



## **Cutting Black Carbon Pollution Provides Fast Climate Mitigation, Prevents Millions of Premature Deaths**

*Key Conclusions of US EPA External Peer Review of Black Carbon Report to Congress*

April 21, 2011

Washington, D.C., 21 April 2011. Cutting black carbon (BC) pollution can provide near-term climate mitigation, particularly in sensitive regions such as the Arctic and the Tibetan Plateau, according to the Advisory Panel reviewing the *EPA Report to Congress on Black Carbon*. BC and its co-emitted pollutants kill approximately two million people each year. Many of these lives can be saved by deploying existing and cost-effective abatement technologies.

On April 18-19, 2011, the US EPA held an Advisory Panel Meeting to review its *Report to Congress on Black Carbon*. As requested by Congress, the study identifies BC impacts on climate through extensive review of available scientific literature, as well as the efficacy and costs of BC mitigation programs and technologies for protecting climate, public health, and the environment. According to the report, reducing emissions of BC could quickly mitigate climate change, and is “ripe for ‘win-win’ emissions reduction approaches that bring both climate and public health benefits.”

The External Peer Review Draft of the Report to Congress on Black Carbon was released by the US EPA in March. Key conclusions of EPA’s draft BC report include:

1. BC and other light-absorbing particles exert a powerful influence over the earth’s climate, especially at the regional scale.
  - BC has a short atmospheric residence time of days to weeks, and the emissions sources and ambient concentrations of BC vary geographically and temporally. BC’s resulting climate effects are therefore more regionally and seasonally dependant than the well mixed greenhouse gases (GHGs).
2. Mitigating BC can make a difference in the short term for climate, at least in sensitive regions.
  - The largest climate benefits of BC-focused control strategies may come from reducing emissions affecting the Arctic, Himalayas and other ice and snow covered regions. Estimates of snow and ice albedo forcing of BC in these key regions exceed global averages.

3. The full effect of BC on climate must be assessed in the context of co-emitted pollutants.
  - Organic carbon (OC) is a significant co-emitted pollutant among the major BC emitted sources. Because OC generally scatters solar radiation and exerts a cooling influence on climate, the total amount of OC vs. BC in an emissions mixture is important. This ratio varies significantly among source categories.
4. BC is different from long-lived GHGs like CO<sub>2</sub> both in the variety of ways it affects climate and its short atmospheric lifetime.
  - BC directly affects the climate by absorbing both incoming and outgoing radiation of all wavelengths.
  - BC affects snow/ice albedo when deposited on the surface, decreasing reflectivity thereby increasing absorption and accelerating melting.
  - BC also indirectly affects the climate by altering the properties of clouds, affecting cloud reflectivity, precipitation and surface dimming.
5. BC mitigation strategies are likely to provide substantial public health and (non-climate) environmental benefits.
  - Exposure to fine particle including BC is associated with a broad range of respiratory and cardiovascular effects, as well as premature death. BC is a component of indoor air pollution associated with the burning of solid fuels, which is estimated to cause about 2 million deaths per year.
6. Careful targeting and sequencing of mitigation programs is essential for both public health and climate purposes.
  - Strategies that focus on sources known to emit large amounts of BC – especially those with a high ratio of BC to OC, like diesel emissions – will maximize climate co-benefits. However, the sequencing of these programs is critical to success; for example, Diesel Particulate Filters (DPF) are ineffective at reducing BC without first converting to low-sulfur diesel fuel.
  - The largest health benefits from BC-focused control strategies will occur locally near the emissions source and where exposure affects a large population.
7. There is a strong need for additional research and analysis of BC including:
  - Quantitative analysis examining the climate, public health, and environmental impacts of specific control strategies.
  - Refinement of climate metrics specific to BC and other short-lived climate forcers.
  - Systematic analysis of key remaining uncertainties and technical gaps in the climate models for BC.

Full text of the draft report can be found at:  
[http://yosemite.epa.gov/sab/sabproduct.nsf/0/05011472499C2FB28525774A0074DADE/\\$File/BC%20RTC%20External%20Peer%20Review%20Draft-opt.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/0/05011472499C2FB28525774A0074DADE/$File/BC%20RTC%20External%20Peer%20Review%20Draft-opt.pdf).

The Advisory Committee is taking written public comments on the draft report throughout the drafting process until early June 2011. Written comments should be directed to the Designated Federal Officer: Stephanie Sanzone at [sanzone.stephanie@epa.gov](mailto:sanzone.stephanie@epa.gov).

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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.

For more information on IGSD's work see [www.igsd.org](http://www.igsd.org) or contact:  
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