



Automotive Industry Weekly Digest

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[Technology Highlights] JD Power's 2021 Initial Quality Study shows infotainment systems remain most problematic features in vehicles

IHS Markit perspective

Implications	JD Power's 2021 Initial Quality Study (IQS) results continue previous themes, including the significance of infotainment system problems and that there are more problems per 100 vehicles (PP100) with models from luxury brands than from mainstream brands. JD Power's 2021 IQS shows an industry average score for PP100 of 162, lower than in 2020. The Ram brand has taken top position in the rankings, while the Chrysler brand has fallen to last place.
Outlook	The rankings in the IQS remain subjective, and vehicle owners' differentiation between "things broken" and "things gone wrong" is somewhat blurred. One of the benefits of the study is that, as an annual survey, it captures owners' responses over time and is useful in assessing trends in scores. JD Power says that the most problematic category remains infotainment systems and the top problem is smartphone connectivity.

JD Power has released the results of its 2021 Initial Quality Study (IQS), which continue themes from previous years, including significant problems with infotainment systems and that owners report more problems per 100 (PP100) vehicles with models from luxury brands than from mainstream brands

JD Power 2021 IQS results by brand

Brand	2021 Score	2020 Score	(Better) / Worse
Ram	128	141	(13)
Dodge	139	136	3
Lexus	144	159	(15)
Mitsubishi	144	148	(4)
Nissan	146	161	(15)
Kia	147	136	11
Genesis	148	142	6
Hyundai	149	153	(4)
Jeep	149	155	(6)
Chevrolet	151	141	10
MINI	151	174	(23)
Buick	156	150	6
Toyota	157	177	(20)
Ford	162	174	(12)
GMC	163	151	12
Lincoln	163	182	(19)
Porsche	163	186	(23)

**JD Power 2021 IQS results by brand**

Brand	2021 Score	2020 Score	(Better) / Worse
Honda	164	177	(13)
Jaguar	165	190	(25)
BMW	166	176	(10)
Infiniti	170	173	(3)
Cadillac	173	162	11
Mazda	177	184	(7)
Subaru	182	187	(5)
Mercedes-Benz	193	202	(9)
Acura	200	185	15
Land Rover	200	228	(28)
Volvo	210	210	0
Volkswagen	213	152	61
Audi	240	225	15
Chrysler	251	189	62
Industry average	162	166	(4)

Source: JD Power© 2021 IHS Markit

JD Power's annual US new-vehicle IQS shows the results of its survey of problems reported by US owners of 2021 model-year vehicles in the first 90 days of ownership. In 2020, JD Power redesigned the study, and in 2021, it has made no further changes. The study's results are based on new-vehicle owners' responses to 223 questions in nine categories: infotainment system; features, controls and displays; exterior; driving-assistance systems; interior; powertrain; seats; driving experience; and climate. In 2020, the newly redesigned survey saw the number of PP100 vehicles increase sharply because of the additional questions. In 2021, the results show a decline in PP100 vehicles. The report identifies key trends that have continued in 2021 and have been ongoing for several years regardless of the 2020 survey changes. In 2021, the industry average PP100 score dropped to 162, compared with 166 in 2020 and 93 in 2019. The 2021 survey was carried out over four months, from February to July; in previous years, the survey was completed during the February to May timeframe. The 2021 survey includes responses from more than 110,800 people who bought or leased a 2021 model-year vehicle. These respondents were surveyed "early in the ownership period" or after 90 days of ownership, according to JD Power.

In a statement announcing the results of the 2021 IQS, JD Power's vice-president of global automotive quality, Dave Sargent, said on the smartphone connectivity issue, "Owners are caught in the middle when vehicle and phone technologies don't properly connect. This year, there are many examples of smartphone technology not working as intended in new vehicles. With more vehicles being fitted with the wireless technology owners want, the study reveals an increase in connectivity problems between smartphones and vehicles, leaving many owners unhappy." As with the 2020 IQS, the 2021 survey enabled Tesla to be profiled, although the electric vehicle manufacturer is not officially ranked in the IQS as it does not meet the study's ranking criteria. In the 2021 IQS, Tesla has a PP100 score of 231, compared with 250 in 2020; however, JD Power was able to survey Tesla



owners in only 35 US states. If Tesla were included in the rankings, it would be third from the bottom with a PP100 score of 231, better than in 2020 when it was below the lowest-scoring brand in the rankings.



JD Power states that, for the first time since 2011, voice-recognition system issues were not the top problem cited by new-vehicle owners, replaced by smartphone connection issues, specifically Apple CarPlay and Android Auto connectivity as automakers increase wireless connectivity. Sargent said, "Owners want wireless connectivity, and the industry has responded. However, this has created a bigger technical challenge for both automakers and tech companies. Automakers generally are the ones facing the wrath of owners, but this is definitely a shared problem. Owners don't care who's at fault—they just want their phone and their vehicle to talk to each other." Infotainment systems remain the category with most reported problems, with 25% of all problems relating to infotainment systems and six of the top 10 problems across the industry infotainment system-related.

In the 2021 IQS, Ram, Dodge, and Lexus are at the top of the scoreboard, a particularly significant win for Ram as Stellantis (formerly Fiat Chrysler Automobiles) has witnessed a difficult performance in these surveys in the past. This is the first time that Ram has taken the top position, and it bumped Dodge to number two from first place in the 2020 survey. In its report on the 2021 results, JD Power does not make its traditional comparison between US brands and imports. However, only two luxury vehicle brands have achieved PP100 scores above the industry average (Lexus and Genesis), while 12 non-luxury vehicle brands have achieved above-average rankings in 2021 (Ram, Dodge, Mitsubishi, Nissan, Kia, Hyundai, Jeep, Chevrolet, MINI, Buick, Toyota, and Ford). Most premium-vehicle brands continue to see below-average rankings, as mass-market brands positions in the rankings have improved relative to premium vehicle brands over the past decade. JD Power says, "For the past six years, owners of mass market vehicles have cited fewer problems, on average, than owners of premium vehicles. Premium brands generally equip their vehicles with more and more complex technology, which can cause problems for some owners."

In 2021, Hyundai Motor Group has taken the highest number of awards for models once again (a total of seven for the Genesis G80, Hyundai Accent, Kia Forte, Kia Sedona, Kia Soul, Kia Sportage, and Kia Telluride). Toyota follows with five model awards: Lexus RC, Lexus RX, Lexus UX, Toyota Sequoia, and Toyota Tundra. In third place is BMW AG with four model awards: BMW 2 Series, BMW X4, BMW X6, and BMW X7. Nissan Motor has gained three model awards: Nissan Altima, Nissan Maxima, and Nissan Murano. General Motors (Cadillac CT5 and Chevrolet Corvette) and Stellantis (Jeep Gladiator and Ram 2500/3500) each has two model awards in 2021. This year, the best-scoring model of all is the Nissan Maxima, with a PP100 score of 85; in 2020, the best-scoring vehicle was the Chevrolet Sonic with a PP100 score of 102. In 2021, the lowest-scoring brand is Chrysler at 251 PP100, although parent Stellantis's score has been improving overall. In 2021, Stellantis brands Ram, Dodge, and Jeep all are above average, although Alfa Romeo and Chrysler remain below average and Fiat is not ranked. According to an Automotive News report, JD Power's Sargent said of Stellantis's performance, "What it boils down to is just a lot of hard work on the part of the Stellantis team throughout the organization to improve their quality." Sargent added, "Maybe 10 years ago, it wasn't the best. Five years ago, it was getting competitive, and now they're one of the best in the industry, particularly on the Ram side. Pickup trucks are not easy to build, [and]



the Ram is loaded with content and lots of variations. They have a pretty tough life, with demanding customers. To be No. 1, when all you do is build pickups, is really pretty impressive.”

Outlook and implications

The rankings in the IQS remain subjective, and vehicle owners’ differentiation between "things broken" and "things gone wrong" is somewhat blurred. One of the benefits of the study is that, as an annual survey, it captures owners’ responses over time and is useful in assessing trends in scores. JD Power says that the most problematic category remains infotainment systems and the top problem is smartphone connectivity.

JD Power has been carrying out the IQS for more than 30 years (the 2021 version is the 35th year) and the survey has evolved with the changing characteristics of vehicles. JD Power is currently using the fifth generation of the survey, which was introduced with the 2020 results. IHS Markit has cautioned that the scores may be somewhat misleading relative to an objective assessment of performances, as they are based on issues reported by new-vehicle owners; however, the study reflects a consumer perspective of new-vehicle quality over time. Looking at one year’s results provides only a snapshot; looking at changes in PP100 scores on the same issues over time may give an indication of industry trends and whether products are improving to meet consumers’ expectations.

In IHS Markit’s view, the survey captures the perceived quality of vehicles more than actual quality or long-term reliability; however, JD Power also carries out a separate survey covering vehicle reliability. The IQS captures consumer-reported issues that are design-based and issues with systems that consumers do not like or may be unfamiliar with, as well as mechanical failures or parts that have broken. The expanded annual IQS survey will provide insight over time on the development of advanced driver-assistance features. However, automakers are rapidly addressing both reported design flaws and defects in their models, which is reflected in the improvements in the area of infotainment systems.

[Technology Highlights] VinFast teams up with Israel’s StoreDot for fast charging technology

Vietnamese automaker VinFast has teamed up with Israel’s electric vehicle (EV) battery startup StoreDot, which is known for its extreme fast charging (XFC) technology that enables the battery to charge to 80% in only 4–5 minutes, reports Associated Press. According to the report, the information was divulged by Thuy Le, vice-chairperson of Vingroup (the parent of VinFast), who spoke to the media about the automaker’s global strategy on EVs. “Thuy Le revealed that VinFast is teaming up with a number of leading companies in battery research and manufacture from the US, Israel, Taiwan to ensure that VinFast’s EV models will be equipped with cutting-edge batteries,” said the report, adding that the partnership with StoreDot means that VinFast may become one of the few EV companies with the most advanced battery technology that has never been acquired by any other EV makers in the world, not even Tesla. The report further stated that the company is carrying out research and development (R&D) activities on its own in addition to seeking external resources. Vingroup has already set up a dedicated arm – VinES Energy Solutions – to focus on battery development activities as it prepares to secure self-sufficiency in the EV battery supply chain. “As regards production, Vingroup’s vice chairwoman said VinFast has plans to establish battery production facilities in Europe and the US, as well as their factory in Vietnam. This will be an important part of VinFast’s journey to become a global smart EV company and efforts to accelerate the trend of green transportation in the world,” it added.



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Outlook and implications

VinFast has also partnered with several other companies in the past in developed markets such as the United States, mainland China, Israel, and Taiwan for projects entailing R&D and advanced applications of EV battery technologies. Recently, VinFast and mainland China's EV battery cell supplier Gotion High-Tech signed a memorandum of understanding (MOU) to co-operate in the research and production of lithium iron phosphate (LFP) battery cells for the automaker. These developments are in line with VinFast's aim to become a global leading EV corporation. It recently announced that it had been developing and preparing to start mass production of three smart EVs – the VF e34 mid-size sport utility vehicle (SUV; C-segment SUV), the VF e35 mid-size SUV (D-segment SUV), and the VF e36 full-size SUV (E-segment SUV) – adding that two of the models would be sold in the US, Canadian, and European markets from 2022. The automaker has already started accepting bookings for the VF e34 in Vietnam. VinFast also plans to launch three more EVs – the VF e32, VF e33, and VF e34P, corresponding to the A, B, and C segments – from 2023.



[EV Highlights] Baojun launches Kiwi EV in China

Baojun has launched the Kiwi electric vehicle (EV) in China. According to a company statement, the model will be available in two variants and six exterior colours, at prices between CNY69,800 (USD10,800) and CNY78,800. The four-seater vehicle is 2,894 mm long, 1,655 mm wide, and 1,595 mm high, and has a 2,020-mm wheelbase. The Kiwi EV has a range of 305 kilometres and generates a maximum power of 40 kW and a peak torque of 150 Nm.



Outlook and implications

The newly launched Kiwi EV is a different trim level of the Baojun E300 Plus EV, which was introduced last year. It is an A-segment car based on the GSEV platform and is to be produced at the Qingdao plant in China. As with the E300 and the E300 Plus, the Kiwi EV will compete with models such as the BYD e1, BAIC BJEV EC series, and Baojun E200 in the Chinese market. The E300 EV family is expected to replace the E100 and E200 gradually to become Baojun's main offering in the mini-EV segment, as it represents a major upgrade over the E100 and E200, with an expressive design, more interior space, and an extended driving range.

[EV Highlights] Xiaomi registers EV business

Chinese tech giant Xiaomi has completed the official registration of its electric vehicle (EV) business. According to Reuters, the new unit, called Xiaomi EV Inc., has registered capital of CNY10 billion (USD1.55 billion) and already has a staff of around 300.



Outlook and implications

The latest development is in line with the announcement in March, when Xiaomi first revealed plans to set up a smart EV business subsidiary. The company said that it plans to invest CNY10 billion in the initial phase of the development and plans a total investment of USD10 billion over the next 10 years to support its EV business. The company hopes to launch its first EV equipped with Level 3 autonomous technology in three years; its upcoming models are likely to be built by a partner engaged in contracting manufacturing and are likely to be positioned in



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the entry and standard price segment to appeal to first-time EV buyers. According to reports last month, Xiaomi is looking to set up its auto business headquarters in Beijing. Over the last few months, the company has been reported to be in talks with Beijing, Shanghai, Wuhan, Hefei, and Xi'an over where to locate its auto project. Xiaomi is not the only tech company that wants to venture in the EV business. Another tech giant, Baidu also announced its plans, earlier this year, to establish a company in partnership with Geely that will manufacture smart EVs.

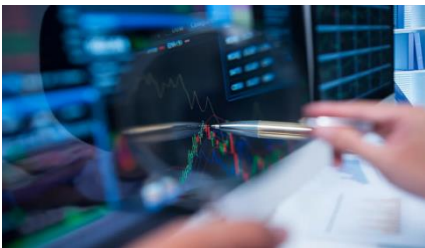


[Sales Highlights]GAC, Great Wall, BAIC report substantial increases in profit during H1

IHS Markit perspective

Implications	These automakers' significant increase in revenues and profits during the first half can be attributed to a low base of comparison. Chinese automakers' financials were hit hard during the same period last year – especially the first quarter – because of the COVID-19 virus pandemic, which severely affected sales and production and forced automakers to suspend operations, resulting in a lower base of comparison.
Outlook	In order to boost sales, BAIC, GWM and Great Wall have been focusing on the introduction of NEVs and models with smart and intelligent capabilities.

Chinese automakers Guangzhou Automobile Group (GAC Group), Great Wall Motor (GWM) and BAIC Motor have reported substantial growth in their profits during the first six months of 2021. According to separate company filings with the Hong Kong Stock Exchange, GWM reported that its net profit more than tripled during the first six months of 2021 due to sales growth and increased profit margins. The automaker's net profit reached CNY3.528 billion (USD546 million), compared with a net profit of CNY1.146 billion during the same period of 2020. Operating revenue during the period stood at CNY61.928 billion, up by 72.3% year on year (y/y) while operating profit improved by 232.6% y/y to CNY3.858 billion. The company witnessed a 126.9% y/y increase in selling expenses due to comparatively lower expenses for the corresponding period of last year under the impact of the pandemic; increase in advertising expenses in line with the launch of new cars and participation in exhibitions, as well as increases in after-sales service expenses.



Separately, GAC has reported 34.81% y/y growth in total revenues to CNY34.571 billion in the first half of the year. The group's net profit attributable to equity holders of the company stood at CNY4.336 billion during the six-month period from 1 January to 30 June 2021, compared with CNY2.317 billion during the same period last year. During the first half of the year, both of the Group's production and sales volume of vehicles exceeded 1 million units, representing an increase of 25.6% and 24.5% y/y, respectively.

BAIC Motor has reported 163.6% y/y growth in net profit attributable to equity holders of the company at CNY2.758 billion during the first six months of 2021 mainly due to the increase in sales volume and profits of Beijing Benz. BAIC's revenues during the period stood at CNY90.375 billion, compared to CNY77.854 billion in the same period of 2020 driven by an increase in the revenue of Beijing Benz while operating profit during January–July 2021 stood at CNY13.977 billion, up 36.6% y/y.



Outlook and implications

The significant increase in revenues and profits of the above-mentioned automakers during the first half can be attributed to a low base of comparison. Chinese automakers' financials were hit hard during the same period last year – especially the first quarter – because of the coronavirus disease 2019 (COVID-19) virus pandemic, which severely affected sales and production and forced automakers to suspend operations, thereby resulting in a lower base of comparison.

In order to boost sales, BAIC, GWM and Great Wall have been focusing on the introduction of new energy vehicles (NEVs) and models with smart and intelligent capabilities. GWM is aiming to sell 4 million vehicles annually by 2025, with revenues expected to reach CNY600 billion and expects its NEV sales to account for 80% of its total annual sales by 2025, and BAIC plans to focus on the development of electric vehicles (EVs) and the strengthening of its partnerships with Daimler and Magna. BAIC is also likely to realign its business to support the growth of its own brands, including BJ, Beijing, and Arcfox over the next few years. Meanwhile, GAC has recently announced plans to invest up to CNY100 billion to develop and commercialise intelligent and connected NEVs. With the help of this investment, BAIC expects EVs to account for 20% of its total output by 2025 and about 50% by 2035. It has been partnering with several technology companies, including Huawei, Didi Chuxing (DiDi), and Tencent to develop vehicles with autonomous capabilities. In July this year, GAC announced that it is planning to work closely with Chinese ride-hailing app company DiDi and Chinese telecom giant Huawei on autonomous vehicle (AV) technologies. By 2024, the companies aim to mass-produce Level 4 AVs, able to operate almost entirely without human input. In order to achieve its sales growth target of 10% for 2021, GAC has improved its brand structure and has been working with its joint venture (JV) partners on new product launch plans in the NEV segment.



The semiconductor shortage has been hitting automakers around the world this year. In mainland China, the latest estimate of vehicle production lost over the microchip shortage is unchanged at 364,000 units in the first quarter and 420,000 units in the second quarter. The latest update shows 536,000 units at risk during the third quarter due to disruptions at Beijing-Hyundai, Geely and SAIC-General Motors (SAIC-GM) JV, with additional disruption at the SAIC-VW JV, the JV between GAC and Toyota, and Honda's Wuhan plants. Overall, the Chinese market has been less disrupted than initially expected and this could be attributed to it being the first to recover from the COVID-19-related lockdowns of early 2020. Moreover, Chinese domestic OEMs, like OEMs operating in India, South America and across much of the ASEAN region have lower levels of semiconductor content per vehicle compared to vehicles in the mature manufacturing regions and these semiconductors are more typically of the larger, less sophisticated variety, which face less competition from other industry sectors.



[Sales Highlights] CATL reports 131.4% y/y growth in net profit during H1

Chinese battery-maker Contemporary Amperex Technology Company Limited (CATL) has released its interim report for 2021. According to China.org, the battery maker reported a revenue of CNY 44.07 billion (USD 6.8 billion) for the six months ended 30 June, up by 134.1% year on year (y/y). Its net profit increased by 131.4% y/y to CNY4.48 billion during the period.



Outlook and implications

The significant growth in CATL's profit and revenues can be attributed to a low base of comparison caused by the impact of coronavirus disease 2019 (COVID-19) virus pandemic on sales last year and a substantial growth in the new energy vehicle (NEV) segment in the country. The company has recently announced plans to raise CNY58.2 billion through private share placements to fund six projects aimed at boosting its production capacity of lithium-ion (Li-ion) batteries in China and Germany. Investments in capacity expansion will ensure a smooth supply of batteries to its partners and will put the company in a strong position in both domestic and foreign markets. The move to significantly increase its investment in Europe reflects the weight of the market in CATL's global business.



[GSP] South America Sales and Production Commentary -2021.08

South America sales

July 2021: +19.3%; 311,000 units vs. 261,000 units

YTD 2021: +34.1%; 2,124,000 units vs. 1,583,000 units

Despite sales in South America growing 19% year on year (y/y) in July, several major markets pulled back in comparison with June, despite having more selling days in most cases. This was the case for Argentina, Brazil, and Peru, where the first two are suffering owing to a dearth of products due to manufacturing cutbacks in Mercosur. The case of Peru was purely related to the uncertainty the second presidential round would bring with leftist candidate Castillo now president. IHS Markit analysts will continue to monitor any revisions he may make to the economic policy that may affect the medium-term outlook of sales in Peru.

South America's year-to-date (YTD) figures remain solid, having expanded by more than a third relative to 2020 to 2.1 million units (although the 2020 base is low given many countries opened up between June/July post-pandemic. IHS Markit analysts will closely watch the situation in Argentina, where a midterm election may create uncertainty. Currently, there is a fading effect owing to the gap between the blue dollar and the official exchange rate. Consumers are swapping their dollars in the black market at a rate of ARS160/USD1, but cars are sold at the official exchange rate of ARS97/USD1, which makes the operation more than one-third cheaper. Also important, Brazil's seasonally adjusted annual rate (SAAR) closed at about 1.8 million in July, the lowest of the year, as a result the constraint in inventory as Brazilian production has also been hit by supplier constraints. Fortunately, many plants should restart operations in late August or early September, and this will ease the product bottleneck.



The macroeconomic model for Brazil signals toward sales of 2.2 million units in 2021. The affordability model suggests a market around 2.1 million units. IHS Markit analysts anticipated sales would break the 2.3-million-unit milestone. However, given Brazil's SAAR in March–May at about 2.0 million owing to a third wave of the COVID-19 infections, the forecast sits at 2.1 million units. IHS Markit analysts expect a gradual recovery toward a SAAR of 2.2 million units by the end of the year, assuming there is some alleviation in build rates that are constrained by semiconductor/raw materials availability.

Sales within the region were at 4.5 million units in 2019; not an all-time high, but this is the benchmark being used globally for how long it will take to recover from COVID-19. IHS Markit analysts estimate that 2020 closed with sales of 3.2 million units and will climb toward 3.7 million units in 2021. The long-term outlook projects sales to approach 5.0 million units by 2026 as the region heals.

South America production



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July 2021: -0.6%; 189,493 units vs. 190,692 units
YTD 2021: +49.6%; 1,494,455 units vs. 998,780 units

Volumes suffered a slight decline in July 2021 in South America, with less than 190,000 units built, down 0.6% over July 2020. The main culprit for this decrease was the ongoing semiconductor supply crisis that is affecting manufacturers throughout the globe. This is more worrisome since July 2021 was still benefiting from an extremely favorable base of comparison in 2020 due to the COVID-19 pandemic decimating volumes in April–May 2020 and constraining until at least November 2020. This dramatically illustrates the extent of the disruptions provoked by the semiconductor shortage. Still, on a year-to-date (YTD) basis, South American volumes kept trending up 49.6% year over year (y/y), nearing 1.5 million units. Unfortunately, the situation will likely worsen in the coming few months and continue suppressing performance.



[EV Charging Network] GACShell plans to significantly expand EV charging network in the U.K.

Shell aims to install 50,000 on-street posts by 2025 and will implement its plans through wholly-owned subsidiary Ubitricity



Source: Getty Images

Oil and gas company Royal Dutch Shell plans to significantly expand its network of electric vehicle (EV) charging stations in the UK, Reuters reported on 1 September.

According to the report, the energy company aims to install 50,000 on-street posts by 2025 and will implement its plans through Ubitricity, a leading provider of on-street charging points for EVs. Ubitricity, which operates around 3,600 chargers in Britain, was acquired by Shell in January 2021.

“The expansion is part of a government-backed push to rapidly grow Britain's EV fleet in line with a target to reduce carbon emissions to net zero by 2050,” the report added. It can be recalled that last year, the UK government had rolled out an ambitious plan to ban the sale of new petrol and diesel cars by 2030. Citing a UK government estimate, Reuters report mentioned that Britain would need around 280,000 to 480,000 EV charging points by 2030, compared with the current count of only 25,000 spots.

Supporting its plan to expand its EV charging footprint in Britain, Shell is helping the local authorities finance their installation. The Anglo-Dutch company, which did not provide details on the cost of the initiative, is expected to make money by selling power at the said charging points, the report pointed out.

Outlook and implications

Shell aims to expand its global network of electric vehicle charging points from the current 60,000 points to 500,000 in 2025 as part of its strategy to become a net zero emissions company by 2050.

Earlier in June, Shell, through its wholly-owned subsidiary MP2 Energy partnered General Motors to provide energy charging solutions to GM's customers and supply chain partners, expanding its footprint in the U.S. It has also teamed up with Porsche to set up Southeast Asia's first cross-border high performance EV charging network, wherein the companies will jointly set up 12 charge points at six Shell stations located along Malaysia's North-South highway, offering EV drivers the possibility of driving between Singapore and Kuala Lumpur as well as Penang in the future.

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