SAN PEDRO BAY PORTS
CLEAN AIR ACTION PLAN

AASHTO Special Committee on Freight Advancements in Port Decarbonization

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South Coast Air Basin Emissions Topography
San Pedro Bay Environmental Challenges

• Among Worst Air Quality in United States
  – Must push to further reduce pollutants
  – Health Risk for Adjacent Communities
  – Greenhouse Gas also critical

• Ports are a vital economic engine
  – 1 in 9 jobs in region
  – Over 40% of imported goods

• Growth and environmental programs must occur together
2006 Original Clean Air Action Plan

• 5 year plan (reduce emissions by 50% from major source categories: ships, trains, on-road trucks, harbor craft and cargo handling equipment)

• Minimize Health Risk from Port Operations

• Contribute “fair share” to reducing regional mass emissions

• Enable Port development
2010 Clean Air Action Plan Update

• Established Health Risk Reduction Standard (85% below 2005 levels by 2020)

• Created Emission Reductions Standards
  • Reduce NOx emissions by 22% by 2014 and 59% by 2023
  • Reduce SOx emissions by 93% by 2014 (and 2023)
  • Reduce DPM emissions by 72% by 2014 and 77% by 2023

• Tracked through annual emissions inventories
Environmental Investments

- Ports have invested over $600M in environmental programs since 2006
- Bulk of investment spent on three programs:
  - Ships (shore power and vessel speed reduction)
  - On-road trucks (Clean Trucks Program)
  - Technology Advancement
2017 CAAP Update

• Continue 2010 Health Risk and Emission Reduction Standards (2020 and 2023)

• Adds GHG reduction requirements
  • 40% below 1990 levels by 2030
  • 80% below 1990 levels by 2050

• Adds new strategies to reduce emissions, including efficiency measures and zero emissions goals
  • Reduce reliance on combustion-based engines/carbon-based fuels

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2017 CAAP Update Overview

- OCEAN-GOING VESSELS
- HARBOR CRAFT
- ON-ROAD TRUCKS
- TERMINAL EQUIPMENT
- EFFICIENCY IMPROVEMENTS
Ocean-Going Vessels

- Increase vessel speed reduction compliance within 40 nautical miles
- Increased control of at-berth emissions
- Incentivize energy efficiency upgrades and clean technologies
- Develop a Clean Ship Program to transition the oldest, most polluting ships out of the fleet (Expand Environmental Ship Index Program)
• Advance the Clean Trucks Program and transition to zero-emission trucks by 2035
• Adopt a reservation system at terminals to improve trucks turn times
Terminal Equipment

- Transition to zero emissions terminal equipment by 2030
- Limit idling
Additional 2017 CAAP Update Highlights

- Expand use of on-dock rail
- Accelerate deployment of cleaner harbor craft engines
- Encourage improvements in freight efficiencies
- Develop Green Terminal Recognition Program
- Ensure energy infrastructure is available to support use of cleaner technologies
Zero Emission Challenges

- Technology in infancy
- High cost of infrastructure
- Conflict between the time for technology to become mature and the immediate needs for air quality and addressing health problems
- Some believe low emission hybrid/alt fuel reasonable alternative
- Zero emissions may be the only long-term solution to Greenhouse gas problem
Technology Development and Efficiency

- **Technology Development:**
  - Demonstrations of Zero Emissions On-road Trucks
  - Demonstrations of Harbor Craft engine technologies
  - Zero Emission Switcher Locomotive
  - Alternative At-berth Emission Reduction Technologies
  - Zero Emission Terminal Equipment Technologies

- **Efficiency Improvements**
  - Bigger ships, increased use of rail
  - Increased planning (GE Portal Demonstration)
San Pedro Bay’s Changing Role

- No longer just “Landlord Ports”
- Ports as partners in goods movement industry
- Deeper collaboration and planning necessary
- Increased dialogue with Supply Chain Stakeholders
- Must balance critical environmental needs with economic imperatives (grow green)
THANK YOU

Questions?