



WHEN TRUST MATTERS



Learnings from an in-depth portfolio level evaluation of EV programs

November 01, 2022

2022 IEPEC Conference

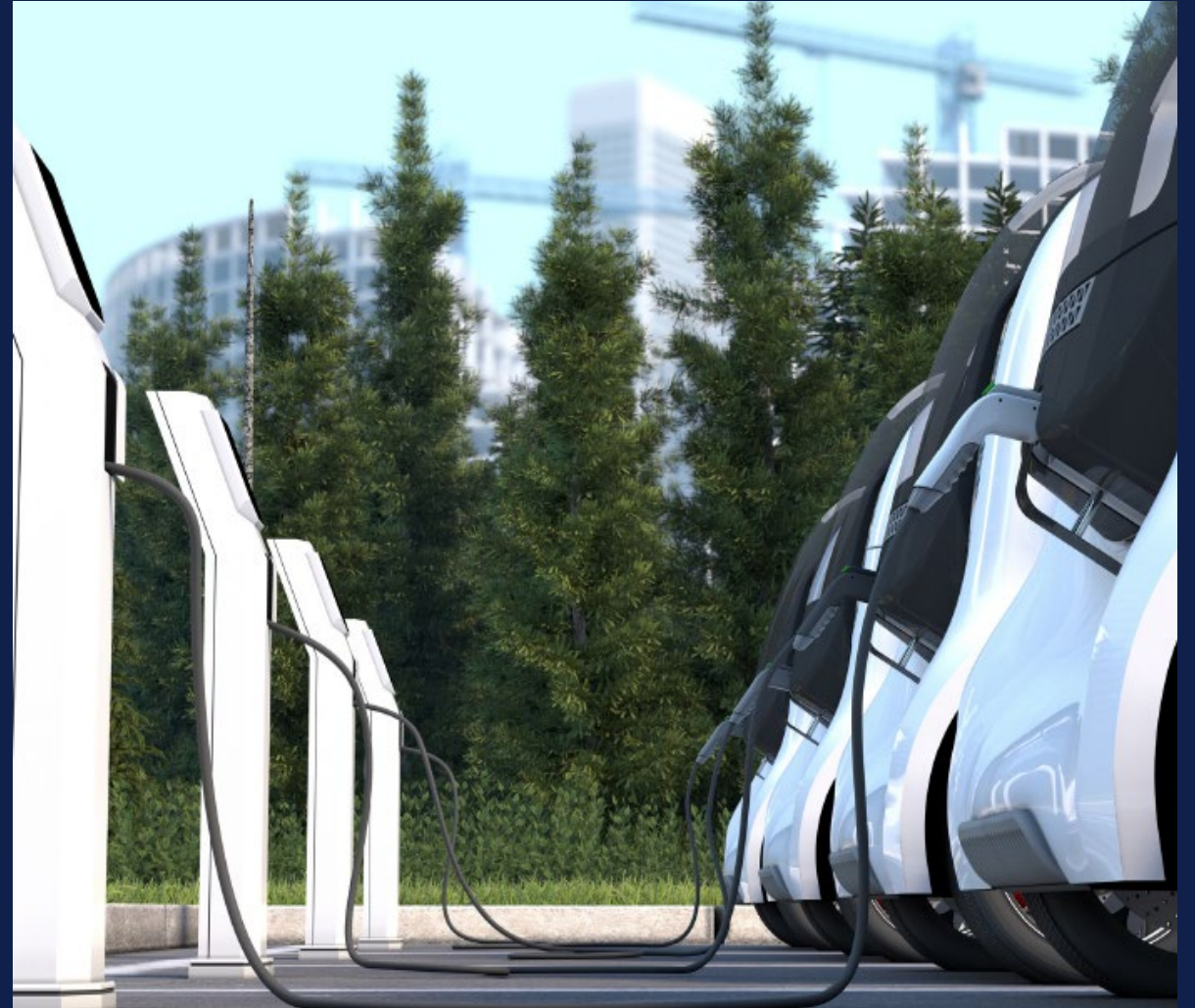


Agenda

1 Study overview

2 Key insights

3 Conclusions & recommendations



Study overview



SMUD programs - End-to-end support of EV customer journey

Marketing, Education, & Outreach (ME&O)

- SMUD Drive Electric Advertising Campaign
- Drive Electric outreach and education events (including Ride & Drive and corporate events)

EV adoption

- \$599 Rebate Program
- PlugStar Shopping Assistant
- EV Estimator Online Tool
- Dealer engagement program
- Electric forklift incentive program (Non-Res)

EV charging

- EV TOD rate discount (12am-6am)
- Workplace charging incentive (Non-Res)
- Public fast charger installation (Non-Res)

Evaluation objectives

- SMUD programs' influence on EV purchase decisions
- Relative importance of SMUD programs and other (non-SMUD) programs on customers' EV purchase decisions
- Evaluation conducted in Q4 2020 based on participation in various programs from 2018 - 2020



Multi-pronged evaluation approach



Residential EV drivers

- Online surveys with 714 residential customers
 - Program participants in EV TOD rate, \$599 incentive program
 - Total program participants: 8,110



Auto dealership sales staff

- Phone interviews with 8 salespeople
 - 6 were top dealership salespeople
 - Total trained sales staff: 239
 - Total certified trained dealerships: 20
- All sell new and used EVs



Commercial charging participants

- Phone interviews with 10 workplace charging participant site managers, directors, and owners
 - Unique program participants: 17
- Avg. employees/tenants per site: 300

ME&O

EV
Adoption

EV
Charging

ME&O

EV
Adoption

EV
Charging

Key insights



SMUD’s residential EV drivers had a typical “early adopter” profile

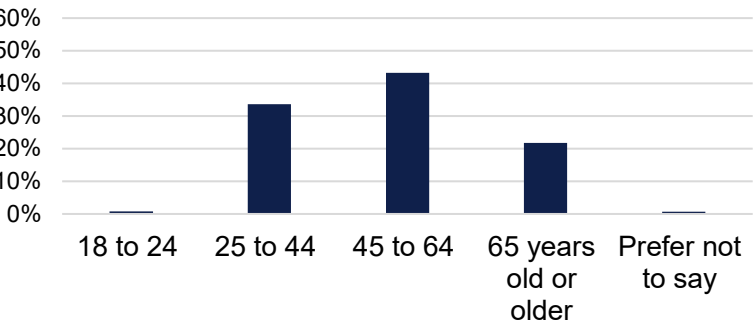
Research corroborated known characteristics of current EV owners/users:
Tended to be more affluent and educated than the general population.

Demographics	American Community Survey Sacramento, CA	SMUD EV Driver Study (n=714)
Household size	2.66	2.62
Education – Bachelor’s degree or higher	33%	81%
Median Income	\$62,335	\$125,000

Sample frame of SMUD residential EV customers drawn from customers on EV TOD rate and/or those who availed of the \$599 rebate, N=8,110

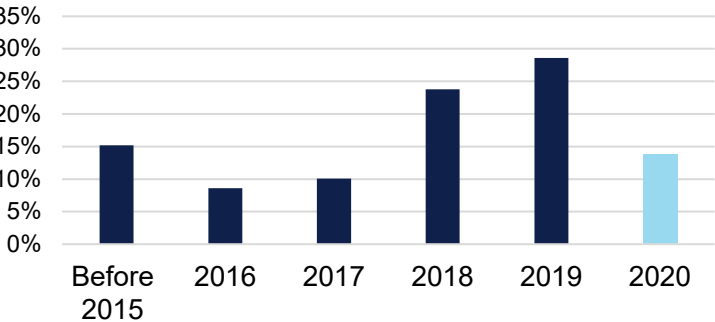
SMUD residential EV driver survey reached a broad group of respondents

Respondent Age



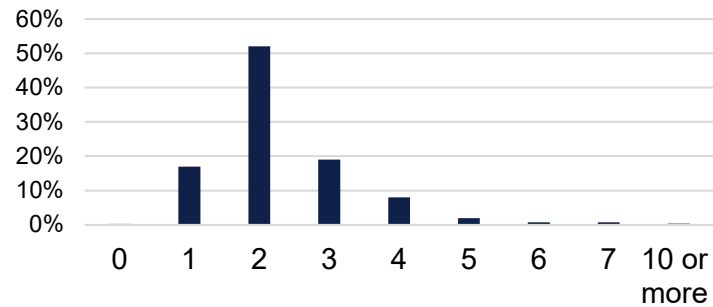
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Year EV Purchased



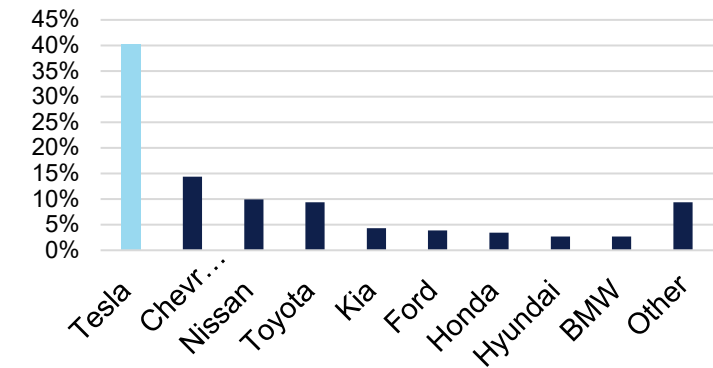
n=676

Number of Vehicles



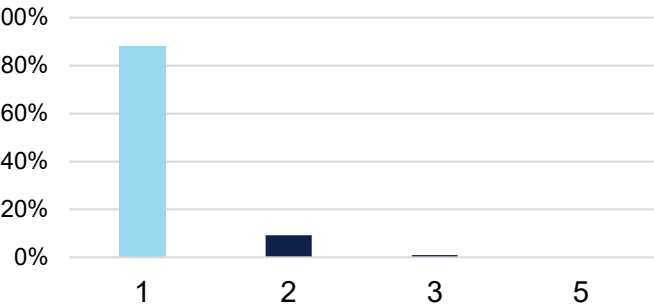
n=690

Make of EV



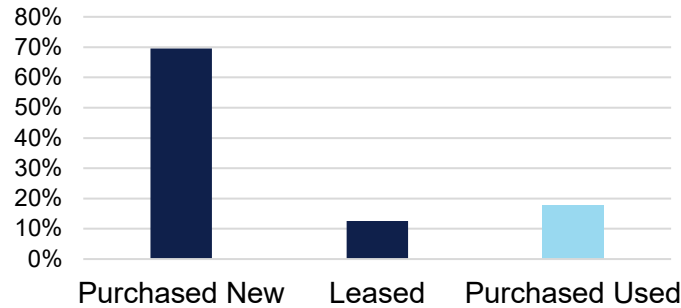
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Number of EVs



n=676

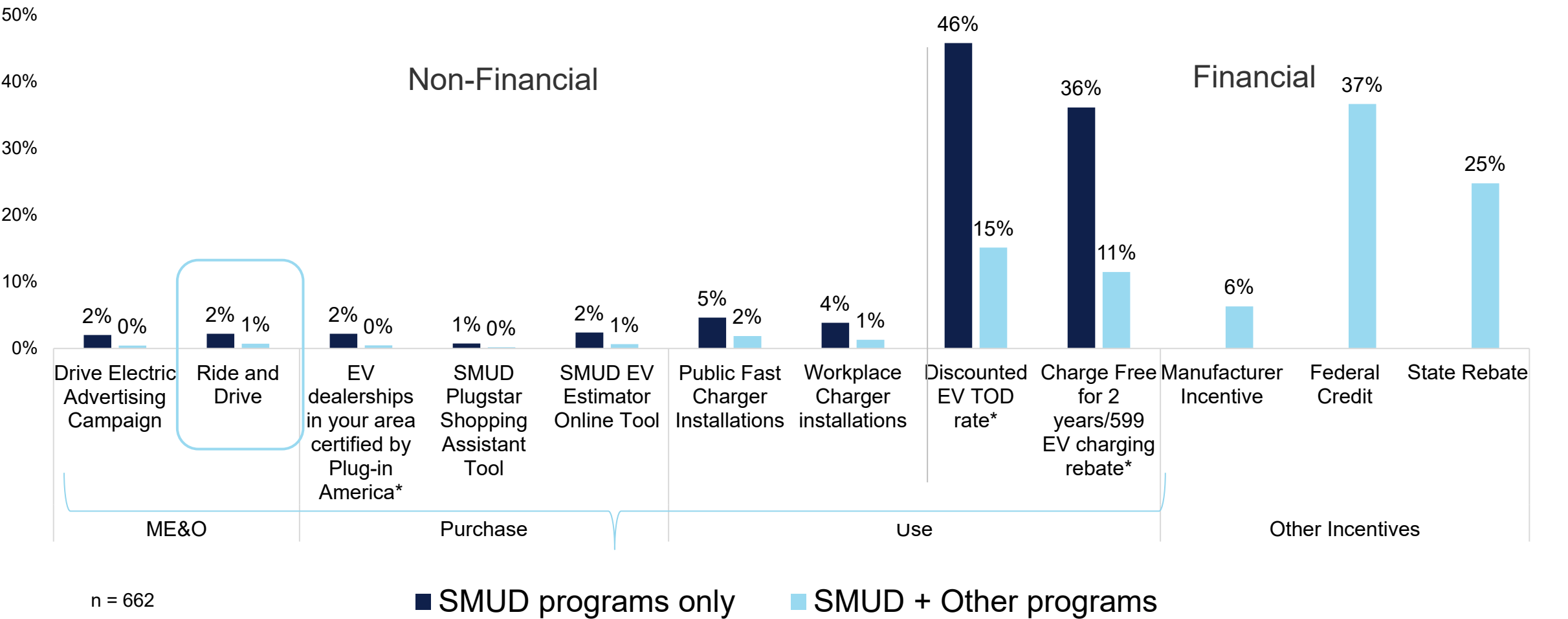
Purchased New/Leased/Used



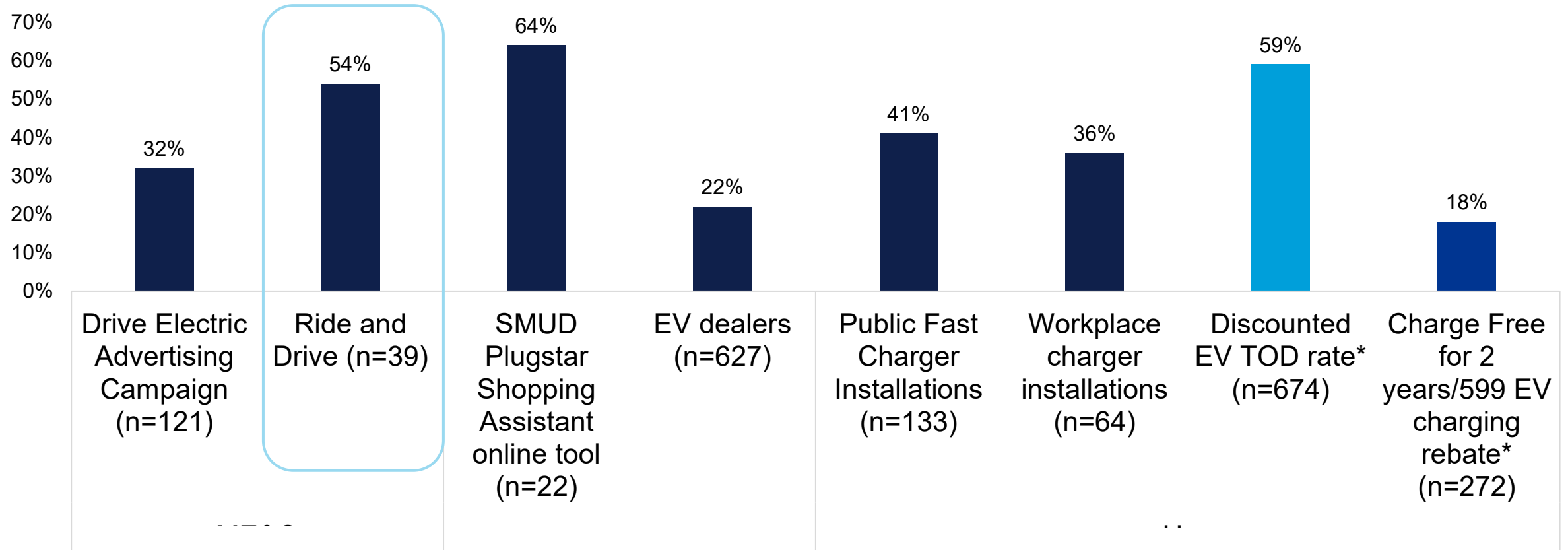
n=677






Relative importance of SMUD EV programs was 32% across SMUD and national programs

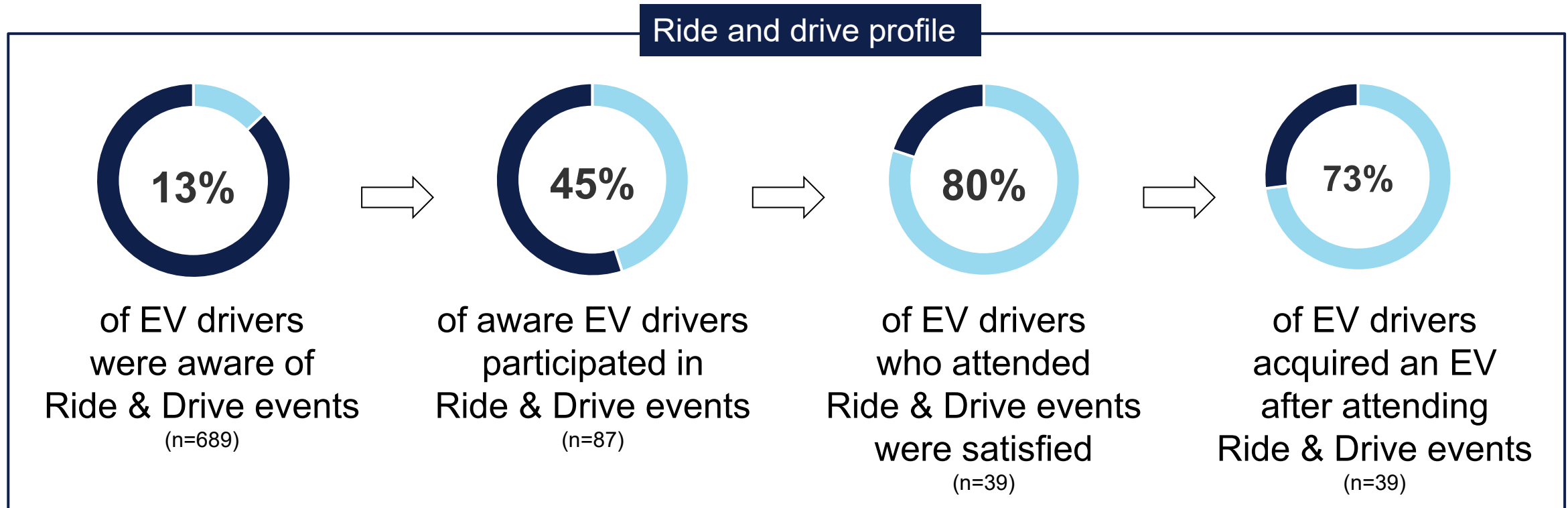


Influence of SMUD EV programs varied by program and customer exposure



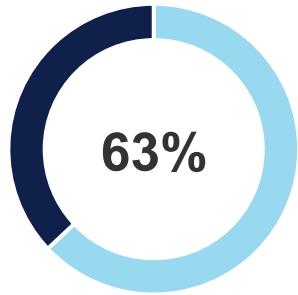
-  % stating [program] had high influence in moving customer further towards decision to acquire an EV
-  % stating they would be less likely to charge off-peak (between midnight and 6 a.m.) without discounted EV TOD rate
-  % stating they would be less likely to acquire EV if they did not receive \$599 incentive/free charging for 2 years

ME&O programs had low awareness, high influence

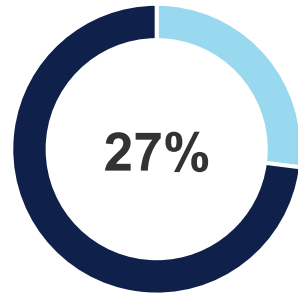


Dealer perspective: *"Ride and Drive events have always been well received."*

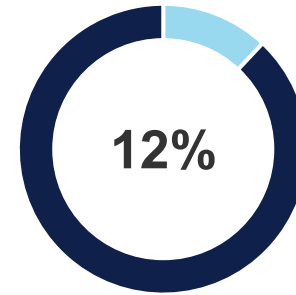
Dealer engagement program refinements may improve customer experience



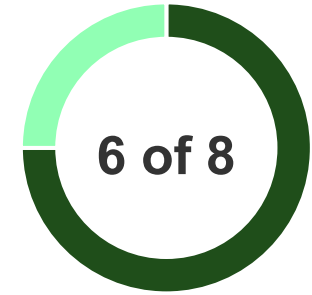
of EV drivers say dealers knowledgeable about EVs
(n=630 EV drivers)



of EV drivers say dealers provided guidance on SMUD incentives
(n=630 EV drivers)



of EV drivers say dealers informed EV drivers of SMUD's EV TOD rate discount
(n=630 EV drivers)



of auto dealers expressed confusion regarding available incentives for EVs
(n=8 Auto dealers)

EV driver perspective:

*"I liked the salesman, but they **should have one who specializes in EVs**. The **ONLY** reason I bought the car was that I wanted to switch to PHEV."*

Opportunities to further optimize time-of-use rates

*“The discount rate for charging at night needs to be increased. **I save less than \$1.00 each month** charging.”*

*“I don't currently use the overnight charging benefit, because the **overall cost of time-of-use rates is higher than the fixed rate** for my usage. It may be worthwhile for me to switch to time-of-use rates in the winter and to a fixed rate in the summer.”*

Residential customers requested SMUD's support for used EV adoption

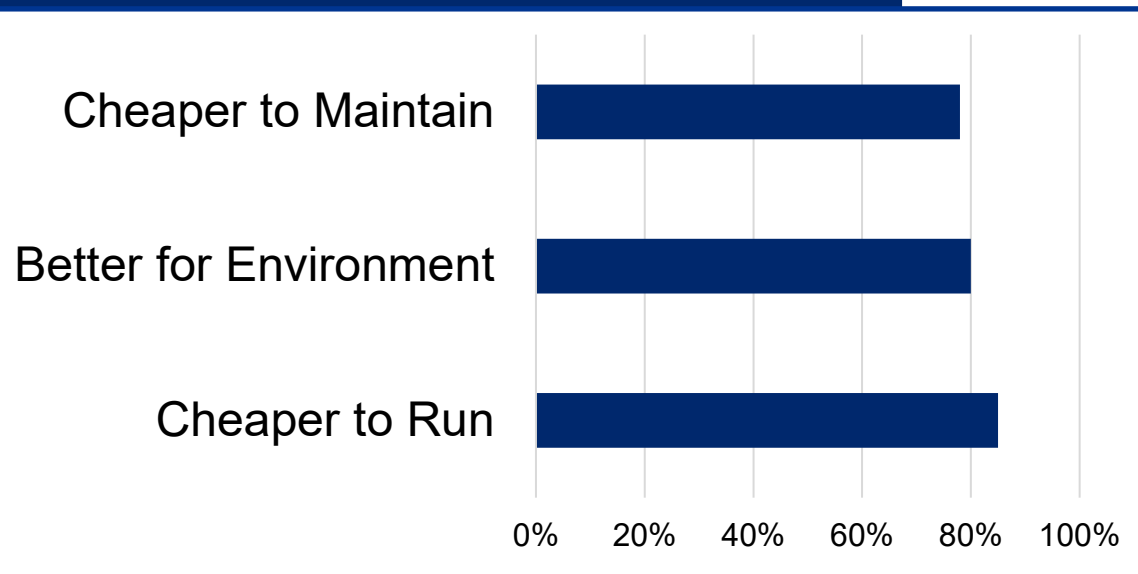
Approximately 7% of EV drivers who provided open-ended feedback (n=176) indicated that they would like SMUD to support used EVs.

*"I would like to see SMUD advocate for incentives for buyers of used BEVs and PHEVs. If the goal is to get rid of ICE vehicles, then there should be help for those that can't afford a NEW car - a mid tier type of incentive that would help people on a **lower income level experience EV ownership**. I am not in the income bracket that can buy a new \$50k car."*

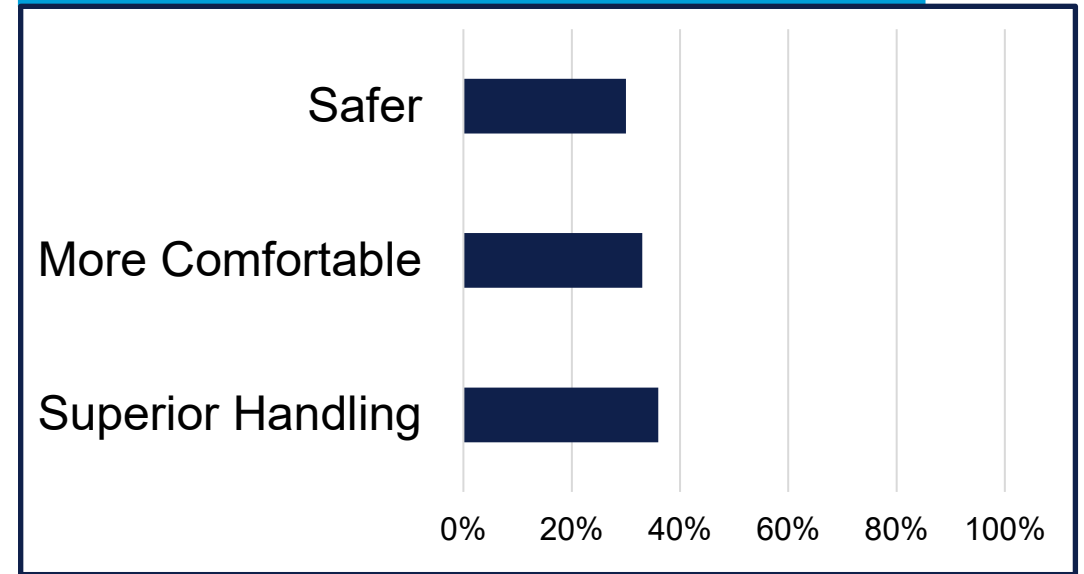
*"It's unfortunate that the rebates for charging equipment at home are only for new electric vehicles and **don't apply to used vehicles**. Why does it matter if the vehicle is new or 1 year old? You still benefit as a company by selling more electricity whether the vehicle is new or not."*

EV drivers appreciated a broad range of EV benefits

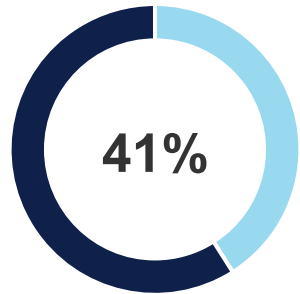
Cost and environmental



Driving and safety

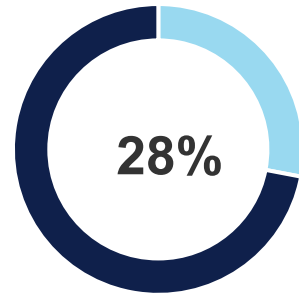


Customers were satisfied with charging options, but there is room to optimize



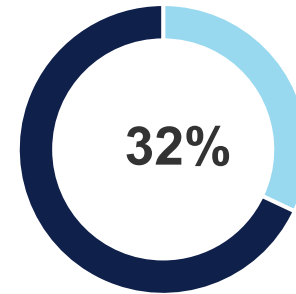
Availability of public chargers had positive influence on EV adoption

(n=427)



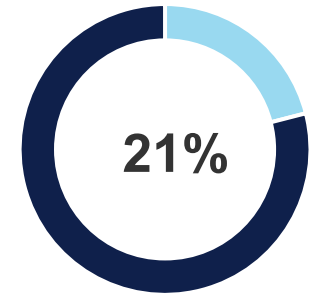
Availability of chargers has been a barrier to EV use

(n=677)



Availability of fast chargers has been a barrier to EV use

(n=677)



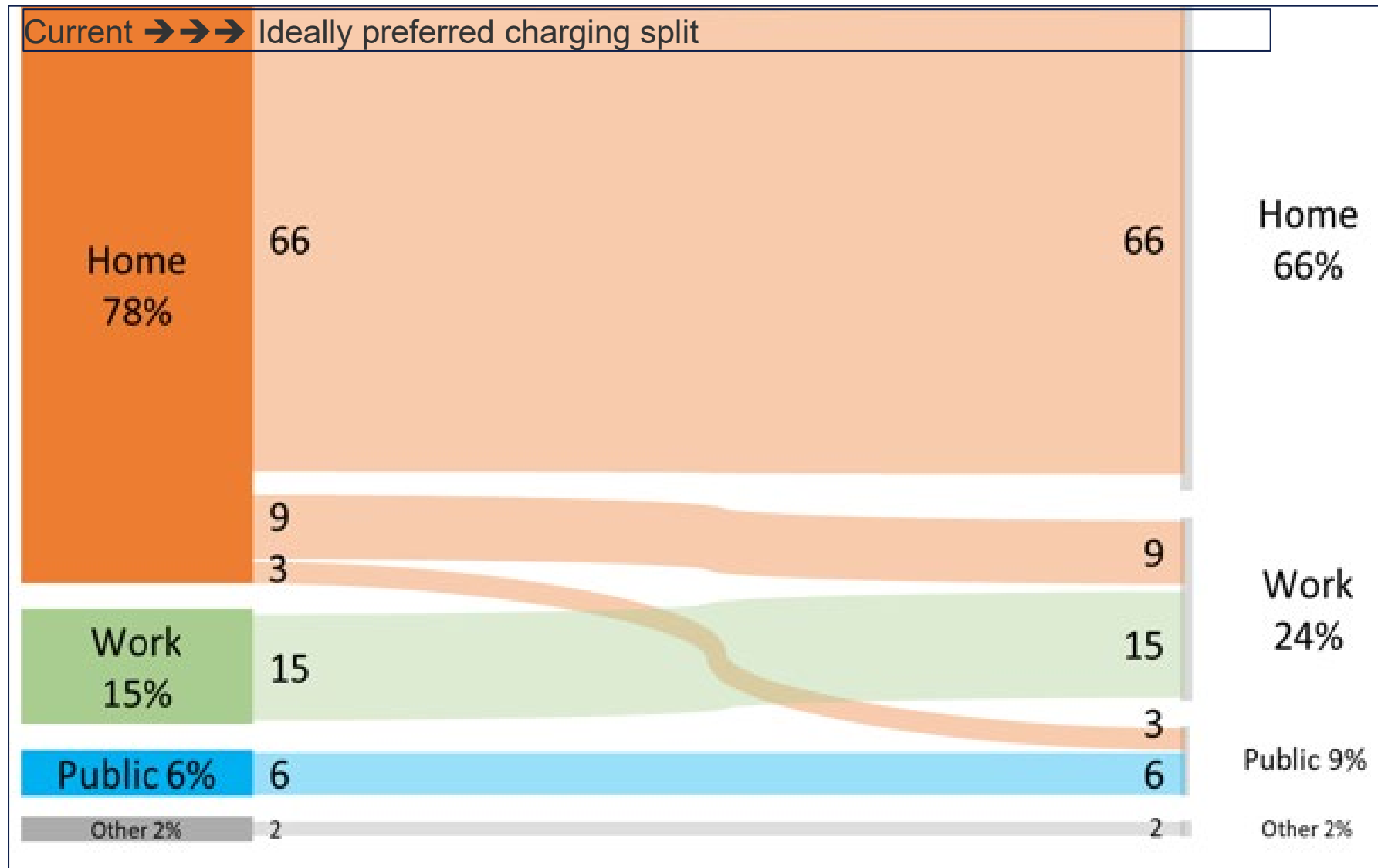
Coverage provided by current EV chargers is not complete enough for daily needs

(n=677)

EV driver perspective:

*"I love my car and **would drive it on trips more often if fast charging stations were more readily available.**
We love our Bolt and look forward to many **more EVs in the future.**"*

Residential customers would like to shift some of their EV charging to public and workplace chargers



EV driver perspectives:

*"I would like the **infrastructure to be better**. More chargers. Fast chargers near freeway exits and level 2 at shopping areas or parks."*

*"My workplace refuses to install chargers, but it's within walking distance of the Mather Field terminal. **I'd like to see public Level 2 chargers installed in that area.**"*



Workplace charging site hosts found program participation simple but charger roll-out challenging

Positive experience with SMUD

- 80% respondents had positive interactions with SMUD
- 90% stated incentive was a reasonable amount
- 70% contacted SMUD for program involvement

Remaining challenges

- Technical: Interconnection, metering, hookup
- Informational: Standards, specs
- Operational: Rates, fees

Site Host Perspectives:

“...other municipalities could learn a lot from SMUD.”

*“SMUD has been an **incredible partner ... [for] saving energy.**”*

*“[the] customer service reps [were] great and always available to help **guide us** through the lengthy process.”*

Conclusions and recommendations



Conclusions and Recommendations

	Marketing, Education & Outreach (ME&O)	EV adoption	EV charging
Residential	Increase marketing for educational initiatives	Increase dealership clarity of incentives	Optimize usefulness and perceptions of rate(s)

Conclusions and Recommendations

Marketing, Education &
Outreach (ME&O)

EV Adoption

EV Charging

Low Income Residential

Develop ME&O
program to support low
income customers

Incentives for used
EVs

Design charging
infrastructure to
support low income
customers

Tackle entire customer journey with focus on ME&O, rate design, low-income customers, and non-res partnerships

Marketing, Education &
Outreach (ME&O)

EV Adoption

EV Charging

Non-Residential

Continue and expand
ME&O activities to
support charging
buildout

Continue to study
public charging and
siting preferences as
market for EVs
matures

Expand access to
public charging and
continue partnerships
with site hosts

Thank you! Questions?

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