

California's Zero Emission Vehicle Regulation

California Energy Commission

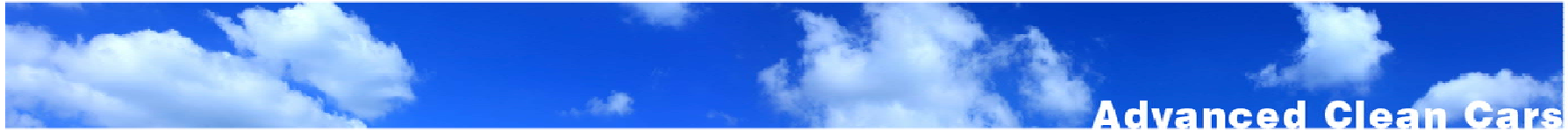
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TN # 69770

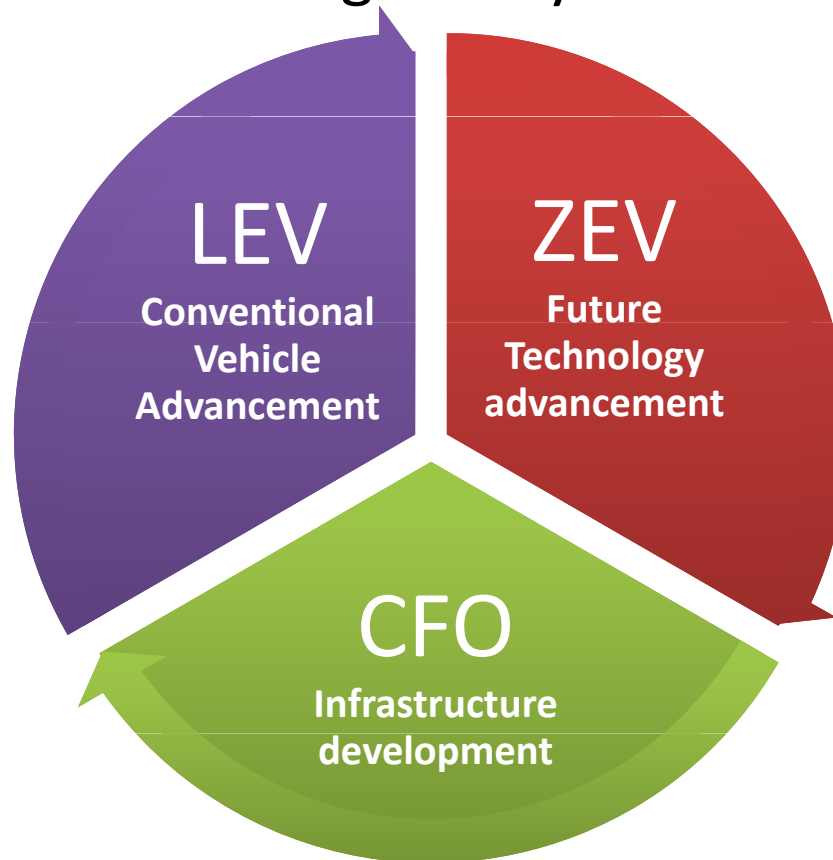
MAR 01 2013

Gerhard Ahtelik
California Air Resources Board
February 2012

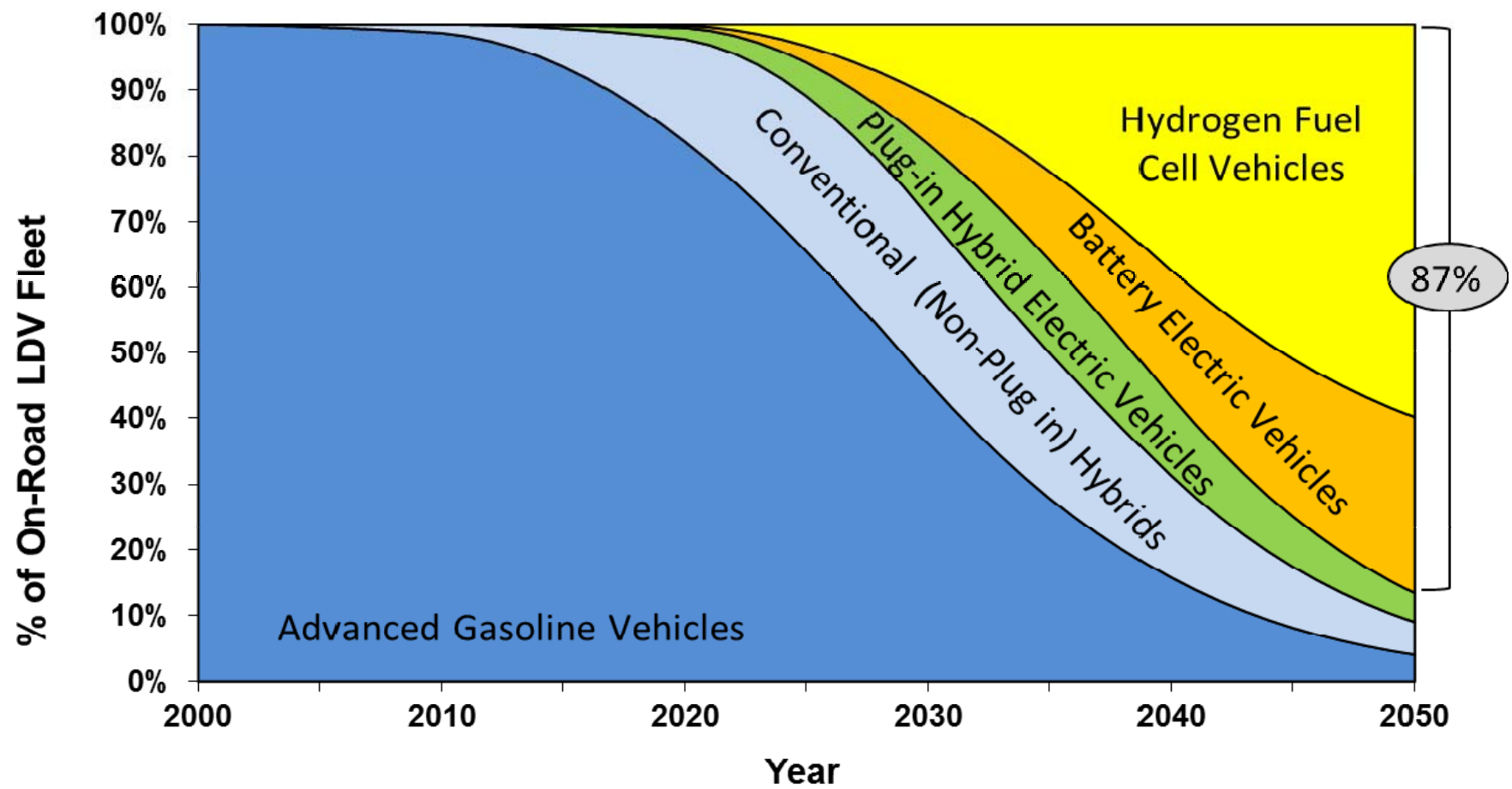
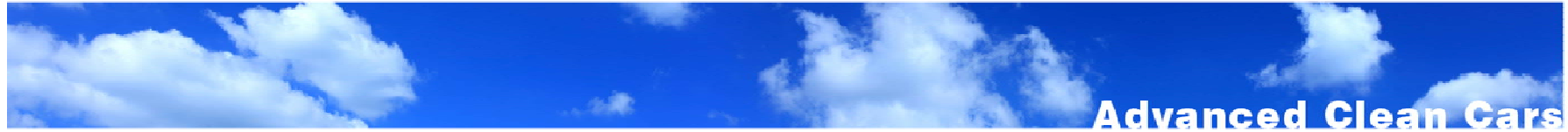
Advanced Clean Cars



Multi-pronged approach to meeting mid- and long-term emission reductions from light duty vehicles



Meeting GHG Goals



How The ZEV Regulation Works

Advanced Clean Cars

- Requires large OEMs to produce zero emitting passenger vehicles



Battery Electric Vehicles



Hydrogen Fuel Cell

- May substitute some with near-zero emission vehicles



Plug-in Hybrid Electric Vehicles

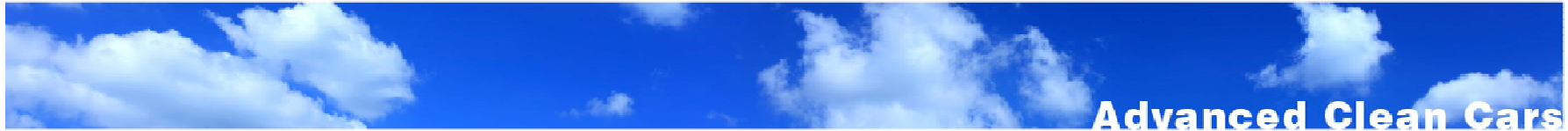


Conventional Hybrids



Clean Gasoline Vehicles

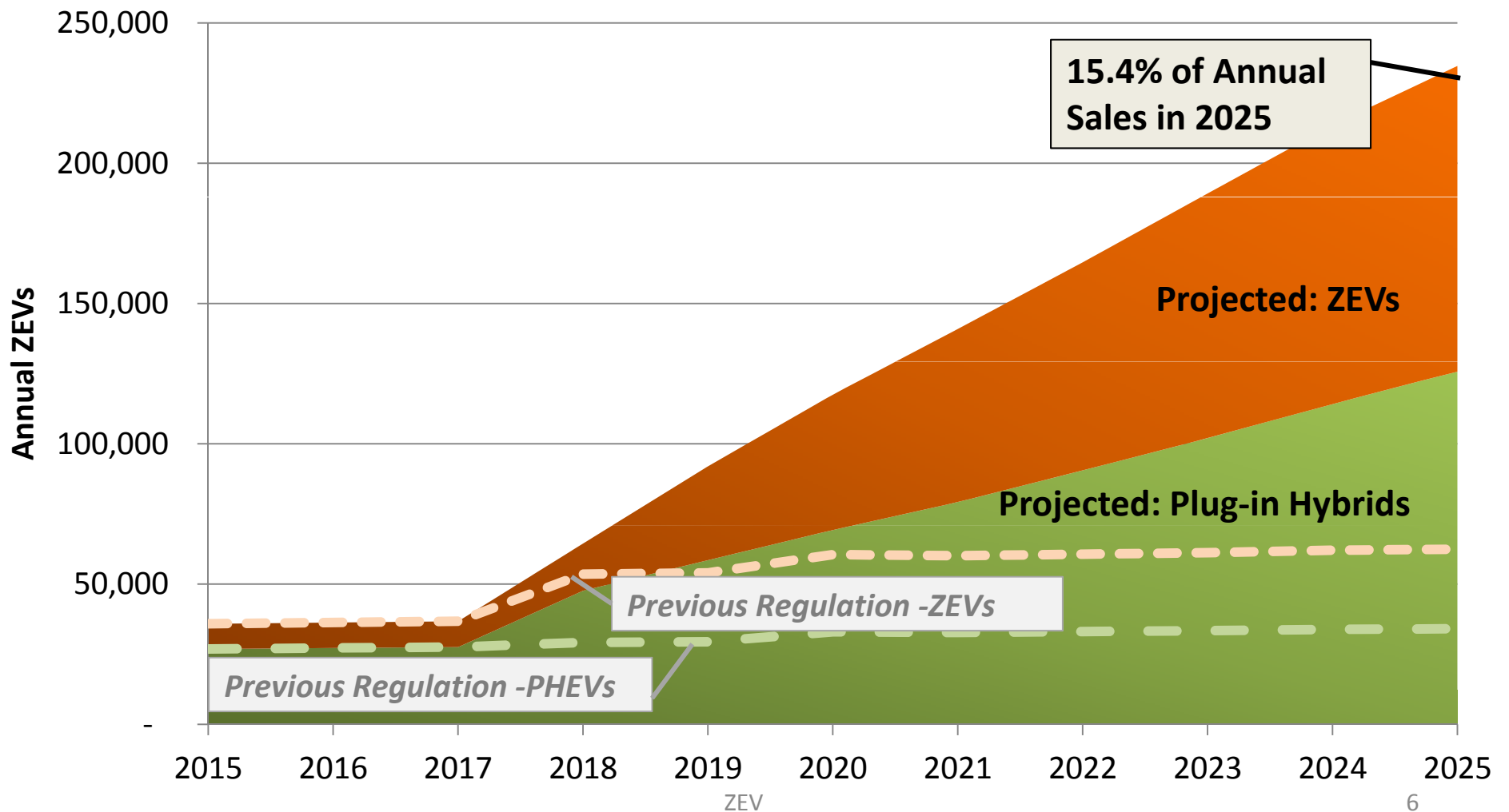
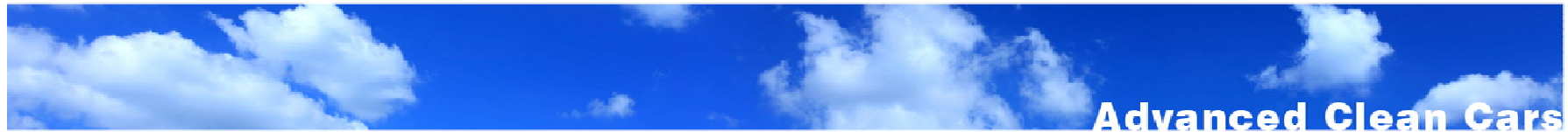
Zero Emission Vehicle Program Success



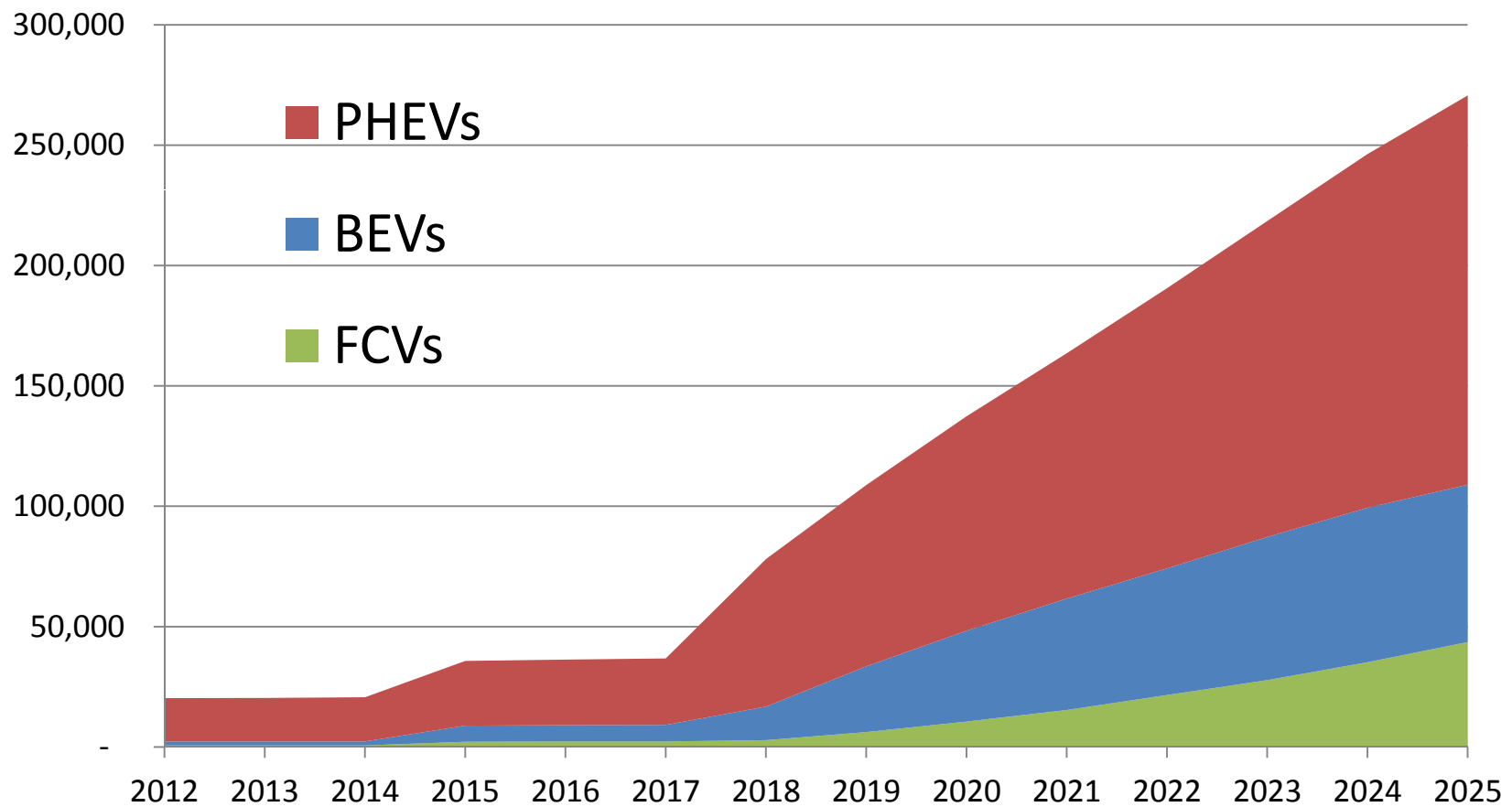
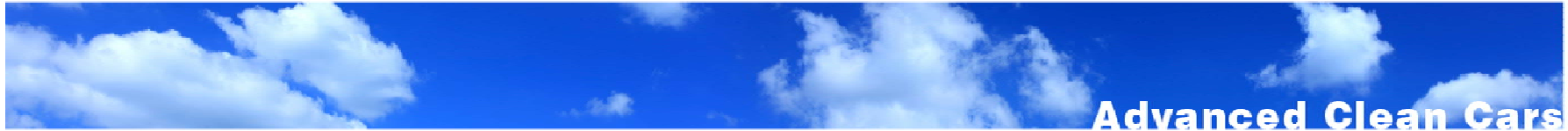
- ZEVs – over 39,000 with many more coming to market
 - Battery Electric Vehicle (10,000)
 - Hydrogen Fuel Cell Vehicle (370)
- Plug-in Hybrid Electric Vehicles (PHEV)
- Conventional Hybrids – over 450,000
- Partial zero emission vehicles (PZEV) – over 2,000,000
 - Gasoline car that meets strictest air quality standards



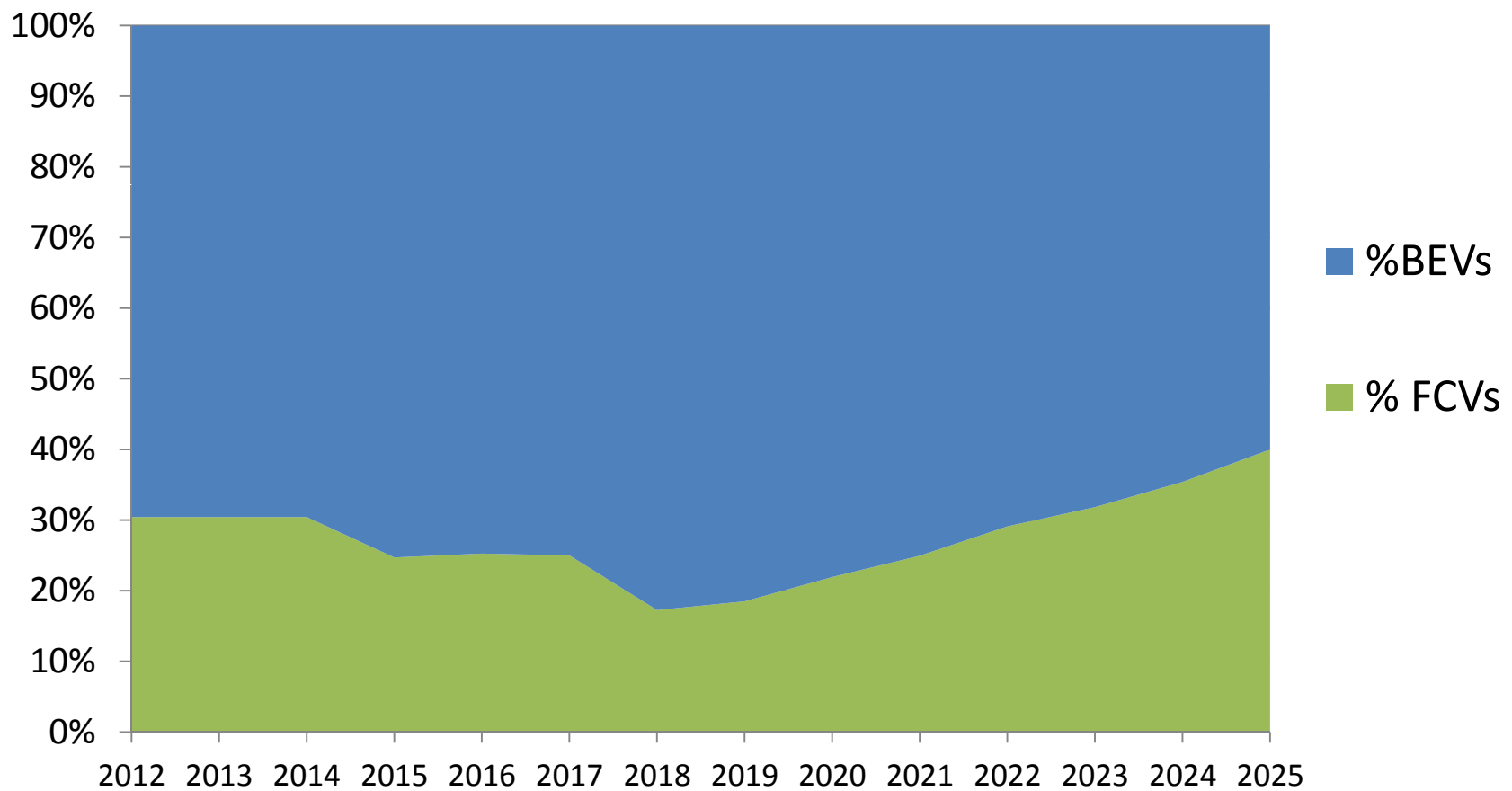
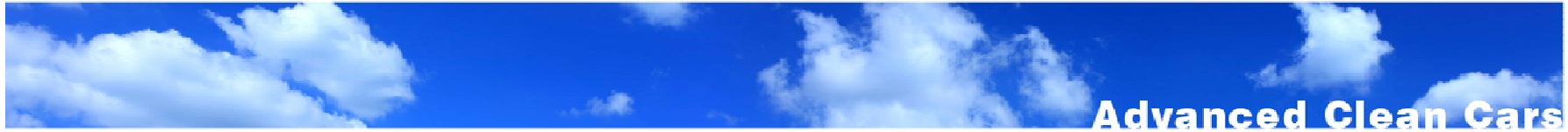
2015-2025 ZEV Requirements



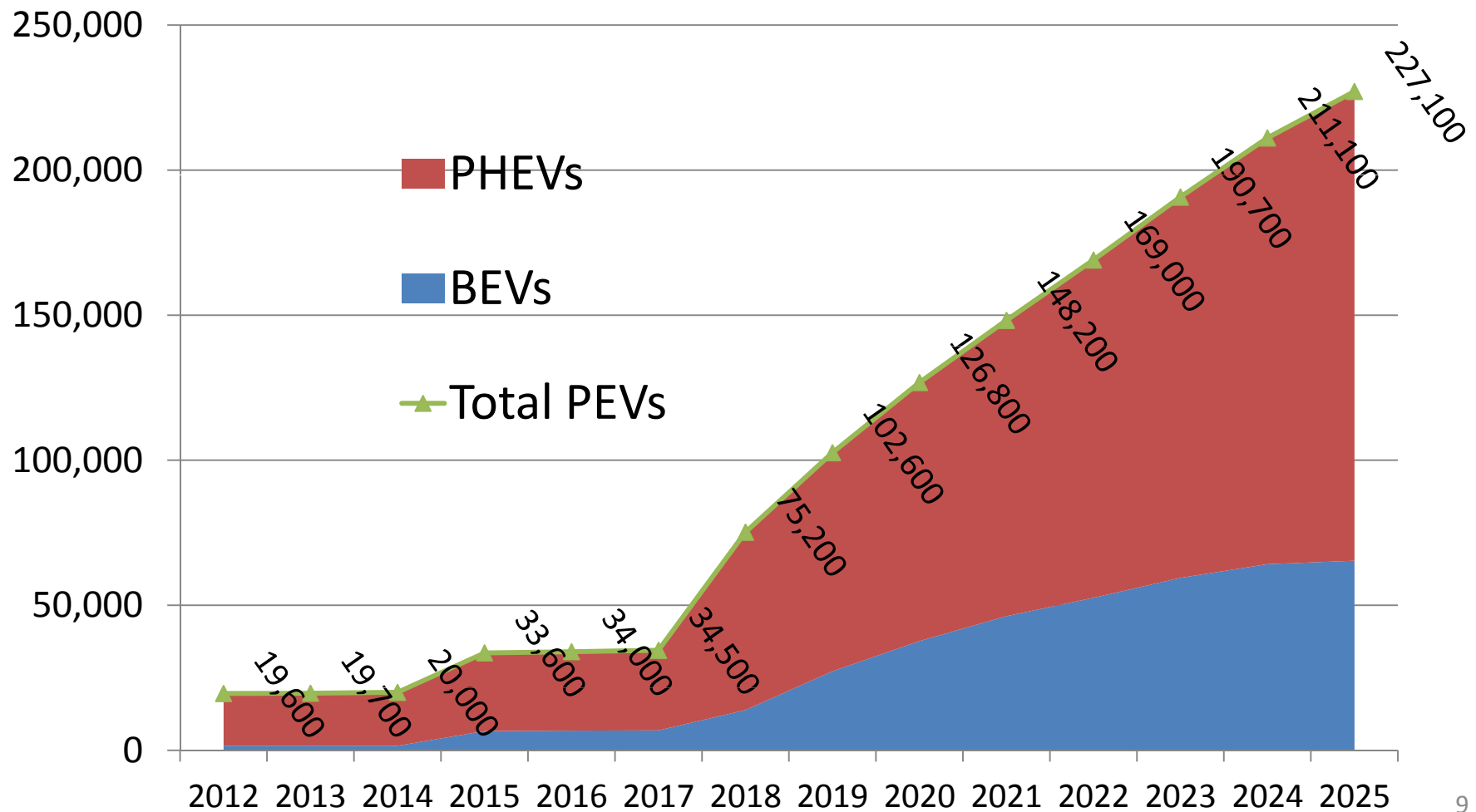
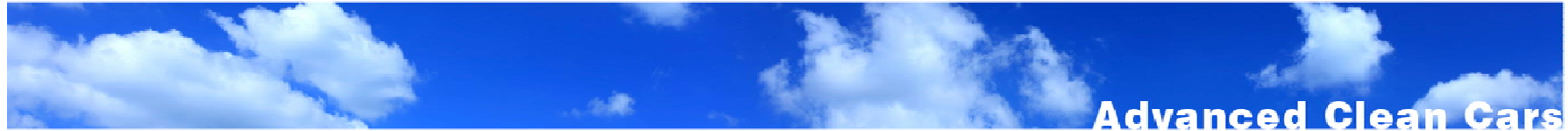
Vehicle Compliance Scenario



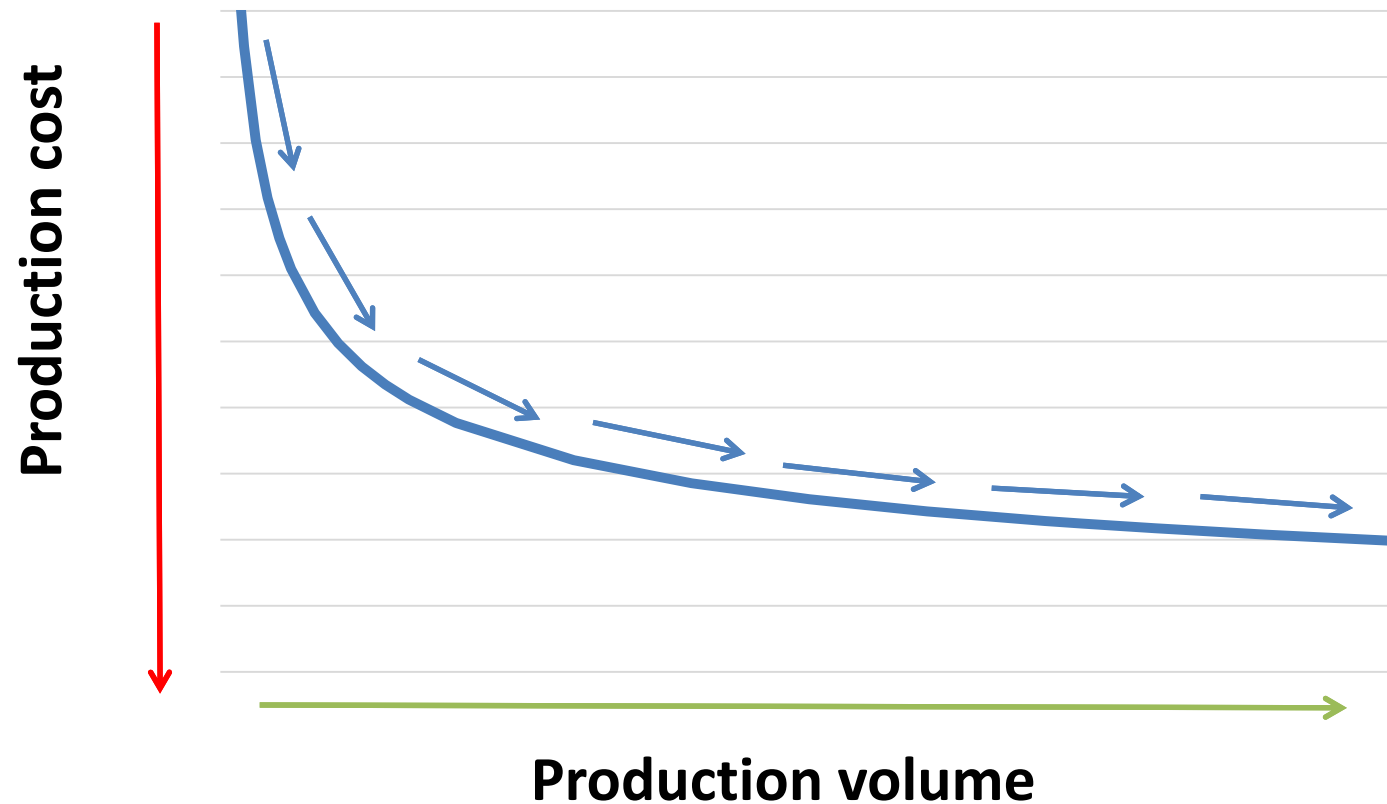
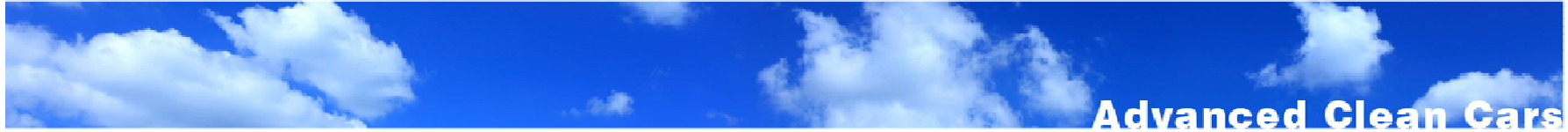
Percent Battery Electric and Fuel Cell



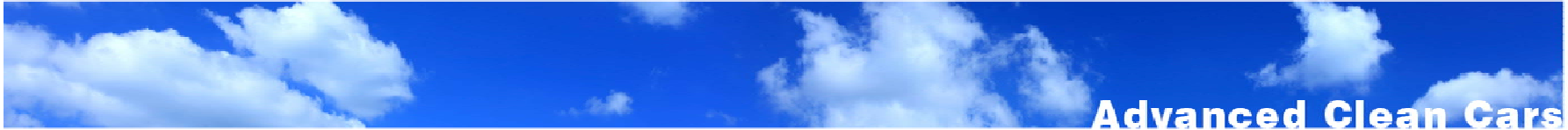
Total Plug in Vehicles



Increased Production Drives Down Price



Compliance 2018MY +



Must Make ZEVs

- Chrysler
- Ford
- GM
- Honda
- Nissan
- Toyota
- BMW
- Hyundai
- Kia
- Mazda
- Mercedes
- Volkswagen

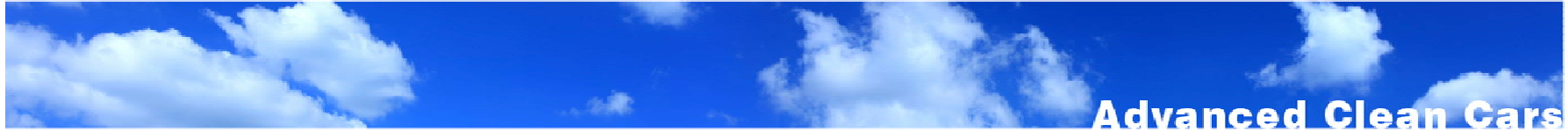
> 20,000 sales

Can make PHEVs

- JLR
- Mitsubishi
- Subaru
- Volvo

*** IVMs will be able to fully comply with Plug-in Hybrids**

Transformation of Light Duty Fleet



Clean, efficient vehicles are needed to meet California's health and climate change goals

- Significant near-term reductions in smog forming emissions
- 80% reduction in GHGs from 1990 levels by 2050

This means that, by 2025,

- ZEV technology is commonplace with multiple light duty platforms
- Fueling infrastructure is in place to meet increasing vehicle demands