Ympäristöministeriö
Miljöministeriet
Ministry of the Environment

Black Carbon from shipping in the Arctic - work at the science-policy interface of the Arctic Council

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6th workshop on black carbon from shipping ICCT
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Arctic Council

DECLARATION ON THE ESTABLISHMENT OF THE ARCTIC COUNCIL

JOINT COMMUNIQUE OF THE GOVERNMENTS OF THE ARCTIC COUNTRIES ON THE ESTABLISHMENT OF THE ARCTIC COUNCIL

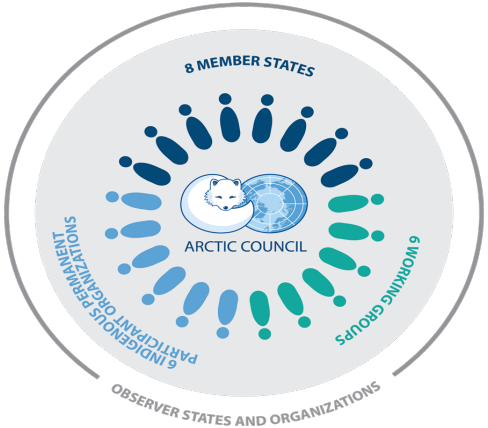
Ottawa, Canada September 19, 1996

1. The Arctic Council is established as a high level forum to:

(a) provide a means for promoting cooperation, coordination and interaction among the Arctic States, with the involvement of the Arctic indigenous communities and other Arctic inhabitants on common Arctic issues[1], in particular issues of sustainable development and environmental protection in the Arctic;

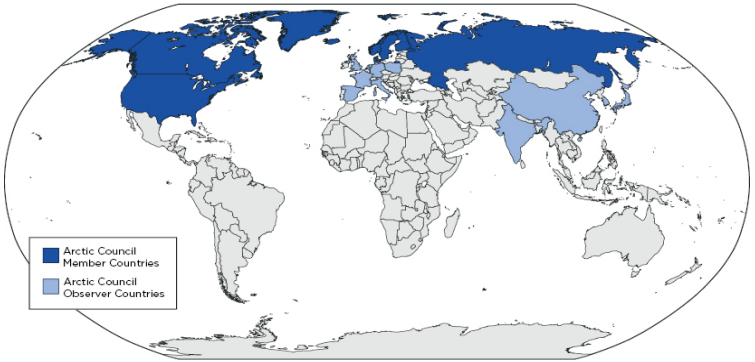
(b) oversee and coordinate the programs established under the AEPS on the Arctic Monitoring and Assessment Program (AMAP); Conservation of Arctic Flora and Fauna (CAFF); Protection of the Arctic Marine Environment (PAME); and Emergency Prevention, Preparedness and Response (EPPR).

[1]The Arctic Council should not deal with matters related to military security.



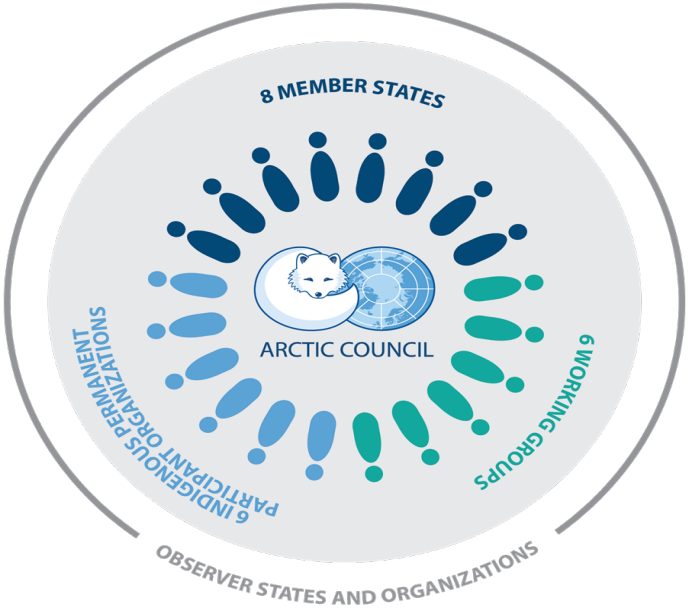
1989 Arctic Environmental Protection Strategy (AEPS)

1996 Ottawan ministerial declaration -> Arctic Council



Map source: http://www.nap.edu/catalog.php?record_id=21717

Arctic council processes addressing BC emission from shipping – a cross-cutting issue



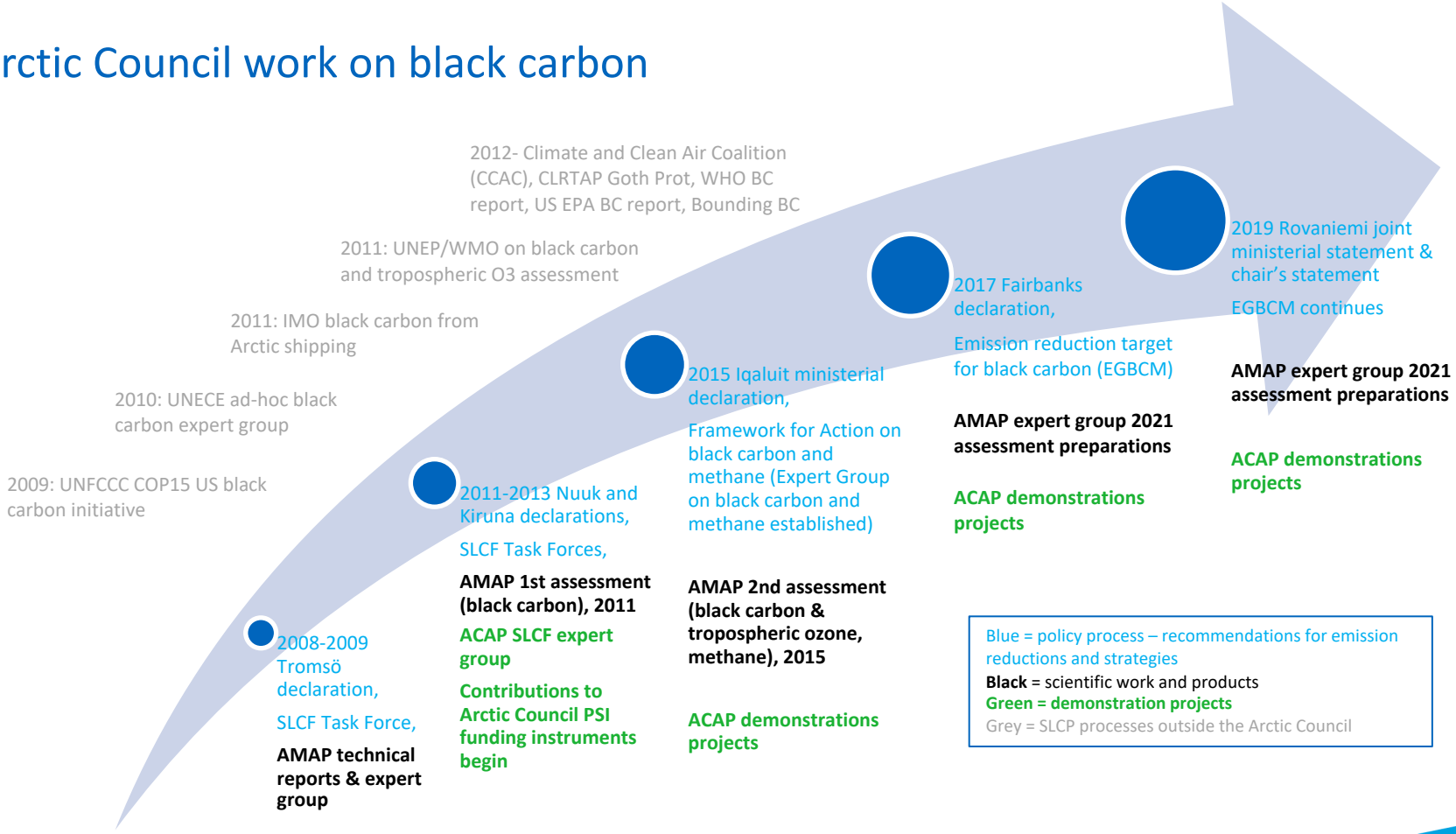
PAME
Protection of the Arctic Marine Environment

AMAP
Arctic Monitoring and Assessment Programme

ACAP
ARCTIC CONTAMINANTS ACTION PROGRAM

EGBCM
Expert Group on Black Carbon and Methane

Arctic Council work on black carbon



Shipping in the Arctic- special characteristics

- Only few emissions sources within the high Arctic

- Current emission levels and their impacts in the Arctic have been argued to be relatively minor compared with other source sectors, but…
- the growth potential in shipping activities, identified for example in the Arctic Marine Shipping Assessment scenarios, indicate that the emissions can become a concern in the future without policy interventions (AMAP 2011 and 2015 assessments)

- Black carbon impacts the Arctic not only via particles that are transported to the Arctic atmosphere and snow/ice, but also via migration of heated air masses from lower latitudes (AMAP 2015 assessment, Sand et al.)

- A sector not necessarily under national jurisdiction -> has to be treated separately:
  - international shipping not covered in national emission reporting, which means that the emission data has to come from somewhere else to evaluate impacts

AMAP SLCF assessments have included short overviews of internation shipping

What has been done so far:

- Comparison of available emission data (2015)
- Specific impact analyses (radiative forcing) (2011)
- However, no systematic, in-depth analyses of the sector

Challenges identified so far:

- Varying definition of the Arctic area
- Spatially distributed emission data (global) needed for impact analyses
- Only few studies on future activity and emission projections

Way forward: strengthen co-operation within the Arctic Council (PAME as well as outside (IMO related groups, European Union Black Carbon Action,…)

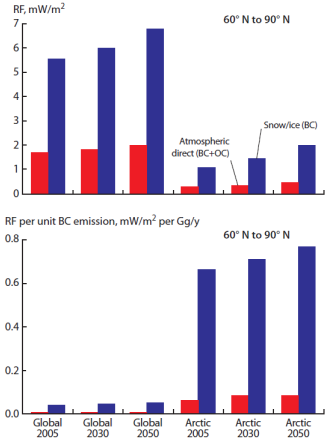


Figure 8.10. Absolute (upper) and normalized (lower) RF due to projected increases in global and Arctic shipping. The NCAR CCSM model was used for the calculations.

Figure from the AMAP 2011 assessment with BC emissions (Gg/yr) from Corbett et al. (2010):

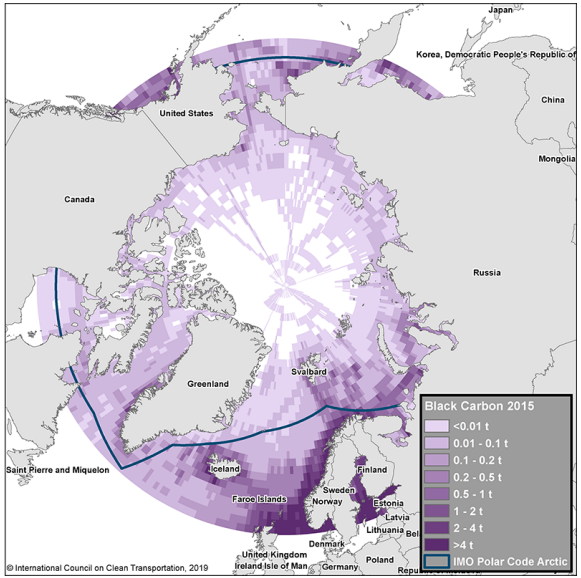
Global shipping 13.2 (2005) to 13.6 (2050)

Arctic shipping 1.65 (2005) to 2.63 (2050)

Policy relevant research – Arctic shipping

1. monitoring the activities (ship movements) in the region
2. estimating potential future activity pathways
3. identifying the emission parameters and estimating emission amounts; multi-pollutant approach
4. pointing out viable options for controlling the emissions
5. the estimation of potential impacts now and in the future; multi-pollutant, multi-effect

…to provide state of the art science based information for policy makers to design smart policies to regulate the emissions



Arctic Council EGBCM has the mandate to develop policy recommendations in priority sectors impacting the Arctic, shipping has been identified as being one of them

AC non-binding black carbon goal (most countries associate with it): "Recognizing that several Arctic States have already drastically reduced emissions, the Expert Group recommends that black carbon emissions be further collectively reduced by at least 25-33 percent below 2013 levels by 2025."
(Expert Group on Black Carbon and Methane, Summary of Progress and Recommendations, 2017)

- Bi-annual "Progress and Recommendations" report (2017, 2019)
- Shipping is dealt with under a chapter on *Mobile and stationary diesel-powered sources*
- The recommendations encourage countries to reduce mobile source emissions by
  - adopting and implementing world-class particulate matter exhaust emission standards and ensuring widespread availability of ultra-low sulphur fuels.
  - adopting targeted policies and programs for legacy diesel vehicles and engines
  - stimulating the shift to alternative vehicle technologies and modes of transportation, and through efficiency measures
  - Develop, as appropriate, and report on measures and best practices to reduce particulate matter and black carbon emissions from shipping (Recommended action 1d from the 2017 Progress of Summary and Recommendation report: Work to accelerate efforts under the International Maritime Organization to mitigate black carbon from international shipping.)

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Thank you!

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