



IMO/MARPOL Annex VI and National Rulemaking

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WEST COAST COLLABORATIVE
Public-private partnership to reduce diesel emissions

Diesel Emissions

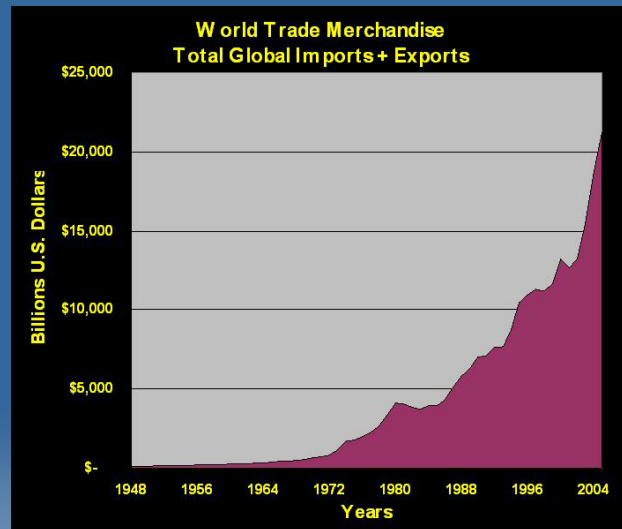
- » Reducing emissions from diesel engines is one of the most important air quality challenges facing the country
- » Even with more stringent standards set to take effect in the next decade, over the next 20 years millions of in-use engines will continue to emit large amounts of pollution



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Driver: Exponential Increase in Global Trade Since 1948



WTO, 2006



Growth in Shipping Impacts Air Quality

- » **US international waterborne freight is expected to double by 2020**
 - › 95% of US overseas cargo goes through ports
 - › 50% of goods are transported to regions outside of state via rail & truck
 - › Will require new vessels, majority not US flagged ships

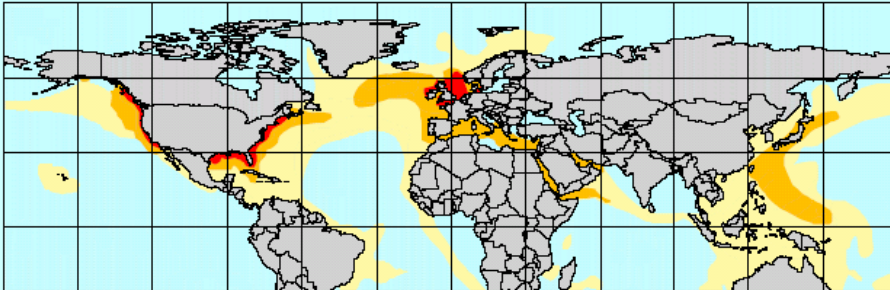
- » **Cruise ships leaving US Ports increased by 10% in 2004**

- » **Dock-side expansion to accommodate growth**
 - › Ports spent \$2.8 billion on capital improvements in 2001-2
 - › Increased interest from environmental & community groups

- » **Many ports actively engaged in reducing diesel emissions**



Global ship traffic density



*85 percent in Northern Hemisphere
70 percent within 400 km of land*

Source: IMO Study on Greenhouse Gas Emissions from Ships, MEPC 45(8), 2000.

Source: 'Sources of Transport of Air Pollution from Ships: Current Understanding, Implications, and Trends', Dr. James J. Corbett & Dr. Paul Fischbeck.



EPA's Regulatory Strategy for New Diesel Engines and Fuel



Common Aspects of existing regulations--

- » Systems approach— ULSD enables clean technologies
- » Very large environmental benefits
- » By 2030, PM reduced by ~250,000 tons/year, NOx by ~4 million tons/year
- » Annual benefits expected to exceed \$175 billion versus costs of approximately \$11 billion

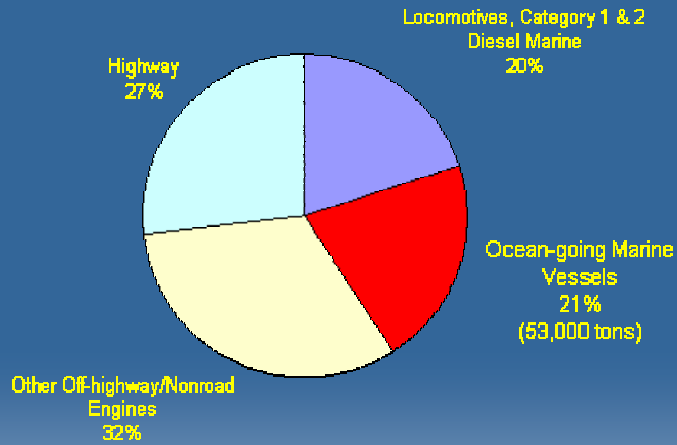


Locomotive/Marine and C3 Marine



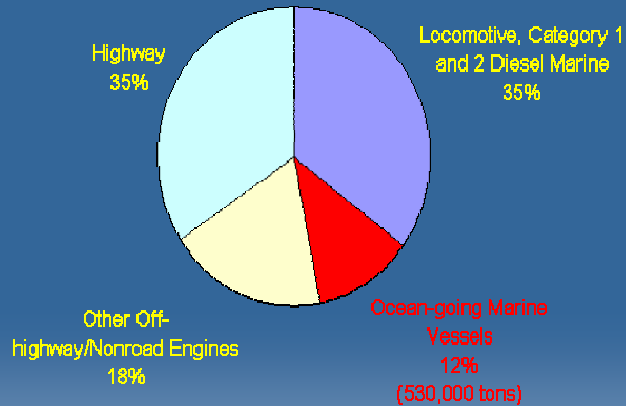
2030 US Mobile Source PM-2.5

(250,000 tons total)



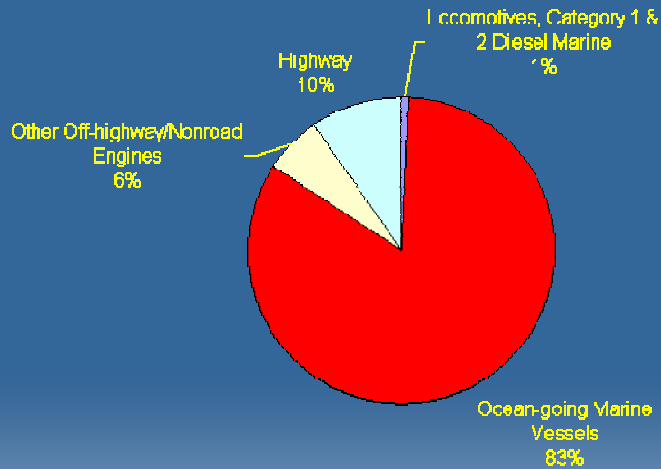
2030 US Mobile Source NOx

(4.5 million tons total)





2030 US Mobile Source SO_x (480,000 tons total)



Ocean-going Vessels

- » **Ships are key to global commerce**
 - › Flagged by many nations
- » **Regulated internationally by IMO**
- » Current round of negotiations at IMO is an opportunity to solve a serious environmental problem, and provide long-term certainty for the marine industry





IMO MARPOL Annex VI Negotiations

- » **Consistent message from The United States Government that IMO should**
 - › Look to the long-term and base standards for PM, SOx and NOx on advanced technology
 - › Provide the industry with appropriate lead time
 - › Show leadership in order to eliminate the need for nations and sub-national governments to develop independent regulatory requirements for ocean-going vessels

- » **I am hopeful that IMO will use this approach and establish long-term standards to address PM, NOx and SOx from ocean-going marine vessels**



IMO MARPOL Annex VI Next Steps



- » **Next IMO subcommittee meeting**
 - › London, April 2007
 - › Subcommittee expected to report back to Marine Environmental Protection Committee – July 2007

- » **Key outcomes for consideration**
 - › Near- and long-term NOx requirements for new vessels
 - › NOx limits for existing vessels
 - › Address PM and SOx emissions from all ocean-going vessels



US EPA Regulation for Category 3 Vessel Engines

- » **2003 US EPA Regulation under Clean Air Act**
 - › As with current IMO Tier 1, NOx only standards, effective 2004

- » **Need for regulatory action**
 - › Environmental need compelling
 - › Technology is feasible and can achieve substantial reductions
 - › Pressure from many stakeholders in the US for EPA to set more stringent standards
 - › Applicability to foreign-flagged vessels that enter US ports a central issue

- » **EPA has stated that it is committed to the IMO Annex VI negotiation process, and believes that it is the most appropriate forum for achieving global environmental objectives for ocean-going vessels**



Other Ocean Going Vessel Activities

- » Information Gathering and Sharing
 - › Clean Ports USA, West Coast Collaborative and conferences
 - FFCA Long Beach and Puget Sound; San Diego Clean Ships Conference
 - › SECA technical support
 - › Emissions Inventories
 - › Web based information clearinghouse

- » Supporting Partnerships
 - › Pacific Rim Collaboration
 - › San Pedro Bay Action Plan
 - › Puget Sound Maritime Air Forum

- » Investing in new technologies and practices for OGV on the West Coast
 - › Treatment technologies: Sea Water Scrubber, SCR and Hood projects
 - › Cold Ironing: Carnival, China Shipping and others
 - › Fuels
 - › Speed



Summary

- » **Technology is available and feasible**
- » **Cargo Owners are looking for creative ways to reduce emissions**
- » **Stakes are high for local communities**
- » **Large public health benefits are achievable**
- » **International consensus for meaningful, long-term standards is necessary**