

## New Energy Vehicle Quality Problems Increase Since 2023, J.D. Power Finds

Geely Panda mini; Geometry A Pro; Aion V Plus and BYD Yuan Plus (in a tie); NIO ET5/ET5T; Audi Q4 e-tron; ZEEKR 001; NIO ES8; BYD Seal PHEV; and WEY Lanshan DHT PHEV Rank Highest in Respective Segments

**SHANGHAI: 6 June 2024** – The overall average quality of new energy vehicles (NEVs) this year is 210 problems per 100 vehicles (PP100), a significant increase of 37 PP100 from 2023, according to the J.D. Power 2024 China New Energy Vehicle Initial Quality Study<sup>SM</sup> (NEV-IQS), released today. A lower number of problems indicates higher quality.

The study, first published in 2019, is based on the annual J.D. Power U.S. Initial Quality Study<sup>SM</sup> (IQS). The NEV-IQS measures new-vehicle quality by examining problems experienced by NEV owners in China within the first two to six months of ownership.

The study this year shows that the number of design-related problems has risen 35 PP100 from 2023, becoming the primary factor for the increase in overall quality problems. Vehicles manufactured by domestic startups have the fewest quality problems with 201 PP100, up 31 PP100 from 2023. International brands have the highest number of quality problems at 218 PP100, a substantial increase of 54 PP100 from 2023.

"The competition in the NEV market is intensifying, with automakers constantly launching new models to capture market share," said **Elvis Yang, general manager of auto product practice at J.D. Power China**. "This has led to significant challenges in quality management as development cycles shorten. This year's study shows that design-related problems significantly outnumber defects. Automakers must prioritize user experience and perceived quality during R&D and focus on thoroughly validating high-tech features to enhance the user experience."

Following are some key findings of the 2024 study:

- **Quality of range-extended vehicles is exceptional, leading the industry:** In 2024, the quality of range-extended vehicles is leading, with a quality score 8 PP100 lower than the overall average. Additionally, range-extended vehicles excel in powertrain performance and intelligent features.
- **Problems with driving assistance and infotainment systems increase significantly:** In 2024, the quality problems for driving assistance and infotainment systems increased 7.2 PP100 and 6.9 PP100, respectively, and are the two largest increases among 10 categories. Driving assistance problems mainly focus on backup cameras, including poor image clarity, dirty lenses and loud radar alerts. Infotainment problems are varied, including inaccurate voice recognition, unresponsive touchscreens and inaccurate navigation.
- **Interior smell and road noise remain top quality problems but improve significantly:** Unpleasant interior smell (7.2 PP100) and road noise (5.7 PP100) are the top two quality problems—and have been for six consecutive years. However, compared with 2023, the number of problems in these two areas have decreased 2.2 PP100 and 1.8 PP100, respectively.
- **Quality problems experienced by younger owners have increased:** While NEV design satisfaction among young vehicle owners (born after 1995) has improved year over year (+26 points), their satisfaction with quality has decreased (+47 PP100). Among the top 10 problem categories,

problems experienced in the driving experience category exceed the average. Among the top 20 problems, six are for driving experience, including steering control, tire grip, suspension and pedal noise.

## Highest-Ranked NEV Models

Models that rank highest in their respective segment are:

- Small BEV Car segment: **Geely Panda mini**
- Compact BEV Car segment: **Geometry A Pro**
- Compact BEV SUV segment: **Aion V Plus** and **BYD Yuan Plus**, in a tie
- Midsize BEV Car segment: **NIO ET5/ET5T**
- Midsize BEV SUV segment: **Audi Q4 e-tron**
- Large BEV segment: **ZEEKR 001**
- Premium BEV segment: **NIO ES8**
- Mass Market PHEV Car segment: **BYD Seal PHEV**
- Mass Market PHEV SUV segment: **WEY Lanshan DHT PHEV**

Award criteria in the Small BEV SUV, Premium PHEV, Mass Market PHEV MPV and Mass Market BEV MPV segments were not met, therefore no awards are given this year in those segments.

The China New Energy Vehicle Initial Quality Study (NEV-IQS) measures new-vehicle quality by examining problems experienced by NEV owners in two segments: design-related problems and defects/malfunctions. Specific diagnostic questions include 236 problem symptoms across 10 categories: features/ controls/ displays; exterior; interior; infotainment system; seats; driving experience; driving assistance; powertrain; battery/ charging; and climate.

The study this year is based on responses from 9,791 vehicle owners who purchased their vehicle between July 2023 and January 2024. The study includes 105 models from 48 different brands, among which 74 models have sufficient samples. The study was fielded from December 2023 through March 2024 in 81 cities across China.

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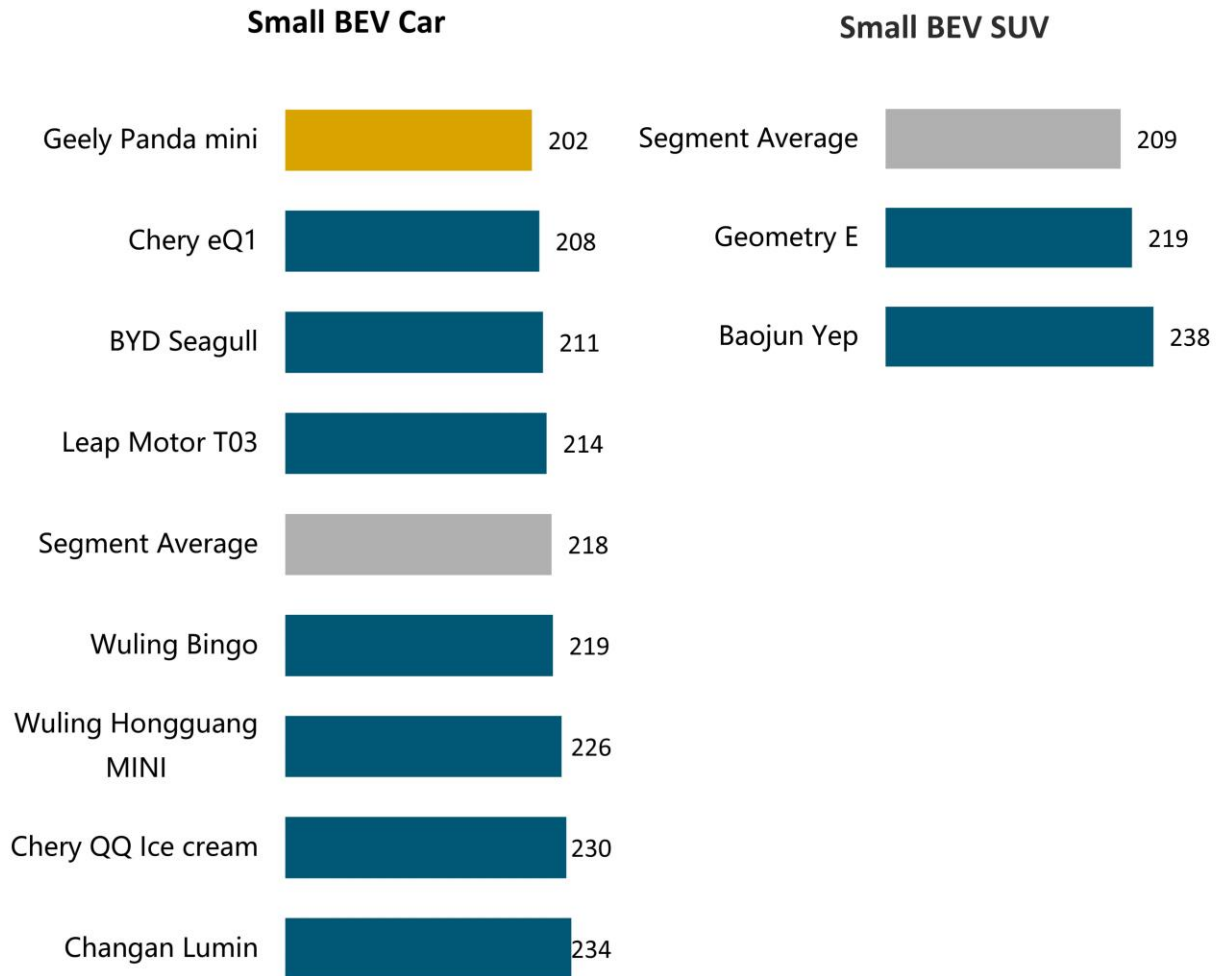
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NOTE: Six charts follow.

# J.D. Power 2024 China New Energy Vehicle Initial Quality Study<sup>SM</sup> (NEV-IQS)

## Model Ranking per Segment *Problem per 100 Vehicles (PP100)*



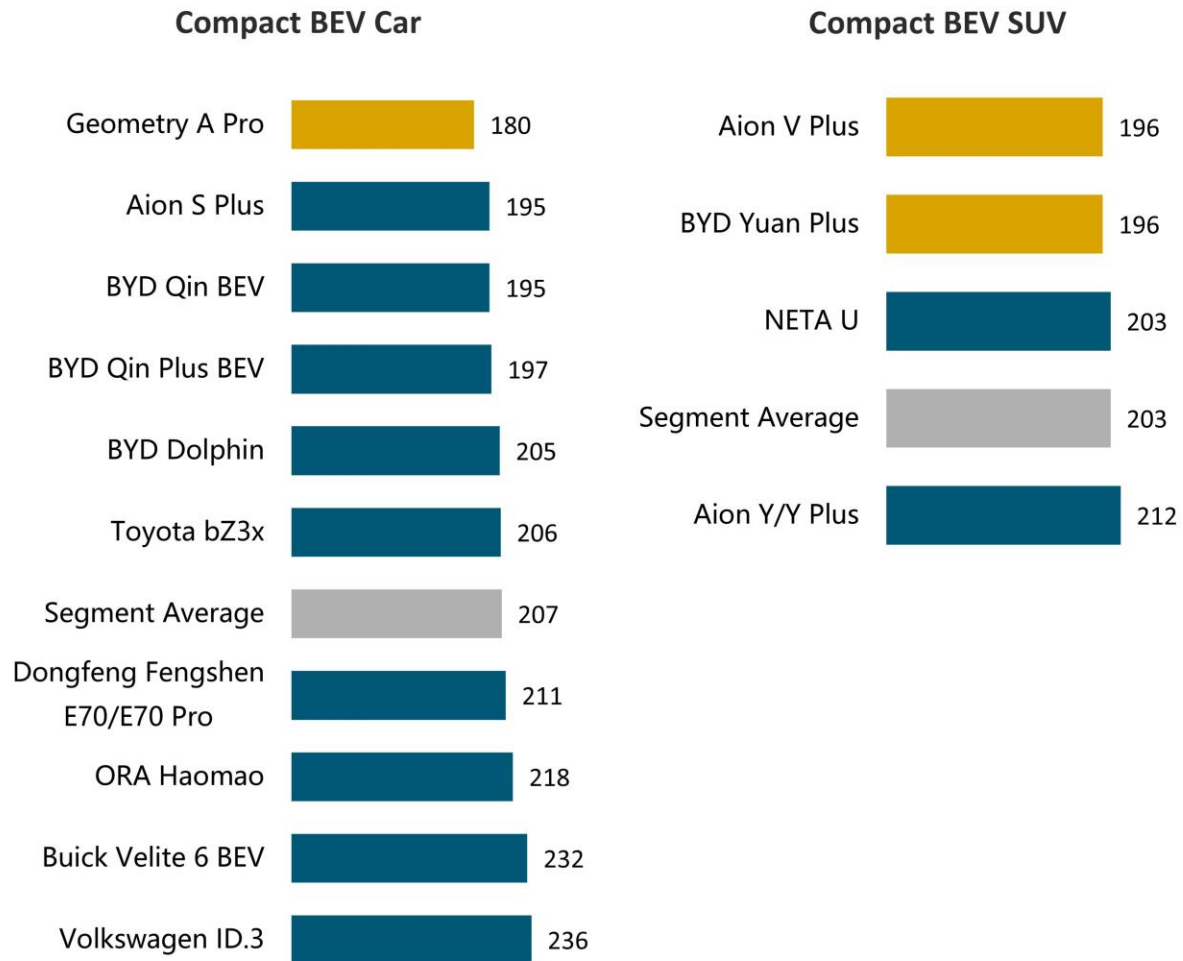
Scores are not shown for small sample (n=30~99) models. (Small BEV SUV: BYD Yuan Pro, Nammi EX1, NETA AYA)  
 Criteria for segment awards: Four models must meet the required sample threshold (at least 100 samples) for inclusion in segment ranking or three models must meet the required sample threshold (at least 100 samples) to be included in segment ranking and the sales volume of these related three models must achieve at least 80% of total market share within that segment during the sampling period. At least one model located within a segment and getting a sufficient sample size must perform better than its segment average. Small BEV SUV segment above does not meet the foregoing criteria for segment awards; ranking and scores are only released for reference.

Source: J.D. Power 2024 China New Energy Vehicle Initial Quality Study<sup>SM</sup> (NEV-IQS)

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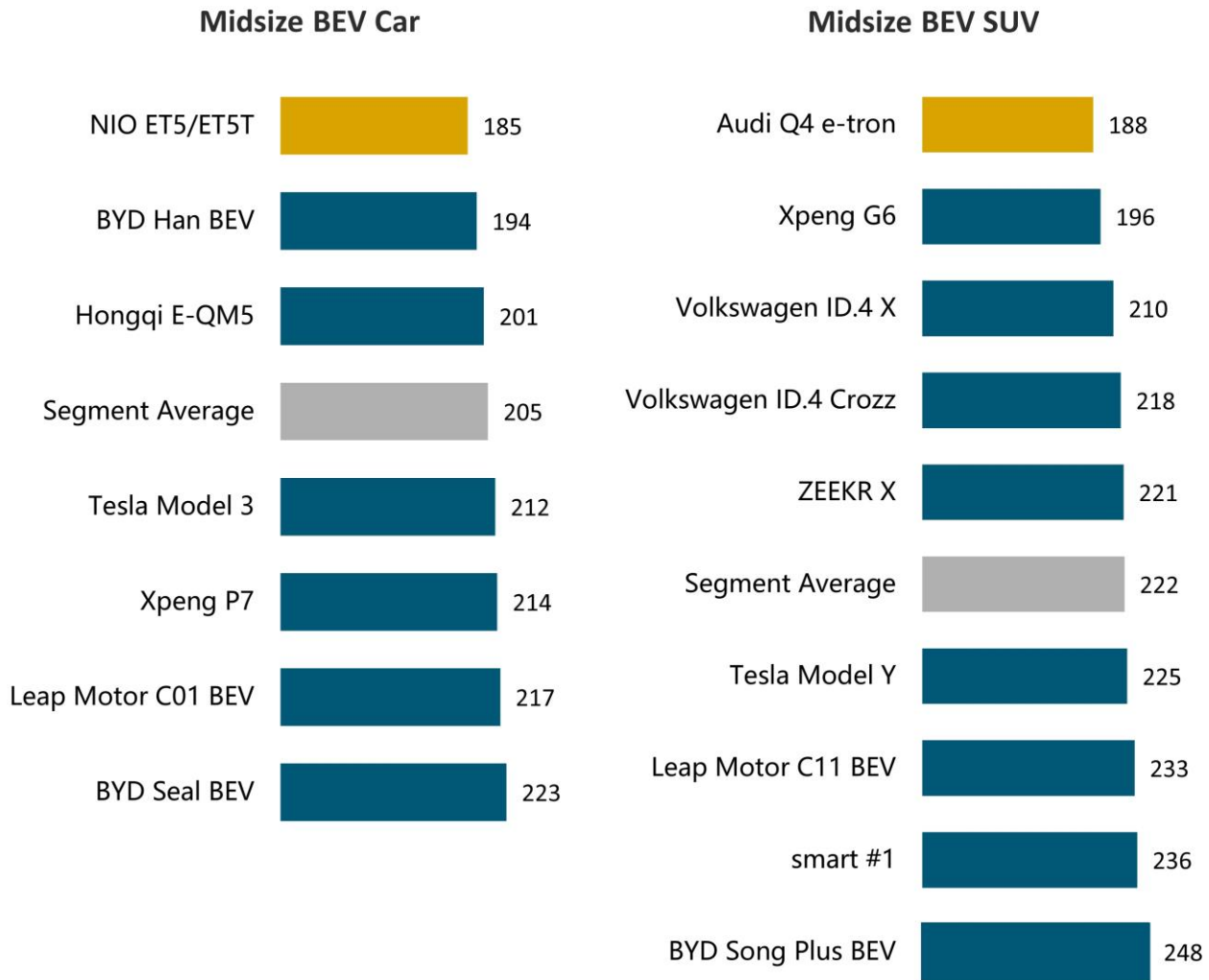
Scores are not shown for small sample (n=30~99) models. (Compact BEV Car: BAIC BJEV EU5 Plus, Baojun Yunduo, BYD e2, DEEPAL SL03 BEV, Geely Emgrand BEV, MG 4 EV, Venucia D60/D60 Plus BEV, Xpeng P5)

Source: J.D. Power 2024 China New Energy Vehicle Initial Quality Study<sup>SM</sup> (NEV-IQS)

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Scores are not shown for small sample (n=30~99) models. (Midsize BEV Car: Roewe ei6 MAX BEV. Midsize BEV SUV: Buick E5, Mercedes-Benz EQA, Mercedes-Benz EQB, smart #3)

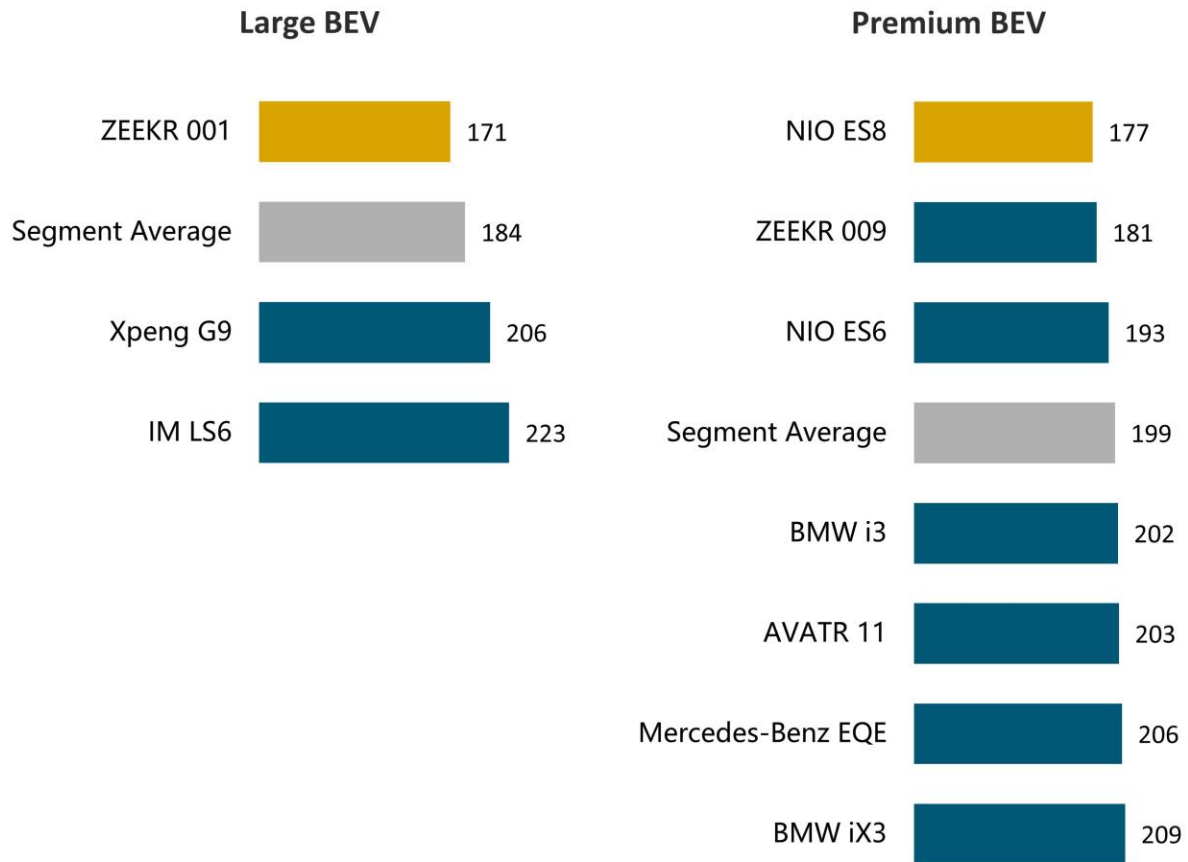
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## Model Ranking per Segment

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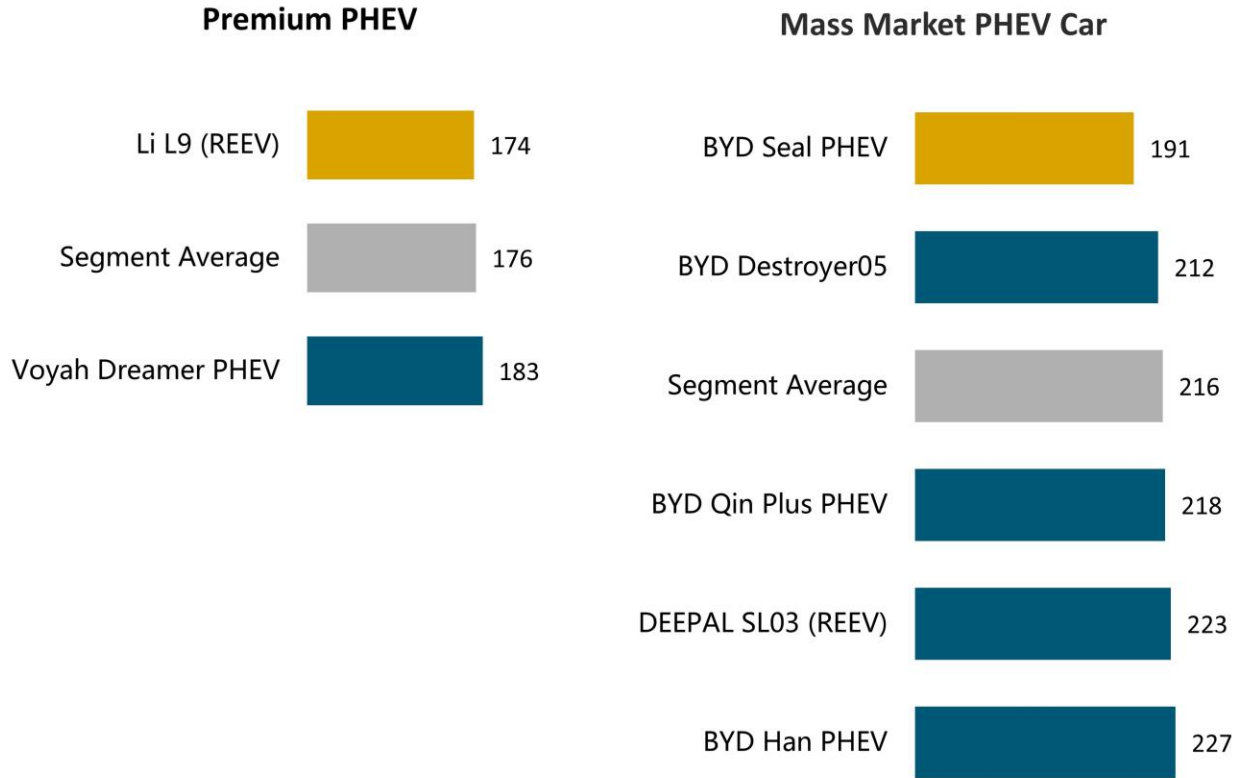
Scores are not shown for small sample (n=30~99) models. (Large BEV: HiPhi Y, IM LS7. Premium BEV: Lexus RZ, NIO EC6)  
J.D. Power defines a model as Premium if the average MSRP exceeds 400,000 RMB.

Source: J.D. Power 2024 China New Energy Vehicle Initial Quality Study<sup>SM</sup> (NEV-IQS)

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## Model Ranking per Segment *Problem per 100 Vehicles (PP100)*



Scores are not shown for small sample (n=30~99) models. (Premium PHEV: BMW 5 Series PHEV, Mercedes-Benz C-Class PHEV, Mercedes-Benz E-Class PHEV, Volvo XC60 PHEV. Mass Market PHEV Car: Changan UNI-V iDD, Galaxy L6 PHEV, NETA S)  
J.D. Power defines a model as Premium if the average MSRP exceeds 400,000 RMB.  
Premium PHEV segment above does not meet the foregoing criteria for segment awards, thus there is no award for this segment; ranking and scores are only released for reference.

Source: J.D. Power 2024 China New Energy Vehicle Initial Quality Study<sup>SM</sup> (NEV-IQS)

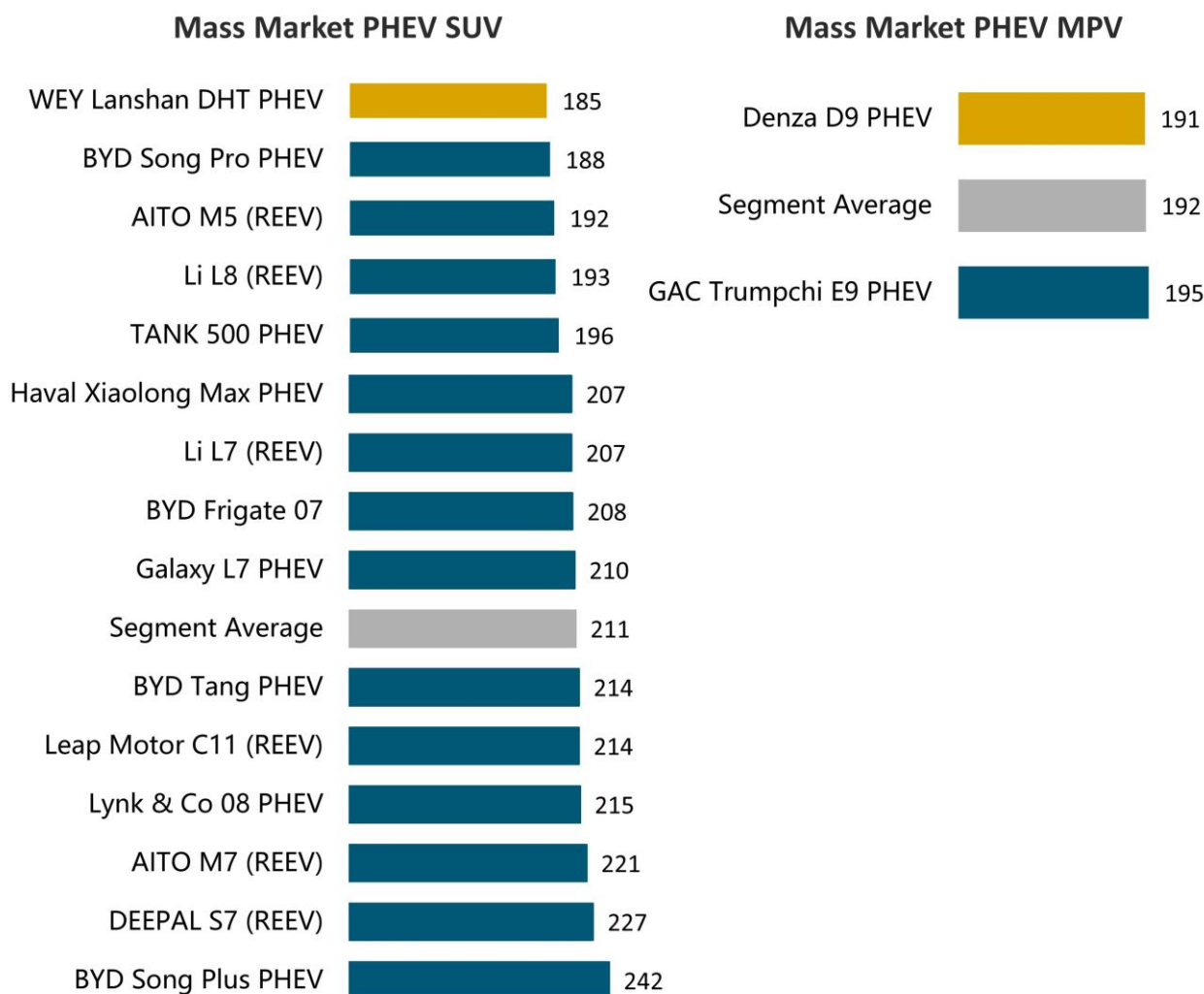
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## Model Ranking per Segment

Problem per 100 Vehicles (PP100)



Scores are not shown for small sample (n=30~99) models. (Mass Market PHEV SUV: Haval Menglong PHEV, Oshan Z6 PHEV, Voyah Free. Mass Market BEV MPV: FAW Besturn NAT)  
Mass Market PHEV MPV segment above does not meet the foregoing criteria for segment awards, thus there is no award for this segment; ranking and scores are only released for reference.

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