

DOCKETED

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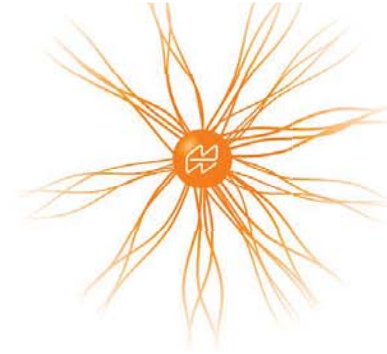
Comment Received From: eMotorWerks

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A Road Map to Attracting Private Capital into the Deployment of Charging Infrastructure

Additional submitted attachment is included below.



A Road Map to Attracting Private Capital into the Deployment of Charging Infrastructure

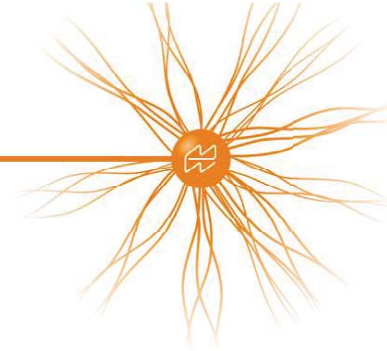
comments by eMotorWerks

California Energy Commission

Workshop on Governor's Executive Order B-48-18

14 May 2018

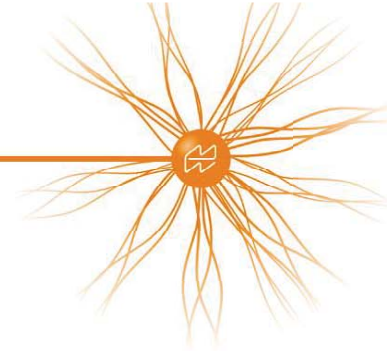
eMotorWerks Prior Testimony



eMotorWerks' comments at the April 2017 workshop:

- To achieve the Governor's goals, the available public funds are not nearly enough.
- Private capital is available and wants to invest in grid-integrated EV charging.
- Revenue from the CAISO wholesale markets is essential to attracting private capital.

eMotorWerks Prior Testimony



eMotorWerks' comments at the April 2017 workshop:

- Public funds can be leveraged as much as 5:1 with private capital
- With a combination of public and private funds, the Governor's goals for charging infrastructure can be met

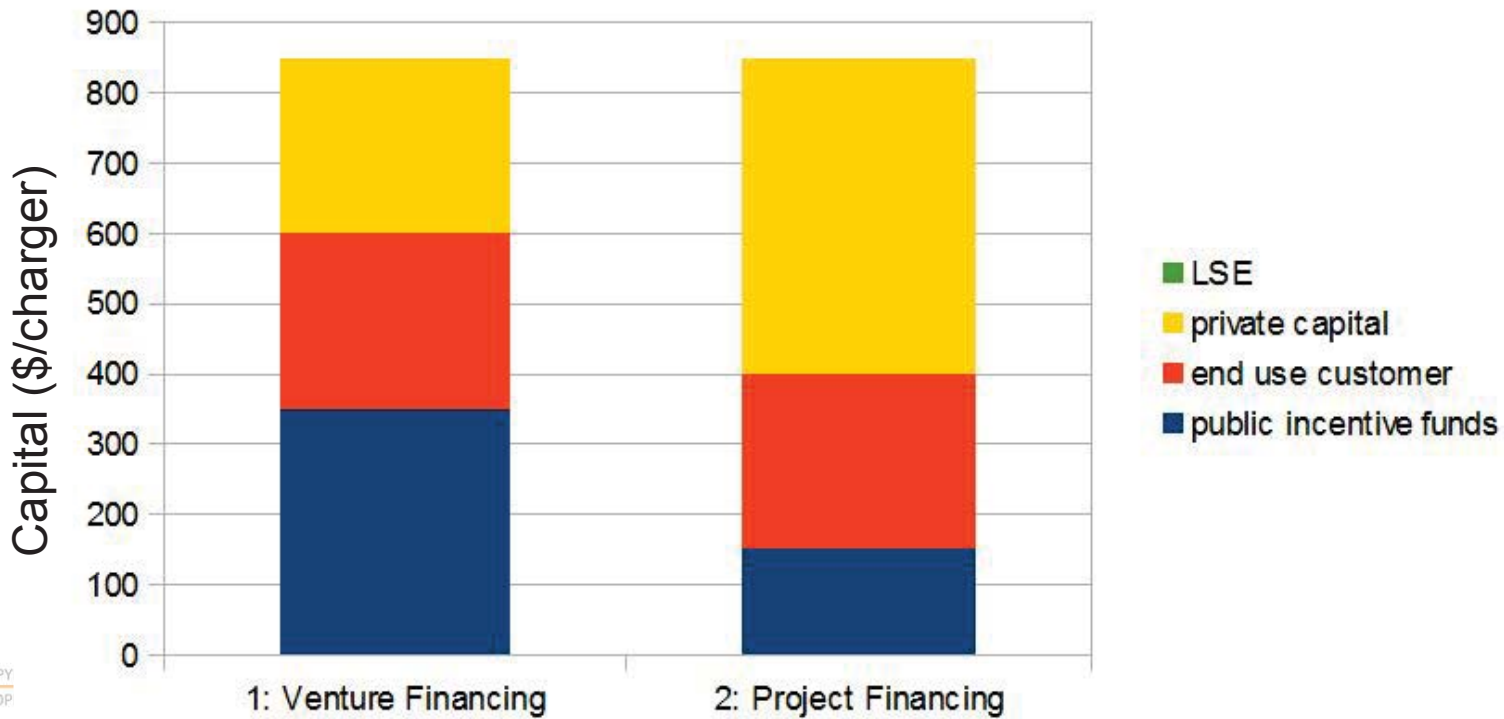
eMotorWerks Prior Testimony



3:2

5:1

Leverage (private to public funds)





Recommendations for the current funding deployment:

1. Design the financial support to accelerate the transition to a private-capital-supported market
2. Don't make the subsidies over-generous
3. Have set asides for important sectors



Recommendation #1: Design the financial support to accelerate the transition to a private-capital-supported market

1. Tie the rebates to grid-integrated charging and participation in the CAISO markets
2. Pay the rebates over multiple years, based on performance, to ensure persistence in grid-integrated charging



Recommendation #1: Design the financial support to accelerate the transition to a private-capital-supported market

Rationale for Recommendation #1:

- CAISO market revenues for grid-integrated EV charging are not yet adequate to support project financing.
- As the market for FR opens to grid-integrated EV charging, CAISO market revenues for EVSEs will increase >10x. This will support private capital influx sufficient to offset ~100% of public subsidies.
- This funding cycle should incentivize the desired charging behavior and give the investment sector a chance to get acclimated.



Recommendation #1: Design the financial support to accelerate the transition to a private-capital-supported market

Example #1:

- For a grid-connected L2 residential station with 2% or better energy metering and sub-4-second response to charging modification signals from the grid:
 - \$100 upon installation, plus
 - 2x bonus on top of actual grid commodities revenues, capped at \$100/year, for 3 years



Recommendation #1: Design the financial support to accelerate the transition to a private-capital-supported market

Example #2:

- For the same residential station where CAISO market participation is unavailable (e.g., muni territory):
 - \$250 rebate upon installation, with tested ability to respond to RTM pricing or grid conditions signals from the UDC, verified annually for 3 years



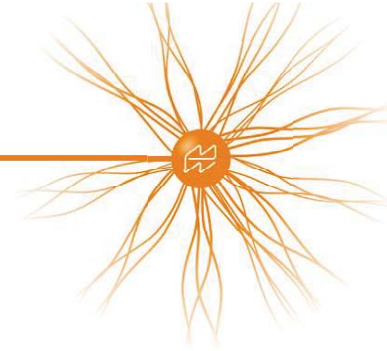
Recommendation #1: Design the financial support to accelerate the transition to a private-capital-supported market

Example #3:

- Twice the residential incentive (per head) for commercial L2 stations.

Example #4:

- \$200 per KW of BESS capacity for grid-integrated DCFC stations.
(minimum 60 minutes BESS capacity)



Recommendation #2: Don't make the subsidies over-generous

1. Tie the rebates to function and performance, not to a % of CapEx
2. Keep the \$/EVSE modest enough to drive price competition and reductions



Recommendation #3: Have set asides for important sectors

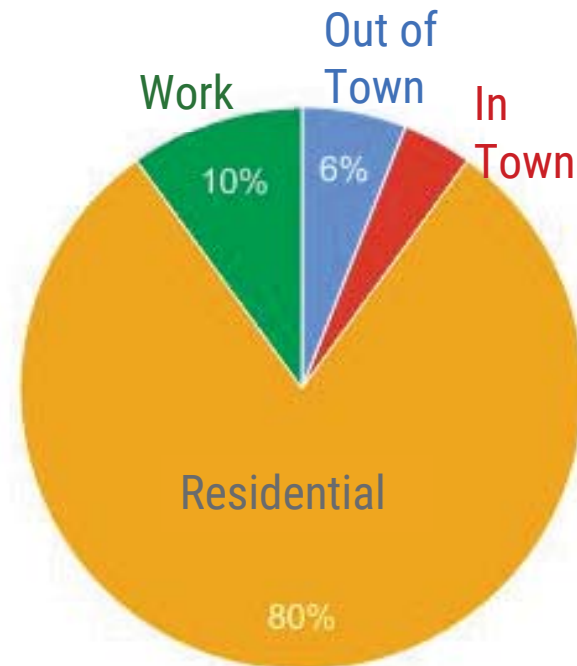
1. ~50% for residential sector. Represents about 80% of the EV charging load. Big bang for the buck.
2. ~10% for grid-integrated EV charging at DCFC stations. DCFC, if not grid-integrated, would necessitate large grid upgrades and worsen the duck.

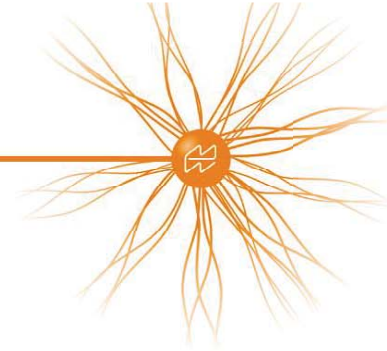


Residential sector

Long duration > 10 hours, with less than 2 hours charging time usually needed

80% of charging power, connectivity is done at home



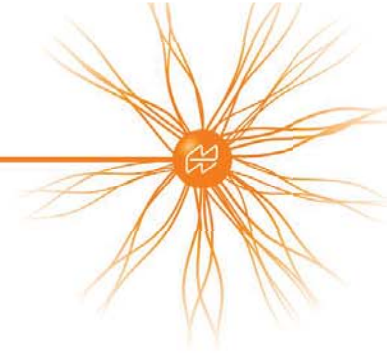


Thank you

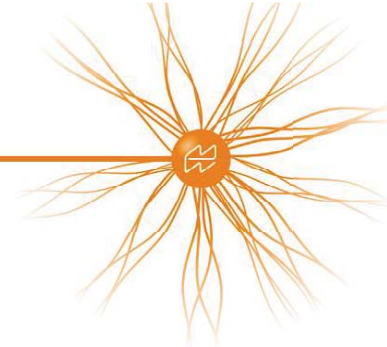
eMotorWerks

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About eMotorWerks



Who we are



Quick intro to eMotorWerks products:

- **EVSEs**. We manufacture and resell fully grid-integrated EVSEs, both residential and commercial, plus smart adapters to convert other chargers to VGI. The best selling charger on Amazon. ~15% US market share in residential EVSEs.
- **VGI**. We maintain the JuiceNet IoT platform to control charging throughout a fleet, with only seconds-scale latency. JuiceNet controls our own EVSEs, 3rd party EVSEs, EVSEs with our smart adapters, and EVs directly through Cloud2V communication. Access to ~50% US market share in residential EVSEs.