



CALIFORNIA ENERGY COMMISSION

The Alternative and Renewable Fuel and Vehicle Technology Program

Peter Ward

California Energy Commission
Hearing Room A

September 14, 2009

DOCKET

09-ALT-1

DATE

RECD. SEP 23 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 (~1 billion gallons ethanol E6)
 - 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%).
- Biofuels can make a large contribution to this goal, with corresponding large 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 Policy Drivers to Reduce GHGs Will Increase Demand for Biofuels

- **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
- **BioEnergy Action Plan (Executive Order S-06-06)**
 - *“Maximize the contributions of bioenergy toward achieving the state’s petroleum reduction, climate change, renewable energy, and environmental goals.”*



State and Federal Policy Drivers to Reduce GHGs Will Increase Demand for Biofuels

BioEnergy Action Plan Goals

- Policy Goal to Increase Biofuels Use
 - 1 Billion gge by 2020; 2 Billion gge by 2050
- Policy goal to increase in-state production of biofuels:
 - ⇒ 2010 – 20% ⇒ 2020 – 40% ⇒ 2050 – 70%

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	\$40
Ethanol (waste feedstocks and infrastructure)	\$12
Renewable Diesel/Biodiesel (waste stream and infrastructure)	\$6
Natural Gas (Includes \$10 M biomethane)	\$43
Propane	\$2
Market Development and Program Support (Includes \$4 million for sustainability research)	\$27
Total	\$176
Sub-total Biofuels (ethanol, biodiesel, biomethane)	\$28



Previous Biofuels Funding Allocation Summary

- E-85 fueling stations (\$5 million)
- Ethanol feedstock and project feasibility studies for new plants (\$3 million)
- New ethanol pilot plants using waste feedstocks (\$4 million)
- Renewable diesel production plants using waste feedstocks (\$2 million)
- Construct renewable diesel blending and storage terminal facilities (\$4 million)
- Biomethane production plants (\$10 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 Investment Plan for FY 10-11.



CALIFORNIA ENERGY COMMISSION

Contact Information

Peter Ward

Program Manager

Fuels and Transportation Division

California Energy Commission

916-654-4639

pward@energy.state.ca.us