

EV Infrastructure Panel | UC Berkeley

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Agenda

Year in Review

EV Charging 101

California Deployment

Trends in Fast Charging

Rate Design



EVgo: 2018 Year in Review

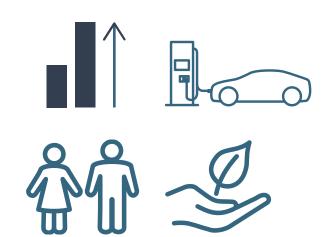
More than **75MM** zero-emission miles in 2018

Nation's largest network of public DCFC

1,100 chargers in 34 states

Double network capacity by 2021

More than 125,000 customers







Different Types Of EV Charging

The EVgo network is designed to give drivers the confidence to go electric with charging sessions that happen in minutes, not hours and built on easily accessible and reliable public DC fast chargers.

Level 1 AC Level 2 Level 3

(DCFC)

- Power Rating: ~1-2 kW
- Plugs straight into wall (120V Circuit)
- Can charge Plug-In Hybrids (PHEV) & Battery Electric Vehicles (BEV)
- Charge Time: 15-30 hours for full charge
- **Use Case:** Long Term Parking. Home, Workplace, Airports, etc. **Power Rating:** ~3 19 kW
- Uses a 240V Circuit
- Can charge PHEVs & BEVs
- Charge Time: 6-9 hours for full charge
- Use Case: Long Dwell Destinations Work, Overnight Home, Amusement Parks, Destinations
- Power Rating: 50 350 kW Connects to the grid - 480V or 208V
 - Public DCFC should support both CHAdeMO and CCS standards
 - Charges Fast Charging compatible BEVs
 - Charge Time: 30 minutes to 1 hour for 80% of charge
 - Use Case: Short Dwell time Retail Locations, Restaurants, Grocery Stores, Light Duty Fleet Charging, Serving MUDs



California Has an Outsized Impact

Biggest investment market

~50% of EVgo's DCFC & 75% of energy delivered

1/3 of energy delivered driven by light duty fleets (nationally)

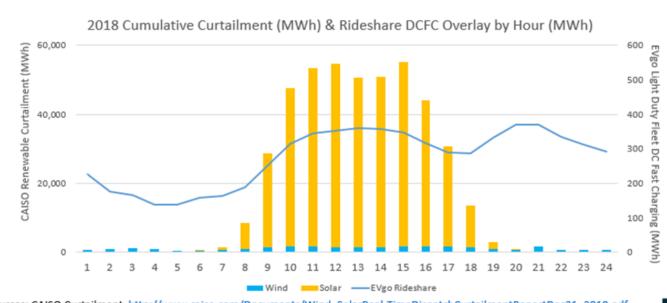
Accelerating delivery in CA

- ~200 DCFC under construction or awaiting utility interconnect
- Leveraging all sources of EVSE funding
- Rate Design



CA Grid Benefits from Electrification

Grid Benefits: DCFC Charging Avoided GWh of 2018 Solar Curtailment



Sources: CAISO Curtailment http://www.caiso.com/Documents/Wind SolarReal-TimeDispatchCurtailmentReportDec31 2018.pdf
Rideshare, 2018 EVgo fast charging operational data



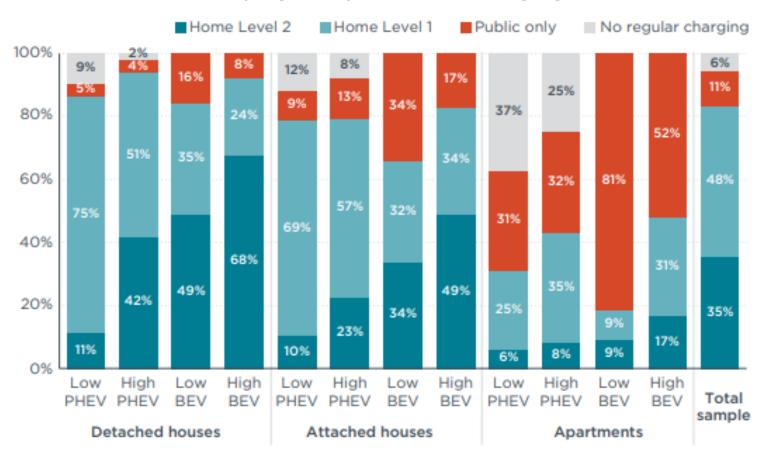
Strong alignment: midday EVgo rideshare fast charging and CAISO solar curtailment:

- >45% of Rideshare charging during 9AM-3PM solar hours;
- >30% during nighttime hours 8PM-4AMAlignment without price signals suggests opportunity for further optimize



Fast Chargers Serve MUD Residents

52 – 81 % of apartment dwellers with battery electric vehicles are relying <u>solely</u> on public charging.



Source: International Council on Clean Transportation, Quantifying the Electric Vehicle Charging Infrastructure Gap Across U.S. Markets (January 2019)

Investing in Priority Populations

Existing

- 40% of sites operating in Low-Income Communities
- 20% of sites operating in Disadvantaged Communities

Under Construction

- 55% of sites in Low-Income Communities
- 22% of sites in Disadvantaged Communities



Low-income definitions per Assembly Bill (AB) 1550 (Gomez, Chapter 369, Statutes of 2016) Disadvantaged Communities as defined by (SB) 535 (De León, Chapter 830, Statutes of 2012)





City of Richmond, Civic Center

Inglewood, City Hall

Brookhurst Community Center, Anaheim

Chevron, Manhattan Beach



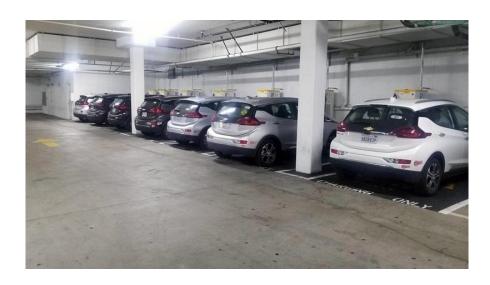
Early Lessons: Dedicated Hybrid Deployment

"This is so great, I don't have to wait for a charge" Maven Driver

Dedicated chargers -> Strong utilization due to low queuing expectation

Public utilization in area surrounding Hollywest:

- 1. Immediate relief on surrounding sites with utilization reduced
- 2. Rebound as rideshare drivers redirect fast charging to dedicated Evgo chargers



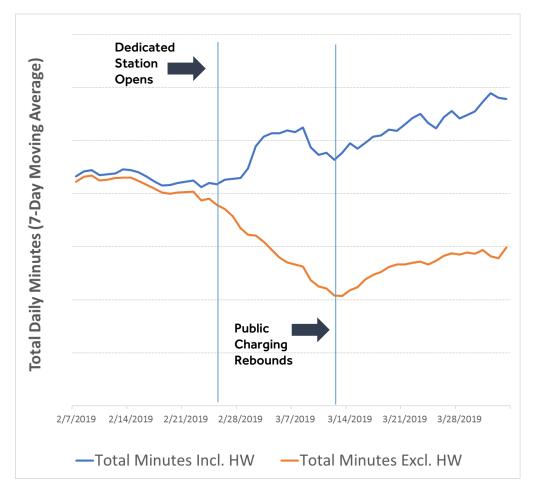


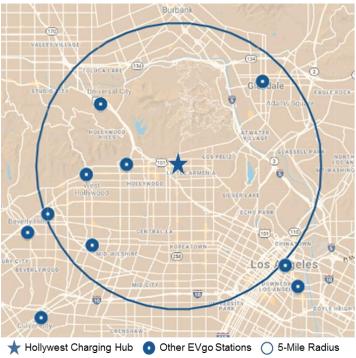
Hybrid Site at Hollywest Promenade, Los Angeles, CA 7 dedicated Maven + 2 Public



Early Lessons: Dedicated / Hybrid Deployment

Hollywest Station utilization grows; depressed public charging rebounds





Hollywest Promenade, Los Angeles, CA 7 dedicated Maven + 2 Public



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