Brussels, 03 March 2022,

Dear Director General,

Thank you for your response (19 January) to my letter on behalf of the Clean Arctic Alliance (CAA) regarding the importance of tackling emissions of black carbon from international shipping impacting the Arctic.

The CAA welcomes the EU's moves to address ship climate impacts after years of delay at IMO and persistent pressure from the organization itself to stop regional action. Last October's Communication[1] which committed the EU to lead on zero pollution from Arctic shipping was quickly followed by the passage of IMO MEPC 77 Resolution 342 calling for a switch to distillate fuels in the Arctic. The Resolution was cosponsored by 8 European states and adopted by IMO Member States despite efforts by Russia to block its progress. Now a growing number in the European Parliament recognize the urgency of including measures on black carbon in the Fuel EU Maritime proposal.

The IPCC's latest AR6 WGII report, published this week, reinforces the urgent need to accelerate environmental and climate protection in the Arctic, while recent political events demand that the EU now push ahead on shipping and ignore Russia's consistent opposition to such measures. Europe's growing Arctic sea trade with Russia must be cleaned up[2]. The EPRD study supporting the EU Communication[3] sets out clearly the growing role of Arctic shipping and Russian oil, coal and LNG to support Europe's energy needs. Virtually all bunker fuel sold in EU ports is imported by sea from Russian oil refineries only then to be re-exported. It would be perverse if just a few months after IMO Resolution 342 urged member states to act on ship-source BC by switching to distillates, such a measure was not included in the EU's flagship climate initiative particularly given the dramatic changed circumstances today.

In the first instance, it is essential that EU policy on Arctic shipping be founded on an accurate emissions inventory using both an appropriate geographic definition of maritime activity in "the Arctic" and a sound methodology for attributing emissions to states. Unfortunately the EPRD study underpinning last November's EU Arctic Communication on shipping delivers neither.

The AHDR definition of Arctic geographic borders formed the basis of a comprehensive knowledge and scientific assessment underpinning the Arctic Council's Sustainable Development Programme over 15 years ago[4]. The maritime borders are the most relevant for any economic activity in the Arctic which involves shipping. The far more restrictive IMO Polar Code definition (as used by the EPRD[5]) was developed to specifically regulate the safety of shipping and pollution prevention in ice-covered Arctic waters. Its scope is very significantly reduced by excluding large parts of the Barents Sea just south of Svalbard, as well as seas along the Norwegian west coast and around Iceland. These waters are never ice covered due to the impact of the Gulf Stream, but they are still Arctic waters, and used by the vast bulk of ships when travelling to and from Greenland, Iceland, Norway, the Russian Arctic and EU ports.

[1] JOIN(2021) 27 final of 13 October 2021. https://eeas.europa.eu/sites/default/files/2_en_act_part1_v7.pdf
[2] Over 80% of Arctic maritime transport by cargo volume alone relates to the development of Arctic oil and gas reserves, both onshore and offshore, in the waters of or territory adjacent to the Barents and Kara Seas.
[3] EPRD Overview of EU actions in the Arctic and their impact Final Report June 2021.
[4] Arctic Human Development Report (arctic-council.org)
[5] For the analysis of EU Arctic ship emissions whereas the rest of the EPRD report used the AHDR definition.

The EPRD analysis also equated "EU" Arctic" ship emissions with those emitted by EU flagged and owned ships only – a departure from the principal of flag neutrality accepted in the EU MRV and at the IMO. As a result, the EPRD estimate of the EU's share of "Arctic" ship emissions - some 35% for CO2 and 16% for BC - may be underestimated by potentially well over 100%. A 2015 study put all IMO Polar Code Arctic ship BC emissions at only about 13% of total ship BC within the entire Geographic Arctic whose maritime boundaries closely mirror those of AHDR.[6] The simplest and most efficient way to proceed would be for the Commission to have EPRD re-run their analysis of 2019 AIS data based on the AHDR maritime boundaries and use a flag neutral allocation of "in Arctic" emissions based on transiting and destinational shipping. As requested in your letter of 19 January, further detail setting out clear assumptions and an alternate methodology that the EPRD could use are provided in the Attachment.

A revised EPRD analysis of "in Arctic" ship emissions will clarify the relative significance of "EU" ship emissions within "the Arctic" itself versus those of other countries. And help determine priorities for state action under MEPC 77 Resolution 342, which aside from voluntary action by the shipping industry calls for Member States to commence addressing Arctic Black Carbon emissions and report on measures and best practices. In respect of measures, it is the ship MRV scope which determines the EU's regulatory remit. To proceed therefore, it is essential that BC emissions firstly be included in the Fuel EU Maritime GHG intensity standard and then accompanied by a mandatory requirement to switch to distillates or other cleaner fuels.

Inclusion of BC in Fuel EU Maritime will not require any change to the provisions of the ship MRV Regulation. The Commission acknowledges that no change to the MRV Regulation will be needed for both CH4 and N20 - which it already proposes to include. Tank to wake (TtW) CO2 equivalent (CO2e) emissions for BC can be calculated in exactly the same way as those for CH4 and N20 CO2e, as provided for in Annexes I and II, by applying emission factors to reported fuel burn of individual ships. Most of today's ship TtW methane emissions result from very low levels of unburned methane from duel fuel diesel and steam engines. This is reflected in the extremely low TtW CH4 emission factors (EFs) for fossil HFO through to distillates that the Commission proposes in Annex II. Calculating TtW CH4 CO2e for LNG ships is however another matter and the Commission proposes to do this using averaged assumptions of methane slip levels from the 4 main LNG engine types. This averaging approach to set default methane slip EFs in Annex II is a compromise by the Commission necessitated by practical considerations that will be equally necessary for establishing default BC EFs. Both approaches involve uncertainty. BC emissions do vary according to engine type and load, nevertheless the IMO's 4th GHG study determined a workable averaging approach. More recent ICCT analysis[7] on all wake-to-wake (WtW) CO2e calculations provides additional data on the approach. At the same time, alternative provisions in Fuel EU Maritime that have been made available for ship operators to calculate CH4 CO2e could equally apply to BC - that is, to report measured and verified emissions in replace of estimates. On the question of WtW emissions, it would be a straightforward exercise for the Commission to amend the formulas in Annex I to include BC and to include both WtT and TtW BC EFs in Annex II. The recent ICCT update report on EFs referred to above[8], has resolved the issue of upstream emissions from natural gas and oil extraction. More detail is included in the Attachment.

BC is currently a much greater climate problem for shipping than methane - about 14 times greater according to the IMO's 4th GHG study. So its omission in the Fit for 55 shipping proposals is inexplicable. Although Fit for 55's controversial proposals to favour LNG mean that the disparity between methane and BC emission levels may decrease over time in regions like Europe, evidence already shows clearly that Arctic ship BC is set to continue to rise sharply. BC emissions from the HFO-fuelled Arctic fleet rose by 85% between 2015 and 2019. Arctic ship BC emissions can be cut substantially by switching to distillate fuels

[6] https://theicct.org/sites/default/files/publications/HFO-Arctic_ICCT_Report_01052017_vF.pdf
[7] https://theicct.org/publication/update-accounting-for-well-to-wake-carbon-dioxide-equivalent-emissions-in-maritime-transportation-climate-policies/. August 2021
[8] ibid

and then stopped almost overnight by installing diesel particulate filters (DPFs) with no need for new infrastructure or new ship types. DPFs cannot be used when ships burn heavy fuels.

CAA remains convinced that, as with the OPS provision, a command & control approach using EU port state control procedures to require a switch to distillates or other cleaner fuels represents the most appropriate EU response to IMO MEPC 77 Resolution 342. Alternatives to fossil fueled propulsion for ships operating in the Arctic will take a good number of years yet to have a significant impact, whereas a switch to distillate fuels can be implemented immediately – and alone will cut ship BC significantly[9].

Regulating Arctic ship BC is low hanging fruit in the fight to tackle shipping's climate impact. Moreover, inclusion of BC, CH4 and N2O as CO2e on a GWP 20 basis would not only reflect the short time remaining to keep global warming within the 1.5°C target, but better reflect BC's share of total ship warming (c. 21% on a GWP20 basis) and, not the least, its heightened impact when deposited directly onto Arctic ice and snow. A policy intervention that permanently reduces an SLCP emission rate corresponds, in terms of its impact on future temperatures, to active removal of a given amount of CO2".[10] Addressing BC emissions would be an easy win for the Arctic and for the global climate.

We will write separately on action by the EU and its Member States at the forthcoming session of the IMO's Pollution Prevention and Response sub-committee to pursue the global regulation of BC emissions including with respect to the aromatic content in marine fuels.

Yours sincerely,

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[9] MEPC 77/9 submitted inter alia by Finland, France, Germany, Iceland, Netherlands, Norway, Sweden and the United Kingdom argued that, when used in the same engine, a switch to distillate fuel can reduce Black Carbon emissions per kilogram of fuel consumption by up to 79% in 2-stroke engines and by up to 52% in four-stroke engines. And in addition highlighted the study by Finland and Germany in document PPR 8/5/1 how the aromatic content of fuels affects Black Carbon emissions.

[10] M R Allen et al., 2018. "A solution to the misrepresentations of CO2-equivalent emissions of short-lived climate pollutants under ambitious mitigation"
https://www.nature.com/articles/s41612-018-0026-8.pdf