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CARB Update on Ongoing Activities Relating to Mobile Refrigerants

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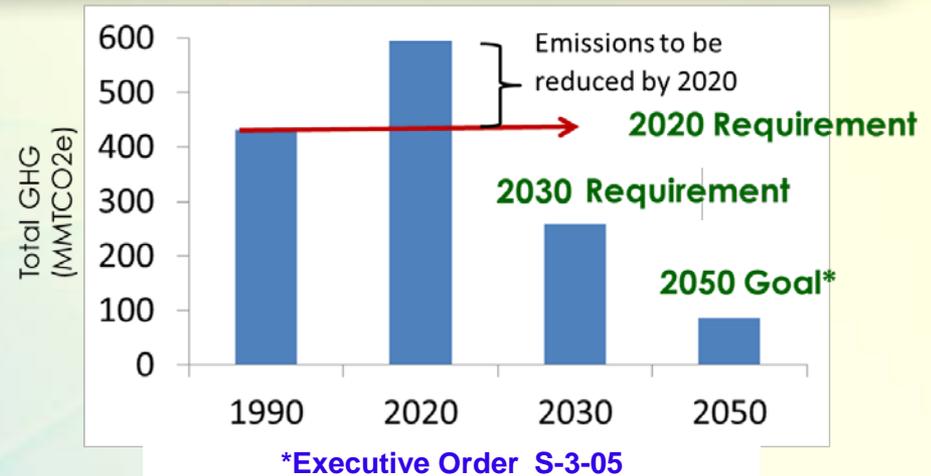
Outline

- Overview of California Programs
- Amendment to California “Small Car” Regulation
- California Medium- and Heavy-Duty Vehicle (MDV/HDV) GHG Phase 2 rulemaking
- Summary

California GHG and HFC Reduction Goals

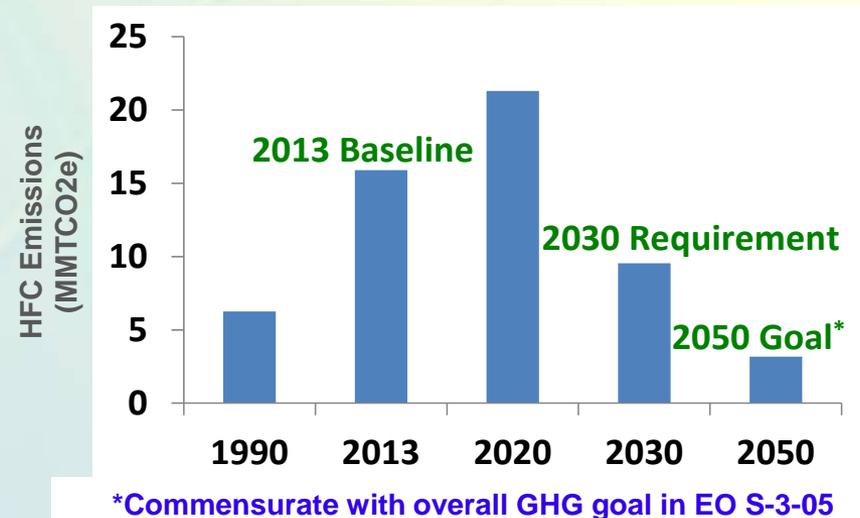
Total GHGs

- Reduce GHGs to 1990 levels by 2020 (AB32)
- Reduce GHGs 40% below 1990 levels by 2030 (SB32)
- Executive Order for 2050

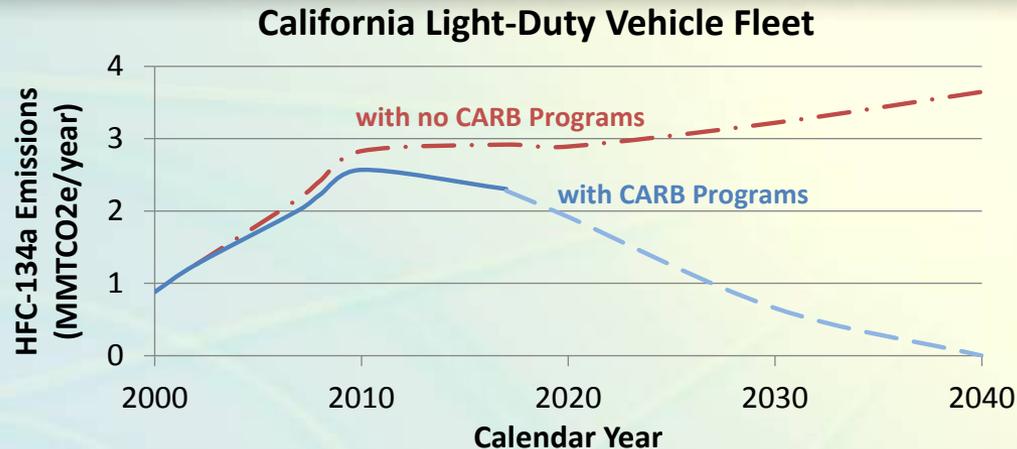


HFCs

- Plan for reductions in Short-Lived Climate Pollutants (SB605)
- Reduce 40% below 2013 levels by 2030 (SB1383)



Existing CARB Programs for Automotive Refrigerants



- Credit incentives for low-leak, low-GWP, and fuel-efficient MVAC systems for new LDVs (adopted by U.S. EPA with modifications)
- Small Can regulation for improved DIY service (main elements adopted by U.S. EPA)
- U.S. EPA additional regulation: changed status of high-GWP MVAC refrigerants for new LDVs from acceptable to unacceptable

“Small Can” Regulation



- Measure to reduce HFC-134a emissions from DIY MVAC service
- Adopted by the Board in 2009, became effective on 1/1/2010
- U.S. EPA adopted self-sealing valve requirement.
- Main difference: CARB rule has a deposit-return-recycling program.
 - HFC-134a is considered a household hazardous waste because its toxicity data fall within the HHW criteria in California.
 - Successful product stewardship has been built around the regulation.

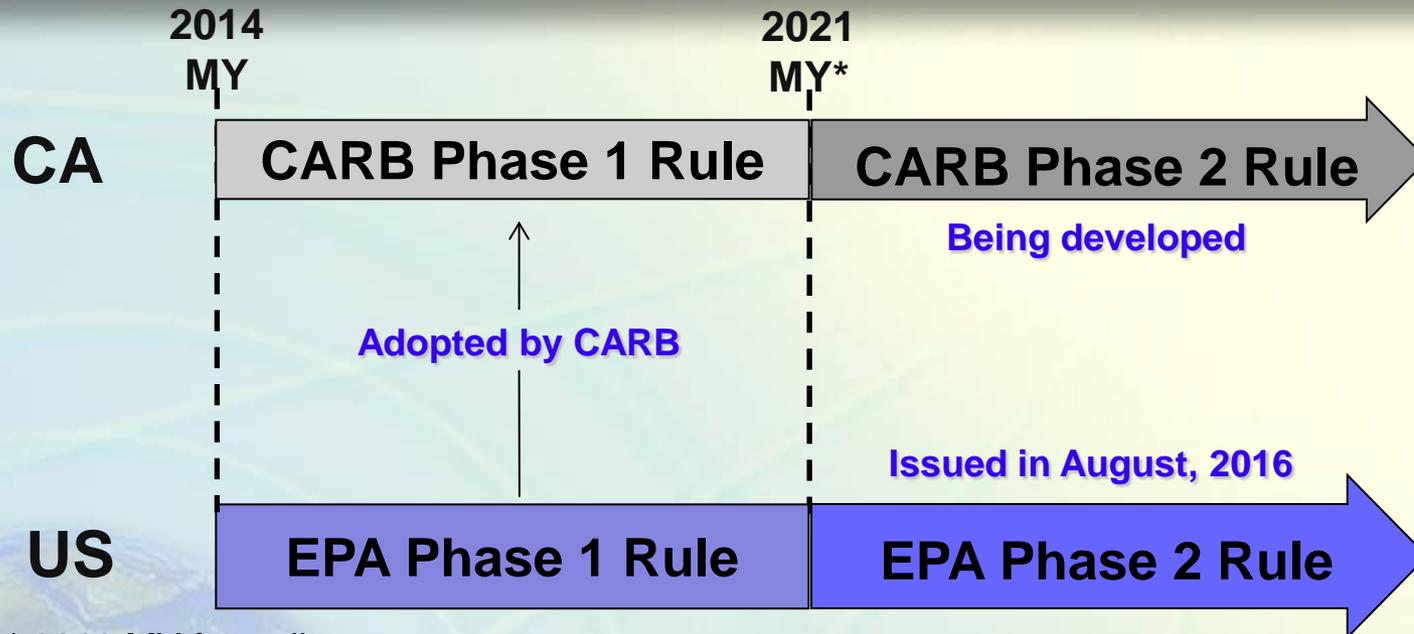
“Small Can” Regulation Implementation

- Positive impacts of regulation
 - Container sales dropped from 1.9 million in 2006 to 1.0-1.3 million after 2010, indicating effectiveness of self-sealing valve
 - Fewer containers needed means savings for consumers
 - Reductions of 0.4 MMTCO₂e/year
- Issues identified during implementation
 - Low container return rate (~70% actual vs 95% benchmark)
 - Low container heel (2-4% actual vs ~20% after single use per a study)
 - Deposits for unreturned containers retained by retailers (~\$3.5 million/year)

“Small Can” Regulation Amendment

- Add details to the requirement for retailers to transfer future unclaimed consumer deposits to the can manufacturers
- Expand the scope for spending the funds
 - Programs to reduce greenhouse gas emissions
 - Improve consumer awareness to increase return rate
 - Executive Officer approval required for expending funds
- Eliminate the deposit adjustment provision
- Require adding “Do Not Vent” on the label
- Board approved amendment in April, 2016
 - Amendment expected to become effective around end of 2016

MDV/HDV GHG Emission Standards



* 2018 MY for trailers

- “Phase 2 Rule”:
 - next-generation MDV/HDV GHG (mainly CO₂) emission standard
 - nexus with NHTSA’s fuel efficiency standard
 - CARB will collaborate with U.S. EPA to develop low-NO_x standards in a companion rulemaking

California MDV/HDV GHG Phase 2 Standards

CARB is committed to creating nationally harmonized programs, so that manufacturers can have one national strategy.

- Adopt the U.S. EPA's Phase 2 standards
 - Same structure, timing, and stringency levels
- Adopt some modifications to credit, labeling, and rule flexibility provisions
 - Encourage adoption of low-GWP refrigerants (credit incentive being considered, built upon the successful LDV MVAC credit programs)
 - Alternatives: HFC-152a and CO₂ approved by U.S. EPA for all new MVAC, HFO-1234yf approved by U.S. EPA for Class 2b/3
 - Lack of movement in adopting low-GWP refrigerants in MDV/HDV – opportunity for regulatory action

Summary

- CARB is amending its “Small Can” regulation to address issues identified during implementation.
- CARB is considering to use credit incentive to encourage the adoption of low-GWP refrigerants for new MDV/HDV MVAC.

Contact Information

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<http://www.arb.ca.gov/cc/hfc-mac/hfc-mac.htm>

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