

California Air Resources Board Advanced Clean Cars

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California Air Resources Board

Tonight's Presentation

- Overview of ARB
- ARB's Advanced Clean Cars Rulemaking
- Tools for finding clean cars
- CEQA Scoping
- Next steps
- Q & A

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

Advanced Clean Cars: Overview

- Clean, efficient vehicles needed to meet California's air quality, public health, and climate change goals
- Commercialization of advanced vehicle technologies by 2025 required to achieve 2050 climate change goal
- Includes modifications to the following programs to meet our 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

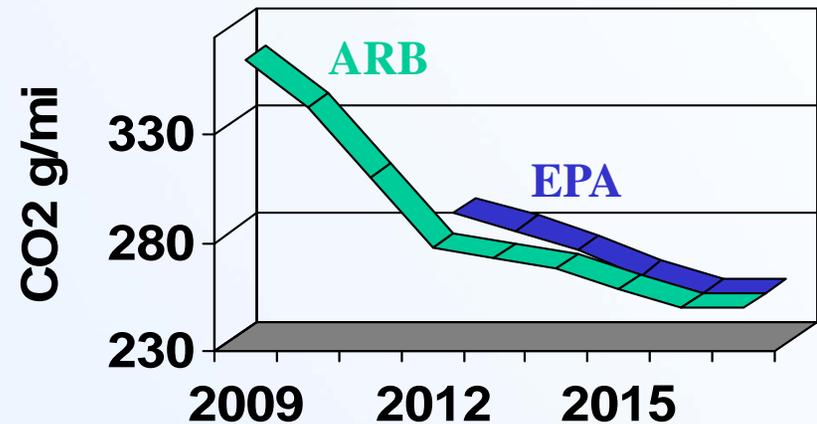
- Will further control both smog-forming and greenhouse gas pollutants

LEV III Smog Standards: 2015 – 2025 Passenger Cars

- Stricter pollution standards for model years 2015 to 2025
- In 2025 smog-forming pollutants from the average new car will be 75% lower than pollutants from today's new car
- Increased emissions control durability from 120,000 miles to 150,000 miles
- Further pollutant reductions from the heavier trucks and vans in the medium-duty vehicle class
- Reductions achieved at low costs through ongoing improvements to conventional emission control systems

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

In May, 2010, President directed EPA & NHTSA to develop GHG and fuel economy standards for 2017-2025 model passenger cars

- The President requested that California participate in a technical assessment report
- ARB requested report evaluate a range of annual GHG improvements of 3% to 6% per year



Greenhouse Gas Standards: Impacts on Fuel Economy

With annual greenhouse gas improvements of 3% to 6% per year

- Consumers would see an average real world fuel economy between 37 MPG and 50 MPG* by 2025
- 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 between 3% to 6% per year
 - The average new car may cost between \$780 to \$3,440 more
- But consumers will **save** \$5,300 to \$9,400 on fuel savings over the life of the car
- Making the average payback period 1 to 3 ½ years depending on the standard

Greenhouse Gas Standards: Economic Impacts – Used Cars

- Households that purchase a used car may pay more:
 - \$7 to \$30 increase in monthly payment
- But you will spend \$32 to \$57 less on fuel per month
- Net Monthly savings of \$25 - \$27

Greenhouse Gas Standards: Summary of Economic Impacts

- Lifetime fuel savings far exceed new vehicle price increase
- First owner breaks even on net cost
 - 3 ½ years or less
- Lifetime benefits of used cars far exceed the increased purchase price

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 Goals

- Improve air quality
- Push development and deployment of zero emission vehicles
- Encourage ZEV commercialization through introduction of ZEV-enabling technology
- Needed to meet 2050 greenhouse gas goals
 - 80% reduction from 1990 levels

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

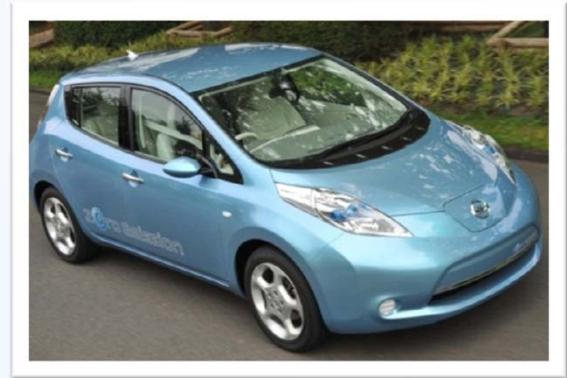
- Gasoline car that meets strictest air quality standards



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: Ensuring 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

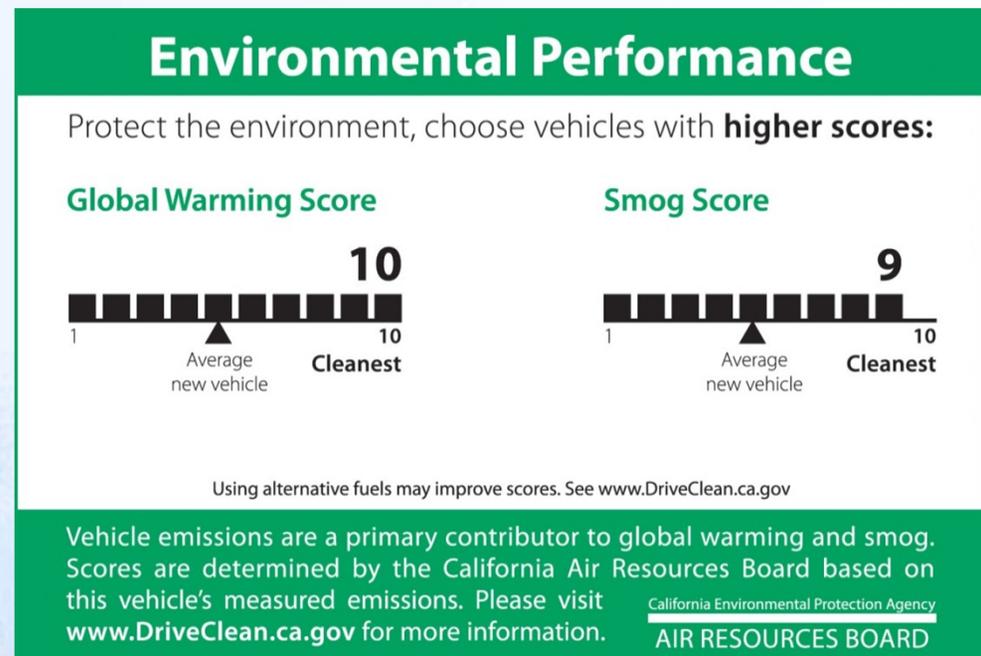


Advanced Clean Cars: Community Impacts

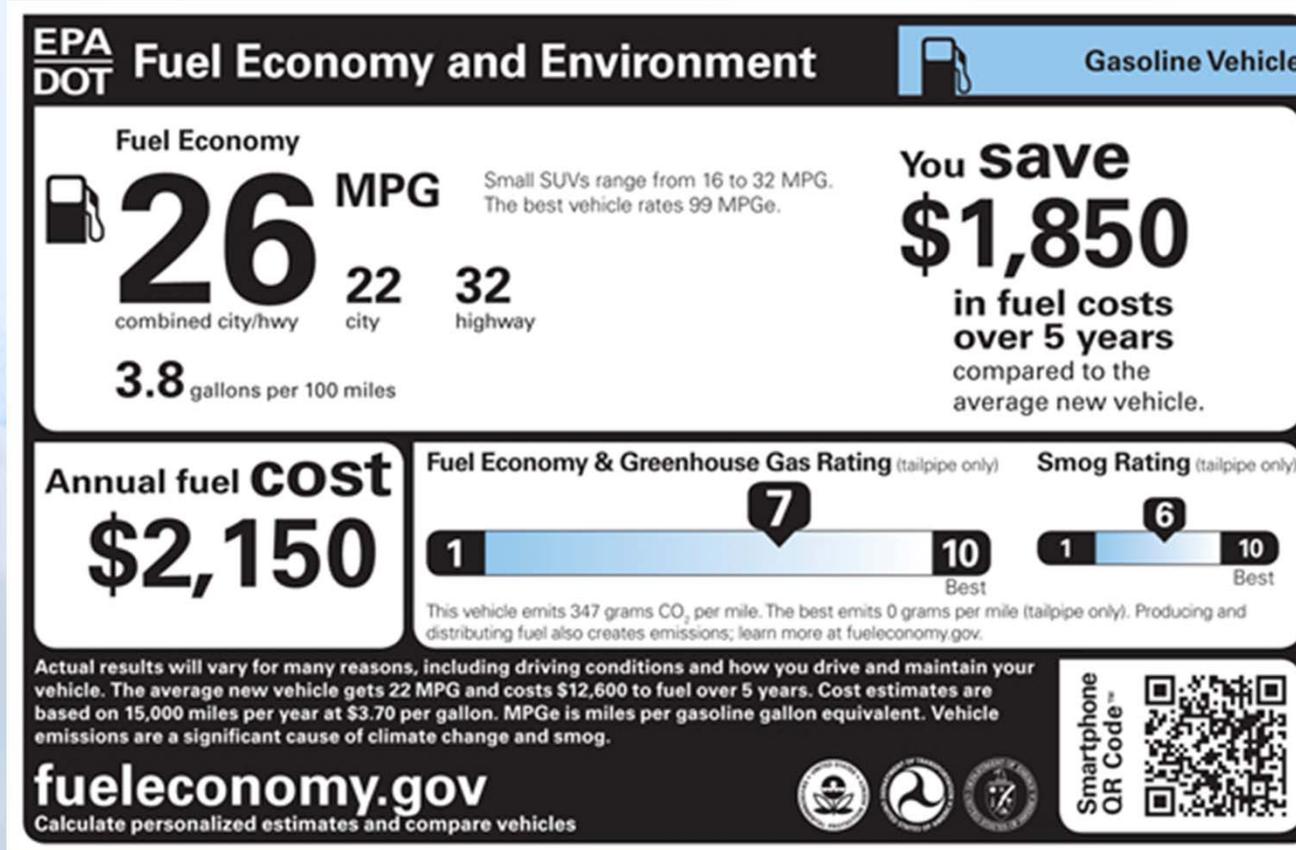
- Clean cars mean lower health risks for those living along roadways
- Clean cars mean improved air quality in your community and throughout California
- Communities will see lower pollution in their areas due to fewer local fuel deliveries
- When consumers save money on gas, they have more to spend on goods and services in their communities (Next10 Study)
- Reducing greenhouse gas pollution and improving fuel economy brings additional jobs to California (Next10 Study)

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

DriveClean.ca.gov
A buying guide for clean and efficient vehicles brought to you by California Air Resources Board

Do Your Research | Know the Score | Think Clean | Find Special Resources | Learn More

Search & Explore

- By Make/Model
- By Category
- By Technologies & Fuel Types
- By Smog Score
- By Global Warming Score
- By Engine Family

Calculate Savings

- By Incentives
- By Driving Habits & Fuel Costs

Vehicle Comparison
Tools & Calculators

DriveClean Buying Guide

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

Browse by Make and Model:

Year: [Dropdown]
Make: [Dropdown]
Model: [Dropdown]
[Find a Car](#)

By Category:

- Sedan
- Wagon
- Van/Minivan
- Coupe
- Pickup
- Crossover
- Sports Car
- SUV
- Neighborhood

Technologies & Fuel Types

- Hybrid Electric
- Battery Electric
- Compressed Natural Gas
- Ethanol (E85) Flex Fuel
- Gasoline
- Diesel

Popular Searches

Cleanest Cars		Hybrid SUVs		Cars with Incentives	
Vehicle	GWS SS	Vehicle	GWS SS	Vehicle	GWS SS
2008 Tesla Roadster (Electric)	10 10	2009 Toyota Prius (Hybrid)	9 9	2009 Honda Civic Hybrid	9 9
2008 GEMs (Electric)	10 10	2009 Honda Civic GX (CNG)	9 9	2009 Nissan Altima Hybrid	9 9
2008 ZENN Electric Vehicles	10 10				
2008 Miles Electric Vehicles	10 10				
2009 Honda FCX Clarity	10 10				

[Print](#) | [View All >](#)

Quick Compare

Vehicle 1: [Dropdown]
Year: [Dropdown]
All Makes: [Dropdown]
All Models: [Dropdown]

Vehicle 2: [Dropdown]
Year: [Dropdown]
All Makes: [Dropdown]
All Models: [Dropdown]

Vehicle 3: [Dropdown]
Year: [Dropdown]
All Makes: [Dropdown]
All Models: [Dropdown]

[Compare](#)

Environmental Performance

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 >](#)

Find Clean Vehicles

Use your mouse to slide the arrow to the right to search by score.

Global Warming Score: [Learn More >](#)
Cleanest [Progress Bar] 1 [GO](#)

Smog Score: [Learn More >](#)
Cleanest [Progress Bar] 1 [GO](#)

DriveClean.ca.gov
DriveClean.ca.gov is a web site of the California Air Resources Board developed as a resource for car buyers to find clean

Search & Explore
By: Make/Model | Category | Technologies & Fuel Types | Smog Score | Global Warming Score | Engine Family

Advanced Clean Cars: Community Input

- Input at the community level is essential to a successful partnership and regulation
- We welcome your input as we prepare our staff report
- Need input as we develop the Functional Equivalent Document (FED) to meet California Environmental Quality Act

Advanced Clean Cars: Next Steps

- Continue to work with EPA/NHTSA on greenhouse gas standards
- Release staff report and FED in September 2011
- Proposal to our Board in November 2011
- Intend to have one national greenhouse gas standard if sufficiently stringent

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.DriveClean.ca.gov

Advanced Clean Cars: Contact Information

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California Environmental Quality Act Scoping Meeting

Introduction

- CEQA applies to most public agency decisions to carry out or approve projects that could have adverse effects on the environment
- ARB has a Certified Regulatory Program
- Environmental analysis requirements
 - Describe potential adverse and beneficial impacts associated with proposed action
 - Identify potential adverse impacts
 - Identify feasible mitigation or alternatives that reduce impacts
- 45-day public review period

California Environmental Quality Act Scoping Meeting

- Your input at the community level is essential to a successful partnership and regulation
- We welcome your input as we develop the environmental analysis to meet the requirements of CEQA
- CEQA analysis will be part of the staff report
- Website to be established

California Environmental Quality Act Scoping Meeting

Framework for Environmental Analysis

- Proposed Project – amending passenger vehicle fleet regulations
- Present integrated analysis of simultaneously amending these regulations
 - Low Emission Vehicle (LEV III)
 - Greenhouse Gas (GHG)
 - Zero Emission Vehicles (ZEV)
 - Clean Fuels Outlet (CFO)
 - Environmental Performance Label (EPL)

California Environmental Quality Act Scoping Meeting

- **CEQA checklist used to identify environmental resource areas potentially impacted**
 - Air Quality
 - Aesthetics
 - Biological Resources
 - Cultural Resources
 - Hazards
 - Land Uses, etc.
- **Environmental analysis to include**
 - Direct, indirect, cumulative impacts, mitigation
 - Alternatives

California Environmental Quality Act Scoping Meeting

- Impact analysis to focus on likely compliance responses
- Greenhouse gas emissions reductions
 - Engine and transmission improvements
 - Improve drivetrain
 - Mass reduction
 - Air conditioning improvements
 - Low rolling resistance tires
 - Increase plug-ins, hybrids and fuel cells vehicles

California Environmental Quality Act Scoping Meeting

Impact analysis to focus on reasonably likely compliance responses (cont.)

- Criteria Air Pollutant emissions reductions
 - Catalyst improvements
 - Air injection improvements
- Impact analysis may also consider consumer responses (e.g. fleet turnover, VMT rebound) and upstream effects (e.g. less fuel processed in and moved through state)

California Environmental Quality Act Scoping Meeting

- Collaborative Partners
 - U.S. Environmental Protection Agency
 - National Highway Traffic Safety Administration

California Environmental Quality Act Scoping Meeting

Next Steps

- September, 2011
 - Release of Draft Environmental Analysis with Proposed Regulations and Staff Report for public review
- November, 2011
 - Board consideration

California Environmental Quality Act Scoping Meeting

Questions?

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