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Counting Electric Vehicle Chargers in California

CALIFORNIA
Governor's Office of Business and Economic Development

June 10, 2020

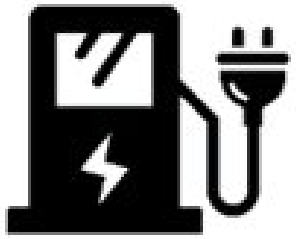
GO-Biz Overview

Business Investment Services

International Affairs

Small Business

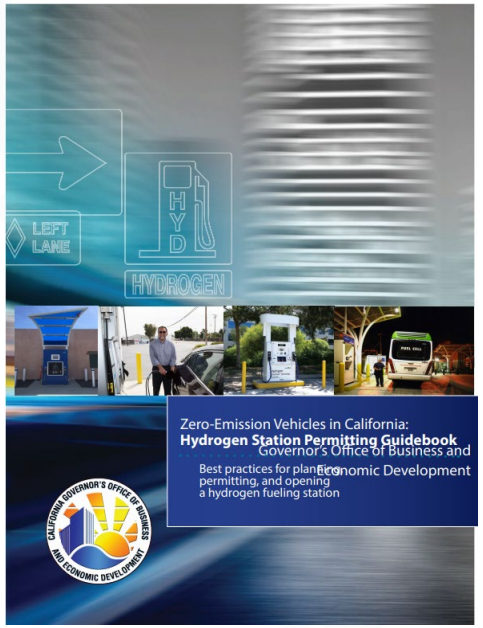
Permits

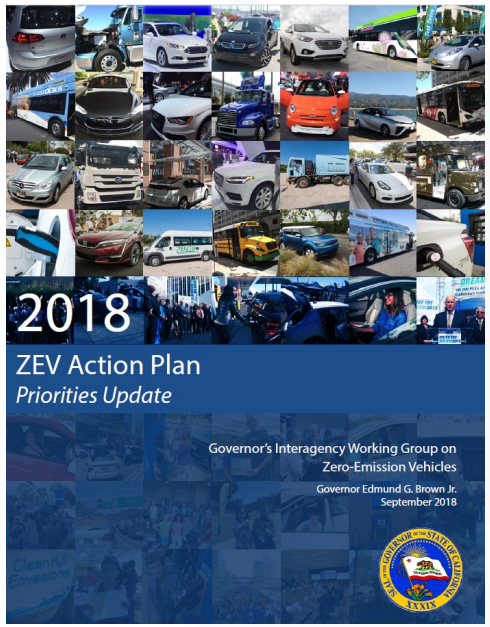


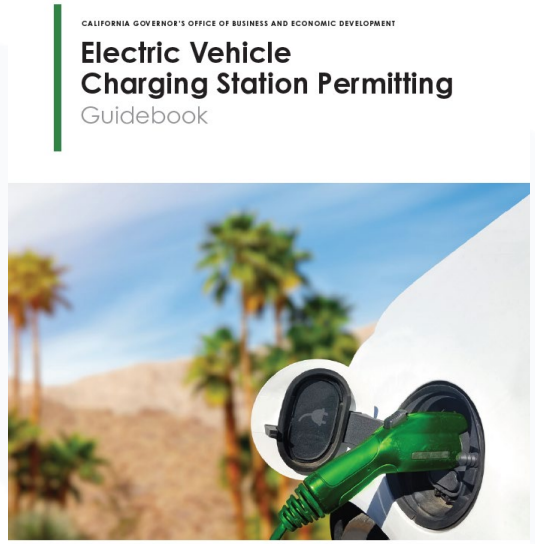
Zero Emission Vehicle Market Development

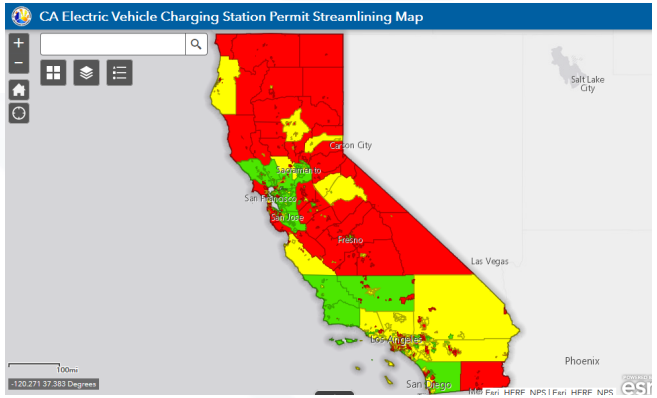
Infrastructure & Economic Development Bank (I-Bank)

Zero Emission Vehicle Efforts









- ZEV Action Plan and Updates
- Permitting Guidebooks, streamlining efforts
- ZEV-related business support
- Existing and proposed regulatory navigation assistance
- Focused ZEV market development activities

GO-Biz Current EV Charging Data Collection

	Public L1		Public L2		Public DCFC		Total - Public	
Month	Stations	Chargers	Stations	L2 Chargers	Stations	DCFCChargers	Stations	Chargers
Dec-19	147	363	5,280	19,813	905	3,716	5,863	23,892
Jan-20	144	355	5,486	20,151	916	3,832	6,076	24,338
Feb-20	138	348	5,573	20,547	944	3,979	6,180	24,874
Mar-20	137	346	5,632	20,769	953	4,078	6,236	25,193
Apr-20	137	346	5,714	21,080	979	4,207	6,335	25,633
May-20	137	346	5,789	21,313	988	4,296	6,415	25,955
Jun-20								

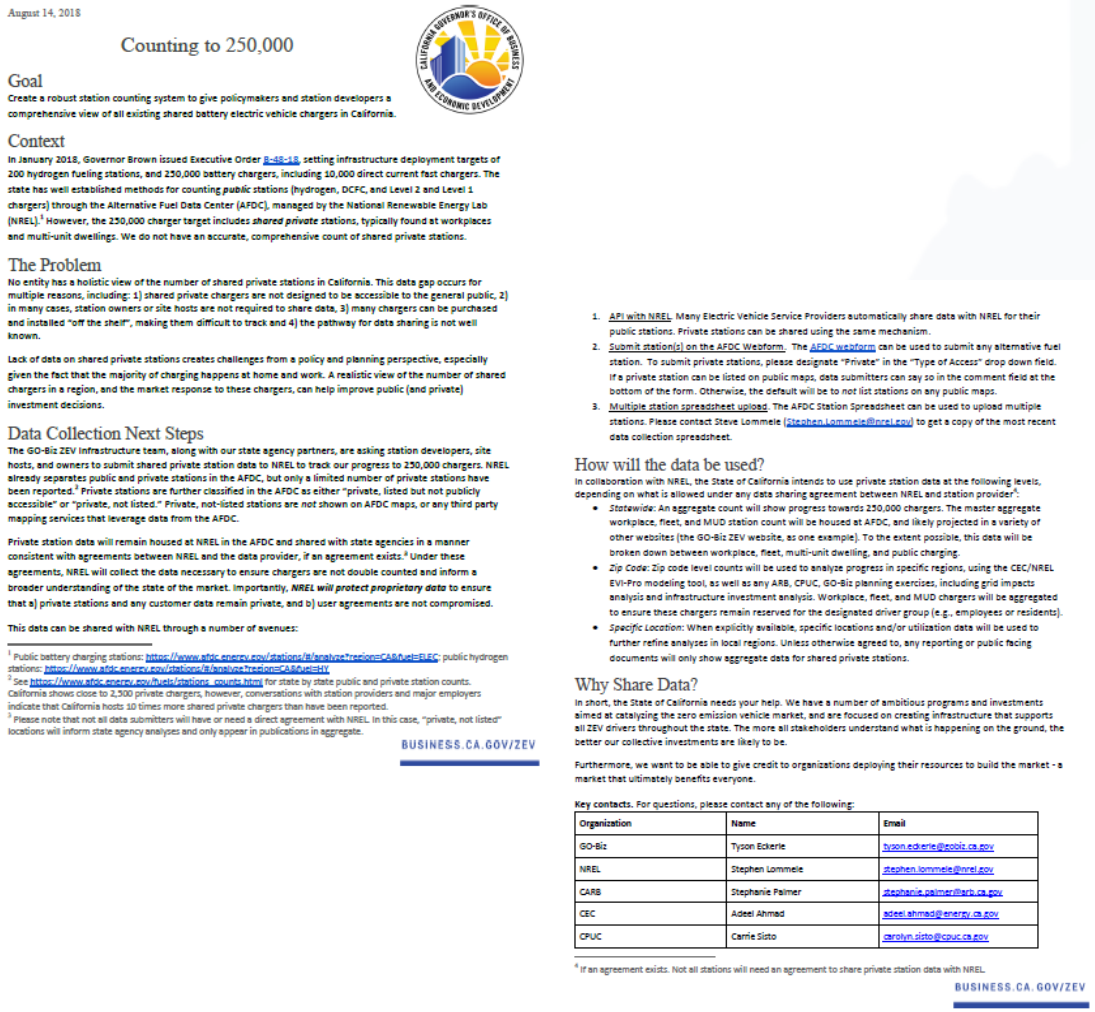
+ Tracking monthly light-duty public charging counts from NREL Alternative Fueling Station Locator.

+ Requesting private, shared light-duty charging counts from EV charging providers (workplace, fleet, MUD).

+ Assessing public and private capital unlocked/needed to support light-duty public charging network.

+ Starting to track MHD and off-road charging.

2018 Memo: Counting to 250,000



August 14, 2018

Counting to 250,000

Goal

Create a robust station counting system to give policymakers and station developers a comprehensive view of all existing shared battery electric vehicle chargers in California.

Context

In January 2018, Governor Brown issued Executive Order B-48-18, setting infrastructure deployment targets of 200 hydrogen fueling stations, and 250,000 battery chargers, including 10,000 direct current fast chargers. The state has well established methods for counting *public* stations (hydrogen, DCFC, and Level 2 and Level 1 chargers) through the Alternative Fuel Data Center (AFDC), managed by the National Renewable Energy Lab (NREL).[1] However, the 250,000 charger target includes *shared private* stations, typically found at workplaces and multi-unit dwellings. We do not have an accurate, comprehensive count of shared private stations.

The Problem

No entity has a holistic view of the number of shared private stations in California. This data gap occurs for multiple reasons, including: 1) shared private chargers are not designed to be accessible to the general public, 2) in many cases, station owners or site hosts are not required to share data, 3) many chargers can be purchased and installed "off the shelf", making them difficult to track and 4) the pathway for data sharing is not well known.

Lack of data on shared private stations creates challenges from a policy and planning perspective, especially given the fact that the majority of charging happens at home and work. A realistic view of the number of shared chargers in a region, and the market response to these chargers, can help improve public (and private) investment decisions.

Data Collection Next Steps

The GO-Biz ZEV Infrastructure team, along with our state agency partners, are asking station developers, site hosts, and owners to submit shared private station data to NREL to track our progress to 250,000 chargers. NREL already separates public and private stations in the AFDC, but only a limited number of private stations have been reported.[2] Private stations are further classified in the AFDC as either "private, listed but not publicly accessible" or "private, not listed." Private, not-listed stations are *not* shown on AFDC maps, or any third party mapping services that leverage data from the AFDC.

Private station data will remain housed at NREL in the AFDC and shared with state agencies in a manner consistent with agreements between NREL and the data provider, if an agreement exists.[4] Under these agreements, NREL will collect the data necessary to ensure chargers are not double counted and inform a broader understanding of the state of the market. Importantly, ***NREL will protect proprietary data*** to ensure that a) private stations and any customer data remain private, and b) user agreements are not compromised.

This data can be shared with NREL through a number of avenues:

1. API with NREL. Many Electric Vehicle Service Providers automatically share data with NREL for their public stations. Private stations can be shared using the same mechanism.
2. Submit station(s) on the AFDC Webform. The AFDC webform can be used to submit any alternative fuel station. To submit private stations, please designate "Private" in the "Type of Access" drop down field. If a private station can be listed on public maps, data submitters can say so in the comment field at the bottom of the form. Otherwise, the default will be to *not* list stations on any public maps.
3. Multiple station spreadsheet upload. The AFDC Station Spreadsheet can be used to upload multiple stations. Please contact Steve Lommele (Stephen.Lommele@nrel.gov) to get a copy of the most recent data collection spreadsheet.

How will the data be used?

In collaboration with NREL, the State of California intends to use private station data at the following levels, depending on what is allowed under any data sharing agreement between NREL and station provider[4]:

- *Statewide*: An aggregate count will show progress towards 250,000 chargers. The master aggregate workplace, fleet, and MUD station count will be housed at AFDC, and likely projected in a variety of other websites (the GO-Biz ZEV website, as one example). To the extent possible, this data will be broken down between workplace, fleet, multi-unit dwelling, and public charging.
- *Zip Code*: Zip code level counts will be used to analyze progress in specific regions, using the CEC/NREL EVI-Pro modeling tool, as well as any ARB, CPUC, GO-Biz planning exercises, including grid impacts analysis and infrastructure investment analysis. Workplace, fleet, and MUD chargers will be aggregated to ensure these chargers remain reserved for the designated driver group (e.g., employees or residents).
- *Specific Location*: When explicitly available, specific locations and/or utilization data will be used to further refine analyses in local regions. Unless otherwise agreed to, any reporting or public facing documents will only show aggregate data for shared private stations.

Why Share Data?

In short, the State of California needs your help. We have a number of ambitious programs and investments aimed at catalyzing the zero emission vehicle market, and are focused on creating infrastructure that supports all ZEV drivers throughout the state. The more all stakeholders understand what is happening on the ground, the better our collective investments are likely to be.

Furthermore, we want to be able to give credit to organizations deploying their resources to build the market - a market that ultimately benefits everyone.

Key contacts. For questions, please contact any of the following:

Organization	Name	Email
GO-Biz	Tyson Eckerle	tyson.eckerle@gobiz.ca.gov
NREL	Stephen Lommele	stephen.lommele@nrel.gov
CARB	Stephanie Palmer	stephanie.palmer@arb.ca.gov
CEC	Adeel Ahmad	adeel.ahmad@energy.ca.gov
CPUC	Carrie Sisto	carolyn.sisto@cpuc.ca.gov

[1] Public battery charging stations: https://www.afdc.energy.gov/stations/#/analyze?region=CA&fuel=ELEC; public hydrogen stations: https://www.afdc.energy.gov/stations/#/analyze?region=CA&fuel=HY

[2] See https://www.afdc.energy.gov/fuels/stations_counts.html for state by state public and private station counts. California shows close to 2,500 private chargers, however, conversations with station providers and major employers indicate that California hosts 10 times more shared private chargers than have been reported.

[3] Please note that not all data submitters will have or need a direct agreement with NREL. In this case, "private, not listed" locations will inform state agency analyses and only appear in publications in aggregate.

[4] If an agreement exists. Not all stations will need an agreement to share private station data with NREL.

BUSINESS.CA.GOV/ZEV

+ GO-Biz, CARB, CEC, CPUC, NREL

+ Goal: Robust station counting, capture private, shared stations. Track progress to 250,000 chargers.

+ Reporting: Private, shared stations to NREL. Through API, webform, spreadsheet update and upload.

- Station info can be withheld from Station Locator.
- Shared with state agencies to track progress, inform planning.

CALIFORNIA
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Hannah Goldsmith

Lead Advisor, Zero Emission Vehicle Market Development

hannah.goldsmith@gobiz.ca.gov