

Tue, 30 August 2022  
Weekly Newsletter

  
Lighting & ADAS

NEWSLETTER #766

## PixCell LED

Ultimate precision in perfect alignment

100+ individual cells with just 25 µm spacing, perfectly matrixed onto a single LED chip for intelligent headlamps



# Editorial

## Valeo Visibility President Maurizio Martinelli Talks With DVN

I heartily thank Maurizio Martinelli who graciously spent a long time with me; granted an interview and shared his thoughts on automotive lighting trends. You'll find our interview in today's DVNnewsletter.

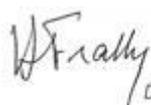
Maurizio took several steps before becoming the president of Valeo's visibility activities. He started at Valeo in 2000 and gradually took greater and greater responsibility there.

In the interview, he explains how the lighting market is foreseen to grow more than the car production in the next few years thanks to increased functionalities and expanding in front and rear fascia, interior lighting and nearfield projection. Lighting remains a matter of performance, style and safety.

Then he defines his strategy about interior lighting; illuminated grilles; communication for personal car customisation and safety by knowing the intentions of other road users, even now lighting on the sides of the car body.

This is the second DVN Interviews with relevant CEOs, after Forvia CEO Patrick Koller last month. We are working to bring you more CEO interviews, including Plastic Omnium; Marelli AL; ZKW; Luxit; Koito; Hasco; Mind, and Lumax. By all means please take a moment to [let us know](#) how you like these interviews!

Sincerely yours,

  
DVN CEO

# In Depth Lighting Technology



## DVN Interview: Valeo Visibility President Maurizio Martinelli



Maurizio Martinelli is President of Valeo's Visibility Systems business group, which designs and manufactures innovative and high-performance lighting systems; wipers, and sensor cleaning systems.

He holds a master's degree in Aeronautical Engineering from Politecnico of Milan, and began his career in commercial aviation before entering the automotive business in 1994 with Allied Signal's automotive braking division and then with Bosch, where he held various positions in quality and manufacturing before becoming director of North Italy Operations.

He joined Valeo in 2000 as the lighting systems Italy division general manager, before moving to France to take charge of North Europe Lighting Systems operations in 2005.

In 2008 he was appointed vice-president of the engine cooling branch, and then from 2010 of the thermal powertrain systems product group. In 2011, on top of this assignment, he was appointed group president for Italy and group customer director for Fiat-Iveco.

In 2012, Martinelli became VP of the lighting systems product group and Visibility Systems Business Group President since 2014. He kindly shared his thoughts with us for this DVN-exclusive interview:

**DVN: We're in a time of great change, through sustainability/climate change; Covid outbreaks and lockdowns in China; Russia's war on Ukraine; semiconductor shortages, and inflation everywhere. How do you see lighting activity and Valeo visibility in 2025 versus 2021?**

**Maurizio Martinelli:** Indeed a time of challenges, managing the inflation: raw materials, energy, transports and wages costs. In this market, lighting is and remains an attractive business. Market is foreseen to grow more than car production in the next few years even if this is not homogeneous across continents. Lighting keeps growing and expanding beyond the classic front and rear lamps thanks to increased functionalities and expanding in front and rear fascia, interior lighting and nearfield projection. So I am convinced that the future of lighting continues to be bright. And big change with Magna buying Olsa; LG buying ZKW; KKR buying Magneti Marelli; Faurecia buying Hella; PO buying Varroc and AMS shows the lighting business remains an attractive market that is expanding and occupying more space in the cars.

**DVN: How do you see the future of automotive lighting with the arrival of EVs and AVs?**

**M.M.:** We see it as a great future. Indeed, electrification and autonomous cars have a positive impact on our business. Car makers want to differentiate EVs and AV from conventional ones and are using the disappearance of the front grille to create new signatures. Moreover, lighting remains a matter of performance, style and safety. These 3 factors make lighting unavoidable for automakers. Lighting is everywhere!

**DVN: How do you handle sustainability and carbon neutrality?**

**M.M.:** Our group is very engaged on this matter: By 2030, Valeo's emissions will fall by 45 per cent compared to 2019 across our entire value chain, by integrating suppliers, operational activities and the end-use of our products. By 2050, Valeo will have achieved carbon neutrality in all operational activities and from our suppliers around the world, and full carbon neutrality (including end-use of our products) in Europe. Valeo also are signatory to the "Business Ambition for 1.5°C" campaign, which brings together companies committed to carbon neutrality by 2050 using the strict framework of the Science Based Targets initiative. As you can see, we are deeply engaged, and Valeo Lighting systems is not lagging behind. We are actively in all scopes to achieve our internal and customer targets.

**DVN: You started working on interior lighting a decade ago. What is your feedback on this activity today and in the next years?**

**M.M.:** With a 2030 market today estimated at some billions of euros, interior lighting is moving from simple monochromatic ambient lighting and reading lamps to more complex systems, which are driving the growth. This dynamic is mainly pulled by China and Europe. Our product portfolio focuses on these new highly visible solutions: from smart LEDs to create animation and communications, but also light engines for

backlight systems. For the latter, we've set up an agreement with Motherson in order to deliver complete systems from light to interior decorations. Such complex systems request high electronics expertise (from software to hardware, and architecture) to master the animations and manage it throughout the cockpit in a timely manner. This is Valeo's lighting activity DNA.

**DVN: DVN forecasts the trend of whole-front illumination, including grilles. What are your thoughts on the subject?**

**M.M.:** Sure we see this trend and we already booked a couple of businesses, both illuminated grilles and front central area. This is definitely part of our expertise and strategy. Depending on the customer, we are offering solutions alone or with partners. As raised in the recent DVN report you published in July we agree with your growth predictions. We are performing well in this domain with significant 2022 key vehicles awards that confirm that we own the competences to make it a reality.

**DVN: We have a facelift every 3.5 years with a very high R&D and investment cost. Do you think this trend will continue? And if not, what is the proposal to decrease costs?**

**M.M.:** I do not think this trend will change dramatically. Lighting is a key differentiator thanks to his contribution to style and our customers seek for differentiation and consequently new models that look different from previous one. We are continuously working at reducing cost while improving performance and robustness. One of the main tools is the platform, this is a strong tool to reduce development costs but also investment.

**DVN: What about the development time for a project?**

**M.M.:** Overall, we are facing a constant increase of complexity translated into an explosion of product requirements, on which we have to add new and relevant demand like cybersecurity, At the end, this is leading to a strong increase of development hours. But on the other hand, we do have some customers asking to reduce development times from an average of three years to an average of 18 months, and we also did it. This is the contradiction we deal with more and more. So yes, we have reduced our development time in the last years, and we are continuously revisiting our development processes to remain competitive while providing robust products: Within Valeo group, we have developed a platform approach to do exactly this.

**DVN: We are seeing more vehicle/concept cars with edge-to-edge front and rear lighting. Will it be a new standard?**

**M.M.:** Difficult to say, the style is very appealing, the space very interesting to provide communicative lighting but what about in case of a crash? What about the costs to repair? insurance premium? however the trend is visible, and we are prepared to answer. The edge to edge front and rear signaling are already visible on new vehicles especially in China and are expanding across automaker platforms. From our vision this trend will probably continue to grow. Nevertheless, as you know, style trends can move quickly and our customers want to keep their own identity.

## **DVN: How do you see the displays in the front and in the rear of the car to communicate?**

**M.M.:** Increasing. Communication is expected on the market for two main reasons: First one being a growing need for personal car customisation with increased animation capabilities, for welcome and goodbye scenarios as well as evolving signatures. Second one is linked to automated vehicle progress and the need for them to communicate about intentions or status to other road users. Display is one of the solutions including several possible technologies. Certain are becoming more and more mature. Today's main blocker is regulation, not allowing real "in motion" communication. It will need to evolve alongside technology

## **DVN: Same questions with logos.**

**M.M.:** Illuminated logo deployment is linked to related regulation already. Applications have been authorised in America; China, and Japan. Recent evolution in ECE will be made possible as well for 2023. This is becoming the new signature of many vehicles with a direct link to appliqué and grille presence.

## **DVN: and what about lighting in the side for communication and for fun (farewell/welcome)?**

**M.M.:** What started as a projected convenience light when approaching the vehicle is now strongly contributing to the brand signature with side projection of pattern. Our teams are developing solutions enabling moving patterns or the capability to change the pattern. Chinese consumers are very keen on such solutions, and China is now leading the trend with Europe. On the ground projection will evolve to address safety functionalities targeting other road users and especially new mobility and vulnerable road users. However, as the lighting is spreading on both front and rear ends, designers are now exploring lighting on the sides of the car body, opening further new lighting territories/ playgrounds.

## **DVN: We now have ADB matrix with 6 to 20 segments, ADB arrow with 80-100 LEDs or miniLEDs, ADB with a thousand microLEDs, and ADB with a million LEDs. Sure, applications are different but how do you manage these LED possibilities?**

**M.M.:** ADB is clearly a great move toward safety, and I am very pleased about the homologation in North America. Even so, I consider it a pity that US regulators did not capitalise on what is done in other continents, more advanced in ADB technology. As you say, there are different applications calling for different technical solutions. We have built our roadmap to answer the market demand and have clearly made choices as we cannot develop all kinds of combinations. We have the chance to work with many different clients in all regions. Based on all discussions with them, we set the best compromise of needs to build the best cost/performance solution. Our platform organisation is able to offer various solutions from standard modules to customer specific solutions when needed. Nevertheless, we remain a lighting company and even if we have modules on the shelf we believe in selling the full lighting systems, as in this way we are able to provide a real tailor made answer to our customer needs.

## **DVN: How do you see the future of $\mu$ LED?**

**M.M.:**  $\mu$ LED has a future as this technology is much more affordable than DMD and allows very high definition ADB. As said before, this is a big step for safety. In regard to

HD projection, the future depends first from the regulation. So far, very few symbols are allowed. To me, HD projection will have a great future as long as it will contribute to increasing safety for passengers but also for the environment when speaking about autonomous vehicles.

**DVN: Are there new trends at the rear of the vehicle and rear lamps?**

**M.M.:** So far signature remains the major trend driven by the style and the will of the automakers to differentiate each brand. Valeo are developing a lot of new technologies allowing designers to design very unique signatures and we are continuously investing to push the boundaries, always a step ahead. We also see the same phenomenon between the front and the rear, light extending to the whole rear fascia. This said, we see a clear move to digitalisation where the rear lighting is also used to communicate with the environment. In this domain, we are among the leaders on personalisation and welcome solutions thanks to the OLED technology. We will capitalise on this OLED leadership to create mass adoption.

**DVN: Software will have more and more importance in lighting. Do you think OTA updates will create a new business for lighting?**

**M.M.:** OTA is opening opportunities and enables us to create a revenue model that is based on services. There are already some car makers experimenting successfully with this business model on lighting features. According to Gartner analysts, half of the top 10 global automakers will offer unlocks and capability upgrades via software updates by 2023. Lighting is becoming digital with HD headlamp, with displays on the rear and projection system on the side and inside the vehicle; this is definitely creating opportunities for new services. Valeo is at the forefront in software, with a longstanding area of expertise and more than 6,000 software and systems engineers.

**DVN: China has closed off since the Covid pandemic and has not reopened yet. Does that cloud the prospects in the Chinese market?**

**M.M.:** We see plenty of opportunities for us and we are prepared to catch them. Chinese automakers and New Chinese players are clearly more and more trendsetters in the lighting universe, creating their own identity and their own lighting language for the exterior and for the interior. We aim to more than double our sales in China within the next five years, Valeo will be a strong contributor to the Chinese automotive market growth. We are prepared to strengthen our market share, at first following our traditional customers but also working with new players. China expect to reach up to 40 per cent of electric vehicles by 2030 and as well they will potentially become the autonomous driving epicentre. so we see potential growth both for Lighting and sensor cleaning systems.

A last word about pandemic: clearly China has been temporarily impacted by their "Covid 0" approach, however the country is restarting and they will be very fast to recover, as we have already seen in the past.

# Lighting News

## Cadillac Lyriq Bristles With New Lightstyles

LIGHTING NEWS



The Cadillac Lyriq EV is slated to enter production next year. The front end has no grille—though it does feature an illuminated Cadillac logo, and its thin vertical headlamps define the next direction in Cadillac styling. Naturally, there are animated, dancing-light displays programmed in, as seen in [this online video](#).



Up front, the Lyriq faces the world with a dramatically illuminated black shield in place of the radiator grille. Slim vertical LED headlamps evoke 'headfins'—like the tailfins Cadillacs have been famous for over many years, but now at the other end of the car.

Compound-angled linear taillamps echo Cadillac's recent concept cars.

DVN will publish next week a report on the worldwide models launched these last months. The report includes the main takeaways we have to retain.

# Ford Jump On Road Projection Bandwagon

## LIGHTING NEWS



Ford are testing the projection of important information such as directions or speed limits onto the road surface in the headlight beam, keeping the driver's eyes on the road. It would also be possible to display a suggested driving line that the person behind the wheel can follow, for example, in order to overtake cyclists at a sufficiently large distance.

These developments began after engineers at Ford experimented with projections onto a blank wall, thinking about what information could be projected onto the road to make driving at night easier. With appropriate online networking, projections could warn of driving-relevant weather changes—snowfall; fog, icy roads, and suchlike. Tying into the navigation system could also allow projections to indicate upcoming turns. Other automakers, notably in Europe, have been intensively developing road projections for quite a few years now; Audi's construction-zone vehicle width guidelines come to mind, for example, and their pioneering projection-type rear fog lamp which kicked off the whole idea.

# Varroc's New Light: Black in Daylight, White at Night

## LIGHTING NEWS



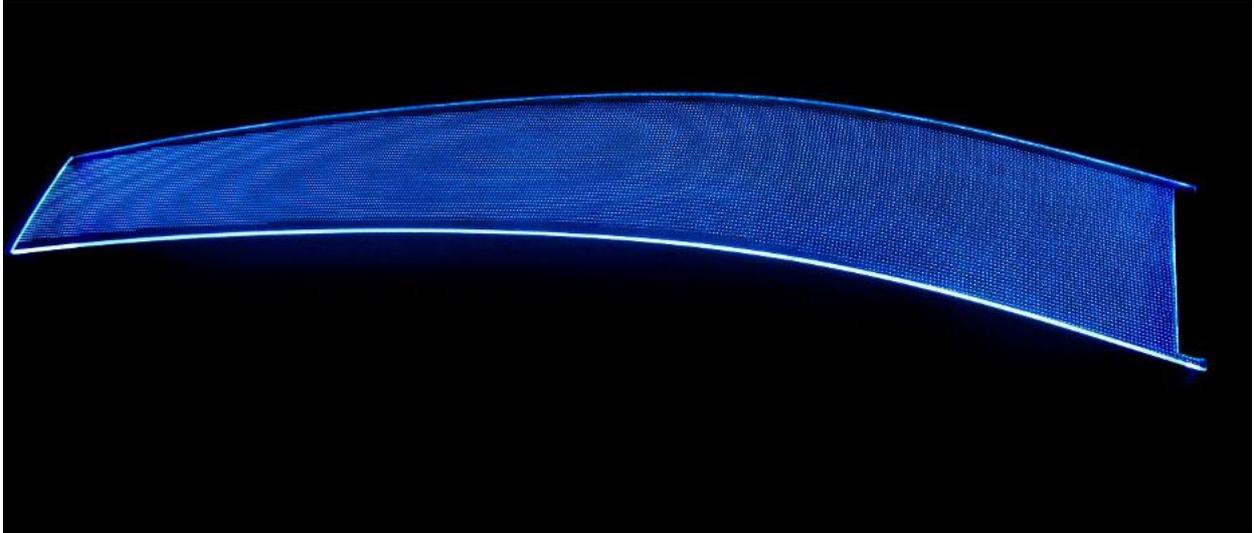
Varroc's innovation provides new design prospects: lights practically invisible—completely blackout dark—when switched off, but with eye-catching light signatures when switched on. Automakers can create distinctive light solutions to differentiate their brands and models. Haut du formulaire

The lamp uses a combination of standard optical systems with new special foils to create really dark looking switched-off lamp—and Varroc say this concept is five times more efficient than other blackout solutions, which reduces electronics requirements and allows the fulfillment of all exterior lighting functions.

**DVN comment:** Certainly an interesting and attractive concept. We're eager to learn more about its power input and light output compared to standard clear lamps and other dark-lamp concepts.

# feno Ultra-Thin Flat Light Guides at IZB 2022

## LIGHTING NEWS



German feno develop high-quality solutions, from lighting control systems and LED solutions to supporting software products, including LED solutions, signal converters and signal controllers to dimmers.

At the International Suppliers Fair IZB in Germany, feno will showcase how flat light guides save valuable space in the design and planning of an automotive interior and can even illuminate large, demanding surfaces homogeneously

As thin as a ruler, the laser-structured, thermoformed flat light guides set new standards in the automotive Interior Lighting.

“PMMA light guides with laser etched microstructure enabled ultra-thin surface lighting” is the name of our number one topic, were presented at the ISAL 2022. In this presentation, they showed how use of thermoformed laser-structured flat light guides help meeting several requirements in automotive interior lighting and thus define the future.

*The International Suppliers Fair IZB in Germany is aimed at all automotive industry suppliers and has its location at the headquarters of Volkswagen in Wolfsburg, Germany. In 2022, it will happen from Oct 11<sup>th</sup> to 13<sup>th</sup>.*

*More than 800 exhibitors from 34 nations presented their products and innovations on 38,000 m<sup>2</sup> exhibition space, in 2018.*

# Webasto Work Toward Smarter Glass

## LIGHTING NEWS



Webasto have acquired Carlex Glass Luxembourg, who make glass elements for passenger cars and were previously part of Carlex Glass America.

Webasto regard themselves as the market leader for sliding; panoramic, and convertible roofs. They aim to further develop their offering in this product group with pioneering technologies and materials; CEO Holger Engelmann says "Electromobility and autonomous driving are having a major impact on the development of car roofs. Thus, the demand for increasingly 'intelligent' roofs is growing". In this context, glass as a material is of particular importance, he says.

The former Carlex plant in Luxembourg, with its approximately 500 employees, has been operating as Webasto Luxembourg since 9 August. In the future, the glass experts will work together with their colleagues in development and validation for roof systems at Webasto headquarters in Stockdorf near Munich.

# Driver Assistance News

## SAIC Mobility valued at \$1B after \$148M Series B

### DRIVER ASSISTANCE NEWS



SAIC Mobility, an arm of state-owned Chinese automaker SAIC that aims to launch a commercial robotaxi service, raised \$148 million. The funds will be used to scale its robotaxi service in China,

The company's robotaxis are powered using Momenta's "Flywheel L4" technology, which is designed to use deep learning rather than a rules-based, machine learning approach. Momenta contends that the technology allows the robotaxis to quickly iterate and improve its algorithms.

The funding comes eight months after the two companies launched two 100-day trials in the cities of Shanghai and Suzhou. The pilot, which launched in December, tested a fleet of 60 vehicles, all of which had a safety driver behind the wheel at all times. SAIC says it reached a daily order volume of about 20 rides per vehicle and that its overall user satisfaction rate was 98%. About 80% of riders used the service two or more times after their initial experience, according to the companies.

The next step is to advance SAIC's trial in Shanghai and Suzhou into a service as SAIC Mobility gears up for eventual commercialization. Local regulations don't support commercialization, and SAIC wants to be ready when new regulations are released early next year, according to a SAIC spokesperson.

Launching in Shanghai will put SAIC Mobility in competition with other big players, like Baidu, which also has an autonomous ride-hailing service, Apollo Go, in the city.

# The First Rides in Motional's new EV Ioniq AV

## DRIVER ASSISTANCE NEWS



Lyft and Motional announced the launch of Motional's new all-electric IONIQ 5-based robotaxi, an autonomous vehicle designed for fully driverless ride-hail operation, on the Lyft network in Las Vegas.

The launch is the next milestone in the lead-up to Motional and Lyft fully driverless service, planning to begin in 2023 and scaling to multiple U.S. cities. This marks the first-time members of the public will experience Motional's all-electric Ioniq 5 AV, which is the first all-electric AV to debut on the Lyft network.

Motional and Lyft have been conducting autonomous rides in Las Vegas since 2018, and now Lyft riders will be among the first to experience Motional's new AV, which has a custom-designed user experience for a fully autonomous journey.

This means riders are able to easily control their ride without assistance from a driver. The enhanced experience includes unlocking the doors through the Lyft app and starting the ride or contacting customer support from the new in-car Lyft AV app, an intuitive in-ride display tailored to autonomous ridesharing.

In 2018, Motional and Lyft pioneered a partnership between the AV and ridesharing industries with the launch of their public service in Las Vegas. The service has since become the model for deploying autonomous vehicles on rideshare networks and has introduced over 100,000 Lyft riders to autonomous technology.

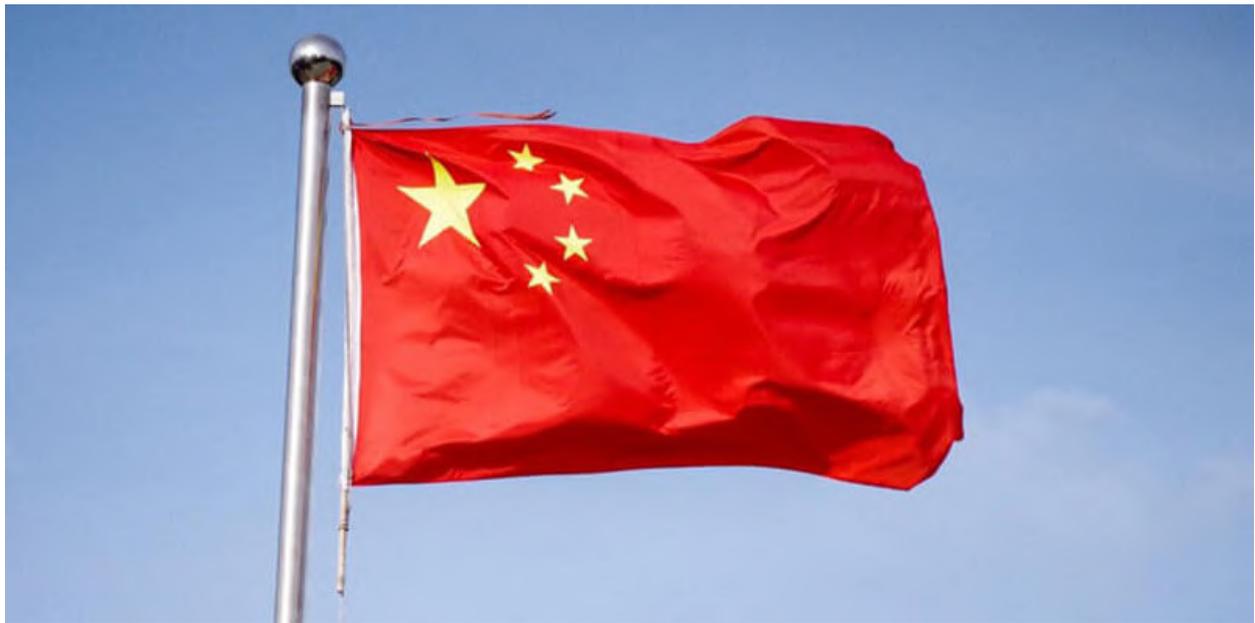
**Lyft** was founded in 2012 and is one of the largest transportation networks in the United States and Canada. As the world shifts away from car ownership to transportation-as-a-service, Lyft is at the forefront of this massive societal change.

**Motional** is a driverless technology company making autonomous vehicles a safe, reliable, and accessible reality. The company formed in 2020 as a joint venture between Hyundai Motor Group and Aptiv

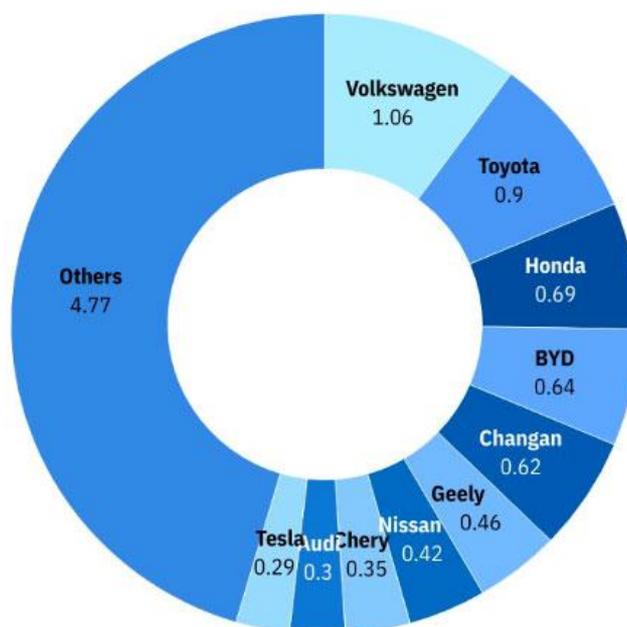
# General News

## China Vehicle Market Rebounds in July

GENERAL NEWS



China's new-vehicle market surged by almost 30 per cent to 2.42 million units in July 2022, from 1.86 million units in July 2021. That's according to passenger car and commercial vehicle wholesale data released by the China Association of Automobile Manufacturers (CAAM).



CHINA PASSENGER CAR SALES BY BRAND, H1 2022 (CAAM IMAGE)

Vehicle sales continued to rebound from the strict lockdowns imposed on major cities across the country in the first half of the year under the government's zero-Covid policy, which also disrupted global automotive supply chains. The country's GDP growth slowed to 0.4 per cent year-on-year in the second quarter, down from 4.8 per cent growth in the first quarter, due mainly to the lockdowns.

Total vehicle sales in the first seven months of 2022 were down by almost 2 per cent at 14.47 million units, with volumes plunging by almost 24 per cent in the three months to the end of May due to the Covid lockdowns. Passenger vehicle sales increased by over 8 per cent to 12.53 million units in the seven-month period, driven mainly by surging new energy vehicle (NEV) sales.

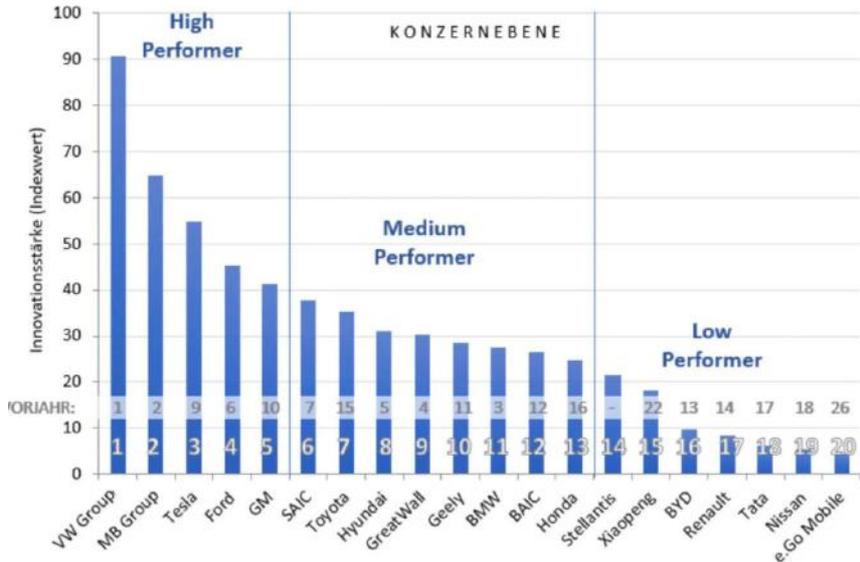
**BYD's** global NEV sales jumped by 224 per cent to 162,216 units in July, including 4,024 exports. Their year-to-date sales surged 300 per cent to 800,371 units, including a 242-per-cent rise in electric vehicle sales to 404,511 units and a 384-perpcent jump in plug-in hybrid sales to 395,860 units. In March the company switched their entire product range to NEVs.

# VW Are Still Most-Innovative Connected-Car Maker

GENERAL NEWS



The Volkswagen Group remains the most innovative automotive group in the connected car sector this year, according to the Connected Car Innovation (CCI) 2022 industry study, which examines innovation trends and innovation performance in the automotive industry in the connected car sector. Mercedes-Benz comes in second place, just ahead of № 3 Tesla.



INNOVATION RANKING FOR CONNECTED CARS (CAM CHART)

In the innovation comparison of automotive countries, however, Chinese automakers continue to catch up and achieve a record result, according to the study, which was prepared by the Center for Automotive Management (CAM), an independent scientific institute for empirical automotive research and consulting. The innovation strength of 28 global automaker groups in 2021 was determined based on a total of 336

innovations and services in the automotive future fields of connectivity, interfaces, autonomous driving, and connected services.

In the 2022 CCI Innovation Comparison, Volkswagen achieved an index score of 90 points (IP), Mercedes-Benz came in at 64 IP and Tesla at 54 IP. Ford (45 IP) and General Motors (41 IP) are also classified as "high performers".

Connected services already play an important role for innovative automakers, for example in the fields of infotainment, autonomous services, e-commerce/e-maintenance, connected financial services and charging services. In 2030, revenue potentials of €900 to €1,100 per vehicle are forecast and the global connected services market volume is estimated at over €200bn.