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**Written Statement**

Chairman Hunter, Ranking Member Garamendi and other members of the Subcommittee, I appreciate the opportunity to testify today on the implementation of the North American and U.S. Caribbean Sea Emission Control Areas, or ECAs.

The International Convention for the Prevention of Pollution from Ships, known as MARPOL, is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. In 2007, at the International Maritime Organization or IMO, the United States proposed amendments to Annex VI of

MARPOL, including stringent new tiers of standards for ships operating in specially designated emission control areas. In 2008, these amendments were adopted after international discussions involving input from a wide range of stakeholders. The United States, Canada, and France (in relation to French overseas territory in the northwest Atlantic) then submitted an application for ECA designation for North America and parts of Alaska and Hawaii, which was adopted by consensus at the IMO in 2010, and has been enforceable under U.S. domestic law pursuant to the Act to Prevent Pollution for Ships since 2012. A second ECA, the U.S. Caribbean Sea ECA, was adopted by IMO in 2011 and became enforceable in January of this year.

### **Emission Control Areas Protect the Environment and Save Lives**

ECAs are one of the most important and cost-effective air quality programs the U.S. Government has put into place in the past decade, and will result in the prevention of tens of thousands of premature deaths. The North American ECA is already yielding significant public health and environmental benefits extending from all U.S. coastal areas to hundreds of miles inland. In 2014, more than 135 million people living in ozone nonattainment areas and over 84 million living in PM<sub>2.5</sub> nonattainment areas will benefit from cleaner air due to the ECA. Furthermore, these air quality improvements are critical for states to attain and maintain the existing health-based National Ambient Air Quality Standards (NAAQS).

Rigorous air quality and inventory modeling analyses conducted by EPA clearly show that U.S. air quality is adversely affected by ships that operate as far as 200 nautical miles from our coastlines. Nitrogen oxide (NO<sub>x</sub>), particulate matter (PM) and sulfur oxide (SO<sub>x</sub>) emissions from these ships are associated with serious public health problems, including

premature mortality, aggravation of respiratory and cardiovascular disease, and aggravation of existing asthma and chronic bronchitis, and which disproportionately impact those most vulnerable - children, infants and the elderly.

By 2030, emissions reductions resulting from the North American ECA will prevent between 12,000 and 31,000 premature deaths and 1.4 million work days lost in the United States. The fuel sulfur limits will also reduce detrimental impacts of these emissions on marine and terrestrial ecosystems. EPA estimates that the monetized human health and welfare benefits of this program outweigh the costs of this program by a factor of at least 30 to 1. In short, the ECA is one of the most cost-effective mobile source programs ever adopted. The ECA provides a more cost-effective alternative to states and local areas than requiring additional emissions cuts from other highly regulated sources, making it easier for them to meet air quality goals.

### **ECA Implementation**

Implementation of the North American ECA started in August 2012, when the allowable marine fuel sulfur level was reduced to no greater than 10,000 parts per million. The Coast Guard and EPA have worked and continue to work closely with the regulated community to ensure an orderly transition during this first stage of ECA standards. This included the development of a policy document to provide the vessel owners with guidance in the event there are temporary fuel availability issues in specific locations. Overall, implementation of the ECA is going very well, and ships are using compliant fuel in the ECA.

A second stage of fuel sulfur controls takes effect in January 2015, when the allowable limit decreases to 1,000 parts per million, and we expect smooth implementation of those requirements as well. This ECA-compliant fuel is expected to be diesel fuel, rather than the heavy residual fuel used by ships today. Diesel fuel is used in highway, nonroad, and small marine applications, and often has sulfur levels much lower than the ECA sulfur limit. This fuel is already available at many ports as it is used on ships for auxiliary engines and for start-up of main engines. Furthermore, this 1,000 ppm sulfur fuel will be required for the ECAs in the Baltic and North Sea as well, making the fuel likely to also be available at foreign ports. The EPA and Coast Guard will continue to work with vessel owners during the transition to the 2015 standards and provide guidance in the event that there are temporary fuel availability issues, just as we have done in the first stage of the fuel standards.

While the ECA is a significant public health achievement, and ECA-compliant fuel is much cleaner than the marine heavy fuel oil historically used by these ships, ECA fuel in 2015 will still have a much higher sulfur content than fuels used in any other U.S. transportation sector – more than 65 times higher than the allowable sulfur content for diesel fuel used in cars, trucks, trains, and ships operating on our inland waterways.

### **Flexibilities under MARPOL Annex VI**

EPA does not grant exemptions from the ECA fuel sulfur limits. However, MARPOL Annex VI contains some provisions that allow for some flexibility in achieving compliance with the requirements. One provision allows for the use of alternative methods provided they are at least as effective in terms of emission reductions. Another allows for temporary permits for trial programs to develop emissions reduction technology. Several ship owners that

operate primarily in the ECA have requested and received permits to develop new technologies and methods that can achieve compliance at lower cost. EPA has worked closely with the Coast Guard and the relevant flag countries to assess and approve or acknowledge several of these projects. As a result, these companies are making substantial investments to develop exhaust gas cleaning systems, convert or build new vessels to use Liquefied Natural Gas (LNG) fuel, and use shoreside power, to reduce emissions. EPA has worked closely with these companies to ensure that they will achieve equivalent or greater emission reductions and are incentivizing the development of new technology.

Specific projects that EPA and Coast Guard have approved or acknowledged are:

- LNG project undertaken by TOTE, a U.S. based shipping firm, which operates two vessels between Tacoma, Washington and Anchorage, Alaska. This program will result in a conversion of these two vessels from diesel fuel to LNG.
- SOx scrubber development project with Norwegian Cruise Line for up to seven vessels.
- SOx scrubber development project with Royal Caribbean for up to six vessels.
- SOx scrubber and diesel particulate filter development project with Carnival Corporation for up to 32 vessels.

I would like to assure the Subcommittee that the EPA will continue to work with Coast Guard and the shipping industry on programs to reduce costs and encourage the development of new, lower cost technologies and compliance methods. The EPA is committed to working cooperatively with all interested stakeholders within the shipping industry to explore flexible,

cost-effective and innovative compliance approaches as allowed under MARPOL Annex VI with respect to technology development programs.

### **Conclusion**

I want to emphasize again that the ECAs are one of the most important and cost-effective air quality programs the U.S Government has put into place in the past decade and will result in the prevention of tens of thousands of premature deaths. The North American and U.S. Caribbean ECAs are already yielding significant public health and environmental benefits in the first stage of fuel sulfur controls, and we are working to ensure a smooth transition to the second stage of standards. Again, I thank you for the opportunity to appear before the Subcommittee.