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

2021
- Handbook-2
- Ports, Rail
- Low-emission diesel fuel

2022
- Non-preempted locomotives

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

<table>
<thead>
<tr>
<th>Trucks</th>
<th>Ships</th>
<th>Locomotives</th>
<th>Equipment</th>
<th>Harbor Craft</th>
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<tbody>
<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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<tr>
<td>• GHG limits</td>
<td>• Ship incinerator ban</td>
<td>• 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
- PM2.5
- SOx
- GHG
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

1. **Cut community health risk**
   (support AB 617 emission reductions)

2. **Attain regional air standards**
   (support State Implementation Plan)

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

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<td>2. Cleaner trucks (new and in-use)</td>
<td>8. Freight regulations reporting system</td>
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<tr>
<td>4. Transport refrigeration units</td>
<td>10. Advocacy with other agencies</td>
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<tr>
<td>5. Rail yards and locomotives</td>
<td>11. South Coast facility measures</td>
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<tr>
<td>6. 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:

Warehouses & Distribution Centers
Seaports
Rail Yards
Truck Stops and Other Locations

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

Images:
- Shore Power
- AMECS Barge-based Capture & Control
- ShoreKat Land-based Capture & Control
Vessels: Berth by Berth Analysis to Identify Feasible Control Options
Vessels: Potential Reductions at Berth

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

NOx
~ 6 tpd
~ 3 tpd
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)
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
A new web-based system for registration, compliance reporting & analysis, enforcement, and public access

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

TRUs
Cargo equipment
Locomotives
Drayage trucks
Harbor craft
Ocean going vessels

Freight Regulation Reporting System
California Sustainable Freight Action Plan

- Accelerating zero-emission operations
- Increasing efficiency
- Developing the workforce

Proposed Otay Mesa East Truck Crossing
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