

Datas concerning lighting

1 Data concerning Volume of Car Production

2 Data concerning Prices

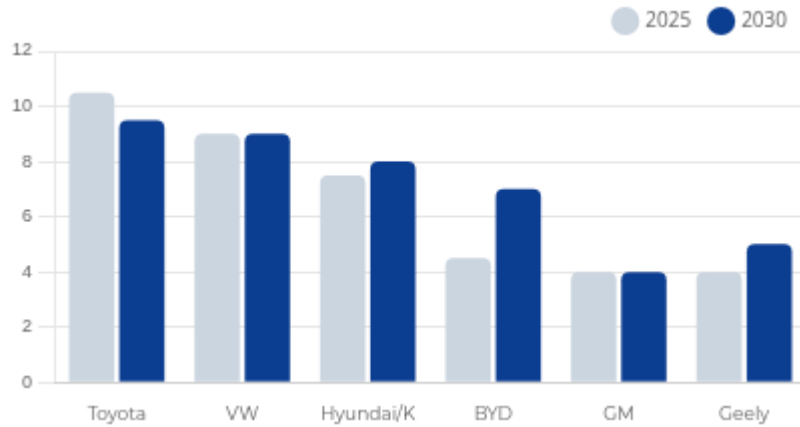
3 Data concerning Lighting Market

4 Data concerning Functions and Technologies

5 Data concerning Regulations

Data concerning volume of car production

Vehicle production by OEM Group (million)



Group	'25	'30
Toyota	10.5	9.5
VW	9.0	9.0
Hyundai/Kia	7.5	8.0
BYD	4.5	7.0
GM	4.0	4.0
Geely	4.0	5.0



Key Strategic Insights

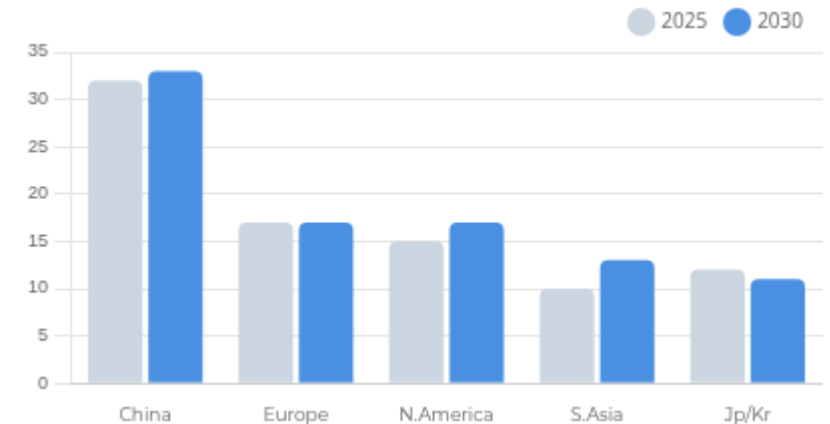
China Dominance: Remains the undisputed manufacturing hub, producing ~one third of global volume by 2030.

Asian Growth: South Asia shows the fastest growth trajectory; BYD & Geely gain significant market share.

Western Stability: North America sees moderate increases, while Europe remains broadly stable in volume.

Region	'25	'30
China	31	33
Europe	17	17
N. America	16	17
S. Asia	10	13
Japan/Korea	13	11

Vehicle production by region (Million)



Data concerning Prices – Current lights

2025 Equipment Price Breakdown by Segment

Values in EUR (€)

Vehicle Segment	Headlamps (x2)	Rearlamps (x2)	Other Lights	Market Mix	Contribution
Low Cost	40 €	10 €	12 €	20%	12 €
Entry Base	120 €	60 €	16 €	20%	40 €
Entry Option	160 €	100 €	60 €	40%	128 €
Premium Base	300 €	200 €	80 €	15%	64 €
Premium Option	600 €	300 €	120 €	5%	52 €
				100%	296 €

Entry Option Dominance

The 'Entry Option' segment represents the largest market share (40%), driving nearly half of the weighted average price.

Premium Impact

Although only 20% of the volume, Premium segments account for ~39% of the total market value due to high component costs.

Average Selling Price Evolution

2025 Baseline

296 €



2030 Forecast

340 €




+15% Growth

Growth Drivers:

- ~5% organic price rise
- New technical content integration

Data concerning Prices – New lights in 2030

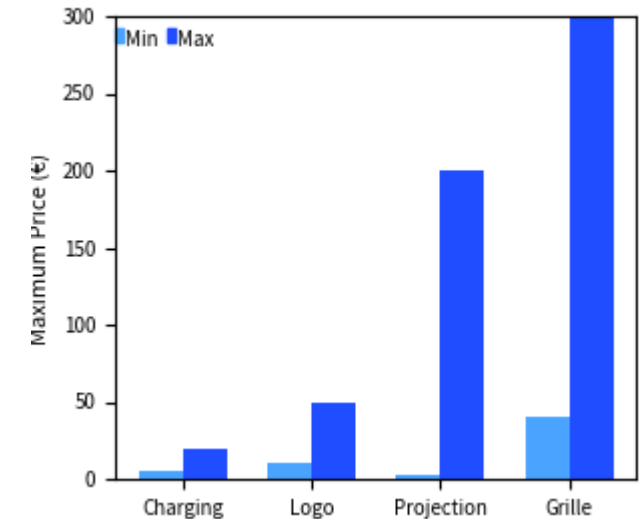
Estimated Cost Range for New Features

Lighting Feature	Description	Price Range (€)
 Charging lamp	EV charging status indicator	5 € – 20 €
 Lit logo	Illuminated brand emblem	10 € – 50 €
 Projection lamp	Ground projection lighting	2 € – 200 €
= Lit grille	Front illuminated grille panel	40 € – 300 €

Key Takeaway

New lighting technologies vary significantly in cost complexity. While basic indicators like **Charging Lamps** remain low-cost, styling features like **Lit Grilles** represent a major premium value opportunity, ranging up to 300€ for complex designs.

Price Potential Comparison (Min - Max)



Highest Value Component

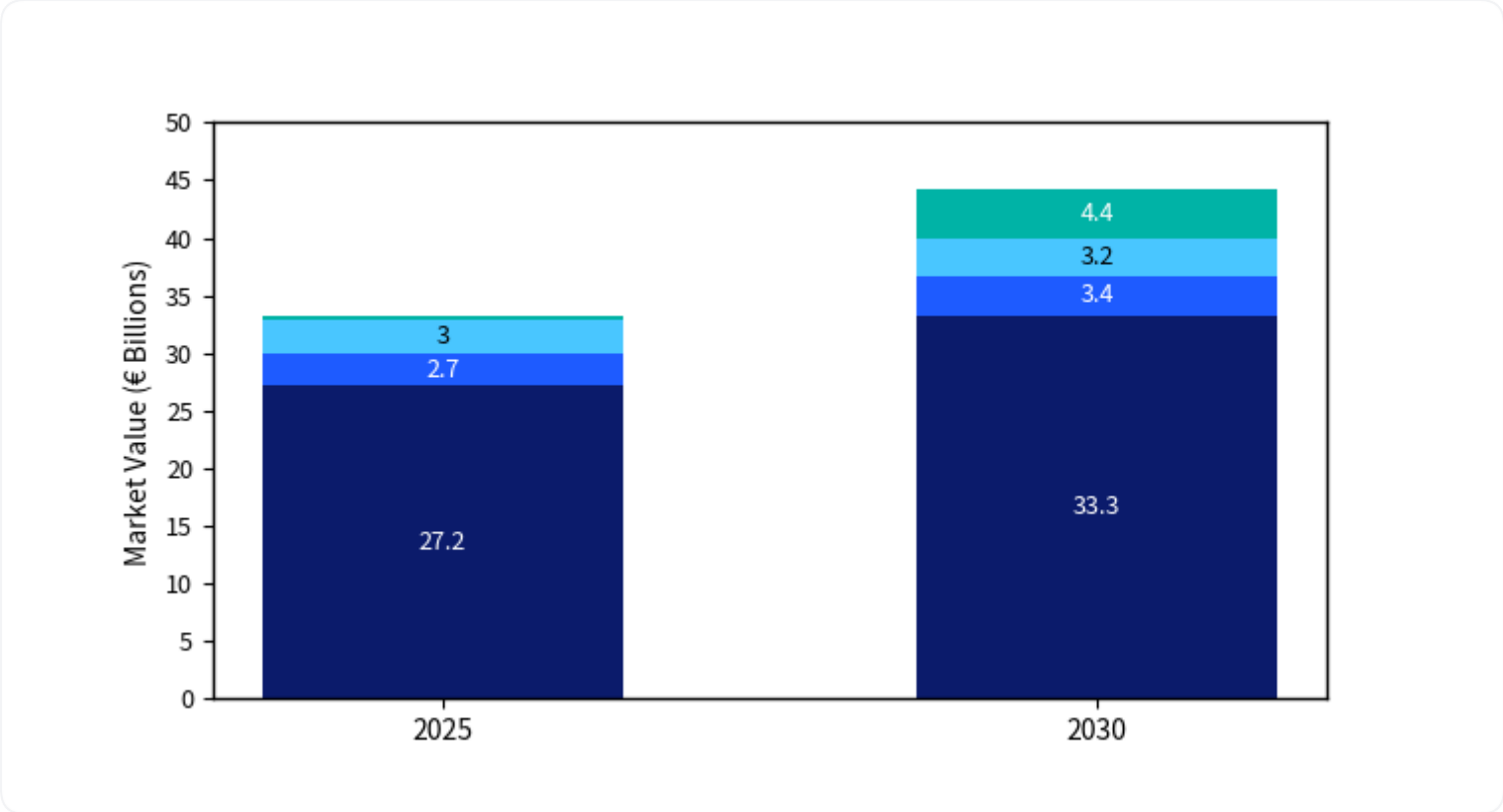
Lit Grille

Up to 300 € per vehicle

Data concerning Exterior Lighting Market

Market Value Evolution (€ Billions)

Growth: +33%



● Current Lights ● Aftermarket ● 2-3 Wheelers/Trucks ● New Lights

Total Market Size

€33.3B → €44.3B

+€11.0B

Market Breakdown

New Lights (Innovation)

Massive growth from €0.4B to €4.4B due to new technologies.

Current Lights

The core segment increases from €27.2B to €33.3B.

Other Segments

Aftermarket grows to €3.4B and 2-3 Wheelers/Trucks to €3.2B.

Functions and Technologies

1) Adaptive Front Lighting Systems (AFS)

Better visibility in curves, intersections, motorways, bad weather conditions.

2) Adaptive driving beam (ADB)

- Matrix LED

Adaptive LED. High beam always on without blinding others.

- Digital / Pixel Lighting / μ LED

from kpixels to million controllable pixels.

3) Communication

- Adaptive Communication Lighting

Exterior lighting used to communicate.

- Projection Lighting

Brand or projection outside vehicle.

- μ LED and Pixel lighting

Welcome animation, custom light signature, ground illumination, entertainment.

4) Decoration

- Light Guides

LED sources inject light into edges, transparent PMMA or PC optical guides, micro-structures.

- Backlit Decorative Surfaces (Hidden-Until-Lit)

Surfaces look solid when off, lit graphics appear when on.

Laser-etched films, Micro-perforated coatings, Semi-transparent decorative layers

- RGB / Dynamic Ambient Lighting

RGB LEDs, CAN/LIN-controlled lighting modules, SW-defined color scenes.

- OLED Lighting

Premium decorative rear lighting with uniform surface emission, Thin panels (<2 mm),

- Laser Etching & Surface Structuring

Decorative optical textures.

Laser engraving, Chemical etching, Micro-optical embossing

- 3D Lighting & Volumetric Effects

Depth perception and premium aesthetics. Multi-layer optics, Floating éléments, Internal reflection structures

- Fiber Optic Decorative Lighting

Continuous light lines and complex routing.

- Smart material

Emerging decorative technologies.

Illuminated paint and film in body panel

Data concerning UNECE Regulations

ADS light

US

Color: blue-green (turquoise) for exterior lights, front, side and rear.

Lights must also be on.

Europe

Current idea is to deactivate the position lamps or DRLs when ADS lights are lit

DRL

Europe:

Distance 600 mm between left DRL and right DRL.

Distance less than 600 mm would be accepted end 2026.

In daytime, it is possible to switch on position lights (no constraint of distance) in same time as DRLs;

China:

from January 2025, DRL no restriction about width requirement. Possible to do a coast-to-coast lamp.

Lit logos

Europe: Restrictions of having a link between the headlamp and the lit logo and a maximum size of 100cm².

China: Allowed while driving, part of the position lamp (with same rule as Europe, but no size limitation.

US: No limitation. Consider as Supplemental lamp. (SAE norm J3098 for front).

Lit grilles

Europe and China: a simple light bar in grill is needed to be able to have a lit logo.

USA: simple light bar is already possible and we estimate a take rate about 10% in 2030

Rear Logo

Europe - Color: red - Maximum size of 100 cm² when car is driving or parked.

China - White-lit logo when vehicle parked - No maximum size for the lit logo.

Light projections in Europe

DI light projections : not yet authorized.

However, a proposal has been accepted by GRE in October 2025, then transmitted to WP29 to be discussed in the session 94 in April 2025.

Would be authorized end 2026? Beginning 2027.

Predictive trajectories in main beams: Authorized since end 2025

Reverse light projection: Proposal made by GRE to be accepted by WP29 in Nov 2025

Stop light projection: Nothing starting in GTB

Light projections in China

Allowed since January 2025

Charging lamp

China and USA; not regulated

Europe: Willingness to regulate the charging lamp from 2030 with maximum light intensity.

Displays

Europe and USA, displays can be activated only in parking condition

China; Displays are used while driving

A2S Consulting is an independent consulting firm with a deep knowledge and experience of the Global Automotive market.

We focus on 3 support activities:

1. Business Development

- Leveraging contacts with OEMs (Audi, BMW, Mercedes-Benz, Renault, Stellantis, VW...) and long-established relationships with the main lighting Tier Ones: Hella, Marelli AL, OP Mobility, Valeo, ZKW.

2. Strategy

- Team of former CEOs, CFO, CTOs with Global Tier Ones (FORVIA, Valeo, ...)

3. M&A and Partnerships

- Knowledge of the worldwide lighting market

We offer you:

1. Proven Expertise in the automotive lighting industry

- Comprehensive understanding of the lighting ecosystem

2. Hands-on Experience

- Large automotive experience in strategy execution, industrial footprint, and engineering transformation, Joint venture, partnership, and turnaround

3. Market Knowledge and Data Access thanks to:

- Strong link with DVN
- Worldwide presence in universities, institutional organization, and regulations through a Network of specialists and the experience at DVN