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Contact: Alex Viets, IGSD: +1.213.321.0911, aviets@igsd.org

US, China, and Others Launch Coordinated Study of Soot's Impact on Arctic Melting

Washington, DC, April 20, 2011 – The Arctic has been warming rapidly over the last century – about twice the global average – and black carbon soot may be to blame, according to an international team of scientists who have begun a month-long research project to study the impact of black carbon particles in the vulnerable region. Scientists from the US, Norway, Russia, Germany, Italy, and China have come together to collect data on black carbon pollution, which is mostly produced from diesel vehicles and biomass-burning cook stoves, and packs a one-two warming punch in the Arctic and other areas of snow and ice.

First, the dark particles absorb heat while in the atmosphere, contributing to temperature rise. Second, once the particles fall out of the atmosphere, they land on snow and ice, darkening the white, reflective surface area. The darker surface means less sunlight is reflected and more is absorbed. This can trigger a positive feedback mechanism where the heat absorbed from the sunlight contributes to even more melting, leading to more dark water – and less reflective ice – that accelerates warming and melting.

“The six nations taking part in this study should be commended for their efforts,” said Durwood Zaelke, President of the Institute for Governance & Sustainable Development. “Black carbon is a dangerous foe of the Arctic and we need to start reducing it immediately. The Arctic is one of our largest defensive shields against warming, and we can’t afford to lose it.”

In addition to its impacts on snow and ice, black carbon is a deadly air pollutant, responsible for respiratory illnesses that kill more than two million people each year. The UN Environment Programme (UNEP) and World Meteorological Organization (WMO) highlighted the multiple benefits from cutting black carbon and another local air pollutant, tropospheric ozone, in its February “Integrated Assessment of Black Carbon and Tropospheric Ozone: Summary for Decision Makers”.

“There’s no doubt that black carbon is a killer, and we need to get rid of it,” said Zaelke. “The good news is that black carbon remains in the atmosphere for a short period of time – days to weeks – meaning that reducing emissions will provide almost immediate benefits. Cutting black carbon is a fast-action strategy that could be our only means of saving the Arctic.”

Solving the black carbon problem can also be done with current technologies, through existing

air pollution laws and treaties, as demonstrated by the UNEP-WMO assessment, which highlights 16 strategies that could have immediate benefits for climate, health, and crops.

“How can you justify inaction on this pollutant? You can’t. Millions of people are dying and the Arctic is melting, as are other vitally important ice shields, including the Tibetan Plateau which is the main water source for hundreds of millions of people in Asia,” added Zaelke.

The Coordinated Investigation of Climate-Cryosphere Interactions (CICCI) project will conclude May 15.

For more information on the CICCI Project:

http://www.noaaneews.noaa.gov/stories2011/20110418_blackcarbon.html

To read the UNEP-WMO assessment:

http://www.unep.org/dewa/Portals/67/pdf/Black_Carbon.pdf

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The Institute for Governance & Sustainable Development’s mission is to promote just and sustainable societies and to protect the environment by advancing the understanding, development and implementation of effective, accountable and democratic systems of governance for sustainable development.

Beginning in 2006, the Institute embarked on a “fast-action” climate mitigation campaign to promote non-CO₂ strategies that will result in significant emissions reductions in the near-term, to complement cuts in CO₂ which are essential for the long-term. These strategies include reducing emissions of local air pollutants such as black carbon, methane, and tropospheric ozone; mitigation of hydrofluorocarbons (HFCs) through the Montreal Protocol ozone treaty; and carbon-negative measures such as biosequestration through expanded biochar production.

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