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ACEA Position Paper Proposal for the Alternative Fuels Infrastructure Regulation (AFIR)

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KEY RECOMMENDATIONS

LIGHT-DUTY VEHICLES

- Increase the level of power needed for public charging
- Align the implementation timeline of the TEN-T core network with that of the TEN-T comprehensive network, while increasing the overall power installed per charging point
- Introduce a density parameter for charging points
- Stimulate fast charging deployment
- Take into account the specificities of vans
- Lower the maximum distance between hydrogen refuelling stations and speed up their deployment (Article 6)

HEAVY-DUTY VEHICLES

- Increase the level of total power output requirements per recharging pool / station on the TEN-T core network (Article 4, para 1a)
- Increase the number of charging stations available at parking areas (Article 4, para 1c)
- Increase the level of total power output requirements for charging pools at urban nodes (Article 4.1e)
- Speed up the deployment of hydrogen refuelling stations (Article 6)
- Lower the maximum distance between liquid hydrogen stations (Article 6)

ALL VEHICLE SEGMENTS

- Clarify the definition of 'publicly accessible'
- Speed up national implementation (Article 15)
- Support standardisation of charging infrastructure and the roaming of ECVs



THE CONTEXT

EU motor vehicle manufacturers are fully committed to bringing CO2 emissions down to zero, supporting Europe's goal of reaching climate neutrality by 2050.

In July 2021, the European Commission published a package of legislative proposals to help achieve its interim target of a 55% net reduction in greenhouse gas emissions by 2030 (compared to 1990 levels).

This 'Fit for 55' climate package proposes revisions of several pieces of EU legislation, including the Alternative Fuels Infrastructure Regulation (AFIR). It also sets out a proposal for a revision of the regulation on CO2 emissions from cars and vans¹ (also known as light-duty vehicles). Likewise, a revision of the regulation on CO2 standards for heavy-duty vehicles is due at the end of 2022.

AFIR AND CO2 REGULATIONS

The availability of charging and refuelling infrastructure is a key parameter in determining the future market share of low- and zero-emission vehicles in Europe. Simply put, the more charging points there are, the more attractive it is for consumers and operators to switch to cleaner powertrain technologies.

The European Automobile Manufacturers' Association (ACEA) therefore believes that AFIR, as a central pillar of Fit for 55, must be fully synchronised with the CO2 regulations. Any CO2 reduction targets – regardless of whether they are for cars, vans or heavy-duty vehicles – can only be met if these targets are accompanied by equally ambitious mandatory infrastructure targets for all 27 EU member states.

ACEA appreciates the change in form, from a Directive – ie the current Alternative Fuels Infrastructure Directive (AFID) – to a Regulation, as this provides much higher legal certainty for all parties. Given today's insufficient deployment of charging and refuelling infrastructure across the EU², ACEA also welcomes the introduction of mandatory targets for member states (instead of today's indicative targets), as well as strengthened monitoring and enforcement measures and a robust review process.

ACEA is also pleased to note that the AFIR proposal addresses the requirements of all vehicle types – not only cars, but also those of vans and heavy-duty vehicles.

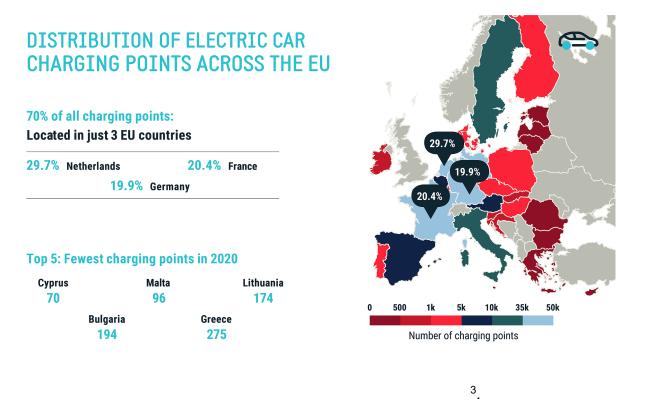
However, Europe's automobile manufacturers are seriously concerned about the overall lack of ambition of this proposal, which seems to be even lower than the current AFID requirements.

¹ See ACEA position paper, 'Proposal for revised CO2 targets for cars and vans'

² <u>https://ec.europa.eu/transport/themes/urban/news/2021-03-09-report-eu-wide-alternative-fuels-infrastructure-deployment_en</u>

LIGHT-DUTY VEHICLES

A dense and visible network of charging and refuelling infrastructure is essential to reassure Europeans that infrastructure availability matches their expectations for travelling across the EU without range anxiety. As long as this is not the case, consumers will not switch to alternatively-powered cars on a large scale.



- There are only some 225,000 public charging points available across the entire EU, and just one in nine of these is a fast charger.
- 70% of all EU charging points are concentrated in only three countries in Western Europe:
 - The Netherlands (66,665), France (45,751) and Germany (44,538).
 - These countries make up just 23% of the EU's total surface area.
- Ten countries do not have a single charging point for every 100 kilometre of main roads.
 - Only four EU member states have more than 10 chargers per 100km.
- 124 hydrogen filling stations were available across 10 EU countries in 2020, but 17 member states did not have any at all.

³ 2021 edition of ACEA's 'Progress report – Making the transition to zero-emission mobility': <u>https://www.acea.auto/publication/2021-progress-report-making-the-transition-to-zero-emission-mobility/</u>

• The EU counts some 4,000 natural gas filling stations, but two-thirds of these are concentrated in two countries alone (Italy and Germany).

Massive progress on infrastructure deployment will have to be made across the entire EU in a very short time frame. However, the AFIR proposal falls far short of expectations and is completely misaligned with the CO2 targets set out in the revised CO2 regulation for cars and vans.

ELECTRIC CHARGING INFRASTRUCTURE (ARTICLE 3)

The automobile industry agrees with the European Commission's proposal on two important factors for determining the energy output required per registered vehicle:

- Total number of expected electrically-chargeable vehicles (ECVs) in 2030:
 - 34.4 million battery electric vehicles (BEVs)
 - 13.7 million plug-in hybrid electric vehicles (PHEVs)
- The average yearly mileage per ECV: 13,414km

However, ACEA disagrees with the three following underlying assumptions made by the Commission:

• The average energy consumption per vehicle

The Commission's proposal does not reflect the fact that in the future vehicles will have bigger and heavier batteries to cover longer ranges, leading to a higher level of energy consumption. With this in mind, ACEA estimates that the average energy consumption of ECVs will be 20kW / 100km in 2030 – ie considerably higher than the 12kW / 100km calculated by the Commission.

• The share of public versus private charging

According to the proposal, the share of energy delivered to ECVs via public charging points will be around 40% in 2030. However, considering that 50% of EU citizens do not have access to private charging⁴ (especially those living in urban areas), ACEA calculations show that this figure should be at least 60%.

• The average charging power of public chargers

The average installed charging power for normal chargers will have to be 11kW by 2030 according to ACEA, versus 7.7kW in the eyes of the Commission. For fast chargers, it is 185kW (ACEA) versus 104kW (Commission).

All of this will lead to a much higher overall annual energy demand:

⁴ Eurostat housing statistics

- 90TWh for BEVs according to ACEA (versus the Commission's 68TWh)
- 27TWh for PHEVS (versus 18TWh)

These discrepancies result in an underestimation by the Commission of the power needed for ECVs in 2030, and thus also the number of charging points required.

RECOMMENDATIONS

1. Increase the level of power needed for public charging

Taking into account the calculations above, ACEA estimates that the level of power needed for public charging should be increased from 1kW, as stipulated in the Commission's proposal, to 3kW for BEVs; and from 0.66kW to 2kW for PHEVs.

This translates into a significantly higher number of public charging points required in 2030: some 7 million as opposed to 3.9 million under the Commission's model.

2. Align the implementation timeline of the TEN-T core network with that of the TEN-T comprehensive network, while increasing the overall power installed per charging point

Firstly, ACEA suggests aligning the implementation timeline requirements of the TEN-T core network (Article 3, para 2a) with that of the TEN-T comprehensive network (Article 3, para 2b). Thus, targets for the TEN-T comprehensive network should also apply as of 31 December 2025 and 31 December 2030.

Secondly, in order to increase consumer comfort and convenience, ACEA proposes to double the power output requirements per recharging pool as well as per charging point for both TEN-T networks by 2025 and 2030 (Article 3 para 2a and 2b).

3. Introduce a density parameter for charging points

ACEA proposes to introduce a parameter to increase the density of charging points in highly-populated areas where there will be a huge concentration of demand in the future. By taking population density into account, the Regulation would ensure a balanced territorial coverage. ACEA will liaise with the Commissions to come up with a concrete proposal for the density parameter in due time.

4. Stimulate fast charging deployment

Fast charging infrastructure could help member states to meet the proposed targets by lowering the total number of charging points required per country (although the total overall energy required to cover the demand would remain the same of course). Member states should therefore be encouraged to invest in fast chargers.



5. Take into account the specificities of vans

Thanks to vans, businesses can deliver goods right to their customers' doorstep. This is all the more important given the huge surge in online purchasing by consumers, who expect rapid and direct deliveries. The electrification of urban logistics will play a key role in the years to come, but greatly depends on the availability of charging infrastructure tailored to the specific needs of vans.

This is particularly true for vehicle categories N1 (vans not exceeding 3.5t) and N2 (up to 12t) given their special demands for cargo space. Therefore, specific provisions with respect to parking space for longer vehicles (especially N2 with cargo space) need to be ensured, including a longer charging cable and tailored space for charging.

Furthermore, it should also be considered that a large number of light commercial vehicles will need to be charged close to the homes of their drivers, which often do not have access to a charging point. Think, for example, of vehicles that are used as mobile workshops, in the service sector, or for postal and courier services.

	Commission proposal	ACEA proposal
Total number of ECVs in 2030	34.4 million BEVs 13.7 million PHEVs	34.4 million BEVs 13.7 million PHEVs
Average annual milage per ECV	13,414km	13,414km
Average energy consumption per ECV	12kWh / 100km	20kWh / 100km
Share of charging at public stations	40%	60%
Average charging power per normal charger	7.7kW	11kW
Average charging power per fast charger	104kw	185kW
Charging capacity per BEV	1kW	3kW
Charging capacity per PHEV	0.66kW	2kW
Total number of chargers	3.9 million	7 million

Light-duty overview: Commission versus ACEA proposal

HYDROGEN REFUELLING INFRASTRUCTURE (ARTICLE 6)

Given the potential of hydrogen for the decarbonisation of cars, targets for hydrogen refuelling stations for light-duty vehicles should not be neglected. In order to make use of synergies, every hydrogen refuelling station should be designed to serve all vehicles segments (ie passenger cars, vans and heavy-duty vehicles).



RECOMMENDATION

6. Lower the maximum distance between hydrogen refuelling stations and speed up their deployment (Article 6)

ACEA would welcome a maximum distance of 100km between (compressed and liquified hydrogen) stations on the TEN-T core and comprehensive network, instead of 150km proposed by the Commission. These targets should apply as of 2027 for both the TEN-T core and comprehensive network, instead of 2030 as per the proposal. This is necessary in order to prevent long queuing times for customers. It would also provide more confidence for customers and the industry to make the shift to this clean technology.

HEAVY-DUTY VEHICLES

A sufficiently dense network of charging and refuelling stations specifically dedicated to, and meeting the needs of, heavy-duty vehicles (HDVs) is one of the key preconditions for reducing CO2 emissions from road freight transport.

The technical specifications and requirements of battery electric and fuel-cell electric HDVs are distinctly different from the charging and refuelling infrastructure suitable for light-duty vehicles. This must be considered with respect to:

- Locations of charging and refuelling stations
- Space requirements
- Most importantly, minimum power output levels

Policy makers play a pivotal role in kickstarting the deployment of charging and refuelling stations for trucks, which are not yet profitable. At least until the end of this decade, it is likely that the level of available infrastructure will effectively determine (or rather limit) the number of low- and zero-emission trucks that can be operated in Europe.

Without a sufficiently dense infrastructure network in place, transport operators will simply not invest in, nor start the transition to, new powertrain vehicles. This would greatly hinder the ability of truck makers to reach their CO2 reduction objectives.

In view of this, policy makers need to fully acknowledge that setting AFIR targets for heavy-duty vehicles now (ie ahead of the revision of the HDV CO2 standards scheduled for next year) will effectively predetermine the CO2 reductions that can be expected from road freight and public transport (by road) by the end of this decade.

In other words, if the AFIR targets are set too low, vehicle manufacturers (and the road freight and public transport sector as a whole) may be severely constrained in their ability to contribute to the required CO2 reductions.

The European Commission's AFIR proposal unfortunately does not fully reflect the strong commitment of commercial vehicle manufacturers to rapidly ramp up the production of low- and zero-emissions vehicles.

According to the industry's pre-Green Deal assessments, already by 2025 approximately 40,000 battery electric medium- and heavy-duty vehicles will be in operation in Europe (EU27 + UK). By 2030 this figure will have to increase to approximately 270,000. Moreover, the first hydrogen fuel-cell electric vehicles are already being rolled out in Europe. From mid-decade the offerings will increase significantly, with at least 60,000 hydrogen-powered trucks expected to be in operation by 2030.

These figures represent the minimum number of vehicles that will have to be put on the market to comply with the current CO2 standards. These industry projections differ considerably from the scenarios presented by the Commission in its impact assessment, which predicted as a baseline scenario only some 50,000 battery electric trucks on the road by 2030 (with policy options moving that number up to just 110,000 vehicles). Consequently, these very different assumptions lead to diverging views on the ambition levels of AFIR.

ELECTRIC CHARGING INFRASTRUCTURE (ARTICLE 4)

In terms of the total power output per recharging pool and power output per charging station needed, the Commission's AFIR proposal is insufficient to meet the rapidly growing number of zero-emission heavy-duty vehicles that will already become available between now and 2025. In addition to providing truck- and bus-suitable charging and refuelling stations, it is equally crucial that EU member states ensure that recharging points are equipped to guarantee continuous (24/7) power output. This in turn also requires the energy grid to have sufficient capacity.

RECOMMENDATIONS

1. Increase the level of total power output requirements per recharging pool / station on the TEN-T core network (Article 4, para 1a)

No later than 1 July 2025 – in order to establish a solid link with the HDV CO2 standards Regulation (EU) 2019/1242 – the EU infrastructure network should offer at least 5,000kW (instead of 1,400kW proposed by the Commission) total power output per recharging pool. The sooner this infrastructure is available, the faster the vehicle roll-out will happen.

In addition, each recharging pool should include at least four (instead of one) charging stations with an individual power output of at least 350kW and four charging stations with an individual power output capable of at least 800kW⁵.

Finally, no later than 1 July 2030 (instead of 31 December 2030), the charging network should offer at least 6,500kW (instead of 3,500kW) total power output per recharging pool. Each recharging pool should include at least four (instead of two) charging stations with an individual power output capable of at least 1,200kW (instead of 350kW).

2. Increase the level of total power output requirements per recharging pool / station, and set earlier targets for its installation on the TEN-T comprehensive network (Article 4, para 1b)

As for the TEN-T comprehensive network, ACEA suggests that no later than 1 July 2027, recharging pools should be built every 100km along the entire TEN-T comprehensive network. Each recharging pool should offer a total power output of at least 1,400kW. Moreover, each of these pools should include at least two charging stations with an individual power output of at least 350kW.

Furthermore, no later than 1 July 2030, the EU charging network should offer at least 3,000kW (instead of 1,400kW) total power output per recharging pool. Each recharging pool should include at least one charging station with a power output capable of at least 800kW (instead of 350kW in the Commission's proposal).

Lastly, no later than 1 July 2035 (instead of 1 December 2035), Europe's charging infrastructure should offer at least 5,000kW total power output per recharging pool, as proposed by the Commission. However, each of these recharging pools should include at least two charging stations with an individual power output capable of at least 1,200kW (instead of 350kW).

3. Increase the number of charging stations available at parking areas (Article 4, para 1c)

ACEA welcomes the provision in the AFIR proposal to equip safe and secure truck parking areas with recharging stations. However, the proposed requirements should be increased to make sure that at least four recharging stations are installed by 2025, instead of at least one charging station by 31 December 2030 (as stated in the Commission's proposal).

Indeed, the current AFIR proposal would result in only 1,000 overnight chargers by 2030. Battery electric trucks in long-haul operations, however, will rely heavily on

⁵ ACEA recognises that it might be difficult to set a target while the technical standard itself is not yet defined. However, it is crucial that the investments in HDV-suitable infrastructure focus on higher power / megawatt charging. Also see comment on Article 19 (7) on page 11.

overnight charging during their missions. That is why AFIR should set more ambitious targets for the deployment of public overnight chargers (100kW) at truck parking areas along motorways, with at least 40,000 overnight public charging points available no later than 2030.

4. Increase the level of total power output requirements for charging pools at urban nodes (Article 4.1e)

The number of public HDV charging stations in the Commission's proposal is insufficient to facilitate urban and regional delivery operations. By 1 July 2030, publicly accessible recharging points providing an aggregated power output of at least 1,600kW (instead of 1,200kW) should be deployed in each urban node in order to address this issue. Furthermore, every charging station should provide a minimum power output of 150kW, with at least two recharging stations per pool having an individual power output of at least 350kW.

The overview on the next page summarises these four recommendations, which (when properly implemented) will lead to a significantly higher number of public charging points suitable for HDVs – in line with industry projections of the number of zero-emission vehicles that will have to be powered.

5. Update common technical specifications (Article 19 (7))

It will also be important to update the technical specifications in Annex II of the AFIR proposal in line with the Megawatt Charging System (MCS) standard that is under development. This standard is expected to be ready by the end of 2024 at the latest.

Heavy-duty overview: Commission versus ACEA proposal

	Commission proposal			ACEA proposal					
	31 Dec 2025	31 Dec 2030	31 Dec 2035	1 July 2025	1 July 2027	1 July 2030	1 July 2035		
TEN-T core network									
Distance	60km			On average, considering local/regional conditions: 60km					
Power output per recharging pool	≥1,400kW	≥3,500kW	-	≥5,000kW		≥6,500kW	-		
Number/power of recharging stations	1 x 350kW	2 x 350kW	-	4 x 350kW + 4 x 800kW		4 x 1,200kW	-		
TEN-T comprehensive network									
Distance	100km			On average, considering local/regional conditions: 100km					
Power output per recharging pool	-	≥1,400kW	≥3,500kW		≥1,400kW	≥3,000kW	≥5,000kW		
Number/power of recharging stations	-	1 x 350kW	2 x 350kW		2 x 350kW	2 x 800kW	2 x 1,200kW		
Safe and secure parking areas									
	-	1 x 100kW		4 x 100kW					
Urban nodes									
Aggregated power output	≥600kW	≥1,200kW				≥1,600kW			
Individual power output	≥150kW	≥150kW				All stations ≥150kW + at least 2 x 350kW			

HYDROGEN REFUELLING INFRASTRUCTURE (ARTICLE 6)

The first fuel-cell electric trucks are already being deployed in Europe and a wider offering by several manufacturers will follow from 2024 onwards. It is expected that this technology will gain momentum, with a special focus on heavy-duty vehicles with longer ranges and higher payloads.

In order to facilitate the roll-out of hydrogen-powered vehicles, the relevant AFIR targets (and related requirements) should be set earlier than 2030. Moreover, the



Regulation should properly consider the specific requirements of hydrogen-powered heavy-duty vehicles and the refuelling infrastructure they need, as at least 60,000 hydrogen-powered vehicles are expected to be in operation across Europe by 2030.

RECOMMENDATIONS

6. Speed up the deployment of hydrogen refuelling stations (Article 6)

An intermediate target for hydrogen infrastructure should be set for 2025. This is needed in order to match the ambitious roll out of fuel-cell electric trucks from 2024 onwards, as well as ensuring that the technology neutrality principle is respected.

7. Lower the maximum distance between liquid hydrogen stations (Article 6)

Liquid hydrogen should be made available at publicly accessible refuelling stations for heavy-duty vehicles, with a maximum distance of 300km between them, by 1 January 2027.

LNG AND CNG FILLING STATIONS

In order to support efficient long-haul and interregional transport operations, and to serve the growing number of low-emission vehicles in Europe that can be powered by renewable and low- or zero-carbon fuels, a more comprehensive network of filling stations for compressed natural gas (CNG) and liquified natural gas (LNG) is needed as soon as possible.

RECOMMENDATION

8. Expand targets for the LNG and CNG network (Article 8)

Member states should ensure that an appropriate number of publicly accessible LNG and CNG refuelling points is put in place as soon as possible (and until 1 July 2030) to refuel alternatively-powered vehicles with low- and zero-carbon renewables.

FURTHER COMMENTS

Recharging infrastructure (Article 5)

Charging in 'price per minute' mode reduces transparency and comparability as it is not possible to calculate the cost of recharging a vehicle in advance. How much energy an electric vehicle can receive during a certain period of time depends on several factors, such as outdoor temperature, battery temperature, the battery's state of charge, etc.



RECOMMENDATION

9. Operators of recharging points should not apply price per minute for ad hoc recharging, as it cannot be considered clearly comparable as required in Article 5 (4)

Data provisions (Article 18)

ACEA considers that the required information on public recharging and refuelling points (where relevant), as specified in the AFIR proposal, is not sufficient for the operation of heavy-duty vehicles.

RECOMMENDATION

10. The following information should be added to the data provision requirements:

- Price for parking (in addition to the recharging / refuelling cost)
- Time limit for parking
- Payment (how to start the recharging / refuelling and payment methods accepted; eg key, app, RFID, credit card, etc)
- Availability of a fixed connector for the recharging points or user requirement to bring their own
- Availability of a reservation system (ie is the charging point bookable?)
- For recharging points: voltage (V) and possibly maximum current (A)
- Accessibility for heavy-duty vehicles: height, length and width restrictions of the recharging station
- Availability of weather protection and other service functions

COMMON RECOMMENDATIONS FOR ALL VEHICLE SEGMENTS

DEFINITION OF 'PUBLICLY ACCESSIBLE' (ARTICLE 2, PARA 38)

ACEA welcomes the broader definition of 'publicly accessible' infrastructure provided in the AFIR proposal. However, the proposed definition leaves space for a mix-up between public and semi-public charging points, which could lead to insufficient infrastructure deployment.

RECOMMENDATION

1. Clarify the definition of 'publicly accessible'



In order to prevent such a mix-up, as well as to ensure that an efficient, sustainable, and easily-accessible infrastructure network (suitable for both light-duty and heavyduty vehicles) will be established, ACEA suggests that the definition of 'publicly accessible' charging points is further clarified and fine-tuned.

NATIONAL IMPLEMENTATION (ARTICLE 15)

The implementation of AFIR in each member state will be based on national policy frameworks. The speed of their implementation is a major concern for the auto industry, based on the previous experience with AFID and its slow and low implementation rate⁶.

RECOMMENDATION

2. Speed up national implementation

ACEA suggests that the Commission should assess the national policy frameworks by January 2025, instead of 2026. Consequently, automobile manufacturers would like member states to notify the Commission of their final national policy frameworks by 1 July 2024, instead of 1 January 2025.

STANDARDISATION AND ROAMING

The absence of widely adopted protocols and interoperability standards for charging infrastructure may hinder the further development of cross-border travel with electric vehicles, the so called 'roaming', as well as slowing down the uptake of ECVs in general.

RECOMMENDATION

3. Support standardisation of charging infrastructure and the roaming of ECVs

ACEA suggests that the AFIR proposal introduces widely acceptable standardisation for charging infrastructure within the EU. As a result, drivers of ECVs would get the possibility to charge their vehicles at all public charging stations across the entire European Union.

⁶ <u>https://ec.europa.eu/transport/themes/urban/news/2021-03-09-report-eu-wide-alternative-fuels-infrastructure-deployment_en</u>



CONCLUSION

Europe's automobile manufacturers are fully committed to help deliver climateneutral mobility by 2050. However, our industry's efforts must be met with the same level of ambition by the EU and its member states.

Any new CO2 reduction targets for the sector can only be met if they are accompanied by significantly more ambitious, and mandatory, infrastructure targets for all 27 EU member states. Indeed, the Alternative Fuels Infrastructure Regulation and the CO2 targets must be seen as one interlinked package.

Policy makers, members of the European Parliament and national governments alike need to understand that (changes to) the ambition level of either piece of legislation requires the other one to be fully synchronised.

Only by working together we can create the right supportive framework that will drive consumers and transport operators towards cleaner mobility options, and thus achieve our common goal of reaching climate neutrality in Europe.

ABOUT THE EU AUTOMOBILE INDUSTRY

- 12.6 million Europeans work in the auto industry (directly and indirectly), accounting for 6.6% of all EU jobs
- 11.6% of EU manufacturing jobs some 3.5 million are in the automotive sector
- Motor vehicles are responsible for €398.4 billion of tax revenue for governments across key European markets
- The automobile industry generates a trade surplus of €76.3 billion for the European Union
- The turnover generated by the auto industry represents more than 8% of the EU's GDP
- Investing €62 billion in R&D per year, automotive is Europe's largest private contributor to innovation, accounting for 33% of the EU total

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