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AIR RESOURCES BOARD

Overview

- The challenge
- ZEV program history & technology story
- The 2003 regulation
- **ARB's role in bringing ZEVs to commercialization**
- Section 177 States
- Next steps
- Conclusion

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ARB's Role in Bringing ZEVs to Commercialization

From the Memorandum of Understanding 1996 to 2003

ARB's Role in the MOA to Help Market ZEVs

- Facilitate purchase of ZEVs in state fleets
- Infrastructure
- Marketing/education
- Emergency response
- Recycling
- Permitting
- Codes and Standards
- Battery development
- Support development of incentive programs

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ZEV Incentives

- Federal Tax Incentives - up to $4,000 tax credit
- State Incentives
  - ZIP I, ZIP II and Fleet ZIP
  - HOV Lane Access
  - Free Parking
- Local Incentives
  - Parking
  - Monetary incentives
- For incentives information visit DriveClean.ca.gov

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ZIP I and ZIP II

- Zero Emission Vehicle Incentive Program I
  - $6.8 million grant program to encourage the purchase or lease of new ZEVs
  - Up to $9,000/ZEV
  - Program ended December 31, 2002
- Zero Emission Vehicle Incentive Program II
  - $6.6 million provided in approved Fiscal Year 2001/2002 State Budget
  - Funds available through June 30, 2004
  - Up to $5,000/ZEV
- Almost 1,000 vehicles funded

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Fleet ZIP

- Fleet Zero Emission Vehicle Incentive Program
  - $6.6 million provided in approved Fiscal Year 2001/2002 State Budget
  - Funds available to fleets in environmental justice areas
  - Up to $11,000/ZEV

- 15 fleets with 208 vehicles funded

evLoan Program

- Intended to facilitate EV purchases in public fleets
- Public agencies could try electric vehicle and charger to public fleets for up to 3 months - at no charge
- Over 200 agencies participated
- 600 loans administered
- Due to lack of available vehicles - initial goals changed to education/outreach

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Outreach/Education

- Grassroots Approach
  - Conferences, schools, youth groups, fairs, community events and auto shows
- Outreach Stakeholder Group
- EVs for Education
- *ev* Sacramento
- ZEVent 2000
- Web site - DriveClean.ca.gov

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ev Sacramento

Marketing Battery Electric Vehicles to Public Fleets

- Implemented in 2000
- 100 EVs were placed in Sacramento fleets
  - RAV4 EVs
  - Ford Rangers
  - Honda EVPlus
- Installed 70 new charging stations
- Very successful!
  - Removed barriers to leasing EVs
  - Increased public/fleet awareness

ZEVent

- Showcased the latest electric vehicle technologies
- Celebrated the success of the *ev Sacramento* program

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Hybrids, Alternative Fuel, Battery Electric, Fuel Cell, Very Clean ICE Vehicles

Vehicle Search - Features more than sixty vehicles that have met California's most stringent emissions standards.

Incentive Search - Allows you to find incentives in your area by entering a technology type, your zip code, or city.

Industry Information - Provides the latest information on the clean vehicle industry

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DRIVECLEAN.CA.GOV

It's easy to drive clean

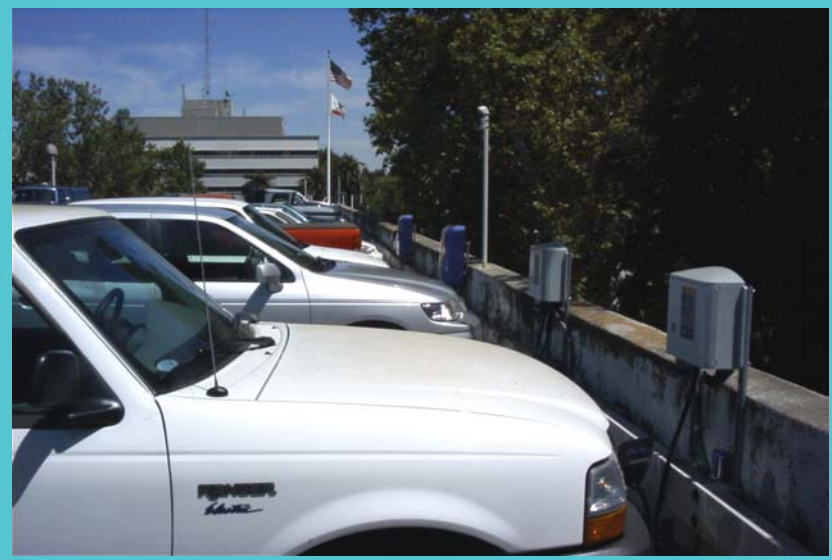
- Cars that meet the most stringent standards
- An easy way to find a cleaner car
- Vehicle technology information
- Understanding emissions ratings

2004 California Vehicle Emissions

LEV	Least stringent standard
ULEV	50% cleaner than average new 2003 car
SULEV	90% cleaner than average new 2003 car
PZEV	SULEV emission standards
	15 year / 150,000 mile warranty
	Zero evaporative emissions
AT PZEV	Meets PZEV standards
	Additional advanced technology components
ZEV	Zero tailpipe emissions
	98% cleaner than average new 2003 model year car

Charging an EV

- Over 900 public & commercial chargers installed
- Found at some airports, malls, grocery stores and movie theatres



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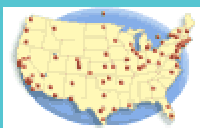
Finding a Charging Location

- www.afdc.doe.gov
- www.evchargernews.com
- www.cleancarmaps.com

Clean car Maps



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California Fuel Cell Partnership

Challenges to FCV Commercialization

- Hydrogen generation, storage and infrastructure
- Technical robustness
- Vehicle cost / volume
- Public awareness

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California Fuel Cell Partnership

"The Partnership is committed to promoting fuel cell vehicle commercialization as a means of moving toward a sustainable energy future, increasing energy efficiency and reducing or eliminating criteria pollutants and greenhouse gas emissions."

-- From CaFCP Statement of Intent

CaFCP Mission

To demonstrate in California the potential for fuel cell-powered vehicles as a safe, practical, clean and efficient alternative to vehicles powered by internal combustion engines by:

- **Demonstrating vehicle technology**
- **Demonstrating alternative fuel infrastructure**
- **Facilitating the path to commercialization**
- **Enhancing public awareness**

-- From CaFCP Statement of Intent

California Fuel Cell Partnership

- 41 Fuel Cell Vehicles (FCVs)
- Over 122,000 FCV miles to date
- Over 2400 H_2 refueling events at the CaFCP
- Zero or Near-0 Emissions

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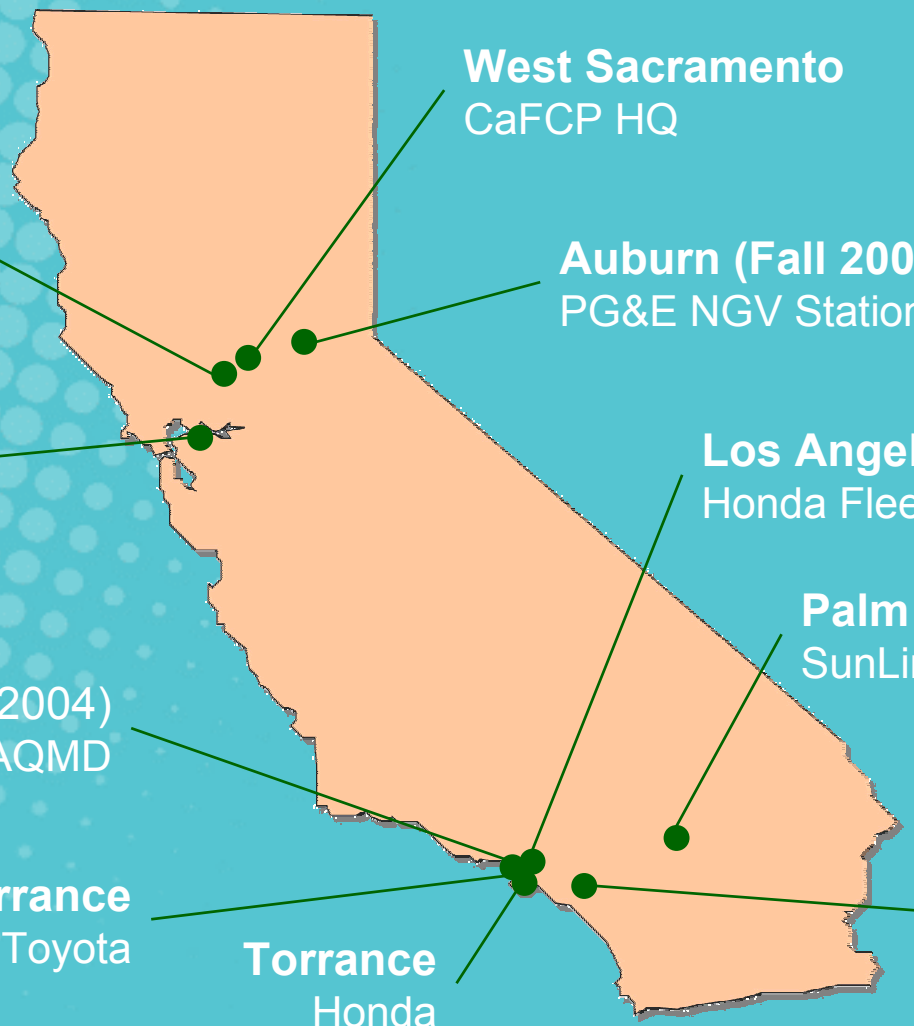
Fuel Cell Vehicle Demonstrations

City of LA – Honda FCX

University of California – Toyota FCHV

SunLine Transit – Palm Springs

Fuel Cell Infrastructure



West Sacramento
CaFCP HQ

UC Davis
Toyota Fleet Program

Auburn (Fall 2003)
PG&E NGV Station

Richmond
AC Transit

Los Angeles
Honda Fleet Program

Palm Springs
SunLine Transit Agency

LAX (Q4 2004)
SCAQMD

Torrance
Toyota

Torrance
Honda

UC Irvine
Toyota Fleet Program

Next Phase for the CaFCP

Key Principles

- **Vehicles in fleets**
  - – operated by real-world users
  - -- focused in Los Angeles & Sacramento/SF areas
  - -- facilitate member vehicle placement of up to 300 FCVs
- **Expanded fueling infrastructure**
  - – to support fleet demonstrations
  - – interoperable, accessible
- **Preparing communities**
  - – emergency response training
  - – permit assistance
- **Continued public outreach**
  - – stakeholder focused
  - – global information exchange
  - – resource sharing