Press Release

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Release of *Arctic Climate Issues 2015* Policy-Makers Summary

The *Arctic Climate Issues 2015 Summary for Policy-makers* was delivered to Ministers at the ninth Arctic Council Ministerial meeting that took place in Iqaluit, Nunavut, Canada on 24 April 2015. It presents the findings from two assessments that have been prepared on short-lived climate pollutants (SLCPs), detailing emission sources and impacts on Arctic climate of (1) black carbon and ozone, and (2) methane.

Assessment Findings

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. Short-lived climate pollutants are gases and particles that cause warming and have lifetimes in the atmosphere of a few days to a decade, much shorter than that of carbon dioxide. The shorter the lifetime, the more quickly atmospheric concentrations can be reduced by lowering emissions. This means that policy action can provide climate mitigation benefits in the short term, potentially slowing the rate of warming and its consequent impacts over the next decades. Human activities have caused increased air concentrations of the SLCPs methane, black carbon, and ozone, affecting both global and Arctic climate.

The potential benefits of SLCP mitigation is of particular interest in the Arctic due to the fact that the Arctic is warming at about twice the global average. The new AMAP assessments outline key findings regarding: how global and regional reductions in SLCPs may influence projected Arctic warming; which emission sources and regions contribute most to Arctic climate change; and the need for continued scientific work on SLCPs.

The two SLCP assessment reports:

- Reaffirm that carbon dioxide emissions are the major driver of anthropogenic climate change. Reductions in carbon dioxide emissions are therefore necessary and urgent if the threats posed by climate change are to be addressed.
- Show that, global mitigation of SLCPs could reduce Arctic warming by roughly half a degree C by 2050. Implementation of maximum technologically feasible actions to reduce methane emissions could slow the global warming expected over this period by approximately 0.2 degrees C. An additional 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. These estimates of avoided warming can be compared with an expected Arctic warming due to all climate forcers over this same period of approximately 2 degrees C from current levels.

Much of the avoided warming from black carbon is associated with reducing black carbon on snow and ice.

Uncertainties associated with climate warming and effects of mitigation actions exist for these SLCPs, and are greater for black carbon than for methane.

To continue to advance our understanding of SLCPs and gain more certainty regarding the influence of SLCPs on Arctic warming and effects of SLCP mitigation, continued science and monitoring work is required.

Pollutants co-emitted with black carbon have indirect effects that are not taken into account in the estimate of avoided warming. Some co-emitted pollutants can cause cooling. Reduced emissions of these co-emitted pollutants would offset some of the climate benefits of reduced black carbon emissions. The uncertainties associated with black carbon are largely related to these indirect effects.

Policy-relevance

Arctic States are responsible for about 30% of Arctic warming due to black carbon; the equivalent figure for Arctic warming due to methane was not estimated reflecting the fact that location of methane emissions is not a major factor in methane's effects in the Arctic.

For methane, Arctic States are responsible for 20% of anthropogenic emissions and have the largest technical abatement potential of any major world region for reducing emissions. For black carbon, Arctic States are responsible for about 10% of anthropogenic emissions; mitigation of black carbon emissions in Arctic countries has (per tonne of emitted black carbon) a relatively high efficacy in reducing Arctic warming.

Arctic countries are responsible for substantial amounts of SLCPs and co-emitted air pollutants from sources associated with important anthropogenic emissions sectors including:

- for black carbon: small-scale domestic burning (household heating/cooking), transport, and oil and gas activities (flaring) and,
- for methane: oil and gas activities (venting/leakage), agricultural releases, and solid waste.

Since a significant share of Arctic warming is a result of SLCPs emitted outside of the Arctic countries; fully effective mitigation efforts require engagement of non-Arctic countries.

References

The full text PDF of the *Arctic Climate Issues 2015 Summary for Policy-makers* is available at: http://www.amap.no/documents/18/policy-makers-summary/308

The comprehensive scientific background assessment reports that are the basis for the Policy-makers summary are being finalised for publication and will be made available through the AMAP Secretariat and published on the AMAP website shortly.

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A list of additional media contacts can be found at http://www.amap.no/documents/download/2224

Arctic Monitoring and Assessment Programme

AMAP is a Working Group of the Arctic Council. AMAP's mandate is to monitor and assess the status of the Arctic region with respect to pollution and climate change, documenting levels and trends, pathways and processes, and effects on ecosystems and humans. AMAP produces scientific assessments that address a range of Arctic pollution and climate change issues, including effects on health of Arctic human populations, as well as public outreach products containing science-based policy-relevant recommendations to inform decision-making processes.

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