



European Association of Automotive Suppliers

ANFAVEA

14 June 2023



CLEPA, the European Association of Automotive Suppliers, represents over 3.000 companies supplying state-of-the-art components and innovative technology for the mobility of the future.

**Direct
membership of
over 130 global
suppliers**

**12 national
associations &
14 associated
members**

EUROPEAN SUPPLIERS AT A GLANCE



 **75%**
of the vehicle value
comes from suppliers

 **1.7 million**
Direct jobs




 **€30 bn**
Invested in R&D each year

 **30%**
of private sector R&D
Investment in the EU

 **29,000**
Patents filed by the
automotive industry each year

 **€600 bn**
Turn over each year

 Annual trade volume: **€65 billion**

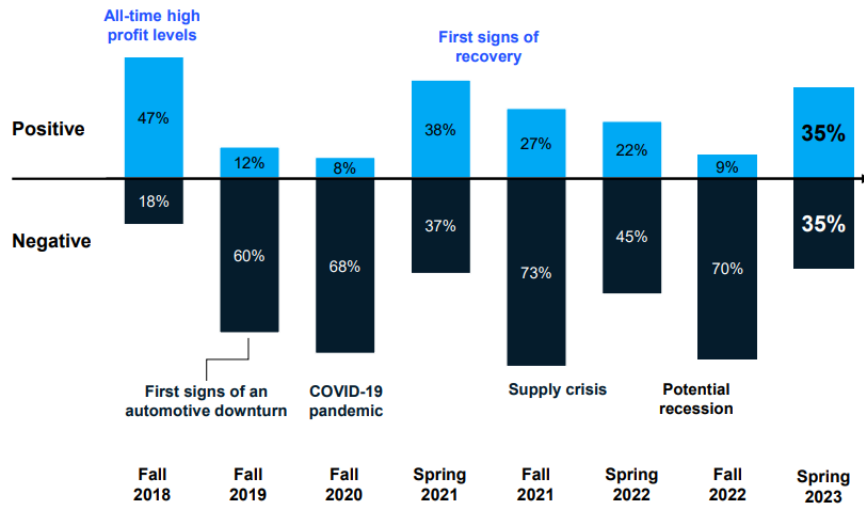
STATE OF THE INDUSTRY

Latest Pulse Check: March 2023



Survey conducted between February 6th – February 24th, 2023

What is your general outlook for the automotive supplier industry?¹



1. Difference to 100%: "Neutral" between positive and negative. N=49 (February 6th - February 24th, 2023)

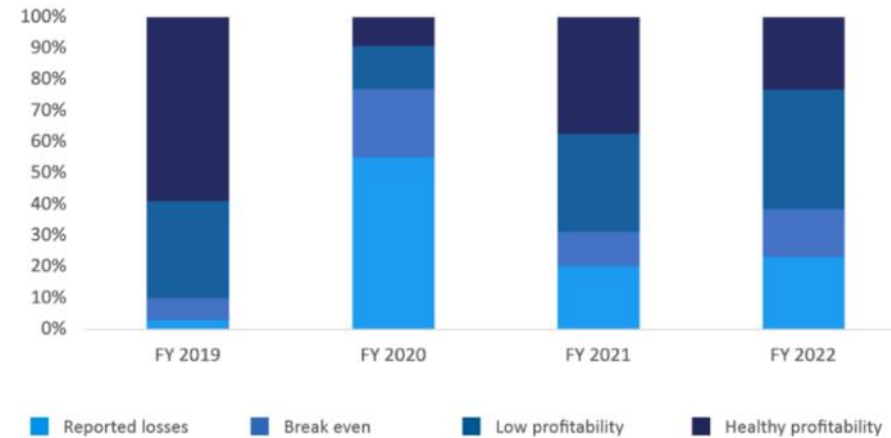
Source: McKinsey CLEPA Pulse Check Survey

Outlook overall more optimistic

- Balanced between positive and negative outlook, better than in the past 2y

Figure 1
Automotive supply profitability radar

Source: McKinsey CLEPA Pulse Check & CLEPA analysis



CLEPA Data Digest #7 - April 2023

Good on volumes, but tight margins:

- 77% of suppliers recorded profitability below 5%, as compared to 41% in 2019.
- 23% of suppliers reported losses, up from just 3% in 2019.

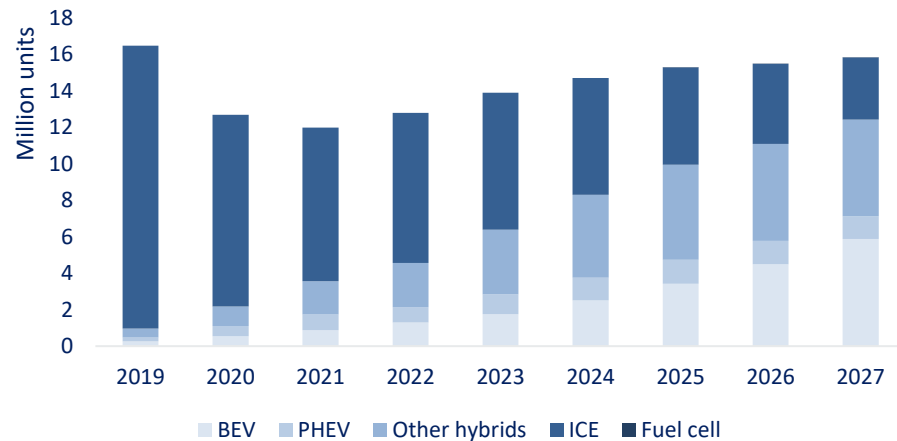
STATE OF THE INDUSTRY

Outlook



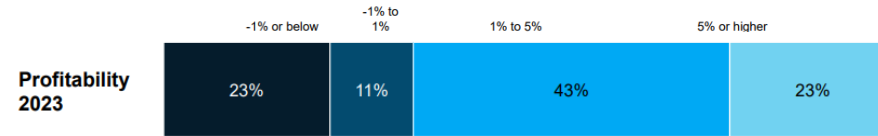
EU light vehicle production forecast

Source: LMC Automotive, 28 April 2023

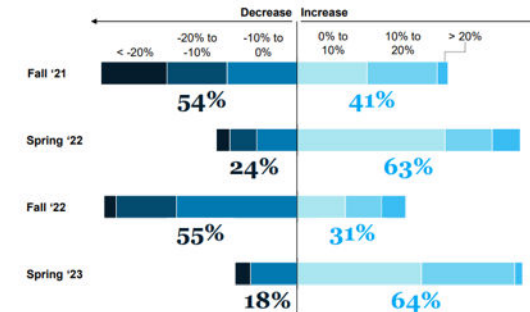


- Forecasts expect EU production of light vehicles to increase by 8.6% over 2023.
- Volumes still 16% below 2019 level.
- Battery and plug-in hybrid electric vehicles could reach 20% of production
- Battery electric likely to surpass internal combustion engines in volume by 2027.

What overall profitability (EBIT-margin) do you expect?¹



How will your revenues develop in the next 12 months?¹



¹. Missing to 100%: No change / stable. N=38 (September 22nd - October 11th, 2021), N=54 (February 16th - March 2nd, 2022), N=32 (September 19th - October 7th, 2022), N=49 (February 6th - February 24th, 2023)
Source: McKinsey CLEPA Pulse Check Survey

Majority of suppliers expect stable/growing volumes

- Potential bias through seasonal effects
- Weak end of 2022, increasing demand Q1 2023, possible positive pull through from China
- But: Uncertainty in Q2, cost inflation, risk of recession

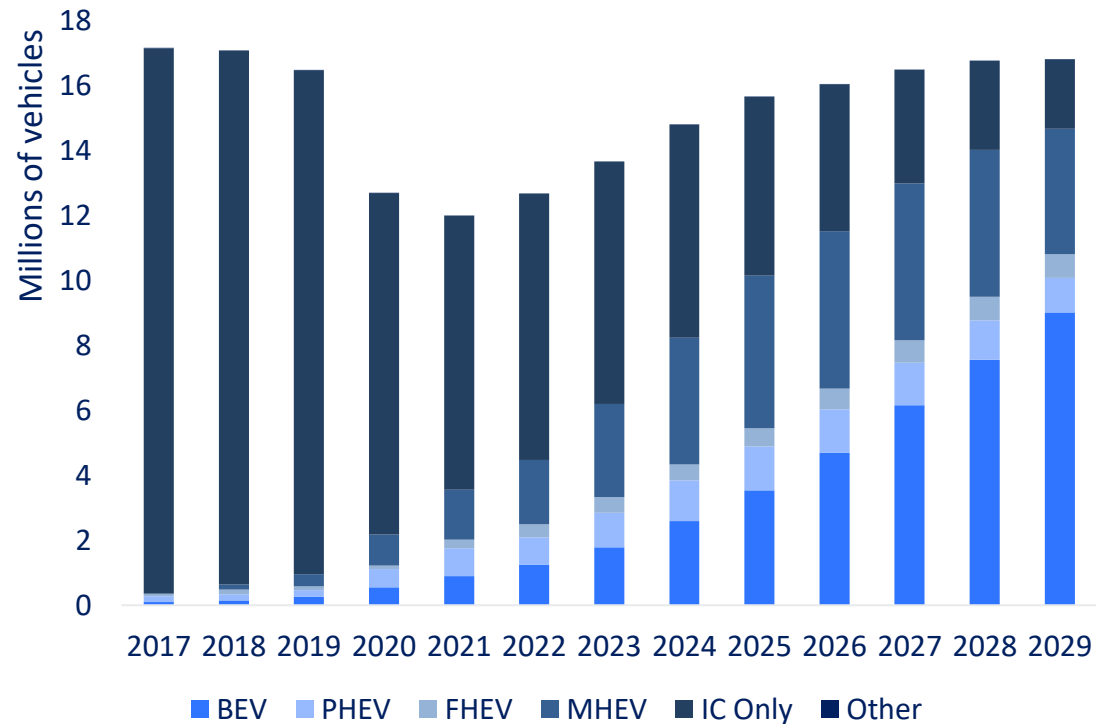
AUTOMOTIVE CHIP OUTLOOK

Change driver: Electrification



EU light vehicle production forecast

Source: LMC Automotive, a GlobalData company, Jan. '23



- *BEV and PHEV expected to represent 21% of manufactured cars in 2023, up from 16% in 2022.*
- *As early as 2027, BEV sales are expected to have surpassed other powertrains in Europe.*

AUTOMOTIVE CHIP OUTLOOK

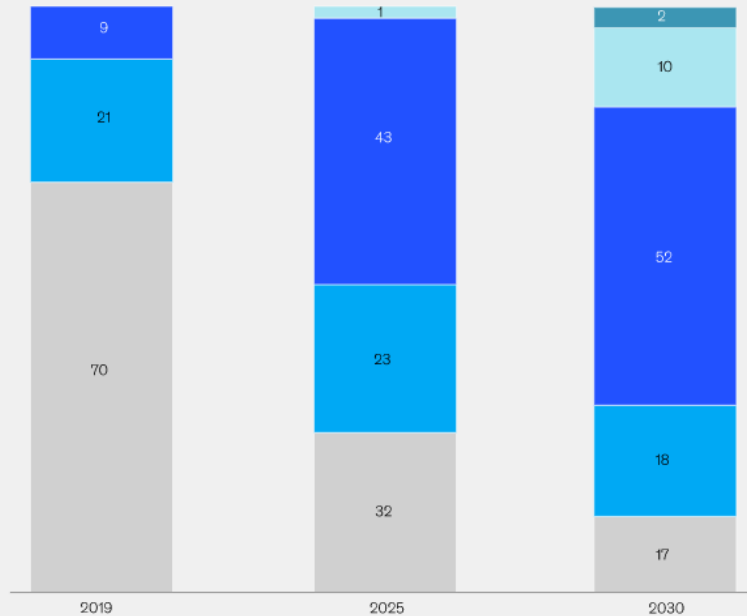
Change driver: Autonomous and Connected Mobility



Consumer demand will propel the rapid growth of autonomous-driving and advanced driver assistance systems (AD/ADAS) vehicle sales.

Vehicle sales by SAE¹ level, % of vehicles

Level 0 Level 1 Level 2 Level 3 Level 4



Note: Figures may not sum to 100%, because of rounding.
¹Society of Automotive Engineers
Source: McKinsey Center for Future Mobility Current Trajectory Scenario

McKinsey
& Company

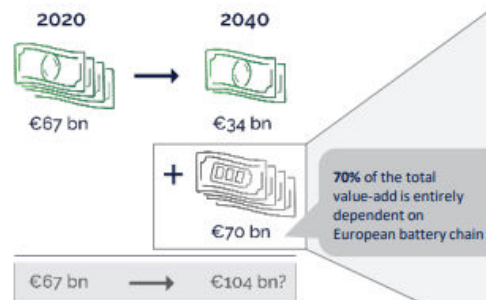
“By 2030, we estimate that 12 percent of global vehicles sales will be equipped with Levels 3 and 4 AD capabilities, compared with only 1 percent in 2025.”
McKinsey, January 2023

STATE OF THE INDUSTRY

Challenge I: Supply chain



Supplier powertrain value-add



Share of battery value-add by area of activity

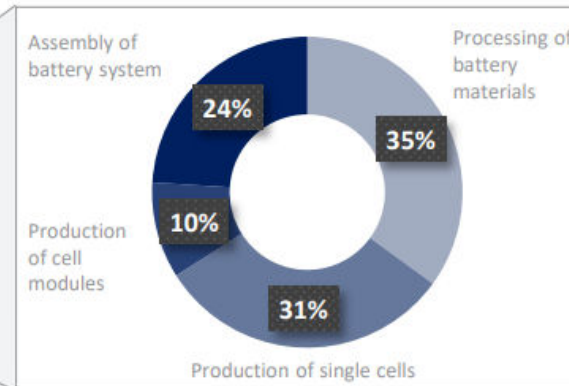
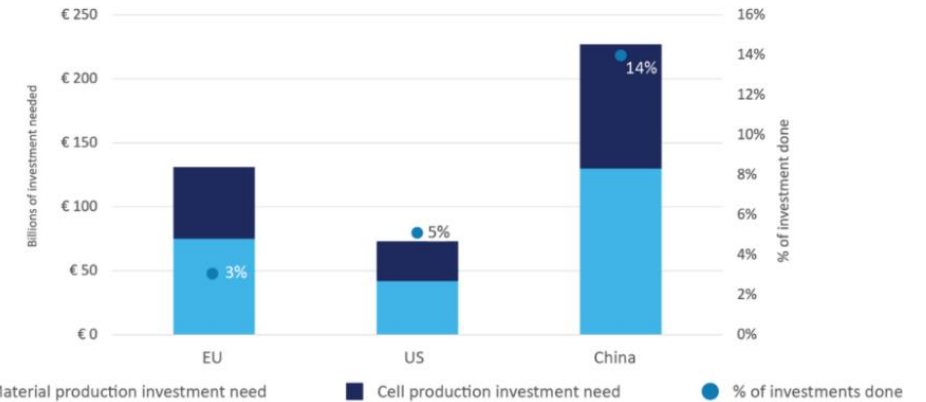


Figure 2
Investment needs in battery supply chain until 2030
Source: PwC Strategy&, December 2022



CLEPA Data Digest #6 - February 2023

Development of a deep battery supply chain will be crucial, only minor share of investments conducted

STATE OF THE INDUSTRY

Challenge I b: Raw materials



KG of minerals used in car, EV compared to ICE

Source: IEA

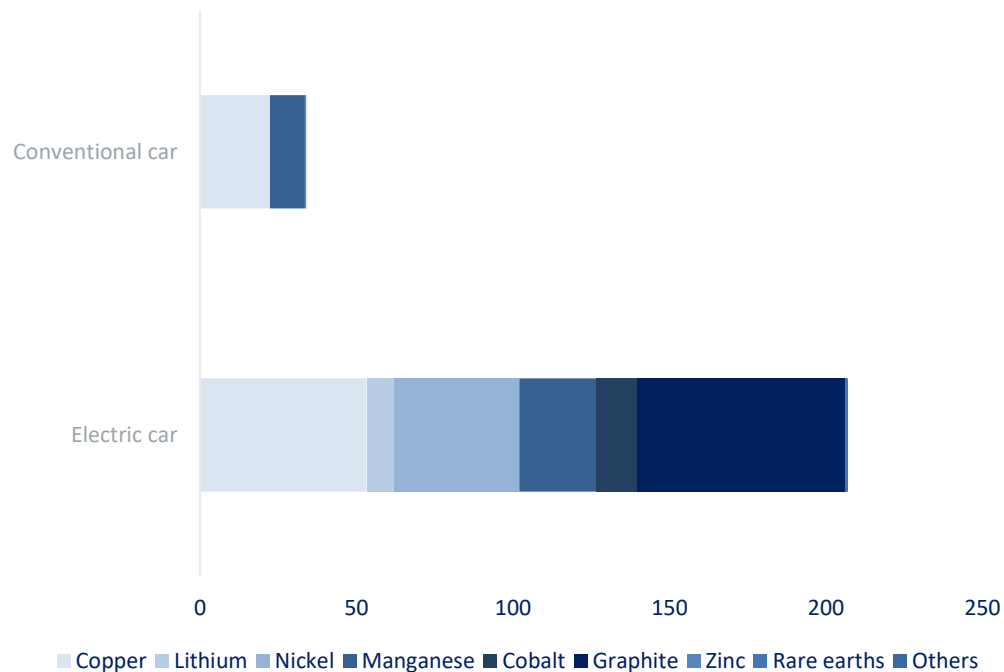


Figure 3 – Projection of production capacity for battery-grade processed raw materials and cells in 2030

Country	Cobalt (Refined Co)	Graphite (Anode precursors from natural graphite+synthetic graphite)	Lithium (Refined Li)	Manganese (HP EMM+HP MSM)	Nickel (NISO4)	Cells
China	51%	87%	34%	56%	59%	65%
USA	7%	3%	4%	14%	8%	14%
EU	10%	1%	11%	7%	6%	0%
India	3%	1%	0%	0%	6%	1%
Japan	0%	6%	10%	0%	1%	14%
Canada	6%	1%	5%	0%	1%	0%
South Africa	1%	0%	0%	10%	1%	0%
South Korea	0%	0%	2%	0%	2%	1%
Denmark	2%	1%	0%	0%	0%	2%
France	1%	0%	0%	0%	9%	0%
Germany	2%	0%	0%	0%	0%	0%
Italy	1%	0%	2%	0%	0%	0%
Spain	0%	0%	16%	0%	0%	0%
Sweden	0%	0%	0%	8%	0%	0%
Russia	0%	0%	11%	0%	0%	0%
Brazil	5%	0%	0%	0%	0%	0%
Iran	1%	0%	0%	0%	0%	0%
India	0%	0%	0%	3%	0%	0%
China	2%	0%	0%	0%	0%	0%
South Africa	2%	0%	0%	0%	0%	0%
Canada	0%	0%	1%	0%	0%	0%
USA	3%	0%	0%	0%	0%	0%
EU	0%	0%	3%	0%	0%	0%
Japan	0%	0%	0%	0%	6%	0%
India	4%	0%	0%	0%	0%	0%
Other	5%	1%	1%	3%	2%	2%

Source: JRC analysis.

Industry will face complex challenges to address dependencies in raw materials extraction and processing

STATE OF THE INDUSTRY



Challenge I c: Reorganising collaboration models

*“In the past, vehicle manufacturers differentiated themselves with **mechanical features** such as horsepower and torque. Today, **consumers** are increasingly looking for features defined by **software**, such as **driver assistance features**, **infotainment** innovations and intelligent **connectivity** solutions.” - Aptiv*

*“Relying solely on hardware innovations has its limitations in addressing the upcoming challenges in the automotive sector. A more **integrated approach** is needed, where **hardware** and **software** are **co-developed** and **co-optimized** in an agile manner. - IMEC*

*“If we look at a car today, **advanced driver assistance systems**, parking, driver monitoring, camera mirrors, digital instrument cluster and infotainment are all different computers distributed throughout the vehicle/ In 2025, these functions will **no longer be separate computers.**” – Nvidia*

*“Software and integration, but also the SoC architecture and process of defining an SoC will impact product development. The **collaboration** aspect of that is growing more important between the **semiconductor developers**, the **Tier 1s**, the **OEMs**. Before a lot of development could be done in isolation.” Synopsys*

STATE OF THE INDUSTRY

Challenge II: costs



EV battery costs could spike 22% by 2026 as raw material shortages drag on

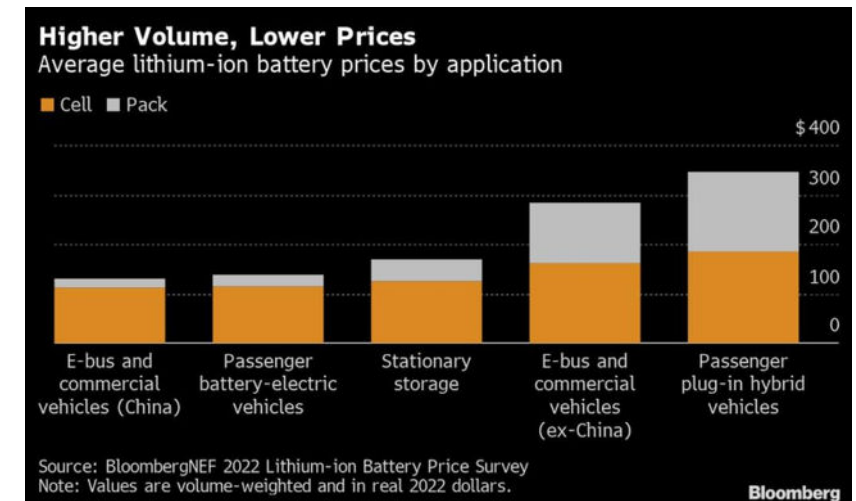
PUBLISHED WED, MAY 18 2022-9:18 AM EDT | UPDATED WED, MAY 18 2022-10:18 AM EDT

BloombergNEF's annual lithium ion battery price survey showing a 7 percent increase in average pack prices in 2022 in real terms, but prices could fall again in 2024.

December 07, 2022 04:47 AM

Rising battery prices threaten affordable EV push

Rising battery prices threaten affordable EV push



No certainty yet how affordable BEV's can be made by when, risk of volume squeeze

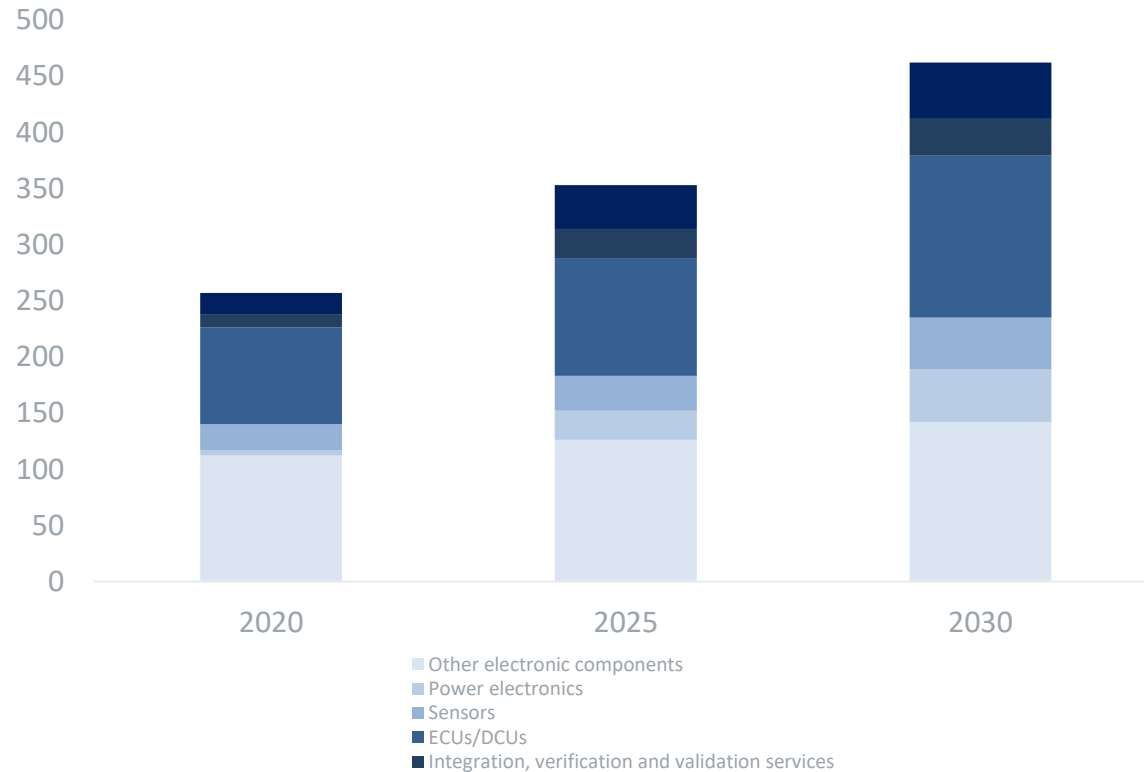
STATE OF THE INDUSTRY

Change driver: Digitalisation



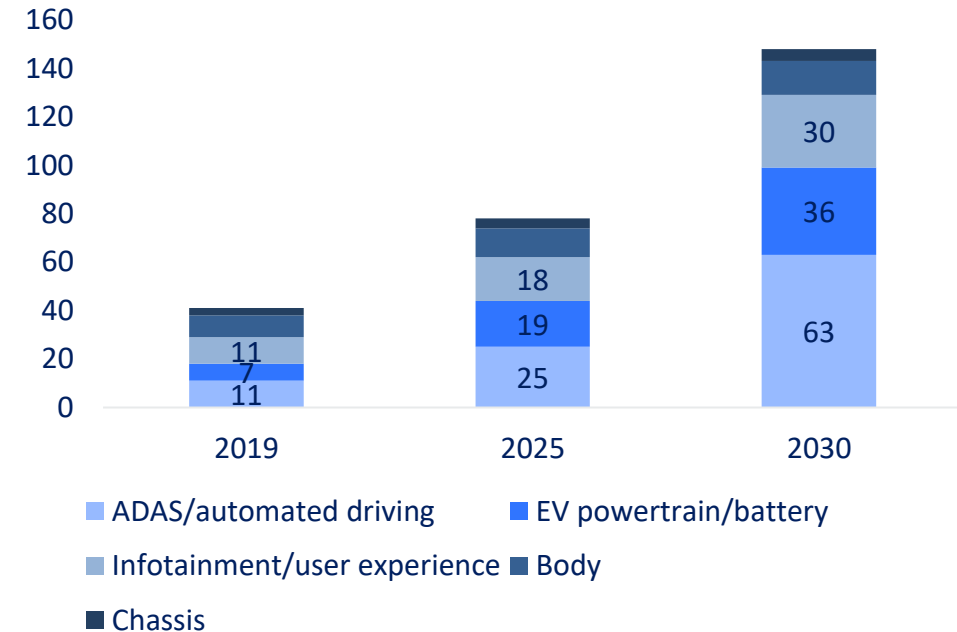
Automotive software and electronics market, \$ bln.

Source: McKinsey,



Automotive semiconductor market by application, \$bln.

Source: McKinsey, October 2022



Electrification CAGR → 16%
 ADAS/automation CAGR → 17%

STATE OF THE INDUSTRY

But will there be enough chips?



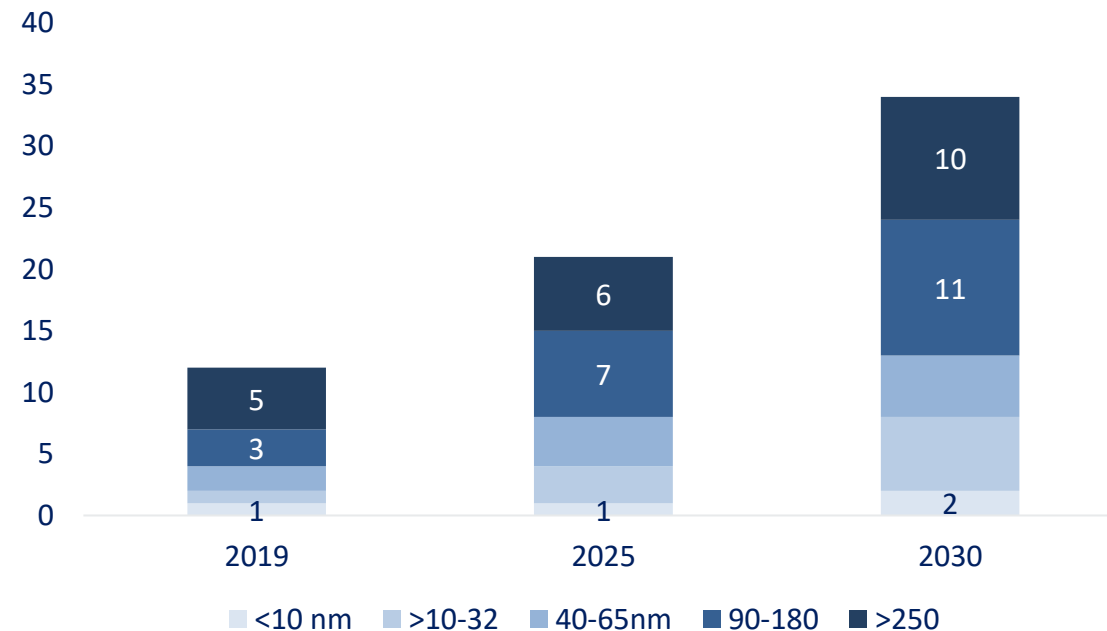
Until 2026, around 20% of vehicle production could still be impacted by semiconductor shortage

Until 2030, demand for chips to grow threefold

60% of demand for analog chips of >90 nanometer, but less than 20% of investments

Annual demand for 12-inc wafer equivalents, million units

Source: McKinsey & Company, October '22



Supply of microcontrollers improved, but mature chip supply likely to remain tight

STATE OF THE INDUSTRY

Challenge III: charging infrastructure



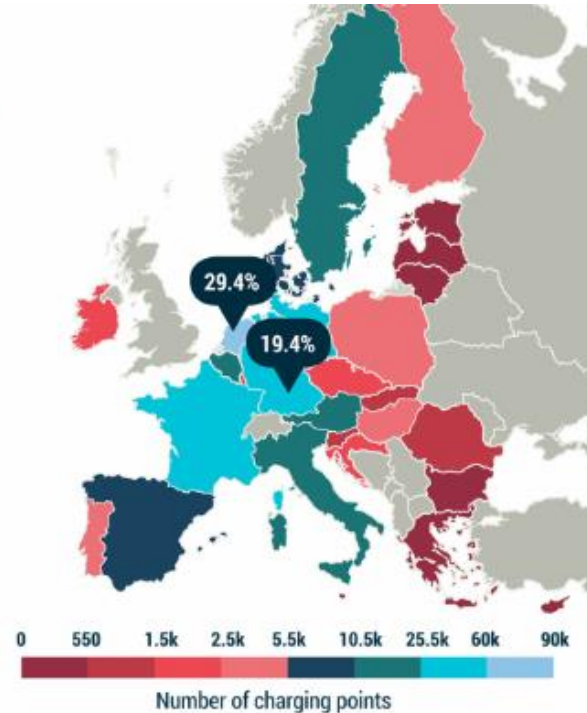
DISTRIBUTION OF ELECTRIC CAR CHARGING POINTS ACROSS THE EU

Some 50% of all charging points:
Concentrated in just 2 EU countries

29.4% Netherlands 19.4% Germany

Top 5: Fewest charging points in 2021

Cyprus	Malta	Lithuania
57	98	207
Estonia	Latvia	
385	420	

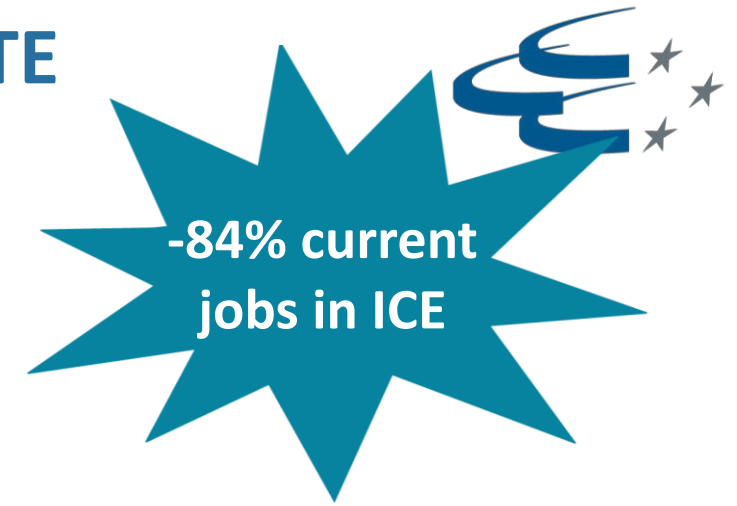


- Up to 6.8m public charging points are required by 2030 in order to reach the proposed 55% CO2 reduction for passenger cars.
- Up to 14,000 public charging points need to be installed per week between 2021 and 2030 for cars – compared to just 2,000 per week currently.

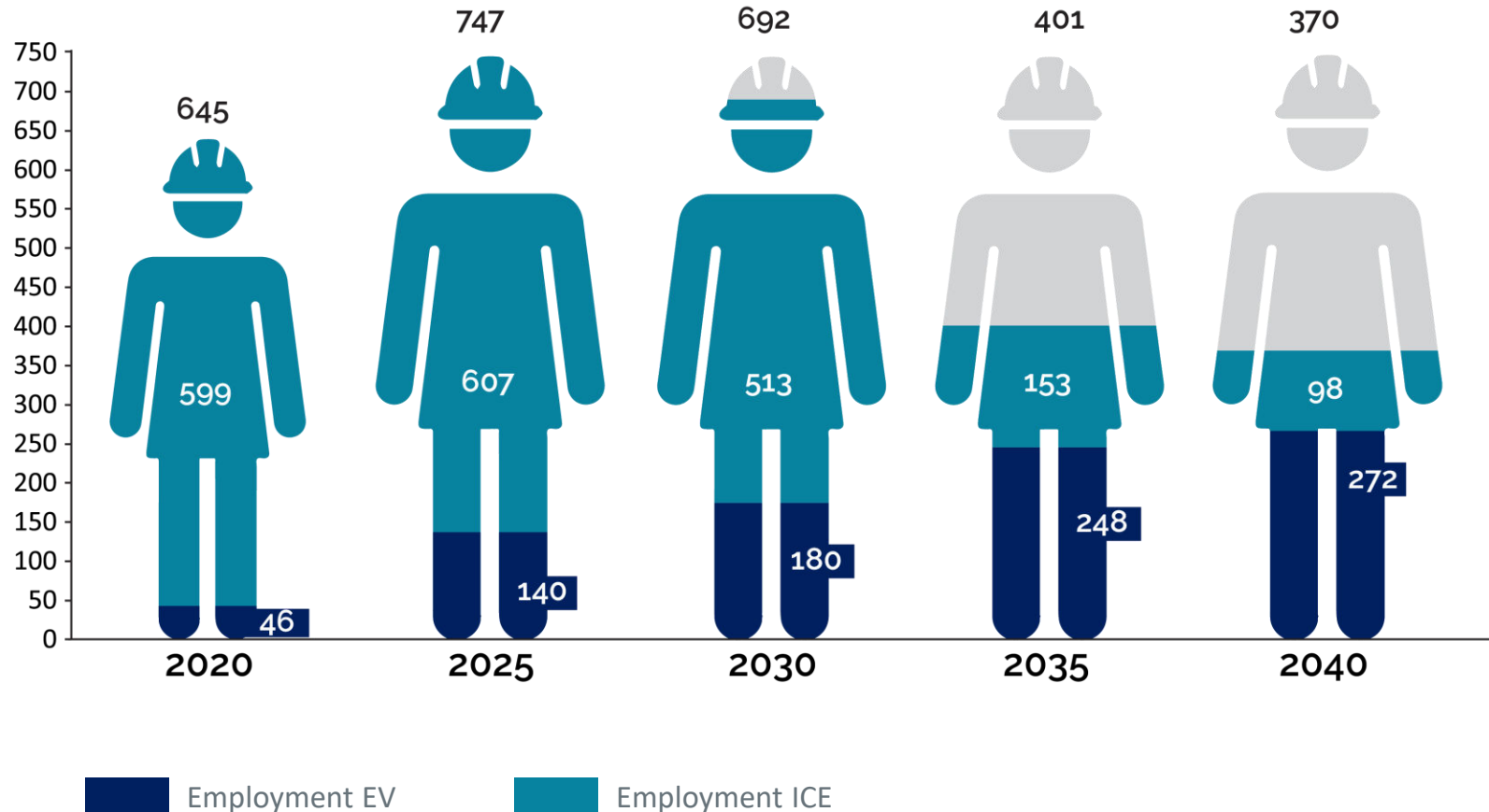
Range anxiety is replaced by charging availability anxiety,
deployment needs to be sped up dramatically

Source: ACEA, 28 March 2022

HALF A MILLION AUTO SUPPLIER JOBS OBSOLETE

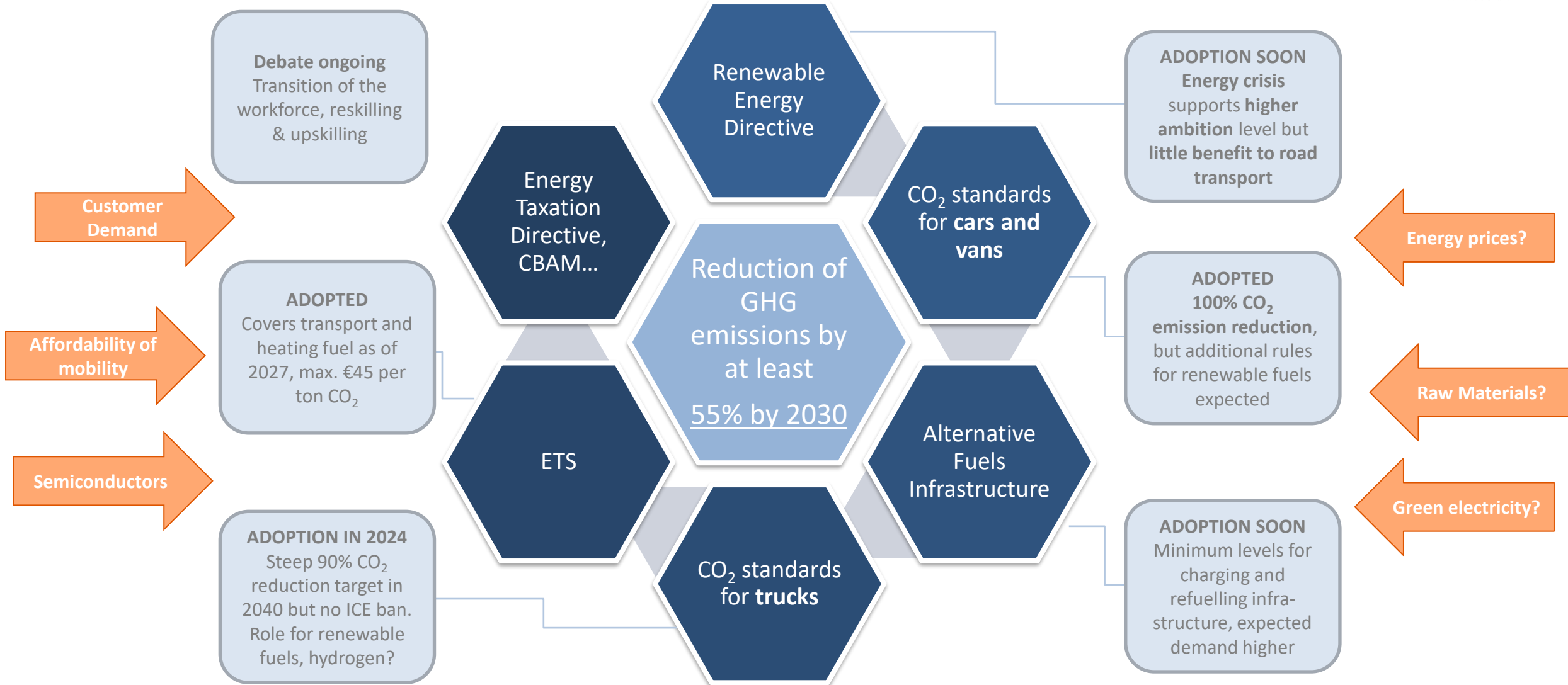


Employment
in thousands



- **501K jobs will become obsolete** from now until 2040
- This is about **one-third of current workforce**
- EV powertrain creates **226k new opportunities**, but still net loss of **275k jobs**
- **Not 1:1 compensation** from ICE to EV powertrain employment

THE ROLE OF THE GOVERNMENT



A 3D rendering of a dark blue room with glowing neon lines forming geometric shapes on the walls and floor. The scene is composed of several rectangular and triangular planes, some of which are outlined with bright blue neon light. The lighting is soft and ambient, creating a futuristic and minimalist atmosphere. The word "Conclusion" is centered in the lower half of the image in a white, bold, sans-serif font.

Conclusion

The background is a deep blue gradient with several glowing white and light blue geometric shapes, including rectangles and lines, that create a sense of depth and perspective, resembling a stylized architectural or digital space.

**CLEPA advocates for safe,
sustainable & smart mobility,
provided by a competitive industry
in Europe and the world**