



Investing for Tomorrow, Today

Janea A. Scott California Energy Commission

August 24, 2017



California's Policy Goals and Objectives

Policy Objectives	Policy Origin	Goals and Milestones
Greenhouse Gas Reduction	AB 32, SB 350	Reduce greenhouse gas emissions to 1990 levels by 2020, 40% below 1990 levels by 2030 and 80% below 1990 levels by 2050 in California
Petroleum Reduction	California State Alternative Fuels Plan	Reduce petroleum fuel use to 15 percent below 2003 levels by 2020 in California
Low Carbon Fuel Standard	AB 32, California Global Warming Solutions Act	10% reduction in carbon intensity of transportation fuels in California by 2020
Air Quality	Clean Air Act	80% reduction in NOx from current levels by 2023
ZEV Mandate	Executive Order B-16- 2012	Infrastructure to accommodate 1 million ZEVs by 2020 and 1.5 million ZEVs on California roadways by 2025
Integrated Energy Policy Report	SB 1389 (2002)	2014 IEPR: Chapter 3 recommendations for ZEV infrastructure deployment



Alternative and Renewable Fuel and Vehicle Technology Program

"...to 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 44272(a)

Complementary state goals

- Improve air quality
- Increase alternative fuel use
- Reduce petroleum dependence
- Promote economic development

Assembly Bill No. 8	
CHAPTER 401	
An act to amend Sections 41081, 44060.5, 44125, 44225 44271, 44272, 44273, 44274, 44275, 44280, 44281, 4428 44299.1, and 44299.2 of, to add and repeal Section 43018.5 Section 44299 of, the Health and Safety Code, to amend and 42889 of the Public Resources Code, and to amend 9250.2, 9261.1, and 9853.6 of the Vehicle Code, relating pollution, and declaring the urgency thereof, to take effect	2, 44283, 44287, P of, and to repeal 1 Sections 42885 Sections 9250.1, g to vehicular air
[Approved by Governor September 28, 2013. Filed w Secretary of State September 28, 2013.]	rith
LEGISLATIVE COUNSEL'S DIGEST	
AB 8, Perea. Alternative fuel and vehicle technologies. If (1) Existing law establishes the Alternative and Rem Vehicle Technology Program, administered by the State E Conservation and Development Commission, to provide to upon appropriation by the Legislature, grants, loans, revolving loans, or other appropriate measures, for the of deployment of innovative technologies that would transf- fuel and vehicle types to help attain the state's climate chang- law specifies that only certain projects or programs are elig- including block grants administered by public entities technology entities for multiple projects, education and pre- within California, and development of alternative and rer- vehicle technology centers. Existing law requires the comm and adopt an investment plan to determine priorities and the program. Existing law also creates the Air Quality Impro- administered by the State Air Resources Board, to : improvement projects related to fuel and vehicle technology This bill would provide that the state board has no aut any element of its existing clean fuels outlet regulation on that requires or has the effect of requiring any supplic construct, operate, or provide funding for the construction any publicly available hydrogen-fueling station. The bill v state board to aggregate and make available to the public, 1 30, 2014, and every year thereafter, the number of hydroges that motor vehicle manufacturers project to be sold or lea 3 years, as reported to the state board, and the number of vehicles treastered with the Devartment of Motory Vehicle	ewable Fuel and inergy Resources specified entities, loan guarantees, levelopment and o'rom California's ge goals. Existing gible for funding, or not-for-profit ogram promotion newable fuel and uission to develop opportunities for vement Program, fund air quality gies. hority to enforce or other regulation r, ras defined, to n or operation of vould require the to later than June n-fueled vehicles sed over the next hydrogen-fueled



Electric Vehicle Infrastructure Support is Growing

Charging Stations Funded by ARFVTP (as of March 2017)

Private Installations		Publicly Accessible Installations					
	Single Family Residential	Private Fleet	Multiunit Dwelling	Commercial	Workplace	DC Fast Chargers	Total
Total	3,936	107	345	3,311	424	555	8,678
Subtotal	4,043		4,635				8,678

Other Initiatives



New Energy and Industrial Technology Development Organization

electrify america



- \$80.1 M for Charging Infrastructure
 - Includes a \$15.2 M agreement with Center for Sustainable Energy to provide EV charging incentives throughout California.
- \$9.75 M for 43 Regional Readiness Planning Grants



EV Charging Infrastructure Pilots Investor Owned Utilities

Investor Owned Utility	Markets	Proposed # of EV Charging Stations	Estimated Cost
Southern California Edison	MUD, Workplace, Public	1,500	\$22 Million
San Diego Gas & Electric	MUD, Workplace	3,500	\$45 Million
Pacific Gas & Electric	MUD, Workplace	7,500	\$130 Million



Building a Foundation for Hydrogen Fueling Stations

Station Funding to Date = \$126.5 million

Public Station Funding

- 60 Funded Stations = \$106.1 million
- 3 Station Upgrades = \$6.7 million
- 45 O&M Support Grants = \$12.8 million
- 1 mobile refueler = \$0.9 million

Other Funding Activities

- 5 Hydrogen Regional Readiness Plans
- AC Transit Fuel Cell Bus Station
- CDFA Div. of Weights and Measures
- UC Irvine STREET Model

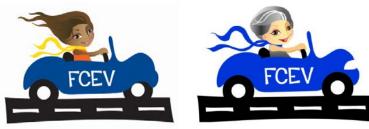




An Emerging Network

Mary's Valley Rally *April 2016*





Bay Area H2 Tour April 2017





JOIN US FOR THE 2017 BAYAREA HYDROGEN TOUR

- 1. SACRAMENTO
- 2. HAYWARD
- 3. SAN JOSE
- 4. TREASURE ISLAND



- Monitor station utilization
- Determine how station deployment supports Zero Emission Vehicle (electric and hydrogen fuel cell) adoption
- Strategically plan for additional stations and funding opportunities that will support the goal of 1.5 million vehicles on California roadways by 2025
- Track impact of electric vehicle charging and hydrogen refueling station investments







Thank you

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