Update on California Actions to Minimize Community Health Impacts from Freight

California Air Resources Board Meeting  March 21, 2019
Path Forward on Freight

- Tighten CARB rules & add facility infrastructure/compliance
- Support district facility-based measures & port initiatives
- Pursue stricter federal & international standards
- Coordinate & expand incentives for freight transition to zero emission operations

Protect communities near freight facilities
New CARB Freight Actions
(1st Board hearing dates shown)

Zero Emission (ZE) Operation

- ZE truck certification
- ZE trucks-mfrs
- ZE ships at berth
- Rail yard idling
- ZE TRUs
- ZE forklifts
- ZE trucks-fleets
- ZE drayage trucks
- ZE cargo equipment

2018
- Truck GHG
- Truck OBD

2019
- Handbook-1 Warehouses

2020
- Heavy-duty Omnibus
- Heavy-duty I/M
- Harbor craft
- Handbook-2 Ports, Rail
- Low-emission diesel fuel

2021

2022
- Non-preempted locomotives

Lower Emissions
CARB strategies already implemented to cut freight emissions and health risk

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<tr>
<th>Trucks</th>
<th>Ships</th>
<th>Locomotives</th>
<th>Equipment</th>
<th>Harbor Craft</th>
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<tr>
<td>• Fuel/engine</td>
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<td>• In-use trucks/turnover</td>
<td>• At berth reductions</td>
<td>• Fleet</td>
<td>• Port &amp; rail equipment</td>
<td>• Harbor craft engines</td>
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<td>• GHG limits</td>
<td>• Ship incinerator ban</td>
<td>• Fleet emission limits for South Coast</td>
<td>• Forklifts</td>
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<tr>
<td>• Idling and smoke limits</td>
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<td>• Diesel soot reduction at rail yards</td>
<td>• Airport equipment</td>
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<td>• In-use compliance</td>
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<td>• Transport refrigerators</td>
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Incentives to demonstrate & deploy cleaner models
Progress in Reducing Freight Emissions Statewide (2000-2035)

- **NOx**
  - Tons/Day
  - Years: 2000 to 2035

- **PM2.5**
  - Tons/Day
  - Years: 2000 to 2035

- **SOx**
  - Tons/Day
  - Years: 2000 to 2035

- **GHG**
  - Million Metric Tons/Year
  - Years: 2000 to 2035
But Freight Impacts are Still Significant

~1/3 of economy/jobs, ~1/2 of air pollution

Freight Impacts:
• Elevated cancer risks in communities near hubs
• Premature death, cardiac and respiratory disease
• Largest contributor to unhealthy levels of regional fine particulate and ozone pollution
• Rising greenhouse gas emissions
Public Engagement

- Input from communities, agencies, industry
- Monthly meetings with CA Cleaner Freight Coalition
- Industry workgroups
CARB Freight Actions Designed to Meet Multiple Objectives

Cut community health risk  
(support AB 617 emission reductions)

Attain regional air standards  
(support State Implementation Plan)

Mitigate climate change  
(support Scoping Plan and SLCP Plan)
## Progress on Freight Actions Underway

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<td><strong>8.</strong> Freight regulations reporting system</td>
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<td><strong>6.</strong> Harbor craft</td>
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Freight Handbook

- Guidance on siting, design, construction & operation of freight facilities to minimize impacts
- Strategies to reduce emissions and exposure, plus support community participation

Fresno, California
Handbook: Objectives

• Respond to community requests for “official” CARB recommendations that advocates can use locally
• Inform local decision makers of tools available to avoid/mitigate pollution
• Share “best practices” with facility developers
• Make a compelling case for facilities designed from the ground up to support zero-emission operations
Handbook: Structure

Main document:

Freight Handbook

Modules:

Next public meetings: Spring 2019
Cleaner Trucks

- ZE Advanced Clean Trucks
  *To be implemented concurrently:*
  - Phase 1: Manufacturer sales %
  - Phase 2: Fleet purchase %
- Heavy-duty Omnibus regulation for new engines
- Heavy-duty Inspection & Maintenance
- Next public meetings: April 2019
Ocean Going Vessels At-Berth

- Require more visits to reduce emissions at berth
  - Include more visits, vessel types, ports
  - Hold ports, terminals, technology providers accountable for doing their part too
- Next public meetings: May 2019
Vessels: Berth by Berth Analysis to Identify Feasible Control Options

Example shows limited room for a barge to fit and still allow access for vessel traffic.
Vessels: Potential Reductions at Berth

**Diesel PM cancer risk**
~ 70% in Bay Area
~ 60% in South Coast

**NOx**
~ 6 tpd statewide
~ 3 tpd in South Coast
Transport Refrigeration Units (TRU)

- Focus on transitioning to ZE operation
  - ZE truck TRUs
  - Plug-in trailer TRUs when stationary
  - Facility infrastructure
  - Electronic tracking
- Next public meetings: Mid-2019
TRU: Identifying Infrastructure Needs

- Require facilities to expand plug-in infrastructure to allow for ZE operation if TRUs are stationary
  - Evaluate facilities and locations needed
TRU: Operations at Cold Storage Warehouses Pose Elevated Risks

- Near-source cancer risks at high-activity facilities (~1,000 in a million)
- Facilities often sited in clusters

Example: Salinas CA
Rail Yards and Locomotives

- Staff working to consolidate two new regulatory measures
- UP and BNSF are complying with the 1998 Agreement
- ZE demo projects & Tier 4 grants in progress
- Next public meetings: Late 2019
Rail Yards: Activity of Older Locomotives Increasing in South Coast

47% Increase in Tier 0+/1+ Activity

Tier 0+ and Older    Tier 1+    Tier 2     Tier 3/ULEL    Tier 4
(Dirtiest ---- Cleanest)
Harbor Craft

• Focus on cleaner combustion for in-use and new engines
• Support introduction of zero-emission technologies in ferries, excursion, other
• Next public meetings: Spring 2019
Harbor Craft: Measuring Engine Space for Upgrade (Cal Maritime Academy)

3D scanner with laser
Recent Freight Facility Funding

- $205 million in CARB grants for zero/near-zero emission equipment and infrastructure at facilities
- 11 projects are located in disadvantaged communities
- Projects range from electric locomotives, trucks and TRUs to a hybrid tugboat and electric cranes and forklifts

**Project locations**
**Vehicle deployment areas**
Freight Regulation Reporting System

Facilities: ports & terminals, rail yards, warehouses, grocery stores, etc.

- TRUs
- Cargo equipment
- Locomotives
- Drayage trucks
- Harbor craft
- Ocean going vessels

A new web-based system for registration, compliance reporting & analysis, enforcement, and public access
California Sustainable Freight Action Plan

- Accelerating zero-emission operations
- Increasing efficiency
- Developing the workforce
Advocacy with Other Agencies
South Coast District: Board Direction on Facility-Based Freight Measures

- Rule concept + econ study
- Rule + explore MOU
- MOU
- MOU
To Further Progress on Sustainable Freight

- Adoption of proposed CARB regulations
- Emphasis on strategic development of freight infrastructure with CPUC, CEC, utilities
- Continued incentives for ZE demonstration and deployment (equipment + infrastructure)
- Local political will to insist on zero-emission operations at new freight facilities