Public Charging Experience for Electric Vehicle Owners Can Get Much Better, J.D. Power Finds

TROY, Mich.: 18 Aug. 2021 — While most electric vehicle (EV) owners primarily charge their vehicles at home, public charging is a significant part of the EV ownership experience. Owners’ ability to recharge their vehicle’s battery is a key factor in the broader adoption of EVs, particularly among those who can’t install a private home charger or don’t have access to residential charging, such as city dwellers who reside in multiple-occupancy buildings. In the inaugural J.D. Power U.S. Electric Vehicle Experience (EVX) Public Charging Study, Tesla Destination ranks highest among Level 2 charge point operators with a score of 689 (on a 1,000-point scale) and Tesla Supercharger ranks highest among DC (direct current) fast chargers with a score of 733.

“Public charging infrastructure is a key component in the overall adoption of electric vehicles by the broad population,” said Brent Gruber, senior director of global automotive at J.D. Power. “Unfortunately, the availability of public charging is the least satisfying aspect of owning an EV. Owners are reasonably happy in situations where public charging is free, doesn’t require a wait and the location offers other things to do—but that represents a best-case scenario. The industry needs to make significant investment in public charging to assure a level of convenience and satisfaction that will lure potentially skeptical consumers to EVs.”

The study measures EV owners’ satisfaction with two types of public charge point operators: Level 2 charging stations and DC fast charger stations. Satisfaction is measured across 10 factors: ease of charging; speed of charging; cost of charging; ease of payment; ease of finding this location; convenience of this location; things to do while charging; how safe you feel at this location; availability of chargers; and cleanliness of this location.

Following are key findings of the 2021 study:

- **Most owners satisfied with ease of public charging:** Satisfaction with the ease of using a DC fast charger is 737 among battery electric vehicle (BEV) and plug-in hybrid electric vehicle (PHEV) owners, while satisfaction with the ease of charging at a Level 2 charging station is only 21 points lower (716) despite Level 2 charging being much slower than DC fast charging. This indicates that current EV owners understand how both types of chargers work, so the systems don’t prompt issues.

- **Charging costs are a large issue for many EV owners:** Though their satisfaction with the cost of charging trails their overall satisfaction by a large margin, satisfaction is much higher among BEV owners with access to free public charging. Greater satisfaction with charging costs filters through many other aspects of the experience. Public charging satisfaction among owners utilizing free DC fast charging is 706, yet when owners must pay for their fast-charging session, satisfaction declines to 673. The impact of cost on Level 2 charging is more pronounced, as satisfaction with free charging is 668 but declines to 586 when payment is required. Free charging, either offered through manufacturer incentives or as a result of a charge point operator’s business model, presents a significant advantage in the public charging experience.

- **Owner satisfaction with availability of public charging stations mixed:** With an average score of 668, the overall availability of public charging stations promotes relative satisfaction among current
BEV and PHEV owners who use such stations. However, satisfaction with DC fast charger availability is 720 while Level 2 charging station availability drops to 645. The level of satisfaction with the availability of public charging varies by geographic region. The West North Central and East North Central regions are above average in charger availability, while the West South Central and Mid Atlantic regions are below average. The Mountain and Pacific regions are the lowest performing regions for charger availability.

- **Looking for a charge but left empty**: The two most-often-cited problems BEV and PHEV owners have when visiting a charging station and being unable to power up are the charger was out of service (58%) and no charger available/too long to wait (14%).

“Building a better infrastructure starts with more collaboration among automakers, charge point operators, site locations, utilities and government at all levels,” Gruber said. “Each type of charger has its place in the EV public charging eco-system— whether its Level 2 for local drives or fast charging while on road trips. One thing is clear: the more chargers that can be deployed, the better.”

**Study Rankings**

**Tesla Destination** ranks highest among Level 2 charging stations with a score of 689. **Volta** (674) ranks second and **ChargePoint** (660) ranks third.

**Tesla Supercharger** ranks highest among DC fast chargers with a score of 733.

The 2021 U.S. Electric Vehicle Experience (EVX) Public Charging Study is driven by a collaboration with PlugShare, the leading EV driver app maker and research firm. The study examines consumer attitudes, behaviors and satisfaction, setting the standard for benchmarking the overall experience of public EV charging. Survey respondents for the inaugural study included 6,647 owners of battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). The study was fielded from January through June 2021. Drivers who visited the charging location but didn't charge their vehicle were asked why they decided not to charge.


See the online press release at [http://www.jdpower.com/pr-id/2021029](http://www.jdpower.com/pr-id/2021029).

**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.
J.D. Power has offices in North America, Europe and Asia Pacific. To learn more about the company’s business offerings, visit JDPower.com/business. The J.D. Power auto shopping tool can be found at JDPower.com.

Media Relations Contacts:
Geno Effler, J.D. Power; West Coast; 714-621-6224; media.relations@jdpa.com
Shane Smith; East Coast; 424-903-3665; ssmith@pacificcommunicationsgroup.com


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NOTE: Two charts follow.
Overall Customer Satisfaction Index Ranking
(Based on a 1,000-point scale)

Level 2 Charging Station

<table>
<thead>
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<th>Service</th>
<th>Index Ranking</th>
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<tbody>
<tr>
<td>Tesla Destination</td>
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<tr>
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<td>Blink</td>
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Source: J.D. Power 2021 U.S. Electric Vehicle Experience (EVX) Public Charging Study℠

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J.D. Power
2021 U.S. Electric Vehicle Experience (EVX)
Public Charging Study℠

Overall Customer Satisfaction Index Ranking
(Based on a 1,000-point scale)

DC Fast Charger

<table>
<thead>
<tr>
<th>Service Provider</th>
<th>Index Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tesla Supercharger</td>
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<tr>
<td>Segment Average</td>
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<td>EVgo</td>
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</table>

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