



CALIFORNIA ENERGY COMMISSION

The Alternative and Renewable Fuel and Vehicle Technology Program

Peter Ward

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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%).
- Electric drive vehicles can make important contributions to this goal, with corresponding reductions in GHG and air pollution.

California Energy Commission



California Air Resources Board





Key Policy Objectives

Objectives	Goals and Milestones
GHG Reduction	Reduce GHG emissions to 1990 levels by 2020 and 80% below 1990 levels by 2050
Petroleum Reduction	Reduce petroleum fuel use to 15% below 2003 levels by 2020
Alternative Fuel Use	Increase alternative fuel use to 20% of on-road fuel demand by 2020 and 30% by 2030
In-State Biofuels Use	Increase biofuel use to 1 billion gge by 2010, 1.6 billion gge by 2020, and 2 billion gge by 2050
In-State Biofuels Production	Produce in California 20% of biofuels used in state by 2010, 40% by 2020, and 75% by 2050.



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



Investment Plan Funding Allocations – First Two Years

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



Previous Electric Drive Funding Allocation Summary

- Plug-in hybrid electric passenger vehicle retrofits (\$3.5 million)
- Medium- and heavy-duty hybrid vehicle RD&D (\$10 million)
- Non-road deployment projects for ports and truck stop electrification (\$11.5 million)
- Charging stations (\$12 million)
- Manufacturing facilities and equipment (\$9 million)



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 2010-2011 Investment Plan.



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Contact Information

Peter Ward

Program Manager

Fuels and Transportation Division

California Energy Commission

916-654-4639

pward@energy.state.ca.us