Press Release: Eye on Black Carbon Emissions

New Analysis within European Union (EU) Action on Black Carbon in the Arctic

Vienna, August 2019 -

Black carbon—commonly known as soot—is a tiny particle formed by the incomplete burning of fossil fuels, biofuels, and biomass. Although it remains in the atmosphere for just a few days or weeks, it is an important contributor to global warming and, in particular, regional warming in the Arctic. It is also a major contributor to air pollution causing impacts to human health. To reduce black carbon emissions reliable data and solid information about emission sources is needed. Therefore, under the project – European Union (EU) Action on Black Carbon in the Arctic - a closer look at the existing international reporting systems was undertaken to analyse the data provided, to identify gaps and to propose improvements.

Important natural and human sources of black carbon emissions include wildfires, the burning of agricultural and solid waste, residential burning, gas flaring, maritime shipping, and the combustion of diesel fuel. Arctic nations (in the EU Denmark, Finland and Sweden, in addition Canada, Iceland, Norway, Russia and the United States) produce about 10% of global human black carbon emissions, but the contribution to Arctic warming is considered to be higher as most black carbon particles do not travel far from their source. In order to reduce black carbon emissions in the future, a more detailed and reliable data base is needed. At the moment no mandatory reporting within the EU is established.

Under the project – European Union (EU) Action on Black Carbon in the Arctic – a detailed analysis of the available data and established reporting systems was jointly led by Environment Agency Austria (host organisation of the European Monitoring and Evaluation Programme/EMEP Centre on Emission Inventories and Projections/CEIP) and the Finnish Environment Institute (SYKE). Contributions came from the International Institute for Applied Systems Analysis (IIASA) and the Arctic Monitoring and Assessment Programme Secretariat (AMAP is a Working Group under the Arctic Council). Special emphasis was placed on the reporting systems applied under the United Nations Economic Commission for Europe (UN ECE) Convention on Long-range Transboundary Air Pollution (CLRTAP) and the

Arctic Council. Key recommendations include improving inventory methods and considerations how to establish a mandatory reporting under CLRTAP.

The EU Action on Black Carbon in the Arctic is a 3-year project funded under the EU's Partnership Instrument over the time period January 2018 – January 2021. Its main objective is to contribute to the development of collective responses to reduce black carbon emissions in the Arctic and to support policy processes leading to enhanced international cooperation on black carbon emissions to protect the Arctic environment. Implementation of this objective is through four work packages: i) improved knowledge; ii) increased awareness and shared knowledge; iii) technical advice documents and scenarios; and iv) development of a roadmap for enhanced international cooperation on black carbon. Six European-based institutes are responsible for the project's implementation and the Arctic Council's Arctic Monitoring and Assessment Programme (AMAP) Secretariat provides the overall project management.

The report is available here as well as on the website: https://eua-bca.amap.no/

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Background:

Why is black carbon a concern in the Arctic?

Black carbon—commonly known as soot—is a tiny particle formed by the incomplete burning of fossil fuels, biofuels, and biomass. Although it remains in the atmosphere for just a few days or weeks (compared with a century or more for carbon dioxide), it is a major short-term contributor to global warming. Scientists estimate that black carbon's impact on the Earth's climate is exceeded only by that of carbon dioxide and methane. It can also exacerbate respiratory and cardiovascular illnesses in people.

In the atmosphere, black carbon affects the Earth's temperature by absorbing solar energy and releasing it as heat. When it falls out of the atmosphere onto ice or snow, it warms the surface and dramatically increases the rate of melting. Because snow and ice reflect solar energy back out to space, reductions in their extent lead to more warming. This feedback loop is one reason why the Arctic is warming more than two times faster than the rest of the world.

Studies suggest that black carbon has contributed significantly to recent warming in the Arctic. Its short lifetime in the atmosphere means that reducing black carbon emissions can have immediate benefits, allowing nations to quickly slow warming in the Arctic and elsewhere while they work on longer-term measures to address global climate change.

Where do black carbon emissions come from?

Important natural and human sources of black carbon emissions include wildfires, the burning of agricultural and solid waste, residential wood burning, gas flaring, maritime shipping, and the combustion of diesel fuel. Arctic nations are responsible for about a third of the Arctic warming caused by black carbon, even though they produce only about 10% of global human black carbon emissions. Most black carbon particles do not travel far from their source, so emissions produced closest to the Arctic tend to have the greatest impact.

What is the European Union Action on Black Carbon in the Arctic?

The European Union (EU) Action, which runs from 2018–2020, will contribute to efforts to reduce black carbon emissions in the Arctic by:

- Supporting the development of commitments and targets to limit production of Arctic black carbon, with a focus on the three regionally important human sources from Arctic nations (gas flaring from oil and gas fields, residential heating—including heating stoves and diesel fuel use—and maritime shipping); and
- Enhancing international cooperation on black carbon policy in the Arctic region.

The Action has four major work components:

- Improving the knowledge base on black carbon emissions,
- Increasing awareness and sharing knowledge,
- Preparing technical advice documents and scenario analyses, and
- Supporting development of a roadmap for international cooperation on black carbon.

Why is the EU interested in taking action on black carbon in the Arctic?

The Arctic is a strategically important region and is experiencing dramatic, transformative impacts from climate change. The EU recognizes the importance of taking action now on black carbon to reduce its warming effect on the Arctic, improve air quality, and protect human health. Cost-effective technologies to reduce black carbon emissions already exist and can be implemented now.

How can the EU influence the actions of Arctic nations?

The eight Arctic nations—Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the United States—are all members of the Arctic Council. The EU is also represented on the Arctic Council by its three members (Denmark, Finland, Sweden) and seven official Observer nations. The EU itself has ad hoc Observer status on the Arctic Council. The EU Action supports the Arctic Council's work, and will contribute to the climate and clean air policies and health benefits of Arctic and non-Arctic nations through measures to reduce black carbon emissions.

The EU will also coordinate its work under the Action with other relevant international efforts addressing black carbon, including those under the UN Economic Commission for Europe's Convention on Long-range Transboundary Air Pollution, the Climate and Clean Air Coalition, the Intergovernmental Panel on Climate Change, and the United Nations Framework Convention on Climate Change.

The Action will seek a future common direction (roadmap) for many nations and organizations to take action together to reduce black carbon emissions in the Arctic and its impacts related to climate change and human health.

Implementing Partners

- Arctic Monitoring and Assessment Programme (AMAP) Secretariat
- Carbon Limits (CL)
- Environment Agency Austria (EAA)
- Finnish Environment Institute (SYKE)
- International Institute for Applied Systems Analysis (IIASA)
- Norwegian Institute for Air Research (NILU)
- Swedish Environmental Research Institute Ltd. (IVL)

For more information, contact

AMAP Secretariat

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