CARB Update on Ongoing Activities Relating to Mobile Refrigerants

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California Air Resources Board
Outline

• Overview of California Programs

• Amendment to California “Small Can” 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)

*Executive Order S-3-05
*Commensurate with overall GHG goal in EO S-3-05
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**

- **2014 MY**
  - CARB Phase 1 Rule
  - EPA Phase 1 Rule

- **2021 MY**
  - CARB Phase 2 Rule
  - EPA Phase 2 Rule

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**CA**
- CARB Phase 1 Rule
- CARB Phase 2 Rule (Being developed)
- Adopted by CARB
- Issued in August, 2016

**US**
- EPA Phase 1 Rule
- EPA Phase 2 Rule

*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-NOₓ standards in a companion rulemaking
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 CO$_2$ 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
• 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.
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