Implementation of State SIP Strategy and South Coast AQMP - Concepts to Minimize the Community Health Impacts from Large Freight Facilities

March 22, 2018
Riverside, CA
Integrated Planning

- State SIP Strategy
- Sustainable Freight Strategy
- Ab 617
- Scoping Plan
Presentation Agenda

State SIP Strategy

Concepts to Minimize Freight Facility Impacts
Implementation of the State SIP Strategy and South Coast AQMP
SIP Mobile Source Strategy

- 184 tpd of NOx reductions from existing regulations in 2031
- 111 tpd of NOx reductions from new measures
- 14 new regulatory actions
- Advanced technology deployment

Table 2: Proposed New SIP Measures and Schedule

<table>
<thead>
<tr>
<th>Proposed Measure</th>
<th>Agency</th>
<th>Action</th>
<th>Implementation Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Road Light-Duty</td>
<td>ARB</td>
<td>2019 – 2021</td>
<td>2025</td>
</tr>
<tr>
<td>Advanced Clean Cars 2</td>
<td>ARB / BAR</td>
<td>n/a, ongoing</td>
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<tr>
<td>Lower In-Use Emission Performance Assessment</td>
<td>ARB / BAR</td>
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<tr>
<td>Further Deployment of Cleaner Technologies*</td>
<td>ARB / SCAGMD / U.S. EPA</td>
<td>ongoing</td>
<td>2015</td>
</tr>
<tr>
<td>On-Road Heavy-Duty</td>
<td>ARB</td>
<td>2017 – 2020</td>
<td>2015 +</td>
</tr>
<tr>
<td>Lower NOx Regime Standard – California Action</td>
<td>ARB</td>
<td>2019</td>
<td>2025</td>
</tr>
<tr>
<td>Lower NOx Engine Standard – Federal Action*</td>
<td>U.S. EPA</td>
<td>2019</td>
<td>2024</td>
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<tr>
<td>Innovative Low Emission Technology</td>
<td>ARB</td>
<td>2017</td>
<td>2015</td>
</tr>
<tr>
<td>Last Mile Delivery</td>
<td>ARB</td>
<td>2018</td>
<td>2020</td>
</tr>
<tr>
<td>Innovative Technology Certification Flexibility</td>
<td>ARB</td>
<td>2018</td>
<td>2017</td>
</tr>
<tr>
<td>Zero-Emission Airport Shuttle Buses</td>
<td>ARB</td>
<td>2018</td>
<td>2017</td>
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<tr>
<td>Innovative Funding to Achieve Further Emission Reductions from On-Road Heavy-Duty Vehicles</td>
<td>ARB / SCAGMD</td>
<td>ongoing</td>
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<td>Further Deployment of Cleaner Technologies*</td>
<td>ARB / SCAGMD / U.S. EPA</td>
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<tr>
<td>On-Road Federal and International Sources</td>
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<tr>
<td>Tier 4 Vessel Standards</td>
<td>ARB / IMO</td>
<td>2015 – 2018</td>
<td>2015 +</td>
</tr>
<tr>
<td>Anti-Hot Spot Regulation Scorecard</td>
<td>ARB</td>
<td>2017 – 2018</td>
<td>2015</td>
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<td>ongoing</td>
<td>2015</td>
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<tr>
<td>Off-Road Equipment</td>
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<tr>
<td>Zero-Emission Off-Road Forklift Regulation Phase 1</td>
<td>ARB</td>
<td>2020</td>
<td>2023</td>
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<tr>
<td>Zero-Emission Off-Road Forklift Emission Reduction Assessment</td>
<td>ARB</td>
<td>2025 +</td>
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<tr>
<td>Zero-Emission Off-Road Worksite Emission Reduction Assessment</td>
<td>ARB</td>
<td>n/a</td>
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<tr>
<td>Small Off-Road Engines</td>
<td>ARB</td>
<td>2018 – 2020</td>
<td>2022</td>
</tr>
<tr>
<td>Transport Refrigeration Units Used for Cold Storage</td>
<td>ARB</td>
<td>2018 – 2019</td>
<td>2020 +</td>
</tr>
<tr>
<td>Low-Carbon Diesel Requirement</td>
<td>ARB</td>
<td>by 2020</td>
<td>2025</td>
</tr>
<tr>
<td>Consumer Products</td>
<td>ARB</td>
<td>2019 – 2021</td>
<td>2020 +</td>
</tr>
</tbody>
</table>

* Required for EPA approval under the provisions of Section 111(d)(6) of the Clean Air Act for areas failing to attain or to reasonably be expected to attain the National Ambient Air Quality Standards. This includes the implementation of new control techniques or improvement of existing control technologies, as well as the identification of needed funding, infrastructure development, and actions/assurances required from other agencies.
Tracking Progress in Three Areas

I. Rule development
II. Advanced technology deployment
III. Reductions achieved

Multiple metrics for each area
## Rule Development

### Metric
- Initiation of regulatory development process
  - Workshop held
  - Stakeholder working group convened
  - ISOR released, etc.
- Board action by scheduled date

### Current Status
- Development process initiated for 11 of 14 regulatory measures
- Two regulatory measures adopted
- South Coast Incentive Measure considered earlier today
Heavy-Duty Vehicle Measures

Rules adopted

✓ Innovative Technology Certification Flexibility
✓ Medium and Heavy-Duty GHG Phase 2

Development started:

• Low-NOx Engine Standard
• Lower In-Use Emission Performance Level
• Innovative Clean Transit
• Advanced Clean Trucks
• Zero-emission Airport Shuttle Buses
Off-Road Measures

Development started:

- Small Off-Road Equipment (SORE) Amendments
- Ships At-Berth Amendments
- Transport Refrigeration Units (TRUs)

Petitioned U.S. EPA for more stringent locomotives emission standards
## Advanced Technology Deployment

<table>
<thead>
<tr>
<th>Metric</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Securing new incentive funds</td>
<td>✓ Substantial first-year allocation of over $1B in incentive funds</td>
</tr>
<tr>
<td>• Count of equipment deployed</td>
<td></td>
</tr>
<tr>
<td>• New regulatory actions or emission control strategies</td>
<td>✓ Identifying additional freight actions</td>
</tr>
</tbody>
</table>
Incentive Funding Secured

- **FARMER Program**
  - Criteria, toxics, GHG reductions from agriculture
  - $135M for 2017-18

- **AQIP**
  - Criteria pollutant and toxics reductions
  - $28M for 2017-18

- **Carl Moyer Program**
  - SIP emission reductions
  - $69M for 2017-18

- **Community Air Protection**
  - Criteria, toxics, GHG reductions for communities
  - $250M for 2017-18

- **Zero-Emission Warehouses**
  - Criteria pollutant, toxics, and GHG reductions
  - $50M for 2017-18

- **Low Carbon Transportation**
  - GHG reductions and AB 1550 benefits
  - $560M for 2017-18

- **VW Mitigation Trust**
  - NOx mitigation
  - $423M for 2017+

- **VW ZEV Car Scrap/Replace**
  - ZEV deployment and equity
  - $25M for 2017-18

- **Prop 1B Goods Movement**
  - NOx and PM reductions in freight corridors
  - ~$10M remaining
Reductions Achieved

Metric

• Evaluating pace of emission reductions
  • Existing rules
  • New regulations and actions

Current Status

☑ Early actions lay foundation for emission reductions from future measures
☑ On pace for achieving emission reductions
Implementation Phases and Emission Reductions

Mobile Source NOx emissions (tpd) in South Coast

- Reductions from current program
- Reductions from SIP measures

2015
2031

Target
South Coast AQMP Commitments

- Sunset the RECLAIM program and transition to command and control
- Secure incentive funding to accelerate transition to cleaner technologies
- Develop facility-based measures
Actions on RECLAIM that provide NOx reductions:

**2016**
- Shutdown credits surrendered

**2018**
- No new RECLAIM sources
- Credits frozen as sources exit
- Develop transition Plan
- Develop BARCT-level regulations
Securing New Funding: South Coast

- District Voluntary Incentive Program
- AB 134 - Budget Act of 2017
- Volkswagen Settlement fund
# Facility-Based Measures

## South Coast Staff Recommendations

South Coast Board will consider these recommendations in April.

<table>
<thead>
<tr>
<th></th>
<th>Voluntary Measures</th>
<th>Regulatory Measures</th>
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</thead>
<tbody>
<tr>
<td>Ports</td>
<td>MOUs</td>
<td>If needed, evaluate ISR</td>
</tr>
<tr>
<td>Airports</td>
<td>MOUs and CAAP</td>
<td>If needed, ISR requiring CAAP</td>
</tr>
<tr>
<td>Rail Yards</td>
<td>MOUs</td>
<td>Required CAAP, additional options</td>
</tr>
<tr>
<td>Warehouses</td>
<td>CEQA Mitigation Fund, Guidance Document, Green Delivery</td>
<td>ISR, Fleet Certification, additional options</td>
</tr>
<tr>
<td>New / Redevelopment</td>
<td>Guidance Document, CEQA Mitigation Fund, Expand charging / alt-fueling infrastructure</td>
<td>ISR, Fleet Certification, additional options</td>
</tr>
</tbody>
</table>
Concepts to Reduce the Community Health Impacts from Large Freight Facilities
Objectives for Freight Transport

- Cut community health risk
- Attain regional air standards
- Mitigate climate change

- Zero-emission (ZE) operation
- Efficiency
- Economy/competitiveness
Board Direction on Freight (March 2017)

• Resolutions directed that
  “…within 12 months, staff shall return to the Board with concepts for an Indirect Source [Review] Rule to control pollution from large freight facilities including ports, rail yards, warehouses and distribution centers, as well as any identified alternatives capable of achieving similar levels of emission reductions…”

• Develop rules to further reduce pollution from ships and cargo equipment

• Coordinate with South Coast District on related facility-based efforts
Evaluating Concepts

Staff focused on these outcomes:

- Effectiveness in reducing emissions and health risk to protect communities
- Opportunities to increase efficiency
- Implementation feasibility for equipment operators/facilities
- Ease of compliance and enforcement
- Certainty of implementation
Public Engagement

Impacted communities and stakeholders identified concerns and contributed ideas.
Feedback at Community Meetings

**Oakland:** “Because of increased enforcement at the Port, trucks are idling all throughout West Oakland.”

**Fresno:** “Fresno has lots of rail siding and spur lines, and old technology. We don’t want old technology to get pushed [here]”

**Fontana:** “We need to figure out how to manage the increasing number of trucks and warehouses in our neighborhoods.”

**Los Angeles:** “These changes can’t wait, we need earlier timelines to reduce burdens on health.”
Facility-Based Approaches

Pros
- Air district ISRs may regulate all sources at facility
- May require infrastructure
- Can reward efficiency

Cons
- Potential for delays
- May be complex for facilities to comply and agencies to enforce

Enforceable agreements
Project design & mitigation measures
Incentives

CARB & district regulations
ISR Rule Concepts (examples)

- Best practices or mitigation fees (San Joaquin Valley)
- Facilitywide emissions target
- Facilitywide emissions per unit of cargo
- x% zero emission operation onsite
- Facility clean air action plan staff concepts (South Coast)
- Voluntary fleet certification with facility requirement staff concepts (South Coast)
Sector-Based Approaches

- **Enforceable agreements**
- **National/international standards**
- **Incentives**

**Pros**

- CARB history/expertise
- Clarity for equipment owners
- Easier to determine compliance on site

**Cons**

- May not address fueling, charging infrastructure
- Harder to assess total impacts from facility

CARB regulations
Seaport – Contribution to Near-Source Cancer Risk

- Trucks to ~3 mi
- On-site equipment
- Ships to ~40 nm
- Harbor Craft to ~40 nm
- Locomotives to ~3 mi

Activity held constant (no growth); reflects rules + fleet turnover

2016

2023
Intermodal Rail Yard – Contribution to Near-Source Cancer Risk

- On-site locomotives
- On-site equipment
- On-site trucks
- On-site TRUs

Average Near-Source Cancer Risk

Activity held constant (no growth); reflects rules + fleet turnover
Distribution Center – Contribution to Near-Source Cancer Risk

Activity held constant (no growth); reflects rules + fleet turnover

On-site equipment

On-site trucks

2016

2023
Cold Storage - Contribution to Near-Source Cancer Risk

Activity held constant (no growth); reflects rules + fleet turnover
CARB Staff’s Conclusion on Concepts

Most effective approach for CARB to achieve significant, enforceable reductions:

• Develop CARB freight rules using a hybrid approach affecting both equipment and facilities
  o Transition to ZE, supplemented with near-zero
  o Facility requirements for fueling/charging infrastructure and compliant equipment
  o Priorities based on community risk
• Work closely with districts to weave together CARB sector rules and any air district ISR rules
ZE Drayage Trucks

1. Participate in the San Pedro Bay Ports’ determination of drayage truck rates to incentivize ZE/near-zero emission truck trips

2. CARB rule to transition drayage trucks to ZE or ZE operation

Considerations:

- Return on investment
- Cost & innovative financing
- Demonstrations underway
- Preferred access (ports, I-710)
Harbor Craft and ZE Cargo Equipment

3. CARB rule for cleaner combustion in commercial harbor craft (in-use and new); freight-related and passenger vessels

4. CARB rule to transition cargo handling equipment to ZE

Considerations:

- Return on investment
- Feasibility of Tier 4 marine retrofits
- ZE potential
- Planning/funding for infrastructure
- Labor
- Automation
5. CARB rule or alternative to reduce idling from rail operations and emissions from other stationary locomotive operations

6. CARB rule or alternative to accelerate upgrade of locomotives not preempted under the Clean Air Act

Considerations:

- Federally mandated activities
- Funding
- Technology for stationary locomotive control
7. CARB handbook that identifies best practices and guidance for the siting, design, construction, and operation of freight facilities

First module: warehouses and distribution centers

8. Additional modules: seaports, rail yards, others

Considerations:

- State partners
- Extensive engagement
- Freight clusters & pollution burden
- Sensitivity to local authority
- State & district CEQA guidelines
9. Form a new team focused on enforcement at warehouses and distribution centers to ensure compliance at freight hubs across the state

Considerations:

- Responsiveness to community concerns
- Additional enforcement partnerships
- Level playing field within the supply chain (vehicle operators, brokers, shippers, and receiving facilities)
# Next Steps

## New CARB Rules and Other Actions

<table>
<thead>
<tr>
<th>Action</th>
<th>To Board</th>
<th>Implement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freight Hub Enforcement Team</td>
<td>---</td>
<td>2018</td>
</tr>
<tr>
<td>San Pedro Ports’ drayage truck rates</td>
<td>---</td>
<td>2018-19</td>
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<tr>
<td>Freight Handbook – Module 1</td>
<td>2019</td>
<td>2019</td>
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<tr>
<td>Harbor craft</td>
<td>2020</td>
<td>2023+</td>
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<tr>
<td>Rail yard idling and other operations</td>
<td>2020</td>
<td>2023+</td>
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<tr>
<td>Freight Handbook – Module 2+</td>
<td>2021+</td>
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<td>Non-preempted locomotives</td>
<td>2022</td>
<td>2025+</td>
</tr>
<tr>
<td>ZE Cargo handling equipment</td>
<td>2022</td>
<td>2026+</td>
</tr>
<tr>
<td>ZE Drayage trucks</td>
<td>2022</td>
<td>2026-28+</td>
</tr>
<tr>
<td>Plus annual update to the Board</td>
<td>2019+</td>
<td></td>
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</table>
Summary: Path Forward on Freight

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