



The Alternative and Renewable Fuel and Vehicle Technology Program

Peter Ward

Hydrogen Technology for Transportation Workshop
California Energy Commission
Hearing Room A

September 29, 2009



California Nation-State Statistics

- Population: 36.8 million
- GDP: \$1.8 trillion - 8th largest economy
- GHG Emissions: 440 MMT (2004)
 - 7.2% of U.S. Emissions (Pew Center)
 - 10th largest emitter on global scale
 - Transportation accounts for 38 % of all GHG emissions
- Vehicles: 26.3 million cars + 0.92 million trucks
- Annual Fuel Consumption: 20 billion gallons
 - 16 billion gallons gasoline
 - 4 billion gallons diesel
 - 3rd largest consumer of vehicle fuels after China and US



California Alternative Fuels Plan

- Full-fuel-cycle analysis of all fuels, specific recommendations.
- Goals: 9% in 2012, 11% in 2017, 26% in 2022.
- Displacement of 4 billion gge in 2020 (20%).
- Hydrogen fuels and technologies can make important contributions to this goal, with corresponding reductions in GHG and air pollution.

California Energy Commission



California Air Resources Board





The Alternative and Renewable Fuel and Vehicle Technology Program

- Assembly Bill 118 (Nunez, Chapter 750, Statutes of 2007) created the Alternative and Renewable Fuel and Vehicle Technology Program administered by the Energy Commission.
- Subsequently amended by AB 109 (Nunez, Chapter 313, Statutes of 2008).
- “The emphasis of this program is to develop and deploy innovative technologies that transform California’s fuels and vehicle types to help attain the state’s climate change policies.”



Funding and Objectives

- Up to \$100 million per year for 7 ½ Years (\$75 million for FY 08-09; \$101 million for FY 09-10)
- Develop, produce, manufacture, and deploy alternative and renewable fuels, advanced vehicles, vehicle efficiency improvements for on-road and non-road applications.
- Emphasize workforce training and job creation
- Foster education, promotion and technology centers
- Prepare environmental, market and technology assessments



State and Federal Policies to Reduce GHGs Will Increase Demand for Alternative Fuels

- **California's Climate Change Reduction Goals – AB 32**
 - 1990 GHG Levels by 2020 (~30% reduction)
 - 80 percent reduction of GHGs by 2050
- **California's Low Carbon Fuel Standard**
 - 10 % reduction in carbon intensity of transportation fuels by 2020
- **Federal Renewable Fuels Standards I and II**
 - 2007 Energy Independence and Security Act



AB 118 Investment Plan Funding Allocations – First Two Years

Fuel / Technology	2-Year Funding Allocation (million)
Electric Drive	\$46
Hydrogen - Allocated for public access hydrogen fueling stations	\$40
Ethanol	\$12
Renewable Diesel/Biodiesel	\$6
Natural Gas	\$43
Propane	\$2
Market Development and Program Support	\$27
Total	\$176



Next Steps

- Ongoing evaluation of proposals for federal economic stimulus funding.
- Preparing a California-based solicitation in accordance with the current Investment Plan.
- Update of the Investment Plan for FY 10-11.



Contact Information

Peter Ward

Program Manager

Fuels and Transportation Division

California Energy Commission

916-654-4639

pward@energy.state.ca.us