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California Air Resources Board Research Seminar



Real-World Activity of Heavy-Duty Tractors Hauling Container Chassis, Flatbed Trailer, and Tank Trailer

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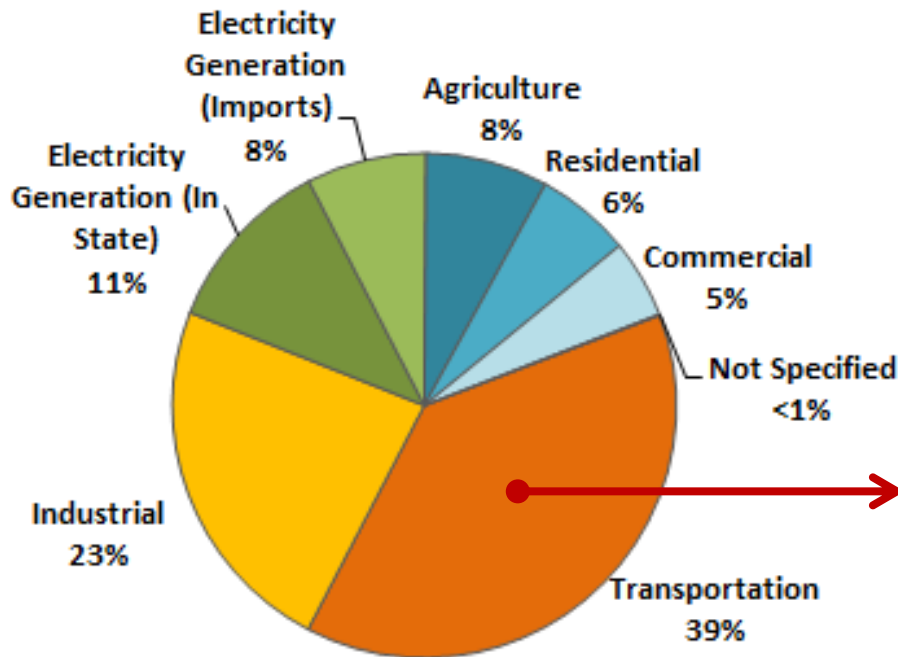
Planned greenhouse gas emissions reductions



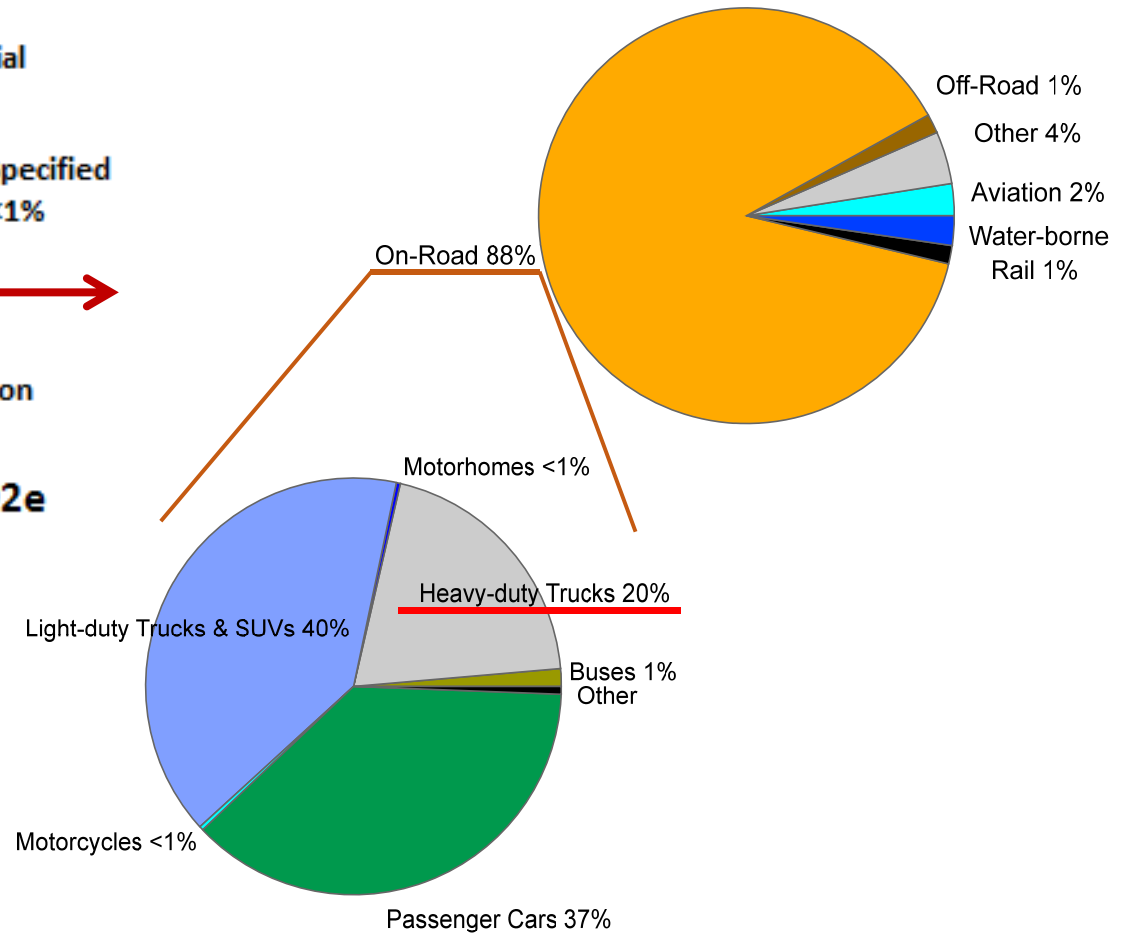
- California is committed to reducing GHGs significantly by 2050
- Reduce the worst effects of climate change
- Accomplish this using various strategies to decarbonize economy and improve efficiency



GHG Emissions Inventory



2015 Total CA Emissions: 440.4 MMTCO₂e



Phase 1 and Phase 2 GHG Regulation

- Mandates improvements in heavy-duty truck GHG emissions using multiple strategies and sectors

Phase 2 Covers Engines, Three Vehicle Categories, and Trailers



Engines -
g(CO₂)/bhp-
hr standards



Vocational
Vehicles
(Class 2b-8)

Tractors (Class 7-8)



g(CO₂)/ton-mile standards

Pickups & Vans (Class 2b-3)



Trailers



Tractor-Trailer GHG Regulation (In-use fleet rule)

- Adopted December 2008
- Long-haul tractor and trailer aerodynamics
- Low rolling resistance tire

Required	2010 MY & Older	2011 MY - 2013 MY	2014 MY & Newer
Tractors	Required Now	Required Now	N/A
Trailers	January 1, 2017	Required Now	Required Now

Aerodynamics for box-type trailers

- Ex: Side skirts and trailer tails
- Well accepted in the industry
 - Use of trailer aerodynamic technologies nationally is high (around 80% of new trailer purchases), and continues to grow, with fleets reporting significant fuel savings
- The Phase 2 standards will result in trailers being certified with aerodynamic technologies
- The Tractor-Trailer GHG rule already requires long box type trailers to use those devices when travelling in CA
- But, what about other trailer types? *Tanker, Curtainside, Container Chassis, Flatbed*
 - Typical operation?
 - Does it make sense to regulate these trailer types?

This study

- **Objective:** Collect tractor-trailer activity data that will also be used by CARB staff to assess the potential GHG emission reductions from improved aerodynamics for four types of trailers: *flatbed, tanker, curtainside, and container chassis*
- **Method:** Tractors hauling these type of trailers were instrumented with dataloggers to collect ECU data and GPS data.
 - This study provides another source of activity data

For More Information



- Research Division Vehicle Emissions Program

<https://www.arb.ca.gov/research/veh-emissions/>

NEW WEBSITE COMING SOON!

- Seminar and Project Links

<https://www.arb.ca.gov/research/seminars/durbin/durbin4.htm>

https://www.arb.ca.gov/research/single-project.php?row_id=65262

- Heavy-Duty Vehicle Rulemaking Portal

Workgroups:

https://www.arb.ca.gov/msprog/hdlownox/files/workgroup_description.pdf

Low NOx: <https://www.arb.ca.gov/msprog/hdlownox/hdlownox.htm>

Phase 2 GHG:

<https://www.arb.ca.gov/msprog/onroad/caphase2ghg/caphase2ghg.htm>

Opacity & HD I/M: <https://www.arb.ca.gov/msprog/hdim/hdim.htm>