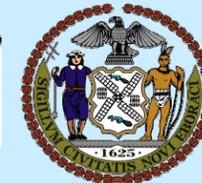


A Clean Air Strategy

For The Port of New York and New Jersey

Presented by The Clean Air Strategy Partners
October 13, 2009

The Clean Air Strategy Partners



City of New York



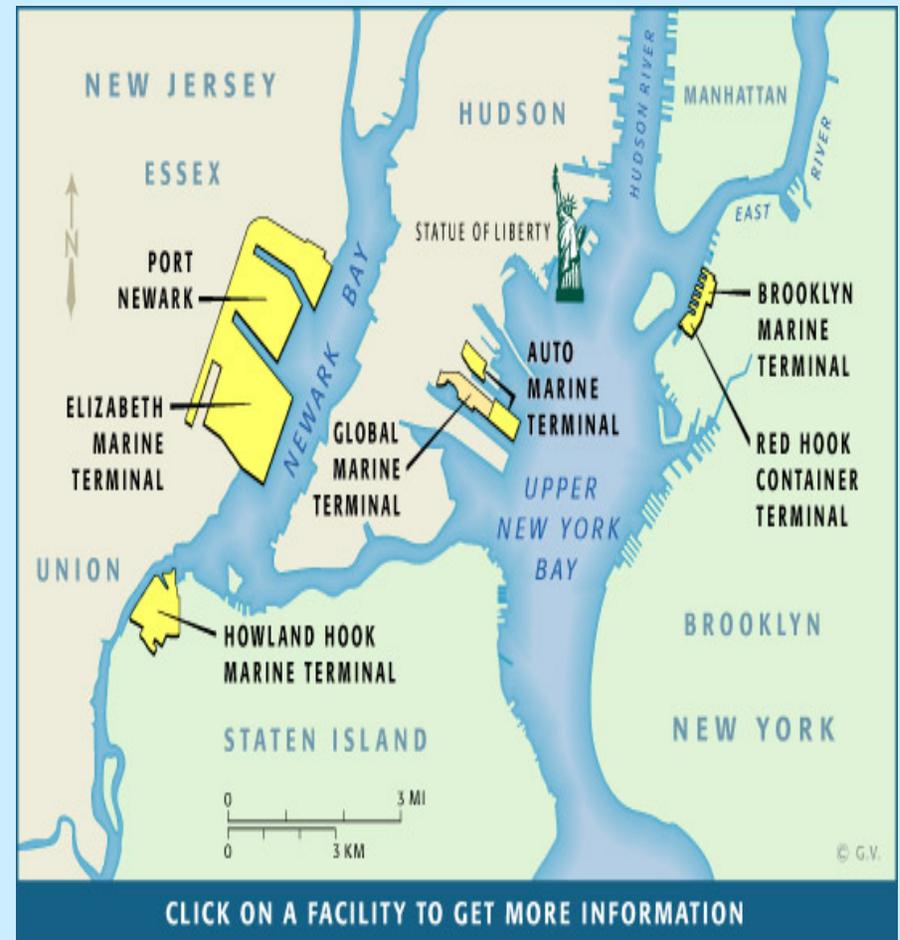
The Port of New York & New Jersey

Economic Impact

- 269,000 jobs
- \$12 billion in wages
- \$6 billion in taxes

Port Authority Facilities

- Port Newark
- Elizabeth Port Authority Marine Terminal
- Port Jersey
- Howland Hook Marine Terminal
- Brooklyn Marine Terminal
- Red Hook Container Terminal
- NY-NJ Rail



Challenge and Response

The Challenge

How to accommodate cargo growth – with all the economic benefits that brings – and protect air quality.

Response

Develop A Clean Air Strategy for the Port of NY & NJ

- Identify emission reduction actions for ALL sources
- Incorporate feedback from port stakeholders
- Track Progress through a measurement verification and reporting system
- Implementation and support by all Strategy Partners

Strategy Purpose and Emissions Reduction Goals

Purpose

Reduce maritime-related air quality impacts on human health and the environment from criteria air pollutants;

Reduce maritime-related contribution to greenhouse gas emissions associated with climate change;

Contribute to the effort to bring the New York/Northern New Jersey/Long Island Non-Attainment Area into attainment

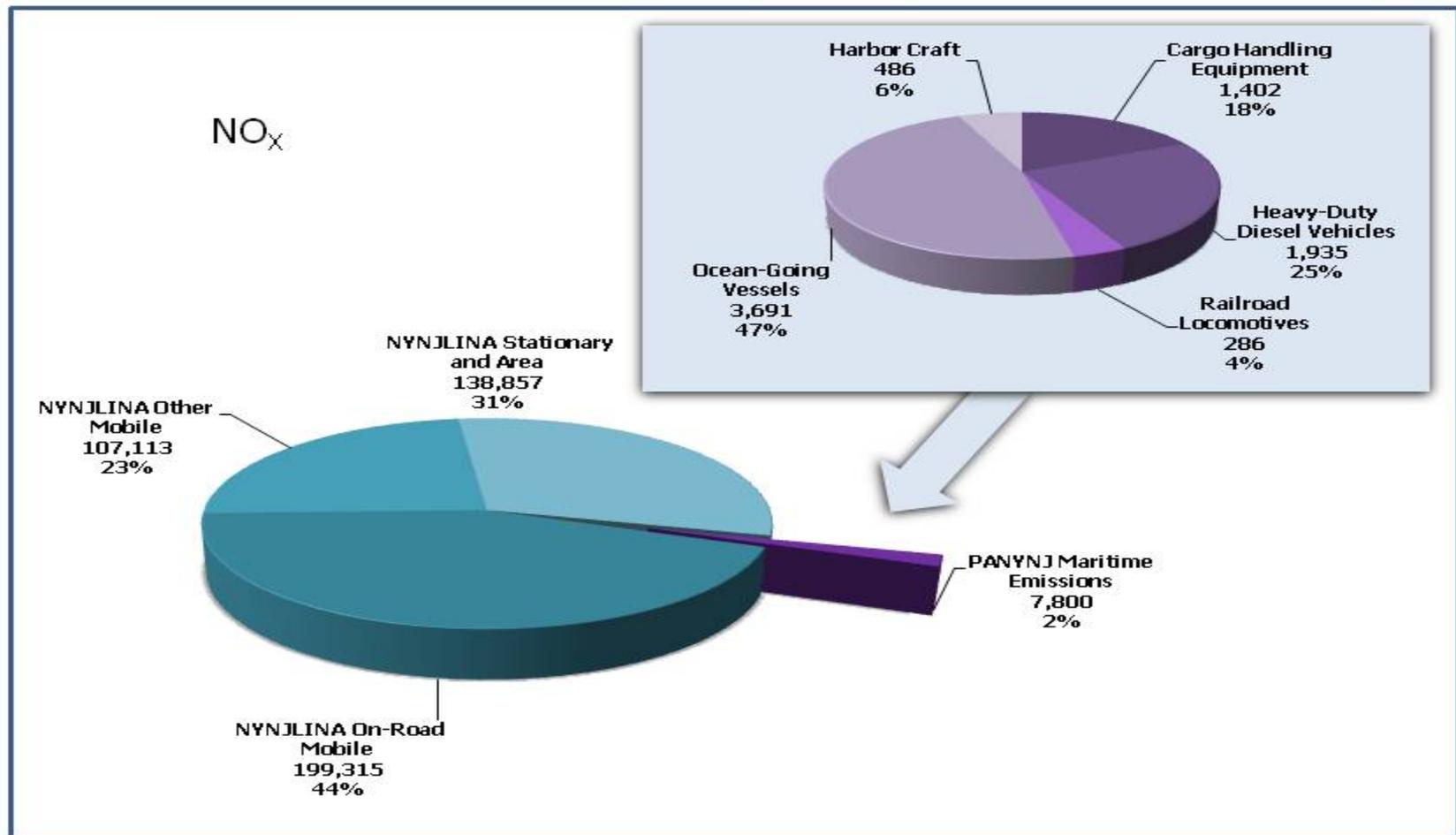
Goals

Overall decrease of Port-related maritime emissions despite any Port growth in the next ten years.

An annual 3 percent net decrease of criteria pollutants

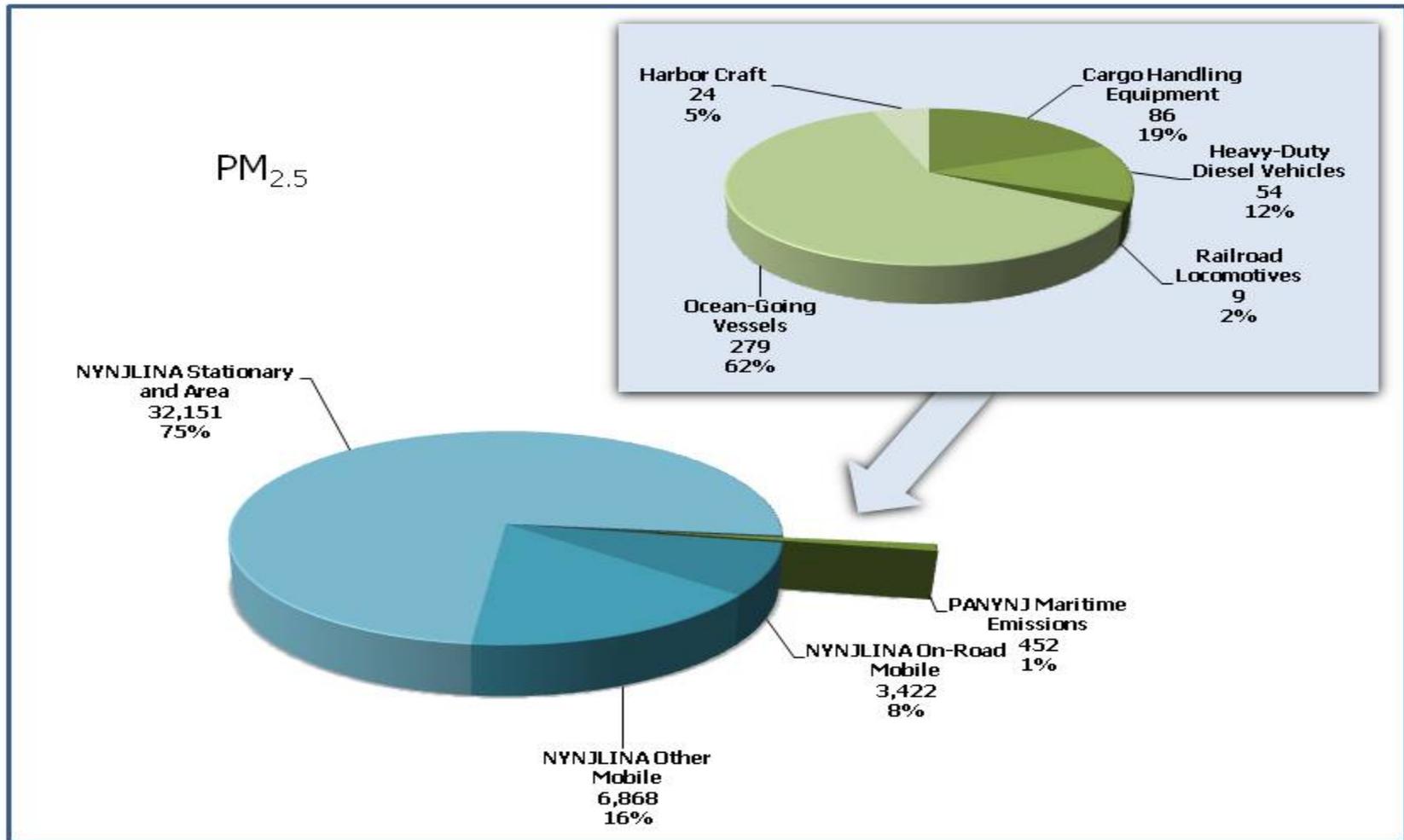
An annual 5 percent net decrease of Green House Gases

Distribution of Nitrogen Oxide (NO_x) Emissions by Source Category



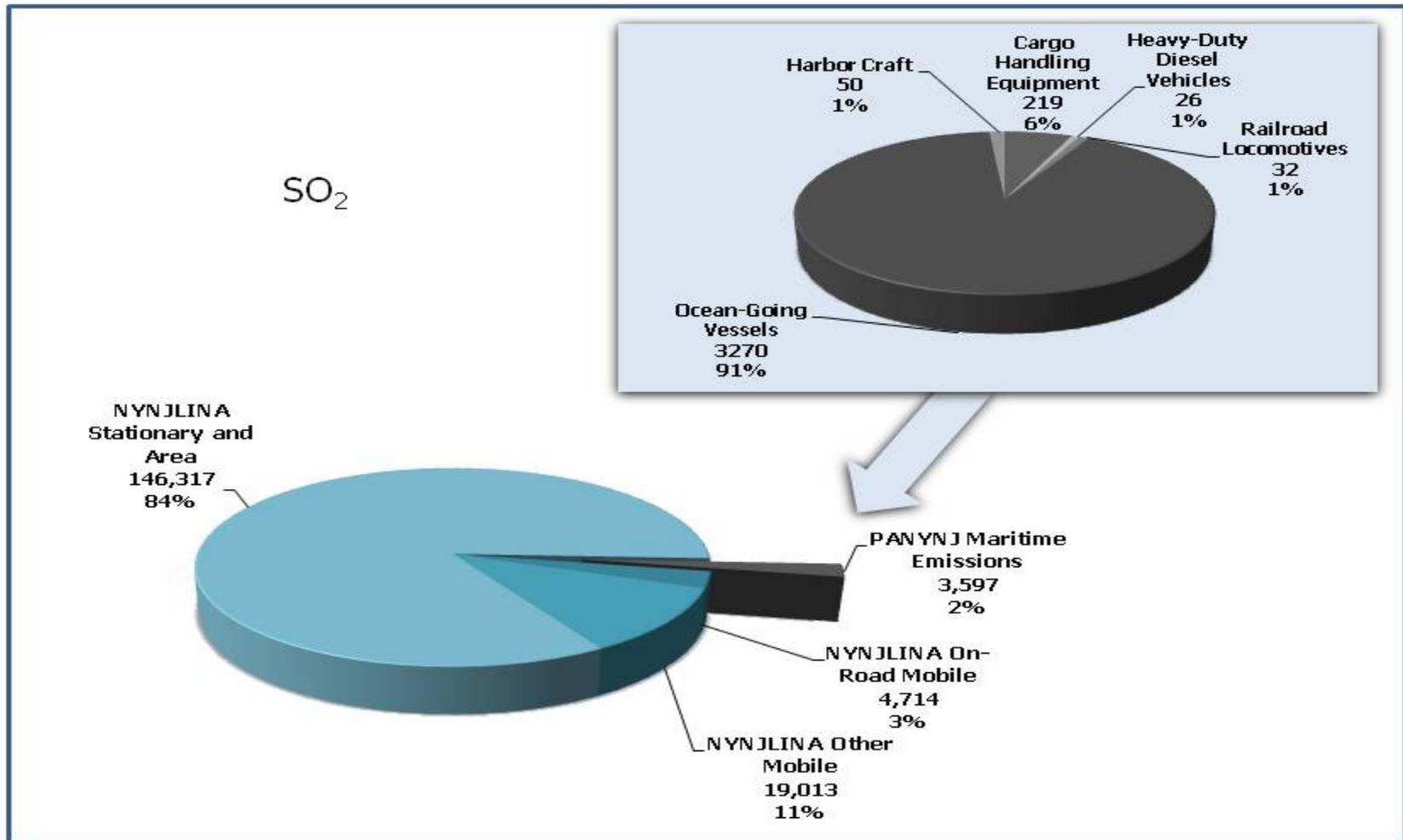
Source: Port Authority Port Commerce Department 2006 Baseline Multi-Facility Emissions Inventory

Distribution of Particulate Matter_{2.5} Emissions by Source Category



Source: Port Authority Port Commerce Department 2006 Baseline Multi-Facility Emissions Inventory

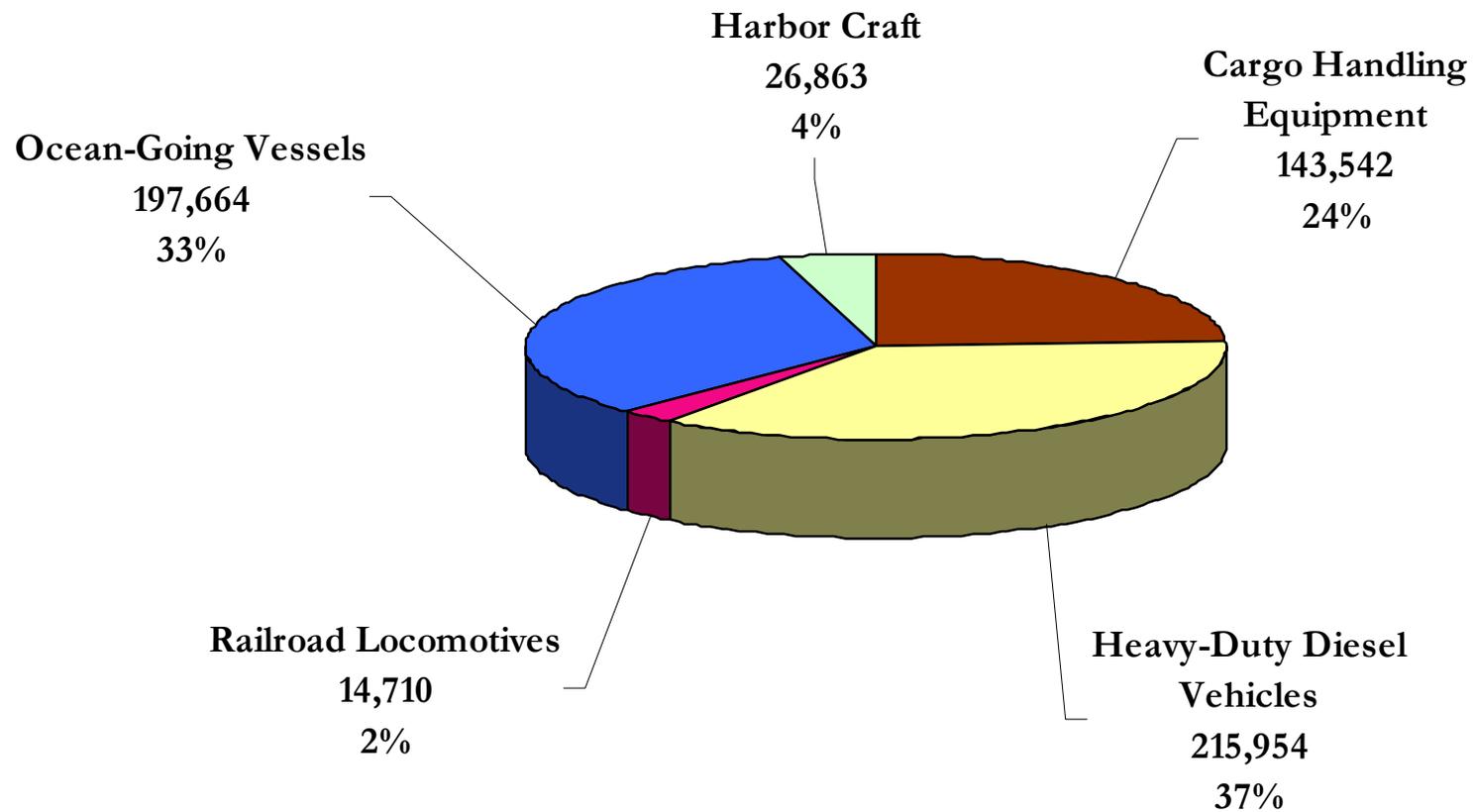
Distribution of Sulfur Dioxide (SO₂) Emissions by Source Category



Source: Port Authority Port Commerce Department 2006 Baseline Multi-Facility Emissions Inventory

Distribution of Greenhouse Gas

(CO₂ Equivalent) Emissions by Source Category



Maritime Activity Emissions Source Categories in the Clean Air Strategy

Ocean Going Vessels

Cargo Handling Equipment

Trucks

Rail

Harbor Craft



Ocean Going Vessels



Ocean Going Vessels: Proposed Committed Actions to Reduce Air Emissions

Establish a year-round vessel speed reduction incentive program for ships approaching the harbor

Develop an incentive program for switch to low sulfur fuel when in the Port of New York and New Jersey

Develop a Clean Ship/Green Flag program

Install shore-power capability at the Brooklyn Cruise Terminal.

Continue/expand international partnerships

NYCEDC to seek to repeal the New York State tax exemption for bunker fuel

Ocean Going Vessels: Proposed Future Actions to Reduce Air Emissions

Install shore-power capability at the NYCEDC's Manhattan Cruise Terminal and in conjunction with all new terminal developments

Implement pilot projects for bonnets and other promising new technologies

Cargo Handling Equipment



Cargo Handling Equipment: Proposed Committed Actions to Reduce Air Emissions

Sponsor pilot projects to test hydraulic and electric hybrid yard hostlers

Install new engines with Diesel Particulate Filters on two wharf cranes at Red Hook

Accelerate modernization/upgrade of the CHE fleet at all Port-Authority leased terminals to meet EPA's 2007 on-road standards

Replace a portion of the CHE fleet at all Port-Authority leased terminals with alternative powered equipment

Cargo Handling Equipment: Proposed Committed Actions to Reduce Air Emissions

Determine the causes of on-terminal idling by CHE and work to strengthen the Idle Reduction Program

Decommission or electrify eleven diesel cranes at Port Newark and Port Elizabeth.

Create an incentive program to retire and dismantle two diesel powered cranes.

Install/upgrade electrical power infrastructure to support electrification of 9 diesel powered wharf cranes

Cargo Handling Equipment: Proposed Future Actions to Reduce Air Emissions

Install wind turbines as alternative energy source on Port Authority facilities

Consider actions to address cold weather idling

Replacement/upgrade of all remaining CHE not covered under the committed actions

Trucks



Trucks: Proposed Committed Actions to Reduce Air Emissions

Work with shippers and vessel operators to establish a SmartWay-type partnership with vessel operators and shippers

Develop an appointment system for trucks serving the terminals, including a fast lane at the gate for newer (2004 or younger) vehicles, in order to decrease total truck turnaround time

Development of a program to phase out older trucks serving Port Authority marine terminal facilities based on model year

Establish a truck working group by June 2009 to work out implementation details, including funding, tracking mechanisms and structure

Trucks: Proposed Committed Actions to Reduce Air Emissions

Implement a \$2M revolving loan program to finance acquisition of newer, lower emitting vehicles

Implement a \$28M Truck Replacement Program to provide incentives and financing to replace pre-1994 trucks with 2004 or newer vehicles

Conduct a study of freight movement, modal splits, and short sea shipping

Develop public-private partnerships for retrofits and/or alternative fuels

Trucks: Proposed Future Actions to Reduce Air Emissions

Develop near-Port truck parking areas with plug-in electrification technology to reduce idling emissions and rest stop amenities

Assess the feasibility of creating a new exit ramp or Port-only lane off of the New Jersey Turnpike between exits 13A and 14A for Port truck traffic

Work with shipping lines to change the operating rules for chassis pool so they are more effective

Install plug-ins for refrigerated containers (reefers) at New York City marine terminals and Hunts Point

Rail



Rail: Proposed Committed Actions to Reduce Air Emissions

Retrofit/replace up to five switching locomotives serving the Port with GenSets

Implement switch to ULSD fuel in switcher locomotives serving the Port and in cargo handling equipment at intermodal yards

Implement operational procedures to shut down locomotive engines when not in use and outside temperatures permit.

Rail: Proposed Committed Actions to Reduce Air Emissions

Extend and modernize rail lines to and in South Brooklyn Marine Terminal and the Port Jersey Peninsula to increase efficiency

Install anti-idling technology in switcher locomotive engines at the Port Newark and Elizabeth Marine Terminal

Begin evaluation of alternative powered (hybrid, CNG or all-electric) lifting equipment at intermodal yards

Rail: Proposed Future Actions to Reduce Air Emissions

Consider a long term, operational change of increasing the amount of cargo leaving the Port on rail versus truck

Implement efficiency improvements, such as the electrification of lift equipment and use of alternative powered lifting equipment at intermodal yards close to the port

Reduce dependency on trucks by enhancing use of rail and barge, such as through Express Rail expansion, development of short haul rail lines and implementation of short sea shipping

Harbor Craft



Harbor Craft: Proposed Committed Actions to Reduce Air Emissions

Revitalize the cross-harbor rail barge: convert locomotive switcher engines to GenSet configuration, implement use of ULSD fuel.

Install diesel oxidation catalysts on private ferries

Accelerate the use of ULSD fuel in harbor craft in advance of EPA's 2012 non-road diesel standards, including expanding availability and the number of fueling sites in the New York/ New Jersey Harbor.

Adopt measures to increase fuel efficiency in harbor craft including speed reduction and vessel assignment planning.

Encourage the use Automatic Identification System to monitor incoming vessel speeds and plan just in time arrival

Harbor Craft: Proposed Committed Actions to Reduce Air Emissions

Identify nearby places where tugs can tie up and shut down engines between assignments

Investigate and test post-combustion controls and after-treatment technologies for tugs

Raise awareness about reducing emissions and influence new purchases to include equipment up to highest emission standards

Expand marine vessel engine replacement and engine retrofit program to private ferries, tugs and other harbor craft including consideration of relaxing the requirement to stay in the harbor a large percent of the time

Harbor Craft: Proposed Future Actions to Reduce Air Emissions

Explore options for reducing the cost of cleaner/alternative fuels for harbor craft

Install strong-arm dockers on ferries, which will enable them to shut off their engines while picking up or discharging passengers at dock

Develop dockside electrification for tugs

Implement a hybrid ferry and tug pilot program

Use anti-fouling hull coatings on marine vessels to reduce drag and improve fuel efficiency

Next Steps

Implementation

- Coordination
- Working Groups
- Funding
- Stakeholders and Community Involvement

Reporting

- Biennial update for Emissions Inventory
- Biennial update of Clean Air Strategy

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