

# Who is CARB?



## CARB

*Regulates mobile sources of air pollution, greenhouse gases, and consumer products.*



Cars



Trucks



Buses



In-Use compliance focuses on engines that are already in use by the public. Certification ensures that new engines being sold in California meet specific emissions standards.

# Tools in Development

- Truck Idling
- Enhanced Enforcement
- Zero Emission Vehicle Deployment
- Emissions Reductions from Freight

What does this Community Steering Committee want to discuss?

What do you want to know more about?

What efforts do you have input on?

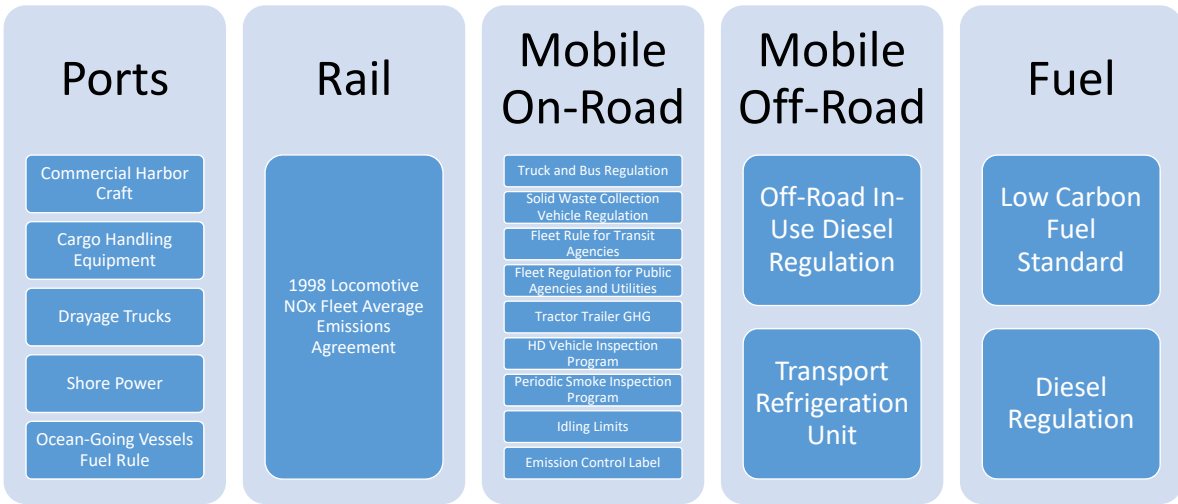
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## CARB Resource Slides

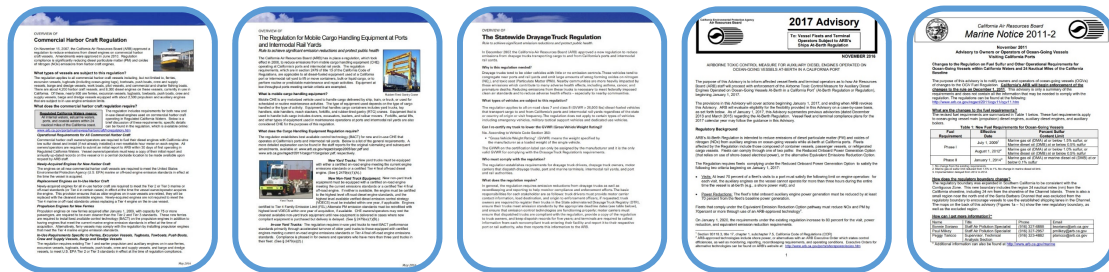
California Air Resources Board

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# Current Regulations and Control Measures



# Ports – Existing Regulations



Commercial Harbor Craft

Cargo Handling Equipment

Drayage Trucks

Shore Power

Ocean Going Vessels Fuel Rule

## Rail – Existing MOU

The 1998 Locomotive NOx Fleet Average Emissions Agreement in the South Coast Air Basin (1998 MOU)

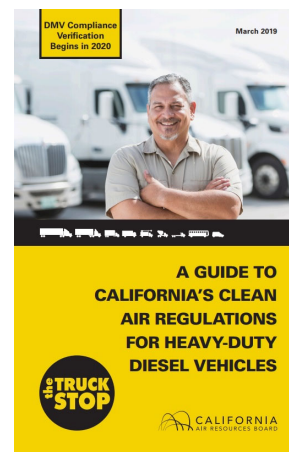
- signed by CARB, Union Pacific Railroad (UP) and BNSF Railway (BNSF)
- accelerates the introduction of cleaner locomotives into the South Coast Air Basin.
- under the Agreement, UP and BNSF agreed to operate locomotive fleets that “on average” meet a Tier 2 NOx emission standard, or 5.5 g/bhp-hr by 2010 (and through 2030).
- the Agreement provides State Implementation Plan (SIP) creditable emission reductions.

<https://ww2.arb.ca.gov/our-work/programs/reducing-rail-emissions-california>

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## Mobile On-Road – Existing Regulations

- Idling Limits
- Heavy-Duty Vehicle Inspection Program
- Emission Control Label
- Periodic Smoke Inspection Program
- Truck and Bus Regulation
- Tractor Trailer Greenhouse Gas
- Solid Waste Collection Vehicle Regulation
- Fleet Rule for Transit Agencies
- Fleet Regulation for Public Agencies and Utilities



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# Moving Forward: On-Road

Expected Board consideration/adoption – Implementation Begins



Innovative Clean Transit	ADOPTED
Fleet Smoke Inspection Rules	ADOPTED
Heavy Duty On-Board Diagnostic Regulations	ADOPTED
Advanced Clean Trucks	
Advanced Clean Cars 2	
Heavy Duty Inspection & Maintenance	
Zero Emission Drayage Trucks	

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# Moving Forward: Off-Road

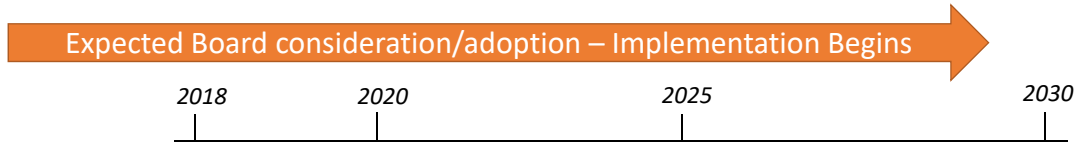
Expected Board consideration/adoption – Implementation Begins



Ships at Berth Amendments	
Zero Emission Transport Refrigeration Unit	
Small Off Road Engines	
Reduced Idling at Rail Yards	
Commercial Harbor Craft Amendments	
Zero Emission Cargo Handling Equipment	
Emissions Reductions from Non-Preempted Locomotives	

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# Moving Forward: Fuel



Low Carbon Fuel Standard	 ADOPTED
Low Emission Diesel Requirement	

## Port Focused NEW Measures



### Ships At-Berth Amendment (Shorepower)

- This strategy encompasses changing the current shorepower regulation to gain additional emissions reductions from even more vessel fleets, types, and operations
- <https://www.arb.ca.gov/ports/shorepower/shorepower.htm>



### Commercial Harbor Craft Amendment

- This strategy would create more stringent engine requirements for freight and passenger vessels. (Blueprint page F-3)
- <https://ww2.arb.ca.gov/our-work/programs/commercial-harbor-craft>

## Port Focused NEW Measures (cont.)



### Zero Emission Cargo Handling Equipment

- This strategy will transition cargo handling equipment to zero emission technology. In addition to emissions reductions at seaports, this strategy would also provide reductions at intermodal rail yards. (Blueprint page F-3)
- <https://ww2.arb.ca.gov/our-work/programs/cargo-handling-equipment>

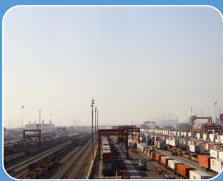


### Zero Emission Drayage Trucks

- This strategy will transition drayage trucks to zero emission technology. In addition to emissions reductions at ports, this strategy would also provide reductions at intermodal rail yards. (Blueprint page F-4)
- <https://www.arb.ca.gov/msprog/onroad/porttruck/porttruck.htm>

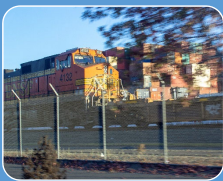
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## Rail Focused NEW Measures



### Reduced Idling at Railyards

- This strategy would reduce emissions from idling freight and passenger locomotives with implementation targeting communities with high cumulative exposure burdens. (Blueprint page F-5)
- <https://ww2.arb.ca.gov/our-work/programs/reducing-rail-emissions-california>



### Emissions Reductions from Non-preempted Locomotives

- This strategy would reduce emissions from older locomotives operating in California. (Blueprint page F-5)
- <https://ww2.arb.ca.gov/our-work/programs/reducing-rail-emissions-california>

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## Mobile On-Road Focused NEW Measures



### Innovative Clean Transit

- This regulation requires all public transit agencies to gradually transition to a 100 percent zero-emission bus (ZEB) fleet and encourages them to provide innovative first- and last-mile connectivity and improve mobility for transit riders. This regulation also provides various exemptions and compliance options to provide safeguards and flexibility for transit agencies through this transition.

- <https://www.arb.ca.gov/msprog/ict/ict.htm>
- <https://ww2.arb.ca.gov/rulemaking/2018/innovative-clean-transit-2018>



### Fleet Smoke Inspection Rules

- Amendments to the Heavy Duty Vehicle Inspection Program (HDVIP) and Periodic Smoke Inspection Program (PSIP) reflect lower smoke opacity limits from diesel exhaust.

- <https://www.arb.ca.gov/msprog/hdim/hdim.htm>
- <https://ww2.arb.ca.gov/rulemaking/2018/heavy-duty-vehicle-inspection-program-and-periodic-smoke-inspection-program>

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## Mobile On-Road Focused NEW Measures (cont.)



### Heavy Duty OBD Regulations

- Proposed updates to these regulations include updating monitoring requirements, changing testing requirements, gathering more robust data, and enhancing enforcement of non-compliance.

- <https://www.arb.ca.gov/msprog/obdprog/hdodbreg.htm>
- <https://ww2.arb.ca.gov/rulemaking/2018/heavy-duty-board-diagnostic-system-requirements-2018>



### Advanced Clean Trucks

- This proposed strategy will accelerate first-wave zero-emission truck deployments by requiring manufacturers to sell a portion of Class 2B and above sales as zero-emission starting 2024.

- Fleets to report data to inform on what vehicles are good targets for electrification and inform future fleet rules.
- <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks>

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## Mobile On-Road Focused NEW Measures (cont.)



### Advanced Clean Cars 2

- This proposed strategy would help increase the number of zero emission vehicles on the road and may also include lowering overall fleet emissions
- <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program>



### Heavy-Duty Inspection & Maintenance

- This future program could help ensure that broken emissions control components on heavy-duty vehicles are repaired in a timely manner and are operating as designed to meet California's public health protection goals.
- <https://ww2.arb.ca.gov/our-work/programs/heavy-duty-inspection-and-maintenance-program>

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## Mobile Off-Road Focused NEW Measures



### Zero Emission Transport Refrigeration Unit

- This proposed measure would focus on transitioning transport refrigeration units (TRUs) to zero emission or near-zero emission to achieve emissions reductions while in transit and at freight hubs.
- <https://ww2.arb.ca.gov/our-work/programs/transport-refrigeration-unit/new-transport-refrigeration-unit-regulation>



### Small Off-Road Engines

- This proposed measure will seek to reduce emissions from small off-road engines by tightening emissions standards and developing strategies to transition to zero emission.
- <https://ww2.arb.ca.gov/our-work/programs/small-off-road-engines-sore>

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## Fuel Focused NEW Measures



### Low Carbon Fuel Standard

- Approved amendments to the Low Carbon Fuel Standard (LCFS) strengthen targets to 2030 and encourage zero emission vehicle infrastructure, among other improvements.
- <https://www.arb.ca.gov/fuels/lcfs/lcfs.htm>

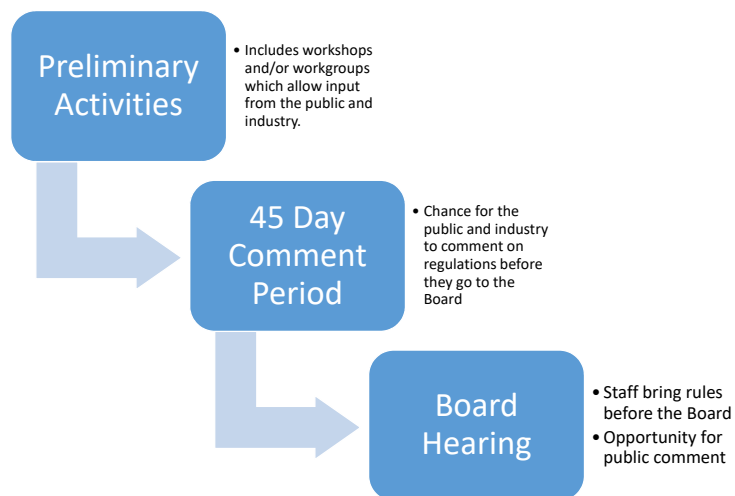


### Low-Emission Diesel Requirement

- This proposed measure would establish performance requirements for low-emission diesel fuel and would require diesel fuel producers to decrease criteria pollutant emissions from their diesel products.

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## Regulatory Process



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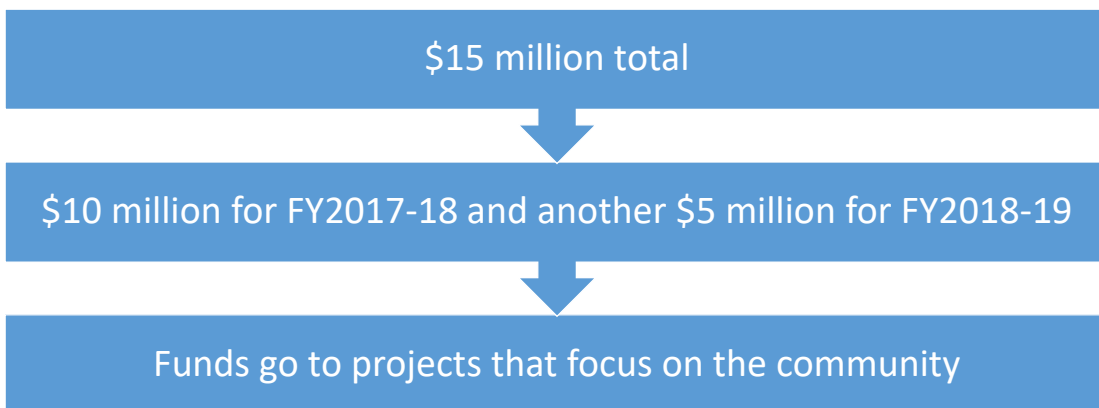
## CARB Vehicle Idling Pilot Study



1. Evaluate idling regulations with current emissions data
2. Identify idling locations and collect activity data
3. Assess need for additional mitigation measures

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## Community Air Grants

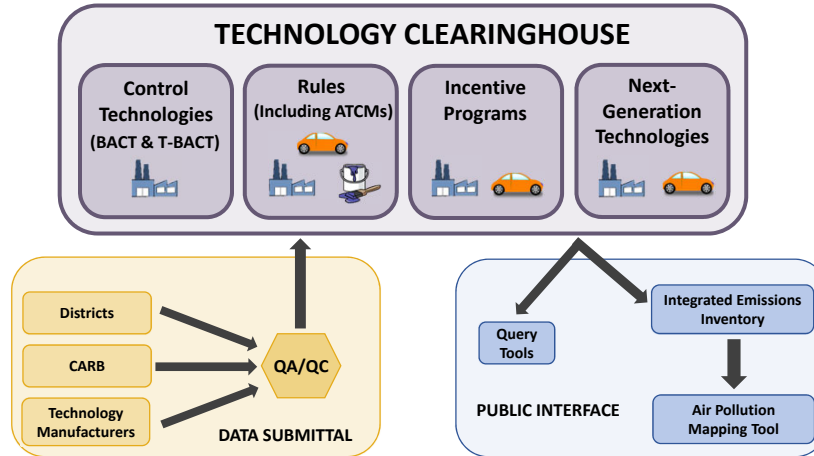


<https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/community-air-grants>

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# Technology Clearinghouse Update

- BACT = Best Available Control Technology
- T-BACT = Best Available Control Technology – Toxics
- ATCM = Air Toxic Control Measure



★ New System Available in Early 2020

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# Technology Clearinghouse Example

**Peaking Turbine**

OVERVIEW

Source Type: Stationary

Agency: District

Comparison of Emissions: [Progress bar]

EMISSIONS TECHNOLOGY

Control Level	Costs	Emissions Reductions	Example Technology
Advanced Technology	\$\$\$	[Icon]	Catalyst, PM Filter
Zero Emissions	\$\$\$\$	[Icon]	Renewable, Fuel Cell, Battery

**Long Haul Truck**

OVERVIEW

Source Type: Mobile

Agency: CARB

Comparison of Emissions: [Progress bar]

EMISSIONS TECHNOLOGY

Control Level	Costs	Emissions Reductions	Example Technology
Advanced Technology	\$\$	[Icon]	Particulate Filter
Zero Emissions	\$\$\$\$	[Icon]	Fuel Cell, Battery

# Handouts

The following pages are handouts associated with this resource slide deck. They include:

- A Guide to California's Clean Air Regulations for Heavy-Duty Vehicles
- Cargo Handling Equipment Regulation Overview
- Commercial Harbor Craft Regulation Overview
- Drayage Truck Regulation Overview
- At-Berth (Shorepower) Advisory
- Ocean Going Vessels Fuel Rule Advisory
- Off-Road Regulation Overview
- Transportation Refrigeration Unit Brochure

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