Proposition 1B: Goods Movement Emission Reduction Program

Concepts for Updates to Program Guidelines

March 1-4, 2010

Air Resources Board
California Environmental Protection Agency
California Air Resources Board

- Meet health-based air quality standards for particles and ozone
- Reduce cancer risk from air toxics like diesel particulate matter (PM)
- Cut greenhouse gas emissions
Freight-Related Diesel Pollution - Impacts at Multiple Levels
Prop 1B: Goods Movement Emission Reduction Program

• $1B to reduce emissions from freight transport in the four priority trade corridors
• Upgrade diesel trucks, locomotives, ship berths, cargo equipment, and harbor craft
• Goal: reduce emissions/health risk as quickly as possible in heavily impacted communities
Trade Corridors

Bay Area

Central Valley
SJV Air Basin
+ Sac Region

LA/Inland Empire
South Coast Air Basin
+ Port Hueneme

San Diego/Border
San Diego + Imperial Counties
Reductions Must be Early or Extra

*Key existing ARB rules/requirements:*

- Port and rail yard truck rule
- Statewide truck and bus rule
- Truck idling and refrigeration unit rules
- Ship fuel and at-berth rules
- Harbor craft rule
- Cargo equipment rule
- Locomotive/rail yard agreements
Funding Flow

- Legislature
- ARB
- Local agency
- Equipment owner

- $250M per year in appropriations
- Cash to implement depends on bond sales
- Competitive process to select projects
Prior Board Actions

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
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<tbody>
<tr>
<td>Feb 2008</td>
<td>Adopted Program Guidelines</td>
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<tr>
<td>May 2008</td>
<td>Awarded 1st Year Funds ($250M)</td>
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<tr>
<td>Mar 2009</td>
<td>Aligned truck incentive programs</td>
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<tr>
<td>May 2009</td>
<td>Extended grant deadlines, shortened contract terms, and reduced drayage truck requirements</td>
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FY2007-08 Project Funding ($246.6M*)

Other trucks: $103.2M
Port/rail yard trucks: $124.1M
Locomotives: $16.5M
Shore power: $2.8M

*ARB administrative costs of ~$3.4M (1.4%)
Results of FY2007-08 Projects

• In 2009-2010
  – 5,100 new and retrofitted trucks operational
• In 2010-2011
  – 3 ship berths equipped with electrical power
  – 14 locomotives upgraded
• Estimated emission reductions
  – 2.3 million lbs PM
  – 40 million lbs NOx
Community Input

• To local agencies on project proposals (i.e., priorities for trucks v. rail v. ships)
• To ARB on Program requirements and funding awards within each region
Looking Ahead
Update to Program Guidelines

March 2010 proposal will update:

• Administrative elements to reflect changes made for FY2007-08 and future year funds
  – Improve efficiency and ease of use

• Project specifications for future year funds
  – Reassess technology, cost, demand, and regulatory requirements
Trucks and Truck Stops
Trucks

Retrofit

- $5-10k to retrofit MY1994-2006 engine with a PM filter (only MY2004-2006 for drayage)
- $20k to retrofit MY1994-2006 engine with a PM+NOx device to meet MY2007 levels or lower

Repower

- $30k to repower truck with MY1994-2006 engine with new MY2010 level engine

Replacement – MY2003 or older engine

- $60k to replace with MY2010 level truck
- $40k to replace with used MY2007 level truck
Three-way transaction

- $65k for three-way transaction to:
  - Replace *middle-aged* truck (MY1998-2006) with MY2010 level truck,
  - Retrofit *middle-aged* truck with PM filter, and
  - Scrap/replace *old* truck (MY1993 or earlier) with *middle-aged* truck

Electrification of trucks stops, distribution centers
Other Possible Changes for Trucks

- Combine port/rail yard trucks & other trucks
- Lower weight to 60,001+ lbs GVW or CGW
- Default mileage (also consider hours)
- Retrofits compete with other options
- Owner’s ability to change/leave contract
California Operation for New Truck

- Current: 100% CA operation
  - Greatest travel in the trade corridors and in highly-impacted communities
  - Least staff resources needed to monitor

- Evaluate 90% CA operation with lower Prop 1B funding
  - Local agencies could opt-in
  - Owner pays for GPS with “geofence” capability and monthly monitoring
Assistance for Smaller Trucking Fleets

• Less documentation needed to apply
• Grants for used MY2007+ trucks
• Improved access to financing
  – Expanded lease-to-own programs
  – Combined grant and loan guarantee
  – Subsidy for non-profits offering financing
• Truck reuse in low-use or agricultural fleets, plus fleets in NOx-exempt areas
Locomotives and Rail Yards
Freight Locomotives

Switcher (1,006 – 2,300 hp)
- $750k to meet better than Tier 3 stds
- $1M to meet Tier 4 stds for NOx or PM only
- $1.2M to meet Tier 4 stds for NOx and PM

Line-haul (2,301-4,000 hp)
- $750k to meet better than Tier 3 stds
- $1.0M to meet Tier 4 stds for NOx or PM only
- $1.5M to meet Tier 4 stds for NOx and PM

Line-haul (4,001 hp or higher)
- $1.2M to meet Tier 3 or lower stds
- $1.5M to meet Tier 4 stds for NOx or PM only
- $2.0M to meet Tier 4 stds for NOx and PM
Freight Locomotives

Hood technology at rail yards

- 85% capture and control efficiency
- Funding to achieve cost-effectiveness of at least 0.15 lbs/State $ to compete

Eligibility for Class I Railroads in the South Coast

- Allow projects to compete for funding if the upgraded locomotives are excluded from the fleet average calculations under the 1998 agreement
Ships at Berth and Cargo Handling Equipment
Ships at Berth

Grid-based shore power – 10 yr life
- Eliminate early requirements (pre-2014)
- Increase extra requirements beyond rule

Non-grid-based shore power – 5 yr life
- Begin usage requirements in 2012
- Lower operating hours for small ports

Hood technology for ships – 10 yr life
- 85% capture and control efficiency
- Funding to achieve cost-effectiveness of at least 1.0 lbs/State $ to compete
Cargo Equipment

Rubber-tired gantry crane

- Remove - energy storage system option
- Add - repower with electric or zero-emission power system at $100k or 50% of eligible cost

Yard truck with off-road MY2004-06 engines

- Add - replace with electric or zero-emission yard truck at $50k or 50% of eligible cost
Commercial Harbor Craft
Commercial Harbor Craft

- Reduce project life to 8 yrs

**Repower/replacement – standard engine**

- Upgrade Tier 0/1 engines with Tier 2/3 engines
  - $140/hp or 50% for regulated vessels
  - $190/hp or 80% for not regulated vessels

**Retrofit or replacement - hybrid power system**

- $100/hp or 80% of eligible costs
- Can be combined with engine repower grant
Reducing Greenhouse Gases

• Prop. 1B projects include conversion to electrification and alternative fuels, plus upgrades to more fuel efficient engines

• Proposal to exclude other State funds from cost-effectiveness calculation for projects with significant greenhouse gas reductions
  – Combine State AB118 and Prop. 1B $ for alternative fuel/hybrid trucks
  – Projects compete based on Prop. 1B $ only
Next Steps in 2010

*Tentative:*
March – Board hearing on guidelines
April – Call for local agency proposals
May/June – Evaluation & workshops
June – Board hearing to award funds  
*(contingent on cash availability)*
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