

California Air Resources Board Advanced Clean Cars

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Today's Presentation

- Overview of ARB
- ARB's light-duty vehicle regulations
- What clean cars are available now and coming soon
- Tools for finding clean cars
- Conclusions

Air Resources Board



State agency under Cal/EPA

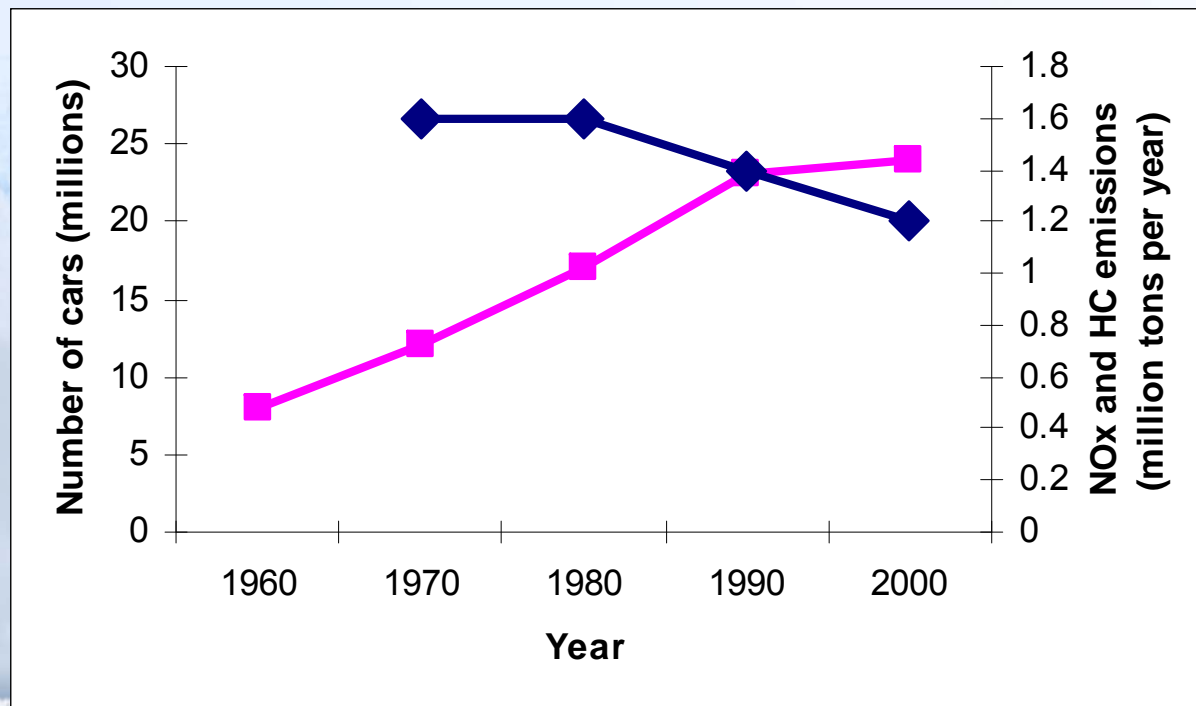
- Goal of the ARB is to ensure all Californians, especially children and the elderly, can live, work and play in a healthful environment free from harmful exposure to air pollution

California Energy & Environmental Goals

- Improve air quality and public health
- Reduce threat of climate change by requiring 80% reduction in greenhouse gas pollution from 1990 levels
- Move away from petroleum and toward more diversified fuels
- Create jobs and spur economic development

The Goal is Zero

A car today is 90% cleaner than one produced in 1960.....but more needs to be done to meet our smog and greenhouse gas goals



Advanced Clean Cars: Overview

- Vehicles contribute over 50% to the State's smog forming emissions and 40% to our climate change emissions
- Coordinated approach to meet smog and climate goals
 - Low Emission Vehicle (LEV)
 - Zero Emission Vehicle (ZEV)
 - Clean Fuels Outlet (CFO)

Smog Standards: Passenger Cars Overview

Low Emission Vehicle (LEV I)

- Originally adopted in 1990
- Standards for model years 1994 to 2003 cars
- Reduced smog-forming pollutants from new cars by 75%

LEV II

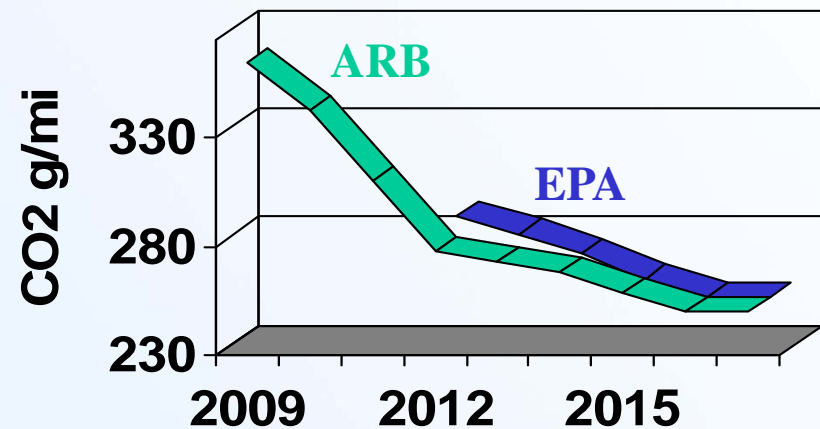
- Further reduced smog-forming pollutants between 1994 and 2010 another 57%

LEV III

- Will reduce smog-forming emissions by 75% by 2025

Greenhouse Gas Standards: 2012 - 2016 Passenger Cars

- California adopted in 2004
- Results in a 30% reduction in GHG emissions by 2016
- EPA adopted similar standards 2012 – 2016



Greenhouse Gas Standards: 2017 - 2025 Passenger Cars

- ARB has been working closely with USEPA and NHTSA
- July 29, 2011 President Obama announced agreement with major automakers on new standards
- 35% reduction by 2025 compared to 2016 levels
- Equivalent to 54.5 mpg average*



* Real world fuel economy is typically about 20% lower than the fuel economy measured on the official test cycles. MPG estimates simplistically assume that all emission reductions come from tailpipe improvements and that GHG reduction and MPG increases correlate absolutely.

Greenhouse Gas Standards: 2025 Technologies

- More efficient engines
- More efficient transmissions
- Improved aerodynamics
- Wider choice of affordable hybrids
- More plug-in vehicles
- Advanced lightweight materials

Greenhouse Gas Standards: Economic Impacts – New Cars 2025

- With greenhouse gas improvements new cars may cost more
- But lifetime fuel savings far exceed new vehicle price increase
- First owner breaks even on net cost in 3 ½ years or less

Zero Emission Vehicle Program: Program Overview

- ZEV Regulation originally adopted in 1990
- Requires auto makers to produce a certain number of ZEVs
- Modified over the years to account for technology readiness and cost

Zero Emission Vehicle Program: Program Success

ZEVs – over 30,000 with many more coming to market

- Battery Electric Vehicle
- Hydrogen Fuel Cell Vehicle

Plug-in Hybrid Electric Vehicles (PHEV)

- Hybrid that can run on a battery and gas engine.

Hybrids – over 250,000

- Conventional hybrid that runs on gas with battery assist

Partial zero emission vehicles (PZEV) – 1,750,000

- Gasoline car that meets strictest air quality standards



Zero Emission Vehicle Program: Bringing California more ZEVs

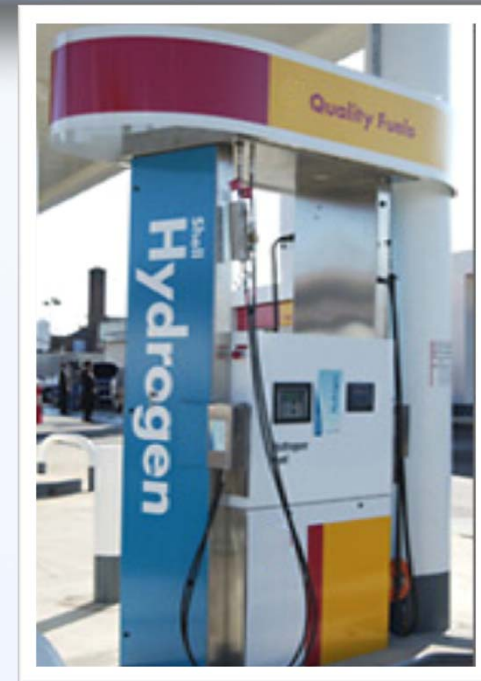
Production requirements for auto manufacturers

- 2012 to 2014:
 - 12,500 ZEVs
 - 58,000 Plug-in hybrid EVs
- 2015 to 2017:
 - 50,000 ZEVs
 - 83,000 Plug-in hybrid EVs
- Advanced Clean Cars rulemaking will increase volumes 2018+ to launch sustainable market



Clean Fuels Outlet Regulation: Making Sure Fuels are Available for the Cars

- Ensure that enough fuel is available to support ZEVs when and where it is needed
- Encourage best possible chance for success for both fuel providers and automakers
- Needed to achieve 2050 greenhouse gas goals



Advanced Clean Cars: Next Steps

- Release staff report in October 2011
- Proposal to our Board in December 2011
- Intend to have one national greenhouse gas standard if sufficiently stringent

PEVs Available Now or by 2012

Release: Spring 2012
20 – 30,000 world sales/yr
15 US launch states



Prius Plug-in Hybrid



2012 Honda Fit EV

Release: 2012

Release: Dec 2010
10 - 15,000 2011 US sales



2011 Chevrolet VOLT



2011 BMW ActiveE

Release: Late 2011

Release: January 2012
2,000 US sales 2012
Eventually 20 – 30,000 world sales



2011 Mitsubishi i-MiEV



2011 Ford Focus Electric

Release: Late 2011

Release: Dec 2010
15 - 20,000 2011 US sales



2011 Nissan LEAF

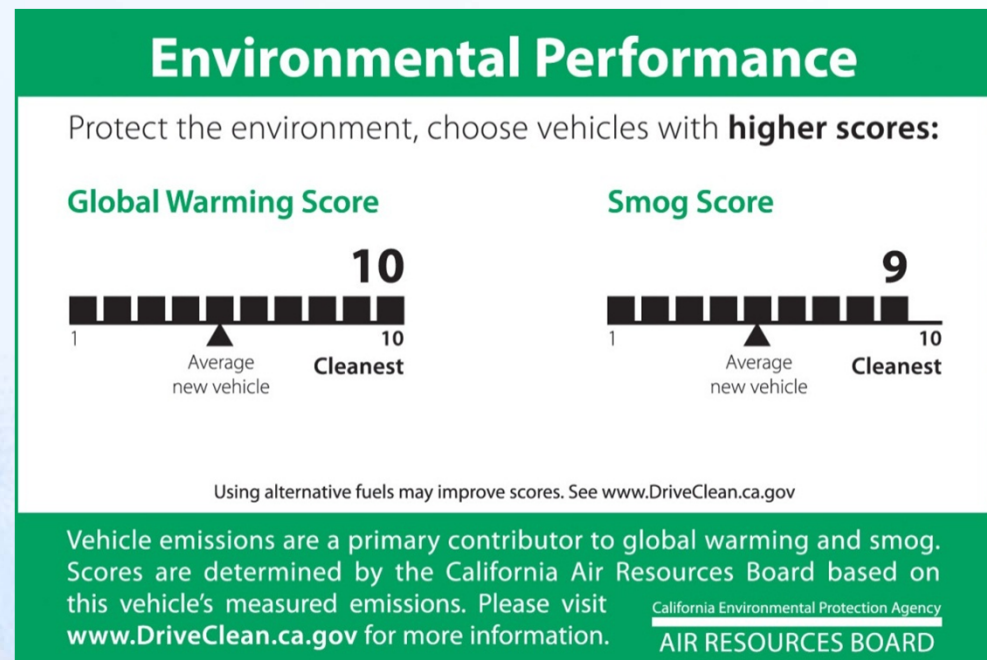


2012 Tesla Model S

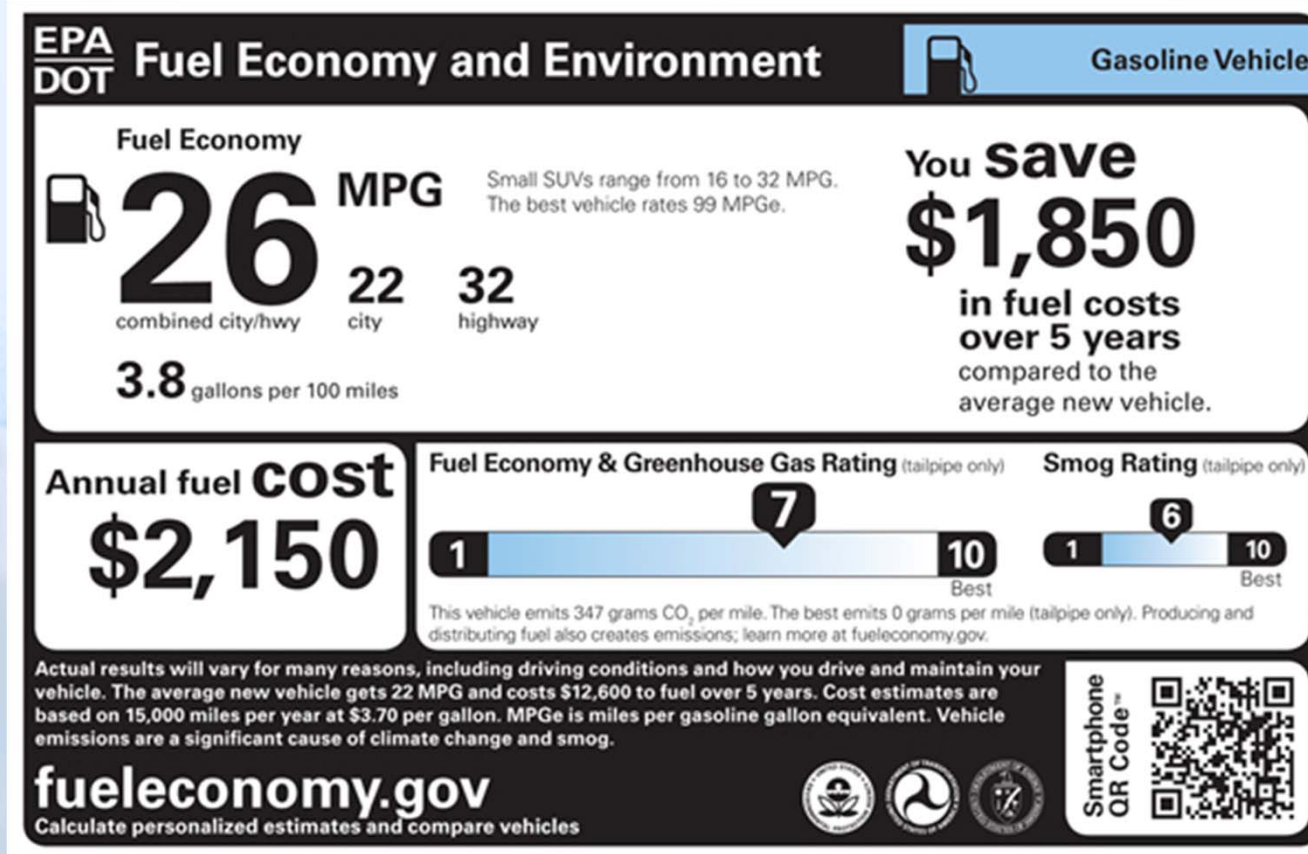
Release: Mid-2012
5,000 sales in 2012,
ramp up to 20,000/yr in 2013

California Environmental Performance Label: Helping Consumers Find Cleaner Cars

- On all new cars in California
- Global Warming and Smog Scores from 1-10
- Cleanest cars have highest scores



Federal Fuel Economy and Environment Label: Coming to Cars in Model Year 2013



DriveClean.ca.gov: A Resource for Information

- Buying guide for all cars in CA
- Includes all cars certified in CA with GW and Smog Scores
- Incentives search

The screenshot displays the DriveClean.ca.gov website. At the top, there is a navigation bar with links for 'About ARB', 'Contact Us', and 'News & Events'. Below this is a search bar and a 'GO' button. The main content area is divided into several sections:

- Search & Explore:** A sidebar with filters for 'By Make/Model', 'By Category', 'By Technologies & Fuel Types', 'By Smog Score', 'By Global Warming Score', and 'By Engine Family'.
- Calculate Savings:** A sidebar with filters for 'By Incentives', 'By Driving Habits & Fuel Costs', 'Vehicle Comparison', and 'Tools & Calculators'.
- DriveClean Buying Guide:** A central section with a 'START STOP' button graphic and text: 'Looking to reduce your carbon footprint? Your car is the piece to start. While gas-fueled cars dominate the roads, alternatives exist now and in the future. Learn more >'.
- Start Your Research:** A section with 'Browse by Make and Model' (Year, Make, Model) and 'By Category' (Sedan, Wagon, Van/Minivan, Coupe, Pickup, Crossover, Sports Car, SUV, Neighborhood).
- Technologies & Fuel Types:** A row of icons for Hybrid Electric, Battery Electric, Compressed Natural Gas, Ethanol (E85) Flex Fuel, Gasoline, and Diesel, each with a 'Learn more >' and 'View vehicles >' link.
- Quick Compare:** A section with three vehicle comparison forms (Vehicle 1, 2, 3) with dropdown menus for Year, All Makes, and All Models, and a 'Compare' button.
- Environmental Performance:** A section with an 'EP Label' graphic and text: 'Understand the EP Label. Look for the Environmental Performance Label on all new cars in California. See how cars rate when it comes to air pollution. Learn More >'.
- Popular Searches:** A table with columns for 'Cleanest Cars', 'Hybrid SUVs', and 'Cars with Incentives', listing vehicles with their Global Warming Score (GWS) and Smog Score (SS).
- Find Clean Vehicles:** A section with 'Global Warming Score' and 'Smog Score' search bars, each with a 'Learn More >' link and a 'GO' button.

At the bottom, there is a footer with the California Air Resources Board logo and text: 'DriveClean.ca.gov is a web site of the California Air Resources Board developed as a resource for car buyers to find clean'.

Advanced Clean Cars: List Serve

- Provides subscribers with automatic email notification
 - Notice of workshops and meetings
 - Posting of documents on ARB website
- To subscribe: go to ARB lists serves
 - http://www.arb.ca.gov/listserv/listserv_ind.php?listname=clean_cars

Advanced Clean Cars: Information Resources

- Air Resources Board
 - 1-800-END-SMOG
 - www.arb.ca.gov
- Air Resources Board - Advanced Clean Cars
 - www.arb.ca.gov/msprog/clean_cars/clean_cars.htm
- DriveClean
 - www.DrivClean.ca.gov

Advanced Clean Cars: Contact Information

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