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California Environmental Protection Agency

AIR RESOURCES BOARD



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Updates on HFC Reduction Measures in California

Regulations & Standards Session

California Air Resources Board

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- **Regulations adopted under AB 32:**
 - Refrigerant Management Program
 - Motor Vehicle AC: Advanced Clean Cars low-GWP AC, and Small Can Recycling for DIYers (now national)
 - Consumer product aerosol propellants
 - Semiconductor manufacturing F-gas reductions
- **Cap-and-Trade offset protocol** for ODS capture and destruction

New Law in CA Requires HFC Reductions

- Senate Bill 1383 (2016) requires a 40 percent reduction in annual HFC emissions below 2013 levels by 2030
- The Short-Lived Climate Pollutant (SLCP) Strategy adopted March 2017 by CA Air Board includes four measures to reduce HFCs

Proposed HFC Reduction Measures in CA

1) Incentive program (\$\$) for new low-GWP refrigeration. Status: Only utility rebates available. Sacramento Utility SMUD offers \$250K

2) HFC Phasedown in CA. Status: Will defer to the global phasedown

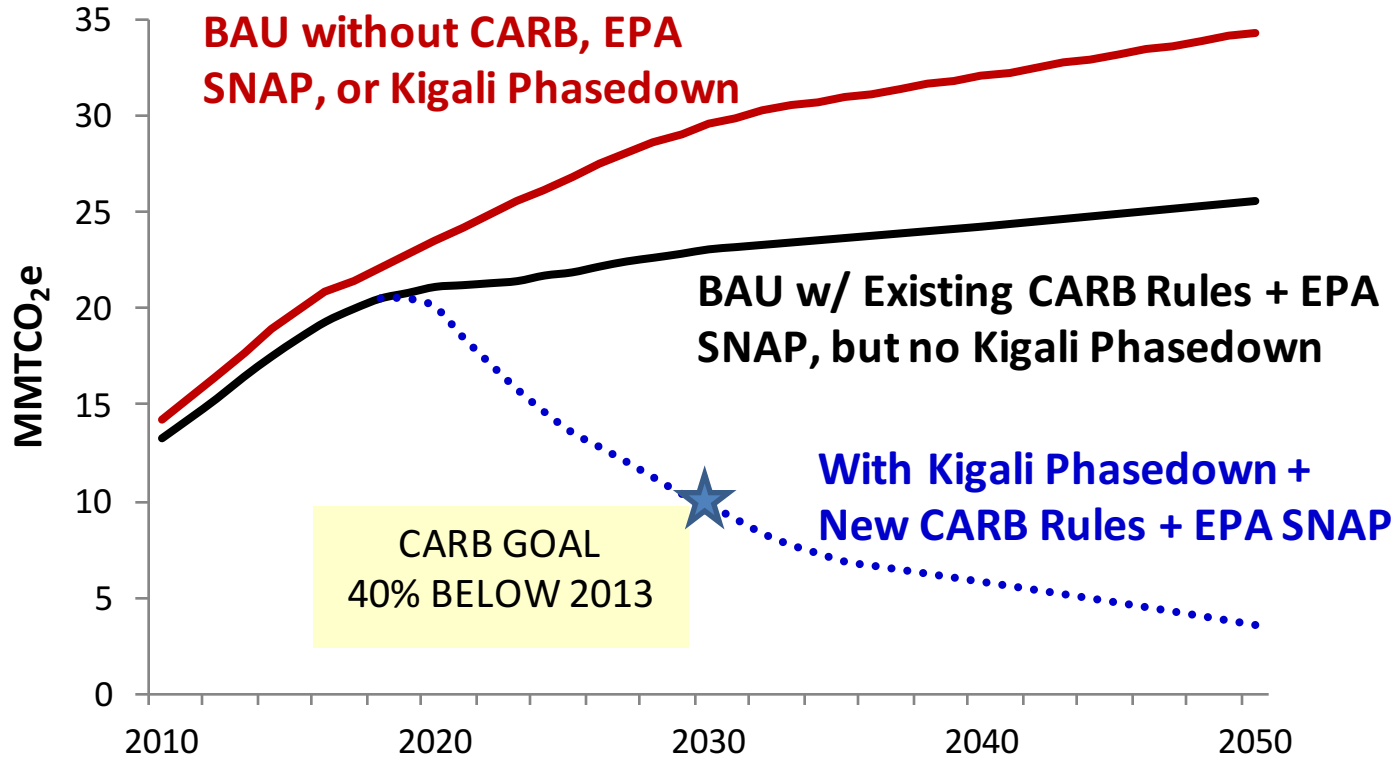


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3) Prohibition on refrigerants > 150 GWP in new refrigeration equipment; and > 750 GWP in new air-conditioning equipment

4) Sales restriction on refrigerants > 2500 GWP; four years later, restriction on > 1500 GWP

Estimated HFC Emissions in CA 2010-2050



- Low-GWP “energy penalty” concerns – better energy efficiency data needed for CA climate zones
- If added cost of low-GWP equipment is 15% greater on average, cost of regulation (before savings) in California could be \$150 million/year through 2030 (savings also \approx \$150 million/year) – better cost data needed
- Low-GWP feasibility for “smaller” units (>150 grams), convenience store-sized remote condensing units, and larger – strategies to overcome barriers from codes, standards, and local permitting
- Are HFC-32 (GWP 675) and HFO-HFC blends (GWPs 400-700) the lowest-GWP refrigerants feasible for stationary air-conditioning?

ARB Next Steps

- ARB currently assessing global phasedown impact on future CA HFC reductions, under scientific review, available to public Fall 2017
- Work with all stakeholders* to develop regulations to meet HFC reduction targets
- *Needed: Stakeholder feedback on cost, energy efficiency, codes/permitting barriers, and more on low-GWP refrigeration and AC - [see you Wednesday](#)

ARB Next Steps (cont.)

- Continue to work on codes and standards updates to allow more low-GWP options
- Official Notice of HFC rulemaking - Summer 2017
- Workshops and public input 2017 – 2018
- Board Approval 2018-2019



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Thank you very much!

