



Achieving Maritime Emissions under International Standards: U.S.-Mexico Demonstration of Fuel Switching

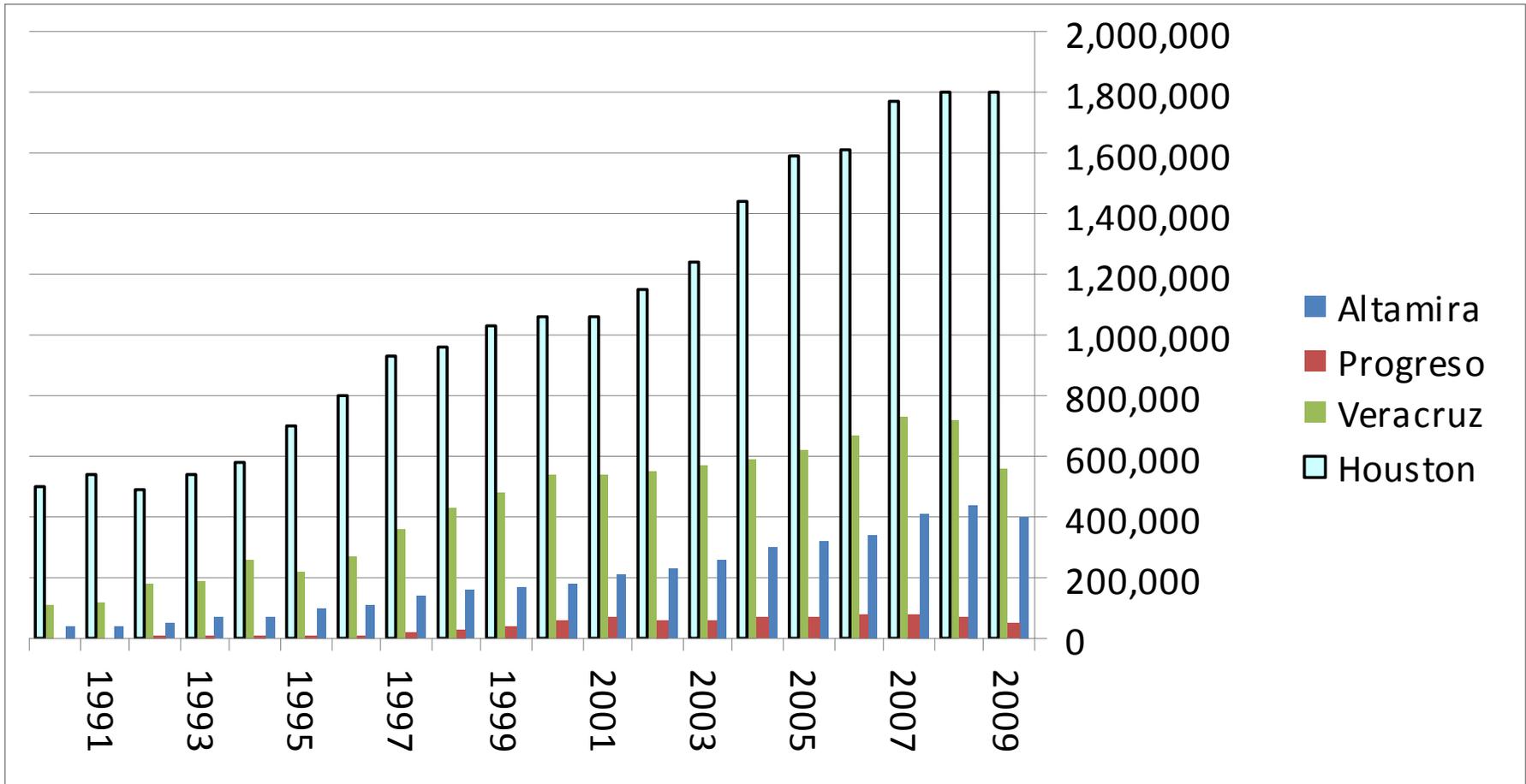
Angela Bandemehr

EPA Office of International and Tribal Affairs

Meeting of the Tampa Bay Regional Planning Council

August 9, 2010

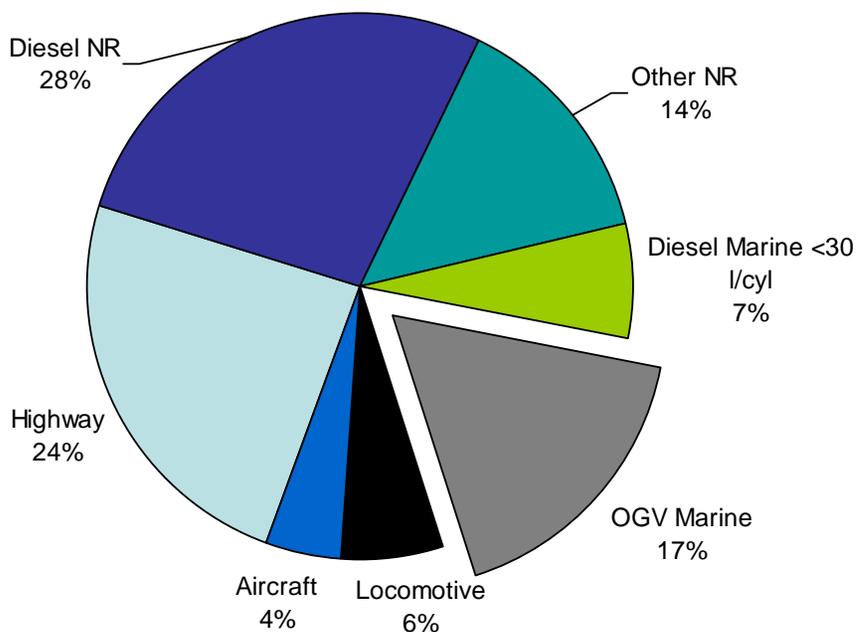
North American Port Container Traffic (1990 - 2009) in TEUs



Source: AAPA

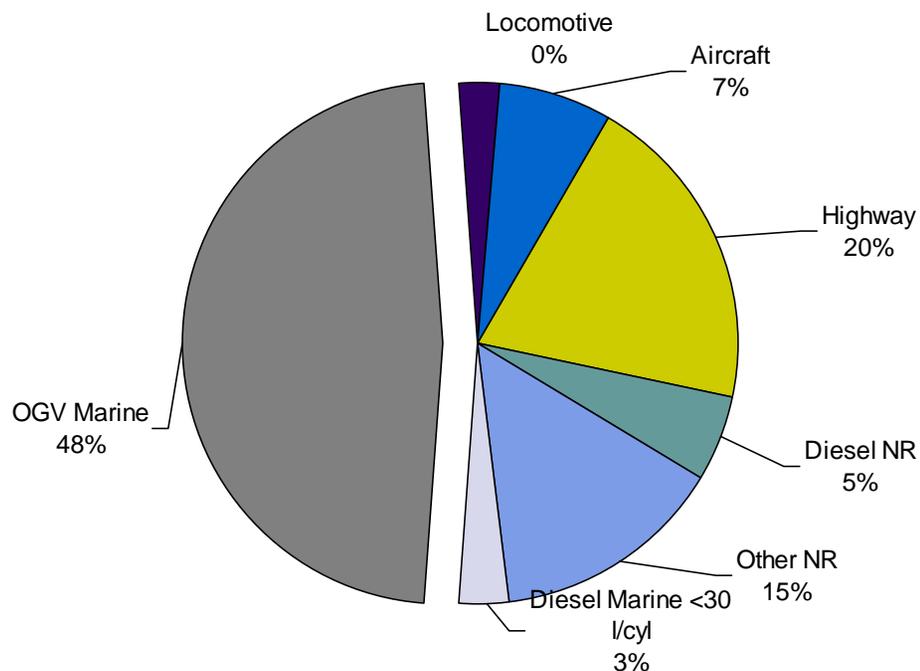
Ship Emissions in a No Action Scenario

2009 Mobile Source PM2.5 Inventory



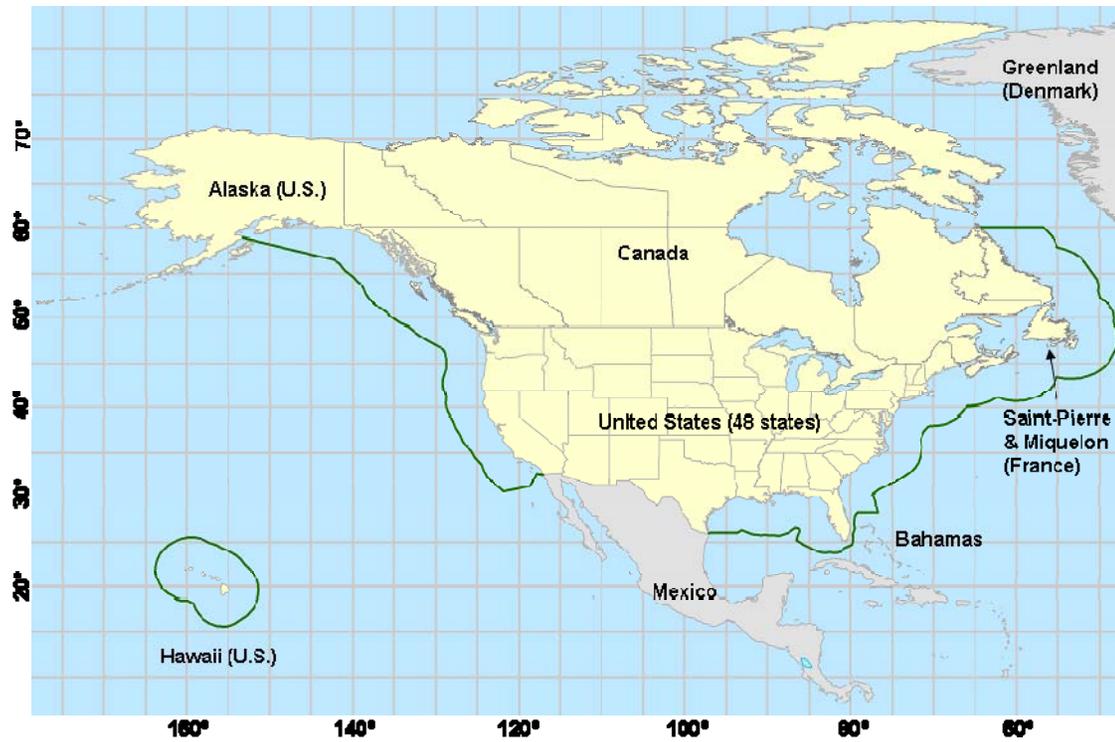
Ship Emissions Relative to Other Transport Sources in U.S.

2030 Mobile Source PM2.5 Inventory

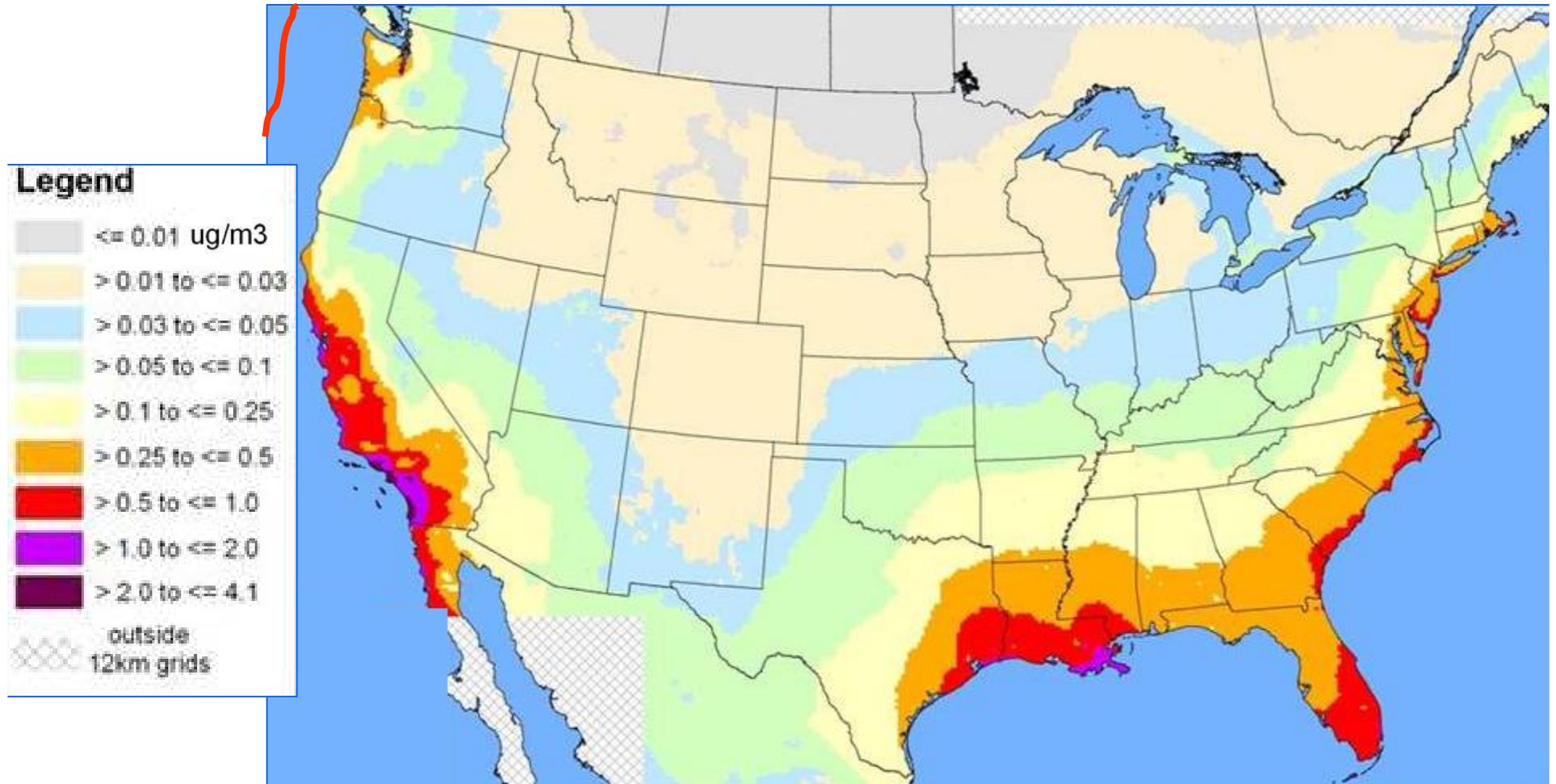


Source of inventory estimates: C3 Marine NPRM (July, 2009)
 Does not reflect IMO MARPOL Annex VI Amendments (October 2008)

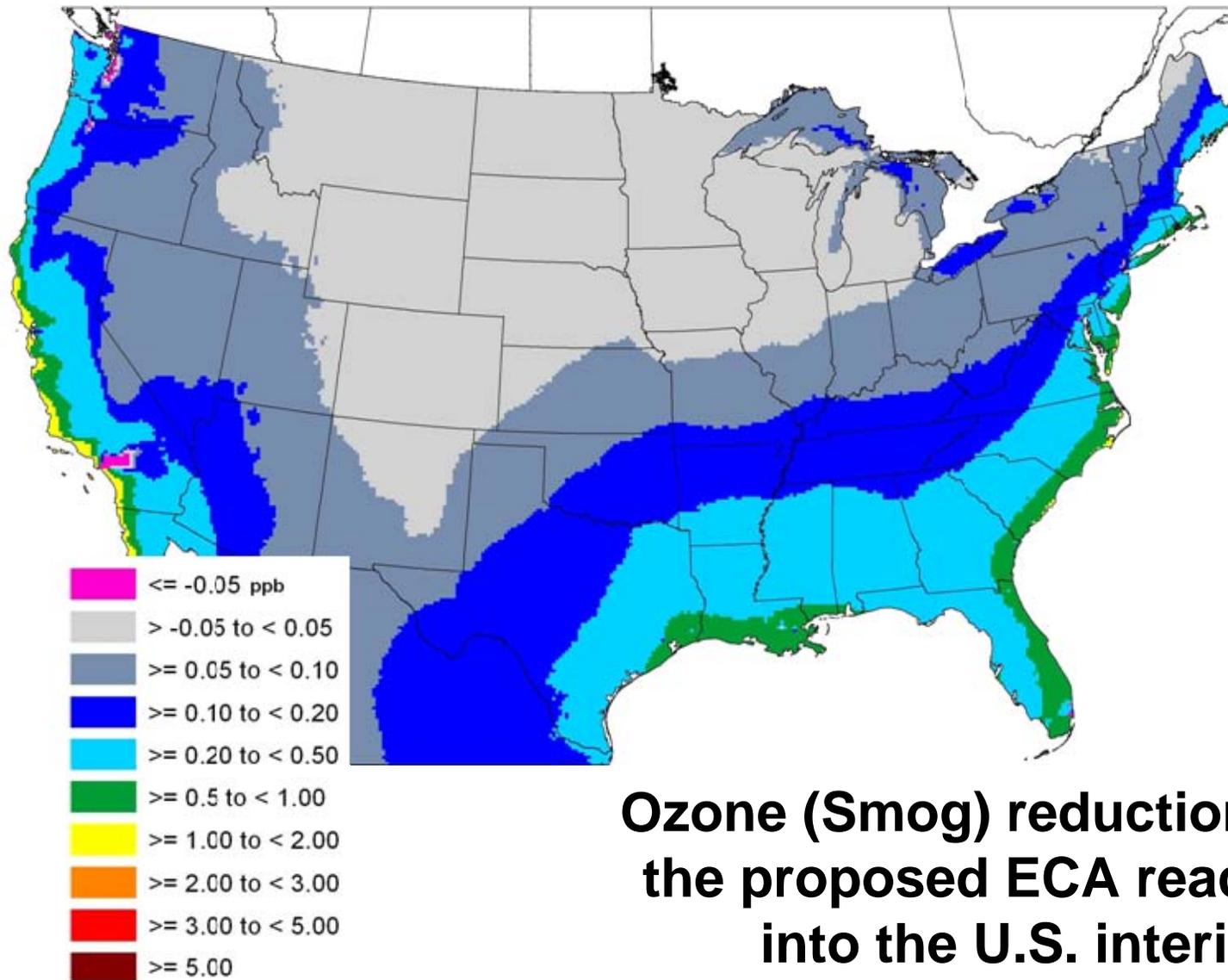
North American ECA



2020 Potential ECA PM_{2.5} Reductions

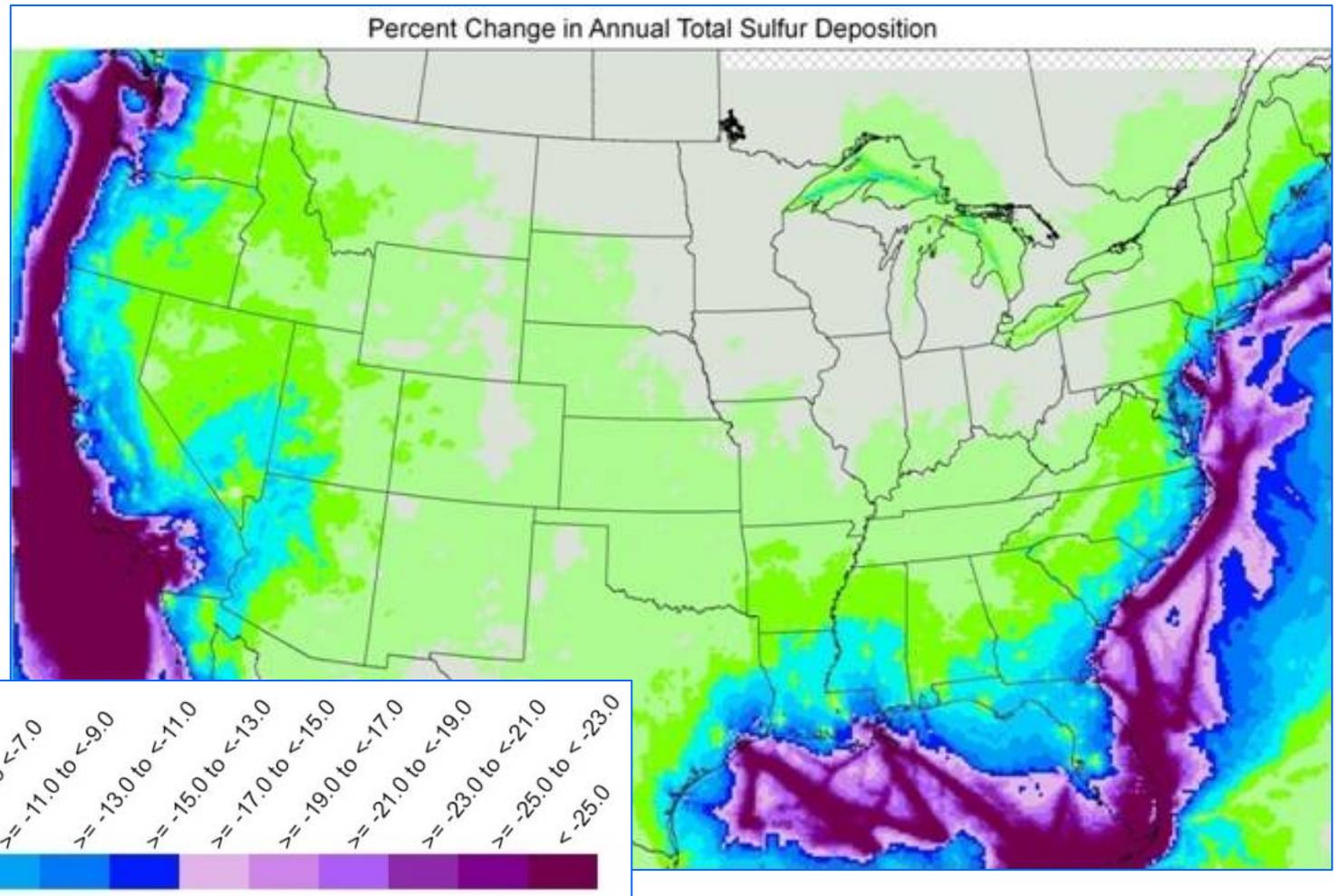


2020 Potential ECA Ozone Reductions



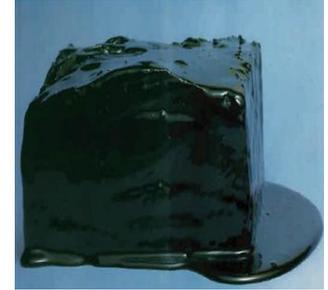
2020 Potential Sulfur Deposition Reductions

Improvements
in deposition
for marine and
terrestrial
ecosystems





On Heavy Fuel Oil



Fuel Switching Demonstration



On Low Sulfur Fuel





Maersk Roubaix

1100 TEUs

Medium Speed Engine

Operational Feasibility and Impact Assessment

Hamburg Süd Cap San Lorenzo

4,000 TEUs

Slow Speed Engine



Public Outreach

www.epa.gov/international/fuelswitch.html



Coastal Environmental Learning Centers

Veracruz Aquarium Kiosk

