



# Maritime Developments Advisory

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## United States and Canada Propose 200 Nautical Mile "Emission Control Area" under MARPOL Annex VI

### New Development

On March 27, 2009, the United States and Canada jointly proposed the designation of an Emission Control Area (ECA) for specified portions of U.S. and Canadian coastal waters to the International Maritime Organization's (IMO) Marine Environment Protection Committee (MEPC). Once approved, the designation will require oceangoing vessels operating within the ECA, whether or not destined for a U.S. or Canadian port, to reduce sulfur oxide (SO<sub>x</sub>), fine particulate matter (PM), and nitrogen oxide (NO<sub>x</sub>) emissions through the use of low sulfur fuel, exhaust gas cleaning devices, such as seawater scrubbers, and advanced NO<sub>x</sub> controls. The Environmental Protection Agency (EPA) estimates that implementation of the ECA will reduce emissions of NO<sub>x</sub> by 320,000 tons, PM by 90,000 tons, and SO<sub>x</sub> by 920,000 tons per year. NO<sub>x</sub>, SO<sub>x</sub>, and PM emissions can cause adverse health effects, including premature mortality, bronchitis, and acute respiratory symptoms. The ECA designation is expected to enter into force as early as August 2012. The North American ECA follows ECAs in northern Europe and the Baltic.

### Background

MARPOL Annex VI entered into force in May 2005 and sets forth Regulations for the Prevention of Air Pollution from Ships. In July 2008, President Bush signed into law the Maritime Pollution Prevention Act of 2008, which implements Annex VI by amending the Act to Prevent Pollution from Ships. The United States deposited its instrument of ratification with IMO on October 8, 2008 and Annex VI entered into force for the United States on January 8, 2009, clearing the way for the submittal of the ECA designation.

Appendix III of Annex VI provides the criteria and procedure for the designation of ECAs. The criteria include: (1) delineation of the proposed area of application;

(2) description of the areas at risk on land and at sea from the impacts of ship emissions; (3) assessment of the contribution of ships to ambient concentrations of air pollution or to adverse environmental impacts; (4) information regarding the meteorological conditions in the proposed area of application to the human populations and environmental areas at risk; (5) description of ship traffic in the proposed ECA; (6) description of the control measures taken by the proposing party or parties; (7) relative costs of reducing emissions from ships compared with land-based controls; and (8) assessment of the economic impacts on shipping engaged in international trade. Appendix III also encourages two or more parties with a common interest in a particular area to submit a coordinated proposal for designation of an ECA, such as this proposal by the United States and Canada. Countries must have ratified Annex VI in order to be eligible to submit an application to designate a new ECA.<sup>1</sup>

At its 58th session in October 2008 (MEPC 58), MEPC adopted amendments to Annex VI setting more stringent emissions standards. These amendments, which will enter into force on July 1, 2010, set both global emissions limits and limits that will apply to ECAs that have gone through the formal designation process.

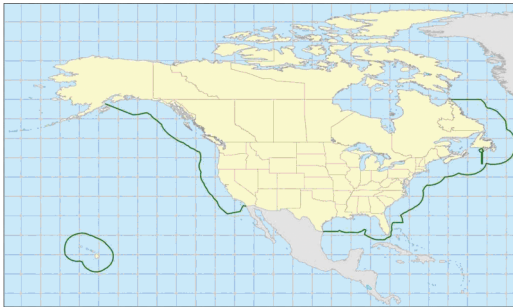
1. Canada, however, has yet to ratify Annex VI. While it is anticipated that Canada will ratify the Annex before the MEPC meeting in July 2009 (MEPC 59), the United States and Canada requested that MEPC consider the proposal in any event. The EPA had discussions with the Mexican National Institute of Ecology about including Mexico in the joint application. Because it was not clear if Mexico will ratify Annex VI in the near term and it will not be possible for Mexico to perform the necessary emissions inventory and air quality analyses in time for a submittal to MEPC 59, Mexico was not included in the proposal. EPA will work with Mexico separately, if necessary, to extend the ECA in the future.

## SOx and NOx Limits

Under the amendments, the fuel sulfur content within ECAs is limited to 1.50% until July 1, 2010. Effective July 1, 2010, the sulfur limit is reduced to 1.00% and further reduced on January 1, 2015 to 0.10%. Effective January 1, 2016, vessels operating within designated ECAs must have Tier III NOx after-treatment controls on new marine diesel engines. The after-treatment controls must meet the emission limit of 3.4 grams NOx per kilowatt hour for engines operating below 130 revolutions per minute (“rpm”) and 2.0 grams NOx per kilowatt hour for engines operating above 2,000 rpm, with a sliding scale limit based on rpm for engines running between 130 and 2,000 rpm. The Tier III standards represent an 80% reduction from the current Tier I standards and in most cases will require the installation of selective catalytic reduction.

## Geographic Area

The proposed ECA, which will extend 200 nautical miles (nm) out to the boundary of the Exclusive Economic Zone, includes the waters adjacent to the Pacific, Atlantic, and Gulf coasts, and the main Hawaiian Islands. The proposed ECA does not include the Pacific U.S. territories, smaller Hawaiian Islands, the U.S. territories of Puerto Rico and the U.S. Virgin Islands, the Aleutian Islands and Western Alaska, and the U.S. and Canadian Arctic. The U.S. and Canada are gathering further information to determine whether to submit a proposal to add those areas to the ECA. The ECA would not extend into any other country’s jurisdiction.



## Cost-Benefit Analysis

EPA estimates the cost of implementing the ECA in the United States to be \$3.2 billion. The costs are based upon installing scrubbers or switching to low sulfur distillate fuel, installing additional fuel tanks, and installing after-treatment NOx controls on new diesel engines. EPA estimates that the operating cost for a vessel en route that includes about 1,700 nm of operation within the ECA will increase by around 3%, which is equivalent to about \$18 per 20-foot container.

The EPA also analyzed the impact of the ECA designation on global fuel production and use, as there is some concern in the industry about the availability of enough 0.10% sulfur fuel come 2015. EPA projected that in 2020 fuel use by ships will be 500 million tons per year, of which about 90 million tons will be used in U.S./Canadian trade. Less than 16 million tons will be used in the ECA, which is only about 3% of the total global use. While EPA concluded that the ECA

designation will have only a small impact on global fuel production, concerns about low sulfur marine gasoil availability persist.

EPA estimates the benefits of implementing the ECA will be as high as \$60 billion in the United States by 2020. The benefits are based upon the monetized health-related benefits of saving as many as 8,300 lives and providing relief from acute respiratory symptoms for more than three million people each year.

The proposal has received support from many shipping trade organizations, as well as state air pollution control agencies and environmental groups. The North America ECA will serve to harmonize federal and state requirements, removing one burden on the shipping industry—that of complying with different federal and state standards.

## Conclusion and Recommendations

The United States expects that MEPC 59 in London in July 2009 will approve the proposed ECA designation. Parties that have ratified Annex VI can vote on the proposal as early as MEPC 60, scheduled for March 2010. If approved, the ECA would enter into force as early as August 2012. Vessel owners, ship managers, shipyards, and other interested parties in the maritime industry that engage in U.S./Canadian trade or transit through the proposed ECA should review the proposal and prepare for its implementation. Interested parties should also be alert for an EPA Notice of Proposed Rulemaking (NPRM), due out later this month, that will propose regulations implementing more stringent NOx controls on oceangoing marine diesel engines.

The ECA designation and upcoming NPRM are components of EPA’s overall strategy to address harmful ship emissions. Moreover, the proposed ECA designation should be of interest to those who have followed the California Air Resources Board (CARB) actions to regulate vessel emissions. In February 2009, CARB issued its latest proposed rule that would require oceangoing vessels operating within 24 miles of the California coastline to meet sulfur limits of 5,000 parts per million (ppm) beginning on July 1, 2009 and 1,000 ppm starting on July 1, 2012. The CARB proposal includes a sunset provision if EPA adopts a national air emission standard, such as the ECA, at least as stringent as the CARB requirement. Depending on how the proposed ECA is handled at IMO and CARB’s response, there appears to be some hope that ships will be able to operate under one national emissions standard rather than different state standards. ■

### For Additional Information

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