



Launching a Hydrogen Network in California

**Fuel Cell and Hydrogen Pathways to Clean Cities:
A Stakeholder – Government Engagement**

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Commissioner Janea A. Scott
California Energy Commission



Diverse Responsibilities



The California Energy Commission is the state's primary energy policy and planning agency

Established by the Legislature in 1974, seven core responsibilities guide the Energy Commission

- Forecasting future energy needs
- Promoting energy efficiency and conservation by setting the state's appliance and building energy efficiency standards
- Supporting energy research that advances energy science and technology through research, development and demo projects
- Developing renewable energy resources
- Advancing alternative and renewable transportation fuels and technologies
- Certifying thermal power plants 50 megawatts and larger
- Planning for and directing state response to energy emergencies.



Key Policies and Regulations

Policy Objectives	Policy Origin	Goals and Milestones
Greenhouse Gas Reduction	AB 32, Executive Orders B-30-16 and S-3-05	Reduce greenhouse gas emissions to 1990 levels by 2020, 40% by 2030 and 80% below 1990 levels by 2050
Petroleum Reduction	California <i>State Alternative Fuels Plan</i>	Reduce petroleum fuel use to 15% below 2003 levels by 2020 in California
Low Carbon Fuel Standard	AB 32	10% reduction in carbon intensity of transportation fuels in California by 2020
Federal Renewable Fuel Standard	Energy Policy Act of 2005, Energy Independence and Security Act of 2007	36 billion gallons of renewable fuel by 2022
Air Quality	Federal Clean Air Act	80% reduction in NOx from current levels by 2023
ZEV Mandate	California Executive Order B-16-2012	Accommodate 1 million EVs by 2020 and 1.5 million by 2025 in California
Sustainable Freight	California Executive Order B-32-15	Improve freight efficiency, transition to ZEV technologies and increase economic competitiveness



Alternative and Renewable Fuel and Vehicle Technology Program



- **Extended through January 1, 2024**
- **Up to \$100 million** annually
- **Hydrogen provisions** of up to \$20M per year to hydrogen infrastructure. Goal is network of at least 100 hydrogen stations.

"...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))



ARFVTP Hydrogen Station Funding

To Date = \$103 million

Public Station Funding

45 New Stations	= \$72.7 million
3 Station Upgrades	= \$6.7 million
44 Station O&M Grants	= \$12.76 million
1 Mobile Refueler	= \$0.9 million

Other Funding Activities

5 H2 Regional Readiness Plans	= \$1.4 million
AC Transit Fuel Cell Bus Station	= \$3 million
CDFA Div of Weights and Measures	= \$4 million
Retail Dispensing Fuel Standards	
HyStEP Test Device	= \$0.1 million
UC Irvine STREET Model	= \$1.5 million
GoBiz ZEV Infrastructure Manager	



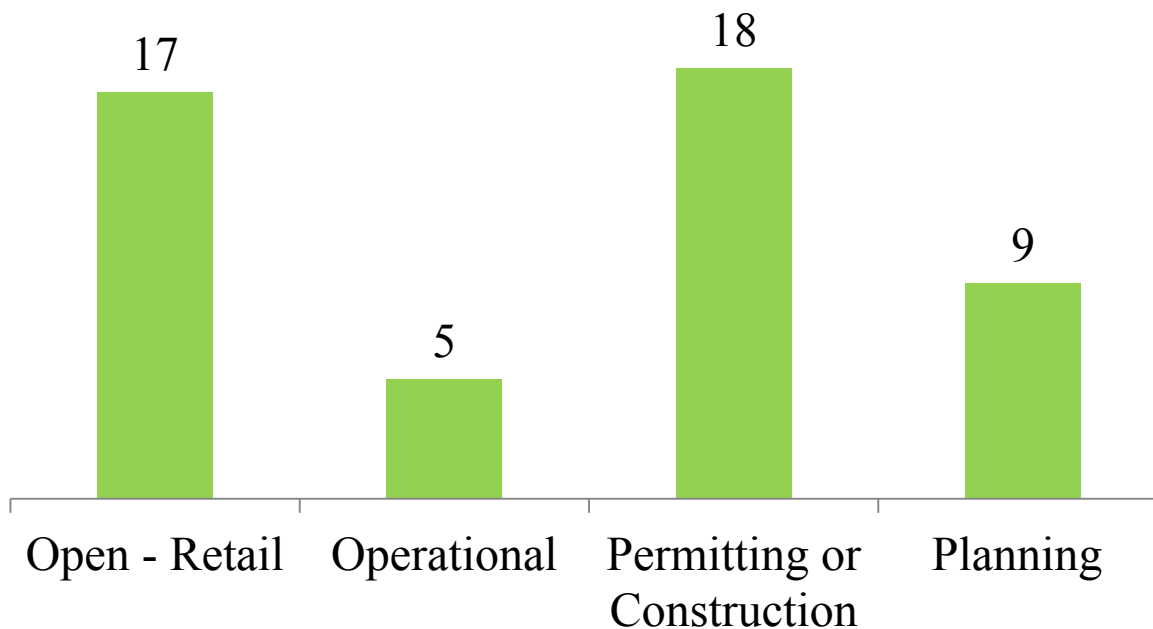
Additional \$17.3 M available – applications due July 15, 2016



Stations are Rolling Out



Status of 49 Energy Commission Funded Hydrogen Stations*



*Includes 3 station upgrades and 1 mobile refueler



HYDROGEN REFUELING STATIONS ARE HERE NOW





CALIFORNIA ENERGY COMMISSION



Thank You

Janea A. Scott, Commissioner
California Energy Commission

Janea.Scott@energy.ca.gov

(916) 654-4930