

Automotive Industry Weekly Digest

25April – 29April 2022





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[OEM Highlights] BYD launches 2022 model-year Han

BYD has begun sales of the 2022 model-year Han in China. The Han will continue to be offered with two propulsion system options: a battery electric vehicle (BEV) and a plug-in hybrid electric vehicle (PHEV). The Han BEV will have a 715-kilometre (km) range version with an 85.4-kWh battery pack and the model will be dual-motor front-wheel drive. The Han BEV also comes in a performance version powered by two electric motors, which BYD says can deliver maximum output of 380 kW and peak torque of 700 Nm. The dual-motor four-wheel-drive configuration enables this performance model to accelerate from zero to 100 km/h in just 3.9 seconds. As for the PHEV offering, this model now features BYD's latest plug-in hybrid technology. The Han DM-i PHEV now boasts an electric-only range of 242 km thanks to the introduction of a 37.5-kWh battery pack. The Han DM-i is also available with a smaller 18.3-kWh battery, which delivers an electric range of 121 km. All model variants are fitted with BYD's Blade batteries. With the 2022 Han, BYD will continue to provide a performance PHEV to customers. The Han DM-p, the highest-priced model across the Han PHEV line-up, is powered by two electric motors capable of delivering maximum output of 360 kW and peak torque of 675 Nm. The driving range of the Han DM-p is estimated at 202 km.



Outlook and implications

With the introduction of the 2022 model-year vehicles, BYD is further strengthening its presence in the premium vehicle segment. The Han, which is available with both electric and plug-in hybrid powertrains, will appeal to a wider customer group. The base model of the Han DM-i is able to deliver an electric-only range of 121 km, while the larger battery version has a fairly impressive range of 242 km. For those looking for a sportier electrified sedan, the Han DM-p could be an attractive offering with a quick acceleration time from zero to 100 km/h of under four seconds. The BYD Han is currently one of the best-selling electric sedans in the Chinese market. In January–February, retail sales of the Han reached 22,000 units. Sales of the model in 2021 totalled more than 117,000 units in China.

[OEM Highlights] BMW, NIO begin to resume production in China

BMW has reportedly resumed production at all its plants in Shenyang, Liaoning province (China) on 14 April, reports Reuters. The automaker had suspended production in Shenyang on 24 March due to COVID-19 control measures. In a separate statement, NIO said on 14 April it is gradually resuming production at its manufacturing base in Hefei, Anhui province after a production halt starting on 9 April.





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Outlook and implications

BMW managed to resume production at its Shenyang manufacturing base as COVID-19 cases began to level out in April. The production halt began on 24 March, when BMW was ramping up production of its high-margin sport utility vehicles (SUVs) in China. The German carmaker has just launched the locally made X5 model in China. The X5 is likely to face delivery delays due to the production halt at BMW's Shenyang plants. Despite the two automakers' announcements on production resumption, COVID-19 lockdowns in eastern China still pose a risk to the auto supply chain. The chairman of Xpeng Motor said on 14 April in a social media post that if suppliers in Shanghai and the neighbouring areas are unable to find a way to maintain operations or resume production with the COVID-19 constraints, all automotive OEM manufacturing plants in China may have to halt production in May. Following Shanghai's lockdown on 28 March, several cities in the neighbouring Jiangsu province, including Suzhou, Taicang, Kunshan have tightened COVID-19 control measures over the past few days, affecting operations of many plants of auto suppliers. According to Reuters, to keep its product line running, Bosch's component factories in Shanghai and Taicang are operating on a closed-loop system, which requires workers to stay at the manufacturing base after their shifts to avoid exposure to the virus.



[Technology & Mobility Highlights] Hyundai Mobis unveils next-generation parking control system

Hyundai Mobis has unveiled a next-generation parking control system, according to a company press release. The Mobis Parking System features narrow space assistance, reverse assistance, and remote smart parking assist. The parking control system uses data from 12 ultrasonic sensors and 4 video cameras. The new features are added to current features such as parking collision-avoidance assist-rear (PCA-R), 3D surround view monitor (SVM), and remote smart parking assist (RSPA), which are already available in certain mass-produced models.



Outlook and implications

This semi-autonomous feature is particularly useful for parking in narrow lanes. The narrow space assist feature requires the side mirrors to be open. The reverse assist feature allows the driver to get the car out of a dead end by pressing a button and backing out as the travelled route is recorded up to a certain distance; the system creates a reversing route by tracing it. Hyundai says that it is also developing memory parking assist and auto valet parking, which are expected to come into use from 2023 and 2025, respectively. Reports last December stated that Hyundai Mobis had filed a patent with the United States Patent and Trademark Office for a headlight system integrated with a camera that also helps with advanced driver assistance system (ADAS) applications.

[Technology & Mobility Highlights] Stellantis to use Qualcomm's Snapdragon Digital Chassis for digital platforms

Qualcomm has announced a multi-year partnership with Stellantis, under which its Snapdragon Digital Chassis will be used to optimise in-vehicle experiences for customers of Stellantis' 14 automotive brands beginning 2024. In a press statement, Qualcomm announced that Stellantis will use its next-generation Snapdragon Cockpit Platforms to power the in-car communication and infotainment systems for STLA SmartCockpit and improve the STLA Brain. SmartCockpit will offer navigation, voice assistance, e-commerce marketplace, and payment services, and STLA Brain is an end-to-end solution connecting the car to the cloud. "Qualcomm is honored to expand our work with Stellantis to redefine vehicles in the 21st century by bringing Snapdragon Digital Chassis solutions to their future vehicles. By creating open, scalable, and comprehensive automotive platforms that encompasses semiconductors, systems, software, and services, we are empowering Stellantis, as well as the broader automotive ecosystem, to lead the transformation to the digital era of automobiles," said Qualcomm president and CEO Cristiano Amon.



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Outlook and implications

The Snapdragon Digital Chassis comprises open and scalable cloud-connected platforms for next-generation vehicles, including telematics and connectivity, the digital cockpit, and advanced driver assistance systems (ADAS) functions. In February this year, Qualcomm announced enhancements to its Snapdragon Digital Chassis connected vehicle platforms, by introducing a feature for Snapdragon Car-to-Cloud Services – Connectivity-as-a-Service. The new service optimises connectivity, analytics and cloud and device developer environment. In the same month, Ferrari announced that it would use Snapdragon Digital Chassis for its road cars. The collaboration will help accelerate Stellantis's plan to merge all software domains into high performance computers by using Snapdragon Automotive Platforms across all major vehicle domains. As a part of its software strategy, the automaker plans to generate approximately USD20 billion in incremental annual revenues by 2030.



[EV & Energy Efficiency Highlights] CATL launches battery-swapping service in Xiamen

Chinese automaker CATL has launched battery-swapping services in Xiamen, Fujian province. Four battery-swapping stations are now in operation in Xiamen, and CATL said it aims to build a battery-swapping network with 30 stations by the end of 2022.



Outlook and implications

CATL said its battery-swapping network of 30 stations in Xiamen will be able to provide access to a battery-swapping facility every 3km in the city. The company did not provide details of its partnership to roll out battery-swappable EVs with OEM clients, however, in a video released by the company to promote its battery-swapping technology, it used FAW's Bestune NAT. The Bestune NAT is an EV that FAW introduced in 2021 for the rental and ride-hailing markets. According to FAW's website, the model variant featuring a swappable 53-kWh lithium battery provides a range of 401 km.

[EV & Energy Efficiency Highlights] Foxconn-PTT Thai JV looking to contract manufacture Chinese EVs

Horizon Plus, a joint venture (JV) between Taiwan-based Foxconn and Thai state-owned energy group PTT, is reportedly in talks with Chinese automaker Hozon to build electric vehicles (EVs) in Thailand, reports Nikkei Asia, citing Ekachai Yimsakul, managing director of Arun Plus, PTT's EV subsidiary. As reported earlier, PTT and Hozon entered into an agreement in November 2021 to expand Thailand's EV market. Hozon sold around 70,000 EVs last year, according to IHS Markit data. In order to expand beyond its home market, the automaker is considering producing right-hand-drive vehicles in Thailand, with the goal of exporting them to Indonesia and Malaysia. "We do have plans [with companies including PTT] and are proceeding with cooperation toward implementing them," said an unnamed Hozon representative, adding, "We will make an announcement when there are concrete developments".



Outlook and implications

PTT and Foxconn debuted their JV, Horizon Plus, in February. They plan to invest USD1–2 billion to build an EV production facility in Thailand's Eastern Economic Corridor. The JV is expected to begin construction of the plant in mid-2022, and production is expected to start there in the first quarter of 2024. The initial capacity of the plant will be 50,000 vehicles per year, with the goal of ramping up production to 150,000 EVs a year by 2030. As previously reported, Foxconn, best known for contract manufacturing high-technology consumer goods such as Apple's iPhone, has recently expanded its activities in EVs. The company presented its EV platform in October 2020 and has since announced partnerships for EV production and technology sharing with several automakers. It has also signed a memorandum of understanding (MOU) with the Indonesian Ministry of Investment as well as Indonesia Battery Corporation, energy firm PT Indika Energy, and Taiwanese electric scooter vendor Gogoro to jointly develop a battery manufacturing and EV ecosystem in the country. Foxconn is also looking at building its newly unveiled battery electric vehicles (BEVs) in Europe, as well as potentially India and Latin America. The company last year unveiled three new prototypes, including its new premium-positioned Model E flagship BEV sedan, with Italian design house Pininfarina contributing to the car's design. EVs are central to PTT's long-term strategy as the Thai government aims to boost the alternative-powertrain vehicle sector, one of the country's target industries, in a bid to reduce carbon dioxide (CO₂) emissions and combat harmful levels of PM_{2.5} ultra-fine dust emitted from ageing internal combustion engine (ICE) vehicles. By 2030, the government aims for EVs to account for 30% of domestic vehicle production, or 725,000 units per year. PTT is already involved in EV batteries and charging infrastructure through group companies. It is seeking to encourage local businesses that now make parts for ICE vehicles to join the electric shift. The idea is to build a comprehensive ecosystem, according to Yimsakul.



[Forecast & Analysis Highlights] Chinese NEV sales grow by 147% y/y in Q1; BYD leads volumes in sector – CPCA

IHS Markit perspective

Implications	BYD, Tesla, and SAIC-General Motors (GM)-Wuling (SGMW) were the three largest NEV manufacturers in China by retail volumes in March.
Outlook	The ongoing semiconductor shortage, as well as the resurgence of COVID-19 cases in China, have added uncertainties to the growth outlook for the country's NEV market.



Abby Chun Tu

Latest data from the China Passenger Car Association (CPCA) indicate that retail sales of passenger new energy vehicles (NEVs), including battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs), increased 138% year on year (y/y) to 445,000 units in China in March. The volumes last month took the country's passenger NEV sales to a quarterly record of 1.07 million units in the first quarter, up 147% compared with the first quarter of 2022.

BYD, Tesla, and SAIC-General Motors (GM)-Wuling (SGMW) were the three largest NEV manufacturers in China by retail volumes in March. Sales of BYD stood at 103,229 units in March, taking an NEV market share of 23.2%. Tesla and SGMW reported sales of 65,754 units and 46,791 units respectively, accounting for 14.8% and 10.5% of overall NEV sales in March. Chery Automobile and GAC AION took the fourth and fifth positions in the rankings for March with sales of 20,350 units and 20,317 units respectively. Xpeng, Changan Auto, Great Wall, Geely Auto, and Hozon Auto occupied the sixth to tenth positions respectively in the sales rankings in March. However, of these five automakers, only Xpeng managed to achieve retail sales of more than 15,000 units in March.

Top 10 NEV manufacturers by sales, YTD (January–March)

	YTD 2022	YTD 2021	YTD Y/Y % change
BYD	282,686	54,209	421.5
Tesla	108,300	69,280	56.3
SAIC-GM-Wuling	105,227	82,616	27.4
Chery Auto	50,072	14,250	251.4
GAC AION	44,874	17,608	154.9
Geely	43,922	8,177	437.1

**Top 10 NEV manufacturers by sales, YTD (January–March)**

	YTD 2022	YTD 2021	YTD Y/Y % change
Xpeng	34,561	13,340	159.1
Great Wall	34,167	30,683	11.4
Li Auto	31,716	12,579	152.1
Changan Auto	30,645	10,574	189.8

Source: CPCA© 2022 IHS Markit

BYD's dominance in China's PHEV market has underpinned the company's rapid rise as a competitive player in the NEV market, as well as to become the fastest-growing OEM in the broader passenger vehicle market. According to CPCA data, in the first quarter (year to date, YTD; January–March), BYD sold 282,686 units of NEVs as the best-selling automaker in the sector. The automaker also commanded a market share of 5.8% in the broader PV market, with overall sales of 294,495 units, trailing FAW Volkswagen, Changan Auto, SAIC Volkswagen, and Geely Auto in the rankings.

As to the sales performance of models, the Tesla Model Y is the highest-selling sport utility vehicle (SUV) model in the NEV market with sales of 74,681 units in the first quarter. This model is followed in the sales rankings by the BYD Song (70,199 units), Li One (31,716 units), and BYD Tang (27,959 units). The GAC AION Y, NETA V, and BYD Yuan Plus have gained market traction in the first quarter with sales of 18,900 units, 18,677 units, and 16,532 units respectively. In the new-energy sedan market, which also includes hatchbacks, the Wuling Hongguang Mini EV remains the best-selling model with sales of 94,778 units in the first quarter. The BYD Qin, BYD Han, and Tesla Model 3 have taken the second, third, and fourth positions in the sales rankings in the segment with sales of 75,834, 34,401 and 33,619 units respectively. Several new models launched in the segment, including the BYD Dolphin and Chery QQ Ice Cream, have achieved sales volumes surpassing the 28,000-unit mark in the first quarter, reflecting solid consumer demand for fully electric mini and subcompact models for their low cost of ownership and practicality.

Outlook and implications

The CPCA's latest data on NEV sales in March and the first quarter continue to show strong consumer demand for passenger NEVs, which in the Chinese market consist of BEVs and PHEVs. The top-10 sales rankings of NEV manufacturers in the first quarter indicate the market is dominated by Tesla and Chinese automakers. Although SGMW is a joint venture manufacturer, the Wuling brand is regarded as a Chinese brand. Japanese automakers, which have a strong presence in China's broader passenger vehicle market thanks to their comprehensive ICE product line-ups, are stepping up efforts to introduce all-new BEVs in the market. For instance, Toyota is expected to begin sales of the bZ4X electric SUV in 2022, while Honda is to launch its first battery-electric models from the e:NP and e:NS product lines. However, these new models will face fierce competition when entering the market, as both traditional OEMs and EV-only players, such as NIO and Xpeng, have made 2022 an important year of new NEV launches. NIO has announced plans to debut the all-new ES7, as well as the 2022 model-year ES6, EC6, and ES8 in May. EV makers Xpeng and Li Auto are also to launch all-new models later this year to diversify their product lines to attract new buyers.

The ongoing semiconductor shortage and the resurgence of coronavirus disease 2019 (COVID-19) cases in China have added uncertainties to the growth outlook for the NEV market in the country. Tesla's production halts



at its Shanghai plant amid the city's lockdown measures will undoubtedly dent the EV manufacturer's output and deliveries in April. In addition, NIO has slowed production in the past few days due to COVID-19-virus-outbreak-induced factory shutdowns by its suppliers in Shanghai, Jilin, and Jiangsu province.

[Forecast & Analysis Highlights] Changan Auto aims to achieve annual sales of 4 mil. units by 2025

Chinese automaker Chongqing Changan Automobile communicated its sales targets to its suppliers at a conference yesterday (13 April). According to Chairman Zhu Huarong, Changan aims to lift its annual sales to 4 million units by 2025. Of this total, 3 million units will be Changan-branded vehicles, including 1.05 million electric vehicles (EVs). By 2030, Changan expects its annual sales to reach 5.5 million units, of which 4.5 million will come from the Changan brand.



Outlook and implications

Changan's 2025 sales targets indicate the company's intention to shift its focus towards the development of its self-owned brand, Changan, and its EV product lines, including a new range of EVs to be introduced under the new 'Shenlan' brand. In 2021, Changan's main brand in the passenger vehicle market, Changan, recorded rapid growth in sales volumes, posting an increase of 16.7% year on year to 1.75 million units, while the group's new-energy vehicle (NEV) sales hit the 100,000-unit milestone. In 2022, new models planned by the automaker include the all-new Avatr 11 EV, a new electric sedan based on the EPA1 platform, and a large electric sport utility vehicle codenamed C673.



[Supplier Highlights] Russia-Ukraine conflict: Continental resumes tire production at Kaluga plant, Russia

The German tire manufacturer had halted operations in the beginning of March



Source: Getty/Torsten Asmus

Continental has resumed production of passenger car tires at its Kaluga plant in Russia to protect local workers who could otherwise face criminal charges, Frankfurter Allgemeine Zeitung reported on 19 March.

Employees and managers in Russia face severe criminal consequences should they refrain from serving local demand. The company employs around 1,300 people at the Kaluga site and resuming tire production at the Russian plant is not a profit driven decision, report added.

Outlook and implications

Last month Continental halted production at its factory in Kaluga leading the tire maker to optimize operations and adjust its production flow management due to the Russia-Ukraine conflict, enabling the company to strategically increase production across other regions.

Last week, Finish tire company Nokian announced its impact caused by EU's fifth round of sanctions on Russian imports that restricts import of tires from Russia as well as export of tire raw materials to Russia.

Russia-Ukraine conflict has triggered a wave of international sanctions causing disruptions in the supply chain. Materials and components were already in a fragile recovery phase owing to the COVID-19 pandemic and Russia-Ukraine crisis has severely implicated these further. Several international tire manufacturers operating and manufacturing in Russia have adjusted their corporate strategy plans for the country as a response to calls and pressures by western governments for international businesses to leave Russia.

Other tire companies with factories in Russia include Bridgestone, Titan, Yokohama Rubber, and four other domestic manufacturers.



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[Supplier Highlights] TomTom, Maxar Technologies expand partnership to offer high-resolution maps

Partnership enables integration of comprehensive mapping solutions



Source: Getty image/imaginima

The mapping company TomTom announced via press release on 19 April that it has partnered with Maxar Technologies to integrate high-resolution, global satellite imagery into its product portfolio.

Mike Schoofs, managing director at TomTom Enterprise, said, “At TomTom, creating the most accurate real time map at scale that reflects the reality of our changing world is our North Star. We want to help our customers make sense of the world around them with meaningful location data and Maxar’s remarkable satellite imagery enables us to do just that.”

TomTom will use Maxar’s Vivid base maps, which offer virtually cloud-free, seamless imagery layers and updates. Vivid Advanced solution offers 30 cm resolution over the most populated and highest-interest areas of the world. While Vivid Basic is available across all remaining areas at 50 cm resolution.

Outlook and implications

TomTom caters to several industries with its maps, data analytics, navigation, traffic information and more. The partnership will enable TomTom to leverage on Maxar’s capability to offer its clients a clear and sharp realistic map that is the actual representative of the world around them. Additionally, TomTom’s Automotive and Enterprise software platform customers can offer their end users satellite imagery and give them more context of potential challenges on the ground.

Earlier this month, TomTom joined Foxconn-initiated MIH Consortium to help accelerate the development of next-gen EVs, autonomous driving, and mobility service applications.



[VIP ASSET] Latest global automotive forecast changes from S&P Global Mobility

While the March 2022 forecast update reflected the impact of Russia's invasion of Ukraine, the April update addresses some additional challenges that have arisen, including a rather sluggish recovery in semiconductor supplies, the impact of further COVID lockdowns in China and the longer-term influence of high raw material prices that will put added pressure on new vehicle affordability.

"Currently the greatest risk to the outlook comes from the threat of further or prolonged lockdowns in mainland China and the contagion into already stressed global supply chains," said Mark Fulthorpe, Executive Director, Global Production Forecasting, S&P Global Mobility.



20 April 2022 Mark Fulthorpe

The April 2022 forecast update reflects noteworthy reductions for several markets, with the most significant reductions focused on Europe and Greater China.

The following reflects the S&P Global Mobility April 2022 Light Vehicle Production Forecast update:

	April 2022 Forecast	Change from March 2022 Forecast	
Region	CY 2022	CY 2022	%Δ
Europe	16,492,975	-498,195	-2.9%
Greater China	24,625,455	-396,227	-1.6%
North America	14,745,564	9,245	0.1%
Rest of world	24,760,939	-45,265	-0.1%
Grand Total	80,624,933	-930,442	-1.1%

Source: S&P Global Mobility April 2022 Light Vehicle Production Forecast

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[VIP ASSET] INTERVIEW: Martina Neuherz, Market Segment Manager Automotive, Rhode and Schwarz

Martina Neuherz sees multicar access, hands-free payment, and configurable driving rights for car sharing as some of the major future use cases of ultrawideband technology



Source: Rohde & Schwarz

Rohde & Schwarz technology develops and manufactures a wide range of electronic capital goods and test and measurement equipment for mobile radios, radio communications, and TV broadcasting. In an interview with IHS Markit (Now part of S&P Global) Martina Neuherz, Market Segment Manager Automotive, Rhode and Schwarz, talks about the various features that the ultra-wideband (UWB) wireless technology will enable in connected and autonomous vehicles (CAV), besides the key advantages of the technology over other wireless and sensing technologies. The following excerpts are edited.

Q. What are your key products and solutions available for the automotive ultra-wideband?

In general, the design, integration, and testing of wideband radio devices at very low power require test solutions that are able to generate and analyze very wide signals and have the required dynamic range. A special aspect is the verification and calibration of the components used for time of flight (ToF) measurements, requiring a test setup that allows very accurate time measurements.

Rohde & Schwarz offers UWB test capabilities with its R&S CMP200 radio communication tester. It is ideal for solving UWB test challenges in mass production as well as in research and development (R&D). The tester combines the capabilities of a signal analyzer and a signal generator in a single instrument.

In combination with Rohde & Schwarz shielded chambers and the company's automatization software WMT, the R&S CMP200 offers a complete solution for transmitter, receiver, ToF and Angle of Arrival (AoA) measurements in conducted and radiated mode, compliant to IEEE 802.15.4a/z specifications.

Q. What are the major applications of your UWB in the automotive industry?

UWB technology has excellent fine-ranging and security capabilities, which make it well suited for automotive applications such as location-aware keyless vehicle access. In the near future, cars will be "sent" to park autonomously via a smartphone application using UWB-based indoor navigation. It is also possible to guide the child seat positioning or to share access credentials over the smartphone to colleagues or parcel delivery services.



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The detection performance accuracy combined with a high security level, low power consumption, and the excellent robustness in wireless connectivity are the specific advantages for applications, such as the so-called Digital Key defined by the Car Connectivity Consortium. The Digital Key complements traditional key fob functions while being reliable enough to completely replace them in future.

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