

**Vehicle Owners Who Switched to EVs from HEVs or ICE Vehicles Experience Decreased Cost of Ownership, J.D. Power Finds**

**TOKYO: 13 Dec. 2024** — More than 70% of vehicle owners in Japan who switched from gasoline- or diesel-fueled internal combustion engine (ICE) vehicles or hybrid electric vehicles (HEVs) to electric vehicles (EVs) indicate that the cost of ownership—including charging, servicing and repairs—for their current vehicle is much less or slightly less expensive than their cost of ownership with an ICE vehicle or HEV previously owned, according to the inaugural J.D. Power Japan Electric Vehicle Experience (EVX) Ownership Study,<sup>SM</sup> released today.

This study focuses on ownership and provides a comprehensive assessment of customer satisfaction and owners' experiences with EVs and plug-in hybrid electric vehicles (PHEVs) registered between January 2021 and March 2024. Data for PHEVs were collected solely for informational purposes.

"EV repurchase intention increases when owners experience economic benefits of their EVs after purchase," said **Taku Kimoto, senior managing officer of research at J.D. Power**. "Among those who experienced a decrease in cost of ownership, 88% of mini-car EV owners and 87% of registered car EV owners say they 'definitely will' or 'probably will' consider another EV. This indicates that lower cost of EV ownership provides a compelling incentive for repurchasing EVs, highlighting the cost efficiency of EVs compared to ICE vehicles and HEVs as an effective way to promote EV adoption."

Following are some of the key findings of the 2024 study:

- **Lifestyle and vehicle usage differences:** The study reveals significant differences in lifestyle and vehicle usage between mini-car EV owners and registered car EV owners. Among mini-car EV owners, 91% live in single-family homes and 65% own more than one vehicle. In contrast, these percentages drop to 80% and 54%, respectively, among registered car EV owners. In terms of vehicle usage, mini-car EV owners utilize their vehicle more frequently for commuting and personal or family use, such as shopping and running errands, than for driving for fun (19%) or road trips (13%). Conversely, registered car EV owners tend to use their vehicle more often for driving for fun (42%) and road trips (56%), in addition to everyday transportation.
- **Charging vehicles outside the home:** The study shows that just 9% of mini-car EV owners primarily charge their vehicle outside the home, while 27% of registered car EV owners do the same. The majority of mini-car EV owners charge their vehicle at home likely due to their single-family home situations and the smaller battery capacities of mini-car EVs. However, it is unexpected that nearly 30% of registered car EV owners primarily charge their vehicle outside the home, given that these EVs have larger battery capacities and require longer charging times. It is presumed that these owners utilize fast-charging networks, such as CHAdeMO and Supercharger, or charging stations in parking lots or commercial facilities. This suggests that residents of housing complexes without home charging capabilities can still own EVs if an adequate charging infrastructure exists in their neighborhoods.
- **Almost 20% of registered car EVs are replacements for previous EVs:** Among registered car EV owners, 81% replaced a previous vehicle, with 18% of those being replacements for another EV. Despite the Nissan Leaf's launch in Japan more than a dozen years ago, passenger EVs still

comprise less than 2% of the new-vehicle sales market.<sup>1</sup> If the 18% of replaced EVs were owned by existing EV owners, it would indicate that the current EV market is supported by a small group of enthusiastic EV owners. To expand the EV market, it is essential to attract more vehicle owners who switch from ICE vehicles or HEVs, and would also require finding ways to attract new EV customers.

- **More EV owners indicate battery range has deteriorated over time:** The study finds that 15% of mini-car EV owners say the battery range has worsened over time, while 19% of registered car EV owners say the same. Among registered car EV owners, 10% who have owned their vehicle for 12 months or less say the battery has deteriorated, compared with 17% of those owning their vehicle for 13 to 24 months, and 32% of those with 25 months or more of ownership. This indicates a correlation between the length of ownership and perceived battery deterioration. Although recent EVs benefit from improved battery performance due to advanced cooling systems, many owners still say their battery is deteriorating over time. This perception negatively affects satisfaction. Among registered car EV owners who indicated the battery range of their vehicle has worsened battery range satisfaction score is 593, 45 points lower, than owners who indicated battery range stayed the same. This presenting a challenge distinct from ICE vehicles and HEVs. Manufacturers need to continuously address performance degradation.

The inaugural Japan Electric Vehicle Experience (EVX) Ownership Study is based on responses from 3,379 owners of passenger EVs and plug-in hybrid electric vehicles (PHEVs) registered between January 2021 and March 2024. This study focuses on ownership and provides a comprehensive assessment of customer satisfaction and owners' experiences with EVs and PHEVs. The study was fielded in July-August 2024. Data for PHEVs were collected solely for informational purposes.

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<sup>1</sup> EVs accounted for 1.7% of new registered passenger vehicle sales between January and December 2023. (Source: Japan Automobile Dealers Association)

### **About J.D. Power**

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