



IHS Markit®

# Automotive Industry Weekly Digest

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## [Partnership Highlights] EV startup Aiways partners with Hesai to promote application of LiDAR sensors

Chinese electric vehicle (EV) startup Aiways has collaborated with Hesai Technology to promote the application of automotive-grade LiDAR sensors. To achieve this, the companies will jointly develop hardware equipment, software algorithms, and smart assistance driving systems. The collaboration will provide the EV maker with an advanced intelligent assistance driving system by deploying Hesai's hybrid solid-state LiDAR solution, reports Gasgoo.



### Outlook and implications

Aiways plans to launch the U6 sport utility vehicle (SUV) in China in October, followed by Europe in April next year. The Aiways U6 is a D-segment SUV based on the More Adaptable Structure (MAS) platform, which it shares with the U5 SUV. According to IHS Markit's light-vehicle sales forecast data, global sales of the U6 will be around 3,200 units this year and around 14,000 units next year. Hesai Technology develops 3D LiDAR sensors and is backed by Bosch, Lightspeed, Baidu, and other global investors.

## [Partnership Highlights] VW to partner with Chinese companies to offer autonomous vehicle solutions

Volkswagen Group (VW) plans to co-operate with Chinese companies to offer autonomous vehicle (AV) solutions in China. Stephan Woellenstein, CEO of VW China, said, "The approach in China is somewhat different from what we see in Europe and the US. We believe we need a strong Chinese partner or two on our side in order to comply with the forthcoming frame (of autonomous driving) in China. We try to keep the global synergies but in a China-specific way. We cannot do it alone." Woellenstein did not reveal the names of potential Chinese candidates but he said they are in intense talks and VW is "coming to conclusion very soon who this partner will be", reports the China Daily.



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## Outlook and implications

VW is already working with Chinese drone maker DJI to develop advanced driving assist functions to be deployed in vehicles manufactured in China. In the United States and Europe, VW is working with AV startup Argo AI. VW and Argo are debuting their all-electric test vehicle, the ID. Buzz AD (Autonomous Driving), this week at the Munich auto show. The vehicle is being tested at Argo AI's newly built closed-course track adjacent to Munich airport and soon it is to be deployed on public streets in Munich. The testing in Munich will support VW's aim to deploy a driverless service with the ID. Buzz in Hamburg to transport both people and goods in 2025. VW plans to conduct this with support from group subsidiary MOIA, a Mobility as a Service (MaaS) provider.

## [Partnership Highlights] Hozon Auto partners with Horizon Robotics to build smart cars

Chinese electric vehicle (EV) startup Hozon Auto's Neta brand has partnered with Horizon Robotics to build smart cars, reports Gasgoo. Horizon Robotics will supply its automotive-grade computing chips with high computational power, as well as required products and technical assistance to Hozon Auto to build diverse intelligent products.



## Outlook and implications

Hozon Auto has stepped up its efforts to gain a foothold in the Chinese new energy vehicle (NEV) market. The automaker recently established an NEV subsidiary and initiated a Series D financing round. In 2019, Hozon Auto launched a B-segment sport utility vehicle (SUV), the N01, under its Neta brand, which performed well and sold 10,000 units during the year, according to IHS Markit's light-vehicle sales data. In 2020, the automaker added another B-segment SUV and a C-segment SUV in the Chinese market, and they sold a combined 15,091 units during the year. Hozon Auto recorded sales of 6,613 units in August 2021.



## [IAA Mobility 2021 Highlights] Great Wall unveils Wey Coffee 01 plug-in hybrid SUV

Great Wall has shown the first new model from its Wey sub-brand, the Coffee 01 plug-in hybrid electric vehicle (PHEV) sport utility vehicle (SUV), according to an Autocar report. The model was launched at IAA Mobility 2021 in Munich (Germany) two years after Great Wall said it would begin selling premium cars under the Wey brand. The PHEV Coffee 01 is powered by a 2.0-litre, 4-cylinder gasoline (petrol) engine, which works in combination with electric motors on the front and rear. The model has the biggest battery of any PHEV yet launched; the 40-kWh battery gives the model an electric-only range of 93 miles and a combined powertrain system output of 469 bhp. The car is styled in a sharp and contemporary SUV body and features an interior design with four interior screens, face-recognition technology, wi-fi, and over-the-air (OTA) updates capability. It also offers Apple CarPlay and Android Auto capability.



### Outlook and implications

The most remarkable thing about the Coffee 01, apart from its rather unusual name, is the size of its battery for a PHEV and its long electric-only range. Its battery capacity is the size of that of many full BEV production cars and it rather begs the question why Wey did not go the whole way and simply build a full BEV. A PHEV with such a big battery and a conventional powertrain will surely be seriously compromised in terms of weight and packaging and it is hard to see the logic that has been applied to this powertrain set-up, especially with Europe as its primary target market.

## [IAA Mobility 2021 Highlights] OEM executives warn semiconductor shortage could continue until 2023

Senior executives from OEMs in attendance at the ongoing IAA Mobility event in Munich (Germany) have warned that the semiconductor shortage that is affecting production and hampering demand could linger on into 2023, according to news reports. CEO of Daimler Ola Källenius was quoted by Automotive News Europe as stating that “several chip suppliers have been referring to structural problems with demand...This could influence 2022 and [the situation] may be more relaxed in 2023.” BMW Group CEO Oliver Zipse also said, “I expect that the general tightness of the supply chains will continue in the next six to 12 months.” However, he added that he did not expect any issues in the long term, noting that the automotive industry is an attractive customer for semiconductor manufacturers. Automotive News Europe also quoted VW Group CEO Herbert Diess as saying that the expansion of products using semiconductors could lead to ongoing struggles, stating, “The internet of

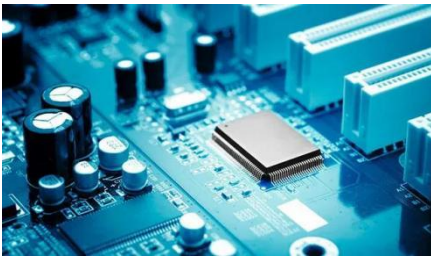


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things is growing and the capacity ramp-up will take time. It will be probably a bottleneck for the next months and years to come." Murat Aksel, VW Group's board of management member with responsibility for purchasing, said that the automotive industry would need around 10% more semiconductor production capacity to lift their availability to adequate levels. In addition, Renault Group CEO Luca de Meo said that the company is sticking to its expected production reduction of around 200,000 units for 2021. However, a spokeswoman for the automaker added that the third quarter is anticipated to be "very difficult" due in part to the worsening coronavirus disease 2019 (COVID-19)-virus pandemic situation in Southeast Asia. The representative said, "At this stage, we lack visibility on the coming months and keep a crisis unit up to date daily to best manage the evolution of the situation."



## Outlook and implications

Following a difficult first half of 2021, the comments underline the ongoing difficulties faced because of component shortages and the uncertainty as to when this will clear. IHS Markit's latest impact assessment shows that the third-quarter outlook is weakened severely and levels of disruption now surpass those experienced in the second quarter. The situation in the third quarter is undermined by some delay at Renesas, where having restored manufacturing capacity following a fire earlier this year, the ability to fulfil shipments may not be possible until late September. There is also much greater exposure to the ramifications of the COVID-19-virus situation in Malaysia, where many 'back-end' operations are performed, such as packaging and chip testing. As this is more labour intensive than the wafer fabrication processes, activity is more easily affected by measures that have an impact on workforce participation. We currently expect the fourth quarter of 2021 to be exposed to disruption and this is expected to spill over into the first quarter of 2022. We also assess that the second quarter of 2022 may be when supply will stabilise, with recovery efforts starting only in the second half of 2022.



## [Sales Highlights] Chinese EV startups post substantial growth in sales during August

### IHS Markit perspective

**Implications** EV startups in China have been riding the NEV wave in the country. The NEV segment has been experiencing substantial growth in sales despite the impact of the COVID-19 virus pandemic, supply chain constraints, and recent floods. According to a recent statement by CAAM's executive vice-chairman, Fu Bingfeng, Chinese NEV sales are expected to increase by more than 40% each year for the next five years. To accommodate growing demand for its models, the three automakers, NIO, Xpeng and Li Auto are working towards expanding their production footprint in China.

**Outlook** It will be interesting to see how future demand for the respective models of these three automakers shapes up. A lot will depend on government policies and subsidies on offer. Currently, IHS Markit forecasts global sales of NIO, Xpeng and Li Auto to be around 82,600 units, 52,300 units and 80,700 units respectively.



Chinese electric vehicle (EV) startups NIO, Xpeng, and Li Auto have reported substantial increases in vehicle sales during August.

**NIO** said that its vehicle deliveries in August increased by 48.3% year on year (y/y) to 5,880 vehicles. The deliveries consisted of 1,738 units of the ES8 sport utility vehicle (SUV), 2,342 units of the ES6 SUV, and 1,800 units of the EC6, a coupé-style variant of the ES6. In the year to date (YTD), total deliveries of the ES8, ES6 and EC6 stood at 55,767 units. The automaker witnessed disruptions in production due to supply chain constraints resulting from the coronavirus disease 2019 (COVID-19) virus pandemic in certain areas in China and Malaysia. Taking into consideration the ongoing semiconductor shortage, NIO has downgraded its forecast for third-quarter sales from previous outlook from 23,000–25,000 vehicles to 22,500–23,500 vehicles.

**Xpeng** said that it delivered 7,214 vehicles in August, a 172% y/y increase including 6,165 P7s, the sports smart sedan, and 1,049 G3s, its smart compact SUV. In the YTD, the company sold 45,992 vehicles, up 334% y/y. The company expects to start deliveries of the G3i in September and will officially launch the P5 sedan, with deliveries expected to begin in October.

**Li Auto** has reported sales of 9,433 units during August, an increase of 248% y/y and 9.8% month on month (m/m). In the YTD, sales stood at 48,176 units.

### Outlook and implications





EV startups in China have been riding the new energy vehicle (NEV) wave in the country. The NEV segment has been experiencing substantial growth in sales despite the impact of Covid-19 pandemic, supply chain constraints and recent floods. According to a recent statement by CAAM's executive vice-chairman, Fu Bingfeng, Chinese NEV sales are expected to increase by more than 40% each year for the next five years. According to the estimate, NEV sales in China will reach 1.9 million units in 2021 and 2.7 million units in 2022. In the first half of the year, Chinese sales of NEVs which include battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs), and fuel-cell vehicles (FCVs), increased by 201.5% y/y to 1.206 million units.

For NIO, its mid-size electric SUVs, the ES6 and EC6, have become the company's backbone models, while the ES8 still appeals to consumers looking for a large six-seater SUV. The EC6 and ES6 are positioned in the premium EV segment with hefty price tags, but through its battery leasing programme NIO has effectively lowered the overall costs for both models. Last month, NIO announced plans to introduce affordable vehicles for the masses under a new brand to gain a stronger foothold in the Chinese NEV segment. Along with China, NIO is focusing on foreign markets as well. It recently received European Community Whole Vehicle Type Approval (ECWVTA) for its ES8 SUV and shipped the first batch of the SUV to Norway in July. In comparison, Xpeng operates on a smaller scale in terms of delivery volumes. It recently unveiled details of its third production model, the P5 electric sedan, featuring the in-house developed autonomous operation system XPILOT 3.5 and Xmart OS 3.0, Xpeng's latest in-car operation system. Last week, Xpeng has also begun exporting its P7 sedan to Europe.



Li Auto has also revealed its future product plans. In addition to its existing SUV, the Li One, the automaker plans to launch a full-size premium range-extended electric SUV based on the X platform next year, followed by another two range-extended SUVs based on the same platform in 2023.

To accommodate growing demand for their models, NIO, Xpeng, and Li Auto are working towards expanding their production footprint in China. NIO has started construction of a smart EV industrial park in Hefei, Anhui province. Called the Neo Park, the facility covers an area of 11.2 million square metres and includes manufacturing and research and development (R&D) facilities with designed annual capacity of 1 million vehicles and 100 GWh of batteries. The R&D will focus on development of technologies related to complete vehicles, core parts, and autonomous vehicle operation. Xpeng has already begun construction at its new manufacturing plant site in Wuhan. The new plant is to have an annual production capacity of 100,000 units and will expand Xpeng's production network and support the launch of new models. Xpeng has also signed an agreement with the Zhaoqing municipal government and the Zhaoqing High Technology Industry Development Zone for expansion of its Zhaoqing Smart EV Manufacturing Base in Guangdong Province. After completion, annual output capacity of the Zhaoqing Base will increase from 100,000 units to 200,000 units. Li Auto will set up its second plant at the site where Beijing Hyundai's first plant is located. The new facility is also likely to house the new subsidiary announced by the automaker to produce NEVs.





It will be interesting to see how future demand for the respective models of these three automakers shapes up. A lot will depend on government policies and subsidies on offer. Currently, IHS Markit forecasts global sales of NIO, Xpeng, and Li Auto to be around 82,600 units, 52,300 units, and 80,700 units respectively.

## [Sales Highlights] BYD reports 86.3% y/y growth in sales during August

Chinese automaker BYD sold 68,531 vehicles in August, an increase of 86.3% year on year (y/y). The sales figure includes new energy vehicles (NEVs) and traditionally fuelled vehicles. Last month, BYD's sales of NEVs, which consist of battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs), totalled 61,409 units, up 301.8% y/y. Passenger BEVs remained the top-selling category in the automaker's NEV line-up in August, with passenger BEV sales totalled 30,382 units, up 222.7% y/y. In August, BYD's sales of passenger PHEVs were 30,126 units, compared with 4,595 units in August 2020. Sales of BYD's traditionally fuelled vehicles totalled 7,122 units last month, down 66.9% y/y. Within this total, sedan sales were 1,154 units, down from 4,284 units in August 2020, and sport utility vehicle (SUV) sales were 5,386 units, compared with 13,813 units in August 2020. Sales of multi-purpose vehicles (MPVs) were 582 units in August, compared with 3,402 units in August 2020. In the year to date (YTD), BYD's sales are up 64.3% y/y at 372,630 units.



## Outlook and implications

The growth in BYD's sales during August was driven by NEV sales. The NEV segment has been experiencing substantial growth in the country despite the impact of the coronavirus disease 2019 (COVID-19) pandemic, supply-chain constraints, and recent floods. Meanwhile, BYD is trying to gain a foothold in the European market, as well as the Chinese market, and recently shipped the first batch of its 100 European-specification BYD Tang SUVs to Norway. BYD Auto also signed a long-term agreement with Nexport on research and development (R&D) and distribution of the next generation of BYD electric passenger vehicles in Australia and New Zealand. Additionally, the automaker recently announced plans to build a major plant in the east China province of Anhui, which is to have a capacity to assemble 400,000 electrified vehicles annually, to help cater to the growing demand for BYD vehicles. The new facility will also produce electric motors, electric control systems, and other key components for electrified vehicles. IHS Markit estimates that BYD's global light-vehicle sales will reach around 473,800 units in 2021 and 543,100 units in 2022.



## [GSP] North America Sales and Production Commentary -2021.08

### North America sales

**July 2021: +3.9%; 1.52 million units vs. 1.46 million units**

**YTD 2021: +25.4%; 11.255 million units vs. 8.978 million units**

Auto production levels pressured by supply-chain issues continue to present the biggest immediate risks to auto sales levels within the region. Consumers, especially in the United States and Canada, have shown a great propensity to sustain spending levels, but even a strong consumer cannot overcome the limits of new vehicle availability. Although the worst of the semiconductor shortages that have wreaked havoc on global light vehicle production levels seems to have passed, the imprint of the new vehicle inventory limits will linger for a while.

With a sales pace of 14.8 million units (seasonally adjusted annual rate: SAAR), down mildly from a reading of 15.4 million units in June, US light vehicle sales reports for July reflected the tight inventory conditions, which have been and are expected to continue to bump against the demand level during the next few months. While IHS Markit analysts expect an improvement from the inventory side of the equation as the industry progresses through the second half of the year, there is little relief likely to be realized in August. Although the fourth quarter is expected to be better than the third quarter relative to the semiconductor shortage, IHS Markit analysts expect the situation will linger into 2022, keeping inventory tight even through the next calendar year. As automakers work to prioritize available chip supply, high-margin utilities and trucks are taking priority, and the issue is not affecting all automakers to the same level. After this cooling-off period, IHS Markit analysts expect the pace of sales to recover through the remainder of the year, although there is some downside bias to the full-year sales volume projection of 16.7 million units, as reflected in the July 2021 forecast setting.

Canadian auto demand levels began calendar year (CY) 2021 by sustaining the strong recovery trend the market has sustained since April 2020. Canadian consumers continued to sustain their capacity to spend, and those willing, ready, and able to enter a new car purchase continued to do so. However, harder lockdown provincial measures implemented in April and extended through May, especially in Ontario, along with potential vehicle inventory pressure have caused a slight slowdown in the new auto sales recovery. Monthly new auto registrations volumes declined in April and May but recovered slightly in June. The inventory pressures pushed against a sustained volume recovery, as incoming July figures point to a year-on-year (y/y) volume decline of approximately 10%, with July volume down compared with the month-prior level also. A surging housing market, economic reopenings, and consumers with plenty of room to spend set up the potential for any build up in pent-up auto demand to be released in the second half of the year. The softer recent results have led to a slight downgrade in the 2021 volume projection, which now stands at 1.81 million units (down 12,600 units from previous forecast level). Sales are expected to reach 1.90 million units in 2022, matching the pre-COVID-19 pandemic level reached in 2019.



For three years before the current COVID-19 effect, Mexican light vehicle demand was leading the region in auto sales declines, and the current situation adds additional pressure to an economy that was already stagnating. Auto sales in the country continue to reflect the weakest recovery levels within the region and CY 2020 demand reflected a 28% decline for the year. Volume in 2021 so far has sustained this trend, with year-to-date (YTD) volume up a mild 17% through July 2021, but on a positive note, with June 2021 volume up approximately 39% y/y and July 2021 volume up over 13% y/y, Mexico auto sales have realized the strongest results in the region over the past three months. Demand in CY 2021 is expected to jump 14%, to 1.08 million units, with demand rising 1.34 million units by 2024, eclipsing the level during the pre-COVID-19 CY 2019.

While the region progresses toward “normalcy,” the early 2021 vehicle demand levels—at least in the US and Canada—reflect that consumers continue to roar back, thanks to economic stimulus and economic reopening activity (where possible). While auto sales appear to have motored back to pre-pandemic levels, the potential vehicle supply issues stemming from supply chain constraints present the next wrinkle to the near-term outlook. Stock management will continue to be an important variable moving through the immediate forecast. Automakers continue to assess their assembly operations, as pressure builds from supply chain constraints, especially semiconductor shortages. The combination of slower production and strong demand portend to inventory constrained demand levels in the immediate term—perhaps the only thing out there with the potential to cool down the auto consumer heading through the second half of 2021. Regional sales are projected to increase 14.5% in 2021 to 19.58 million units, followed by a moderate and sustained rebound across the region, with light vehicle sales bumping against the 20.3-million-unit level by CY 2023.

## North America production

**July 2021: -26.4%; 0.93 million units vs. 1.26 million units**

**YTD 2021: +20.4%; 7.72 million units vs. 6.42 million units**

The North American light vehicle forecast was revised down a sharp 5.3% or 775,154 units to total 13.86 million units for 2021 as the semiconductor supply chain is not improving at the pace that was expected with renewed COVID-19 restrictions adding further weight to an already hamstrung global supply chain. Production in third quarter 2021 was revised down 11.8% or 433,410 units on continuing and expected incremental downtime. Production in the third quarter was expected to begin a marked improvement in the supply of semiconductors with the August 2021 forecast release erasing any increases compared to the benchmark December 2020 forecast. Production in the fourth quarter was revised down 8.3% or 333,047 units amid expectations for disruptions to continue for a more protracted period that extends through second quarter 2022. General Motors (GM) production was cut by 12.9% or 336,341 units for 2021 as COVID-19 restrictions weigh on semiconductor production in Malaysia with incremental downtime continuing at the company. While Ford has been silent on further downtime and reductions, the forecast reflects expectations that Ford will be impacted by the continuing



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shortages that results in a downward revision of 13.3% or 281,334 units for 2021. Combined, GM and Ford production cuts represent 80% of the total downward adjustment to the 2021 forecast. Stellantis production was reduced by 1.4% or 27,688 units after deeper reductions last month with production of several new vehicles, including the Jeep Grand Cherokee L and Wagoneer and Grand Wagoneer, bolstering production in the second half. Among the Asian manufacturers, Honda is expected to increase production with the forecast revised higher by 2.3% or 33,601 units based on its ability to meet production to date while still reflecting less than optimal levels of production that would see even higher results. Toyota and Nissan are expected to face issues through the remainder of the year, although at a significantly smaller scale compared to their domestic counterparts. Production for Toyota was revised down 1.0% or 19,762 units for 2021 with Nissan revised down a sharper 6.3% or 72,613 units amid ongoing struggles at a time when it is trying to launch several redesigned vehicles, including the Nissan Frontier, Pathfinder, and Infiniti QX60. The industry is going to continue to struggle to keep pace with demand with vehicles arriving at dealerships and being immediately sold, leaving little in the way of restocking inventory. This phenomenon is expected to continue through all of 2022 based on the economic and demand fundamentals. Based on the sheer fundamentals, production in 2022 is theoretically needed to increase to nearly 18.0 million units to meet demand and restock inventory back to 3.0 million units, but this will not be possible given the ongoing semiconductor situation along with other production constraints. Most manufacturers can get away with overbuilding for the next 12 to 18 months before getting into any trouble in terms of excess inventory, but constraints will prevent this from occurring in most situations. There is mounting concern that the lack of industry wide inventory will begin to affect overall US vehicle demand with the July 2021 sales rate that came in at a lower-than-trend 14.73 million units on a seasonally adjusted annual rate (SAAR) basis pointing to the beginning of more constrained demand. With production crimped worldwide with further downward adjustments to the forecast globally for the August 2021 release, US inventory is expected to remain at under 1.5 million units through 2022, well below the normal stock level that should be between 3.5 million and 4.0 million units to support the current state of demand.

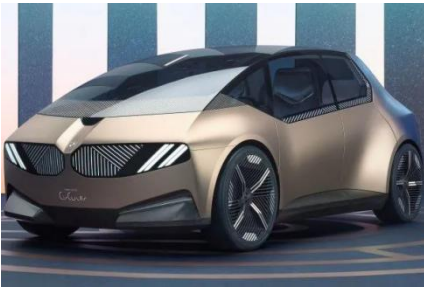


## [VIP ASSET] IAA Mobility 2021: New BEV launches show automotive future to be exciting, dynamic, and for everyone

### IHS Markit perspective

**Implications** The 2021 IAA Mobility show has opened to the public today (7 October) in Munich, Germany, with a strong array of new battery electric vehicle (BEV) concept and production vehicle launches.

**Outlook** The launches cover the spectrum of passenger car segments and show that all customers' tastes and preferences will be catered for as the automotive industry finally begins to really accelerate the process of electrification.



BMW\_I Vision Circular Concept.  
BMW Group

The 2021 IAA Mobility expo has opened to the public today (7 October) in Munich, Germany, with an impressively diverse show of new battery electric vehicle (BEV) launches. This raft of new production and concept vehicle launches shows that electrification is being adopted rapidly by OEMs across the auto industry, in the spectrum of vehicle segments, and that there will be offerings to suit all customers' budgets and tastes. Given the European Commission's recent decision to recommend legislation that will effectively ban ICE passenger cars by 2035, this is a timely development. Below are some of the show highlights.

BMW is showing a novel and forward-thinking concept at the IAA Mobility in the form of the I Vision Circular, which hints at an entirely new design language, with a massive flared and textured interpretation of BMW's traditional kidney grille. The car is conceived as a carbon-neutral concept vehicle through the ideas behind the circular economy, hence the concept's name. The automaker says the ideas of "rethink, reduce, reuse and recycle" are core to the model's design and construction. The I Vision Circular is constructed entirely of recycled materials, including its solid-state battery, the technology of which BMW has been working on for some time, with this experimental battery chemistry having the potential to offer higher energy density and not use the rare earth materials used in the current generation of lithium-ion batteries. Aside from the car's rather dramatic front-end design, the I Vision Circular's form is a rather simple shape, which takes in sport utility vehicle (SUV) and multipurpose vehicle (MPV) elements, in order to reduce the number of component parts, materials, and surface finishes. This includes an unpainted body made out of recycled aluminum. The interior design concept is dominated by what BMW calls a 'phygital' (a blend of physical and digital) experience. Instrument controls are projected on to a head-up display (HUD) on the windscreen, while there is a V-shaped dash panel that has special light effects to create interior ambience as well as wood elements. BMW gave no range or performance details for the concept.





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German startup E-Legend is showing its EL1 retro-themed high-performance BEV, which uses the legendary Audi Quattro Sport S1 as the basis for its styling. The car produces a combined 805 bhp from three electric motors, one motor developing 201 bhp at the front and a pair of motors producing 302 bhp each at the rear. The BEV is powered by a 90-kWh battery pack, which can give the car a range of up to 248 miles, although this shrinks to about 30 miles when the car is in Sport Plus mode, which allows the driver to access the full 805 bhp. A carbon structure helps keep the weight down to 1,680 kg. Production of a limited run of just 30 cars is expected to begin next year at a rather steep EUR890,000 (USD1,056,200).



*Porsche Mission R Concept,  
Porsche AG*

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