



# Automotive Industry Weekly Digest

17 January – 21 January 2022





WeChat



Auto VIP

# Contents

[Forecast & Analysis Highlights] Geely Auto reports sales growth of 1% in 2021, aims to sell 1.65 mil. vehicles in 2022	3
[Forecast & Analysis Highlights] GAC posts 4.92% y/y sales growth in 2021	3
[EV & Energy Efficiency Highlights] NIO teams up with Zhejiang Commercial Group to build battery-swapping stations	5
[EV & Energy Efficiency Highlights] VinFast partners with Applus+ IDIADA for EV safety testing	5
[OEM Highlights] Lexus launches new LX 600 SUV	7
[OEM Highlights] BYD Han DM-i PHEV to deliver electric driving range of up to 206 km	9
[Technology & Mobility Highlights] Bus maker GILLIG partners with RR.AI to develop automated vehicle technology	11
[Technology & Mobility Highlights] Hyundai starts developing automotive semiconductors	11
[Supplier Highlights] CES 2022: Visteon unveils AllGo App Store for connected cars	13
[Supplier Highlights] CES 2022: SOSLAB unveils automotive solid-state lidar	13
[VIP ASSET] China inches forward on CCUS deployment with Sinopec pilot project	15
[VIP ASSET] Semiconductor supply issue: Light-vehicle production tracker	18



WeChat



Auto VIP

## [Forecast & Analysis Highlights] Geely Auto reports sales growth of 1% in 2021, aims to sell 1.65 mil. vehicles in 2022

China's Geely Auto has reported that its sales in December 2021 increased by 3% year on year (y/y) to 158,765 vehicles, including 141,640 units sold in China. Of Geely's total sales volumes last month, 18,813 units were electrified models, including full hybrid vehicles, battery electric vehicles, mild hybrid vehicles, and plug-in hybrid vehicles. For the full year 2021, Geely Auto's sales increased by 1% y/y to 1,328,029 units. The data include sales of Lynk & Co-branded vehicles sold by the group's 50%-owned joint venture (JV). Sales of the Lynk & Co brand totalled 25,846 units in December, up 4% y/y. For the full year 2021, sales of the Lynk & Co brand totalled 220,516 units, up 26% y/y. During 2021, the automaker shipped a total of 11,602 Lynk & Co vehicles to Europe. As for Geely's electric vehicle (EV) brand, Zeekr, it began deliveries of the Zeekr 001 EV on 23 October 2021; as of the end of December, 6,007 units of the Zeekr 001 had been delivered. Looking ahead, Geely aims to sell 1.65 million vehicles this year, representing an increase of 24% y/y.



### Outlook and implications

Geely's expanding product lines under the Geely and Lynk & Co brands have helped the automaker narrow the gap in sales volumes with its closest rivals, Honda and Nissan. The two Japanese automakers both experienced sales contractions in 2021 in China. Honda's Chinese sales stood at 1,561,530 units last year, while Nissan sold 1,381,494 vehicles. In the sport utility vehicle (SUV) market, demand for Lynk & Co vehicles remained strong last year and the brand achieved a new sales record thanks to the launch of new models such as the Lynk & Co 09. The brand also enjoyed growing demand in Europe, where customers can rent its cars under a subscription model. To compete with automakers such as BYD, Geely has introduced its hybrid technology, the Epic hybrid system, on the Xingyue L SUV. Pre-sales of this model have just begun in China, with deliveries expected to start in the first quarter.

## [Forecast & Analysis Highlights] GAC posts 4.92% y/y sales growth in 2021

GAC Group has recorded a 4.92% year-on-year (y/y) increase in sales to 2.144 million units during 2021, according to a company statement. In December 2021, its sales increased by 11.8% y/y to 233,671 units. Among the group's joint ventures (JVs), GAC Honda sales reached 78,402 units in December, down by 3.54% y/y. Sales of GAC Toyota totalled 98,523 units, up 35.5% y/y. GAC Mitsubishi Motors' sales totalled 7,012 units, compared with 10,981 units in December 2020, while those of GAC Fiat Chrysler Automobiles (FCA) totalled 1,376 units, versus 5,176 units in December 2020. Sales of GAC's wholly owned brand managed by GAC Motor, the group's



WeChat



Auto VIP

passenger vehicle subsidiary, increased by 2.18% y/y to 32,151 units in December 2021. GAC AION New Energy, the subsidiary that manages the AION electric vehicle (EV) brand, sold 14,500 vehicles last month, up 98.5% y/y.



## Outlook and implications

GAC Toyota has managed to increase its sales in China despite semiconductor shortages and other supply chain constraints. Toyota's competitive product line in China's C and D segments enabled the automaker to expand its sales in a turbulent market environment. The JV has already begun deliveries of the Sienna multi-purpose vehicle (MPV) in China in January. The Sienna, designed to appeal to family-oriented buyers, is expected to help the JV gain volumes in the MPV market. In comparison, sales of GAC Honda contracted in 2021. The semiconductor shortage has hindered deliveries of Honda's best-selling models, such as the CIVIC and Accord. With regard to GAC's wholly owned product lines, AION has been leading the group's charge in the EV market; its sales have doubled last year, reflecting growing consumer acceptance of the brand and its products. To scale up production, GAC AION will build a second plant for the production of AION models in China. The new plant will boost GAC AION's production capacity to 400,000 units per annum



WeChat



Auto VIP

## [EV & Energy Efficiency Highlights] NIO teams up with Zhejiang Commercial Group to build battery-swapping stations

Chinese electric vehicle (EV) startup NIO entered into an agreement with Zhejiang Commercial Group on 9 January to build battery-swapping facilities jointly. The two parties aim to establish battery-swapping stations along expressways in Zhejiang province. Under this partnership, 30 new stations are expected to come online by the end of June.



### Outlook and implications

NIO expanded its battery-swapping service network at an unprecedented rate during 2021 with the help of other companies. By the end of 2021, the EV startup had deployed a total of 777 battery-swapping stations in China, 605 of which were newly built in 2021. NIO and Sinopec, one of China's leading utility suppliers, have launched 101 supercharging and battery-swapping stations in China since the opening of first NIO-branded battery-swapping stations in April 2021. The new stations built under NIO's partnership with Sinopec are located inside existing petrol stations in Sinopec's network, saving costs for NIO and making such locations easy to find for EV owners. Thanks to its expanding battery-swapping network, NIO's vehicle sales grew by 109% in 2021 to a record of 91,429 units.

## [EV & Energy Efficiency Highlights] VinFast partners with Applus+ IDIADA for EV safety testing

Vietnamese automaker VinFast has partnered with Applus+ IDIADA, a leading global firm with complete vehicle testing and engineering capabilities in the US, Europe, and Asia, for electric vehicle (EV) safety testing, according to a company statement. It will conduct safety tests to examine the performance of VinFast EVs in accordance with global regulatory and consumer requirements. "We are very pleased to deserve the trust of VinFast as their technical partner for vehicle safety in this ambitious and challenging project," said Carlos Garcia, director of Applus+ IDIADA North America.



WeChat



Auto VIP



## Outlook and implications

VinFast continues to move very quickly in its international rollout and vehicle electrification plans, which this month revealed a full range of five new battery electric vehicles (BEVs) at the CES 2022 in Las Vegas. During the announcement, the automaker confirmed that it would become a full BEV brand this year, having debuted with internal combustion engine (ICE) vehicles in 2019. The VF e36 and VF e35 will now be known as the V9 and V8, and VinFast revealed the VF 5, VF 6, and VF 7, in the A, B, and C segments, respectively, at the CES 2022. It announced that it is looking for a production location in Germany, and it has also been reported that the company has confirmed its plans to build EV battery cells and packs in the US, where it plans to begin producing EVs in the second half of 2024. “The US is among the most important markets for VinFast and we want to provide the highest level of safety to the customers. The demand for EVs in the coming up years is huge; we don’t come to the US and other markets to compete with other OEMs. We aim to provide a high-quality EV, unique customer experience at reasonable price. We believe that we’ll find a place in the global EV market,” said Vingroup vice-chairman and VinFast Global CEO Le Thi Thu Thuy. Currently, IHS Markit forecasts that VinFast's production will rise to about 88,000 units by 2026, at this point reflecting only the Vietnam production base. As plans for US and European production become more clear relative to the automaker’s capacity expectations and investment, as well as overall progress and market reception to its initial moves, the forecast will be adjusted.



## [OEM Highlights] Lexus launches new LX 600 SUV

### IHS Markit perspective

**Implications** The update to the LX was much needed to ensure that the vehicle remains competitive, with other key luxury brands already offering technologies such as voice assistants. Lexus is already known for its comfortable ride, but with enhanced off-road and safety features, the refreshed vehicle is likely to have an edge over its rivals and give a boost to the automaker's sales.

**Outlook** We forecast sales of the LX model to be around 24,000 units in 2022, including around 19,000 units of the new model. Sales are likely to improve to 28,000 units next year.

Lexus has launched the all-new Lexus LX 600 sport utility vehicle (SUV) today (12 January). Along with a new platform, the 2022 model-year (MY) SUV will have new luxury and sporty trim levels named Executive and Offroad. The automaker has dropped the venerable 5.7-litre V8 engine from the new-generation LX 600, replacing it with a twin-turbo 3.5-litre V6 with maximum output power of 305 kW (415 PS) and maximum torque of 650 N.m. The newly adopted engine is mated to a 10-speed automatic transmission to achieve a wider range of overall gear ratios, resulting in an improved high-speed fuel economy and, at the same time, enhanced starting acceleration and off-road performance.

The vehicle is 5,100 mm long, 1,990 mm wide, and 1,885 mm tall with a wheelbase of 2,850 mm. Compared with the conventional model, the overall length is 20 mm more, the overall width is 10 mm larger, and the overall height is 25 mm lower. The 2022 MY brings the most significant platform change for the Lexus LX since 2007, and a suspension largely the same as that of the LandCruiser 300. With this new generation of the LX 600, Lexus aims to continue the outgoing model's reputation. The new GA-F platform provides 20% more rigidity and a weight reduction of 200 kg by adopting the new engine and replacing the roof material with lightweight aluminium. The stiffer structure, lower centre of gravity, and reduced weight should make the vehicle feel more balanced on the road. The LX also moves to electric steering and electric brake control. Lexus said that the front high-mounted double wishbone suspension, suspension geometry, and optimised coil springs improve vehicle stability and ride comfort, with a long suspension stroke for both on- and off-road performance. At the rear, a four-link axle-type suspension with lateral control arms is carried over from the prior model. The suspension arms and shock absorber layout has been revised for better control.

The model line-up includes the standard LX 600 priced at JPY12.5 million (USD108,384); the Executive variant, which has four independent seats that can recline up to 48 degrees, is priced at JPY18 million, while the Offroad variant is priced at JPY12.9 million. The new model also adopts a multi-terrain select that allows the user to select off-road driving support according to the road's surface conditions from six modes (Auto, Dirt, Sand, Mud, Deep Snow, and Rock). For off-road driving, the all-new LX 600 has a multi-terrain selection system, as well as Toyota's latest crawl control and downhill assist features. Crawl control is essentially a low-speed cruise control for trails and rough terrain.



WeChat



Auto VIP



*Lexus LX 600*

*Lexus*



*Lexus LX 600*

*Lexus*



*Lexus LX600*

*Lexus*



*Lexus LX 600*

*Lexus*

The new-generation LX 600 is on an all-new platform with expanded technology and expanded adaptive driver-assistance features compared with the outgoing product. It features a fingerprint authentication-type push start switch to reduce chances of theft. This feature has been adopted for the first time by the automaker. Other safety features include the coverage area of "pre-crash safety" using monocular camera and millimetre-wave radar that can detect daytime bicycle drivers and nighttime pedestrians. The system can now detect crossing pedestrians coming from the front when turning left. In addition, functions such as emergency steering support that assists





steering in the lane triggered by the driver's steering and low-speed acceleration suppression that supports accident prevention at low speeds have been added.

## Outlook and implications

The update to the LX was much needed to ensure that the vehicle remains competitive, with other key luxury brands already offering technologies such as voice assistants. Lexus is already known for its comfortable ride, but with enhanced off-road and safety features, the refreshed vehicle is likely to have an edge over its rivals and give a boost to the automaker's sales. Kazuyuki Ueno, an off-road test driver for Lexus, said, "We repeated test driving on various rough roads many times to make off-road driving safe and secure, and to let our customers drive while experiencing the quality and comfort of LEXUS, and this time off-road driving. We have created performance. We have fine-tuned active height control and adaptive variable suspension system so that all passengers can move comfortably, and while improving the feeling of ground contact on rough roads, we have realized a high-quality ride."

The Lexus LX is an E-segment SUV that has been in the market for over two decades and its global sales had improved from around 17,000 units in 2010 to around 30,000 units in 2019 before dropping to 23,400 units in 2020, according to IHS Markit light-vehicle sales forecast. We forecast sales of the LX model to be around 24,000 units in 2022, including around 19,000 units of the new model. Sales are likely to improve to 28,000 units next year.

## [OEM Highlights] BYD Han DM-i PHEV to deliver electric driving range of up to 206 km

BYD is expected to introduce its DM-i plug-in hybrid technology to its Han sedan. According to d1ev, the Han DM-i will have two battery options: an 18.315-kWh battery pack and a larger 37.555-kWh battery pack. The 18.315-kWh battery will only be offered in a front-wheel-drive model, which will have a range of 101 km under the Worldwide harmonized Light vehicles Test Cycles (WLTC). The 37.555-kWh version will be available with four-wheel drive and the model will boast a range of up to 206 km under the WLTC. The Han DM-i will continue to be powered by a 1.5-litre turbocharged engine that BYD developed specifically for its hybrid models.



## Outlook and implications

The Han, BYD's flagship sedan, has already become one of the best-selling models in China's full-size sedan market. The launch of a DM-i-powered variant to the Han line-up is expected to further boost Han's sales, which



WeChat



Auto VIP

had already exceeded 117,000 units in 2021. Thanks to the DM-i plug-in hybrid technology, BYD is gaining shares in the plug-in hybrid electric vehicle (PHEV) market and leading its rivals, Geely Auto and Great Wall Motor, in rolling out hybrid models. Since mid-2021, BYD has introduced its latest plug-in hybrid technology to four models of its Dynasty product line. The Qin Plus, Song Plus, Song Pro, and Tang have all come in with a PHEV variant featuring the DM-i technology.



## [Technology & Mobility Highlights] Bus maker GILLIG partners with RR.AI to develop automated vehicle technology

Bus maker GILLIG has partnered with RR.AI to jointly develop automated vehicle technology for commuter buses in the United States, according to a company statement. The companies will jointly develop Level 4 autonomous technology for buses, which would allow a vehicle to drive itself under certain circumstances. Safety features such as automatic emergency braking, precision docking, bus yard automation, blind spot detection, and pedestrian avoidance will be developed and tested by the two companies. Derek Maunus, GILLIG president and CEO, said, "We see this partnership as a great fit for both our companies. The GILLIG team is passionate about delivering transformative products and solutions that make transportation safe, efficient and help eliminate roadway congestion. RR.AI is equally committed to those important goals. We're excited to work with such a technology leader to bring advanced vehicle automation technologies to cities across America."



### Outlook and implications

GILLIG, Canadian NFI Group Inc's new flyer unit, and Canada-based Novabus are the major bus manufacturers in the United States. GILLIG plans to deploy these automated technologies across all its bus models, but will begin with its latest electric bus model. Developing robotaxis proved to be more difficult and expensive than anticipated, so investors are pouring capital into tech firms developing autonomous technology for trucks and other commercial vehicles where automation could be viable sooner. RR.AI is a unit of autonomous vehicle (AV) technology startup Robotic Research, which recently raised USD228 million in a Series A funding round. Robotic Research plans to use the infused capital to scale up RR.AI's solutions for trucks, buses, and logistics vehicles.

## [Technology & Mobility Highlights] Hyundai starts developing automotive semiconductors

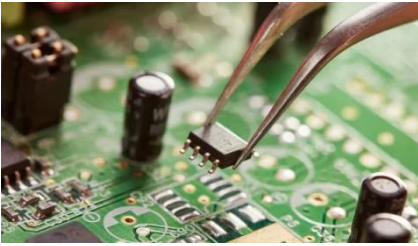
Hyundai has started developing next-generation power semiconductors for vehicles, reports the Business Korea Daily News. Along with power semiconductor company Power Cube, the automaker will develop semiconductors using new materials such as silicon carbide (SiC), gallium nitride (GaN), and gallium oxide (Ga2O3). Next-generation semiconductors outperform current silicon-based semiconductors in terms of performance. Hyundai is also expected to place new orders with South Korean foundries. It will reportedly outsource production of gallium oxide power management integrated circuits and microcontroller units to domestic foundry companies. Samsung Electronics is also on the horizon for collaboration. Hyundai will use or is considering using Samsung Electronics's products such as camera image sensors, vehicle power management integrated circuits, and infotainment application processors in Genesis premium-brand models.



WeChat



Auto VIP



## Outlook and implications

Hyundai has been forced to disrupt production at a number of its South Korean and overseas facilities since January 2021 in relation to the ongoing semiconductor shortage, which is hitting OEMs around the world. As of 7 January, IHS Markit's assessment of the supply shortage indicated an estimated production volume loss of around 199,000 units at Hyundai Motor Group during 2021. Another 13,000 units are now at risk in the first quarter of 2022. In October 2021, Hyundai's global chief operating officer José Muñoz said that the automaker is working on developing its own chips, an effort that he said "takes a lot of investment and time". The automaker's parts affiliate Hyundai Mobis would play a key role in the in-house development plan. By developing its own semiconductors, the automaker aims to reduce reliance on chipmakers and give a boost to the South Korean semiconductor ecosystem. Sensor deployment in vehicles has increased recently, and high-speed processing to understand and anticipate these data for safer driving has become vital. Other automakers, such as Toyota, General Motors, and Volkswagen, are also developing next-generation semiconductors in partnership with global fabless companies such as Germany's Infineon and the Netherlands' NXP.



WeChat



Auto VIP

## [Supplier Highlights] CES 2022: Visteon unveils AllGo App Store for connected cars

**steon has been working with multiple early-stage app developers around the world to create a pipeline of new automotive-optimized apps**



Source: Visteon

Visteon has unveiled the AllGo App Store at CES 2022 at Las Vegas, according to a company press release on 5 January. The AllGo App Store features automotive-optimized versions of mobility, navigation, parking, and infotainment apps around the world and using its work in in-vehicle infotainment and is based on Android Automotive.

“The AllGo App Store shows Visteon is strategically positioned to disrupt the in-vehicle information and entertainment experience for today’s connected car. It provides developers and OEMs with a portal for development, distribution and analytics for customizable content and services while giving consumers the seamless infotainment experience, they expect,” said Sachin Lawande, president and CEO, Visteon.

### Outlook and implications

A dedicated portal for automakers, it features certified apps that are filtered to the countries where the car company operates and gives them control over which apps to offer through their customizable app store platforms. Apart from over-the-air (OTA) updates, the system also provides a pipeline for future monetization opportunities. Visteon has been working with multiple early-stage app developers around the world to create a pipeline of new automotive-optimized apps. The AllGo App Store developer portal allows providers a self-service method to create, manage, and monitor apps.

## [Supplier Highlights] CES 2022: SOSLAB unveils automotive solid-state lidar

**SOSLAB demonstrated ML’s 180-degree wide angle and long-range measuring performance for several meters**



WeChat



Auto VIP



Source: Getty image/ Just\_Super

SOSLAB has released Mobility lidar (ML) at the CES 2022 in Las Vegas, the company said in a press release on 9 January. SOSLAB introduced the Solid-state LiDAR product at CES 2022, after its market release was delayed due to the COVID-19 pandemic. SOSLAB demonstrated ML's 180-degree wide angle and long-range measuring performance for several meters.

## Outlook and implications

SOS LAB has signed a lidar collaboration memorandum of understanding (MoU) in January 2020 with ON Semiconductor to accelerate the development and commercialization of lidar technology for the automotive and smart factory markets.

In May 2020, SOS LAB raised USD8 million in Series A+ financing round led by Korea Development Bank (KDB), with participation from A ventures, Emford Equity Partners, Ulmus Investment, KDB Capital, Shinhan Capital, and Shinhan Financial Group.



## [VIP ASSET] China inches forward on CCUS deployment with Sinopec pilot project



06 January 2022 Max Tingyao Lin

China saw another pilot carbon sequestration project commissioned recently, but experts suggest a regulatory framework and more financial incentives are required for large-scale development.

In a statement, state-owned energy major Sinopec said it put a carbon capture, utilization, and storage (CCUS) facility with an annual capacity of 200,000 metric tons (mt) into operation in Jiangsu province 27 December.

The project will capture CO<sub>2</sub> from the tail gas of a coal-to-hydrogen plant at Sinopec's Nanjing petrochemical complex for use in enhanced oil recovery at the Huadong and Jiangsu fields.

"This marks the completion of our first demonstration project in the Yangtze River Delta region," Sinopec said.

China, the world's largest GHG emitter, says CCUS will play an important role in its long-term decarbonization pathway in several policy documents.

IHS Markit estimated that 23 projects with a total carbon capture capacity of 4 million mt/year were operational in China as of September. However, 15 of them were small pilot projects with a capacity of less than 400,000 mt/year each.

Paola Perez Pena, a clean energy technology principal research analyst at IHS Markit, said China currently remains focused on research and development (R&D) for carbon sequestration projects rather than commercialization.

"Mainland China has [become] the region with the most operational CCUS pilots globally, however supporting policies for commercial CCUS are still needed to incentivize large-scale projects," Perez Pena told Net-Zero Business Daily.

"China is not prioritizing [the technology] as a solution on emissions abatement, but rather as an economical option that can increase oil production with side benefits like CO<sub>2</sub> emissions reduction," she added.

In 2019, the Chinese central government released a roadmap for national CCUS development that targets readying the technology for industrial applications by 2030, with CO<sub>2</sub> pipelines of up to 2 million mt/year being made available.



Government officials plan to deploy those projects extensively and envisage several industrial carbon hubs across the country by 2050, according to the roadmap.

But China has yet to enact any specific regulations for carbon sequestration or provide any specific and targeted financial incentives for related projects—and those could be deemed essential by many investors.

In a research report published in September, the International Energy Agency (IEA) said the government will need to introduce a legal and policy framework, and market incentives like CO<sub>2</sub> pricing and subsidies to kickstart large-scale CCUS development.

While the country's national emissions market, which was launched last July, is off to a strong start in terms of liquidity, experts said the trading scheme is not yet robust enough to prompt decarbonization investments, with carbon emissions priced at just CNY 44.20/mt (\$6.93/mt) as of mid-December.

Sharing a similar view to the IEA, Perez Pena suggested the Chinese government is likely to prepare some policy tools to promote CCUS development in the coming years.

"China has experience in developing policies to incentivize large-scale deployment for other industries like renewables, so we are expecting to see some sort of progress in the policy framework for CCUS in the next 10 years," she said.

## **Necessary technology**

When updating its Nationally Determined Contribution last year, China committed to its CO<sub>2</sub> emissions peaking by 2030 and achieving carbon neutrality by 2060.

The government-backed Chinese Academy of Environment Planning, Chinese Academy of Science, and Administrative Center for China's Agenda 21 said in a joint report last July that CCUS would be critical in reducing emissions from the power, steelmaking, and cement sectors.

According to the report, the technology could capture up to 408 million mt of CO<sub>2</sub> in China by 2030 and 1.82 billion mt by 2060.

With the country relying on coal for 60% of its power generation, Perez Pena expects CCUS to be one of the key technologies for reducing emissions in China in the short run.

"China will require the technology to meet their targets ... The question is if the government will put in place the right incentives and funding for these projects to be quickly deployed," she said.

## **Project development**





WeChat



Auto VIP

So far, Chinese energy majors have been the keenest in developing CCUS projects in the country.

Sinopec, China National Petroleum Corp., and CNOOC Group together operated eight CCUS projects with a total capacity of 2.9 million mt/year as of September, or 72.5% of the national total, according to IHS Markit.

*Welcome to add WeChat ID (ihsmarkitautomarket) , join the VIP group and read the full article*



## [VIP ASSET] Semiconductor supply issue: Light-vehicle production tracker

Reports of disruption within the supply chain of semiconductors to the automotive sector began in late 2020 and is now continuing in the first quarter of 2022. Pressure built up as the automotive industry's recovery from the widespread coronavirus disease 2019 (COVID-19) virus pandemic-related lockdowns experienced during the first half of 2020 clashed with increasing demand from the wider consumer electronics sector, itself recovering strongly and, late in the year, building stocks for the holiday season. The situation was further exacerbated by other factors, including the fire at Renesas' Naka (Japan) facility on 19 March, which only reopened fully in late June, and following the severe weather that hit the southwest US in February. Other factors have also come into play more recently, such as the impact of the COVID-19 virus on parts of Southeast Asia, and especially Malaysia which undertakes many labour-intensive back-end tasks in the semiconductor supply process.



*Semiconductor*

*Shutterstock/Dario Lo Presti*

Many OEMs have been affected by this situation and will continue to be so. Here is a selection of key automakers that have been hit, the steps they have taken to mitigate the situation and their expectations going forward.

### **Ford**

Ford has been hit heavily by the shortage at its sites both in North America and in Europe. In North America, multi-week stoppages took place in the first quarter of 2021 and continued through that year, hitting some sites and the products they build more significantly than others. It has affected production of important models such as the Explorer; the new Bronco Sport and Bronco; Lincoln Navigator; the F-Series and Ranger pick-ups; with the Mustang Mach-E battery electric vehicle (BEV) being hit in the fourth quarter 2021. During the first weeks of 2022, production of the F-Series pick-up and E-Series van has been disrupted.

All of the automaker's sites in Western and Central Europe were affected by multi-week stoppages during 2021. Valencia (Spain), which builds a range of models, including the Kuga and Transit Connect, Craiova (Romania) that manufactures the Puma, and its German sites in Cologne (Fiesta), and Saarlouis, which builds the Focus, saw four consecutive quarter of disruption caused by the semiconductor shortage. After the Kocaeli-Otosan (Turkey) facility, which builds the Transit and Transit Custom, saw a lengthy stoppage during the second quarter, it was also hit by stoppage during the fourth quarter as well. Weak supplies of components led to reduced working at Saarlouis in January 2022 as well.

There have also been several production stoppages at plants in Asia during 2021, taking in operations in China, India, and Thailand. No other stoppages have been confirmed for 2022.



WeChat



Auto VIP



During the announcement of its third-quarter financial results during late October, Ford has said that its inventory has fallen further while its order bank has expanded. During the three-month period, inventory in its key US market has fallen to a record low of just 20 days' supply by the end of September. Its order bank in the wider North American market expanded by over 50%, an increase of 111,000 units, while in Europe it has reached record levels. Ford currently expects the semiconductor shortage will affect 2022, and that it could be 2023 before it is able to rebuild inventories. Ford chief financial officer (CFO) John Lawlor said that Ford expects the scope and severity of the disruption will reduce throughout 2022.

In addition, Ford has announced a partnership with GlobalFoundries, a semiconductor manufacturer, to explore supply and development of automotive semiconductors, potentially including US manufacturing.

## General Motors (gm)

GM's production has been affected across its operations in North America, South America, and Asia as a result of the semiconductor shortage in 2021. In North America, despite attempts to avoid experiencing impacts on some of its highest-margin products such as full-size pick-up trucks and sport utility vehicles (SUVs), production disruptions hit these products because of this component shortage mainly in the third quarter of 2021. Disruptions are already starting to hit a number of plants in 2022. GM has been trying to maintain uptime by cutting some features from the specifications of certain vehicles.

There have also been significant ongoing disruptions at its Brazilian operations, with the Gravatai facility affected by a stoppage that lasted for around five months. Intelligence suggests that a third shift has not taken place at this site before January 2022, while the end-of-year shutdown was slightly longer than usual at two weeks. At the São Caetano do Sul plant, the latest production stoppage extended the end-of-year break for longer than usual at four weeks. There was also a three-week end-of-year stoppage at the São Jose dos Campos plant. Elsewhere, GM's two sites in South Korea have reduced output at various times during all four quarters 2021, with a halt at Pupyong also hitting the first week of 2022 for some models while others will have output cut by 50% through January. In China, there were limited disruptions to production at the SAIC-GM joint venture (JV) in the second and third quarters of 2021.

On the announcement of its third-quarter 2021 financials in late October, the semiconductor shortage was continuing to drag on its performance. With regards to its GM North America (GMNA) operations, its wholesale sales have dropped y/y due to the production disruptions. It is also reaching a point where inventory is becoming exceptionally lean, not helped by the earlier impact of the COVID-19 virus pandemic in 2020, or the UAW strike in late 2019 that meant GM went into 2020 with a leaner inventory as well. However, it has highlighted that the inventory situation has reduced sharply the need for incentives and created an environment of strong pricing. GM stated that GMNA's average transaction prices in the third quarter climbed to more than USD47,000 and



WeChat



Auto VIP

incentive spending as a percentage of average transaction price dropped to 4.6%, lower than 7.4% in the third quarter of 2020. GMNA's low inventory and strong pricing are expected to continue well into 2022, although its production volume is expected to increase.



CFO Paul Jacobson has since announced that GM has increased its 2021 profit expectation as a result of strong consumer demand, high new-vehicle prices and more stability in semiconductor supply. It now anticipates full-year adjusted pre-tax profits of around USD14 billion, over the USD11.5–13.5 billion it previously forecast. However, he added that supplies of semiconductors will not get back to normal until late 2022, and GM's dealer inventory will not be normal soon, either.

The automaker's president, Mark Reuss, has also said that the company is looking to reduce the number of unique semiconductors that it uses in its vehicles by 95%. It is said that the change could strengthen the flow of GM's semiconductors after the shortage. It also expects its semiconductor requirements will more than double over the next several years. GM will also consolidate core microprocessor chip purchases into three families, which will be co-developed, sourced, and built with leading semiconductor manufacturers.

*Welcome to add WeChat ID (ihsmarkitautomarket) , join the VIP group and read the full article*

###



WeChat



Auto VIP

## Email

[AsiaPacificAutomotive@ihsmarkit.com](mailto:AsiaPacificAutomotive@ihsmarkit.com)

## Local Automotive Site

中国（中文）：[IHSMarkit.com/China Automotive](https://IHSMarkit.com/China_Automotive)

日本（日本語）：[IHSMarkit.com/Japan Automotive](https://IHSMarkit.com/Japan_Automotive)

韩国（韩国语）：[IHSMarkit.com/Korea Automotive](https://IHSMarkit.com/Korea_Automotive)

---

## Disclaimer

The information contained in this report is confidential. Any unauthorized use, disclosure, reproduction, or dissemination, in full or in part, in any media or by any means, without the prior written permission of IHS Markit Ltd. or any of its affiliates ("IHS Markit") is strictly prohibited. IHS Markit owns all IHS Markit logos and trade names contained in this report that are subject to license. Opinions, statements, estimates, and projections in this report (including other media) are solely those of the individual author(s) at the time of writing and do not necessarily reflect the opinions of IHS Markit. Neither IHS Markit nor the author(s) has any obligation to update this report in the event that any content, opinion, statement, estimate, or projection (collectively, "information") changes or subsequently becomes inaccurate. IHS Markit makes no warranty, expressed or implied, as to the accuracy, completeness, or timeliness of any information in this report, and shall not in any way be liable to any recipient for any inaccuracies or omissions. Without limiting the foregoing, IHS Markit shall have no liability whatsoever to any recipient, whether in contract, in tort (including negligence), under warranty, under statute or otherwise, in respect of any loss or damage suffered by any recipient as a result of or in connection with any information provided, or any course of action determined, by it or any third party, whether or not based on any information provided. The inclusion of a link to an external website by IHS Markit should not be understood to be an endorsement of that website or the site's owners (or their products/services). IHS Markit is not responsible for either the content or output of external websites. Copyright © 2020, IHS Markit®. All rights reserved and all intellectual property rights are retained by IHS Markit.

