

DEMAND FOR ELECTRIC VEHICLE (EV) CHARGERS

Gay Cororaton

Senior Economist, Director of Housing and Commercial Research
Research Group | National Association of REALTORS®

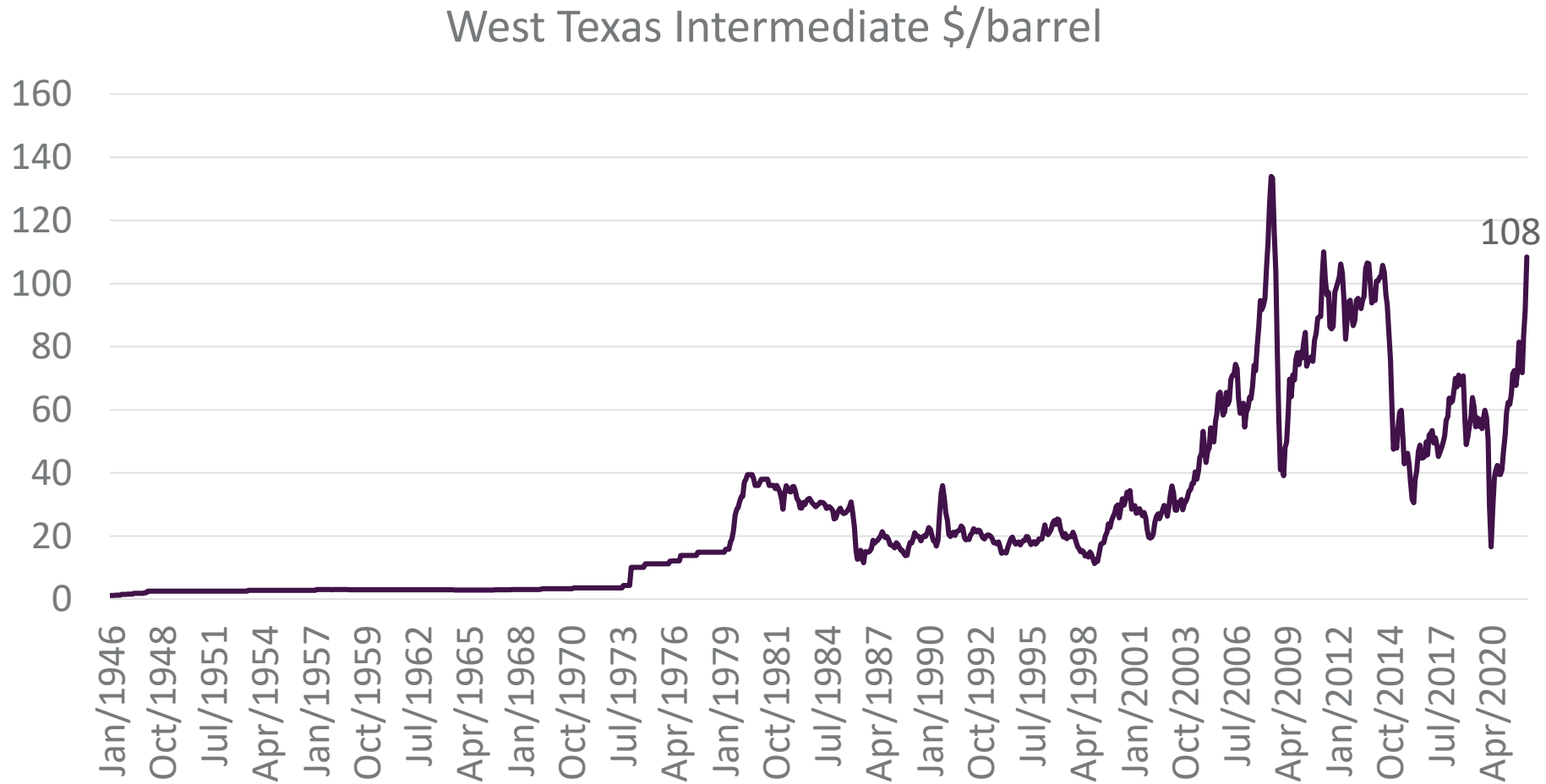
Commercial Real Estate Research Advisory Board
REALTORS® Legislative Meetings
May 4, 2022

1

#NARLegislative



HIGH OIL PRICES INCENTIVIZE SHIFT TO ELECTRIC VEHICLES



ELECTRIC VEHICLE (EV) AND EV CHARGERS TARGETS TO REDUCE CARBON EMISSIONS AND CREATE JOBS

- Increase zero-emission (battery electric, plug-in hybrid electric, fuel cell electric vehicle) vehicle market share to 50% by 2030 (Executive Order)
- increase the number of electric vehicle chargers to 500,000 by 2030 (from 128,474 as of 2021) with EV stations every 50 miles along fuel corridors; Bipartisan Infrastructure Law allocates \$7.5 billion to achieve this target

<https://www.whitehouse.gov/bipartisan-infrastructure-law/>

<https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/05/fact-sheet-president-biden-announces-steps-to-drive-american-leadership-forward-on-clean-cars-and-trucks/>

CARBON EMISSIONS OF TYPICAL VEHICLE: 4.6 METRIC TONS/YR

- A typical passenger vehicle emits about 4.6 metric tons of carbon dioxide per year (EPA)
- This assumes the average gasoline vehicle on the road today has a fuel economy of about 22.0 miles per gallon and drives around 11,500 miles per year. Every gallon of gasoline burned creates about 8,887 grams of CO₂.
- A vehicle that operates exclusively on electricity (an EV) will not emit any tailpipe emissions. A fuel cell vehicle operating on hydrogen will emit only water vapor.

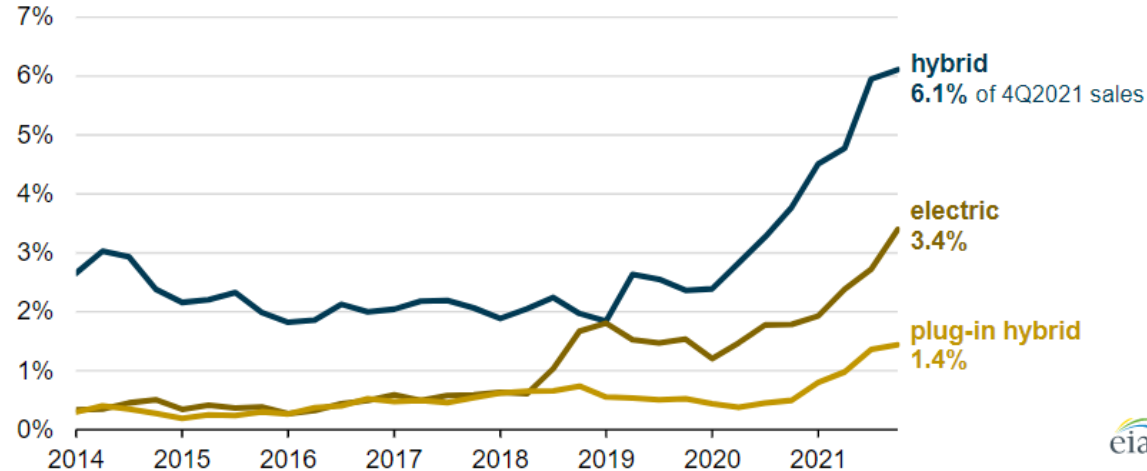
Source: EPA: <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle#:~:text=typical%20passenger%20vehicle%3F-A%20typical%20passenger%20vehicle%20emits%20about%204.6%20metric%20tons%20of,8%2C887%20grams%20of%20CO2.>

ELECTRIC VEHICLE (EV) SALES SHARE RISES TO 3.4% AS OF 2021

FEBRUARY 9, 2022

Electric vehicles and hybrids surpass 10% of U.S. light-duty vehicle sales

Quarterly light-duty vehicle sales by powertrain (2014–2021)
percentage of total



Source: Graph by the U.S. Energy Information Administration, based on data from Wards Intelligence

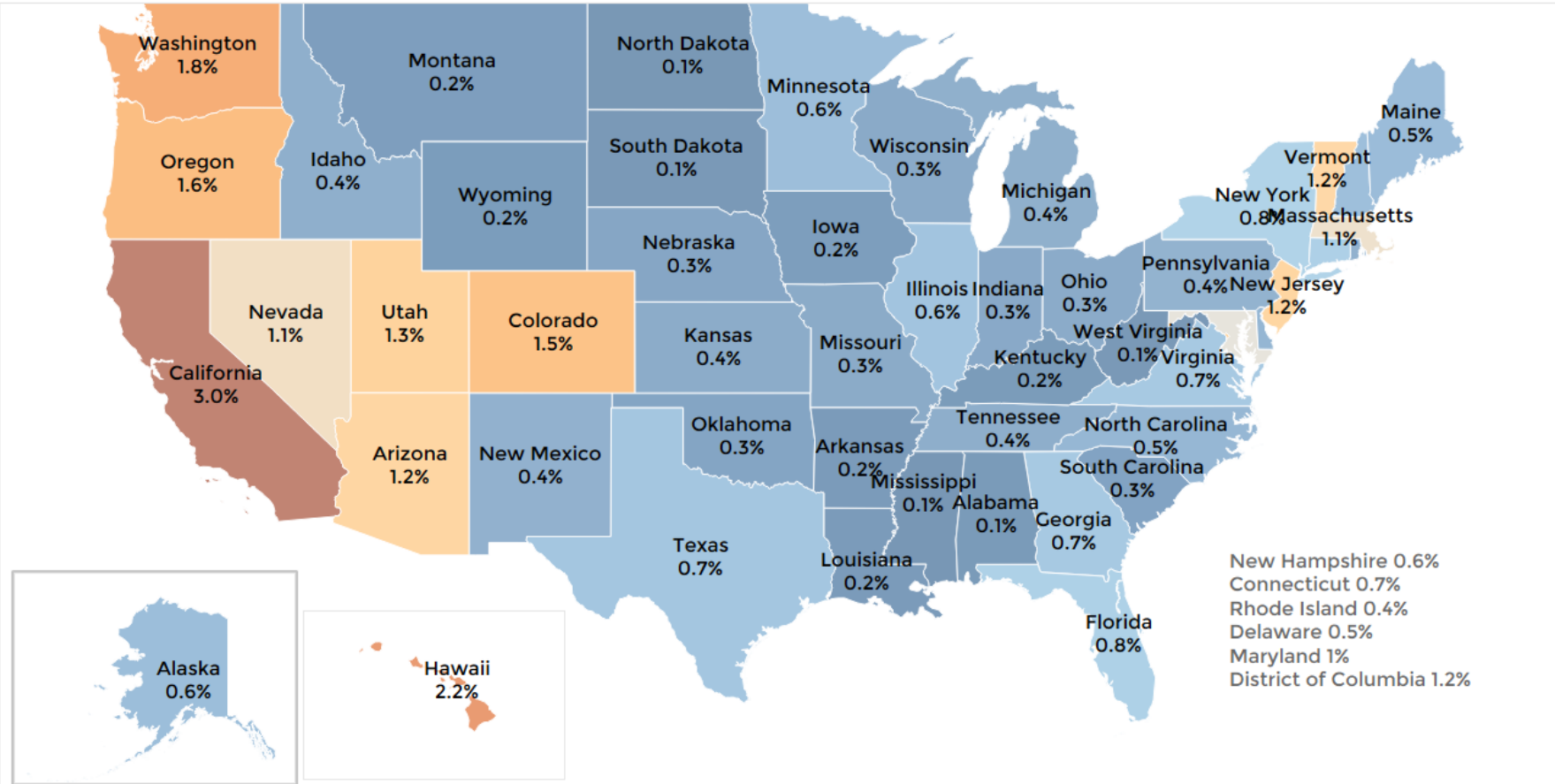
Hybrid, plug-in hybrid, and electric vehicle sales in the United States have increased in recent months as sales of non-hybrid internal combustion engine (ICE) vehicles fueled by gasoline or diesel decreased. In the fourth quarter of 2021, hybrid, plug-in hybrid, and electric vehicles collectively accounted for 11% of light-duty vehicle sales in the United States, according to data from Wards Intelligence.

Sales of several existing hybrid, plug-in hybrid, and electric models increased in 2021, but a large portion of the sales increase came from new manufacturer offerings across different market segments. Manufacturers increased the number of non-hybrid ICE vehicle models by 49 in 2021, versus an increase of 126 for hybrid and electric vehicle models.

<https://www.eia.gov/todayinenergy/detail.php?id=51218>

EV REGISTRATIONS AS A PERCENT OF AUTOMOBILE REGISTRATIONS (1% NATIONALLY)

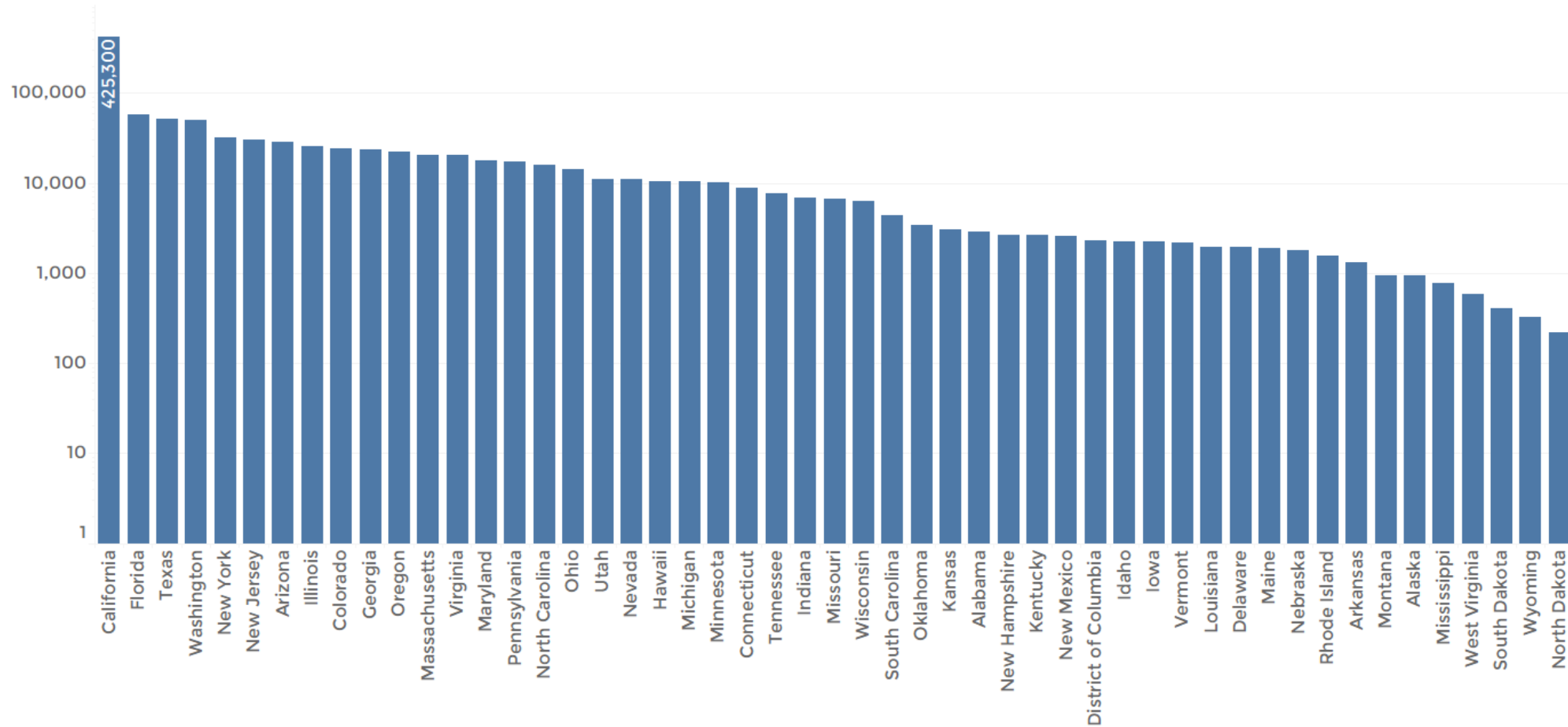
1.02 Million EV registrations as of December 2020, or 1% of private and commercial automobile registrations in 2020



Source: NAR estimates based on Alternative Fuels Data Center on EV registrations as of 2020 and Office of Highway Policy Information private and commercial automobile registrations as of 2020

CALIFORNIA: 43% of EV REGISTRATIONS AS OF 2020

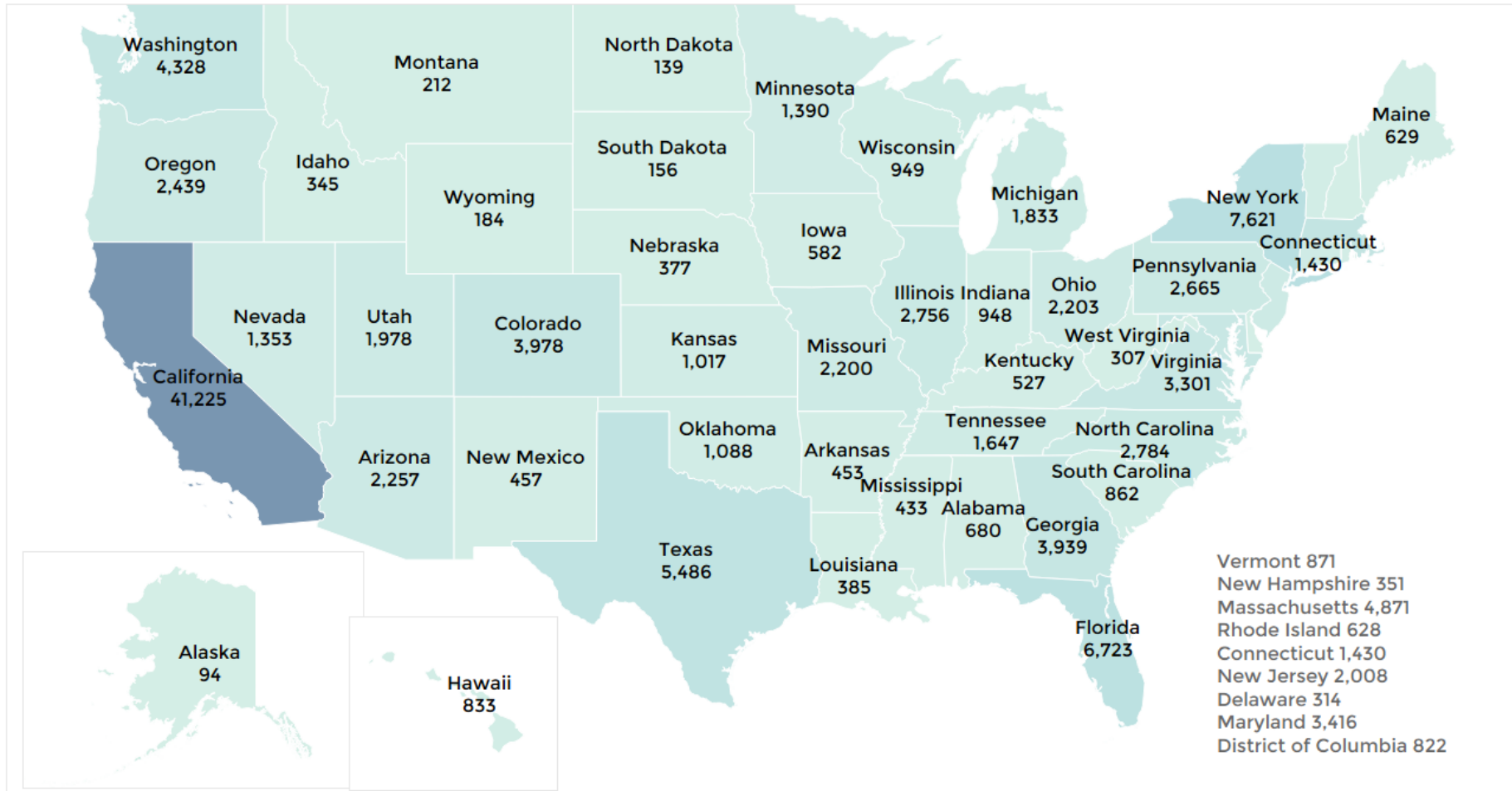
1.02 Million EV registrations as of December 2020



Source: Alternative Fuels Data Center data

CALIFORNIA: 32% OF EV CHARGING OUTLETS

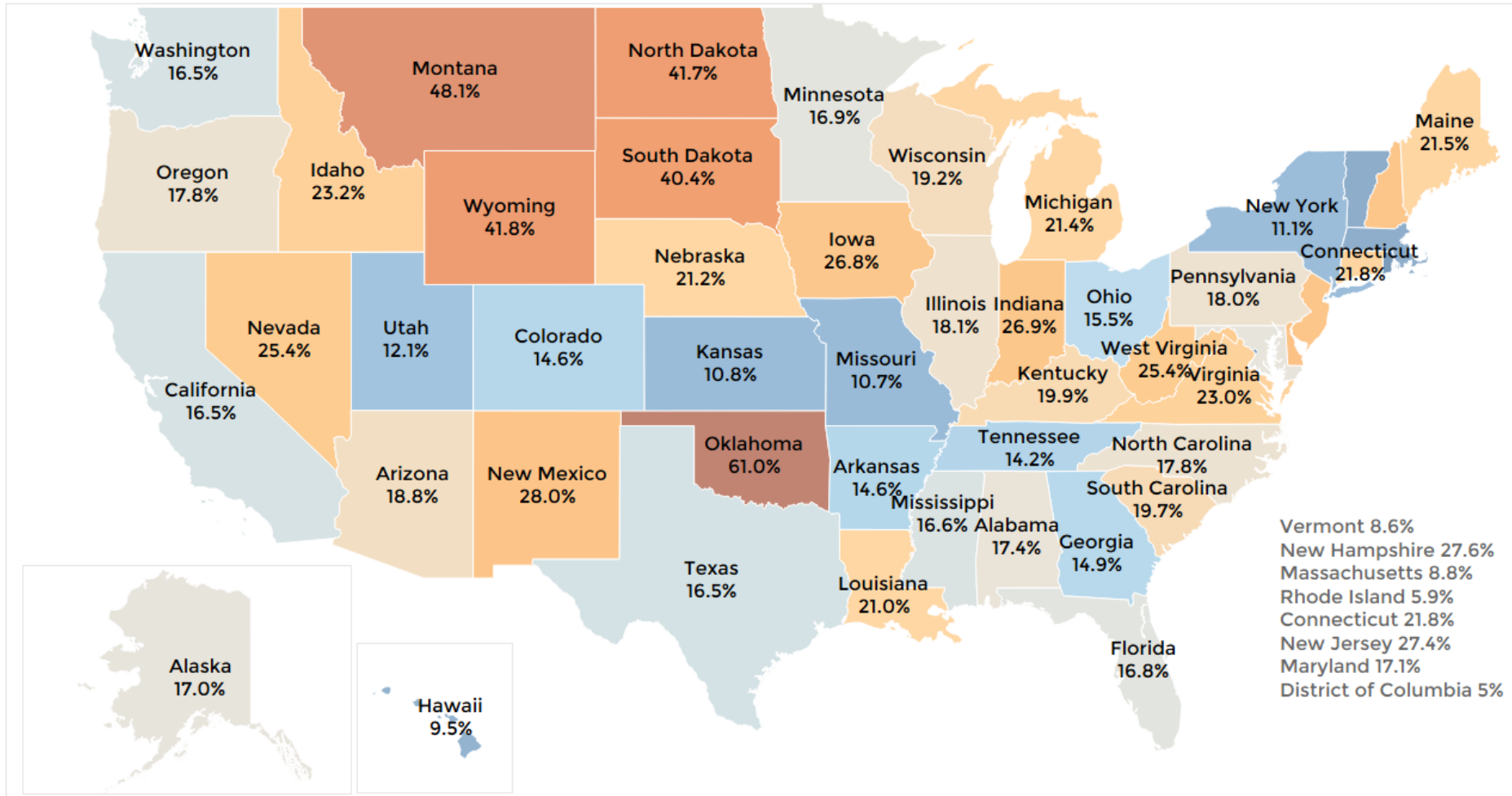
California accounts for 32% of 128,474 electric vehicle charging outlets that are located in 50,054 stations nationally as of December 2021



Source: Alternative Fuels Data Center

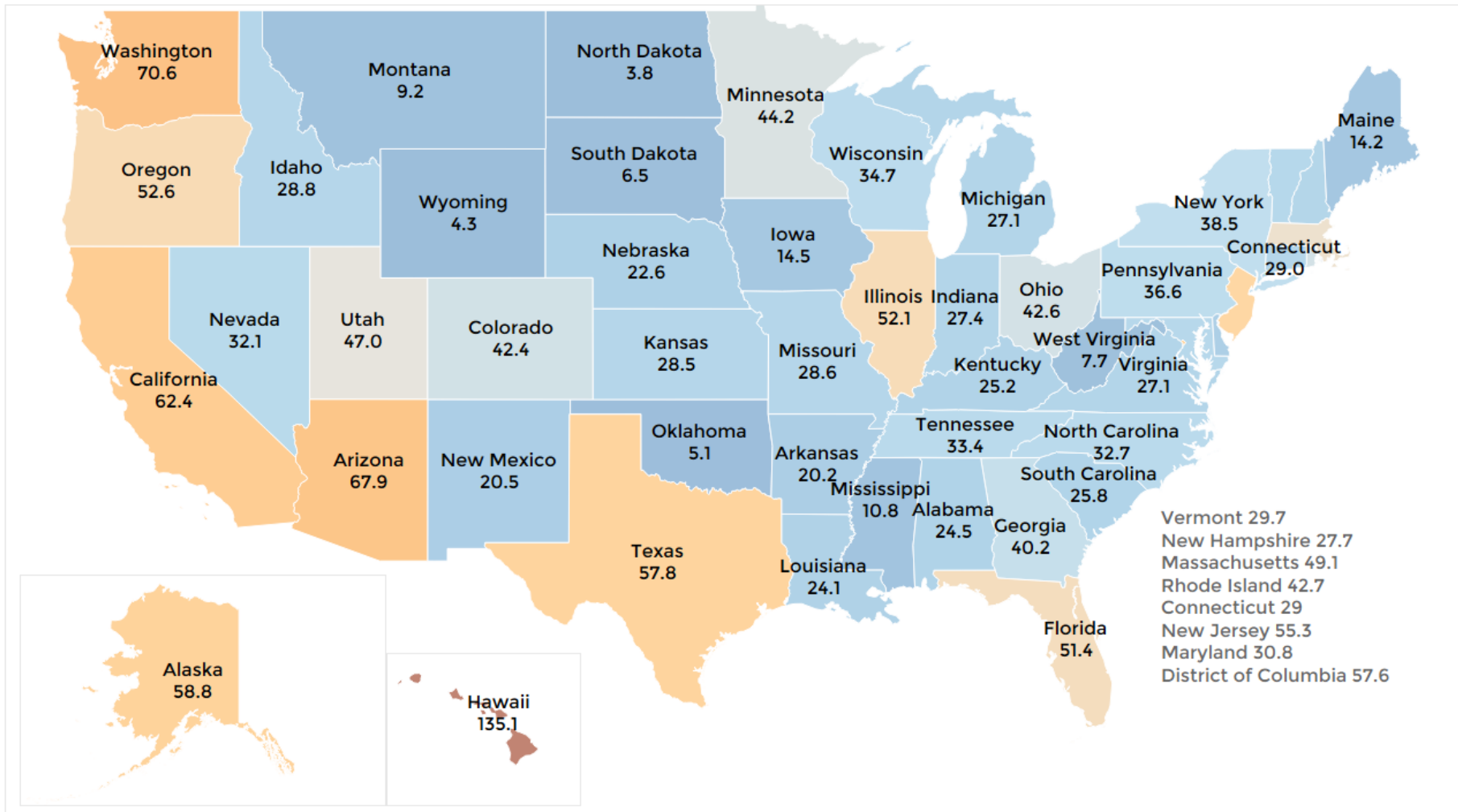
DIRECT CIRCUIT (DC) FAST CHARGERS: 17% OF EV OUTLETS

DC Fast Chargers as a Percent of State's Total EV Outlets as of 2020
(17%: national average)



NATIONALLY, 47 ELECTRIC VEHICLES PER DC FAST CHARGER

Ratio of electric vehicles per DC fast charger as of 2021 (47: national average)



Source: NAR analysis of Alternative Fuels Data Center data

ELECTRIC VEHICLE GOALS IN SOME CITIES

Table 2. Examples of city electric vehicle goals and strategies

City	Goal	Strategy	Strategy details
Columbus	1.8% ownership by 2020. Deploy 900 public charging stations.	None identified	None identified
Denver	15% of total registration by 2025, 30% by 2030, and 100% by 2050. 100% in city fleet by 2020	Opportunities for vehicle electrification in Denver Metro area and across Colorado	Discusses steps to address DC fast charging availability and multi-family housing charging access barriers
Houston	30% of new vehicle sales by 2030	Evolve Houston electric vehicle roadmap	Outlines awareness, affordability, and availability actions, with suggested key stakeholders
Los Angeles	25% of total registrations are ZEVs by 2025, 80% by 2035, and 100% by 2050. Deploy 10,000 public chargers by 2022; 28,000 chargers by 2028.	L.A.'s Green New Deal	Establishes targets with initiatives from 2021 to 2030
Memphis	5% of vehicle travel by 2025, 30% by 2035, and 50% by 2050	None identified	None identified
Portland	Replace at least 10,000 vehicles. Double public Level 2 and DCFC. 30% in city fleet by 2020	2017 City of Portland electric vehicle strategy	Details 49 unique actions with lead bureaus
Sacramento	35% of total registrations are ZEVs by 2025	Electric vehicle strategy	Outlines 8 core performance targets with lead department and entities
San Francisco	50% of new registrations by 2025 and 100% by 2030	Proposed electric vehicle roadmap for San Francisco	Establishes 6 main strategies with lead and support authorities
Seattle	30% ownership by 2030	Drive Clean Seattle Implementation Strategy	Coordinates 5 implementation actions with lead departments

Source: International Council on Clean Transportation
 file:///H:/000%20Save%20Files/GAY's%20TEAM_HOUSING%20&%20COMM%20RESEARCH/Commercial/CRE%20Research%20Studies/Electric%20Vehicles/EV-cities-update-aug2020.pdf

STATE WITH INCENTIVES HAVE HIGHER EV SHARE

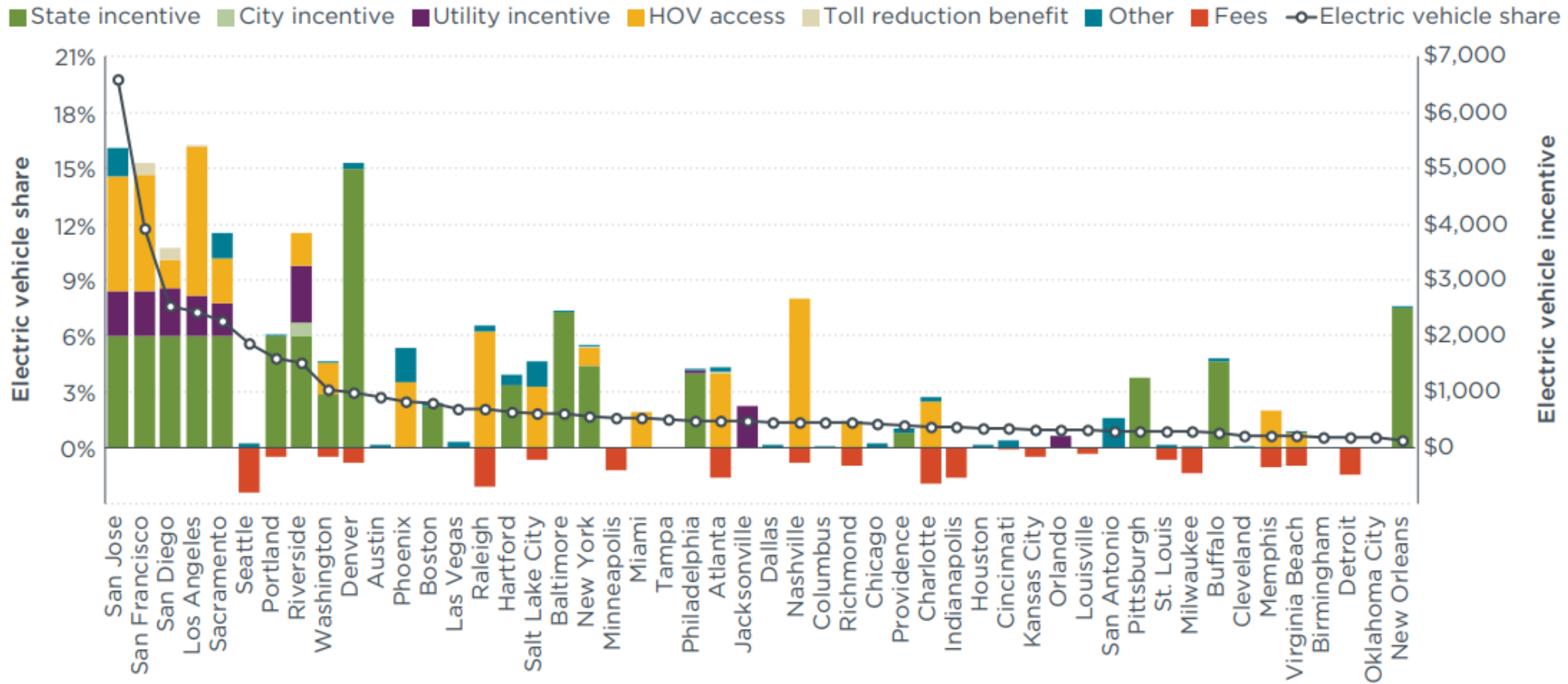


Figure 6. Electric vehicle shares of new vehicles and available consumer incentives in the 50 most populous U.S. metropolitan areas. New vehicle registration data are from IHS Markit.

Source: International Council on Clean Transportation
 file:///H:/000%20Save%20Files/GAY's%20TEAM_HOUSING%20&%20COMM%20RESEARCH/Commercial/CRE%20Research%20Studies/Electric%20Vehicles/EV-cities-update-aug2020.pdf

EXAMPLES OF STATE INCENTIVES

- California– \$2,000 tax rebate on sales purchase, HOV access
- Colorado- \$5,000 tax rebate on sale purchase
- Connecticut, DC, Maryland, Pennsylvania, Louisiana – rebate
- Colorado, Louisiana– income tax credit
- Maryland- excise tax credit
- Washington-exemption in sales tax
-

Source: International Council on Clean Transportation
file:///H:/000%20Save%20Files/GAY's%20TEAM_HOUSING%20&%20COMM%20RESEARCH/Commercial/CRE%20Research%20Studies/Electric%20Vehicles/EV-cities-update-aug2020.pdf

SYNERGY BETWEEN EV CHARGING STATIONS AND REAL ESTATE: WHOLE FOODS®

Whole Foods pivoted from managing the chargers itself to contracting with charging providers, which install and maintain the chargers. It now works with many of the leading companies, including EVGo, Tesla, and ChargePoint Inc.

The chain provides the slow charging for free while rates for the fast charging are set by the charging companies.

Jonathan Levy, vice-president of EVGo, one of the chain's charging providers, described the relationship between Whole Foods and its providers as a "symbiotic relationship." He says, "People who buy organic arugula are also the kind of people who are first to adopt electric cars. Come for the electrons, and spend more time and money at the salad bar"

Energy Wire, "How Whole Foods Became Ground Zero in the Charging Wars," <https://www.eenews.net/articles/how-whole-foods-became-ground-zero-in-the-charging-wars/> (link is external)

SYNERGY BETWEEN EV CHARGING STATIONS AND REAL ESTATE:

TARGET®

Target started investing in EV chargers in 2012 by partnering with ChargePoint to provide Level 2 chargers. It ramped this up in 2017 by partnering with Tesla to install Superchargers. In 2018, Target announced that it will expand the installation of EV charging stations to a goal of 600 parking spaces in over 20 states over the next two years and partnered with Electrify America to provide DC fast-charging stations. At the end of 2019, Target had 527 spaces at 74 sites in 16 states.

Target customers could charge for free for as long as two hours using Level 2 chargers.

According to John Leisen, vice president of Property Management, "It's an opportunity to work with industry-leading partners to bring a more convenient shopping experience to guests as we look to design lower-carbon solutions throughout our entire operation."

A Bulls Eye View, "Target Is Charging Up Its Electric Vehicle Program to Reach More Than 20 States," <https://corporate.target.com/article/2018/04/electric-vehicles>(link is external)

⁶ <https://www.bizjournals.com/twincities/news/2020/10/07/tesla-superchargers-at-target-stores-in-metro.html>(link is external)

Gay Cororaton
scororaton@nar.realtor

Senior Economist, Director of Housing and Commercial Research
Research Group | National Association of REALTORS®

Commercial Real Estate Research Advisory Board
REALTORS® Legislative Meetings
May 4, 2022

16

[#NARLegislative](#)

