



**Before the U.S. Environmental Protection Agency**

**Regarding**

**Control of Emissions of Air Pollution from New Marine  
Compression-Ignition Engines at or above 30 Liters per Cylinder;  
Proposed Rule**

**Docket No. EPA—HQ—OAR—2007-0121**

**New York Public Hearing  
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**Testimony of  
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Good morning. My name is David Marshall, and I am Senior Counsel with the Clean Air Task Force. CATF is a non-profit environmental organization dedicated to restoring clean air and healthy environments through scientific research, public education, and legal advocacy. CATF's work is focused on the reduction of harmful air pollution from diesel engines and other energy systems. CATF has been actively engaged over the past four years in the international negotiations at the International Maritime Organization (IMO) that led to an agreement last October to significantly tighten standards limiting sulfur oxide emissions from international shipping and nitrogen oxide emissions from new ships. CATF is also working in the US in partnership with other environmental and health advocates in over a dozen states to reduce emissions from existing diesel engines, including those used on marine vessels.

CATF appreciates the opportunity to testify today concerning EPA's proposed regulation of air pollution from new Category 3 marine diesel engines.

Diesel exhaust is a hazardous mix of toxic and carcinogenic pollutants, including fine particulates, nitrogen oxides, sulfur oxides, toxic organic gases, and heavy metals. Diesel exhaust causes premature death, lung cancer, heart attacks, strokes and many other heart and lung problems. The reduction of diesel pollution is one of the most pressing public health problems in our country today.

Large diesel engines on ocean-going vessels are a significant contributor to these health problems. For example, several years ago, CATF commissioned the first scientific, peer-reviewed study estimating premature mortality resulting from international shipping emissions. That study, published in December 2007 in the journal *Environmental Science & Technology*, found that the number of people around the world dying from heart and lung disease as a result of international shipping emissions totaled 60,000 in 2002.

Large ocean-going shipping has the distinction of being the last of the major transportation sectors to be cleaned up. EPA has promulgated regulations over the last few years to clean up new diesel engines used in heavy-duty highway trucks and buses, construction equipment and other land-based non-road vehicles, as well as locomotives and inland and coastal marine vessels. Present pollution control requirements for ocean-going ships are much more lenient than those for all other diesel vehicles, and in reality do little more than ratify existing industry practice. EPA estimates that without additional controls, by 2030, NOx emissions from Category 3 marine diesels will constitute about 40% of US mobile source NOx emissions and almost *one-half* of mobile source PM2.5 emissions. Therefore, it is critical that Category 3 marine diesel engine pollution be reduced as much as possible—as quickly as possible. The Clean Air Act requires no less.

Until now, EPA has been hesitant to promulgate tighter regulations for Category 3 marine diesels, instead waiting for international standards to be revised. While we believe that the Clean Air Act requires EPA to regulate emissions from all nonroad diesel engines, including marine engines, regardless of the action or inaction of other countries or international bodies, we do applaud the US leadership in securing last October's agreement at the IMO to amend MARPOL Annex VI. Those amendments significantly strengthened international limits for shipping emissions of SO<sub>x</sub>, and to a lesser degree, NO<sub>x</sub>.

The Agency's proposal largely reflects these new standards, and we strongly support its direction and thrust. This rule will save thousands of lives over the next few decades. In fact, EPA estimates that it will save up to 32,000 lives by 2030. It is highly cost-effective—in fact, it is significantly more cost-effective than several recent diesel rules that the Agency is successfully now implementing—the 2007 Highway Diesel Rule, the Tier 4 Nonroad Diesel Rule and the locomotive and domestic marine rule. The emission reductions resulting from the proposed C3 marine rule will produce quantifiable benefits to society that exceed costs by a huge margin—in 2030, ranging from above 30 to 1 on the low end to 90 to 1 on the high end.

This important rule should be implemented promptly, and its major elements retained. In particular, CATF offers the following comments—

- We strongly support the proposed sulfur fuel standards and the NO<sub>x</sub> emission standards for new ships.
- We believe that the proposed hydrocarbon and carbon monoxide standards are also important. These standards should serve to prevent degradation in engine combustion efficiency in order to prevent increases in HC and CO emissions; this will have the co-benefit of also limiting emissions of carbon dioxide and directly emitted particulates, including black carbon.
- We urge the Agency to take all action within its jurisdiction to reduce emissions from the existing fleet. For example, while the NO<sub>x</sub> standards for new ships will be substantially strengthened, the emission reductions produced by those standards will not become fully realized for several decades, when the existing fleet has largely turned over. Thus, even with the proposed NO<sub>x</sub> standards for new ships, EPA estimates that total NO<sub>x</sub> emissions are likely to continue to increase over the next decade or so, from 913,000 tons in 2009 to 952,000 tons in 2020. In view of this, we support the proposed Voluntary Marine Verification Program, which we believe will complement EPA's existing National Clean Diesel Program.
- We also support the proposal to require measurement of particulate emissions from ships. The Agency has already promulgated emission standards for fine particulates for all diesel engines except oceangoing

ships engines, and in the near future EPA should do the same for these huge marine diesels.

- We support EPA's move away from limiting its analysis of health benefits to areas in which PM<sub>2.5</sub> concentrations exceed 10  $\mu\text{g}/\text{m}^3$ , since the scientific literature is clear that exposure to PM emissions continues to produce human health impacts below the 10  $\mu\text{g}$  threshold.
- We urge the Agency to retain the 15 ppm sulfur requirements for all diesel fuel except that used in C3 marine engines. We would not support any relaxation of the sulfur fuel limits for C1 or C2 marine engines; the higher sulfur levels would not only increase deadly sulfate particulate emissions from such engines, but would also compromise the effectiveness of controls for limiting directly emitted PM from those engines.

We do believe that there are several ways in which the C3 proposal should be improved. We urge the Agency to strengthen its proposal as follows—

- First, the proposed emission requirements should be applied to both US and foreign-flagged vessels visiting US ports and traveling in US waters. ALL ship engines subject to US jurisdiction, including those flying foreign flags, should be held to the same standards. Otherwise, US ships will be unfairly discriminated against. More importantly, the public health and environment impact of emissions from a ship traveling in US waters does not depend on the flag that the ship happens to be flying. Because the overwhelming majority of ships in US waters are foreign-flagged, a regulation that does not control emissions from those ships will produce only small public health and environmental benefits. EPA has sufficient authority to regulate foreign-flagged ships in US waters under the Clean Air Act and, once the US-Canadian ECA is adopted by the IMO, will also have authority under the Act to Prevent Pollution from Ships, as amended in 2008 .
- Second, EPA should commence efforts to reduce directly emitted PM from ships. In particular, we urge EPA to—
  - expand the scope of its proposed Voluntary Marine Verification Program to include verification of substantial reductions of directly emitted PM;
  - include PM speciation in the proposed PM measurement requirement, so that the amount of important PM constituents such as black carbon may be determined; and
  - propose emissions standards for directly emitted PM from ships, including black carbon, within the next 2 years.
- Finally, EPA should explore ways that it might reduce emissions of non-sulfur related emissions from existing ships traveling in US waters. As indicated previously, without such reductions, these

emissions will continue to increase for years into the future as a result of expected increase in global trade and shipping traffic.

In conclusion, while CATF believes that the proposed rule can be improved in several respects as just described, we strongly support the proposal overall and particular the emission standards contained in the proposal.

Thank you.