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SHIPPING FACT SHEET

AIR EMISSIONS

What kinds of air emissions come from ships?

Commercial ships are typically powered by diesel engines that use heavy fuel oil, distillates or fuel blends. The exhaust produced by these engines is mostly composed of carbon dioxide. However, other pollutants like nitrogen oxides, sulfur oxides, particulate matter and black carbon are also present. Shipping emissions can be classified as domestic when they come from vessels that travel between Canadian ports. They are classified as international when they come from ships travelling between ports in different countries.

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What are the impacts of air emissions on the environment and communities?

- Increasing carbon dioxide contributes to global warming and ocean acidification.
- Black carbon, a component of particulate matter, absorbs solar energy. Black carbon does not stay in the atmosphere for as long as carbon dioxide does, but it has a high warming potential and is the second-largest contributor to the climate crisis.
- Nitrogen oxides and sulfur oxides can cause water and soil to become more acidic, reducing biodiversity and killing wildlife.
- The World Health Organization has classified emissions from diesel engines as a carcinogen to humans.
- Nitrogen oxides, sulfur oxides, and particulate matter like black carbon from diesel engine exhaust are particularly harmful to human health. If inhaled, these particles may cause inflammation and eventually lead to heart and lung failure.

How does Canada regulate air emissions from vessels?

The International Maritime Organization (IMO), a United Nations agency responsible for regulating international shipping, has a target to reduce greenhouse gas (GHG) emissions from shipping by at least half by 2050 compared to 2008 levels. Canada has not established national greenhouse gas emissions targets.

The Canadian government has also worked with the government of the United States and the IMO to develop an Emission Control Area. Within this area, which extends 200 nautical miles from North American coastlines, ships must adhere to stricter standards for sulfur oxides and nitrogen oxides emissions.

What needs to be done?

The government of Canada should employ the following measures to regulate air emissions from shipping:

- **Set an ambitious domestic target** to reduce GHGs and black carbon from shipping, keeping global temperature rise to 1.5 degrees Celsius;
- **Develop a transition fund** for operators in the Arctic to phase out the use and carriage of heavy fuel oil;
- **Support research and development of zero-emissions shipping** such as green hydrogen, wind and solar;
- **Institute a national speed reduction regime** to maximize the co-benefits of speed reduction for whale strikes, underwater noise and GHG reductions; and
- **Mandate that all resource development projects** have GHG and black carbon reduction strategies for shipping.

Why address this now?

The climate crisis is already impacting human health, ecosystems and wildlife around the globe. With the expected increase in shipping activity in Canadian waters, emissions are likely to increase. To tackle the climate crisis, it is crucial to address the shipping sector's climate impacts, along with other sectors.