



Advanced Clean Cars II Regulations

Informational Update

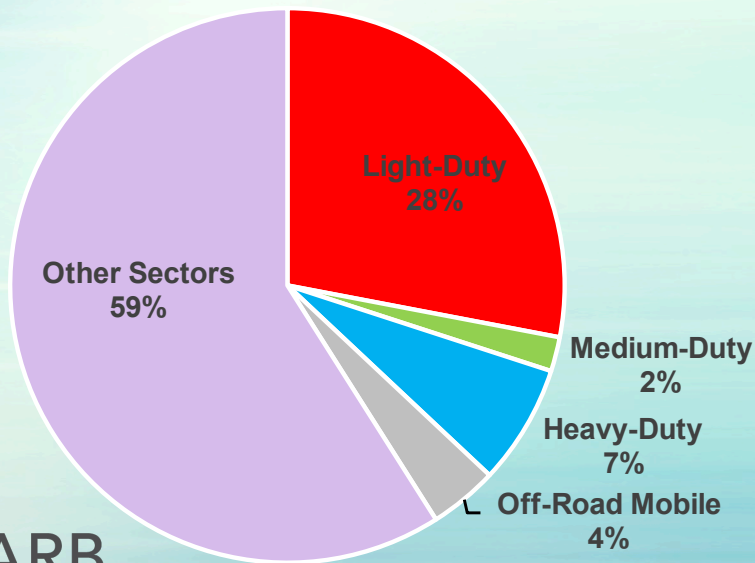
May 28, 2020

ACC II Rules Are Needed

California's climate and air quality challenges still require deep reductions from light-duty vehicles

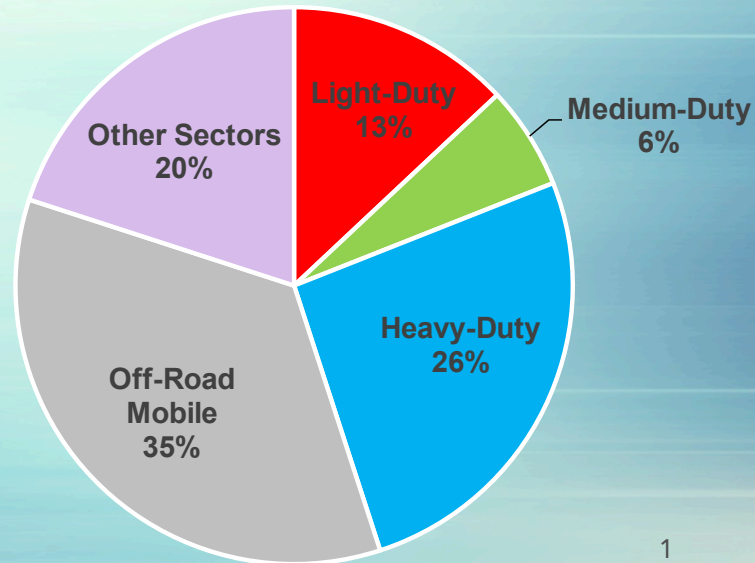
2017 Statewide GHG Emissions

Total = 424 MMTCO₂e



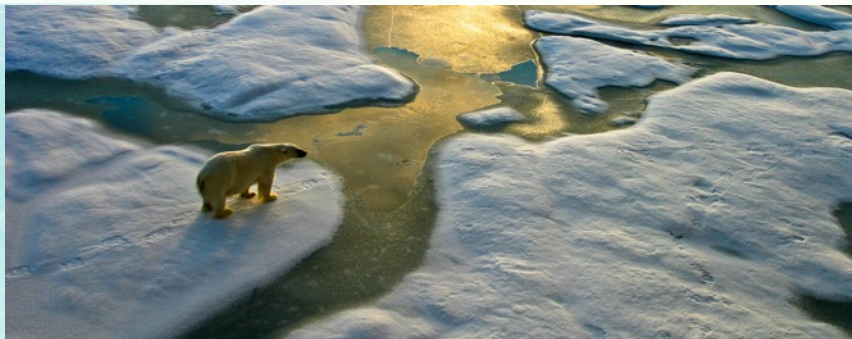
2017 Statewide NO_x Emissions

Total = 1294 tons per day



Early Reductions Are Critical

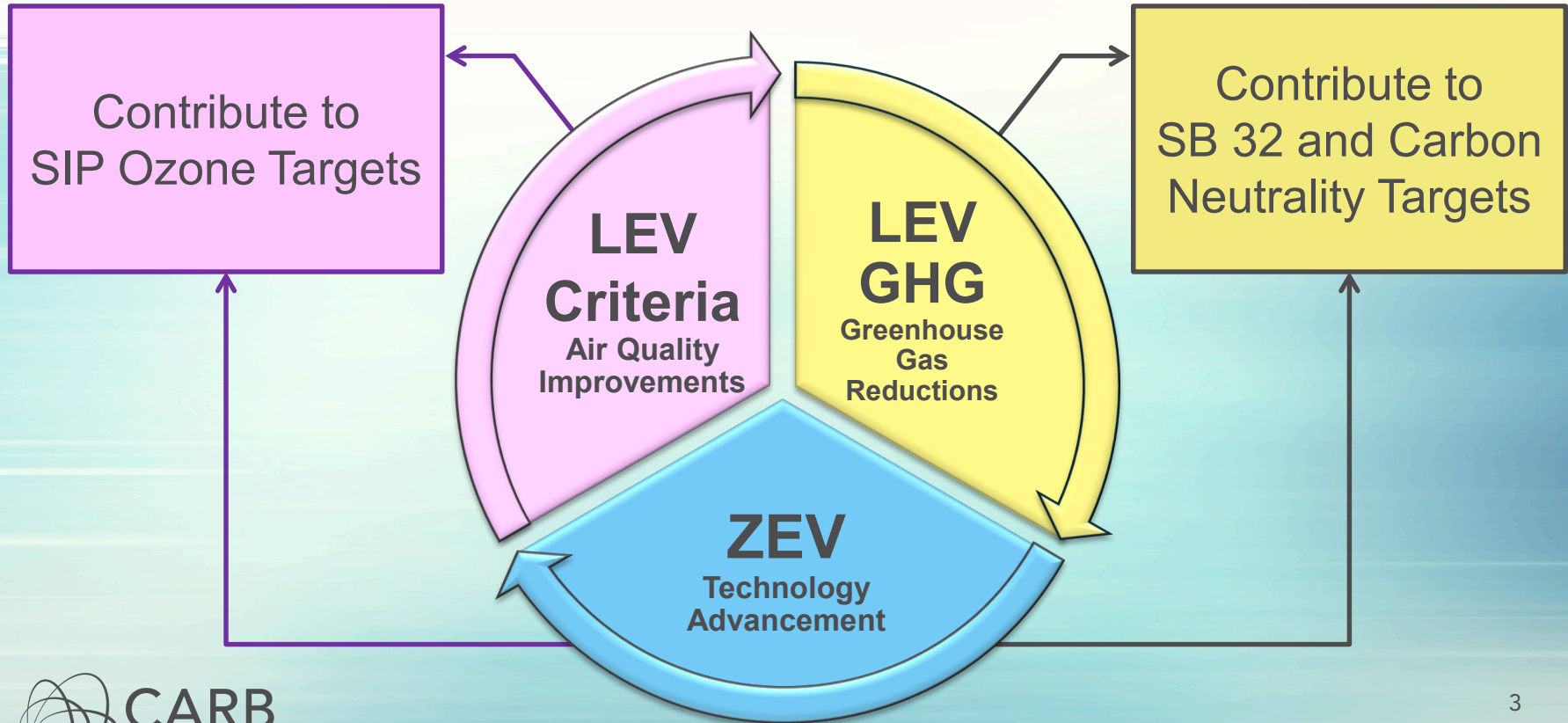
Preventing Irreversible Climate Impacts



Reducing Respiratory Illnesses



Role of Advanced Clean Cars II



ACC II Objectives

1. Maximize criteria and GHG emission reductions from combustion vehicles
 - Increase stringency
 - Real-world reductions
2. Accelerate transition to zero emission vehicles
 - Improving ZEVs for consumers
 - Increase market share of ZEVs

Maximize Reductions from Combustion Vehicles

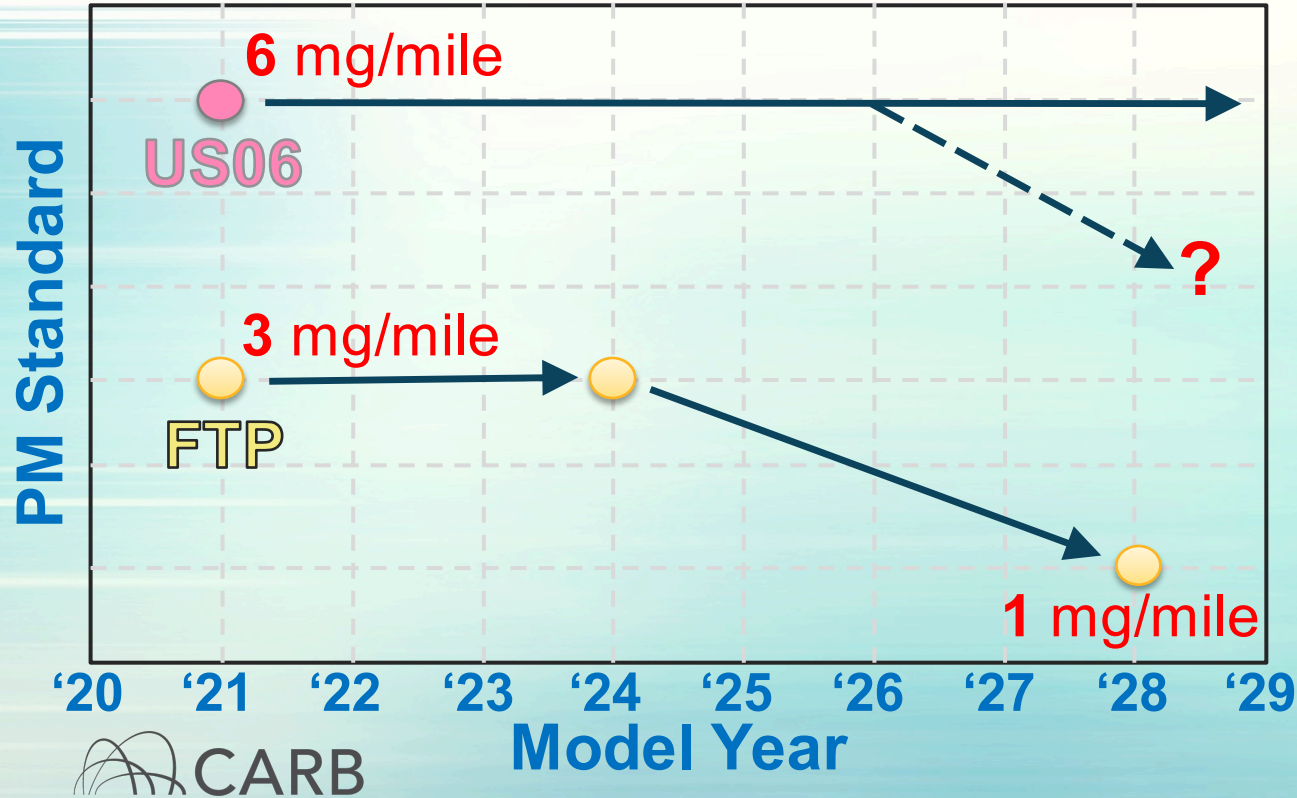
Increase Stringency

- More stringent criteria and GHG fleet average
- Robust PM emission control
- Optimize emission control for heavier vehicles

Real-World Reductions

- Align GHG standards to real-world performance
- Better control of engine start emissions
- Address unique challenges for PHEV engine start emissions

Increase Stringency: Robust PM Emission Control



More than 80% of vehicles tested by CARB already below 3 mg/mile on the US06 cycle

Increase Stringency: Optimize Emission Control for Heavier Vehicles

- Some medium-duty vehicles qualify to use either chassis or engine testing for certification
 - Ensure equivalency between standards
- Explore effects of higher loads and towing on emissions
- Evaluating in-use standards for this category

Real-World Reductions: Better Control of Engine Start Emissions

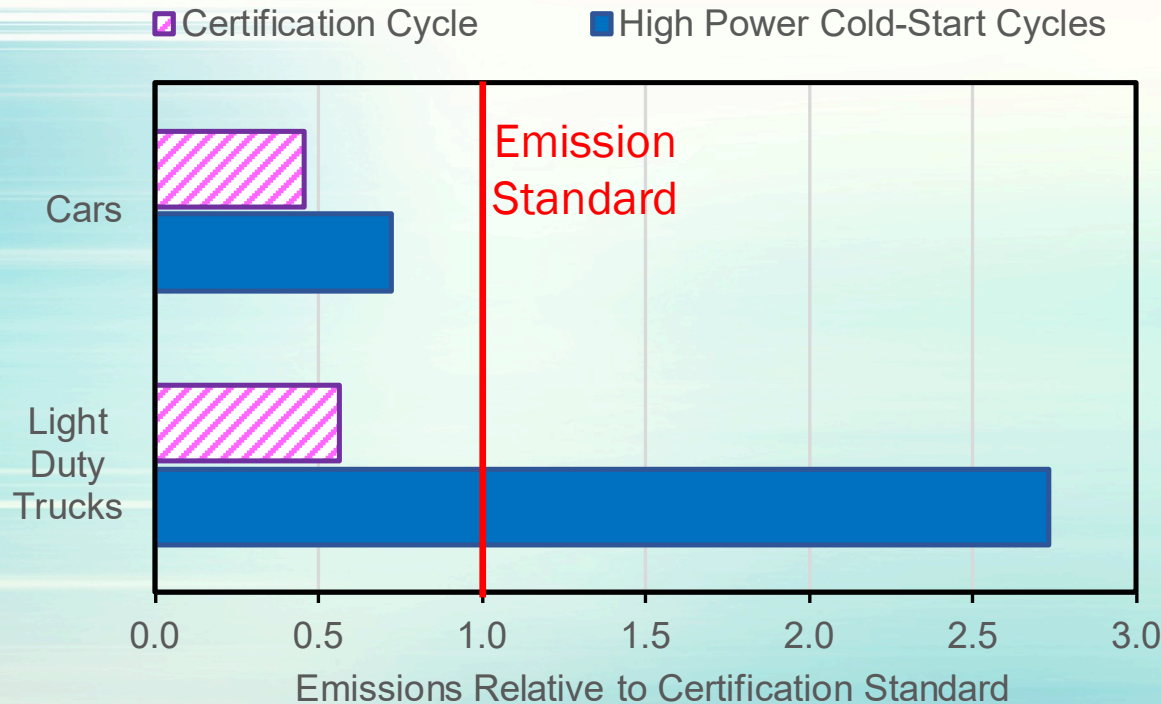


Cold Starts

>70% of criteria emissions

- Real-world cold start emissions can exceed lab test emissions due to:
 - Shorter initial idle
 - Intermediate soak duration
- Implement regulations for better control of cold start emissions

Real-World Reductions: Unique Challenges for PHEV Starts



Car PHEVs

- High power start emissions similar to certification value

Truck/SUV/Minivan PHEVs

- High power start emissions significantly higher than certification standard

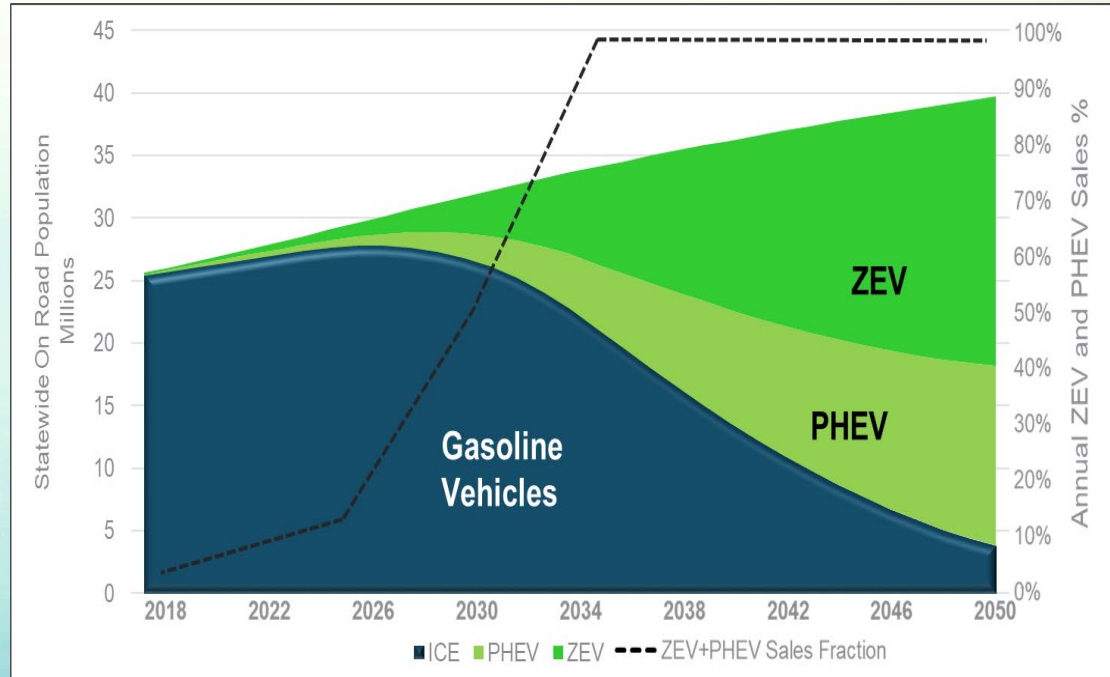
Improving ZEVs for Consumers

- Warranty and durability requirements
- Add vehicle and battery state-of health monitoring
- Raise minimum requirements for PHEVs to earn ZEV reg credits
- Standardize fast charging port

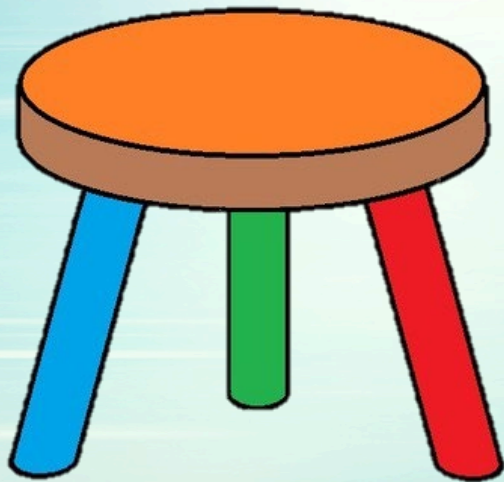
Increase Market Share of ZEVs

- Significantly increase ZEV reg requirements and GHG standards
- Limit ZEV credit life to increase certainty on future sales volumes

Preliminary Updated VISION Scenarios



Additional Policies Also Needed to Reduce Transportation Emissions



- Increase non-regulatory support for ZEV market development
- Continue reducing carbon intensity of liquid fuels
- Collaborate with other agencies to develop policies that influence vehicle purchases and usage

The Road Ahead

