

New Exhaust Emission Standards for Commercial Vessels Poised to Protect Health

U.S. proposed rules part of a broader North American strategy to improve air quality and protect citizens and the environment.

To protect human health, the U.S. Environmental Protection Agency (EPA) is proposing more stringent exhaust emission standards for the largest marine diesel engines. These engines are used for propulsion on marine commercial vessels (called Category 3 engines) sailing in US coastal waters out to 200 nautical miles (the “Emission Control Area” or “ECA”).¹EPA’s proposal will also apply to C3 vessels operating in the Great Lakes (some ships, called Lakers, operate exclusively in the Great Lakes). These proposed Clean Air Act standards are part of a coordinated U.S.–Canada strategy to address emissions from the largest commercial marine vessels that affect North America’s air quality. EPA has previously regulated smaller marine engines found mainly in coastal and inland waterways, such as tugboats, push boats, fishing boats, ferries, etc.²



Most commercial vessels are equipped with engines that consume some of the dirtiest fuel on the planet- producing higher levels of sulphur oxides (SOx), and particulate matter when burned.³ The C3 vessels that are proposed to be regulated may burn bunker fuel or marine distillate fuel. Bunker fuel is essentially the thick, black sludge that’s left at the bottom of the barrel after oil is refined into gasoline and other products. Bunker fuel has an average sulfur content worldwide of approximately 25,000 parts per million, over a thousand times higher than highway diesel fuel, at 15 ppm.

Air pollution from commercial vessels can be transported hundreds of miles by atmospheric winds, and thus affects not just populations living near ports and coastlines, but also those living far inland. Without further action, by 2030, EPA projects that C3 ship emissions will dramatically increase to:

- » 40% of mobile source NOx
- » 48% of mobile source PM_{2.5} and
- » 95% of all mobile source SO₂.⁴

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When people breathe this polluted air, their health is adversely affected leading to lost productivity due to increased illnesses, hospitalizations and even premature deaths. Many governmental health agencies, including EPA, have found that diesel exhaust from commercial vessels is likely to be carcinogenic to humans by inhalation.⁵ Children, people with heart and lung diseases, and the elderly are most at risk. Exposure to excess diesel exhaust particles in the U.S. is associated with an estimated 21,000 annual premature deaths, 27,000 heart attacks and

¹ “Control of Emissions from New Marine Compression-Ignition Engines at or Above 30 Liters per Cylinder; Proposed Rule,” and published on August 28, 2009 at 74 Fed. Reg. 44442 (the “C3 Marine Engine NPR”).

² EPA, May 6, 2008, “Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression-Ignition Engines Less than 30 Liters per Cylinder; Final Rule,” 73 Fed. Reg. 25098 (“Locomotive and Marine Rule”).

³ NRDC. *Harboring Pollution: The Dirty Truth about U.S. Ports*. August 2004. Available at: <http://www.nrdc.org/air/pollution/ports1/contents.asp>

⁴ C3 Marine Engine NPR, 74 Fed. Reg. at 44444.

⁵ C3 Marine Engine NPR, 74 Fed. Reg. at 44451.

2.4 million work loss days.⁶ These impacts cost society hundreds of billions of dollars annually.⁷

BENEFITS FOR THE GREAT LAKES REGION

EPA’s proposal helps implement a preliminary international agreement that would require low sulfur fuel to be burned by marine commercial vessels (C3) within 200 miles of the U.S coasts and applies the same requirements to commercial vessels operating exclusively in the Great Lakes (Lakers). The majority of international vessels entering the Great Lakes are newer vessels which have diesel engines. Unfortunately they generally burn heavy bunker oil as most international vessels are allowed to burn under current international rules. The older domestic Great Lakes fleet, the Lakers, is a mix of different vessels, engines and fuels. Some are decades old with older diesel engines burning diesel oil, others are steamships, nearly a century old, that burn bunker fuel.

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The EPA requirement will require all C3 vessels in the ECA, as well as all C3 ships in the Great Lakes, including Lakers, to meet stringent sulfur emissions standards by 2015. At present, sulfur and particulate emissions from C3 vessels in the Great Lakes are not subject to any meaningful regulation. EPA estimates that without new regulations, Great Lakes C3 shipping will emit in 2030 over 22,000 tons of NOx, over 14,000 tons of SO2, and over 1,700 tons of fine PM.⁸ EPA also estimates that its new requirements will, by 2030, when the full impact will be realized, prevent up to 32,000 premature deaths each year, over 500 of which will be from the Great Lakes region.⁹

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⁶ Abt Associates, *Diesel Emissions: Particulate Matter-Related Health Damage* (Bethesda, MD), at p.6-2 (2004). http://www.catf.us/projects/diesel/dieselhealth/20041216-REMSAD_No_Diesel_Report.pdf. See also, CATF, *An Analysis of Diesel Air Pollution and Public Health in America*, at p.7 (2005). http://www.catf.us/publications/reports/Diesel_in_America_Technical_Paper.pdf. These studies used EPA estimated primary and secondary diesel emissions in 2010.

⁷ Clean Air Task Force, Fact Sheet on New Air Pollution Rule, October 9, 2008. http://www.catf.us/press_room/20081009-CATF_shipping_fact_sheet.pdf

⁸ EPA, “Draft Regulatory Impact Analysis: Control of Emissions of Air Pollution from Category 3 Marine Diesel Engines,” at p. 3-132 (Table 3-90).

⁹ C3 Marine Engine NPR, 74 Fed. Reg. at 44506.