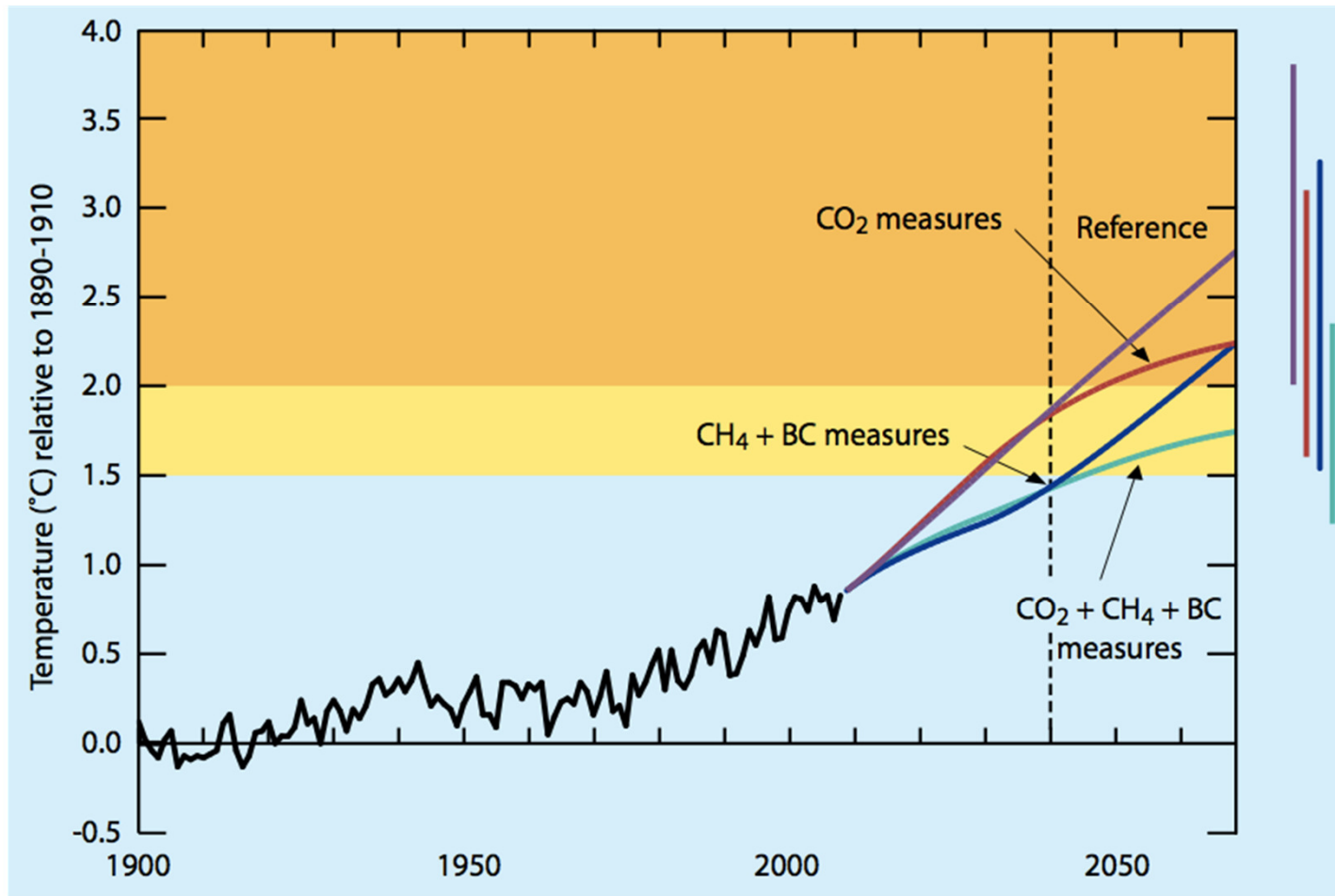


Options to address short-lived climate forcers emitted by ships as part of EU action to reduce GHG emissions from shipping

ECCP Working Group Ships
15-16 November

WHY CONSIDER NON-CO₂ FORCERS?

“Both near-term and long-term strategies are essential to protect climate”



UNEP (2011) Integrated Assessment of Black Carbon and Tropospheric Ozone, Summary for Decision Makers

Ship emissions: the importance of BC

- Black Carbon is the most potent non-CO₂ forcers from shipping
- Ship emissions occur mostly in the Northern hemisphere and the impact of shipping emissions in the Arctic is projected to increase dramatically
- Shipping responsible for 2% of global BC emissions, but shipping share is steadily growing in Europe

Facts and figures about BC

- BC believed to contribute up to **16% of global warming**, making it the second most important climate forcer after CO₂
- BC is estimated to account for **half of all Arctic warming**
- ICCT calculates that the GWP of black carbon is **1,600 times higher than that of CO₂** at 20 years, and 460 times higher over a period of 100 years

UNECE on shipping BC emissions

“Shipping. To encourage the use of best available techniques and accelerate the introduction of cleaner fuels and ships, IMO regulations could be complemented by strict national or regional emission standards and/or by economic instruments, such as emission charges. Additional mitigation may be achieved from sources associated with port activities, for example port electrification.”

Why is action in Europe important?

- BC warming effect is especially important in the Arctic and within the Arctic front, which extent as far as 40°N
- Europe is the largest contributor to the deposition of sulphate and BC at the surface of the Arctic ice cap
- Europe's role as one of the major users of Arctic sea routes

POLICY OPTIONS FOR EU ACTION

Option 1:

Monitoring and data collection

- This option will not have any real impact on BC emission, but is intended as a safeguard
- Assess the impact of different EU CO₂ strategies on BC emissions levels
- Establish a robust system of monitoring that could provide the basis for further air quality and climate policies

Option 2: A black carbon charge

- Can be designed as an add-on to CO₂ or as a standalone instrument (difference important when it comes to the BC price)
- Emissions factors or real life measurement
- Revenues: adopt an instrument along the lines of the Norwegian NO_x fund?

Option 3:

Reducing Arctic emissions

- EU importance to Arctic shipping and the significant transport of BC emissions from Europe to the Arctic
- In January 2011, the European Parliament called for a ban on HFO and the reduction of shipping soot emissions
- Distillate fuel and speed reduction can lead to 75% BC reduction per km travelled

Option 4:

Earmark a proportion of MBM revenues

- The most efficient way to reduce BC is through abatement technologies
- Promising reductions (90%+) can be achieved with exhaust after-treatment (particle filters)
- A number of questions remain open: scope, technologies eligible, conditions for the use of funding, etc.

Option 5:

PM and BC emission standards

- BC reductions can be driven by the adoption of emissions standards
- This approach follows action taken in the other industrial sectors
- BC emissions standards could be part of a general approach to ship efficiency and technical adaptation

Actions on non-CO₂ forcings should complement the EU's CO₂ strategy!

	Monitoring	BC charge	Arctic	Earmarking	Engine std
Potential BC reductions	-	+ / ++	++	+ / ++	++
Compensation fund	x	x	x	x	-
Emission trading	x	-	-	x	-
Taxation	x	x	x	x	-
Ship Efficiency	x	-	-	-	x