

# California Air Resources Board Advanced Clean Cars

Lisa Chiladakis  
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

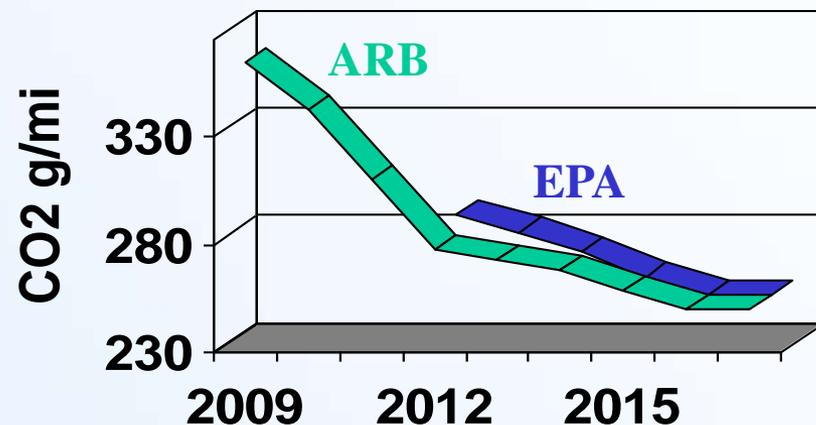
- Will further control both smog-forming and greenhouse gas pollutants

# 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

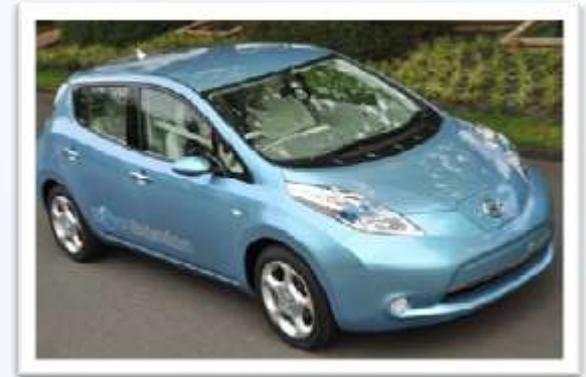
- Gasoline car that meets strictest air quality standards



# Zero Emission Vehicle Program: Bringing California more ZEVs

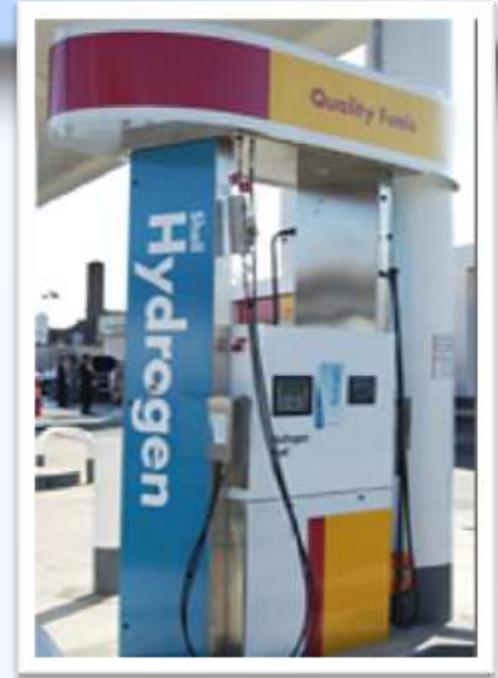
Production requirements for auto manufacturers

- 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

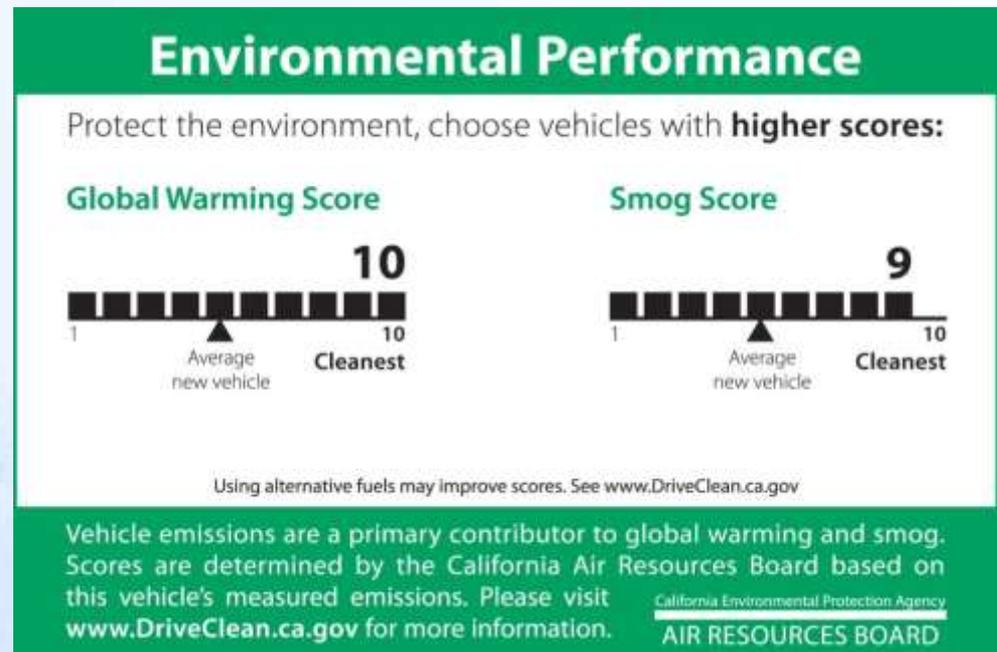


# Advanced Clean Cars: Community Impacts

- 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

The screenshot shows the DriveClean.ca.gov website. The header includes the logo, navigation links (About ARB, Contact Us, News & Events), and a search bar. The main content area features a 'Buying Guide' section with a 'START STOP' button, a 'Start Your Research' section with filters for Year, Make, and Model, and a 'Browse by Make and Model' section. There are also sections for 'Technologies & Fuel Types', 'Popular Searches', 'Quick Compare', 'Environmental Performance', and 'Find Clean Vehicles'. The footer contains the California Air Resources Board logo and contact information.

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

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 place 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 [Learn more >](#) [View vehicles >](#)
- Battery Electric [Learn more >](#) [View vehicles >](#)
- Compressed Natural Gas [Learn more >](#) [View vehicles >](#)
- Ethanol (E85) [Learn more >](#) [View vehicles >](#)
- Gasoline [Learn more >](#) [View vehicles >](#)
- Diesel [Learn more >](#) [View vehicles >](#)

**Popular Searches**

Vehicle	GW	SS	Vehicle	GW	SS
2008 Tesla Roadster (Electric)	10	10	2009 Toyota Prius (Hybrid)	9	9
2008 GEMs (Electric)	10	10	2009 Honda Civic Hybrid	5	9
2008 ZENN Electric Vehicles	10	10	2009 Honda Civic GX (CNG)	9	9
2008 Miles Electric Vehicles	10	10	2009 Nissan Altima Hybrid	9	9
2009 Honda FCX Clarity	10	10			

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

**Quick Compare**

Vehicle 1: Year [Dropdown], All Makes [Dropdown], All Models [Dropdown]  
Vehicle 2: Year [Dropdown], All Makes [Dropdown], All Models [Dropdown]  
Vehicle 3: 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 Federal 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](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](http://www.arb.ca.gov)
- Air Resources Board - Advanced Clean Cars
  - [www.arb.ca.gov/msprog/clean\\_cars/clean\\_cars.htm](http://www.arb.ca.gov/msprog/clean_cars/clean_cars.htm)
- DriveClean
  - [www.DriveClean.ca.gov](http://www.DriveClean.ca.gov)

# Advanced Clean Cars: Contact Information

Lisa Chiladakis – Advanced Clean  
Cars

916.327.2932

[lichilada@arb.ca.gov](mailto:lichilada@arb.ca.gov)