

Automotive Industry Weekly Digest

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[OEM Highlights] Xpeng begins to take reservations for P5 electric sedan in Europe

Xpeng has begun to take reservations for its P5 electric sedan in Denmark, the Netherlands, Norway, and Sweden, reports CNBC. The European version of the P5 is said to be different from the China model with a less-sophisticated version of Xpeng's advance driver assistance system and no LiDAR. The model should come standard with the Xpilot 2.5, which supports functions such as adaptive cruise control, auto lane change, blind spot monitoring, and assisted parking. However, compared with the Xpilot 3.0 that Xpeng offers on models like the P7 in China, vehicles with Xpilot 2.5 cannot perform more sophisticated automated driving tasks such as navigation-guided pilot on highways and “memory parking” for parking lots.



Outlook and implications

Xpeng is expanding its presence in European markets with the P5, which is a smaller and more compact vehicle compared with the P7. The electric vehicle (EV) maker began sales of the G3 electric sport utility vehicle (SUV) in Norway in 2020, which was followed by its flagship P7 electric sedan in 2021. Apart from setting up its first self-operated showroom outside China in Sweden in February, the EV maker last month also entered into partnerships with Bilija, an automotive distributor in Sweden, and auto retailer Emil Frey in the Netherlands to sell its EVs. According to CEO He Xiaopeng, Europe makes a strategic market for Xpeng not only for the region's sales potential. The region's high standards on vehicle safety, emissions control, and data protection will have a positive and long-standing effect on Xpeng's product development and help the brand gain recognition in global markets.

[OEM Highlights] Evergrande gains approval from regulators to start sales of first electric model

Evergrande New Energy Vehicle Group (Evergrande), the new energy vehicle (NEV) division of China's property giant China Evergrande Group, has gained approval from the Chinese industry regulator to begin sales of its first battery electric model, the Hengchi 5 sport utility vehicle (SUV), in China, reports Reuters. According to the report, the model has been included by the Ministry of Industry and Information Technology (MIIT) in its latest product catalogue of electric vehicles (EVs). Local media reports suggest the company is likely to begin sales of the Hengchi 5 in the second quarter.



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Outlook and implications

Evergrande announced earlier this year that its Tianjin plant in China already has the capacity to begin series production of the Hengchi 5. The significance of the Hengchi 5 lies in the model's role in helping Evergrande to build credibility in the automotive sector, in which it has no experience in terms of vehicle manufacturing, sales, brand building, and distribution. The model also needs to prove Evergrande's capability to design, engineer, and mass produce a high-quality EV. The Hengchi 5 is positioned in the EV market as a compact SUV. However, there are significant concerns from consumers over whether the company will be able to commit long-term to the asset-heavy automotive manufacturing sector, as reportedly its parent company has been struggling to meet its debt obligations.



[Technology & Mobility Highlights] Toyota adds Toyota Teammate advanced driver-assistance system to 2022 model-year Mirai in US

Toyota is debuting its Level 2 advanced driver-assistance system, called Toyota Teammate, in the US market on the 2022 model-year Mirai fuel-cell electric vehicle (FCEV). According to a company announcement on 10 March, the system provides advanced driver-assistance and advanced parking functions. The Toyota statement says that the advanced parking feature comes as standard, while the advanced driver-assistance feature is optional. The statement says the advanced driver-assistance function is “designed to support drivers by accurately detecting driving conditions to plan and execute acceleration, braking and steering commands under active supervision of the driver. It can also maintain the vehicle within the lane, follow other vehicles, change lanes, navigate certain interchanges and traffic jams and overtake slower vehicles.” The driver must be engaged during the system’s operation, although in some highway situations, the system allows hands-off-the-steering-wheel, eyes-on-road operation. The driver monitors the operation of the advanced parking function; however, the system enables hands-free parking by controlling steering, acceleration, braking, and gear changes when parallel parking or backing into a space. The system uses the car’s cameras and sensors to display a 360-degree view of the vehicle during the manoeuvres. The Toyota Teammate option is available on the Mirai’s Limited trim level, the price of which starts at USD66,000, and the system costs USD5,170.



Outlook and implications

Toyota’s Teammate Level 2 system is called Lexus Teammate when deployed on a Lexus product, but the system’s first application in the US is on the Mirai. In Japan, the system was made available in 2020. The system is expected to be added to the Lexus LS 500h hybrid in the US; it is not yet available and Lexus has not confirmed the timeline on availability. The system was made available on the LS in the Japanese market in 2020. In Japan, the system is offered on a limited number of other models as well. The decision to launch the system on the Mirai in the US is of interest as the Mirai is a product with limited availability, available primarily in California state, where the most robust hydrogen-refuelling network in the US is available.

[Technology & Mobility Highlights] BMW Group to develop software solutions for automated operation with Qualcomm and Arriver



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BMW Group has announced its long-term co-operation with Qualcomm Technologies and Arriver for the development of automated vehicle technologies, reports Europe Press. According to the source, the combined companies will develop next-generation automated vehicle technologies ranging from New Car Assessment Program (NCAP) Level 2 advanced driver assistance systems (ADAS) to Level 3 automated vehicle functionalities. The joint development of software functions uses the existing BMW Automated Driving software stack, which was launched with the BMW iX, which will be expanded to the next generation using this co-operation.



Outlook and implications

The automaker is trying to develop a scalable platform for automated vehicles based on a common reference architecture, sensor suite specifications, and safety requirements. In 2021, BMW Group said that it will use chips manufactured by Qualcomm to support ADAS and automated functions for its next-generation vehicles. BMW is planning to launch an autonomous vehicle (AV) when it has fully perfected the Level 3 automated vehicle, something it initially planned to do with the iNext, which was to be offered in 2021 with full Level 5 autonomous features. Now, however, BMW has stated that it will first offer Level 3 with plans to release a 7-Series full-size sedan featuring Intel's automated technology next year. Qualcomm is best known for its support of mobile phone applications, but the company is expanding its footprint to the automotive industry. Its expertise in wireless technologies through its C-V2X 9150 chipsets enables an enhanced vehicle-to-everything (V2X) connectivity experience, according to the company. Last year, Qualcomm started its own line of ADAS systems called Snapdragon Ride.



[EV & Energy Efficiency Highlights] Ford plans to build 600,000 EVs annually in Europe by 2026

IHS Markit perspective

Implications Ford aims to move forward on its electric vehicle (EV) plans in Europe, announcing an additional seven EV models by 2024, after the Mustang Mach-E, E-Transit, and Tourneo Connect. Ford's EV line-up is to include three new electric passenger vehicles and four new electric commercial vehicles. In addition, the company has entered into a memorandum of understanding on a new battery plant in Turkey.

Outlook On the heels of announcing a restructuring of its global business to separate ICE vehicle and EV development, this announcement gives some further detail to the company's European EV plans. Although Ford's US EV plans include an electric version of the company's most important significant single product, the F-150, the European plans include more models more quickly than in the US, as European regulations are encouraging faster EV adoption in the region. Although the latest statement shortens Ford's timeline, there had been rumours or communication of the basic details previously. The announcement did not give details of the investment involved, but it did suggest that Ford is aiming to double the amount stated in an earlier announcement regarding investment in Cologne. This also follows Ford CEO Jim Farley raising Ford's plans for EV and technology investment to USD50 billion through 2026. Based on the IHS Markit February 2022 light-vehicle powertrain forecast, this statement may reflect only some of the likely future European products.



Ford European EV range/Image courtesy of Ford Motor Company

Ford issued a statement on 14 March expanding its plans in the European electric vehicle (EV) market, increasing targets in the region announced previously. In addition, the latest announcement follows the decision to split the company's ICE vehicle and electric vehicle (EV) development into two business lines. By 2024, Ford's EV product line-up will include three new electric passenger vehicles and four new electric commercial vehicles; combined with the Mustang Mach-E and E-Transit, Ford will have nine EVs on offer in Europe. The new passenger vehicles will include the Puma, a medium-sized crossover utility vehicle and a sport crossover to complement the Mustang Mach-E. The commercial vehicles will include the Transit Courier, Tourneo Courier, Transit Custom, and Tourneo Custom, along with the E-Transit to be launched in Europe in the second quarter. Production of the new 500-kilometre-range medium-sized crossover is to begin in 2023 at the company's plant in Cologne, Germany, with the sports crossover to be added in 2024. The 14 March announcement is the first confirmation that Cologne's first EV will be a medium-sized crossover, although this is the vehicle based on the Volkswagen MEB EV platform announced earlier. Ford intends to announce the name of the model later in 2022. The Puma goes electric in 2024, to be produced in Craiova, Romania, in 2024. In 2021, Ford confirmed investment at this site for EV production, although at that time indicated a light commercial vehicle (LCV) product would be produced first. The new Transit EV range will include the Transit Custom one-tonne van and



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Tourneo Custom multi-purpose vehicles in 2023 and the smaller, next-generation Transit Courier van and Tourneo Courier multi-purpose van in 2024.

In a statement, Ford CEO Jim Farley said, “I am delighted to see the pace of change in Europe – challenging our entire industry to build better, cleaner and more digital vehicles. Ford is all-in and moving fast to meet the demand in Europe and around the globe. This is why we have created Ford Model e – allowing us to move at the speed of a start-up to build electric vehicles that delight and offer connected services unique to Ford and that are built with Ford-grade engineering and safety.”

Ford has indicated previously that its Cologne, Germany, factory will be a key plant for the company in Europe. In the latest announcement, Ford said production of EVs at the facility would reach 1.2 million units cumulatively over six years, involving a total investment of USD2 billion, helping to support annual European sales of 600,000 units in 2026. Following indicating previously an aim of a 10% global EBIT in 2026 with the ICE versus EV restructuring, Ford reconfirmed plans to reach a 6% EBIT margin in Europe as soon as 2023.

In addition, Ford announced signing a non-binding memorandum of understanding with South Korean battery-maker SK On and Koc Holding regarding establishing commercial vehicle battery production sites in Turkey. This plan follows Ford’s work with SK in North America and was indicated in 2021. Ford states the deal has not yet been finalised, although the plan is to locate the facility near Ankara and to produce high-nickel NMC cells for assembly into battery array modules. The facility’s annual production capacity is expected to be 30 to 45 gigawatt hours, with production to start around the middle of the decade. An investment amount was not disclosed.

Stuart Rowley, chair, Ford of Europe and Ford’s newly appointed chief transformation and quality officer, said, “Our march toward an all-electric future is an absolute necessity for Ford to meet the mobility needs of customers across a transforming Europe... These new Ford electric vehicles signal what is nothing less than the total transformation of our brand in Europe – a new generation of zero-emission vehicles, optimized for a connected world, offering our customers truly outstanding user experiences.”

Outlook and implications

Following soon after the company announced a restructuring of its global business to separate ICE vehicle and EV development, this announcement gives some further detail to the company’s European EV plans. Although Ford’s US EV plans include an electric version of the company’s most important significant single product, the F-150, the European plans include more models more quickly than in the US, as European regulations are encouraging faster EV adoption in the region. Although the latest statement shortens Ford’s timeline, there had been rumours or communication of the basic details previously.

The plans announced on 14 March accelerate Ford’s plans for EVs in Europe. Although the announcement did not give details of the investment involved, it did suggest that Ford is aiming to double the amount stated in an earlier announcement regarding investment in the Cologne plant. This also follows CEO Farley raising Ford’s plans for EV and technology investment to USD50 billion through 2026. However, Ford has set a target of offering only EV passenger cars in Europe as soon as 2030, a target that Rowley had indicated could be accelerated. Based on the IHS Markit February 2022 light-vehicle powertrain forecast, this statement may reflect only some of the company’s likely future European products.



Although the EV announcement on 14 March outlines an EV product offensive of models due to arrive through 2024, IHS Markit also forecasts that Ford's European EV production footprint could include production of EV versions of the Bronco Sport and Maverick compact pick-up, as well as production of the Mustang Mach E EV, in the latter half of this decade. Although the initial forecast for Romanian production of the Puma and Transit Courier to be on a modified Ford platform, the follow-up generation of the Puma EV is expected to shift to an entry version of Volkswagen's MEB platform, also in the second half of the decade. However, the increased investment figures and battery plant investment suggest Ford is preparing for higher annual EV production volume than IHS Markit forecasted in our February forecast round.

[EV & Energy Efficiency Highlights] Chongqing to expand battery-swapping network to cover 200 stations by 2023

The municipal city of Chongqing is soliciting public opinion on its plans to promote battery-swappable electric vehicles (EVs) as well as expand the city's battery-swapping infrastructure. The government said that it will build a battery-swapping network covering at least 200 service stations by 2023, which will support its plan of adding 10,000 battery-swappable EVs to its transportation network. As part of this initiative, the government is also studying plans to provide subsidies for battery-swapping projects.



Outlook and implications

The short-term target of Chongqing is to present a clear pathway and commercially viable business mode to incorporate battery-swappable EVs into the city's transportation network. The city is likely to engage leading automakers with battery-swapping know-hows and operational experiences in its next step of action plan, which will benefit companies with such technologies like Geely and CATL. Geely is engaged in the battery-swapping sector through its subsidiary Ruilan Auto, a joint venture with Chongqing-based Lifan Technology. Ruilan's main business focus is battery-swappable EV design and manufacturing. The company's Maple S60, an electric sedan featuring a swappable battery, is already on the market. According to previous announcements made by Ruilan, the company will introduce five models with swappable batteries by 2025. CATL could also take the opportunity to expand into the battery-swapping sector by forging partnerships with OEMs. The Chinese battery maker in January launched its battery-swapping service brand, EVOGO. The battery maker said its 'Choco-SEB' battery block can be adapted to 80% of the world's vehicles already on the market and those due to be launched in the next three years on pure electric platforms.



[Forecast & Analysis Highlights] Chinese new vehicle sales increase 19% y/y in February, NEV volumes up 184% y/y

IHS Markit perspective

Implications CAAM data suggest demand for new vehicles remained strong in China during February, with sales volumes growing 19% y/y. Compared with January, new vehicle sales were 31% lower in volumes last month, which was mainly due to the week-long Chinese Lunar New Year festival falling in February.

Outlook In IHS Markit's February forecast, we anticipate light-vehicle production in mainland China to increase by 2% to around 24.99 million units in 2022 and further increase to 27.2 million units in 2023.



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New vehicle sales on a wholesale basis in China rose by 18.7% year on year (y/y) to 1.737 million units in February, according to data from the China Association of Automobile Manufacturers (CAAM). In the year to date (YTD; January to February), new vehicle sales in China increased by 7.5% y/y to 4.268 million units. By vehicle type, passenger vehicle sales increased 27.8% y/y to 1.487 million units in February, while passenger vehicle production increased by 32% y/y to 1.534 million units. The CAAM definition of passenger vehicles includes sedans, sport utility vehicles (SUVs), multi-purpose vehicles (MPVs), and minivans. During February, the SUVs and sedan markets both showed strong demand recovery. Sales of SUVs, the largest vehicle type in China, grew 29.6% y/y to 734,000 units, while sales of sedans rose 28.4% y/y to 687,000 units. Demand for MPVs also rebounded with sales totalling 52,000 units, up 12.9% y/y.

China's commercial vehicle (CV) sector was still in contraction in February. Sales of CVs, including medium and heavy vehicles, fell by 16.6% y/y to 250,000 units last month, while CV production decreased 18.3% y/y to 279,000 units. In the YTD, sales of CVs were 594,000 units, down 21.7% y/y.

Sales of new energy vehicles (NEVs), which include battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs), and fuel-cell vehicles (FCVs), increased by 184.3% y/y to 334,000 units in February. Sales of passenger NEVs were 321,000 units in February, up 182.2% y/y, while sales of commercial NEVs were 13,000 units, up 251.3% y/y. Within the NEV passenger-car category, sales of BEVs were 246,000 units in February, up 154.5% y/y, while sales of PHEVs were 75,000 units, up 338.6% y/y. In the YTD, a total of 765,000 NEVs were sold in China, up 154.7% y/y.

China's new vehicle exports jumped by 60.8% y/y to 180,000 units in February. Of this total, NEV export volumes surged by 273.76% y/y to 48,000 units. From January to February, China's vehicle exports increased by 75% y/y to 412,000 units. Export volumes of NEVs surged by 381.7% y/y to 104,000 units in the same period.



Outlook and implications

CAAM data suggest demand for new vehicles remained strong in China during February, with sales volumes growing 19% y/y. Compared with January, vehicle sales were 31% lower in volumes, which was mainly due to the week-long Chinese Lunar New Year festival falling in February. The Chinese NEV market kept up its strong momentum during February and again outpaced the broader new vehicle market in sales growth. Over the first two months of 2022, the penetration rate of NEVs in the new vehicle market has reached 18%. On the export front, NEVs also contribute significantly to China's export growth. In January to February, NEVs accounted for 25% of China's total new vehicle exports and the proportion of NEVs in the country's total vehicle exports is likely to continue to grow as both legacy automakers and EV companies, led by Tesla, NIO, and Xpeng, are looking to expand their presence in overseas markets. In IHS Markit's March forecast, we anticipate light-vehicle production in mainland China to increase by 1% year on year(y/y) to around 24.78 million units in 2022, followed by a further increase of 8.7% y/y in 2023 to 26.92 million units. The Omicron variant of the coronavirus disease 2019 (COVID-19) virus outbreak is visibly disrupting vehicle production in mainland China and is expected to continue to disrupt the supply chain, including supplies of semiconductors. Even before Russia's invasion of Ukraine, automakers were already feeling the pinch of rising raw material costs, which have brought uncertainties to component supply and squeezed the margins of their high-volume models. Great Wall, for instance, suspended reservations for its two EVs, the Ora White Car and Black Cat, in February, citing rising component costs and an order backlog that the company was struggling to fulfil.

The CAAM has also cautioned that Russia's invasion of Ukraine will have an impact on China's vehicle exports, as the association's data show around 5–6% of China's new vehicle exports are destined for those two countries. Sanctions imposed on Russia and supply chain disruptions brought by the Russian and Ukrainian war have already led to a surge in prices of commodities, including cobalt and nickel, which are important minerals for electric vehicle (EV) batteries. The direct impact of rising mineral prices on EV sales will be a fresh round of price hikes for EVs and longer waiting times for consumers, which will, in turn, hinder adoption of EVs. Several automakers have already hiked prices of their EVs recently. Tesla, for instance, increased the prices of its models in both China and the United States last week. The Model Y Dual-Motor Long-Range version has seen its price go up by CNY10,000. We will continue to watch these factors in the coming weeks and provide further analysis of their impacts on auto production and sales.

[Forecast & Analysis Highlights] Dongfeng posts sales increase of 35% y/y in February

Dongfeng Motor Group has reported a 35% year-on-year (y/y) increase in sales to 205,485 units during February. According to a company statement, its passenger vehicle sales totalled 182,091 units in February, up by 51.2% y/y, including sedans, sport utility vehicles (SUVs), and multi-purpose vehicles (MPVs), while its commercial vehicle (CV) sales came in at 23,394 units, down by 25.9% y/y. Among the group's joint ventures (JVs), Dongfeng Motor Company Limited (DFL), the JV with Nissan, posted a sales increase of 46.7% y/y to 100,422 units in February. Sales of Zhengzhou Nissan, the JV with Nissan, sold 4,200 vehicles last month, up by 20% y/y. Sales of the Dongfeng-Honda JV stood at 59,379 units during the month, up by 26.9% y/y, while those of Dongfeng Peugeot Citroën Automobile (DPCA), the JV formed between Stellantis and Dongfeng, totalled 7,632 units in February, an improvement from 3,006 units in February 2021. Sales of Voyah, Dongfeng's new energy vehicle (NEV) subsidiary, reached 740 units in February.



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Outlook and implications

Dongfeng's JVs with Nissan and Honda continue to underpin the group's sales in February. Sales of DFL increased by 18.6% y/y from January to February, while those of Dongfeng Honda grew by 15% y/y during the same period. With regard to DPCA, Dongfeng has reached an agreement with Stellantis for the latter to manage the operations of the Peugeot brand in China while Dongfeng will be responsible for the Citroën brand in the market. Local media reports suggested that Dongfeng plans to export more Citroën CX5 vehicles overseas this year where the model will be sold via Stellantis's distribution network. The automaker expects one-third of the CX5 produced in China this year to be exported to overseas markets.



[Supplier Highlights] Chinese supplier Minth inaugurates new production plant in western Serbia

Built at a cost of USD110.3 million, the new plant will supply aluminum parts to BMW, Renault, and Toyota



Source: Getty Images/Nerthuz

Chinese exterior automotive body parts manufacturer Minth Group inaugurated a USD110.3 million production plant in Loznica, Western Serbia, according to an article published by Seenews on 10 March.

According to the article, the plant will manufacture and supply aluminum parts for cars primarily to OEMs such as BMW, Renault, and Toyota.

According to a video posted on the YouTube channel of Tanjug news agency by Minth president Aleksandar Vucic, the company plans to open more production plants in Serbia and hire over 3,000 people in total.

Outlook and implications

The supplier operates in Serbia through three subsidiaries: Minth Automotive Europe, Minth Automobile Parts Balkan, and Minth Metal Parts Balkan.

Central and Eastern European plants that could potentially be supplied by Minth's new Serbian facility include BMW's plants in Austria and Hungary, Renault's plants in Romania and Slovenia, and Toyota's plants in Poland and Czechia.

The use of lightweight aluminum body parts has been largely driven by an increasing focus toward improving the range of an electric vehicle (EV) range as well as reducing the fuel consumption and carbon emissions of ICE vehicles. While aluminum can yield significant impacts to vehicle lightweighting, issues related to its manufacturing and joining (requiring rivets and adhesives compared to traditional welds) as well as its comparative costs against that of steel have restricted its application to mid and premium segments alone.

Surging prices of the metal have created new concerns over its potential use in the future automotive industry. According to the metal price index of the LME, the price for aluminum rose to USD3,448 per ton on 1 March after western sanctions hit the Russian industry in response to Russian military aggression in the ongoing Ukraine conflict. The disruptions to the market price were driven by Rusal, one of Russia's top aluminum manufacturers, halting shipments of alumina feedstock from its 1.75 Mtpa Nikolaev aluminum refinery located near the port of Mykolaiv in Ukraine, to Russian smelters, in response to logistical challenges in the area.



[Supplier Highlights] Grupo Antolin, Uniphy partner to develop smart surfaces for in-vehicle applications

Partnership will leverage on Uniphy's innovative Canvya smart surface solution



Source: Getty/baranozdemir 1

Grupo Antolin and Uniphy collaborate to develop next-generation in-vehicle user interface solutions, according to a press release published by Grupo Antolin on 14 March. The partnership will combine Grupo Antolin's extensive knowhow in ambient lighting technologies and Uniphy's Canvya smart surface to create seamless and robust interior surfaces.

Grupo Antolin's expertise in interior technology, together with its integration experience of third-party solutions into its products, will be paired with Uniphy's Canvya 3D smart-surface technology to enhance user experience offering safe and efficient interior surfaces.

Marta Cuevas, Grupo Antolin Lighting & HMI Business Unit Director, said, "Uniphy and Antolin are a perfect fit. Together we can produce unique smart 3D surfaces that can be seamlessly integrated into all interior parts of next generation vehicles. As part of this program, Uniphy will collaborate closely with our Lighting & HMI Business Unit as well as Walter Pack, Antolin's strategic partner in films and decorative surfaces."

Outlook and implications

The human machine interface (HMI) coupled with Grupo Antolin and Uniphy's technology will create unmatched design freedom to deliver high-performance touch, touch curves such as longitudinal or circular sliders, concave/convex touch-surface dials, touch-gesture, and proximity recognition, along with integration of displays and advanced lighting solutions within interior surfaces. Smart interior solutions can greatly benefit cockpit of the future in gathering occupant's physical and mental data to ensure safety in higher autonomy vehicles. With regulations mandating driver monitoring systems (DMS), smart surfaces is expected to gain traction from manufacturers and OEMs.

Uniphy's solution uses algorithms and patented technologies to develop feature-rich and freeform 3D smart interface. It unifies non-conductive, finger pressure touch sensing with the integration of physical HMI features including dials, buttons, and sliders. It also supports haptic feedback, touch-gesture, and proximity recognition. Uniphy's Canvya 3D smart surface has enabled Hyundai to partner and develop next generation in-car interface using Uniphy's revolutionary 3D technology.

[Special Article 3] Russia, Ukraine and the impact on the automotive industry



The invasion of Ukraine by Russia's armed forces on 24 February is an unfolding human tragedy and it is already having a grave impact on the global economy. Rising oil and gas prices have had an instant impact on living costs and the US, the EU, the UK, and Canada have imposed an unprecedented range of economic sanctions on Russia, including excluding the country from the international SWIFT banking system, which allows large-scale international payments for companies and individuals. It is now inevitable that there will be an impact on vehicle production directly, as a result of the actual conflict, and as a result of the sanctions regime that is designed to economically isolate Russia.



Vehicle production
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In terms of our initial response to the invasion and its potential impact on the global industry, IHS Markit has published an alternative production forecast contingency that focuses on the potential disruption to semiconductor production as a result of the invasion. The pessimistic scenario will wipe 3.5 million units off our most recent forecast for global light-vehicle production for 2022 as a result of sustained semiconductor manufacturing supply disruption. The pessimistic case is based on the semiconductor manufacturing industry relying on gases, particularly neon and other input materials such as palladium, of which Ukraine and Russia has traditionally provided a large proportion. In the pessimistic scenario, we assume that supplies of gases and materials are significantly disrupted by the invasion, which appears increasingly likely given the extent of the conflict and the sanctions regime. It is also highly possible that sanctions will include some neon purification plants located in the breakaway republics of eastern Ukraine. This scenario would mean alternative supply sources will be found, although we would assume several semiconductor plants are forced to run intermittently at suboptimal speeds between the third quarter of 2022 and the second quarter of 2023. This lost production is unrecoverable, given limited additional capacity at fabrication plants and lost chips ultimately means lost vehicle production and lost vehicle sales.

It is important to make clear that this initial assessment is focused purely on the potential impact on already constrained semiconductor production as a result of the conflict. This initial assessment does not include production disruption from any other sources, including the issues surrounding wiring harness supply that have already hit a number of carmakers in Western Europe, especially those in Germany that have been sourcing wiring harnesses from Leoni's plants in Ukraine. The Volkswagen (VW) passenger car brand has announced stoppages at its Zwickau, Dresden, Emden, and Hannover plants. Porsche, Audi, BMW and Mercedes-Benz have also announced their production will be significantly disrupted by the wiring harness issue.

The cost of natural gas is inevitably rising as a result of the conflict. Europe would be on the frontline of this increase, given its dependency on Russia for its supplies and have a direct hit on affordability in households directly through its use in homes and the generation of electricity. However, a further rise in the cost of natural gas would also hit industry in the region, especially those relying on energy-sensitive materials like the automotive sector, which would pass this additional cost on to customers through higher prices, lowering potential vehicle demand. Other input costs such as steel, aluminium, and nickel, are also set to rise steeply.



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We have already mentioned palladium above, in the context of it being used in the manufacture of semiconductors. However, it may have a major impact on vehicle production for another reason, as it is a key material in the manufacture of catalytic converters. The global supply of this metal is heavily concentrated in Russia, with around half being sourced from the country. A further rise in its price would eventually trickle through to making internal combustion engine (ICE) vehicles more expensive. Furthermore, although we do not envisage sanctions to be placed directly on this material, there could be consequences if an individual or company involved in its trade were named in new sanction restrictions.

The Russian vehicle market itself is also set to undergo significant disruption. The economic sanction regime imposed by the US, EU, the UK and Canada is the most severe that has ever been imposed, and a number of global OEMs have already completely halted vehicle exports to Russia as well as halting production. VW, Nissan and Toyota fall into this category. Ford has also with immediate effect suspended its light commercial vehicle joint venture (JV) with local manufacture Sollers. The second largest vehicle group in terms of sales in Russia, Hyundai, has stopped Hyundai and Kia vehicle production at its plants in the country and has not given a date for resumption. The biggest vehicle brand in sales terms is domestic champion Lada, although parent company AvtoVAZ has also announced stoppages to production that it is attributing to the kind of semiconductor shortages that were responsible for previous stoppages. However, it is likely to be affected by the imposition of sanctions too. A host of premium carmakers such as Volvo, Jaguar Land Rover, Bentley and Aston Martin have also announced exports suspensions. It also goes without saying that the Ukrainian vehicle market is set to be decimated by the conflict.

However, today's market reality is one where "notional vehicle demand" is substantially higher than realised sales and possible production levels due to the ongoing semiconductor shortage. Indeed, IHS Markit currently forecasts that production in 2022 will be 6.5 million units below potential demand. As a result of the semiconductor-limited production ceiling being so far below potential demand, the size of the impact from the next level of sanctions we have modelled is not likely to require any significant additional reduction in actual global sales or production forecasts from current levels caused by the factors outlined above.

IHS Markit will continue to watch the situation in Ukraine and the responses to developments, and will provide further updates to our forecast as deemed necessary.



[VIP ASSET] CERAWeek 2022: Financiers say energy transition may accelerate renewables drive, but won't eliminate traditional oil and gas reliance

The momentum for a global energy transition away from fossil fuels that began to pick up as the world emerged from the COVID-19 pandemic won't happen overnight, though it has started to accelerate with the war in Ukraine, financiers observed at the just concluded CERAWeek by S&P Global conference.

During multiple sessions at CERAWeek, which ran 7-11 March in Houston, financiers made it clear that the appetite for investment in oil and gas assets has dried up especially in Europe, which is heavily dependent on Russia for natural gas supplies.

With prices of oil, natural gas, and coal reaching record levels owing to tightness of supply fomented by the ongoing war, renewables seem like a rosier prospect for investment to most.



16 March 2022 Amena Saiyid

"It is absolutely clear that the energy transition will accelerate as people fear and people are fed up with being dependent on Russian oil," said Marcel van Poecke, managing director of Carlyle International Energy Partners and head of the Carlyle International Energy Partnership.

However, van Poecke and others on the panel warned that the transition to net-zero by mid century won't happen overnight, and it won't be smooth, and it won't be cheap, citing global consulting firm McKinsey, which raised the estimated price tag at \$275 trillion.

'Messy and muddy'

"Energy transition is going to be messy and muddy business as we have seen it play out in Ukraine," Morgan Stanley Vice President and Managing Director Tom Greenberg said.

For starters though, countries cannot completely switch away from investment in fossil fuels, according to Greenberg.

Describing the energy transition as "a paradox" because it's energy intensive and likely needs to be funded by fossil energy profits, Greenberg said the scarcity of alternative energy sources is propelling the transition because people want to compete with the high prices.

But on the other hand, he said, it affects the availability of capital, which is raised through traditional fossil fuel extraction and sales, for technologies that are expensive to construct.



Discussing the impact on oil with the tilt toward electric vehicles in another CERAWEEK panel, Michael Cohen, chief US economist for bp, tended to agree with the view that there will be a decline in existing supplies of oil and gas under a climate-constrained scenario or otherwise.

Need for 'resilient' hydrocarbons

But Cohen said "there's still a need for resilient hydrocarbons," which is how he chose to describe relatively lower GHG emitting natural gas.

"Whether you are talking about India or China, there's a need for natural gas," Cohen added.

India's leaders have time and again spoken of the need to use natural gas to transition to a carbon-free future by 2070.

Global energy companies like bp and Equinor say they need to be mindful of being able to produce enough to meet the demand of emerging countries.



Equinor Vice President Annette Frydenburg said lack of sufficient reinvestment in oil and gas production between 2016 and 2020 has resulted in a situation where companies can't keep up with resilient demand.

This is the transition period, Frydenburg noted, "where you are able to feed the world with the energy that's needed, while at the same time as you're being a company that's taking that step leading in that transition phase."

Are EVs truly green?

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[VIP ASSET] Automotive Monthly Market Review – China

Market data

Light vehicles

Light-vehicle sales

	Jan-22	Jan-21	Growth %	YTD 2022	YTD 2021	Growth %
Car	2,129,889	2,010,803	5.9	2,129,889	2,010,803	5.9
LCV	285,062	289,514	-1.5	285,062	289,514	-1.5
Light vehicle *	2,414,951	2,300,317	5.0	2,414,951	2,300,317	5.0

*Estimated light vehicle totals include domestically manufactured sales figures only (does not include any retrospective revisions or imports)

Source: IHS Markit now a part of S&P Global © 2022 IHS Markit now a part of S&P Global

- Sales of passenger cars in China were 2,129,889 units in January 2022, marking an increase of 5.9% year on year (y/y).
- Sales of light commercial vehicles (LCVs) decreased by 1.5% y/y to 285,062 units in January.
- Sales in China's light-vehicle (LV) market, made up of passenger cars and LCVs, increased by 5% y/y to 2,414,951 units in January.

Passenger cars

Passenger car segmentation

	Jan-22	Jan-21	Growth %	Jan-2022 market share %	YTD 2022	YTD 2021	Growth %	YTD-2022 market share %
A CAR	95,143	59,615	59.6	4.5	95,143	59,615	59.6	4.5
A MPV	0	22	-100.0	0.0	0	22	-100.0	0.0
A SUV	2,150	732	193.7	0.1	2,150	732	193.7	0.1
B CAR	57,679	48,680	18.5	2.7	57,679	48,680	18.5	2.7
B	2	31	-93.5	0.0	2	31	-93.5	0.0
SPORT								
B SUV	95,613	120,001	-20.3	4.5	95,613	120,001	-20.3	4.5
C CAR	437,758	482,558	-9.3	20.6	437,758	482,558	-9.3	20.6
C MPV	8,024	7,183	11.7	0.4	8,024	7,183	11.7	0.4
C SUV	482,120	466,676	3.3	22.6	482,120	466,676	3.3	22.6
C VAN	0	41	-100.0	0.0	0	41	-100.0	0.0
D CAR	338,460	294,976	14.7	15.9	338,460	294,976	14.7	15.9
D MPV	59,601	61,228	-2.7	2.8	59,601	61,228	-2.7	2.8
D SUV	412,987	353,574	16.8	19.4	412,987	353,574	16.8	19.4
E CAR	99,992	93,034	7.5	4.7	99,992	93,034	7.5	4.7
E MPV	2,894	1,702	70.0	0.1	2,894	1,702	70.0	0.1



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Passenger car segmentation

	Jan-22	Jan-21	Growth %	Jan-2022 market share %	YTD 2022	YTD 2021	Growth %	YTD-2022 market share %
E SUV	37,466	20,750	80.6	1.8	37,466	20,750	80.6	1.8

* Domestically manufactured passenger car sales only

Source: IHS Markit now a part of S&P Global © 2022 IHS Markit now a part of S&P Global

The C segment experienced a decline of 3% y/y during January, with sales surpassing 927,900 units. The contraction is attributed largely to the market's shift away from compact models to larger vehicles. The ongoing semiconductor shortages also had an impact on the supply of compact vehicles, as automakers continued to prioritise production for larger, higher-priced vehicles amid the microchip shortage. Despite the contraction, underpinned by solid demand for compact sedans and sport utility vehicles (SUVs), the C segment is still the largest segment in the Chinese LV market.

In January, demand for D-segment models bounced back, with sales of 811,048 units, up 14.3% y/y. Sales increased in both the D-car and the D-SUV segment in January. Sales of D-segment cars increased 14.7% y/y to 338,460 units in January, with models such as the BYD Qin Plus, Tesla Model 3, and Toyota Camry leading the segment sales, while sales of D-segment SUV models all increased by double-digit rates, and the segment's sales grew 16.8% y/y to 412,987 units.

C-SUV

By sub-segment, C-SUVs remained the highest-selling vehicle type in mainland China during January, with sales volumes of 482,120 units, up 3.3% y/y and taking a 22.6% market share. Several models introduced by Chinese automakers are gaining popularity in the segment. The CS55, the highest-selling model of the segment, outsold the Honda CR-V in January with sales of 30,316 units. Sales volumes of the Honda CR-V were down 2% y/y to 25,595 units in January, followed by the Nissan Qashqai with sales of 24,732 vehicles, up 35% y/y.

C-CAR

The C-car segment had the second-highest sales in January; however, C-car sales continued to contract, decreasing 9.3% y/y to 437,758 units. The top-five best-selling models in January were the Volkswagen (VW) Lavalida (45,524 units, up 8% y/y), Nissan Sylphy (36,680 units, up 21% y/y), VW Sagitar (26,341 units, down 29% y/y), Nissan Bluebird (24,490 units, down 12% y/y), and Toyota Levin (22,305 units, down 23% y/y). The C-car segment remains dominated by Japanese and German brands; the Geely Emgrand and Roewe i5 were the only two local models to make it into the top-10 C-car sales rankings in January. New entries including the Honda Integra, Ora Haomao, Buick Verano Pro, and Aion Y gained market traction in January. Sales of the Integra reached 9,215 units in January, while sales of the Haomao, which is a battery electric vehicle (BEV), totalled 9,020 units.

D-SUV

In January, the D-SUV segment remained the third-highest-selling vehicle category with total sales of 412,987 units, up 16.8% y/y and with a market share of 19.4%. The Haval H6, Tesla Model Y, and Hongqi HS5 were the



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top-three best-selling models in the D-SUV segment in January. Demand for premium vehicles remains strong in the D-SUV segment, with the Mercedes-Benz GLC and the BMW X3 the two most popular premium offerings from German automakers. The D-SUV segment is also the main segment for automakers to launch their BEV models. The Tesla Model Y has proven to be a major success in both the mid-size SUV market and the electric vehicle (EV) space. Other popular BEV entries in the segment include the NIO ES6, EC6 BYD Tang, and AION V. Chinese brands are expected to continue to gain market share in the segment thanks to their expanded product lines. New models such as the Geely Xingyue L and the WEY Tank 300 have been gaining popularity in the past few months. Sales of the Geely Xingyue L totalled 11,492 units in January, while sales of the WEY Tank 300 reached 10,363 units.

D-CAR

The D-car segment took fourth position with sales of 338,460 units in January, up 14% y/y. Sales in the segment were led by the Toyota Camry, Tesla Model 3, and BYD Qin Plus. The majority of the Model 3's sales volumes are generated by the standard-range version featuring lithium iron phosphate (LFP) batteries. This entry-level Tesla model, priced at CNY265,652 (USD41,740) after subsidies, presents an attractive option to vehicle buyers when compared to popular premium offerings such as the Audi A4 and the BMW 3 Series. Preferential policies for EVs also helped EV makers, including Tesla and BYD, to grow their sales.

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