



IHS Markit®

# Automotive Industry Weekly Digest

26 July – 30 July 2021





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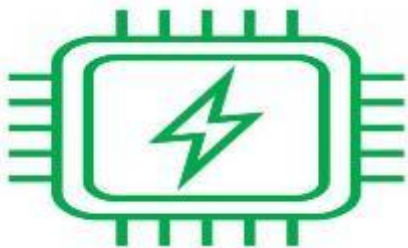
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## [Policy Highlights] Chinese authorities release plan for better traceability and recycling of NEV batteries

The Chinese authorities have announced a plan for better traceability and recycling of batteries used in new energy vehicles (NEVs) to reduce their impact on the environment, reports the China Daily, citing a five-year plan for developing the 'circular economy' released by the National Development and Reform Commission earlier this month. The plan focuses on how batteries' remaining power is utilised after their primary use, as well as more effective recycling. The plan confirms that China will build a traceability management system for NEV batteries and measures will be taken to encourage NEV manufacturers to set up recycling service networks. According to the data from the China Automotive Technology and Research Centre, China's total amount of decommissioned power batteries reached some 200,000 metric tons by the end of last year and is likely to reach 780,000 tons by 2025.



### Outlook and implications

China has been aggressively pushing the use of NEVs in both the private and the public transport domain. NEV sales have increased significantly in the past five years in China, thanks to the generous subsidies offered by the government. Despite the impact of the coronavirus disease 2019 (COVID-19) pandemic on vehicle sales, the Chinese NEV market continued to expand during 2020. Sales of NEVs increased 10.9% to 1.37 million units last year. In the first six months of this year, NEV sales in China rose by 201.5% year on year to 1.206 million units and are anticipated to increase by more than 40% each year for the next five years. The recent policy aims to tackle the problem of improper recycling of the heavy metals contained in power batteries. If this problem continues, it will mean decomposed batteries will dangerously affect the environment and the whole purpose of introducing battery-powered vehicles in the first place will be lost.

## [Policy Highlights] Shanghai city issues draft regulation to regulate smart vehicle testing data

The Chinese city of Shanghai has released draft regulations to protect data collected during smart vehicle testing, reports Reuters. The Shanghai Economic and Information Technology Commission said that the companies involved with smart vehicle testing would be required to appropriately handle data gathering, processing, application, and transfer. It added that the data collected is not permitted to be transmitted overseas unless approved by the relevant authorities. The companies should also take appropriate steps to protect data



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confidentiality, establish a personal information protection system, and refrain from engaging in illegal trading, transfer, or disclosure of relevant data.



## Outlook and implications

China is in the process of revising its privacy and data security policies. It is drafting a Personal Information Protection Law, which requires technology firms to impose stricter measures to ensure that user data is stored securely. In September, China is set to implement its Data Security Law, which requires companies that process critical data to undertake risk assessments and submit reports. This comes as the country tightens scrutiny of technology firms on a range of issues, including data security, customer privacy, and anti-competitive practices. Chinese ride-hailing giant Didi Chuxing (DiDi) was recently ordered by China's cyberspace regulator to remove its app from app stores. China's market regulator has also fined several internet companies, including DiDi, Tencent, and Alibaba, for not seeking approval for earlier merger and acquisition deals.



## [Technology Highlights] Lyft partners with HERE to power location searches, real-time road data

Ride-hailing firm Lyft has selected HERE Technologies as a primary search and location provider. Lyft is to use HERE Map Content and HERE Location Services for its fleet's location searches and real-time road closures data. Lyft has integrated HERE Geocoding and Search Service into its app, allowing users to search for pick-up and destination addresses, as well as points of interest. For back-end analysis, Lyft is to leverage HERE Point Addressing and HERE Places Extract Portal, which instantly offers new location data. Edzard Overbeek, CEO at HERE Technologies, said, "Powering more than a million rides a day, Lyft requires a robust and accurate search engine to meet the needs of each of their customers. Over the past six months, we have worked in collaboration with Lyft to implement and test our robust destination catalog that helps riders get to more destinations in cities across North America. Our services are now enriching the Lyft network, spearheading innovation in the rideshare industry."



### Outlook and implications

Lyft considers destination searches and estimated times of arrival (ETAs) as a crucial part of its user experience. Previously, the company was using Google maps for search and location services. HERE's real-time traffic technology collects and analyses data from multiple sources and provides real-time information on traffic conditions to drivers. HERE's Live Sense SDK is deployed with high-definition maps and positioning technology to detect potentially hazardous circumstances ahead. Earlier this month, France-based startup Nexyad, a developer of an embedded, real-time platform for aggregating onboard data, and Here Technologies announced a collaboration to apply cognitive artificial intelligence (AI) technology to road safety.

## [Technology Highlights] Porsche JV and BASF to develop high-performance lithium-ion batteries

BASF has been selected as the cell development partner to create a next-generation lithium-ion battery for Cellforce Group, which is a joint venture (JV) between Porsche and Customcells. A company statement said that as part of the collaboration BASF will provide high-energy cathode active materials to contribute to high-performance battery cells for fast charging and high energy density. Cellforce will provide the main battery component. Commenting on the R&D partnership Michael Steiner, Member of the Executive Board for Research and Development at Porsche said, "As an automotive manufacturer, Porsche aims to be CO2-neutral in its overall



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balance sheet by 2030. In this respect, a low CO2 footprint, closed-loop recycling and sustainability are increasingly in the foreground. The cooperation with BASF is a win-win situation for all parties involved. European sources for the materials nickel and cobalt, the associated security of supply and the short transport routes from Schwarzheide to Baden-Württemberg in Germany were all important arguments for the decision to work with BASF.”



## Outlook and implications

The Cellforce JV was established by Porsche with a particular focus on very creating and manufacturing battery technology for high-performance vehicles. It is based in Tübingen, Germany and is targeting a start of production for its high-performance battery cells from 2024, with an initial low volume of 100 MWh a year for applications in around 1,000 motorsport and high-performance vehicles. Sustainability appears to be one of the core elements around selecting BASF as a partner for the project. BASF is extremely focused on ethical sourcing, while production waste from the future Cellforce Group battery plant will be recycled at BASF’s prototype plant for battery recycling in Schwarzheide (Germany).



## [Autonomous Highlights] Nissan, DoCoMo to demonstrate on-demand vehicle dispatch service using autonomous vehicles

Nissan Motor, in partnership with NTT DoCoMo, will demonstrate an on-demand vehicle dispatch service using autonomous vehicles (AVs), according to a company statement. The companies will deploy four AVs on a route with 23 stops in the Yokohama Minato Mirai and Chinatown areas of Japan. The companies will hire 200 qualified passengers (volunteers) who will participate in this demonstration to provide feedback about their experience. The service will combine DoCoMo's artificial intelligence (AI)-based on-demand service, "AI-operated bus" and the autonomous mobility service Easy Ride, which is jointly developed by Nissan and DENA.



### Outlook and implications

Nissan is working to reduce carbon emissions. It has conducted multiple autonomous mobility trials in countries such as Japan, the United Kingdom, and China. The automaker plans to introduce more than 20 models equipped with basic automated vehicle functions by 2023. It will integrate ProPilot 2.0 in the higher-priced cars, while lower-end models will feature the first-generation technology as standard equipment. Under Nissan Intelligent Mobility, Nissan tested invisible-to-visible (I2V) technology using NTT DOCOMO's 5G connectivity in Japan.

## [Autonomous Highlights] WeRide partners with Hesai to develop advanced hardware platform for autonomous cars

Autonomous vehicle (AV) startup WeRide.ai has partnered with Chinese LiDAR manufacturer Hesai Technology to jointly promote the adoption of driverless technology. The companies will co-build a sensor suit required for autonomous operations. Hesai will assist WeRide in building a more advanced hardware platform for autonomous cars by providing its LiDAR sensors, reports Gasgoo.





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## Outlook and implications

WeRide.ai focuses on deploying Level 4 AVs on public roads, and recently received a permit to test two AVs without a driver behind the wheel on designated streets in San Jose (California, US). In 2020, it began testing fully driverless cars in Guangzhou. The company has also launched a mini-robobus trial service for the public at Guangzhou International Bio Island. Meanwhile, Hesai Technology develops 3D LiDAR sensors and is backed by Bosch, Lightspeed, Baidu, and other global investors. Hesai claims that the customised LiDAR will improve accuracy by about 2 cm, and has an object detection radius that is 1.5 times wider than the leading products currently in the market.





## [Supplier Trends and Highlights] GKN Automotive accelerates development of 800V eDrive technologies for EVs

**Next generation eDrive systems promise several benefits including faster charging times and superior performance**



Source: GKN Automotive

UK-based manufacturer of drive systems, GKN Automotive is accelerating the development of next generation eDrive technologies in an attempt to stay aligned with the rapidly increasing global demand for electric vehicles (EVs), the company said in a press release on 20 July.

Based on the 800V technologies, the next generation eDrive systems are already in advanced stages of development and are currently being tested in the real-world conditions, the company said, adding that it is working with some key automakers to commercialize these advanced eDrive systems soon.

According to the company, the fast track development of next-generation eDrive systems is driven on the back of Formula E, where it is a partner to Jaguar Racing.

“Constant testing to improve efficiency, performance and extending the range of batteries in the ultra-competitive world of electric motorsport creates a direct link from race to road. Cutting-edge developments currently being developed for Jaguar Racing will likely be available on near-future road cars in just three years,” it said.

### Outlook and implications

GKN Automotive estimates that deployment of 800V technologies in its future eDrive systems promise several benefits for the EV owners, including faster charging times and superior performance.

The greater systems efficiencies achieved by these eDrive systems would lead to an increased driving range, which continues to be the single largest roadblock in EV adoption worldwide, it said, adding that these efficiencies could also lead to the carmakers opting to use smaller batteries, reducing vehicle cost, complexity, and weight.

“Global demand for EVs is accelerating fast and now is the perfect time for GKN Automotive to underpin its leadership in eDrive systems through next-generation technologies. These high-tech 800V systems will create faster charging cars with better battery range, improved driving performance and even greater efficiencies,” said Liam Butterworth, CEO, GKN Automotive.



## [Supplier Trends and Highlights] Smart Eye ties up with OmniVision to develop interior sensing solution

**Solution enables complete driver and cabin monitoring with videoconferencing applications from a single RGB-IR sensor**



Source: Getty Images/algre

Smart Eye has announced a partnership with OmniVision Technologies to develop a full interior sensing solution for automotive OEMs, according to a company press release on 20 July. This enables complete driver and cabin monitoring with videoconferencing applications from a single RGB-IR sensor. The solution is an integrated video processing chain which combines features based on the OmniVision OV2312 RGB-IR sensor.

“Interior Sensing AI is crucial for the automotive industry. Not only is this technology improving automotive safety—saving human lives around the world—it is also enabling automakers to provide differentiated mobility experiences that enhance wellness, comfort and entertainment. By partnering with OmniVision, we are delivering on this vision: providing an end-to-end, highly advanced Interior Sensing system that meets the demands of automotive OEMs, at a price point that makes it viable for the mass market,” said Martin Krantz, founder and CEO of Smart Eye.

### Outlook and implications

Smart Eye’s eye, mouth, and head tracking technology is linked with full cabin monitoring and driver monitoring, featuring distraction, drowsiness and incapacitated driver detection, combined with driver identification, and spoof-proof processing. It also includes occupancy detection for all seats, out of position, seat belt status, and forgotten baby detection. The action detection tracks driver hands on steering wheel, interaction with mobile device, calling, drinking, and eating.

In June, Smart Eye completed its acquisition of Affectiva to accelerate the growth and development of software for automotive interior sensing, media analytics, human factors research, and other adjacent markets.



## [GSP] Europe Sales and Production Commentary -2021.06

### Europe sales

**May 2021: +74.5%; 1.486 million units vs. 0.851 million units**

**YTD 2021: +34.7%; 7.237 million units vs. 5.374 million units**

The global spread of the COVID-19 virus and efforts to contain it are shaping the near-term economic outlook. The IHS Markit baseline forecast assumes that an effective vaccine will not be widely available until late 2021 or early 2022 and government restrictions on activities will be progressively eased through the remainder of the second quarter of 2021. The COVID-19 pandemic has emerged as the single-biggest risk factor facing the automotive industry for many years. The COVID-19 crisis piles intense additional pressure on an already stressed automotive industry, and the latest forecast includes downgrades across virtually all regions.

Although the declines were steep during the first two months of 2021, they were not as heavy as those recorded in early 2020. This is expected owing to the level of dealer readiness for new sales and handover processes that were not in place at the time of earlier lockdowns, which will support ongoing vehicle registrations. However, although automakers have begun offering online vehicle orders and some dealers can take orders over the phone, customers either seem to be less confident about this method or preoccupied by the wider implications of the lockdowns. This will likely lead to a depleted orderbook and therefore, would have had a knock-on effect during earlier months of 2021. At the same time, those in the most heavily affected sectors, such as nonessential retail and hospitality, which will be more reliant on government support measures, are also less likely to enter the market when dealers reopen.

The European passenger car market dropped almost one-fourth in 2020, as key markets implemented restrictions to tackle the spread of the COVID-19 virus during the year. The European market fell 20.4% year on year (y/y), to 16.41 million registrations, in 2020.



European light vehicle registrations surged during May on the low base caused by restrictions brought in by some markets to prevent the spread of the COVID-19 pandemic a year ago. According to the latest forecast, registrations in the region were up 74.5% y/y, to 1,486,381 units. Despite steep declines during the first two months of 2021, the recent improvement has managed to offset the fall. During the first five months of the year, registrations grew 34.7% y/y, to 7.237 million units. The huge upward swing is thanks to the exceptionally low base of comparison caused by measures introduced in several key markets to prevent the spread of the COVID-19 virus in 2020. Similar or even greater growth rates are expected during the next month or so because of this situation, although like this month, volumes may well be lower than they were before the pandemic.



In May, all Western European markets performed quite equally, with strong gains in most countries. This was expected owing to the low base of comparison caused by the first strict COVID-19 virus-related lockdown that was introduced part way through March/April 2020. There were triple-digit gains in countries, such as Greece (up 103.8%), Ireland (up 270.7%), Portugal (up 159.1%), Spain (up 159.8%), and the United Kingdom (up 569.6%). Out of the Big Five markets, Spain and the UK showed the biggest gains with triple-digit increases, followed by France (up 42.6%), Italy (up 39.9%), and Germany (up 38.2%). Moreover, the implemented car stimulus programs directly affect the recovery of the different markets. Looking back to 2020, the Western European market was down 19.2% y/y. The market started solidly in the first quarter of 2020, but the COVID-19 outbreak significantly changed the trend and pushed the market into a deep recession, with sales volumes falling massively in the second quarter of 2020. With lower infection numbers and government support, sales volumes improved in the third quarter, until the second wave of COVID-19 infections arrived and again dragged down sales volumes. On the positive side, governments around the world are working toward sustainable ways to manage the COVID-19 pandemic. Recovery cycles will be largely determined by the path of the pandemic, including progress on vaccine programs. All parts of Western Europe faced a spring of stubbornly high COVID-19 infection rates and ongoing restrictions, which could further dent automotive demand prospects. The crisis intensifies operational and economic pressures on an already stressed global automotive industry, especially as OEMs and suppliers finetune strategies toward coping with “new normal” vehicle demand levels.

The eurozone’s second COVID-19-driven recession was much less severe than the first, while leading indicators, including the IHS Markit Purchasing Managers’ Index® (PMI®) data, point to a strong rebound starting in the second quarter. The manufacturing sector has led the pickup but pronounced improvements in sentiment are increasingly evident across other sectors. Consistent with easing COVID-19 containment measures, eurozone GDP growth on a quarter-on-quarter (q/q) basis is forecast to peak in the third quarter.

Economic conditions continue to vary across the eurozone’s 19 member states, given variations in the containment of the COVID-19 virus, related restrictions, economic structure, and available policy space. The more manufacturing-orientated economies, such as Germany, are forecast to return to their pre-COVID-19 GDP levels earlier than the more highly indebted, services-sensitive economies of southern Europe. The eurozone’s double-dip recession will be followed by a growth spurt starting late in the second quarter owing to easing COVID-19 containment measures. Weakness in private consumption, especially of services, has been the main drag on economic activity during the pandemic but will strongly rebound as restrictions on activity are relaxed and the exceptional surge in household savings rates in 2020 continues to unwind.



Investment will also strongly rebound, in tandem with improving business sentiment. As of the first quarter of 2020, gross fixed capital formation was still almost 8% below its pre-pandemic level despite three consecutive q/q increases since the third quarter of 2020. Given the expected broad-based rebound in domestic demand, the forecast for annual GDP growth in 2021 has been revised up to an above-consensus 4.8%.



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Manufacturing indicators remain exceptionally elevated, although supply bottlenecks are restraining activity. Business surveys, including the IHS Markit PMI® surveys, show continued buoyant conditions in the sector but with suppliers' delivery times reaching record lengths. Still, industrial production has experienced a V-shaped recovery, rising in April 2021 to within a whisker of its pre-COVID-19 level. Strength in external demand has played a pivotal role, with exports rebounding unusually quickly compared with prior recessions.

The European Central Bank's (ECB's) ongoing expansion of net asset purchases and long-term loan provision to banks has contributed to favorable financial conditions. The EU-wide agreement on the Recovery and Resilience Facility (RRF) is an additional source of support. Still, high public-sector debt burdens, legal constraints on the ECB, and banking-sector vulnerabilities remain sources of risk. Recent higher inflation rates have also leant up on long-term interest rates, although they remain at exceptionally low levels.

Overall, despite the growth recorded by the Western European market in May, volumes remain low compared with the pre-pandemic levels. IHS Markit has also published a comparison with 2019 data, which underlines the weakness of the market, with a 19% decline compared with May 2019 and an 18.9% retreat when comparing the two year-to-date (YTD) figures. This highlights the intense additional pressure on an already stressed automotive industry from the pandemic. Moreover, OEMs will likely strongly push vehicles with no or low carbon dioxide (CO<sub>2</sub>) levels into the market to lower the fleet CO<sub>2</sub> average in 2021 and onward, which will increase their financial burden.

Compared with the development in Western Europe, demand in Central Europe was on a similar positive level and recorded a 68.1% gain in May 2021, with 125,395 units, which means a 25.6% gain during the first five months of 2021. After more than one year of steep falls, the Central European market started a recovery process from March onward, with strong growth rates during the last quarter, which is a bit lower than the performance of the Western European region. Increases and volume gains in May were seen in all Central European markets, such as Bulgaria (up 83.5%), Poland (up 94.8%), Czechia (up 61.1%), Hungary (up 64.5%), and Romania (up 15.0%). In addition, Eastern Europe showed a stronger result compared with the other two markets in the European region again. Demand in Eastern Europe during the month grew 90.7% compared with the same period last year. The main reason for this solid volume was again the strong result in the Turkish market (up 69.8%), which is related to the low base level in the Turkish car market during 2019–20. Moreover, the Russian market showed a triple-digit growth rate (up 119.7%) compared with the same month one year ago.

For full-year 2020, the European light vehicle market posted a significant loss of 20.4%, with sales of 16,417,367 units, mainly related to the outbreak of the COVID-19 pandemic in spring 2020. The results were affected by losses in Western Europe (down 23.7%) and similar losses in Central Europe (down 23.8%). The Eastern European region was dragging up the sales level of the whole European region with a gain of 2.1% for full-year 2020. Despite the good news that effective vaccines will be widely available by the third quarter of 2021, expectations for the second quarter of 2021 lean toward the cautious side. The global spread of the COVID-19 virus will still have a fundamental impact on the near-term economic outlook.

Besides the COVID-19 virus outbreak, which will have a massive effect for a longer period, there are further downside risks. Protectionism is a prominent source of concern. The threat of an all-out trade war could be enough to defer some expenditure, especially investment. Emerging-market turbulence is an additional headwind to growth and a source of uncertainty. Political developments in Italy, the potential effect on sovereign yields and spreads, and contagion to other member states also merit attention.





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For the western part of the continent, a recovery within this region is expected, with a 10.0% increase, up to 13.75 million units—about 1.2 million units more than in 2020. The recovery in Western and Central Europe combined is expected to reach only 15.2 million units in 2021—about 9.7% above the 2020 level. In the east, turmoil is far from over in Russia and its neighboring countries, with expectations being held at bay. The recovery of the Turkish economy, especially with the stabilization of the Turkish lira and changes in local taxation, has resulted in a jump of vehicle sales in the country. The latest data show a better performance than in the Western and Central European markets, with 40.7% growth in Eastern European sales after the first five months of 2021. For full-year 2020, Turkish light vehicle sales advanced 61.3% y/y, thanks to the low base of comparison. The ongoing economic recovery and interest rate cuts have boosted deferred vehicle demand. However, the recent geopolitical tensions may affect growth performance. Aimed at boosting domestic demand in the face of the COVID-19 virus crisis, lower interest rates significantly raise downside risks to the stability of the lira. Some OEMs announced suspended production at Turkish plants for several weeks amid the COVID-19 virus outbreak. Currently, the net effect of the COVID-19 virus to Turkey's economic activity remains uncertain. Generally, for the short term, a gradual recovery in the new vehicle market will be seen on the back of an economic growth rebound that started in 2020.



## [VIP ASSET] Why driverless cars will never roam Roman roads



In this week's episode of Autology, we discuss how and when autonomous vehicles will penetrate markets, understanding things such as technical, regional and consumer acceptance challenges.

Vehicle-to-everything (V2X) has gained momentum over the years and OEMs are keen to upgrade cars with more advanced safety features. Ubiquitous connectivity is expected to accelerate the roll out of autonomous vehicles, which will play an integral part of future smart cities.

In order to get there, automotive industry players and municipalities need to understand how to bring people, technology and policy together.

And even if the latter two challenges can be overcome, consumer acceptance might remain the biggest hurdle yet—points that are explored in the podcast, alongside when and where autonomous vehicles are expected to take off first.

### Speakers:

- Karen Lightman, Executive Director of Metro21 Smart Cities Institute at Carnegie Mellon University
- Jim Misener, V2X ecosystem lead at Qualcomm
- Anna Buettner, Connected Car expert at IHS Markit
- Brock Walquist, Autonomy expert at IHS Markit

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## [VIP ASSET] Semiconductor supply issue: 20 July Asia production tracker

### IHS Markit perspective

**Implications** By the end of 2020, reports had begun to emerge of disruptions to the supply of semiconductor chips to the automotive sector. Light-vehicle manufacturers faced increased disruption to the supply of systems using semiconductors in the first half of 2021. Furthermore, new waves of COVID-19 infections are hitting across Asian countries since early April, which is also affecting vehicle production in the region.

**Outlook** Our latest intelligence underlines that the third quarter of 2021 will continue to experience disruption and this is becoming increasingly significant. While we do not expect the same levels of disruption as in the second quarter, it could approach what was seen in the first quarter. This report provides a current snapshot of the impact of these issues on light-vehicle production in Asia, comparing known impacts against our December 2020 forecast.

After production shutdowns during the first half of 2020 as a result of the COVID-19 pandemic, vehicle output in Asia resumed slowly initially, affected by new safety protocols and training in those measures, as well as managing the supply chain. By the beginning of the fourth quarter of 2020, production had largely normalised. However, by the end of 2020, reports had begun to emerge of disruptions to the supply of semiconductor chips to the automotive sector, as the needs of the recovering automotive industry clashed with those of the wider consumer electronics sector, which was itself recovering strongly and late in the year, building stocks for the holiday season. The situation was exacerbated by other factors, including a fire at Renesas's Naka (Japan) facility on 19 March and disruption following the severe weather that hit the southwest United States in February.

Our latest assessment of the supply shortage indicates that following a difficult first half of 2021 for the OEMs captured in our assessment, the latest intelligence underlines that the third quarter of 2021 will continue to experience disruption and this is becoming increasingly significant. While we do not expect the same levels of disruption as in the second quarter, it could approach what was seen in the first quarter. The situation in the third quarter is undermined by some delay in Renesas, having restored manufacturing capacity, being able to fulfil shipments until possibly September. IHS Markit also believes that there is additional volatility due to lockdown measures in Malaysia where many "back-end" operations are performed, such as packaging and chip testing. In view of these developments, initial thoughts are that the fourth quarter of 2021 will be exposed to disruption, and this is now expected to spill over into the first quarter of 2022. The second quarter of 2022 may be the point at which we look for the stabilisation of supply, with recovery efforts now starting only from the second half of 2022. As of 19 July, we estimate that vehicle production at risk globally over the issue was about 1.44 million units during the first quarter and 2.59 million units in the second quarter. Another 862,000 units are at risk in the third quarter of the year.

Furthermore, new waves of COVID-19 infections have been hitting Asian countries since early April, which is also affecting vehicle production in the region.

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