



CALIFORNIA ENERGY COMMISSION

California's Alternative and Renewable Fuel and Vehicle Technology Funding Program: AB 118

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California Energy Commission Authorities

California's Lead Energy Information and Policy Development Agency

- Transportation Fuels
 - Fossil and Alternative
 - Alternative and Renewable Fuel & Vehicle Funding
- Energy Efficiency Standards and Regulations
- Power Plant Licensing
- Electricity Supply-Demand Information
- Renewable Portfolio Standard
- Public Interest Energy Research Program
 - \$ 84 million annually in energy research funding

All states require balancing energy supplies, reliability, cost and environmental protection



California Nation-State Statistics

- Population: 36.8 million
- GDP: \$1.8 trillion - 8th largest economy
- GHG Emissions: 469 MMT (ARB 2008)
 - 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 (~1.5 billion gallons ethanol @ E10)
 - 4 billion gallons diesel
 - **3rd largest consumer of vehicle fuels after China and US**



AB 118 Basics

Purpose

To transform California's transportation market into a diverse collection of alternative fuels and technologies and reduce California's dependence on petroleum.

“...develop and deploy innovative technologies that transform California’s fuel and vehicle types to help attain the state’s climate change policies.” (Health and Safety Code Section 44272(a))

\$1.5 Billion State Funding Program

For the *Alternative & Renewable Fuel and Vehicle Technology Program*, the Energy Commission will receive **\$120 million/year for over 7 years**.

California Air Resources Board will receive **\$80 million/year for over 7 years** for *Enhanced Fleet Modernization and Air Quality Improvement*.



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 and Renewable Fuel Use	Increase alternative and renewable fuel use to 11% of on-road and off-road fuel demand by 2012, 13% by 2017 and 26% by 2022
In-State Biofuels Production	Produce in California 20% of biofuels used in state by 2010, 40% by 2020, and 75% by 2050



Sustainability and AB 118

- “A rapid transition to alternative fuels has the potential to encourage environmentally destructive production practices
- We have developed sustainability goals and criteria for AB 118, and will consider sustainability in every funding decision we make”

Energy Commission Chair

Karen Douglas

– January, 2009





Investment Plan

- The Investment Plan determines the priorities and opportunities for the Program.
- The Investment Plan must be updated annually.
- The Energy Commission must create and consult with an Advisory Committee as it develops its Investment Plan.



Advisory Committee

- The role of the Advisory Committee is to inform, advise, and make recommendations regarding the Investment Plan.
- The Advisory Committee convenes in public meetings at least twice annually.
- The Advisory Committee includes mandated agencies, groups representing mandated interests, and groups representing interests selected by the Energy Commission's Transportation Committee.
- Organizations directly participating on the Advisory Committee will be ineligible for Program funding.



AB 118 Investment Plan Funding Allocations – First Three Years

Fuel / Technology	Funding Allocations (million)	
	FY 2008-10	FY 2010-11
Electric Drive	\$46	\$24.5
Hydrogen	\$40	\$14
Gasoline Substitutes (Ethanol / Green Gasoline)	\$12	\$18.5
Renewable Diesel / Biodiesel	\$6	\$10
Natural Gas	\$14	\$14
BioGas	\$19	\$10
Propane	\$2	\$3
Innovative Technologies and Advanced Fuels		\$3
Program Support (Includes \$4.5 million for sustainability)	\$27	\$11
Total	\$176	\$108



2009 AB 118 Funding Awards

2009 ARRA and AB 118

\$36 M AB 118 Match to Leverage \$93.6 M in Federal Funding for California

- 2,860 Electric Vehicle Charging Stations
 - Support Nissan Leaf Roll-Out in San Diego
 - State-wide Public EV charging
- 50 Natural Gas Fueling Stations
- Demonstrate > 800 MD-HD NG and Hybrid Electric Trucks
- Workforce Development and Training
- No California Biorefineries Rec'd Federal Funding



2010 AB 118 Funding Awards

**BioGas for California Transportation
Applications
4 Projects Totaling \$21.5 Million**



1 – Argonne NL & Eurisko Scientific

- **Project Description:** Enhance anaerobic digestion of wastewater sludge and effluent using calcium carbonate to accelerate methane production and sequester CO₂.
- **Location:** Sacramento Wastewater Treatment Facility in Elk Grove, CA
- **Anticipated Output:** Not yet fully quantified. Six month demonstration project.
- **Transportation Application:** Clean Energy will market biogas
- **GHG Reduction:** 124% - **Carbon Negative!**
- **Recommended Award:** \$1.8 Million



2 – Northstate Rendering Company

- **Project Description:** Anaerobic digestion of animal rendering material
- **Location:** Northstate Rendering Facility, Oroville, CA
- **Annual Output:** 54.1M cubic feet of biomethane from 15,000 tons of animal rendering remains
- **Petroleum Displacement:** 378,550 DGE / year
- **Transportation Application:** One third to facility truck fleet, two thirds wheeled to 3rd parties via CALSTART
- **GHG Reduction:** 81%
- **Recommended Award:** \$3.9 Million



3 – Pixley BioGas Project

- **Project Description:** Anaerobic digestion of dairy manure from 3 local dairies to produce biogas that will offset 13% of natural gas consumption at the Calgren Biorefinery (ethanol from Midwest corn).
- **Location:** Pixley, CA
- **Anticipated Output:** 105 M cubic feet per year
- **GHG Reduction in Ethanol:** 5% lower than California produced ethanol for total of 21% below petroleum baseline.
- **Recommended Award:** \$4.7 Million



4 – High Mountain Fuels

- **Project Description:** Bio-Liquified Natural Gas production from landfill gas wells
- **Location:** Simi Valley Landfill, Ventura County
- **Anticipated Output:** 1.5 B cubic feet of landfill gas or about 750 M cubic feet of biomethane for the production of 6 M gallons of LNG annually
- **Transportation Application:** Will fuel 500 HD waste haul trucks
- **Petroleum Displacement:** 3.43 Million DGE
- **GHG Reduction:** 85%
- **Recommended Award:** \$11 Million



Active & Upcoming Biomass Solicitations

- **Advanced Biorefineries: \$14.9 to \$19 M**
 - **Solicitation No:** PON-09-064
 - **Closing Date:** May 20, 2010
 - **Funding Mechanism:** Pre-Development Grants through CEC and Loan Guarantees and Bond Funding through State Treasurer's Office for Commercial Plants.
 - **Project Types:** Integrated Biorefineries and Cellulosic Process Technologies
 - **Anticipated Feedstocks:** Waste streams from ag and forest sectors, sustainably produced bioenergy crops
- **Hydrogen Fueling Infrastructure – Renewable Hydrogen**