Emission Reduction Plan for Ports and Goods Movement in California
(approved April 2006)

Maritime Workgroup Meeting

September 12, 2006

Air Resources Board
California Environmental Protection Agency

Key Emission Sources

- Heavy diesel trucks
- Locomotives
- Ships
- Harbor craft
- Cargo handling equipment
Goods Movement Contribution to Statewide Emissions in 2005

ARB Goals for Goods Movement

Reverse growth in emissions
- By 2010, reduce emissions as much as possible, at least to 2001 levels

Reduce diesel PM risk
- Rapid reduction in community risk
- By 2020, reduce statewide risk 85%

Attain all federal standards
Emission Reduction Strategies

- Cleaner engines and fuels
- Fleet modernization (retrofit or replace)
- Speed reduction and idling limits
- Shore-based power for ships and tugs
- Operational efficiencies
- Land use decisions
- Project and community specific mitigation
- Port programs

ARB Action – April 20, 2006

Board approved plan and directed staff to:

- Expeditiously pursue proposed ARB rules and other actions
- Work with port operators and others to reduce emissions and health risk
- Report back in November and every 6 months thereafter
Recently Adopted ARB Rules

- Low sulfur fuel for trucks, equipment, harbor craft, in-state locomotives
- Truck idling limits
- International border trucks
- Ban on cruise ship incineration
- Marine auxiliary engine fuels
- Diesel cargo handling equipment
- Gas forklifts

New ARB Rulemaking or Alternatives --- Public Process Underway

- Port trucks
- Privately-owned truck fleets
- Shore power for ships and harbor craft
- Ban on ship incineration (beyond cruise ships)
- Harbor craft fleets & new engine standards
New ARB Rulemaking or Alternatives --- Beginning Soon

- Low sulfur fuel for ship main engines
- Expanded ship speed reduction
- Switcher/yard locomotive upgrades
- “Green ship” construction and deployment to California service

Conclusions

- Need expeditious action to cut community risk
- Reducing goods movement emissions is key for new clean air plans
- ARB will use its full authority
- Partnerships are critical for success
- Will take large effort and resources from industry, agencies, and the public
Expanded Description of Emission Reduction Strategies

Ships In/Near Port

✓ ARB rule for clean auxiliary engine fuel
✓ Shore power or alternative technology (40% of ship visits by 2010, 100% by 2015)
✓ Retrofit controls on auxiliary engines
✓ Additional vessel speed reductions
Ships in California Coastal Waters

- Cleaner fuel for main engines
- Bring cleaner ships to California service
  
  Step 1: Ships retrofitted with controls
  (20% of visits by 2010, 50% by 2015)
  Step 2: “Green” ships at 90% NOx/PM control
  (25% of visits by 2015, 50% by 2020)
  By 2020: 90% of visits by either new green or retrofitted ships

Statewide Impact on Ships in Port
(Emissions in tons per day, 2005-2020)
Trucks

- Port “drayage” truck modernization program
  - Incentives, ARB rule, ports as gatekeepers
  - Need for comprehensive approach
- Statewide fleet rule for private trucks
  - ARB rules for international trucks, anti-idling and low sulfur diesel

Statewide Impact on Port Trucks (Emissions in tons per day, 2005-2020)
Locomotives

- Upgrade switcher/local yard locomotives
- More stringent national locomotive standards
  - Tier 3 for new engines (90%+ PM/NOx), cleaner rebuilds, anti-idling, diagnostics
- Bring cleaner locomotives to California service
  - All Tier 2 engines in South Coast by 2010
  - 60% Tier 3 + cleaner rebuilt engines by 2015, 100% by 2020

Harbor Craft

- ARB fleet rule for existing engines
- Shore-based electrical power in port
- Tighter U.S. EPA or ARB emission standards for new engines
Cargo Handling Equipment

- ARB rule for new and existing diesel equipment
  - Replace all yard tractors with new, very low PM engines within 5 years
  - Ensure large reduction in NOx
- ARB rule for new and existing gas forklifts and other large industrial equipment

Next Steps
SIP Development

- Development of a statewide strategy underway
- Key element will be goods movement emission reductions
- Evaluating alternative approaches and opportunities for additional or alternative measures for emission reductions beyond those identified in Plan
- Symposium scheduled for October 12 in Sacramento