

Electric Vehicle Owners Have Higher Satisfaction with “Next Level” Home Chargers, J.D. Power Finds

Tesla Receives Home Charging Experience Award for Second Consecutive Year

TROY, Mich.: 24 Feb. 2022 — With sales of battery electric vehicles (BEV)¹ expected to increase in the coming years, a brighter spotlight also will shine on home chargers. At present, satisfaction is highest among electric vehicle (EV) owners for Level 2 portable chargers and Level 2 permanently mounted home chargers, each garnering overall satisfaction scores of 752 (on a 1,000-point scale), according to the J.D. Power 2022 U.S. Electric Vehicle Experience (EVX) Home Charging Study,SM released today.

The study measures EV owners’ satisfaction in three charging segments:² Level 1 portable; Level 2 portable; and Level 2 permanently mounted charging stations. Satisfaction is measured across eight factors: fairness of retail price; cord length; size of charger; ease of winding/storing cable; cost of charging; charging speed; ease of use; and reliability, all of which provide a comprehensive assessment of the owner experience and charger performance.

There is a 188-point gap in overall home charging satisfaction between EV owners who use a Level 1 charger (564) and those using a next-level Level 2 charger (752). Satisfaction improves the most year over year—11 points—among EV owners using a Level 2 portable charger, while Level 1 satisfaction declines 10 points from the 2021 study.

“Home charging is an important aspect of owning an EV and taking that to the next level by utilizing a Level 2 charger is key to optimizing the ownership experience,” said **Brent Gruber, senior director of global automotive at J.D. Power**. “When upgrading to Level 2 charging, some home electrical upgrades may be necessary. Making those changes will mean faster charging and result in a far more satisfactory EV ownership experience. With battery ranges increasing, it makes sense for many owners to make the upgrade if they haven’t already. All parties involved in the EV marketplace need to pay special attention to home charging since 84% of owners regularly charge at home.”

Following are key findings of the 2022 study:

- **Charging performance has notable effect on satisfaction:** The gap in satisfaction with charging speed is 361 points—a year-over-year increase of 9 points—going from a low of 326 for Level 1 portable chargers to a high of 687 for Level 2 permanently mounted chargers. This is exacerbated by the difference in speed of charging importance to overall satisfaction between Level 1 portable chargers (27%) and Level 2 permanently mounted chargers (15%).
- **Satisfaction with cost varies by location:** The regional gap in satisfaction with home charging costs among owners of Level 2 chargers is 162 points, ranging from a low of 632 in the New England region to a high of 794 in the Mountain region. The Pacific region has the second-lowest level of

¹ Electric vehicles (EV) include battery electric vehicles (BEV), plug-in hybrid electric vehicles (PHEV) and hybrid electric vehicles (HEV).

² J.D. Power defines charger segments as Level 1 portable; Level 2 portable; or Level 2 permanently mounted (permanent). Level 1 portable charging stations offer simple electric vehicle charging capabilities at home through a standard 120-volt electrical outlet. Level 2 portable charging stations offer faster charging capabilities at home through an upgraded 240-volt electrical outlet. Level 2 permanently mounted charging stations use an upgraded 240-volt electrical outlet via a permanently wall-mounted format.

satisfaction with cost (719), with California (689) having the lowest satisfaction score in the Pacific region.

- **Preconditioning can improve satisfaction:** Preconditioning a vehicle—warming or cooling it with the HVAC system while the vehicle is charging—is a new metric in the study this year. Satisfaction scores among owners of Level 2 permanently mounted chargers who say they always precondition their vehicle averages 794, while satisfaction among those who say they never precondition their vehicle averages 753. For owners of Level 2 portable chargers, overall satisfaction is 795 among those who say they always precondition their vehicle and is 745 among those who say they never precondition their vehicle.
- **Upgrading to Level 2 requires owners to take action:** Three-fourths (75%) of EV owners say at least one component upgrade was needed to complete the home installation of a Level 2 charger. The most common upgrades are wiring (55%); outlet (45%); and electrical panel (28%).
- **Many EV owners unaware of utility programs:** Only 40% of owners with Level 1 home charging and 52% of those with Level 2 charging know if any EV programs are offered by their local utility. Satisfaction is higher when EV owners utilize a program through their utility, such as charging during off hours at lower rates; financial incentives for a Level 2 installation; or itemized costs for EV usage. “We’re on the verge of EVs approaching mainstream owners who are price conscious,” Gruber said. “The industry needs to be sensitive to the incentives beyond the purchase of the vehicle—and making sure owners are aware of them.”

Study Ranking

The study examines the home-charging experience of EV owners across all three charger segments, but only Level 2 permanently mounted charging stations are award eligible.

Tesla ranks highest among Level 2 permanently mounted charging stations with a score of 797. **ClipperCreek** ranks second with a score of 758. The segment average is 752.

The U.S. Electric Vehicle Experience (EVX) Home Charging Study, now in its second year, is driven by a collaboration with PlugShare, the leading EV driver app maker and research firm. This study sets the standard for benchmarking satisfaction with the critical attributes that affect the total or overall EV ownership experience for both BEV and PHEV vehicles. Survey respondents for the study included 8,216 owners of 2016-2022 model year BEVs and PHEVs. The study was fielded in October-November 2021.

For more information about the U.S. Electric Vehicle Experience (EVX) Home Charging Study, visit <https://www.jdpower.com/business/automotive/electric-vehicle-experience-evx-home-charging-study>.

See the online press release at <http://www.jdpower.com/pr-id/2022014>.

About PlugShare

Based in El Segundo, Calif., **PlugShare** maintains the most comprehensive census of EV infrastructure in the world. They make the PlugShare app for iOS, Android and the Web, the most popular EV driver app globally, in use by most drivers in North America and over one million EV drivers worldwide. PlugShare also provides sophisticated data tools, reports, custom consulting and comprehensive research on EVs for automakers, utilities, charging networks, government and the rest of the EV industry. It operates the world’s largest EV driver survey research panel, PlugInsights, now with over 63,000 members.

About J.D. Power

J.D. Power is a global leader in consumer insights, advisory services and data and analytics. A pioneer in the use of big data, artificial intelligence (AI) and algorithmic modeling capabilities to understand consumer behavior, J.D. Power has been delivering incisive industry intelligence on customer interactions with brands and products for more than 50 years. The world's leading businesses across major industries rely on J.D. Power to guide their customer-facing strategies.

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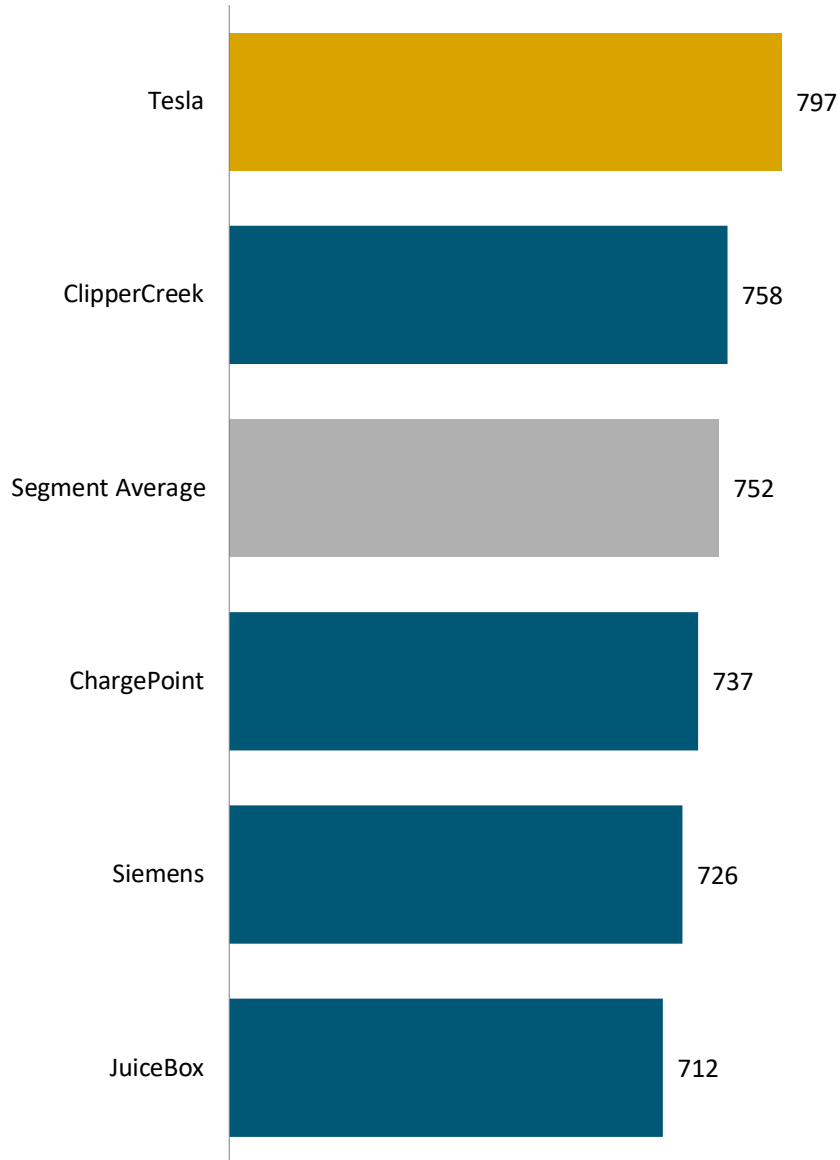
NOTE: One chart follows.

J.D. Power 2022 U.S. Electric Vehicle Experience (EVX) Home Charging StudySM

Overall Customer Satisfaction Index Ranking

(Based on a 1,000-point scale)

Level 2 Permanently Mounted Charging Station



Source: J.D. Power 2022 U.S. Electric Vehicle Experience (EVX) Home Charging StudySM

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