

DOCKETED

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Development of the 2017-2018 Investment Plan Update for the ARFVTP

Jacob Orenberg

Fuels and Transportation Division
California Energy Commission

February 16, 2017

Meeting Agenda

- 10:00 am Introductions and Opening Remarks
- 10:10 am Presentation: Development of the *2017-2018 Investment Plan Update for the ARFVTP*
- 10:30 am Advisory Committee Discussion
- 12:00 pm Lunch break
- 1:00 pm Advisory Committee Discussion (continued)
- Public Comment (following advisory committee discussion)



California Transportation Statistics



Vehicles

28.1 millions cars
1.0 million trucks

GHG Emissions

441.5 MMT CO₂e (2014)
37% from transportation

Air Quality

Severe Non-Attainment for Ozone
San Joaquin Valley & South Coast

Petroleum Consumption

14.5 billion gallons gasoline
3.6 billion gallons diesel



Purpose of the ARFVTP



“...to develop and deploy innovative technologies that transform California’s fuel and vehicle types to help attain the state’s climate change policies.”

California Health and Safety Code 44272(a)

Complementary state goals:

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



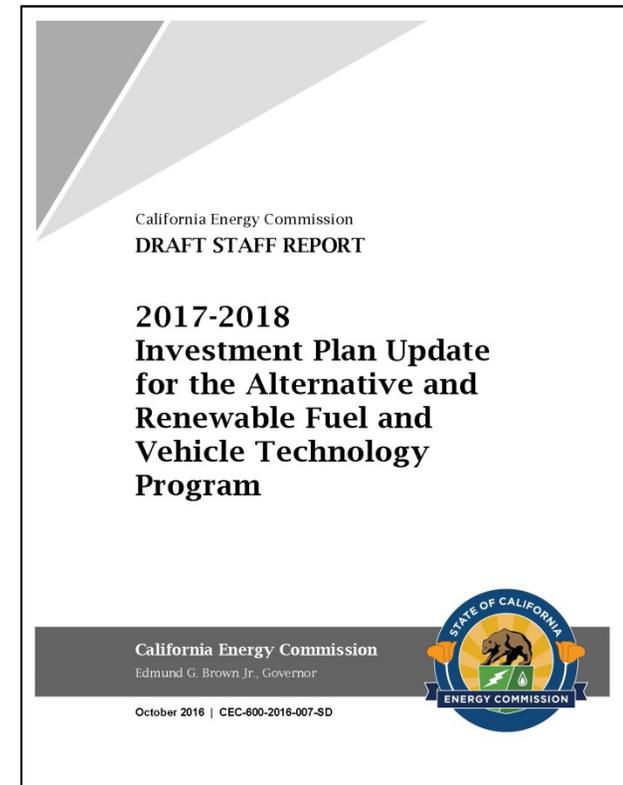
Investment Plan Purpose



Basis for FY 2017-2018 solicitations, agreements, and other funding opportunities

\$100 million funding allocation for a portfolio of fuels, technologies, and supporting elements

Funding allocations for categories (not individual projects)



ARFVTP Funding To-Date



Fuel Type	Cumulative Awards (in millions)	Percent of Funding	Cumulative Number of Projects
Biomethane	\$46.1	7%	15
Ethanol	\$43.6	7%	18
Biodiesel	\$44.4	7%	19
Renewable Diesel	\$16.1	3%	5
Electricity	\$224.5	35%	167
Hydrogen	\$111.8	18%	71
Natural Gas	\$97.5	15%	147
Propane	\$6.0	1%	30
Multiple/Other	\$44.8	7%	77
Total	\$634.8	100%	549

As of December 15, 2016



Commitment to Diversity



The Energy Commission adopted a resolution on April 8, 2015 to firmly commit to increasing:

- Participation of women, minority, disabled veteran and LGBT business enterprises in program funding opportunities
- Outreach and participation by disadvantaged communities
- Diversity in participation at Energy Commission proceedings
- Diversity in employment and promotional opportunities



Commitment to Diversity



Fairness – Increase funding accessibility to all Californians

Inclusion – Small businesses make up a significant portion of the U.S. economy

Job Creation – Projects can create jobs for residents of the underserved communities

Diversity of Ideas – Great ideas occur in a variety of areas

Diversity in Communities' Needs – Needs vary widely from one area to the next (air quality, socioeconomic, etc.)



Investment Plan Update Schedule



Activity	Date
Release Draft Staff Report	October 17, 2016
1 st Advisory Committee Meeting	October 27, 2016
Release Revised Staff Report	January 9, 2017
2 nd Advisory Committee Meeting	February 16, 2017
Release Lead Commissioner Report	March 2017
Business Meeting Approval	April 2017



Major Considerations for 2017-2018



Volkswagen diesel emissions settlement

ARB Low Carbon Transportation Investment Program
(Greenhouse Gas Reduction Funds)

California Sustainable Freight Action Plan

2016 Joint Agency Staff Report on Assembly Bill 8

*2016 Annual Evaluation of Hydrogen FCEV Deployment and
Hydrogen Fuel Station Network Development*



Notable Changes to Revised Staff Report



Allocations remain unchanged

Updated statistics through December 15, 2016

Expanded discussion on Program Benchmarks
(Benchmarks expected to be added in 2018-2019 report)

Landfill biogas projects excluded from funding

Glossary added



2017-2018 Investment Plan Layout



Context of the Investment Plan Update



Alternative Fuel Production and Supply



Alternative Fuel Infrastructure



Alternative Fuel and Advanced Technology Vehicles



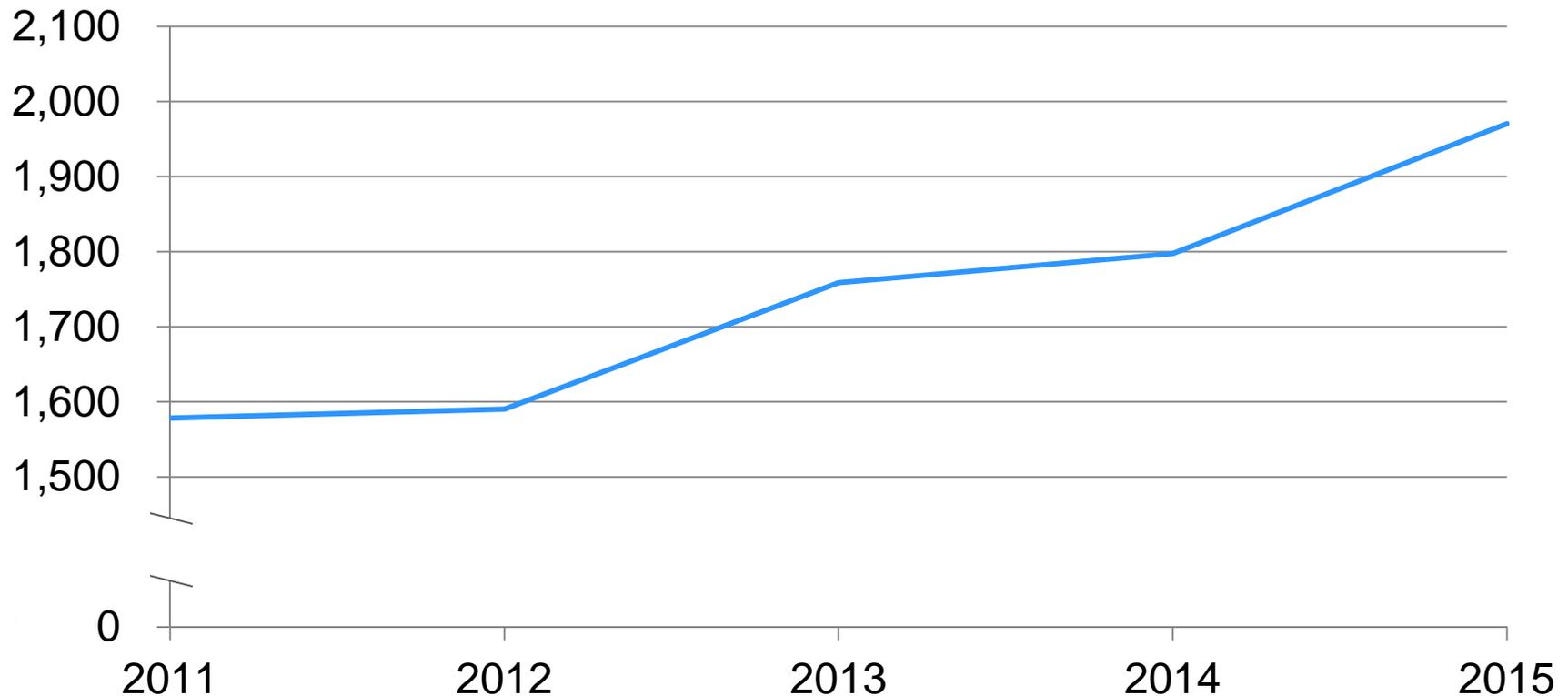
Related Needs and Opportunities



Biofuel Production and Supply



LCFS Total Volume, Millions of Gallons (minus CARBOB and Diesel)



Source: California Air Resources Board *LCFS Data Quarterly Summaries*. July 28, 2016.



Biofuel Production and Supply



Non-petroleum diesel substitutes, gasoline substitutes, and biomethane

Covers multiple fuel types and multiple phases of technological maturation

Proposed \$20 million allocation

Policy Goals Supported:

- GHG Reduction
- Petroleum Reduction
- In-State Biofuels Production
- Low Carbon Fuel Standard



Biofuel Production and Supply



Landfill biogas projects now excluded from funding

California laws impacting biogas feedstocks and pathways:

AB 341 (Chesbro 2011)

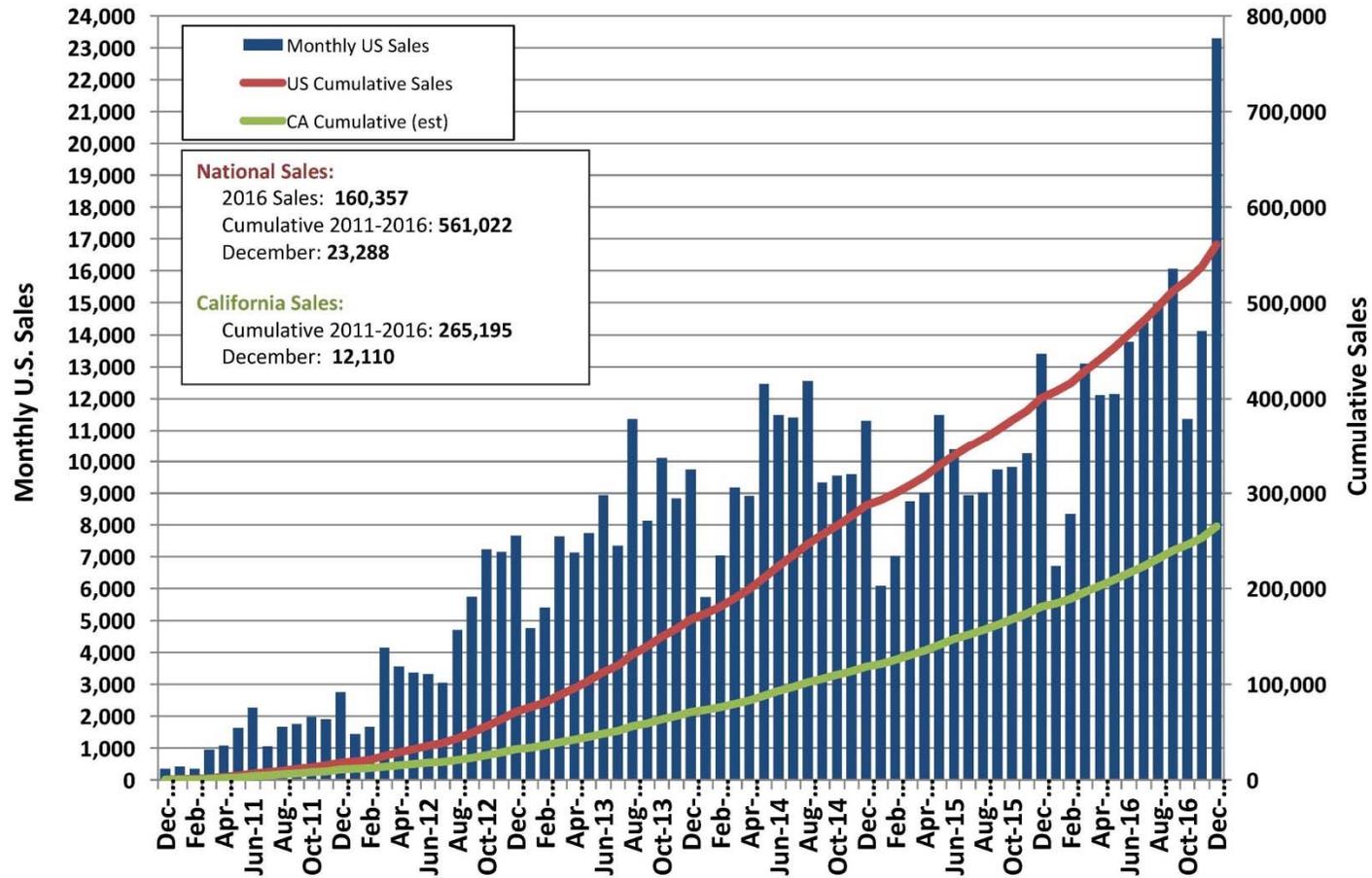
- Reduce, recycle, or compost 75% of *solid waste* by 2020

SB 1383 (Lara 2016)

- Goal to reduce statewide disposal of *organic waste*
- 50% by 2020 and 75% by 2025



Electric Charging Infrastructure



Source: California Plug-In Electric Vehicle Collaborative. January 6, 2017.



Electric Charging Infrastructure



Additional resources available from Investor-Owned Utilities and VW settlement

Refocusing of category

- Geographic areas and sectors not covered by larger programs

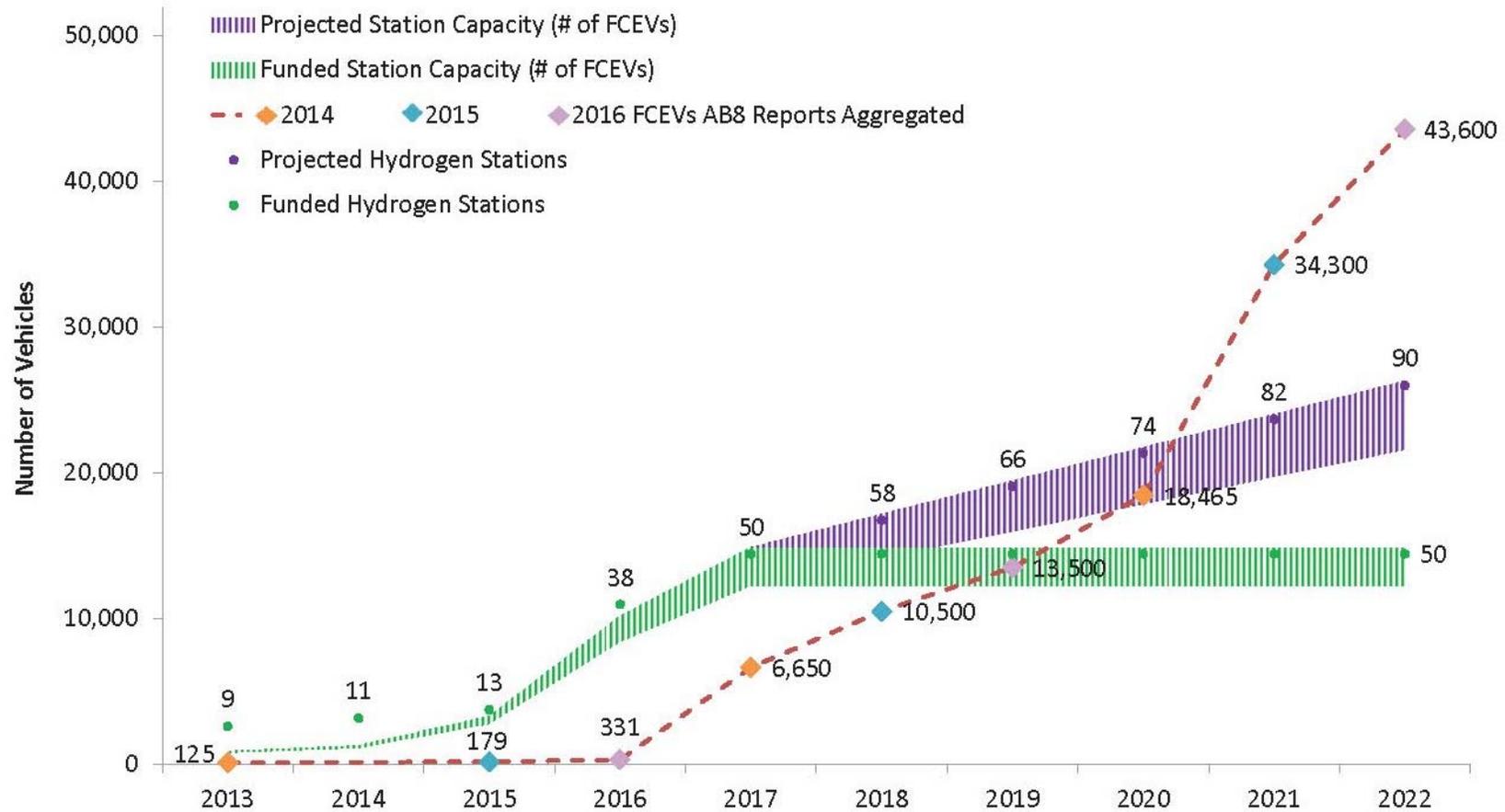
Proposed \$17 million allocation

Policy Goals Supported:

- GHG Reduction
- Air Quality
- Petroleum Reduction
- ZEV Regulations
- Low Carbon Fuel Standard



Hydrogen Refueling Infrastructure



Source: California Air Resources Board.



Hydrogen Refueling Infrastructure



Initial 100-station network expected in 2023

Proposed \$20 million allocation

- Consistent with recommendation in 2016 AB 8 Annual Evaluation
- Estimated to be sufficient for 8 or 9 stations, plus O&M

Policy Goals Supported:

- GHG Reduction
- Air Quality
- Petroleum Reduction
- ZEV Regulations
- Low Carbon Fuel Standard



Natural Gas Fueling Infrastructure



Prioritization for school districts and other municipal fleets with restricted access to capital

Proposed \$2.5 million allocation

Policy Goals Supported

- Petroleum Reduction
- Air Quality
- Low Carbon Fuel Standard
- GHG Reduction (w/ biomethane)





How should the ARFVTP address funding for natural gas fueling infrastructure in the future?

Most recent solicitation (GFO-16-602) was undersubscribed

Carl Moyer Program (ARB/Air Districts) guidelines are being revised to permit funding for natural gas fueling infrastructure



Natural Gas Vehicles



Continued demand for incentive funding

- Additional funding for NGVIP now available

Change in natural gas – diesel price differential

Proposed \$10 million allocation

Policy Goals Supported:

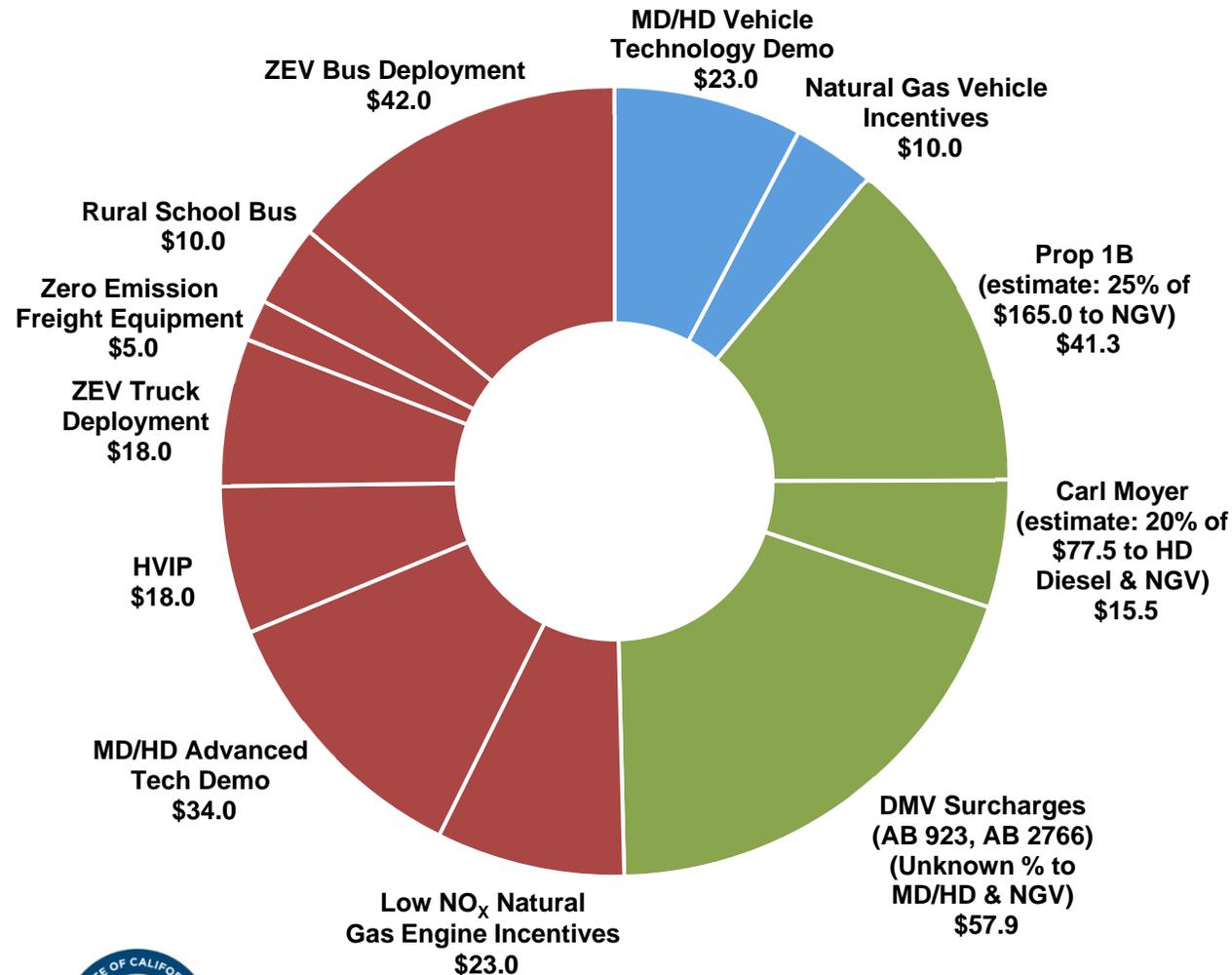
- Petroleum Reduction
- Air Quality
- Low Carbon Fuel Standard
- GHG Reduction (w/ biomethane)



Medium- and Heavy-Duty Vehicle Funding



FY 2016-2017 Funding



ARB:

\$150.0 million

Air Districts:

Est. \$114.7 million

Energy Commission:

\$33.0 million

Source: California Energy Commission.





Formerly the *Medium- and Heavy-Duty Vehicle Technology Demonstration and Scale-Up* category

On-road fleet and non-road freight vehicles

- Class 3 through 8 fleet vehicles (GVW 10,000+ lb)
- Non-road freight vehicles
- Non-propulsion projects for these vehicles

New focus on fueling infrastructure projects

Sustainable Freight Action Plan and Ports Collaborative



Advanced Freight and Fleet Technologies



Continued, stable funding for advanced freight and fleet vehicle projects

Proposed \$18 million allocation

Policy Goals Supported:

- Petroleum Reduction
- Air Quality
- Low Carbon Fuel Standard
- GHG Reduction



Manufacturing



No allocation since FY 2014-2015

- Merged into MD/HD Technology Demonstration and Scale-Up

Provides funding to support the in-state manufacturing of alternative-fuel vehicles, vehicle components, and supporting infrastructure

Proposed \$5 million allocation for FY 2017-2018

Policy Goals Supported:

- GHG Reduction
- Air Quality
- Petroleum Reduction



Related Needs and Opportunities



Emerging Opportunities

- Proposed \$4 million allocation based on projected demand
- Potential for renewable hydrogen production demonstration

Workforce Training and Development

- Proposed \$3.5 million allocation based on anticipated need
- Potential expansion into high school career paths

Regional Readiness

- Sufficient funds remain from previous fiscal years
- No allocation proposed for FY 2017-2018; revisit next year





How can the Energy Commission better ensure the equitable distribution of environmental and economic benefits from ARFVTP projects?



Next Steps



Seeking feedback from all stakeholders

- Comments requested no later than February 20, 2017
- E-commenting available at:

<http://energy.ca.gov/altfuels/2016-ALT-02/>

Release Lead Commissioner Report in March 2017

Seek approval for final Commission Report at April 2017
Business Meeting



Proposed Funding Allocations



Category	Funded Activity	Proposed Funding Allocation
Alternative Fuel Production	Biofuel Production and Supply	\$20 million
Alternative Fuel Infrastructure	Electric Charging Infrastructure	\$17 million
	Hydrogen Refueling Infrastructure	\$20 million
	Natural Gas Fueling Infrastructure	\$2.5 million
Alternative Fuel and Advanced Technology Vehicles	Natural Gas Vehicle Incentives	\$10 million
	Advanced Freight and Fleet Technologies	\$18 million
Related Needs and Opportunities	Manufacturing	\$5 million
	Emerging Opportunities	\$4 million
	Workforce Training and Development	\$3.5 million
	Total Proposed	\$100 million

