arctic climate change.

At the ongoing COP in Paris governments will discuss actions aimed at preventing global average temperatures rising by more than 2 degrees C by 2100. Carbon dioxide emissions are the major driver of anthropogenic climate change and reductions in carbon dioxide emissions are therefore necessary and urgent if the threats posed by climate change are to be addressed.

However, other air pollutants including **black carbon** and **methane** also contribute to global warming. Unlike carbon dioxide, **short-lived climate pollutants (SLCPs)** have a relatively short residence time in the atmosphere (of a few days to about a decade - hence the term short-lived). The shorter the lifetime, the more quickly atmospheric concentrations can be reduced by lowering emissions. This means **that action on SLCPs has the potential to slow the rate of climate warming on a comparatively shorter time scale**. Action to reduce SLCPs should be seen as a complement to, and not a replacement for action to reduce emissions of carbon dioxide.

Human activities have caused increased air concentrations of methane, black carbon, and ozone, affecting both global and Arctic climate. However, technological measures to reduce emissions of SLCPs and co-emitted pollutants already exist.

Actions to reduce [methane](#) emissions could slow the global warming expected by 2050 by approximately 0.2 degrees C. Arctic warming is part of global warming. Consequently, reducing overall global warming will also result in reduced Arctic warming and slow the rate of melting of snow and ice.

A reduction of about 0.25 degrees C in the Arctic could be achieved through global actions to reduce emissions of [black carbon and co-emitted air pollutants](#). Much of the avoided warming from black carbon is associated with reducing black carbon on snow and ice.

Thus, if these existing measures were introduced to their maximum extent globally, the **AMAPs assessments indicate that Arctic warming could be reduced by roughly half a degree C by 2050**. The assessments did not consider the cost or likelihood of maximum feasible reduction.

These estimates of avoided warming can be compared with an expected Arctic warming due to all climate forcings over the period to 2050 of approximately 2 degrees C from current level. **Arctic temperatures are warming at about twice the global average** and this is [resulting in unprecedented changes in Arctic sea ice, land ice, permafrost, and snow cover](#).

While uncertainties associated with climate warming and effects of mitigation actions exist for these SLCPs, they should not be an impediment to taking action. Action on black carbon and ozone has added benefits since these pollutants are also harmful to human health.

Arctic countries are responsible for substantial amounts of SLCPs and co-emitted air pollutants from sources associated with important anthropogenic emissions sectors. In its Iqaluit Declaration, Arctic Council Ministers:

Press Announcement: AMAP assessments of short-lived climate pollutants - their impacts on Arctic climate warming and potential for mitigation

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- “Reaffirmed the Arctic States’ commitment to work together and with partners toward an effective, ambitious, durable international climate agreement in Paris in December 2015 that is applicable to all, and ... to work within and beyond the United Nations Framework Convention on Climate Change to limit the increase in global average temperature to below two degrees Celsius above pre-industrial levels.
- Decided to implement the Framework for Action on Enhanced Black Carbon and Methane Emissions reductions... ” with the objective that Arctic Council members will take enhanced, ambitious, national and collective action to accelerate the decline in their overall black carbon emissions and to significantly reduce their overall methane emissions.

Media Contacts:

General enquiries: Lars-Otto Reiersen (AMAP Executive Secretary) +47 21 08 04 81 / +47 900 46476 amap@amap.no

Methane assessment: Michael Gauss +47 55 23 66 89 michael.gauss@met.no

Methane assessment: Frans-Jan Parmentier +47 405 39339 frans-jan.parmentier@nateko.lu.se

Black carbon/ozone assessment: Andreas Stohl +47 6389 8035 ast@nilu.no

Black carbon/ozone assessment: Patricia Quinn +1 206 526 6892 patricia.k.quinn@noaa.gov

Black carbon/ozone assessment: Kaarle Kupiainen +358 400 148 766 kaarle.kupiainen@ymparisto.fi

Related background reading:

1. *Arctic Climate Issues 2015 Summary for Policy-makers*. Summary report presented to Arctic Council Ministers at the ninth Arctic Council Ministerial meeting in Iqaluit, Nunavut, Canada) (<http://www.amap.no/documents/doc/summary-for-policy-makers-arctic-climate-issues-2015/1196>)
2. *Arctic Pollution Issues 2015: Methane as an Arctic climate forcer*. Comprehensive scientific background assessment report. (<http://www.amap.no/documents/doc/AMAP-Assessment-2015-Methane-as-an-Arctic-climate-forcer/1285>)
3. *Arctic Pollution Issues 2015: Black carbon and ozone as Arctic climate forcers*. Comprehensive scientific background assessment report. (<http://www.amap.no/documents/doc/amap-assessment-2015-black-carbon-and-ozone-as-arctic-climate-forcers/1299>)
4. *Response of Arctic temperature to changes in emissions of short-lived climate forcers*. Article by M. Sand et al. in *Nature Climate Change* (<http://www.nature.com/nclimate/journal/vaop/ncurrent/full/nclimate2880.html>)
5. *Arctic Warming: Short-term solutions*. Article by Julia Schmale in *Nature Climate Change - News and Views*. (Advance online publication, <http://www.nature.com/nclimate/journal/vaop/ncurrent/full/nclimate2897.html>)

Organization Background:

The Arctic Monitoring and Assessment Programme (AMAP) is the working group of the **Arctic Council** that is responsible for monitoring and assessing the impacts of pollutants on Arctic climate and ecosystems. AMAP produces scientific assessments that address a range of Arctic pollution and climate change issues to inform and support sound science-based decision-making. Members of the Arctic Council are the eight Arctic States: Canada, the Kingdom of Denmark (including Greenland and the Faroe Islands), Finland, Iceland, Norway, Russia, Sweden and the United States. Six international organizations representing Arctic Indigenous Peoples have permanent participant status.

Some related news stories and COP21 arrangements:

- Climate and Clean Air Coalition ([CCAC events during COP21](#))
- Black Carbon in the White Arctic (Ministry of Foreign Affairs, Iceland) side-event in the Nordic Pavilion at COP21 (Saturday 5 December)
- Risks of Irreversible Climate Impacts from Cryosphere: Permanent Changes to the Earth System. International Cryosphere Climate Initiative (ICCI) co-sponsored side-event at COP21 (Wednesday 9 December)
- Reducing black carbon and methane emissions could reduce Arctic warming ([CBC news story](#))