



Editorial

Lit Logos, Grilles, Bumpers Take Centre Stage

Lighting is indubitably a key styling element. Most automakers at the Beijing auto show presented new vehicles with lit logos, grilles, and bumpers. Opel, Mercedes, Audi (in China particularly), Nissan, and Mazda are all integrating light in grilles and logo.

The question is no longer if, but *how* to illuminate the grille, the logo and the bumper in an attractive manner while meeting the regulations—the 75mm distance rule and 100-cm² logo area limit in ECE countries, the logo symmetry in China, the prohibition in North America on impairment of mandatory lamps. These things aren't just left to caprice and whim; they involve thoughtful coöperation and careful decisions on questions and factors like:

- How to work with the supplier ecosystem? Some lamp suppliers don't make grilles; some bumper suppliers aren't developing lamps.
- How to succeed despite technical constraints? Pedestrian protection, low-speed crashworthiness, reparability, power consumption.
- How to integrate new technology? Compression tools, films, PU coating, in-mould electronics.
- How to share work between automaker lighting team and supplier teams on a common component? Responsibility for the component development and sourcing.

At DVN, we've predicted an equipment rate of 20 per cent for lit logos and lit grilles in 2030. But when I saw all the newly-released vehicles last week, it occurred to me that rate may come faster. 15 years ago, LED penetration was widely underpredicted. Will it be the same for front fascia lighting? Let's watch and see!

Sincerely yours,

Paul-Henri Matha
DVN Chief Operating Officer and Lighting General Editor

In Depth Lighting Technology

Lighting Trends at Beijing Auto Show



There'll be a full DVN Report on the Beijing auto show published next week, but in the meantime, here are some of our primary main reactions and takeaways about lighting:

In China there's no talk about lighting performance, only about lighting design and customer experience. The closest thing to lighting performance under discussion is how to communicate with light, which seems to be the key element particularly for new Chinese BEV brands like Zeekr, Aito, IM, Geely, and the others.

Lighting as a design element, on the other hand, is an area of focus for automakers both domestic-Chinese and global. Logos and grilles with inbuilt lighting are offered in China by Audi, Nissan, Mazda, and Mercedes. This is clearly the trend. Here are some brand and model spot-checks:

Zeekr Mix

Here's one of the coolest new MPVs. Zeekr's design team have integrated the brand's "Stargate" front lamp design. Rear lighting is on-trend: slimline lights and a full-width light band.





Four Nissan concepts

Nissan unveiled four NEV concepts:



The Epoch is an electric sedan for urbanites and suburbanites to enhance their lifestyles with design and technology. The concept has access to what's described as an 'AI-expanded internet of things', and its virtual personal assistant operates through communication that recognizes emotions.

The Epic is an electric SUV for city couples who explore on weekends, with autonomous driving for city streets and highways. The vehicle can function as a mobile source of electricity to power equipment, campsites, or parties. Its onboard technologies support and create a relaxing atmosphere.

The Era is a plug-in hybrid SUV that supports urban lifestyles and is well suited to young businesspeople who treat their car as a second home. With an interconnected entertainment system and zero-gravity seats, its advanced 'e-4ORCE' all-wheel control and active air suspension provide a comfortable and confident driving experience.

The Evo plug-in hybrid sedan is designed for weekend getaways and creating special moments for the whole family. In addition to its advanced driver support and safety functions, its AI-enhanced virtual personal assistant helps properly deliver the intended drive and journey.

All four concept cars have lighted grilles and front and rear logos!



Stelato S9

Huawei and BAIC unveiled the Stelato S9. The lamps seems similar to those on the Aito M9 with pixel technology (DLP + ISD) including a light strip on the front fascia connecting the left and right headlamps. Interesting star-cluster effect underneath the headlamp portion of the light strip.



Geely Galaxy Starship

Geely presented a concept car to introduce their new GEA EE platform.



The most important innovation is a complete animated grille and bumper for V2X communication.



Volkswagen ID.Code 01

VW unveiled their ID.Code 01 SUV concept with what they call 'Chinese DNA' and L^4 autonomous driving.



The steering wheel can retract into the dashboard when autonomous driving mode is activated, as no human intervention is required for L^4 autonomous driving. And we see an interesting evolution of the VW design trend to integrate lighted logos and side-to-side front and rear light bars. Volkswagen will use the ID.Code 01 as a concept for future ID models in China.

Mazda EZ-6, Arata

Mazda presented the EZ-6, slated to enter mass production toward the end of 2024, and a concept car called the Arata. Both vehicles have a lighted perimeter to the grille, as well as lighted front logo and lighted rear Mazda callout.

The Arata concept model is scheduled to be mass-produced as the second new electrified vehicle by the end of 2025, and introduced in the Chinese market. It shows an interesting variation on the full-width-light-band idea; the band defines the lower perimeter of the grille area, and presents as a bowl cradling the also-lit Mazda logo.



The EZ-6 is the first of Mazda's NEVs, developed and manufactured by Changan Mazda in cooperation with Mazda and Changan, and will be launched in China by the end of 2024. The rear lighting simultaneously maintains the Mazda familial lightstyle, riffs on the full-width lightbar trend, and caters for the Chinese perception of round shapes as auspicious.



Mercedes-Benz electric Geländewagen



Mercedes presented a new G-Class EV. There's a lighted surround to the grille, and Mercedes-logo puddle lights.



Audi Q6L

Audi's new Q6L (L for long, with an extended wheelbase; stretched versions of cars are prized by luxury buyers in China). Unlike Audi vehicles in Europe, it has a lighted grill and logo.

In China, regulations will come in for lighted logos around January 2025—but for the moment, if your logo has a symmetrical shape, you can have it lit if it fulfills the position lamp requirement, and Audi's logo meets both requirements.



Italdesign concept

Italdesign showcased an interesting concept with slim lamp design .. and lit logos. This concept is not planned to enter into mass production



Lighting News

DVN Interview: ZKW and Rehau

LIGHTING NEWS



By Paul-Henri Matha

ZKW and Rehau Automotive entered a close coöperation in May 2023: the lighting experts at ZKW and Rehau's specialists in polymer applications decided to jointly drive forward the integration of modern lighting systems in vehicle fronts. In this interview, Michael Brachmann of ZKW and Rehau's Martin Wippermann talk about developments and much more. I took some time during the DVN Munich event to learn from Michael and Martin about their companies' collaboration.



ZKW and Rehau team at CES 2024

DVN: What is the motivation behind the coöperation? Have the expectations been met so far?

Rehau: The fusion of light with exterior add-on parts is taking place as expected, and is actively used in the design language of many OEMs. The implementation in series production requires extensive expertise from both companies, which we already offer vehicle manufacturers in full as a coöperation. ZKW and Rehau are thereby expanding their existing product portfolios with a joint one.

DVN: What products are you currently working on?

ZKW: We are working on exterior vehicle parts with integrated light and electronics. These are currently grilles, panels and bumpers with various decoration technologies, e.g. foil back injection or painting in body colour. We presented our solutions at the CES in Las Vegas and also at the DVN in Munich.

DVN: Can you give us an example why backlit bumpers are so thrilling?

Rehau: The complexity of seamless light integration while at the same time ensuring the full functional scope of the components with regard to crash requires new materials that combine both requirements and enable new functionalities, without negatively affecting the subsequent recycling of the material. So all three disciplines—light, exterior, and materials—come together to make the vision real, which we have successfully achieved with the demonstrators shown.

DVN: Recycling and sustainability are good keywords. What kind of efficiency can be had with your solutions? How do you optimize them?

ZKW: Here too, system efficiency is the sum of many sub-areas and their interaction. In addition to material optimization (increased transmission), we offer our customers a wide range of compromises in terms of efficiency and appearance thanks to great freedom in design and adapted lighting technology. Here we can draw on the broad and longstanding experience of both our companies.

DVN: Compared to polycarbonate with its transmissivity around 97 per cent, what transmissivity values can you obtain?

Rehau: We have to redefine transmission in relation to decorative surfaces. In contrast to a classic fully transparent cover of a headlight, the largest portion of the of decorative surfaces is deliberately kept non-transparent. Even if the transmission of the material is lower, what ultimately matters is how efficiently we generate light in the place where it is desired by the design and is not blocked. Transparent narrow lines or dots in the design, for example, are significantly more inefficient than large elements if they were simply backlit over the entire surface.

DVN: What are the biggest challenges?

ZKW: A close and early coördination between technics and design (graphics) is important for finding the sweet spot. Minimal changes on one side can affect the complexity of the whole system, and therefore the costs. Not to forget the country-specific licencing issues. We are also working on corresponding repair solutions to offer in the case of damage.

DVN: How do you integrate electronics in your concept? Do you need a box that will be glued or welded?

Rehau: Yes and no. The integration of electronics depends heavily on the overall concept and the optical approach. While a fibre optic can be powered by a separate, enclosed light engine, a fully addressable panel with multiple LEDs requires distributed PCBs over a large area. The individual requirements for interchangeability and repairability also drive the mechanical interface.

DVN: To what extent can the technology shown in your demonstrators already be used in series production?

ZKW: Regarding technology we are already today, in 2024, ready to quote.

DVN: What does the future of light integration look like?

ZKW: We are expecting further exciting exterior light designs and an increasing functionality combined with more addressable light.

DVN: Thank you very much for this very interesting insight into your coöperation. I wish you and your teams all the best with your future work!

Geely Galaxy E8

LIGHTING NEWS



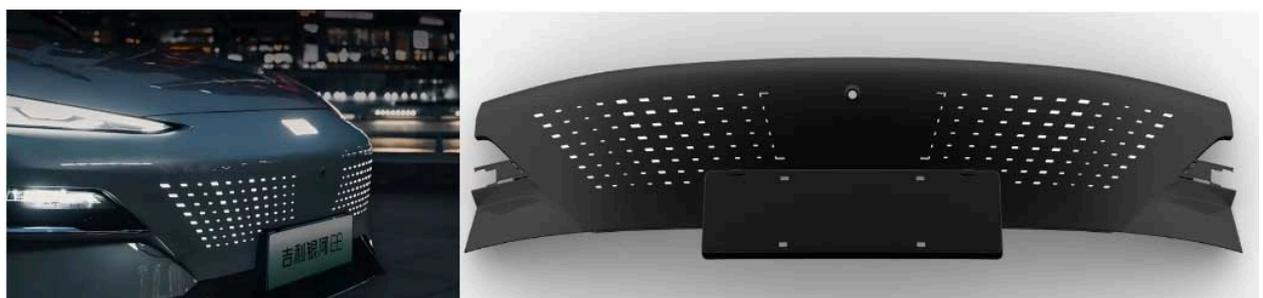
By Paul-Henri Matha

I took time to talk this week with Mr. Pei from Seekin—a Chinese lighting supplier to a variety of automakers—to learn more about the Galaxy E8 lit bumper.

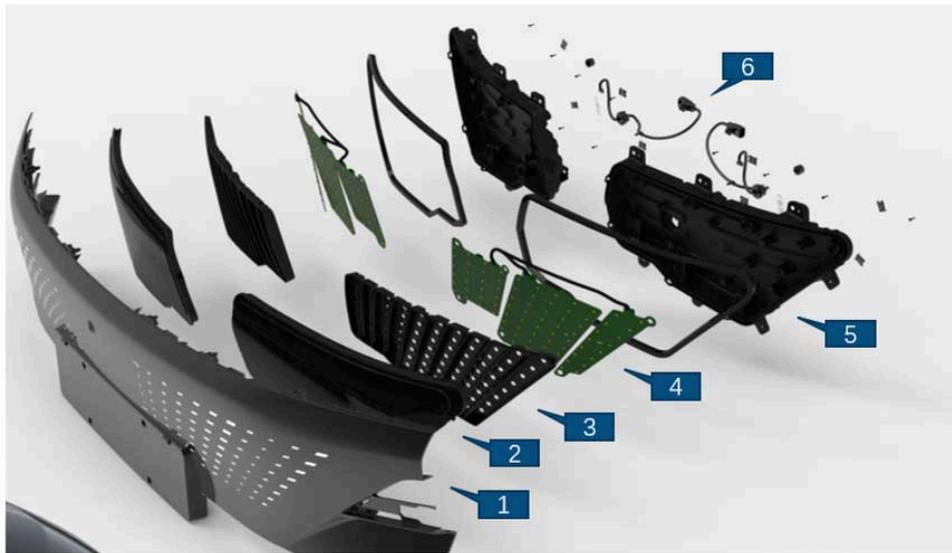
Seekin have several production bases, including Taizhou Zhongyuan Auto Parts; Zhejiang Jinye Auto Parts, and Zhejiang Liangxin Auto Parts. In addition, the company have two research institutes, with 50 people in their electronics research institute and 183 in their vehicle lamp research institute.

Zhejiang Jinliao Optoelectronics is Xuanjin's electronics factory, and Zhejiang Jinlaiyuan is the company's wiring harness factory. Seekin's total yearly revenue is about C¥ 2bn (€258m, \$276m).

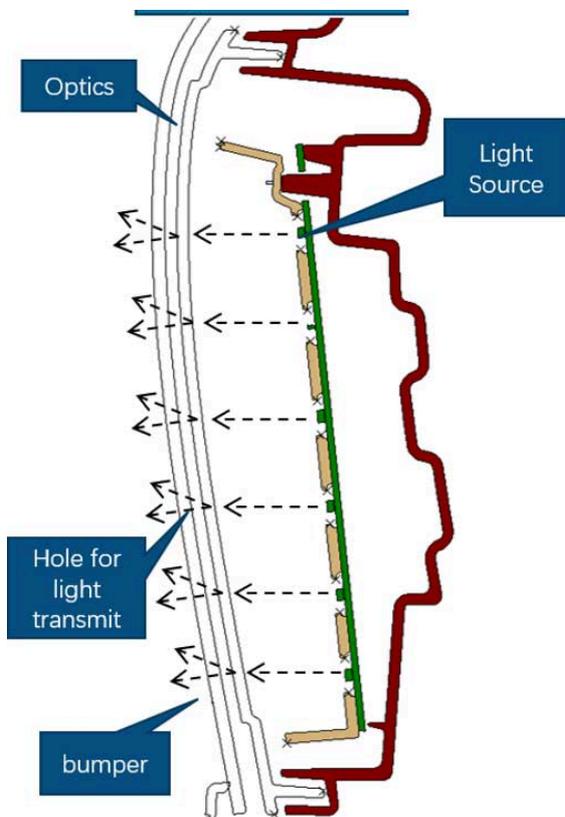
For this design, the bumper is composed with PP + EPDM milky material, with an additional outer body colour painting, partially removed by laser etching. Transparency is around 60 per cent.



Behind the bumper, two lighting modules—a left and a right—produce part of the vehicle's front position light function.



1	2	3	4	5	6
bumper	Optics lens	Reflection optics	PCB	Bottom housing	<u>accessories</u>



Vertical section of lighting module + front bumper

Each lighting module may be considered as a unique lamp, with its own lens, housing, reflector and PCB. This lamp is referenced on the bumper to have LED aligned with laser-etched holes in the bumper.

Each module comprises 79 leds driven at 60 mA, assembled on three PCBs. Each LED is driven by a MAX25608 matrix controller from Analog Devices, which is able to individually control 12 LEDs—so there are seven matrix managers per lamp—and controlled by UART over CAN from the main headlamp HCM. Power consumption of each module is around 18 watts.

DVN comment : Great job for one of the first lit bumper on a mass production vehicle!

Opel Grandland has 3D Vizor, Lit logo, HD Matrix

LIGHTING NEWS



The new Opel Grandland SUV is based on Stellantis' STLA Medium platform.

It is styled in accord with the 'Opel Compass' design seen on its antecedent concept car. It's got a prominent central longitudinal crease, and all features organised horizontally with the 'electrified Blitz' emblem at the centre—made more prominent with edge light technology. This newest iteration of the characteristic Opel brand face is the '3D Vizor'.

The new illuminated logo is accompanied by another lighting innovation: the Intelli-Lux Pixel Matrix HD headlighting system, with over 50,000 elements (25,600 on each side) for high-definition light distribution. Based on the traffic situation, objects ahead are detected by a camera and the Intelli-Lux Pixel Matrix HD light shadows them out. It does so more precisely than standard matrix technologies, and delivers a much brighter and more homogeneous light pattern while ensuring other road users are not glared. New welcome/goodbye animations with graphical projections in front of the vehicle give an outlook on future possibilities.

At the rear, the distinctive compass lighting signature includes the first integration of an illuminated OPEL callout.



DVN comments: Highly detailed, sculpted and styled lighting with high performance! The Opel logo illumination is possible thanks to the new UN R148 01 amendment from January 2023, which allows a lit logo with apparent surface less than 100 cm². Speaking of apparent surface, though, that nifty vertical (compass pointer?) CHMSL is less than 29 cm², which would make it noncompliant in the USA and Canada.

New Nissan Kicks

LIGHTING NEWS



Nissan have unveiled their new Kicks for the North American market, with a totally new design. The DRLs are built with 4 horizontal lines, aligned with the grille, and the four square low and high beam modules give the car a unique face. The rear lighting is perhaps less imaginative, but still fresh and new, with crystal-clear lenses on the body and trunk lamps.



General News

Valeo Announce New Power Division

GENERAL NEWS



The Valeo Power division was created on 22 April, 2024. Mobility needs power. The acceleration of electrification relies on powertrain and thermal management systems to increase the range, performance and comfort of the vehicles. The Valeo Power division will implement a lean organization structure based on seven regional operations and will progressively replace the former Thermal Systems and Powertrain Systems business groups.. Xavier Dupont is appointed CEO of the Valeo Power division (and Valeo Group Executive Vice President).

At the same time, Valeo have updated the names of two other divisions to reflect the evolution of their activities:

The Valeo Comfort and Driving Assistance business group becomes the **Valeo Brain** division. Mobility is evolving towards the software-defined vehicle, advanced driving assistance systems (ADAS), and new opportunities they open for in-vehicle experience. They all rely on software and on powerful computing units acting like 'brains' of the vehicles. Marc Vrecko is appointed CEO of the Valeo Brain division (and Valeo Group executive Vice President).

The Valeo Visibility business group becomes the **Valeo Light** division. Safe mobility relies on light to see and be seen. The light must reach the driver and the sensors without distortion, by dint of wiper and sensor cleaning systems. The revolution of mobility supports the acceleration of lighting everywhere as electric and advanced vehicles offer new opportunities in terms of lighting design, functionality and personalization. Maurizio Martinelli is appointed CEO of the Valeo Light division (and Valeo Group Executive Vice President).

Valeo's new operational structure is now organized around these three divisions that will become the financial reporting segments of the Group starting at the 2024 half-year results. Valeo's aftermarket activity will still be called **Valeo Service**, with Eric Schuler appointed CEO.

Valeo Q1 Numbers Are In

GENERAL NEWS



Valeo have released their Q1 2024 figures:

- Sales of €5.4bn, up 2 per cent on a like-for-like basis (LFL)
- Original equipment sales up 1 per cent LFL
- Outperformance of 2 percentage points versus automotive production, after a slightly unfavorable geographic mix
- 7 percentage point outperformance for ADAS, 6 percentage point outperformance for the Visibility Systems Business Group, 4 percentage point outperformance for the Thermal Systems Business Group
- 9 percentage point outperformance for the traditional Powertrain activities, partially offsetting the low level of activity in high-voltage electrification. 5 percentage point underperformance for the Powertrain Systems Business Group.

Original equipment sales*** (in millions of euros)	As a % of sales	Q1 2024	Q1 2023	Change	LFL* change	Perf. **
Europe & Africa	49 %	2,215	2,293	-3 %	-3 %	-1 pt
Asia, Middle East & Oceania	29 %	1,343	1,409	-5 %	+4 %	+5 pts
<i>o/w Asia (excluding China)</i>	15 %	717	777	-8 %	+2 %	+8 pts
<i>o/w China</i>	14 %	626	632	-1 %	+6 %	+2 pts
North America	20 %	912	847	+8 %	+9 %	+8 pts
South America	2 %	84	88	-5 %	-7 %	-1 pt
Total	100 %	4,554	4,637	-2%	+1 %	+2 pts

* Like for like.

** Based on S&P Global Mobility automotive production estimates released on April 16, 2024.

*** Original equipment sales by destination region.

Sales by Business Group (in millions of euros)	Q1 2024	Q1 2023	Change in sales	Change in OE sales*	Perf. **
Comfort & Driving Assistance Systems	1,229	1,159	+6%	+4%	+5 pts
Powertrain Systems	1,635	1,741	-6%	-6%	-5 pts
Thermal Systems	1,150	1,145	—%	+3%	+4 pts
Visibility Systems	1,415	1,376	+3%	+5%	+6 pts
Other	-2	61	N/A	N/A	N/A
Group	5,427	5,482	-1%	+1%	+2 pts

* Like for like.

** Based on S&P Global Mobility automotive production estimates released on April 16, 2024. (Q1 2024 global production growth: -1%)

The Visibility Systems Business Group outperformed automotive production by 6 percentage points. In Europe, the Business Group benefited from production launches for lighting projects for several European automakers. In China and North America, the Visibility Systems Business Group's sales were driven by the recent production launch for a North American automaker in the field of electrification. In China, activity was boosted by the ramp-up in production for several Chinese automakers in the area of electrification.

Forvia Hella Q1 Figures

GENERAL NEWS



Forvia Hella's Q1 2024 figures look like this:

- Currency-adjusted sales increased by 2.2 per cent to €2bn; reported growth of 0.6 per cent
- Operating income of €111m, operating income margin at 5.6 per cent
- Sales growth driven by business group Lighting; Electronics and Lifecycle Solutions with slightly lower sales
- Net cash flow in relation to reported sales is down 2.6 per cent (versus -1.9 percent in the previous year).

"As we anticipated, the global automotive environment is slightly down in the first quarter, partly due to lower production volumes in Europe and a temporary slowdown of electrification at the start of the year. Within these framework conditions, we have achieved satisfactory results that are in line with our expectations," said CEO Bernard Schäferbarthold.

Sales development in the first quarter was driven by the business group Lighting, which achieved growth of 4.9 percent to €1,002m (previous year: €955m). The main factor here was the full consolidation of the Chinese joint venture Beijing Hella BHAP Automotive Lighting since the beginning of this year. In addition, the business group's development was supported by business with electric vehicle manufacturers in Asia and America as well as by new launches in the Americas.

In the Electronics business group, sales fell by 3.4 per cent to €813m (previous year: €842m). The radar business in particular continued to develop successfully. However, customer mix effects in Asia and Europe, a slower ramp-up of electromobility in Europe at the beginning of the year and delays in individual new series launches had a negative impact on sales development in Electronics.

In the Lifecycle Solutions business group, sales reduced by 1.7 per cent to €278m (previous year: €283m). The independent aftermarket in Europe, for example in the United Kingdom, Poland and Turkey, performed particularly well. In contrast, lower investment activities by commercial vehicle manufacturers and a disproportionately high demand in the workshop business in the prior year, which resulted from the market launch of a new particle counter, had a negative impact.

The company confirmed their outlook for the full fiscal year 2024 as part of the presentation of the quarterly results. They continue to expect currency and portfolio-adjusted Group sales of between around €8.1bn and €8.6bn in 2024. The operating

income margin is still forecast to be between around 6 and 7 per cent. With regard to whole-group net cash flow in relation to sales, they continue to forecast a figure of approximately 3 per cent.

	Fiscal year 2024	Fiscal year 2023	Change
Adjusted sales	2,033	1,990	+2.2%
Reported sales	2,002	1,990	+0.6%
Operating income	111	111	0.0%
Operating income in relation to reported sales	5.6%	5.6%	0.0 percentage points
Net cash flow	-51	-38	-13
Net cash flow in relation to reported sales	-2.6%	-1.9%	-0.7 percentage points

OPmobility Q1 Results

GENERAL NEWS



- Economic revenue of €2,867m for Q1 2024, up 1.6 per cent, and +3.6 per cent like-for-like. The joint ventures, which mainly manufacture exterior car body parts in Asia, reported like for-like growth of +5.4 per cent.
- Exterior Systems economic revenue increased by 3.8 Per cent (+5.5 per cent LFL) compared to Q1 2023. The Exterior business group benefits from a solid order book recorded in recent years. Lighting revenue is down on Q1 2023, in line with Group forecasts, due to a lower order book prior to its acquisition by OPmobility.
- Modules: economic revenue is stable at -0.3 per cent (+1.1 per cent LFL) compared to Q1 2023, with rising volumes in North America. After strong growth in Q1 2023 tied to a recovery in activity following the impact of the conflict in Ukraine, activity was boosted in Q1 2024 by the good performance of the new module assembly plant in Austin, Texas, to meet a historic order for a major American player in electric mobility.
- Powertrain: economic revenue is stable at -0.4 per cent (+2.8 per cent LFL) year-on-year. Activity levels of the C-Power business group remained similar to Q1 2023, consolidating its leading position and confirming the relevance of the Group's strategy in the fuel tanks and emission reduction systems production market. H2-Power was still driven by sales in Europe and China. The Group also booked a key order in the United States from a premium manufacturer for hydrogen vessels for SUVs.

In a market down 0.9 per cent, OPmobility outperformed automotive production by 4.5 points. According to S&P Global Mobility, global automotive production fell by 0.9 per cent in Q1 2024, after a strong recovery in Q1 2023.

In 2024, the automotive production market is expected to decline slightly, by an estimated 0.3 per cent according to S&P, in an environment marked by a more gradual transition to decarbonized mobility than expected.

OPmobility confirm their 2024 objectives, with the aim to outperform global automotive production and improve all its financial aggregates (operating margin), net result Group share, free cash flow and net debt compared to 2023.

In € million By business ¹⁾	Q1 2023	Q1 2024	Change	LFL change ^{c)}
Exterior Systems	1,333	1,383	+3.8%	+5.5%
Modules	807	804	-0.3%	+1.1%
Powertrain	682	679	-0.4%	+2.8%
Economic revenue^{a)}	2,822	2,867	+1.6%	+3.6%
Joint ventures	258	254	-1.4%	+5.4%
Exterior Systems	1,167	1,226	+5.1%	+6.0%
Modules	715	708	-1.0%	0.0%
Powertrain	682	678	-0.5%	+2.7%
Consolidated revenue^{b)}	2,564	2,613	+1.9%	+3.4%

In € million By region	Q1 2023	Q1 2024	Change	LFL change ^{c)}	Automotive production ^{b)}	Performance vs. Automotive production
Europe	1,476	1,445	-2.1%	-1.9%	-3.1%	+1.2pt
North America	741	845	+14.1%	+15.5%	+0.7%	+14.8pts
China	258	215	-16.7%	-11.5%	+5.5%	-17.0pts
Asia excl. China	229	233	+1.7%	+7.9%	-6.6%	+14.5pts
Rest of the world ¹⁾	118	129	+9.1%	-	-	-
Economic revenue^{a)}	2,822	2,867	+1.6%	+3.6%	-0.9%	+4.5pts

Koito results Fiscal Year 2024

GENERAL NEWS



(¥ millions are rounded down)

1. Consolidated Results for Fiscal 2024 (April 1, 2023 to March 31, 2024)

(1) Consolidated Operating Result (¥ millions; percentage figures represent year-on-year changes)

	Net sales		Operating income		Recurring profit		Profit attributable to owners of parent	
Fiscal 2024	950,295	9.9%	55,995	19.5%	63,265	30.4%	40,879	37.8%
Fiscal 2023	864,719	13.7%	46,847	△12.3%	48,532	△19.9%	29,660	△22.6%

Note: Comprehensive income: Fiscal 2024: ¥98,108 million (84.6%), Fiscal 2023: ¥53,155 million (△21.3%)

	Net income per share (¥)	Net income per share (diluted) (¥)	Return on equity (%)	Recurring profit to total assets ratio (%)	Operating income to net sales ratio (%)
Fiscal 2024	130.93	130.90	6.3	6.8	5.9
Fiscal 2023	92.26	92.24	4.9	5.5	5.4

Koito comments about these results:

“The economic situation in fiscal 2024 showed a gradual recovery as economic activity began to normalize following the recovery from the COVID-19, but the outlook remained uncertain due to monetary tightening in response to anti-inflation measures in many countries, the stalling of the Chinese economy, as well as heightened geopolitical risks in Ukraine, the Middle East and elsewhere. As for the global automobile production volume, although sluggish sales of Japanese vehicles in China due to the progress of EVs, the suspension of production and shipments due to the fraud problems of automobile manufacturers in Japan as well as the UAW strike in North America, it increased in all regions compared to the previous year due to the easing of semi-conductor shortages and other factors. Under these circumstances, the consolidated net sales reached ¥ 950.2 billion (increased by 9.9% year-on-year), a record high for the second consecutive year, due to a recovery in vehicle production, new orders mainly in Japan and North America, and the effect of currency translation, despite sales in China decreased due to lower production of Japanese vehicles.

Regarding profits, although we saw impacts of production and shipping stoppages caused by our clients, inflation in various countries and soaring labor costs caused by the tighten employment situations mainly in North America, the operating income increased by 19.5% to ¥55.9 billion, recurring profit increased by 30.4% to ¥63.2 billion and net income attributable to owners of the parent increased by 37.8% to ¥40.8 billion, due to the effect of increased sales in Japan, North America and elsewhere, as well as the promotion of rationalization activities, including group-wide productivity improvements.

Although the outlook for global automobile production in the fiscal year ending March 31, 2025 remains uncertain, global automobile production is expected to increase slightly compared to the previous fiscal year, reflecting gradual recovery in Japan. Consolidated sales are expected to increase for the fourth consecutive year due to new orders in Japan and North America, despite the effects of the continuing slump in sales of Japanese vehicles in China and the termination of production of ordered models in Europe. Regarding the profit, despite rising costs caused by continued inflation and labor shortages in various countries, as well as an increase in investments for new orders, R&D investments for the future, operating income, recurring profit, and the net income attributable to the owners of the parent are expected to increase year on year due to the effect of increasing sales, productivity improvements and continuous rationalize operations.”