



CPUC Transportation Electrification Activities



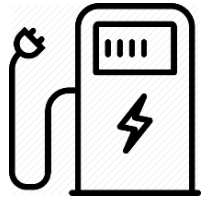
**Committee on the Assessment of Technologies for
Improving Fuel Economy of Light-Duty Vehicles**

January 24, 2019



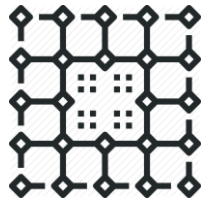


The CPUC regulates the role IOUs serve in meeting CA's Transportation Electrification (TE) goals



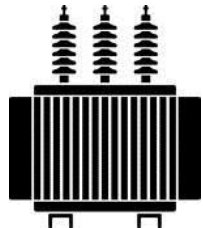
IOUs as fuel providers

Design rates that ensure electricity is a lower-cost option than conventional fuels



IOUs as grid managers

Ensure additional load from EVs is integrated in a manner that provides grid benefits



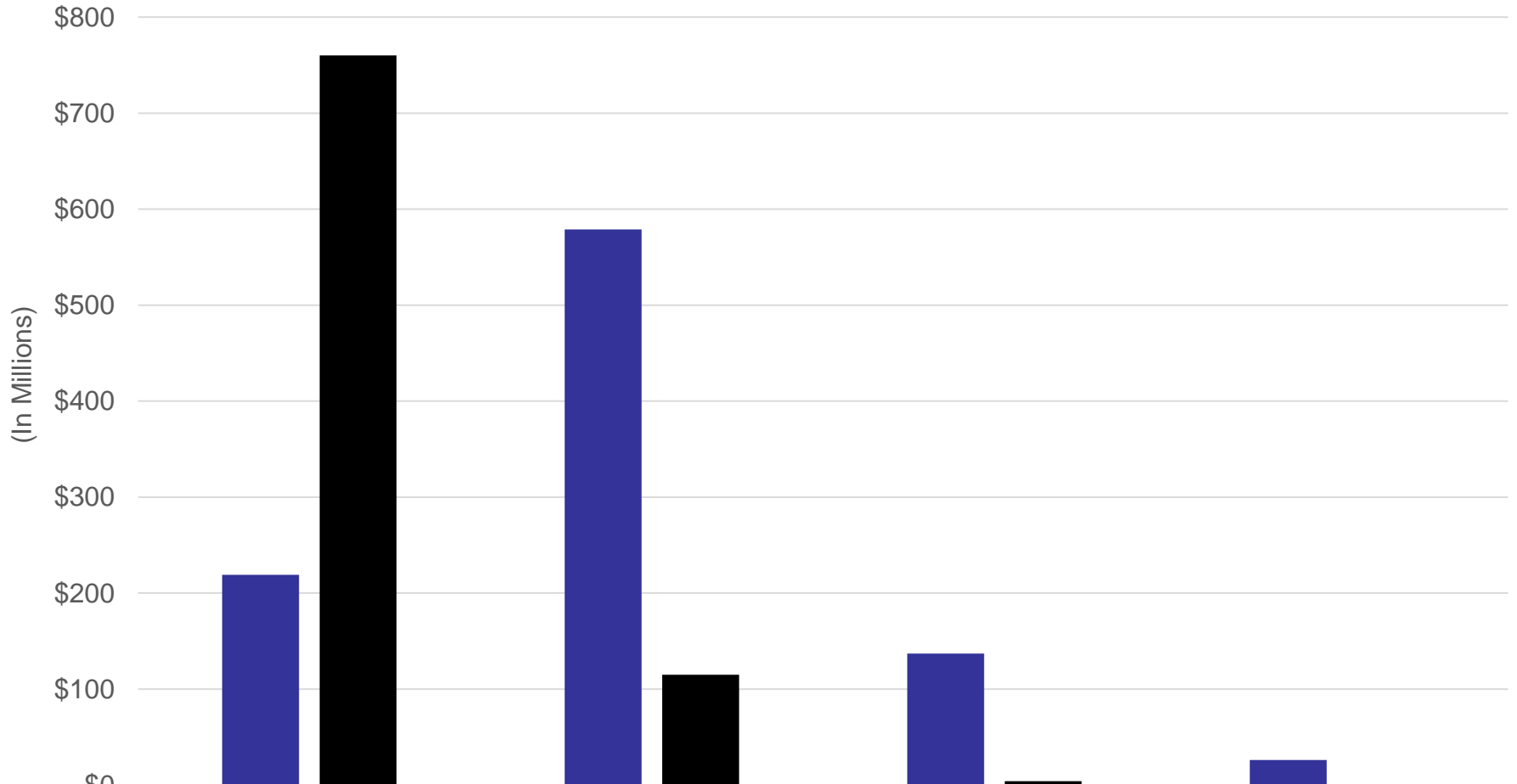
IOUs as infrastructure providers

Ensure sites are ready for customers to install charging infrastructure and provide some support for EVSE installation





IOU Infrastructure Investment Totals as of December 2018



■ Approved	\$219,000,000	\$579,000,000	\$137,000,000	\$26,000,000
■ Proposed	\$760,100,000	\$115,000,000	\$4,130,000	\$0





Open TE Proceedings

Proceeding #	IOU	Short Title	Requested Budget
A.18-01-012	SDG&E	Install Medium/Heavy-Duty Infrastructure to support 3,000-6,000 incremental EVs over 5 years	\$115M
A.18-06-015	SCE	Charge Ready Phase 2 Proposal to install up to 48,000 new light-duty EV charging ports by 2023	\$760.1M
A.18-07-020+	PG&E, SCE, SDG&E, Liberty	1-2 year Pilot programs at schools at state parks and state beaches under AB 1082/1083	\$54.5M
A.18-07-021	PG&E	Empower EV Charge Network to provide rebates to low/moderate income residential customers that install EV charging stations (~2,000 rebates over 2 years)	\$4.13M
A.18-11-003	PG&E	Subscription-Based Commercial EV Charging Rate	
A.17-01-020, et al.	PG&E SCE SDG&E	SB 350 Programs – D.18-05-040 reopened on a request for reconsideration of cost recovery allocation	
R.18-12-006	All	OIR To Continue the Development of Rates and Infrastructure for Vehicle Electrification	



OIR To Continue the Development of Rates and Infrastructure for Vehicle Electrification (R.18-12-006)

- Overarching rulemaking to consider parameters for TE policies and programs
 - Reduce emissions from the transportation sector
 - Support integration of increased renewable energy
- Staff proposal to develop guidance for future IOU investments
 - Clarify IOU role in meeting statewide ZEV adoption and GHG reduction goals
 - Attract third-party participation
 - Build on learnings from prior investments
- Joint IOU rate proposal
 - Reduce demand charges associated with commercial customers adding EV load
 - Accommodate electrification of fleets and public charging station site hosts
- New VGI Working Group launching in July 2019
 - Build off of [VGI Communication Protocols Working Group](#) (2017) and the CEC-led [VGI Roadmap update](#)





The CPUC's work aligns with other state agencies' programs

The CPUC is directed via legislation and E.O. 48-18 to collaborate with sister state agencies to meet the California's ZEV adoption and GHG reduction targets

- [ZEV Action Plan](#) (GO-Biz)
- [VGI Roadmap](#) (2018/2019 update led by CEC)
- Open access for public charging stations
 - [SB 454 implementation](#) (CARB)
 - [EVSE metering regulations](#) (CDFA)



Please email with any questions

Carrie Sisto: cs8@cpuc.ca.gov

<http://www.cpuc.ca.gov/zev>

<http://www.cpuc.ca.gov/sb350te>

<http://www.cpuc.ca.gov/vgi>



Appendix





CPUC-TE Legislative Mandates

Bill	Sponsor	Year	Short Description
SB 350	De León	2015	Clean Energy and Pollution Reduction Act of 2015
AB 1082	Burke	2017	Electric vehicle charging infrastructure: school facilities and other educational institutions
AB 1083	Burke	2017	Electric vehicle charging infrastructure: state parks and beaches
SB 1014	Skinner	2018	California Clean Miles Standard and Incentive Program: zero-emission vehicles
SB 1000	Lara	2018	Electric vehicle charging infrastructure





CPUC-TE Legislative Mandates

- **SB 350 (PU Code §740.12):** Transportation Electrification is defined as using external sources of electrical power for “vehicles, vessels, trains, boats, and other equipment that are mobile sources of air pollution and greenhouse gases”
 - Directs CPUC, in coordination with ARB and CEC, to direct IOUs to file applications to accelerate widespread TE
 - Applications from all 6 IOUs filed in 2017; initial programs authorized in D.18-01-024, D.18-05-040, and D.18-09-034 with budgets totaling more than \$790 million
- **AB 1082/AB 1083 (PU Code §740.13 & 740.14):** IOUs authorized to propose pilots to install TE infrastructure at school facilities and state parks and state beaches
 - Applications filed in July 2018 by four IOUs with budgets of about \$54 million
 - Proceeding under expedited review with PD anticipated in Q1 2019





CPUC-TE Legislative Mandates (cont.)

- SB 1014: Creates PU Code §5450 requiring the adoption of the California Clean Miles Standard and Incentive Program to reduce emissions from vehicles driven by transportation network companies
 - Program to increase zero-emission transportation through ZEV adoption and facilitation of walking and biking
 - CARB to adopt annual targets and goals by 2021, to take effect by 2023
- SB 1000: Creates PU Code §740.15 directing CPUC to consider in an existing proceeding
 - 1) Facilitating the development of grid integration technologies
 - 2) Developing rate strategies and technologies that reduce the effects of demand charges
 - 3) Adopt a new tariff specific to heavy-duty electric fleets that encourages off-peak charging at locations with excess grid capacity





Light-Duty Infrastructure Investments

- IOU programs targeting workplaces, multi-unit dwellings, and long-dwell time destination centers
 - \$197 million
 - 12,500 primarily L2 charging ports
 - Implementation 2016-present (details on following slide)
- NRG/EVgo settlement installing public DC Fast Charging stations and make-ready infrastructure for public L2 charging
 - \$102.5 million
 - 200 DCFC stations
 - 10,000 make-ready stubs



	SDG&E Power Your Drive	SCE Charge Ready	PG&E EV Charge Network
Program Status	932 charging stations installed at 85 sites as of September 2018	1,266 charging station installed as of August 2018; \$22M in additional funding authorized in D.18-12-006	322 charging stations installed at 23 sites as of November 30, 2018
Scope	3,500 charging stations	1,500 charging stations, with another 1,000 authorized in 2018	7,500 charging stations
Budget	\$45M	\$44M	\$130M
Markets	multifamily, workplace	multifamily, workplace, public	multifamily, workplace
Disadvantaged Communities	≥10% charging stations in disadvantaged communities	≥10% charging stations in disadvantaged communities	≥15% charging stations in disadvantaged communities
Charger Ownership	SDG&E	Site host	Site host. PG&E ownership allowed only in multifamily or disadvantaged community up to 35%
Cost to host	Participant Payment	Rebate	Participant Payment or Rebate
Rates	Vehicle-grid integration rate to driver or host	Time-of-use rate to host	Time-of-use rate to driver or host
Regulatory Status	Approved Jan 2016 (CPUC Decision 16-01-045)	Approved Jan 2016 (CPUC Decision 16-01-023)	Approved Dec 2016 (CPUC Decision 16-12-065)

3 Large IOUs Approved SB 350 Projects

	Medium/Heavy Duty Infrastructure	Residential Infrastructure	Offroad Infrastructure	Public DC Fast Charging	Taxi/ Shuttle	Education/ Outreach	
	\$592 Million	\$141 Million	\$13 Million	\$30 Million	\$3.2 Million	\$2.3 Million	
SDG&E	Fleet Delivery Services \$3.7 M	Residential Charging Infrastructure \$137 M	Airport Ground Support Equipment \$2.8 M	Electrify Local Highways \$4 M	Green Shuttle \$3.2 M	Car Dealer Incentives \$1.8 M	Total SDG&E Budget: \$155 M
		Residential Grid Integration Rate	MD/HD and Forklift Port Electrification \$2.4 M				
SCE	Transit Bus Make-Ready & Rebate \$4 M	Residential Make-Ready Rebate \$4 M	Port of Long Beach Gantry Crane \$4 M	Urban DC Fast Charger Clusters \$4 M			Total SCE Budget: \$360 M
	MD/HD Charging Infrastructure \$343 M		Port of Long Beach ITS Terminal Yard Tractor \$0.5 M				
	Commercial EV Rate Design						
PG&E	MD/HD Fleet Demonstration \$3.4 M		Idle-Reduction Technology Demonstration \$1.7 M	Fast Charge Infrastructure \$22 M		Home Charger Information \$0.5 M	Total PG&E Budget: \$266 M
	Electric School Bus Renewables Integration \$2.2 M						
	FleetReady Make-Ready Infrastructure \$236 M						

Priority Review
Standard Review
Rate Design Proposals

3 Small IOUs Approved SB 350 Projects

	Public DC Fast Charging	Residential Infrastructure	Commercial Infrastructure	Heavy-Duty Infrastructure	Education & Outreach
	\$4 M	\$1.74 M	\$1.18 M	\$223,000	\$235,000
Bear Valley (\$746,500)		EV TOU Pilot Rate (\$139,000)			
			Destination Make-Ready Rebate (\$607,500)		
Liberty Utilities (\$6.2 M)	DC Fast Charger Project (\$4 million)	Residential Make-Ready Rebate (\$1.6 million)	Small Business Make-Ready Rebate (\$300,000)	EV Bus Infrastructure Program (\$223,000)	Customer Online Resource Project (\$65,000)
PacifiCorp (\$440,000)			Demonstration & Development Grant Program (\$270,000)		Outreach & Education Program (\$170,000)

Priority Review
Standard Review