UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF THE
CHIEF FINANCIAL OFFICER

The Honorable Kenneth Calvert
Chairman, Subcommittee on Interior,
Environment and Related Agencies
Committee on Appropriations
House of Representatives
Washington, D.C. 20515

The Honorable Betty McCollum
Ranking Member, Subcommittee on
Interior, Environment and Related Agencies
Committee on Appropriations
House of Representatives
Washington, D.C. 20515

The Honorable Lisa Murkowski
Chairman, Subcommittee on Interior,
Environment and Related Agencies
Committee on Appropriations
United States Senate
Washington, D.C. 20510

The Honorable Tom Udall
Ranking Member, Subcommittee on
Interior, Environment and Related Agencies
Committee on Appropriations
United States Senate
Washington, D.C. 20510

Dear Chairmen Calvert and Murkowski and Ranking Members McCollum and Udall:

Enclosed is the U.S. Environmental Protection Agency's Report to Congress on agency considerations in reducing pollution from marine vessels operating in the North American Emission Control Area. The Joint Explanatory Statement, accompanying the Consolidated Appropriations Act, 2017 (P.L. 115-31), references the following requirement in Senate Report 114–281:

> *The Committee supports efforts to reduce pollution from marine vessels that may be harmful to human health and coastal environments. While that is the case, the Committee is concerned the mandate for fuel with a sulfur content of 0.1% in the North American Emission Control Area is having a disproportionately negative impact on vessels which have engines that generate less than 32,000 horsepower. This impact may cause some shippers to shift from marine based transport to less efficient, higher emitting modes. In an effort to avoid negative environmental consequences and modal shifting, the Committee directs the Agency to consider exempting vessels with engines that generate less than 32,000 horsepower and operate more than 50 miles from the coastline. Within 180 days of enactment of this act, the Agency should provide the Committee with a report detailing their decision.*

This report provides background on the relevant requirements and outlines efforts the agency has taken to study potential mode shift that may result from the ECA requirements.

Please do not hesitate to contact me or Ed Walsh of my staff at (202) 564-4594 should you require any additional information on this report.

Sincerely,

David A. Bloom
Deputy Chief Financial Officer

Enclosure

Report to Congress on Agency Considerations in Reducing Pollution from Marine Vessels in the North American Emission Control Area

The North American Emission Control Area (ECA) is part of the Environmental Protection Agency's coordinated strategy to reduce emissions from large marine diesel engines and their fuels. ECA engine standards and fuel sulfur limits ensure that emissions from all ships that operate in U.S. ports and waters, including foreign vessels, will be reduced significantly, delivering substantial benefits to large segments of the population, as well as to marine and terrestrial ecosystems. This document provides Congress with a report outlining efforts the EPA has taken to study potential transportation mode shift[1] that may result from the ECA requirements, as directed by Senate Report 114–281.[2]

Introduction

The Joint Explanatory Statement accompanying the Consolidated Appropriations Act, 2017 (P.L. 115-31), refers to Senate Report 114–281 as carrying the same emphasis in regard to the administration of programs. In this case, report language notes the concerns of the Appropriation Committee that the ECA fuel sulfur requirements may lead some shippers to a transportation mode shift away from certain ships and toward less efficient, higher emitting land-based transportation. To prevent negative environmental consequences and modal shifting, Congress instructs the EPA to consider exempting vessels with a specific class of engines from part of the North American ECA requirements:

> Fuel Standards. —The Committee supports efforts to reduce pollution from marine vessels that may be harmful to human health and coastal environments. While that is the case, the Committee is concerned the mandate for fuel with a sulfur content of 0.1% in the North American Emission Control Area is having a disproportionately negative impact on vessels which have engines that generate less than 32,000 horsepower. This impact may cause some shippers to shift from marine based transport to less efficient, higher emitting modes. In an effort to avoid negative environmental consequences and modal shifting, the Committee directs the Agency to consider exempting vessels with engines that generate less than 32,000 horsepower and operate more than 50 miles from the coastline. Within 180 days of enactment of this act, the Agency should provide the Committee with a report detailing their decision.

Background

As part of its obligations under Section 213 of the 1990 Clean Air Act, the EPA finalized a rule, in 2010, adopting a national Coordinated Strategy to reduce air pollution from large marine

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[1] For the purpose of this report, "transportation mode shift" refers to users of a particular method of transportation changing to a different transportation method in response to a change in the market. In this case, an increase in operating costs due to the requirement to use higher price, low sulfur ECA fuel may lead to increases in marine freight rates, which could make rail or road transportation more attractive to shippers.

[2] Committee Report [To accompany S. 3068] https://www.congress.gov/114/crpt/srpt281/CRPT-114srpt281.pdf

diesel engines (75 FR 22896, April 30, 2010).[3] The Coordinated Strategy consists of: (1) engine and fuel controls adopted under Clean Air Act authority; (2) amendment to Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL Annex VI) to designate U.S. coasts as an ECA in which all vessels, regardless of flag, would be required to meet the most stringent engine and marine fuel sulfur requirements in Annex VI; and (3) the new engine emission and fuel sulfur limits contained in the amendments to Annex VI that are applicable to all vessels regardless of flag through the Act to Prevent Pollution from Ships, as well as clarification on implementation of those standards, application to domestic and foreign-flagged vessels in internal waters, and application to nonparty foreign-flagged vessels.
The North American and U.S. Caribbean Sea ECAs were designated through amendment to Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL) by the International Maritime Organization (IMO) in 2010 and 2011, respectively.[4] MARPOL is an international treaty established by the members of the IMO. These amendments were proposed by the United States based on input gathered by the U.S. Coast Guard and the EPA through a public process; Canada and France joined the United States in proposing the North American ECA. Consistent with the treaty, beginning August 1, 2012, the sulfur content of fuel used onboard vessels operating in the ECAs could not exceed 10,000 ppm. Beginning January 1, 2015, the fuel sulfur limit was reduced to 1,000 ppm. In addition, engines installed on new vessels constructed beginning in 2016 are required to meet stringent NO_X emission standards while they are operating within the ECA region.

The North American Emission Control Area was the subject of a significant and comprehensive analysis of the impacts of ship emissions on U.S. air quality. The 2009 analysis examined the projected benefits of the ECA by comparing estimated 2020 air quality conditions with and without the ECA controls. The inventory and air quality modeling were based on state-of-the art science and peer reviewed methods. The 2020 projections from this analysis show significant expected improvement in ambient air quality, human health, and the ecosystem. These expected benefits extend hundreds of miles inland and will assist States in attaining and maintaining the fine particulate matter ($PM_{2.5}$) and ozone National Ambient Air Quality Standards near term and in the decades to come. By the year 2030, this program is expected to reduce annual emissions of NO_X, SO_X, and $PM_{2.5}$ by 1.2 million, 1.3 million, and 143,000 tons, respectively. The magnitude of these reductions would continue well beyond 2030, and are estimated to annually prevent between 12,000 and 30,000 PM-related premature deaths; between 210 and 920 ozone-related premature deaths; 1,400,000 work days lost; and 9,600,000 minor restricted-activity days. The estimated annual monetized health benefits of the North American Emission Control Area in 2030 would be between $110 and $270 billion, assuming a 3 percent discount rate (or between $99 and $240 billion, assuming a 7 percent discount rate). The annual cost of the overall program in 2030 would be significantly less, at approximately $3.1 billion. This cost includes $2.5 billion in fuel costs, $0.6 billion in NOx control operating costs (e.g. urea consumption), and $0.05 billion in variable costs. See 75 FR 22989, April 30, 2010.

[3] See https://www.gpo.gov/fdsys/pkg/FR-2010-04-30/pdf/2010-2534.pdf.

[4] See https://www.epa.gov/regulations-emissions-vehicles-and-engines/designation-north-american-emission-control-area-marine and https://www.epa.gov/regulations-emissions-vehicles-and-engines/designation-us-caribbean-emission-control-area-marine.

Considerations

To carry out the Committee's instructions, in Senate Report 114–281, to consider revising the North American ECA program with respect to ships that generate less than 32,000 horsepower to avoid modal shift resulting in higher emissions, it will be necessary for the EPA to examine the potential for modal shift in coastal marine transportation markets. It should be noted that ships that generate less than 32,000 horsepower represent about 85 percent of all ships which visit U.S. ports.[5] To further consider the potential for mode shifting in the ECA, EPA expects to use a similar approach as was used for a 2012 study of the impacts of the ECA on the Great Lakes shipping industry.[6] As part of this new study to answer the Committee's questions, EPA expects to solicit stakeholder input during all phases of the analysis (including from the freight shipping industry), especially with regard to the scenarios studied, the methodology used, and important data inputs. The Agency expects the analysis to be performed with the help of a contractor with access to expertise in geospatial modeling, to create the transportation routes and identify suitable rail and highway alternatives; and freight rate estimates, for all three transportation modes.

As of first quarter FY 2018, the EPA is in the planning stage for this new intermodal study. EPA expects to have a draft report ready for peer review in Spring 2019 with a final report expected in FY 2020.

[5] 2015 U.S. Vessel Entrances and Clearances. See http://www.navigationdatacenter.us/data/dataclen.htm.

[6] In 2012, EPA completed a detailed analysis of the economic impacts of the ECA fuel sulfur requirements on Great Lakes shipping, in response to House Report 111-316, which accompanied the Department of the Interior, Environment, and Related Agencies Appropriations Act, 2010 (P.L. 111-88). That report is available at https://nepis.epa.gov/Exe/ZyPDF.cgi/P100E7EW.PDF?Dockey=P100E7EW.PDF