



Automotive Industry Weekly Digest

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[OEM Highlights] Lotus to develop four platforms, make BEV shift as part of huge investment plan

IHS Markit perspective

Implications At its Driving Tomorrow presentation on 27 April, Lotus outlined an investment plan worth more than GBP2 billion that will lead to the development of four new vehicle architectures; a technology roadmap towards being a BEV-only OEM, and a fresh global retail identity.

Outlook With the business now on more solid foundations and with better financial backing than in any time in its recent history, it can now look forward to broadening its product range and growing volumes. IHS Markit currently expects brand production to break through the 50,000-upa barrier by 2026, underpinned by models that include two new crossovers.

At its Driving Tomorrow presentation on 27 April, Lotus outlined the significant investment in the business that will support the targets set by its Vision80 plan, which it plans to achieve by 2028.

At the event, it revealed more details about the brand's first new model, which is part of plans to replace the Elise, Exige, and Evora, which are being dropped by the end of 2021. According to the announcement, the vehicle that has been known by the internal codename Type 131 will be officially called the Emira, a word that is said to feature in numerous ancient languages and often translates to 'commander' or 'leader'. The vehicle will be revealed on 6 July, and its design will be influenced by the Evija. However, Lotus added, "Contrary to media speculation, the car will not be a hybrid" and said that instead, it will be powered by a choice of internal combustion engines. This will come via "an exciting new powertrain partnership" and "this new powertrain option will be new to Lotus, highly efficient, use cutting edge technology and be tuned to help deliver that distinctive Lotus experience."



The architecture underpinning the Emira is one of Lotus's four new vehicle platforms that are being developed in collaboration with locations in Europe and China. These are:

- **Sports car architecture:** Known internally as 'Elemental', this is the platform architecture that will underpin the Emira. It is said to be flexible and lightweight, and features extruded aluminium technology. The company adds that "every dimension is different to previous generations of Lotus sports cars".
- **Hypercar architecture:** Known as 'Extreme', this underpins the Evija battery electric hypercar which goes into production at its Hethel (UK) site later this year.
- **Premium architecture:** Known as 'Evolution', Lotus says that this is will be the "first ever truly global automotive architecture from Lotus" and form the basis of an all-new range of "lifestyle vehicles". These cars are planned to substantially boost the brand's retail volumes and revenues. Lotus adds that while the architecture has been defined and designed in the UK, collaboration has taken place with teams in China, Sweden, and Germany.



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- **Electric sports car architecture:** Known as 'E-Sports', this will stem from the collaboration with Renault Group announced in January that will also underpin the next generation Alpine sports car. The Lotus Engineering consultancy will lead development work on the platform.

The company added that although these platforms will be largely exclusive to Lotus within the Geely business group, they will also be available to other OEMs through the Lotus Engineering consultancy.

Lotus has also revealed a new technology road map based upon five principles – Electrify, Amplify, Simplify, Intensify and Personify – and dubbed 'EAS-IP'.

- **Electrify:** Following the Emira, every new Lotus car will have a battery-electric powertrain.
- **Amplify:** Lotus has said it is committed to “delivering innovative and engaging technologies” and plans to expand this as its new product range is launched in an effort to grow their desirability.
- **Simplify:** The company has said that as well as standing by the brand founder Colin Chapman’s mantra of “simplify and add lightness” as a way of improving performance, it will also use technology to enable this. It also aims to simplify the driving and ownership experience for customers.
- **Intensify:** Lotus will further develop its reputation in the area of Human Machine Interface (HMI), User Interface (UI), and User Experience (UX) as new products are launched.
- **Personify:** Technology will be used to give the new models “a brand character that will become part of the company’s DNA”. It also plans to make its cars customisable through technology.

To support its plans for a broader range and the hopes of far greater volumes, Lotus has also launched a new retail identity programme that is being rolled out to its showrooms globally, the first of which is located in Manama (Bahrain). It has said that this identity “draws directly on the brand’s design and engineering prowess to create a bold and original new showroom environment that’s sculptural and artistic in its execution.” However, the automaker has also said that this will be part of a “wider multi-channel retail strategy” under which it will work with new partners to take it into a wider number of global markets. The company has also hinted at providing an online retail experience as well.

Outlook and implications

The event has provided a broad outline of the future plans for Lotus, but it is clear that it is on far more solid foundations underpinned by greater financial backing than it has been in recent times, and perhaps in its entire history. Indeed, the new managing director of Lotus Cars, Matt Windle, who recently replaced Phil Popham told Reuters that investment would reach “more than” GBP2 billion, with a spokesperson for Lotus also telling Automotive News Europe (ANE) that more than half of this had already been spent. It is difficult to see how this initiative could have been made possible without Geely Automotive taking a controlling 51% stake in Group Lotus. As well as access to funding, part of the remainder of which could come from a capital raise, it is also now able to take advantage of being part of a far larger organisation. In its statement, Lotus highlighted the Geely Innovation Centre Sweden which is located in Gothenburg and is home to the Uni3 by Geely Campus, China Euro Vehicle



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Technology (CEVT) and Geely Design; the Geely Auto Technical Deutschland (GATD) in Frankfurt (Germany) and Geely's wide-ranging operations in China.



The UK will remain the core of its operations with a focus on not only development but also the manufacture of its sports cars. Windle has told media outlets that investment in the Hethel (UK) facility will help lift capacity to 5,000 units per annum (upa), helped by a new automated paint shop. This is where the Emira will be built, although comments made by Windle suggest that this will more of a stepping-stone vehicle for the brand as the company moves towards its battery electric vehicle (BEV)-only future. Windle told ANE that its BEV strategy was finalised in 2018 after positive customer feedback, at which point the Emira was already in development. Reuters also quoted him as saying that while the company intends to go all-electric by the end of its Vision80 plan in 2028, this may depend on the popularity of the Emira, although he said, "But definitely before the end of the decade, we'll be fully electric." This model will effectively be replaced by a vehicle on the E-Sports architecture developed in conjunction with Alpine for the replacement of its A110 sports-car. This is planned to arrive in the 2025/26 timeframe according to Windle, who has set a stiff brief. He told ANE, "The challenge I have set the team is to try and produce an electric sports car that weighs the same as Elmira, which is a real stretch target for them." Although the automaker has yet to unveil a weight for the Emira, it seems likely that it will sit somewhere between the 922kg of the Elise Sport 240 Final Edition and the 1,400kg of the Evora GT410 automatic. Many enthusiasts will be hoping for it to be closer to the lower end of this range though.

Far more important for the future of the brand will be the Evolution platform-based vehicles. Although Lotus has said that these will be "lifestyle vehicles", they are expected to be in the crossover and sport utility vehicle (SUV) category, given current trends. Windle told ANE that the first Evolution-based vehicle is set to be launched "within two years" and will compete in a new segment for the brand. He also stated that "it will be one of the best cars to drive in the segment and it will be one of the lightest cars to drive in its segment." The cars on this new platform will be manufactured at a new plant in Wuhan (mainland China) being built by Geely. Windle said to the Financial Times (FT) that these vehicles will lift the brand's volumes to "tens of thousands of cars a year".

IHS Markit agrees with this expectation, as it expects Lotus's sports car range to be joined by two crossovers and a sedan-like large premium model to be introduced by the middle of the decade. With this in mind, we see the brand's production breaking through the 50,000-unit-per-annum barrier in 2026 and remaining largely above this level beyond that.

[OEM Highlights] Ford announces plan for new battery development centre



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Ford has created a new team dedicated to battery development, called Ion Park, and plans to build a new USD185-million centre of excellence for battery development, to be opened by late 2022. The new development will be in southeast Michigan, although Ford is still determining the final location. According to Anand Sankaran, who has been appointed as director of Ion Park, the company has specific needs for the site and is evaluating several locations. Locating in southeast Michigan, however, keeps the facility near Ford's Dearborn headquarters as well as local Ford manufacturing of motors and drive systems, and to the Allen Park Battery lab. Relative to the number of jobs the new facility might create, Ford's chief product platform and operations officer Hau Thai-Tang downplayed the scope; the new facility will have about 150 employees, with many of them internal hires as well as some external employees. Thai-Tang said, "We're already scaling production of all-electric vehicles around the world as more customers experience and crave the fun-to-drive benefits of electric vehicles with zero emissions. Investing in more battery R&D ultimately will help us speed the process to deliver more, even better, lower cost EVs for customers over time... We are modernizing Ford's battery development and manufacturing capabilities so we can better control costs and production variables in-house and scale production around the world with speed and quality." The Ion Park facility will include facilities for developing, testing and building vehicle battery cells and cell arrays. It will use state-of-the-art technology to pilot new manufacturing techniques, enabling Ford to quickly scale breakthrough battery cell designs with novel materials "once the company vertically integrates battery cells and batteries". This announcement also follows CEO Jim Farley's comments during an Automotive News interview indicating that Ford will ultimately build batteries. Farley said, "In the first inning, you could buy batteries and you could cherry-pick the technology, energy density and cost from multiple sources. We're in the second inning now. The volumes are going to grow. We've committed [USD]22 billion to converting the factories and engineering the new products. The next thing is going to be allocating the cost of batteries. Our [USD]22 billion does not include any resources for batteries. So you can imagine and you can expect from Ford lots of announcements."



Outlook and implications

The announcement in some ways confirms Farley's earlier indications that he expects Ford will ultimately produce its own battery cells, something that previous CEO Jim Hackett believed did not provide much value. Although Thai-Tang declined to provide any indication of timing for Ford to produce its own battery cells, the executive said that when battery electrics move from phase one of primarily innovator customers to phase two of early majority buyers, flexibility and the optionality to vertically upgrade will be significant. Thai-Tang also said that while the Ion Park team will initially be working with lithium-ion batteries, the company will also be researching solid state and other future battery technology.



[Sales Highlights] Hyundai's net profit surges 175.4% y/y in Q1, announces mid- to long-term EV strategy

IHS Markit perspective

Implications	The strong growth in Hyundai's net profit during the first quarter came on the back of a low base of comparison and an improved product mix.
Outlook	IHS Markit light-vehicle sales forecasts project that the Hyundai brand will post sales of 4.03 million units globally in 2021 (up by 14.2% y/y). The Genesis brand is expected to record sales of 188,000 units this year (up by 49.2% y/y).

This report covers only the mainstay Hyundai brand, the premium Genesis brand, and Hyundai's Chinese subsidiaries, which include commercial vehicles (CVs) produced in China. Hyundai's affiliate Kia's financial results will be reported separately.

Hyundai today (22 April) announced that it recorded a 175.4% year-on-year (y/y) surge in net profit to KRW1.52 trillion (USD1.36 billion) in the first quarter, compared with a net profit of KRW553 billion during the same period of 2020. Operating profit grew by 91.8% y/y to KRW1.66 trillion during the period, which included gains from product mix improvements worth KRW296 billion, gains in the finance division worth KRW312 billion, volume-related expenses worth KRW373 billion, and other expenses worth KRW202 billion. These gains offset factors such as a cost innovation increase and unfavourable exchange-rate effects worth KRW22 billion and KRW368 billion, respectively.

Hyundai's sales revenues during the first quarter went up by 8.2% y/y to KRW27.39 trillion. The automotive division's sales revenues grew by 11.0% y/y to KRW21.70 trillion during the quarter, and it reported an operating profit of KRW1.19 trillion, up by 109.0% y/y from KRW569 billion in the same period of 2020. As far as other financial details are concerned, Hyundai's total assets stood at KRW216.15 trillion at the end of the first quarter, while liabilities were KRW138.63 trillion.

Hyundai's Q1 2021 financial results, KRW bil.

	Q1 2021	Q1 2020	% change
Sales revenues	27,391	25,319	8.2
Operating income (loss)	1,657	864	91.8
Net income (loss)	1,522	553	175.4

Source: Hyundai press release

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Hyundai posted a 17.5% y/y increase in its global vehicle sales (on a retail basis) to around 1.03 million units in the first quarter, compared with 878,000 units in the same period of 2020. Of this total, Hyundai's South Korean sales accounted for 185,000 units, up by 16.6% y/y. Its sales in North America were up by 26.7% y/y to 210,000 units, while those in Europe grew by 13.0% y/y to 132,000 units. Hyundai's Chinese sales grew by 2.7% y/y to 111,000 units during the period, while its sales in India surged by 52.1% y/y to 152,000 units. Its sales in South America



increased by 18.5% y/y to 69,000 units and those in Russia went down by 5.6% y/y to 40,000 units. The automaker's sales in other markets were up by 3.2% y/y to 133,000 units during the first quarter.

In terms of wholesale dispatches, Hyundai registered a 10.7% y/y increase overall to around 1 million units during the period. Domestic plants accounted for around 185,413 units, up by 16.6% y/y, and overseas plants accounted for around 814,868 units, up by 9.5% y/y. Sales from its North American plants declined by 3.6% y/y to 224,000 units, while sales from Hyundai's European plants remained flat at 119,000 units. Shipments from the company's Indian plant jumped by 44.2% y/y to 156,000 units, and sales from the company's Chinese production plants came in at 94,000 units, up by 47.8% y/y. Sales from its South American plants surged by 36.1% y/y to 65,000 units. Sales from Russian production decreased by 11.3% y/y to 46,000 units, while dispatches from the automaker's other overseas plants stood at 108,000 units during the first quarter, down by 8.1% y/y.

During the first quarter, Hyundai's selling, general, and administrative (SG&A) expenses decreased marginally by 0.6% y/y to KRW3.38 trillion, mainly owing to a 4.8% y/y decrease in the automaker's warranty expenses to KRW648 billion and a 1.4% y/y decline in other expenses to KRW834 billion. Its salary expenses increased by 2.2% y/y to KRW710 billion and its marketing expenses grew marginally by 0.2% y/y to KRW893 billion, while costs for research into new product development increased by 2.1% y/y to KRW295 billion. Furthermore, the automaker's cost of goods sold (as a percentage of sales revenues) decreased by 1.6 percentage points to 81.6% during the first quarter, compared with 83.2% in the same period of 2020.



Separately, Hyundai also announced its mid- to long-term electric vehicle (EV) strategy. Starting with the launch of the IONIQ 5 in 2021, the first model under its new IONIQ brand dedicated to EVs, Hyundai aims to sell 160,000 EVs in 2021, up from 100,000 units in 2020. It aims to further increase its EV sales to 560,000 units by 2025. The automaker also plans to increase the number of EVs in its line-up to 8 models in 2021 (up from 4 models in 2020) and to 12 models by 2025, including those built on the recently revealed electric-global modular platform (E-GMP), a dedicated EV architecture. In addition to the IONIQ 5, Hyundai recently revealed the G80 EV under the premium Genesis brand. In 2022, the automaker plans to launch the new IONIQ 6 sedan and its first dedicated EV under the Genesis brand. It also plans to launch an EV version of its existing Genesis model next year.

The automaker aims to further enhance its core EV competitiveness. Hyundai aims to increase the EV driving range by raising energy density of the current lithium-ion battery cell and adopting next-generation batteries. It plans to start mass production of solid-state batteries by 2027. It also aims to reduce charging time by expanding fast charging infrastructure, and provide innovative experience related to the ecosystem by expanding and developing current vehicle-to-load (V2L) function to vehicle-to-grid (V2G), vehicle-to-vehicle (V2V), and vehicle-to-home (V2H).

Outlook and implications



The strong growth in Hyundai's net profit during the first quarter came on the back of a low base of comparison and an improved product mix. The automotive group's production operations were disrupted last year by the first wave of the coronavirus disease 2019 (COVID-19) virus pandemic.

Robust sales of sport utility vehicle (SUV) models and Genesis-brand models as well as increasing total sales volume helped lift revenue in the first quarter despite an adverse business environment and an unfavourable exchange rate, according to Hyundai. According to data released by the automaker, SUVs accounted for 44.3% of its total wholesale dispatches during the first quarter, up from 42.9% in the same period of 2020, while Genesis accounted for 4.3% in the last quarter, up from 1.8% in the first quarter of 2020. Sales recovery and market share expansion in the Americas, India, and China also contributed to the higher revenue.

"Moreover, there was no major impact of the global semiconductors shortage on Hyundai's production in the first quarter as it kept its inventories at manageable levels," said Hyundai executive vice-president of the finance and accounting division Seo Gang-hyun.

Hyundai expects globally expanded economic stimulus plans to help boost auto demand, but the prolonged COVID-19 virus pandemic, semiconductor supply condition, and raw material cost fluctuation are likely to amplify business uncertainty. The automaker plans to flexibly adjust its production in line with semiconductor supply delays by preemptively securing its component inventory while looking for alternative chip parts to optimise production. It implemented reduced operations at its South Korean plants at weekends during the first quarter. The automaker also temporarily suspended production operations at its No. 1 Ulsan plant in South Korea between 7 and 14 April owing to problems with parts supplies, which affected production of the Kona and IONIQ 5. The production losses for these vehicles due to this issue were said to be 6,000 and 6,500 units, respectively. Hyundai also cancelled overtime work at the No. 3 Ulsan plant on the first and second weekends of April. In addition, it suspended operations at its Asan facility on 12, 13, 19, and 20 April.



Hyundai said that it will focus on enhancing its product mix with SUV and premium models while improving profitability based on cost innovation to secure its competitiveness in the future mobility industry despite the tough business environment. It will also continue its efforts to become a leader in vehicle electrification with the new IONIQ 5, as well as hybrid and plug-in hybrid models of the Tucson Santa Fe SUVs.

IHS Markit light-vehicle sales forecasts project that the Hyundai brand will post sales of 4.03 million units globally in 2021, up by 14.2% y/y from the 2020 estimate of 3.53 million units. The Genesis brand is expected to record



sales of 188,000 units this year, up by around 49.2% y/y from the 2020 estimate of 126,000 units. Our light-vehicle sales forecast includes passenger vehicles and light commercial vehicles.

[Sales Highlights] Gentex reports 7% y/y sales growth in Q1

Gentex has reported its financial results for the first quarter of 2021, including record first-quarter net sales of USD483.7 million, an increase of 7% year on year (y/y). However, Gentex's net sales in the first quarter were down 9% from USD529.9 million in the fourth quarter of 2020. The automotive components supplier reports that its results in the first quarter were impacted by the components shortages that caused a decline in worldwide automobile production in the first quarter, a situation is not yet resolved. Gentex said the impact of the shortages decreased its revenue by about USD45 million in the first quarter. However, Gentex stated that, despite the difficulties, the sales in the first quarter were the second-highest quarterly sales in its history. Gentex's sales of exterior auto-dimming mirrors in international markets also increased, by 15% y/y, in the first quarter. In the company statement on its financial results, Gentex president and CEO Steve Downing said, "Our guidance for the year included a first quarter that was forecasted to be similar to the fourth quarter of 2020 from a revenue perspective, but first quarter revenues were clearly impacted by the difficulties created by parts shortages. During the first quarter of 2021, our primary revenue generating markets of North America, Europe and Japan and Korea were down 2% on a combined basis, when compared to the first quarter of 2020, which means our revenue growth of 7% yielded a total out-growth versus the underlying market of 9%. It is also important to remember that the first quarter of 2020 was negatively impacted by COVID-19 shutdowns, which means that vehicle production levels from the first quarter of 2021 declined 15% in comparison to the first quarter of 2019. However, the Company has experienced a net revenue growth rate of 3% when comparing those quarters, which calculates to a 18% outperformance versus the underlying market in that two year period." The supplier's automotive net sales reached USD475.6 million in the first quarter, an 8% increase compared with USD439.9 million in the corresponding period a year earlier. Gentex reports an increased gross margin (37.9%) in the first quarter from structural cost savings implemented in the second quarter of 2020, as well as product mix tailwinds. The supplier's net income reached USD113.5 million in the first quarter, up 27% from USD89.5 million in the corresponding quarter of 2020. Gentex's operating expenses decreased 4% y/y to USD49.6 million in the first quarter.



Outlook and implications

Gentex's full-year 2021 guidance was unchanged with its first-quarter results. In 2021, Gentex forecasts that it will achieve full-year revenue of between USD1.94 billion and USD2.02 billion and a gross margin in the 39–40% range, and its capital expenditure will be up to USD95 million. Gentex did, however, increase its guidance for 2022; it now



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expects a revenue increase of between 8% and 13% next year. Gentex essentially expects underlying consumer demand for light vehicles worldwide to counter the impact of supply-chain issues on production.



[Partnership Highlights] Continental, Horizon Robotics to form JV dedicated to intelligent driving business

German auto-parts supplier Continental AG has partnered with Chinese artificial intelligence (AI) firm Horizon Robotics to form a joint venture (JV) dedicated to intelligent driving business, reports Gasgoo. The companies plan to leverage each other's strengths to develop advanced driver assistance systems (ADAS) and autonomous software and hardware systems for global automakers. Continental is to offer its expertise in product quality management, supply-chain technology innovation, and research and development (R&D) and Horizon Robotics is to provide its automotive-grade AI chips of the Journey series and perception algorithm.



Outlook and implications

The companies partnered last year to co-operate in the fields of ADAS and automated driving for the Chinese market. Horizon is one of the leading manufacturers of automotive-grade microchips in China, focusing on facilitating automated operation solutions in electric vehicles. In the first half of 2021, Horizon Robotics plans to launch the Journey 5 chip, which features computing power of 96 trillion operations per second, enabling Level 3 and Level 4 autonomy. Meanwhile, Continental's portfolio of businesses in the field of automated vehicles includes radar, LiDAR, camera, and control units. From 2018 to 2020, Continental received orders from customers in this field totalling more than EUR9 billion (USD10.8 billion). The company has built a demonstration vehicle called the Continental Urban mobility Experience (CUBE), based on French company EasyMile's EZ10 platform.

[Partnership Highlights] Bolt, University of Tartu expand partnership on autonomous vehicle development

Estonia-based ride-hailing company Bolt has expanded its partnership with the University of Tartu to develop technology for autonomous vehicles (AVs), according to a statement released by the university. The partnership aims at enhancing the technical capabilities of the current Autonomous Driving Lab in fields of "artificial intelligence (AI), maps and algorithms, create better conditions for connecting technology to urban traffic infrastructures". The University of Tartu's Institute of Computer Science has also announced plans to expand the autonomous technology research group as this will support the creation of better opportunities in this field and the practical training of students. Jaak Vilo, head of the University of Tartu's Institute of Computer Science, said, "Thanks to the agreement, we will significantly enhance our cooperation, open a new professorship, recruit scientists, doctoral and graduate students. The expanded research lab will also be open to other interested parties to validate ideas, develop new technological solutions and conduct



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experimental projects. In addition, many more students will directly benefit from it, as we will prepare new courses and provide an internship base to them so they could become top-level professionals.”



Outlook and implications

Bolt, which is primarily active in Eastern European and African cities, was launched in 2013 and currently has 50 million users in 40 countries. In 2019, the company partnered with the University of Tartu to achieve Level 4 autonomy and to deploy autonomous cars on Bolt's transportation platform by 2026. This partnership has attracted a grant from the Archimedes measure “Support for applied research in smart specialisation growth areas”. There are many ride-hailing companies that have ventured into the AV field to introduce robo-taxies in future. Chinese ride-hailing giant Didi Chuxing (DiDi) has announced the launch of a pilot robo-taxi service in Shanghai (China). The service will allow passengers to hail AVs in the city's Jiading district using DiDi's app.



[GSP] South America Sales and Production Commentary -2021.04

South America sales

March 2021: +31.7%; 323,000 units vs. 245,000 units

YTD 2021: -0.6%; 904,000 units vs. 909,000 units

- March sales saw robust gains for most major markets in South America compared with last year. The largest market Brazil saw month over month (m/m) growth. However, it experienced a major drop in the seasonally adjusted annual rate (SAAR) in March versus February (1.9 million versus 2.4 million, respectively) as a new local strain of COVID-19 saturated the medical system. The country has also experienced product shortage owing to the semiconductor supply challenges, which may weigh in other countries later in the second quarter. Similar with Brazil, there has been an increase in number of cases toward the end of March in other countries, such as Argentina, Chile, Colombia, and Peru, which may also have an effect on dealer showroom traffic.
- South America's first quarter sales are essentially flat compared with last year and light vehicle sales will likely continue picking up momentum, as vaccination programs progress and translate into a recovery of a certain degree of normalcy. However, there are two major challenges identified. First, the third wave of cases that began in most countries in March. Second, any supply chain disruptions in product availability are likely to be experienced in Brazil for the remainder of the year. Furthermore, there are several major electoral processes taking place and that could certainly derail any economic recoveries.
- The macroeconomic model for Brazil signals toward sales of 2.3 million units in 2021. The affordability model suggests a market about 2.35 million units. Sales would likely break the 2.3-million-unit milestone, but given the Brazil's SAAR rate in March (1.9 million) owing to a third wave of COVID-19, the forecast was revised downward to 25,000 units, as sales are not expected to regain momentum in the coming months. This is the second reduction in a row after the forecast was reduced by 150,000 units owing to the semiconductor shortage.



- Sales within the region were at 4.5 million units in 2019; not an all-time high, but this is the benchmark being used globally for how long it will take to recover from COVID-19. Sales in 2020 is expected to have closed with 3.3 million units and climb toward 3.8 million units in 2021. The long-term outlook projects sales to approach 5.0 million units by 2025 as the region heals.

South America production

March 2021: +16.4%; 242,291 units vs. 207,333 units

YTD 2021: +3.9%; 675,746 units vs. 650,246 units



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- After a setback in February, South American production volumes returned to growth in March 2021 with an increase of 16.4% year on year (y/y), or about 242,000 units built. This implies that the first quarter of 2021 ended on a satisfactory note with volumes up 3.9% y/y, slightly above 675,000 units.



[Supplier Trends and Highlights] ABB partners with AFC Energy over fuel cell testing, integration

The current agreement builds on the one signed by the two companies in 2020.



Source: ABB

ABB has announced a strategic investment and development agreement with AFC Energy for “the advancement of fuel cell technology integration into its high-growth eMobility and data center segments,” according to a company press release on 16 April.

Outlook and implications

ABB has a previous partnership agreement with AFC Energy from 2020, to create the next generation of high power sustainable electric vehicle (EV) charging solutions for grid constrained locations. The latest agreement is a follow up on the agreement signed in 2020.

The companies plan to further their vision of a zero emission, sustainable power solution for the growing number of current and prospective data centers currently servicing the world’s data storage and processing requirements.

Frank Muehlon, president of ABB’s eMobility division, said: “The investment in AFC Energy brings an opportunity to further the advancement of groundbreaking technologies that can ultimately enable a wider reach to remote off-grid locations. AFC Energy’s goals to deliver clean energy solutions perfectly align with ABB’s commitment to innovation and enabling low carbon societies, making them an ideal solution partner.”

The companies will also partner in the assessment of data center power design principles and system operability, review interfaces between fuel cell, energy storage, electrical equipment, switchgear, and control infrastructure. They will conduct the testing using real-time data center simulation techniques.

[Supplier Trends and Highlights] Umicore, Anglo American collaborate to develop PGM-based catalysts for LOHC applications on FCEVs

LOHC technologies provide an effective alternative solution by chemically bonding hydrogen to a stable organic liquid carrier.



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Source: Getty Images

Umicore and Anglo American have announced a research and development (R&D) collaboration agreement to develop PGM-based catalysts for liquid organic hydrogen carrier (LOHC) applications on fuel cell electric vehicles (FCEVs) and other mobile applications. According to a company press release on 26 April, the collaboration has been formed through its PGMs business Anglo American Platinum.

Umicore and Anglo American's PGM market development program in cooperation with Prof. Peter Wasserscheid at the University of Erlangen, cofounder of Hydrogenious LOHC Technologies, will conduct the research. Hydrogenious LOHC Technologies is a portfolio company of AP Ventures.

Outlook and implications

Umicore and Anglo American believe that PGM-based catalysts have the potential to transform the way hydrogen can be stored and used to power FCEVs. Typically, compressed hydrogen is used to power FCEVs. However, countries today face the roadblock of insufficient infrastructure and refueling networks for compressed hydrogen. The companies believe that LOHC technologies provide an effective alternative solution by chemically bonding hydrogen to a stable organic liquid carrier. This negates the need for compression thereby increasing safety and cost efficiency to transport hydrogen using existing conventional fuel networks.

The joint R&D program targets new PGM-based catalyst technologies for LOHC, that can be installed directly on FCEVs and other mobile applications. This will help to further simplify the fuelling process: the LOHC containing hydrogen can be unloaded directly on the FCEV and the dehydrogenation phase will be carried out onboard the vehicle. The new catalyst technologies will allow to carry out this dehydrogenation step at lower temperatures and pressures, which is required for mobile applications, thereby providing a simpler and cheaper alternative to onboard storage of compressed hydrogen.

Benny Oeyen, Anglo American's Executive Head of PGM Market Development, said: "There is growing enthusiasm for the role that hydrogen can play in tackling global energy challenges. In order to unlock its full renewable energy potential, however, we need to solve the existing transport, logistics and infrastructure challenges. LOHC technology provides a versatile and attractive solution both for the short and long term future, and PGMs have an important role to play in streamlining logistics, offering a better user experience and reducing cost across the entire value chain."

Lothar Mussmann, SVP New Business Incubation at Umicore said: "We are a leading supplier of catalysts for Proton Exchange Membrane fuel cell electric vehicles. Allowing the use of hydrogen loaded LOHC in mobile fuel cell applications by using advanced LOHC dehydrogenation catalyst technology will help to overcome existing challenges of hydrogen infrastructure and logistics and thereby foster the wider introduction of fuel cell electric vehicles."

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