

Peninsula Advanced Energy Community (PAEC)
Supercharging the Buildout of Electric Vehicle Charging Infrastructure



Sven Thesen
EV Consultant to the Clean Coalition

- PAEC EVCI Study
- Accelerating EV Adoption: 5 Actions for Local Governments
- Innovative/Low-Cost EVCI Installations



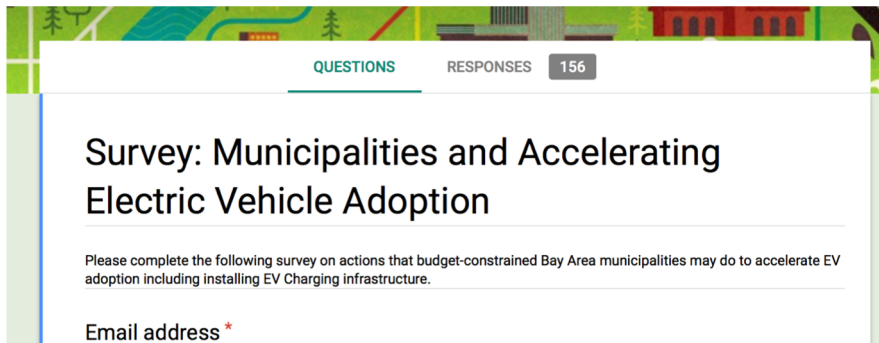
Electric Vehicle Charging Infrastructure (EVCI) Study Goals:

- A. Confirm/Refute: Long-range EVs catalyzing new charging paradigm
- B. Determine & Recommend EV Acceleration Tools for Local Governments



Electric Vehicle Charging Infrastructure (EVCI) Study:

- Online survey, 156+ participants
- Interviewed sustainability managers and EV thought leaders
- EV literature review/pulse



Google's Waymo buys 20,000 electric Jaguar SUVs for driverless luxury taxi service

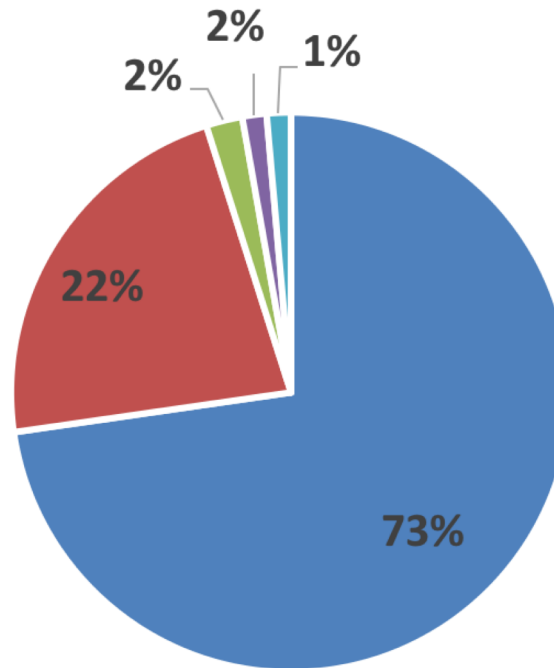
INSIDE EVS

See Tesla Model S P100D Race Lamborghini Huracan Performante

A. Long-range EVs catalyzing new EVCI paradigm:

- De-focus L2 in public spaces, aka less topping up/commuter EVs
- Focus on L1/L2 in residential, workplace + DCFC in public spaces for long-range driving

2017 EV Sales	
Model	Sales
Tesla Model S	27,060
Chevy Bolt	23,297
Tesla Model X	21,315
Toyota Prius P	20,936
Chevy Volt	20,349
Nissan Leaf	11,230
Ford Fusion E	9,632
Ford C-Max E	8,140



Residential and workplace charging: Key to EV adoption?

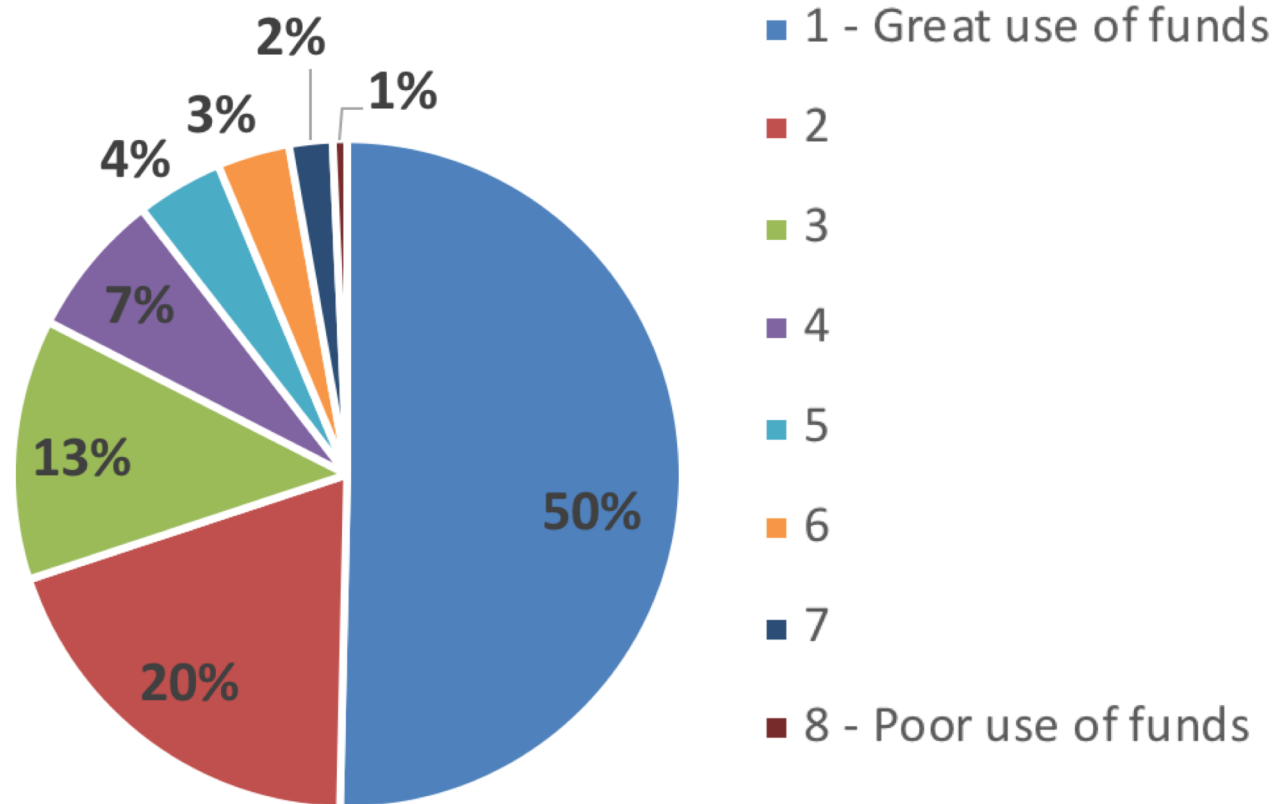
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

B. Determine & Recommend EV Acceleration Tools for Local Governments (\$25k EV adoption acceleration fund)

Results:

1. Strong Residential EVCI Codes for New Construction;
2. Encourage Public DCFC Infrastructure;
3. Residential & Workplace (L1/L2) Low-Cost Installations;
4. EVCI Public Signage;
5. EV Educational Activities (EV Ride & Drives + Classes).

#1 Strengthen building codes to require EVCI for new buildings and renovations, with a density of one charger per residential unit.



Palo Alto Code:

<https://www.cityofpaloalto.org/civicax/filebank/documents/43818>

SF, Oakland, and Fremont also have solid EVCI codes.

#2 Encourage public DCFC infrastructure (long-distance travel) with ownership, installation, and operation by third parties

(Electrify America & Tesla)



#3 For residential and workplace (L1 and L2), focus on low-cost installations via grants and utility-funded installs:

- PG&E's Charge Network (covers 80-90%)
- BAAQMD's Charge! Program (\$3k/port Q3/4 2018)
- Local Utilities & CCAs (Palo Alto, Sonoma Clean Power)



#4 Public signage for EVCI



#5 Conduct EV ride & drives and related educational activities

National Drive Electric Week™



IS AN ELECTRIC VEHICLE RIGHT FOR YOU?

- Come hear from a panel of local, long-time EV drivers and experts on their experiences.
- Get your questions answered on the difference between all-electric and plug in hybrid EVs; EV charging (home, work public space); range anxiety misconceptions; battery longevity; buying v. leasing; environmental, economic, personal benefits
- As a bonus, a number of EVs to explore inside and out, likely including Nissan Leaf, Kia Soul EV, Fiat 500-e, Ford Focus EV, VW e-Golf, Tesla, and new all-electric Chevy Bolt, with 238-mile range!



Instructors:

Sven Thesen, founder of Project Green Home in Palo Alto, chemical engineer, shared 2007 Nobel Peace Prize for IPCC climate guidelines, known as "EV-Angelist" for spirited work in promoting electric vehicles

Jim Barbera, Systems Engineer, ChargePoint (prominent local charging company) versed in all aspects of charging station installation & settings

Marc Geller, founder/member of Board of Directors, Plug In America; and Vice-Chair, Board of Directors of the Electric Auto Association.

Jane Rosten, MSW, LCSW, Manager of Stanford HIP's Environmental Behavior Change Program

**THURSDAY, May 17, 2018 Palo Alto
Michell Park Community Center**

5:30-7:30 PM classroom + time before (4:30-5:20pm) and after class to explore cars

FREE, via generous co-sponsorship with **City of Palo Alto**

Registration Required:

<http://events.stanford.edu/events/765/76559/>



STANFORD





Intelligent chargers:

- Networked; grid connected automated, variable billing and more
- But expensive to acquire, operate, and maintain

Non-networked chargers:

- Essentially safety devices
- Inexpensive & inexpensive



Use existing parking billing systems and inexpensive chargers





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