Task Force on Short-Lived Climate Forcers

Progress Report

Senior Arctic Official Meeting
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Haparanda, Sweden

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Nuuk Mandate and Charge from SAOs

- Nuuk Declaration requested that the Task Force [and the AMAP expert group] continue its work “by focusing on methane and tropospheric ozone, as well as further black carbon work where necessary and provide a report to the next Ministerial meeting in 2013.”

- The SAO’s final report to Ministers, reflecting the Task Force’s own recommendations (from 2011), stated the following:

  - Regarding future work for black carbon, the Task Force recommends continued focus on the costs of implementing certain measures, the additional emission reduction potential of some measures, potential Arctic climate benefits, and potential health benefits.

  - Regarding methane, the Task Force notes that the Arctic Council and Council nations may be able to leverage existing efforts to encourage additional methane reductions, both within and outside Arctic Council nations, by communicating and demonstrating the climate benefits of such measures specifically for the Arctic region.
Task Force is preparing two documents

• **Summary for Policymakers**
  – expand upon aspects of our 2011 recommendations on black carbon
  – present a menu of options for actions to address methane
  – provide updated scientific context on the role of SLCFs in Arctic climate change, with a particular focus on methane
  – provide a number of key messages regarding the potential climate and health benefits of addressing SLCFs, as well as recommendations for future research

• **Supporting technical document**
  – a more detailed review of recent scientific findings
  – updates on black carbon and methane emissions
  – future emission projections, mitigation analyses with associated costs
  – catalogue of key national regulations, policies, practices, and int’l forums

• Sectors receiving special attention include oil & gas operations, marine shipping, and open burning
Task Force collaboration with AMAP

- The Task Force and AMAP expert groups on black carbon/tropospheric ozone and methane are working with one another to:
  - provide scientific context for the Task Force’s recommendations
  - identify mitigation scenarios that may be assessed by AMAP in terms of their Arctic climate implications

- The AMAP groups are operating on a longer time horizon (i.e., beyond 2013) compared to the Task Force, but nevertheless the AMAP expert group chairs have committed to providing interim products (through Task Force-AMAP exchanges) that can serve the Task Force for its 2013 deliverables.
Some messages on black carbon and methane climate effects and emissions

- Black carbon and methane are different in a number of ways – one key difference is atmospheric lifetime.

- The location and timing (i.e., season of the year) of mitigation actions for black carbon are important in determining the net benefit of the action for the Arctic climate.

- By contrast, it is our current understanding that reducing one ton of methane anywhere in the world will essentially have the same temperature effect in the Arctic.

- This means AC nations, as well as other nations in, or operating in, high northern latitudes, have a unique role in reducing black carbon emissions.
  - AC nations make up about 10% of the world’s global black carbon emissions, but, according to the 2011 AMAP report, tend to have a higher Arctic climate impact per unit of emissions.

- For methane, even though the location of AC nations does not create a unique opportunity, the AC as a whole is currently responsible for approximately 20% of the world’s anthropogenic methane emissions.
Health effects: some key messages

• Measures to reduce methane and black carbon would produce health and environmental benefits fairly directly, in addition to those benefits accruing from reductions in the rate and magnitude of climate change.

• However, we currently lack quantitative estimates of the potential health benefits of specific measures to help inform mitigation decisions in individual AC nations.

• Black carbon mitigation measures in densely populated areas are likely to provide the greatest health benefits.

• Methane mitigation measures also benefit public health (through associated decreases in ground-level ozone), although to a lesser degree and on a longer timescale than reductions in black carbon.
  – Though reducing methane emissions in any location would reduce ozone-related health impacts all around the world, regardless of where the mitigation occurs, many methane measures would achieve local health benefits by also reducing VOCs and hazardous air pollutants.
Task Force’s 2011 recommendations, remaining mitigation opportunities

- The 2011 recommendations continue to appear valid and worthy of SAO consideration

- It is worth noting how some positive actions have occurred, and where black carbon mitigation opportunities remain:
  - some efforts have occurred to improve and share black carbon emission inventories, but there are still opportunities to generate, share and improve national emission estimates
  - Retrofitting of older diesel engines remains a significant black carbon mitigation opportunity
  - there remain opportunities to set stringent particulate matter standards (and thus reduce black carbon) for some categories of mobile diesel sources (e.g., nonroad diesels, locomotives, commercial marine other than ocean going vessels, and even, in some cases, on-road diesels).
New developments in LRTAP, IMO, CCAC

• In May 2012, amendments to Gothenburg Protocol under LRTAP were adopted, but have not yet entered into force.
  – includes emission reduction commitments for PM. Black carbon is included in the Protocol as a component of PM, though no specific emission limits for black carbon.
  – Parties are encouraged to prioritize PM measures that will also reduce black carbon.
  – Parties will be encouraged to voluntarily report their black carbon emissions

• In February 2012, the IMO established a black carbon correspondence group to identify measurement and control measures for international shipping. A report from this group should be available in early 2013

• In February 2012, Canada, Sweden, the United States and others launched the CCAC to Reduce Short-Lived Climate Pollutants. The CCAC’s membership has grown to 19 nations, including now most AC nations and the EU.
  – voluntary partnership whose objectives include raising awareness, enhancing and developing new national and regional actions, promoting best practices, and improving scientific understanding of SLCFs.
Preview of methane analyses that will appear in Task Force Report

Methane Emissions by Arctic Council Nation: 1990 to 2030

Source: Data annex to EPA Draft Global Non-CO2 Emissions Projections: 1990-2030
Preview of methane analyses that will appear in Task Force Report (2)

Some results for Arctic Council countries 2005 -2030 consistent with IEA-WEO 2009 Reference scenario

Significant methane mitigation potential exists in Arctic Council nations, and in various sectors

Presented by Lena Höglund-Isaksson, IIASA at Task Force meeting, 18 September 2012
Preview of methane analyses that will appear in Task Force Report (3)

CH₄ Mitigation Potential from Arctic Council Nations: 2020*

* Potential CH₄ mitigation at $30/tCO₂e

U.S. Environmental Protection Agency, DRAFT  Analyses, presented by Shaun Ragnauth, Task Force meeting, 18 September 2012