

Regulating vessel air emissions

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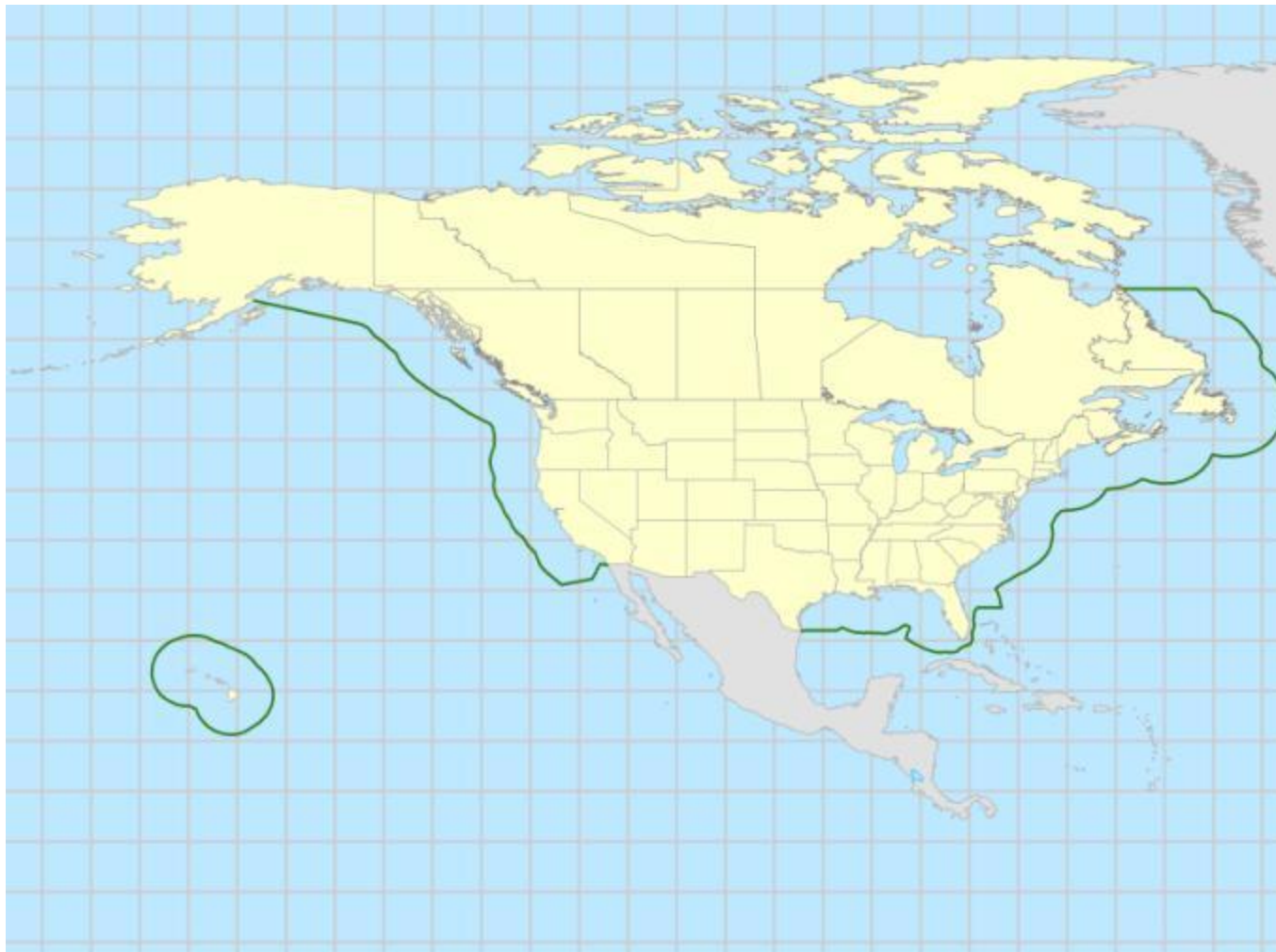


Background

North American Emission Control Area

- The North American Emission Control Area proposed by Canada, United States and France was adopted on March 26, 2010
- It is the largest such area established by Parties to Annex VI of the MARPOL Convention (along coasts out to the 200 nautical limit, south of 60°N and Hawaii)
- Its stringent standards are expected to reduce sulphur oxides by 96 percent and nitrogen oxides up to 80 percent as well as reduce other pollutants
- This approach will protect health of North Americans on both sides of the border
- The measures will come into force in August 2012.

North American Emission Control Area



Adopted March 26, 2010.

Includes waters under the jurisdictions of Canada, the United States, and France.

Drivers

- Government of Canada Commitments on Clean Air and regulatory alignment with international standards
 - Accession to Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL)
 - Adoption of the North American Emission Control Area
- A Harmonized Environmental Agenda for an Economically Integrated North America
 - North American Emission Control Area resolves US court case
- Transport Canada's Moving Forward Policy to align with IMO Standards for vessels carrying international trade
- Support of Canada's domestic fleet to modernize

Key dates and provisions

- July 1, 2010, new MARPOL Annex IV
 - Baltic and North Sea ECA 1.5% to 1% sulphur
- January 1, 2011, new ships -Tier II NOx
- January 1, 2012, global sulphur level 3.5%
- August 1, 2012, North American ECA (1% sulphur)
- January 1, 2015, all ECAs reduced to 0.1%
- January 1, 2016, new ships in ECAs – Tier III NOx
- January 1, 2018, IMO review of low sulphur fuel
- January 1, 2020, global sulphur level to 0.5%
- January 1, 2025, alternate date for 0.5% sulphur



Nitrogen oxide standards

- Tier I
 - 17.0 g/kWh when n is less than 130 rpm;
 - $45 \cdot n^{(-0.2)}$ g/kWh when n is 130 or more but less than 2,000 rpm;
 - 9.8 g/kWh when n is 2,000 rpm or more.
- Tier II
 - 14.4 g/kWh when n is less than 130 rpm;
 - $44 \cdot n^{(-0.23)}$ g/kWh when n is 130 or more but less than 2,000 rpm;
 - 7.7 g/kWh when n is 2,000 rpm or more.
- Tier III*
 - 3.4 g/kWh when n is less than 130 rpm;
 - $9 \cdot n^{(-0.2)}$ g/kWh when n is 130 or more but less than 2,000 rpm;
 - 2.0 g/kWh when n is 2,000 rpm or more;
- * IMO to carry out review between 2012 and 2013

Technical options for compliance: sulphur

- Sulphur levels in fuel are a performance standard
- Compliance can be met by
 - Low sulphur fuel
 - Distillates
 - Alternative fuels
 - Emission control systems
 - IMO Guidelines to assess emission control systems
- Option for fuel with next lowest sulphur content if compliant fuel cannot be found

Vessel Air Emissions in the Great Lakes

- US introduced increased air emissions standards for vessels operating in the Great Lakes in the December 2009 rules to implement the North American ECA
- US subsequently moved to exempt certain vessels.
- Canadian regulations to implement the North American ECA will also address emissions in the Great Lakes
- Improved environmental standards are consistent with Government of Canada commitments
- Canada seeks a bi-national approach to air emission regulations in consultation with industry

Next steps

1) Detailed Assessment of Options

Alignment of regulatory options with Government of Canada policy commitments and considerations

- Overall SO_x and NO_x reductions, harmonization of approach, health improvements, environmental improvements, competitiveness of domestic fleet, fleet renewal

Ease of industry compliance

- Available technologies and fuels, cost of implementation, level of complexity

Government capacity to implement regulations

2) Decision on option for the Great Lakes in November