

Ever-wider: why large SUVs don't fit, and what to do about it

The case for European law-makers to review the maximum width of light duty vehicles

January 2024

Summary

Spurred on by rising sales of large SUVs, **newly-sold passenger vehicles (i.e. cars) are getting one centimetre wider every 2 years** (see figure 1 below). All the indications are that **this trend will continue without regulatory action** by European law-makers. The current EU maximum width applied to all vehicles, 255 cm, was enacted to limit the expansion of buses and trucks in the mid 1990s - and was never truly intended for cars. The limit fails to contain the trend to ever-wider SUVs (including pick-up trucks), and there is a compelling case to review it.



Image credit: Cllr Saskia Heijltjes

The average width of new cars in the EU now exceeds 180 cm, and around half of sales now exceed this figure. 180 cm is a key threshold because it is a frequently-used minimum specification for the width of on-street parking in Europe. When parked in spaces 180 cm wide, vehicles exceeding this width simply don't fit. Vehicles which exceed their parking bay take space from those using the footpath, from vehicles moving along the road, or from both the footpath and the road.

Troublingly, the **ever-wider trend is continuing apace with large SUVs and pick-ups that approach or exceed 200 cm**. The BMW X5 (200.4 cm), BMW X6 (200.4 cm), BMW X7 (200 cm), Mercedes Benz GLS (195.6 cm), Audi Q8 (199.5 cm), Porsche Cayenne (198.3 cm), Land Rover Defender (199.6 cm), Land Rover Range Rover Sport (199 cm), and VW Touareg (198.4 cm) are being joined by the Mercedes Benz EQS (195.9 cm), Volvo EX90 (196.4 cm), Kia EV9 (198 cm), and BMW XM (200.5 cm). The Dodge RAM, a top-selling American pick-up truck imported into Europe, measures up to 208.5 cm in width, overshooting 180 cm-wide parking spaces by almost 30 cm.

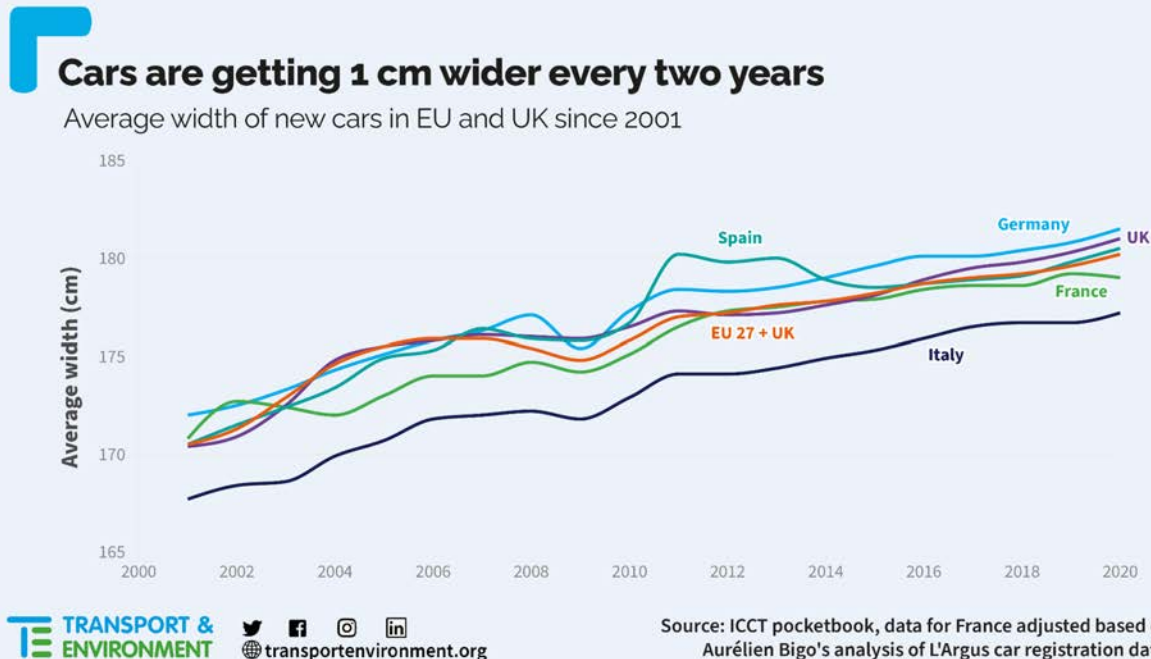


Figure 1: Average width of new cars in the EU and UK

Reviewing the **maximum width limit of light duty vehicles** (cars, crossovers, SUVs, pick-ups and vans) **is vital to protect public space from further encroachment**, including footpaths, roadway and adjoining parking. Such a review must also consider the road safety risks posed by ever-wider SUVs, particularly since increased width enables the height of the vehicle to be further raised. Vehicle fronts raised by 10 cm carry a 30% higher risk of fatalities in collisions with pedestrians and cyclists.

Primarily this briefing makes the case for a review of light duty vehicle width by the European Commission, and calls for such a review as a matter of priority. To illustrate the background issues more deeply, we explore one scenario where new vehicles with widths greater or equal to the widest

3% of 2023 sales could, after a phase-in period, no longer be newly-registered. The 3% figure is an assumption used for illustrative purposes.

The **widest 3% of new passenger car registrations** in the first half of 2023 **exceed 192.1 cm**, and the scenario then assesses this figure as a potential revised maximum width, including its likely implications for electric vehicles. Because large vans, mini-buses and campervans (larger-volume vehicles) involve different use cases, the scenario explores a wider maximum of 207 cm for this cohort, with access to this higher limit governed by internal space thresholds. Potential application dates are also discussed. Overall, the scenario indicates that prompt action would deliver **a crucial safeguard to arrest the ever-wider trend from becoming further embedded in future sales** while having only **modest market impact**.

Crucially, decision-makers are urged to **support the inclusion of a review clause to examine the maximum width of light duty vehicles in revising the Weights & Dimensions directive**, being discussed in the European Parliament and Council in early 2024. **Importantly: to support the inclusion of a review clause is not to specify new limits.** Rather, it is to agree that the ever-wider trend warrants examination, and to entrust this examination to the European Commission within a defined timeframe.

Table of contents

1. Vehicle width growth: trend and impacts	4
1.1. How passenger vehicle width has expanded	4
1.2 The downsides of ever-wider passenger vehicles	8
2. Revised maximum width scenario and its market impact	14
2.1 The need to review light duty vehicle width	14
2.2 Newly-registered passenger vehicles (all powertrains)	15
2.3 Newly-registered passenger electric vehicles (EVs)	16
2.4 The need for reform without delay	17
2.5 Discussion regarding lead-in time	18
2.6 Other light duty vehicles	19
2.7. Suggested approach in the UK to reforming maximum light duty width	23
3. Conclusion	24
Annex	25
Vehicle categorisation	25
Measurement of width	25

1. Vehicle width growth: trend and impacts

Since 1996 EU law has used a single legal limit to govern the width of all types of new vehicles, namely 255 cm.¹ The 255 cm width limit was set to harmonise the maximum width for new trucks, buses and coaches, and stop them from becoming ever-wider. In other words, the EU's vehicle width limit focused - and focuses - on heavy duty vehicles.²

Having only one width limit for *all vehicles* (heavy and light duty) is failing to prevent the ongoing widening of new light duty models, particularly large SUVs and pick-up trucks. Unless the limit for light duty vehicles (LDVs) is reviewed, large SUVs and pick-ups will continue to expand outward to the 255 cm width limit put in place to contain heavy duty vehicles.

1.1. How passenger vehicle width has expanded

Newly-sold cars and SUVs are expanding in width by roughly half a centimetre each year. The finding is confirmed by two different datasets. First, we examined new car registrations in the EU 27, comparing the top 100 sellers in 2018 to the top 100 sellers in the first half of 2023.³ The average width for the top 100 sellers in 2018 was 177.8 cm. For the first half of 2023, the comparable figure is 180.3 cm, a rise of 2.5 cm over five years, and yielding an average annual increase of 0.5 cm since 2018.

Second, we reviewed data compiled by ICCT, which is based on all new car registrations. The ICCT data shows the same trend in the two decades leading up to 2020. Average car width in the EU increased from 170.5 cm in 2001 to 180.2 cm in 2020, again equating to an average annual increase of 0.5 cm.

Key EU markets that have already surpassed the 180 cm threshold include Germany (in 2016), the UK (2018), and Spain (2019). New cars are widest on average in Germany: 181.5 cm in 2020, according to ICCT data, and comparatively narrower in Italy, averaging 177.2 cm in the same year. As currently structured, EU law will not prevent a cohort of new SUVs from expanding as far as 255 cm; in turn, this will push average new car width to around 2m, which corresponds to the width of the largest SUVs available today.

¹ The 255 cm maximum width of light duty vehicles is now contained in Annex XIII (Part 2, Section B) of Commission Implementing Regulation [2021/535](#). For the original 1996 legislation, please see [link](#).

² Heavy duty vehicles are trucks, buses and coaches which weigh more than 3.5 tonnes and serve utilitarian or public service purposes, for example, carrying large volumes of freight and significant numbers of passengers.

³ The top 100 sellers in the first half of 2023 account for 80% of EU car registrations. Averages are weighed.



Cars are getting 1 cm wider every two years

Average width of new cars in EU and UK since 2001

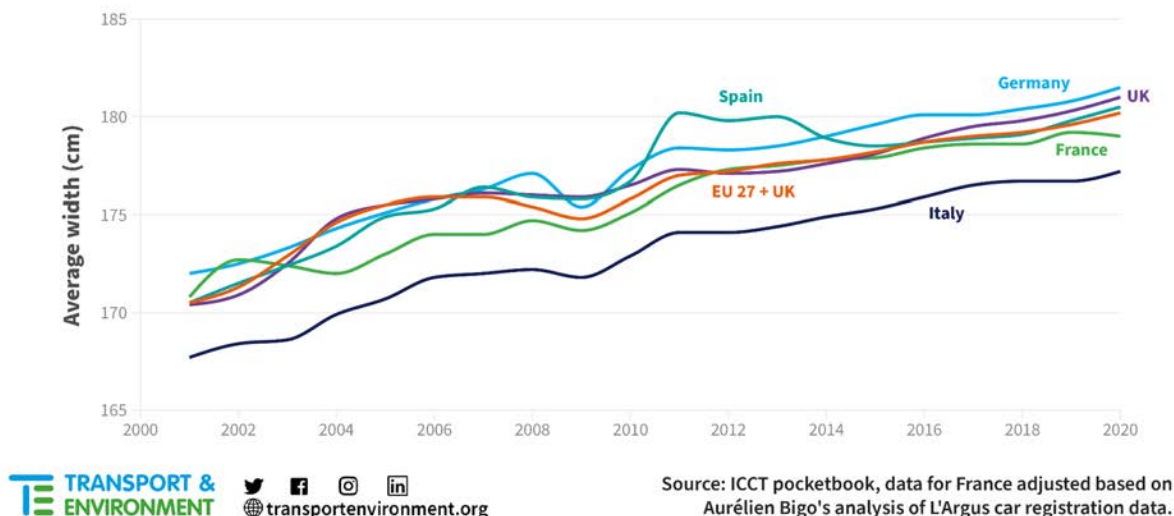


Figure 1: Average width of new cars in the EU and UK⁴

French data on car size, available from 1960, suggests that the rate of width expansion has increased in recent years. Based on the sales of new cars in France, the average increase in the period 2001 to 2020 was 0.45 cm per year, some 25% higher than the annual increase of 0.36 cm recorded in the years 1960 to 2000.⁵

New models are larger than the previous generation, with a particularly pronounced trend among luxury SUVs. This luxurious end of the market also appears to be significantly influencing the updating of mid-market models.

Large luxury SUVs are pulling the market towards further width increase

In some cases, the width of luxury SUVs was increased incrementally. In others, the expansion was made in large jumps. There are differences between - and within - vehicle-makers. The paragraphs below give some insight into the widening of luxury models by the six top-sellers of large SUVs in Europe (namely BMW, Mercedes, Audi, Porsche, Volvo and Land Rover) by highlighting some recent developments regarding the widest models available today.

⁴ An interactive time sequence of this data with numbers for intermediate years is available at this [link](#).

⁵ Data from L'Argus, compiled by Aurélien Bigo, with average growth rates based on linear regressions. In early 1960s France the average width of new cars was around 155 cm.

BMW

BMW significantly expanded the width of its X5 model as part of its 2019 model update. The 2010 and 2013 versions of the X5 were 193.8 cm wide. For the 2019 model, the width of the X5 was increased by 6.6 cm to 200.4 cm, remaining at this width in the 2023 model update.

BMW's X6 follows an incremental pattern of width increase. Already in 2010, the X6 was 198.3 cm wide. The 2015 model update saw a 0.6 cm increase to 198.9 cm. A further 1.5 cm was then added in 2020 to bring the X6 to 200.4 cm - the same width to which the X5 was widened the previous year.

Launched in 2023, the XM, described by BMW as a large luxury high-performance plug-in hybrid SUV,⁶ is 200.5 cm wide, a further millimetre wider than the X5 and X6.

Mercedes

Already in 2012, the Mercedes M, the forerunner of the GLE, was 192.6 cm wide. With the launch of the GLE in 2015, the width was increased by 0.9 cm to 193.5 cm. A further 1.2 cm was added for the 2019 GLE model, bringing the width to 194.7 cm, and this width was retained in the 2023 GLE model update.

Audi

In 2019 Audi launched its Q8 which is 199.5 cm wide, 1.2 cm wider than the Q7 (198.3 cm), launched in 2009.

Porsche

The 2010 Cayenne was 193.9 cm wide, with this width retained by the 2015 model. In 2018 the Cayenne was widened by 4.4 cm to 198.3 cm.

Volvo

Volvo's XC90 dates to 2006 when it had a width of 189.8 cm. In 2015 Volvo increased this width to 192.3 cm (+2.5 cm), retaining this width for the XC90 model update in 2019. However, Volvo went 4.1 cm wider with its electric version of the XC90. Launched in 2023, the EX90 measures 196.4 cm in width.

Land Rover

The Land Rover Defender has three sub-models, the 90, 110 and 130. Launched in 2022, the Defender 130 is longer than the 90 and 110, while being equally wide.⁷ Land Rover increased the width of both

⁶ BMW (2023). The BMW XM Models. [Link](#).

⁷ As the 130 doesn't appear to have a direct predecessor as such, we focus here on the Defender 90 and 110.

the Defender 90 and 110 from 179 cm in 2014 to 199.6 cm in 2020, a rather substantial increase of 20.6 cm.

To recap, while there is no one single pattern, the ever-wider trend of large SUVs is clear, with BMW now pushing beyond 200 cm. In 2019, BMW recorded a significant increase (of 6.6 cm) for its update of X5, while the width of the X6 was increased incrementally, ultimately arriving at the same width as the X5 (200.4 cm), with the XM pushing out a further millimetre in 2023. Mercedes and Audi generally widened their largest SUVs by around 1 cm with each model update over the decade to 2019. In 2018, Porsche widened its Cayenne by 4.4 cm. In 2023, Volvo went 4.1 cm wider with its EX90, a full electric model along similar lines to its XC90 SUV. In 2020, Land Rover very substantially widened its Defender models (by 20.6 cm), no doubt influenced by sales of similar vehicles of its own⁸ and wider market developments.

The width increase of the widest models is pulling the rest of the market towards further width expansion, providing carmakers with a pretext to enlarge width across all segments, and thus moving the whole market steadily towards larger vehicles.

Mass market models are also getting wider in reaction to ever-larger SUVs

Compact and mid-sized cars are also getting wider and following the trend set by large SUVs. Below we provide an illustration of the width increase for some mass market cars, including crossovers as well as midsize and compact cars. A substantial number of them have been widened by around 3 - 5 centimetres in recent model updates:

- 2017 Nissan Qashai, 180.6 cm, was widened 3.2 cm for the 2021 Nissan Qashai, 183.8 cm
- 2020 Toyota C-HR, 179.5 cm, was widened 3.5 cm for the 2024 Toyota C-HR, 183 cm
- 2021 Peugeot 3008, 184.1 cm, was widened 5.4 cm for the 2024 Peugeot E-3008, 189.5
- 2016 Renault Clio, 173.2 cm, was widened 6.6 cm for the 2019 Renault Clio, 179.8 cm
- 2018 Skoda Fabia, 173.2 cm, was widened 4.8 cm for the 2021 Skoda Fabia, 178 cm
- 2017 Peugeot 308, 180.4 cm, was widened 4.8 cm for the 2022 Peugeot 308, 185.2 cm
- 2020 Opel Astra, 180.9 cm, was widened 5.1 cm for the 2022 Opel Astra, 186 cm
- 2018 Fiat Panda, 164.3 cm, was widened 2.9 cm for the 2023 Fiat Panda, 167.2 cm

⁸ The Range Rover Sport had a width of 195 cm in 2009, which was increased to 199 cm in the 2013, 2018 and 2022 models. The Land Rover Discovery had a width of 195 cm wide in its 2010 and 2013 models, increasing to 199 cm for the 2017 and 2021 versions.

1.2 The downsides of ever-wider passenger vehicles

The ever-wider trend impacts all road users - pedestrians, cyclists and drivers of other vehicles. Walking, the ever-wider trend is most evident by large SUVs and pick-ups parked on part of the footpath, sometimes making it difficult or impossible for wheelchairs and children's buggies to pass. It's also visible at junctions, where large SUVs parked near corners often make it difficult to see oncoming traffic.

For cyclists, many streets are becoming increasingly hazardous as ever-wider passenger vehicles exceed the width of on-street parking, intruding onto the lanes intended to allow vehicles and bikes to safely pass each other.

Other drivers are adversely affected by downsides linked to the ever-wider trend, for example, delays as large SUVs attempt to park in standard parking spaces they don't fit into, as well as public service vehicles, such as recycling trucks and buses, impeded or obstructed by ever-wider SUVs. There is also a growing risk of collisions as ever-wider SUVs attempt to pass each other on streets and roads not designed for them.⁹

Underneath the ever-wider trend, there is also a large-scale privatisation of public space which is creeping yet noticeable at the same time. It's worth looking at each of the points introduced above in more detail.

On-street parking

Major cities, including London, Paris and Rome, have set 180 cm as their minimum width for an on-street park space.¹⁰ To be clear, these cities strive to provide parking spaces that are wider, and 200 cm is a typical recommended width. However, the point here is that many cities accept 180 cm when more space is not available, and the result is that a major cohort of on-street parking across Europe is 180 cm-wide, inclusive of road markings.

In turn, this minimum has been used to mark out on-street parking spaces, often for many decades. When parked in on-street spaces 180 cm-wide, all vehicles wider than this contribute to the loss of

⁹ Which? (2018). Cars too wide for narrow roads - we expose the worst offenders. [Link](#).

¹⁰ For Paris, the minimum width of parking spaces is 180 cm. When the width of the roadway allows it, the recommended width is 200 cm; see Mairie de Ville (2015) "Direction de la voirie et des déplacements". [Link](#). The situation in Rome is similar; see Roma Capitale (2015) "Regolamento viario e classifica funzionale delle strade urbane di Roma capitale". [Link](#). For London and other UK cities, see UK Government (2016) Traffic Signs Regulations and General Directions ([link](#)), where the minimum width of 180 cm is not mandatory but advised. A review of on-street parking width across European cities more generally is beyond the scope of this briefing.

public space either by narrowing the usable road width, or by partly parking on the footpath ('pavement parking'), or a combination of both.

Around half of newly-registered passenger vehicles no longer fit in 180 cm-wide on-street spaces used in many European cities. This statistic should signal alarm, both given the increasing proportion of cars / SUVs that overshoot the width of a major cohort of parking spaces, and perhaps more importantly, the indications that the ever-wider trend looks set to continue without regulatory action.

Off-street parking

The increasing width of vehicles is also causing a major issue for off-street parking. Here, the spaces are wider, typically 240 cm (although 230 cm is also frequently used¹¹). The problem is opening the doors, and getting in and out. The overwhelming majority of off-street parking was built using 230 - 240 cm-wide bays over previous decades, before the average width of new cars exceeded 180 cm, and when the average width of the European car fleet was significantly below that figure.

In a survey of around 400 respondents, 65% said that modern cars are too big for multi-storey car parks.¹² Some 45% experienced getting 'stuck' in their car because there was not enough room to open the door, and 54% of respondents said that only cars below a certain size should be allowed in car parks.

The higher the share of vehicles around 200 cm wide, the more car users will find themselves periodically stuck outside (or inside) their vehicles. Assuming a 200 cm wide SUV is perfectly centrally parked in a 240 cm space, there's just 20 cm to the white line at each side. If two such SUVs are perfectly centrally parked, this suggests there is 40 cm to open the doors and get out. However, the width of the vehicle door can be approx 10 cm wide, reducing the effective space to around 30 cm.

For context, the length of an A4 page is roughly 30 cm (29.7 cm). A high proportion of adults are likely to struggle to get in or out in an opening that is effectively 30 cm, keeping in mind that the widest point between the open door and vehicle frame is usually somewhat behind the seats. Another survey draws attention to 27 models, mostly large SUVs, that are "so wide you may struggle to open the doors when parked" in 240 cm wide spaces.¹³ The same survey highlights the increasing trend to greater dimensions, and the related problems for car users more generally.

¹¹ One of the largest parking operators in France uses 230 cm; see Interparking (2023) "What are the dimensions of a parking space?" [Link](#).

¹² Startline (2023). Two out of three say modern cars are too big for multi-storeys. [Link](#).

¹³ Which? (2023). Cars too big for UK parking spaces - the worst culprits revealed. [Link](#). See also Gaillard (2023). Voitures de plus en plus grosses : un problème de taille ! [Link](#).

Ever-wider cars have knock-on implications for land-use and the cost of parking. Including the spectrum of SUV types, there are around 250 million cars in Europe, all of which need to be parked. While off-street parking spaces could be widened, that takes up more land, making the use of space more inefficient. In the case of paid parking, whether multi-story or surface - and given that car park owners are unlikely to pay the higher costs of reduced capacity - the widening of parking spaces would push up costs for others.¹⁴ In practice, to enlarge parking spaces would be to turn the “user pays” principle on its head; instead of confining the cost to those using wide SUVs, it would burden non-SUV users with higher costs for which they hold no responsibility. There would also appear to be basic equity issues around a generalised increase in the cost of parking, rather than solutions that fix the higher costs on the users of large SUVs.

Uncertainty regarding ongoing width expansion may also pose issues for the operators of charging points for electric vehicles. The ever-wider trend is also evident for EVs, particularly in recent launches of large models (an issue covered in Section 2.2). Here, a few examples are given to highlight the issues (linked to charging ever-wider EVs in commonly-used parking space dimensions, such as on-street spaces 180 cm wide, and off-street 240 cm-wide spaces). Released in 2023, the BMW XM has a width of 200.5 cm; launching in 2024, Kia’s EV9 measures 198 cm in width.

The situation for charge point operators will be complicated if there is an increase in the sales of very wide electric SUVs. Put simply, an increasing presence of ever-wider EVs in charging bays will lead to the same difficulties for drivers in getting out and back in, as flagged above. Moreover, the wider each space is to park and charge, the lower the number of EVs that can be recharged in a given site. The result, at scale and over time, is higher costs, lower accessibility to charging, or both.

Taking space from other road users

In moving traffic, ever-wider passenger vehicles also take space from other road users. As well as crowding out cycling, ever-wider passenger vehicles also more frequently impede the movement of public vehicles such as buses, fire tenders, recycling trucks and trams.¹⁵ When wide SUVs narrow the lane such that other road users can’t pass, or struggle to pass,¹⁶ they make movement needlessly inefficient, hassle-some - and often less safe.

¹⁴ 9news / Davis (2023). “Why Australia doesn't need bigger parking spaces for larger cars”. [Link](#).

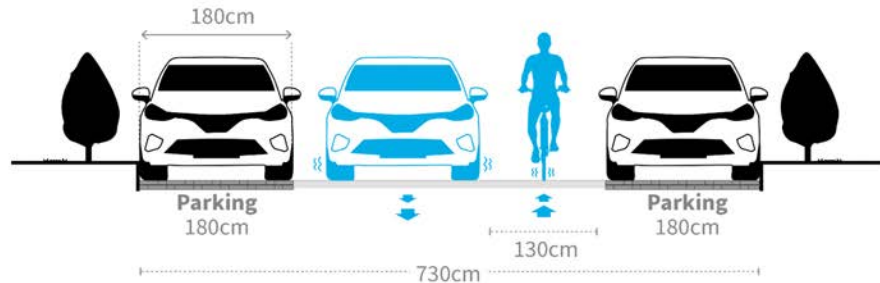
¹⁵ RTBF / Jacobs (2019). “Trams de la STIB: 175 heures cumulées de blocage à cause de voitures mal garées”. [Link](#). Referring to the increase in large vehicles such as SUVs and big vans, Cindy Arents, spokesperson for Brussels tram operator, STIB, says that “these vehicles, if poorly parked, disrupt tram traffic more quickly than a small vehicle protruding only slightly from a parking space”.

¹⁶ “It seems to me that the manufacturers are shooting themselves in the foot with these very wide models because we, the government, are almost obliged to limit the car's place in the city by eliminating parking spaces or making the streets one-way”: Yves Rouyet, urban planning alderman in the Ixelles commune of Brussels, quoted in [The Bulletin](#).

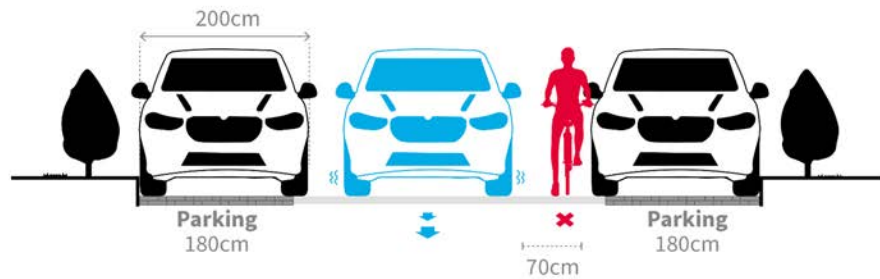


Mega SUVs leave too little space for other road users

Average new car width: 180cm (200cm with mirrors)



Mega SUV width: 200cm (220cm with mirrors)



Source: T&E 2024. Notes: Image shows a residential street with cycling in both directions, one way for all other traffic, and parking for vehicles on both sides. A 730 cm width is frequently used for such streets in Europe.

Ever-wider cars are also privatising public space on a major, but largely undocumented, scale. To take the example illustrated above, the cumulative loss of road width to other road users is more than half a metre (60 cm). On a street with two lines of parked vehicles and two lanes of moving traffic, the cumulative loss will be in the region of 80 cm. Clearly, these losses don't materialise overnight; cars sold today don't suddenly replace all those sold previously. But these losses, which are being incurred across Europe and beyond, are not less consequential because they are incremental.

Loss of vision and higher road safety risk

Expanding width has also enabled passenger vehicles, mainly SUVs, to become taller, which then obstructs the view of the road for all road users, also known as reduced sight-lines.

Drivers in wider, higher SUVs also see less of the road space around them, with a larger blindspot in particular to the front. The larger blindspots of wider and higher vehicles contribute both to a greater

incidence of collisions, and a higher rate of death and serious injury in this elevated number of collisions.¹⁷

Vehicle blindspots can be informally measured by counting the number of children seated to the front who the driver doesn't see. The figure rises to 13 - 14 children in some cases (see image below). When passing at close proximity, and all other things being equal, drivers of ever-wider SUVs are more likely to strike mirrors, or worse.



Image: Vehicle blindspot. Credit: WTHR

For many years US data has been referenced in Europe to highlight the dangers posed by SUVs, particularly higher-fronted variants. Since the publication in August 2023 of a major longitudinal study by VIAS, a Belgian institute specialising in road safety, the higher risks posed by SUVs is also evident from European data. The VIAS study analysed all collisions in Belgium between 2017 and 2021, a sample cohort involving 300,000 road users in total.

VIAS found that the risk of fatalities for pedestrians and cyclists struck in collisions increases with higher vehicle fronts.¹⁸ More specifically, a 10 cm increase in the height of the vehicle front (from 80 cm to 90 cm) is linked to a 30% rise in fatalities where a pedestrian or cyclist is struck in a collision.¹⁹ Overall, VIAS found that the average height of vehicle fronts has risen from 73 cm to 83 cm over the past 20 years. To better protect vulnerable users, VIAS stresses that the trend to large, high-fronted vehicles must be arrested.

¹⁷ IIHS (2022). The association between pedestrian crash types and passenger vehicle types. [Link](#).

¹⁸ VIAS Institute (2023). Des voitures plus lourdes, plus hautes et plus puissantes pour une sécurité routière à deux vitesses ? [Link](#).

¹⁹ For pick-up trucks, the SUVs with generally the tallest fronts, VIAS found that the increased risk of fatalities rises to 200%, although the VIAS study does not solely attribute this increase to frontal height alone.

There are parallels between key findings by VIAS and an analysis published some months later by the IIHS.²⁰ The IIHS analysed almost 18,000 collisions and calculated vehicle front measurements for around 3,000 different models. The IIHS found that blunt vehicles with fronts 76 - 102 cm high are associated with a 26% higher risk of pedestrian fatalities in collisions, as compared to lower vehicle fronts. There's resonance here with the VIAS finding that vehicle fronts 90 cm high (as compared to 80 cm) carry a 30% increased risk of fatalities in collisions with pedestrians and cyclists.

Commenting on the release of its study, IIHS president David Harkey, referring to using pedestrian crossings, observed that “some of today’s vehicles are pretty intimidating when you’re passing in front of them... These results tell us our instincts are correct: more aggressive-looking vehicles can indeed do more harm”.

Higher emissions and resource and energy use

An in-depth assessment of the true energy, emission and resource cost of SUVisation is beyond the scope here, but a number of key points can be briefly noted. Mainly because of their poorer aerodynamics, SUVs require more energy to run, with the IEA calculating that, on average, SUVs of all powertrain types use around 20% more energy compared to medium-sized cars.²¹ Turning to emissions, and looking at global data between 2010 and 2022, the fall in energy used in combustion engine vehicles would have been 30% higher if cars had stayed the same size, i.e. without SUVisation.²²

As well as using more energy in the use phase, due to their larger size and weight, SUVs also require more materials, e.g. 20% more steel than sedan cars,²³ their production emits more CO₂,²⁴ and they require higher levels of critical raw materials. European vehicle-markers are far from securing the

²⁰ IIHS (2023). The association between passenger-vehicle front-end profiles and pedestrian injury severity in motor vehicle crashes. [Link](#). The IIHS looked in-depth at the consequences of the height and slope of vehicle fronts. Tall fronts are associated with a 43 - 45% increase in pedestrian fatalities compared to low and sloping vehicle fronts, with the data indicating that it matters little if a tall front is blunt or sloped. As noted above, a blunt medium-height front, 76 to 102 cm (30 to 40 inches) carries a 26% higher risk of pedestrian fatalities. The vehicle examples shown in the study appendix, and the use of international vehicle geometry data suggest that these findings would be broadly applicable to European collisions involving similarly-shaped vehicle fronts.

²¹ IEA (2019). Growing preference for SUVs challenges emissions reductions in the passenger car market. [Link](#). The ICCT notes the dominant role of poorer aerodynamics: VW’s T-Roc, for example, only weighs 2 kg more than the Golf (1,257 kg vs. 1,255 kg), but its greater height and bulk result in CO₂ emissions which are 17 gCO₂/km higher (11%) than the Golf (173 gCO₂/km as compared to 156 g/km). The models compared are 1.5 TSI in both cases. [Link](#).

²² Global Fuel Economy Initiative (2023). Trends in the global vehicle fleet. [Link](#).

²³ Greenpeace (2023). Breaking The Mold: The Role of Automakers In Steel Decarbonisation. [Link](#).

²⁴ IEA (2023). Global EV Outlook 2023: Catching up with climate ambitions. [Link](#). Comparing the average weight of an electric SUV to the average *small* electric car, the IEA found the battery of the SUV to be twice as large (requiring about 75% more critical minerals). The CO₂ emissions associated with materials processing, manufacturing and assembly of the SUV were estimated to be more than 70% higher.

levels of critical raw materials they need to reach their own EV targets;²⁵ reducing battery size would bring down the consumption of such material by 20 - 25%.²⁶

SUVs also cause a higher level of tyre-related air pollution; their greater weight requires larger tyres, leading to the wear of more rubber and plastic micro-particles,²⁷ with these particles polluting soil, watercourses, and ultimately, the oceans.²⁸

EU legislation requires new car sales to shift to electric vehicles by 2035 and reach 60% of the market in 2030. To stem emissions, energy and resource use as new sales are electrified, the IEA emphasises the importance of the deployment of more compact electric vehicles.²⁹

2. Revised maximum width scenario and its market impact

2.1 The need to review light duty vehicle width

The case to review the EU maximum for light duty vehicles is clear. Currently (early 2024) law-makers are working on the revision of the EU's Weights & Dimensions directive. While this legislation governs heavy duty vehicles, T&E and other civil society organisations are asking law-makers to include in their revision a review clause obliging the European Commission to assess the EU's light duty vehicle limit, and make proposals accordingly.³⁰ Given this is an issue of growing public importance, the Commission could be asked to complete its review and table proposals within 12 months of the Weights & Dimensions revision entering into legal force.

The EU width limits for vehicles are contained in type approval legislation last updated in 2021, and which does not appear to contain a deadline date for its own review.³¹ This underlines the need to insert a time-bound commitment to reviewing light duty vehicle width as part of the revision of the Weights & Dimensions directive.

Many voices are calling for regulatory action to limit the footprint of new vehicles, among them the Global Fuel Economy Initiative,³² Eurocities and the International Federation of Pedestrians.

²⁵ T&E (2023). Pedal to the metal: how prepared are European carmakers for EV value chain transformation? [Link](#).

²⁶ T&E (2023). Clean and lean: Battery metals demand from electrifying passenger transport. [Link](#). Smaller batteries represent the single largest factor to reduce the demand in battery critical raw materials.

²⁷ Ademe (2022). Émissions des véhicules routiers. [Link](#).

²⁸ Eunomia (2018). Measuring the Impacts of Microplastics. [Link](#).

²⁹ IEA (2023). Global EV Outlook 2023: Catching up with climate ambitions. [Link](#).

³⁰ In late 2023 a number of MEPs on the TRAN committee of the European Parliament tabled amendments regarding light duty vehicle width, focusing primarily on the case to review the maximum limit; see [link](#).

³¹ Commission Implementing Regulation [2021/535](#) does not signal a date by which it must be reviewed.

³² Global Fuel Economy Initiative (2023). Trends in the global vehicle fleet. [Link](#).

The following section assumes a review of light duty width will take place. For illustrative purposes, it assumes that reform - applied only to future sales of new vehicles - discontinues the widest 3% of cars / SUVs, and models this scenario accordingly.

The aim of the scenario is to explore the headline impacts of potential reform in their market context. The scenario avoids impact on:

- EU's 100 top-selling passenger vehicles (based on new registrations in the first half of 2023)
- Europe's top-selling light commercial vehicles, most commonly registered and used as vans, but which can also be converted into mini-buses and campervans (noting, however, that these latter-mentioned vehicles are sometimes registered by private users as passenger vehicles).

Based on new sales in the first half of 2023, the widest 3% of new registered cars / SUVs exceed a width of 192.1 cm. To avoid impact on vans and van variants (minivans and campervans), the scenario proposes a revised limit for these vehicles, but sets it at the widest light duty vans sold today. To summarise, the scenario explores:

- A revised maximum width of 192.1 cm for light duty vehicles applied to new registrations after a certain date (to be decided), and subject to,
- A wider maximum width of 207 cm for vans and van variants, with criteria to govern access to this wider limit to be assessed.

2.2 Newly-registered passenger vehicles (all powertrains)

The passenger vehicles assessed here comprise all powertrain types, namely those propelled exclusively by an internal combustion engine, hybrids, and full battery electric vehicles (EVs).

Based on passenger car registrations in the first half of 2023, 3% of current sales exceed 192.1 cm.³³ Some 97% of sales, including Europe's top 105 best-selling passenger vehicles today, would be unaffected by a revised limit of 192.1 cm. The highest-selling vehicles exceeding 192.1 cm sit at 106th (BMW X5) and 113th (Mercedes GLE) in terms of sales in the first half of 2023. Separately, each of these vehicles accounted for 0.3% of new registrations; see table below.

³³ Based on an analysis of car sales in the EU in the first half of 2023. Cumulatively, 99.4% of car sales are included in the scope of the analysis.

Table: passenger vehicles wider than 192.1 cm (all powertrains)

Sales rank	Model	Registrations (H1 2023)	Segment	% of all registrations	Width (cm)
106	BMW X5	17,238	SUV Medium-Large (E)	0.3%	200.4
113	MERCEDES GLE	15,828	SUV Medium-Large (E)	0.3%	194.7
140	VOLVO XC90	10,403	SUV Medium-Large (E)	0.2%	192.3
149	PORSCHE MACAN	9,168	SUV Medium (D)	0.2%	192.2
153	AUDI Q8	8,778	SUV Medium-Large (E)	0.2%	199.5
157	PORSCHE CAYENNE	8,242	SUV Medium-Large (E)	0.2%	198.3
169	AUDI Q7	6,609	SUV Medium-Large (E)	0.1%	197.0
173	VW TOUAREG	6,149	SUV Medium-Large (E)	0.1%	198.4
174	AUDI Q8 E-TRON	6,000	SUV Medium-Large (E)	0.1%	193.5
177	PORSCHE TAYCAN	5,849	Sportive Medium (D)	0.1%	196.7
178	LAND ROVER DEFENDER	5,648	SUV Medium (D)	0.1%	199.6
183	BMW IX	5,249	SUV Medium-Large (E)	0.1%	196.7
184	MERCEDES G CLASS	5,233	SUV Medium (D)	0.1%	193.1
185	MERCEDES S CLASS	5,182	PC Large (F)	0.1%	195.0
197	BMW X6	4,086	SUV Medium-Large (E)	0.1%	200.4
205	MERCEDES EQS	3,448	PC Large (F)	0.1%	195.9
206	AUDI Q8 E-TRON SPORTBACK	3,407	SUV Medium-Large (E)	0.1%	193.5
220	TESLA MODEL S	3,027	PC Medium-Large (E)	0.1%	198.7
221	MASERATI GRECALE	2,993	SUV Medium-Large (E)	0.1%	197.9
223	LAND ROVER RANGE ROVER VELAR	2,824	SUV Medium-Large (E)	0.1%	195.0
226	BMW X7	2,696	SUV Large (F)	0.1%	200.0
231	MERCEDES GLS	2,487	SUV Large (F)	0.0%	195.6
237	BMW 7 SERIES	2,216	PC Large (F)	0.0%	195.0
238	TESLA MODEL X	2,214	SUV Medium-Large (E)	0.0%	199.9
253	AUDI A8; S8	1,648	PC Large (F)	0.0%	194.5
254	AUDI E-TRON GT	1,630	Sportive Medium (D)	0.0%	196.0
264	BMW XM	1,016	SUV Large (F)	0.0%	200.5
266	BMW I7	907	PC Extra Large (G)	0.0%	195.0
268	FORD EXPLORER	849	SUV Medium-Large (E)	0.0%	200.4
Total		151,024		3%	

Note: the widest vehicles are also among the heaviest. The average weight of vehicles wider than 192.1 cm is 2,311 kg while the average weight of cars in the EU in 2022 was 1,518 kg.

2.3 Newly-registered passenger electric vehicles (EVs)

Looking only at passenger EVs, the scenario shows that a higher percentage share of new registrations would potentially be impacted, compared to a consideration of all powertrain types. Based on newly-registered passenger EVs in the first half of 2023, and assuming a 192.1 cm width limit already applied, 4.7% of current EV sales would be affected (or 0.6% of total car sales; i.e. EVs account for one fifth of the 3% of cars affected).

This greater potential impact on EVs can partly be explained by their more recent design, and partly by their market segment. Coming later, they have been proportionately more affected by the ever-wider trend. Over and above that, more than twice the percentage of new EVs fall into larger-sized vehicle segments (i.e. D and above) compared to the share of ICE / hybrid vehicles into these segments.³⁴

Table: passenger EVs wider than 192.1 cm

Model	Registrations (H1 2023)	Segment	% total of EV sales	Width (cm)
AUDI Q8 E-TRON	5,994	SUV Medium-Large (E)	0.9%	193.7
PORSCHE TAYCAN	5,826	Sportive Medium (D)	0.9%	196.7
BMW IX	5,223	SUV Medium-Large (E)	0.8%	196.7
MERCEDES EQS	3,417	PC Large (F)	0.5%	192.6
AUDI Q8 E-TRON SPORTBACK	3,400	SUV Medium-Large (E)	0.5%	193.7
TESLA MODEL S	3,017	PC Medium-Large (E)	0.4%	198.7
TESLA MODEL X	2,208	SUV Medium-Large (E)	0.3%	199.9
AUDI E-TRON GT	1,628	Sportive Medium (D)	0.2%	196.0
BMW I7	899	PC Extra Large (G)	0.1%	195.0

Overall, nine EVs models would require design changes in order to meet the 192.1 cm width limit proposed in the scenario's (based on the cumulative total of 99.4% cars sales). None of these models individually exceed 1% of total EV sales.

In light of the greater proportional impact of the scenario on electric vehicles, mitigation steps are explored below in the form of a longer phase-in timeframe (see section 2.5).

2.4 The need for reform without delay

Already having the widest ICE SUVs, BMW goes even further with the plug-in hybrid XM, which measures 200.5 cm without mirrors (swelling to 223.5 cm with mirrors folded out).

³⁴ Around half of EV sales are in the segments D, E and above, compared to around 20% (falling into these same segments) when all powertrain types are considered.



Without regulatory change, other vehicle makers are increasingly following the ever-wider trend set in particular by BMW and Mercedes. The point appears strongly evident in EV design. For example, Volvo's XC90, a hybrid / ICE vehicle, is 192.3 cm wide, but its new electric EX90 is to be 4.1 cm wider, at 196.4 cm. Due for launch in 2024, Kia's EV9 measures 198 cm in width. In effect, Kia is joining the cohort of vehicle-makers offering large SUVs which approach 200 cm in width. Kia's EV9 will be 8 cm wider than its Sorento SUV which, at 190 cm in width, was the widest vehicle sold by the company until the arrival of the EV9.

These significant and recent width expansions by vehicle-makers which previously did not produce unduly wide passenger vehicles highlight the need to act without delay.

2.5 Discussion regarding lead-in time

While there is some variation between and within companies, leading auto-makers now aim to bring a new model to the market within 3 years.³⁵ We further assume that the finalisation of the Weights & Dimensions file will likely take place in early 2025. Our scenario also assumes that law-makers ask the European Commission to review light duty width within 12 months of the file being finalised.

If the Commission tabled a proposal to revise light duty width in early 2026, a mid-range case to finalise new maximum light duty width limits would be late 2027.³⁶ For the scenario under discussion, the next question is: from when should revised limits apply?

As ICE and hybrids (including plug-in hybrids) will not be newly-sold after 2035,³⁷ relatively few new ICE / hybrid models are expected to be type approved from 2029/2030. The scenario therefore

³⁵ See Electrive (2023) "Volkswagen details cost-cutting measures to bring VW on track". [Link](#).

³⁶ This allows approx 18 months for the revision process.

³⁷ This is subject to regulatory considerations regarding synthetic fuels, also known as e-fuels.

envisages 1.1.2030 as the date from when the revised limits would apply to all newly-sold ICE / hybrids, irrespective of the date when these models were first type approved.

For EVs (full electric vehicles), a steep ramp up in sales in the second half of the 2020s is expected, and there is a case to distinguish sales of models type-approved before 1.1.30 from models newly type-approved after that date. The scenario assumes:

- EVs newly type-approved **after** 1.1.30, the revised limits would apply from that date, while
- Sales of EVs type-approved **before** 1.1.30 would be permitted to continue until 1.1.32.

This proposed timing takes into account that a certain number of wide EVs may be newly-type approved before finalisation of the revised width limit - assumed here as late 2027. Essentially, the scenario described here would grant these particular EVs 4 years of sales (2028 to 2031 inclusive) before the revised limits apply.

A vehicle-maker that wishes to continue selling a particular model can explore mitigation options. One such option could be to re-brand ('re-badge') a model exceeding the proposed revised limit into a vehicle that respects the new width threshold.

2.6 Other light duty vehicles

Additional width of just under 15 cm is suggested for larger-volume light duty vehicles, resulting in a proposed width limit of 207 cm for such vehicles. This recommendation is based on the width of two top-selling models, the Renault Master (207 cm) and VW Crafter (206.9 cm). Thanks to vehicle conversions, these and similar models (see table below) have multiple end uses as large box vans, mini-buses and campervans. Most often, they are registered as light duty commercial vehicles, but can also be registered by private users as light duty passenger vehicles, after conversion to a campervan, for example.

The table below includes all large top-selling vans based on 2020 market data for the EU and UK.³⁸ To cover the possibility that the market picture has changed somewhat over the last 2 - 3 years, a number of other large van models have been added, e.g. the VW Crafter and Citroen's largest van models.

Table: top-selling larger-volume light duty vehicles with multiple end uses (van, minibuss, campervan)

³⁸ Statistica / Carlier (2023). "Market share of the best-selling light commercial vehicle models in EU-28 in 2020". [Link](#).

Vehicle marque / model	Width (cm) No mirrors
Ford Transit ³⁹	205.9
VW Crafter ⁴⁰	206.9
Renault Master ⁴¹	207
Fiat Ducato	205
Peugeot Boxer ⁴²	205
Citroen Jumper ⁴³ & Relay ⁴⁴	205
Mercedes Benz Sprinter	202
Iveco Daily ⁴⁵	201

Light duty vehicles used to carry people

Mini-vans such as the Citroen SpaceTourer XL, Opel Zafira Life L, Peugeot Traveller Long and Toyota Proace Verso Long have a width of 192 cm and internal volume of 9.89 cubic metres. When this width is exceeded, however, as seen with the Mercedes Benz V Ig, for example, the volume tends to exceed 10 cubic metres. The Mercedes V Ig is a case in point: at 192.8 cm wide, it has an internal volume of 10.3 cubic metres.

³⁹ <https://vanreviewer.co.uk/ford/transit/dimensions/1801/>

⁴⁰ <https://www.vanguide.co.uk/guides/volkswagen-crafter-dimensions/>

⁴¹ <https://www.vanguide.co.uk/guides/renault-master-dimensions/>

⁴² <https://www.vanguide.co.uk/guides/peugeot-boxer-dimensions-key-measurements-compared/>

⁴³ <https://www.citroen.com/en/range/citro%C3%ABn-cameroon-cfao-motors/jumper-van>

⁴⁴

<https://www.vanguide.co.uk/guides/citroen-relay-dimensions-all-key-measurements-compared/#::~text=Overall%20Dimensions,excluding%20the%20mirrors%20is%202050mm>

⁴⁵ <https://www.vanguide.co.uk/guides/iveco-daily-dimensions-load-area-exterior/>



Image: Minivan images courtesy of www.automobiledimension.com

One candidate for a volume-based threshold, therefore, could be 10 cubic metres, namely, a light duty passenger vehicle with internal volume of more than 10 cubic metres would be permitted to be up to 207 cm wide.

Light duty vehicles used to carry goods and/or equipment

Wide vans, such as the Renault Master and VW Crafter (discussed above), are also offered in short wheelbase variants, while retaining the same width. The usable volume for cargo / equipment of shorter-wheelbase versions varies and there are examples which slightly exceed 7 cubic metres.⁴⁶ For this reason, the volume threshold proposed for larger-volume vehicles that carry goods / equipment is 7 cubic metres. Further analysis of this issue is needed. Essentially, the working assumption here is that a proposed volume rule of 7 cubic metres may be effective in preventing the enlargement of pick-up trucks beyond 7 cubic metres (to gain the additional width proposed). If such a vehicle was developed it would be akin to a large van, but this and related assumptions need to be tested.

Pick-up trucks

As shown by the table below, while there is significant variation in the width of pick-up trucks, this cohort also contains the widest light duty vehicles.

Table: selected pick-up trucks

⁴⁶ A short wheelbase variant of the Iveco Daily with 7.3 cubic metres is available, for example; see <https://www.vanguide.co.uk/guides/iveco-daily-dimensions-load-area-exterior/>

Vehicle marque / model	Width (cm)	
	No mirrors	Mirrors folded out
Isuzu D-MAX	183.5	NA
Nissan Navara	185.0	208.5
Ford Ranger	191.8	220.8
Ford Ranger Raptor	202.8	220.8
Ford Bronco	193.7	NA
VW Amarok	195.4	222.8
Dodge RAM (variant dependant)	208.5 ⁴⁷	~260.0
Ford F150 Lightning EV	203.2 ⁴⁸	243.8
Toyota HiLux (variant dependant)	185.5 to 202	NA

The scenario's reduced width limit of 192.1 cm would, after its phase-in timeframe, affect sales of pick-up truck models such as the Ford Ranger Raptor (202.8 cm wide), the VW Amarok (195.4 cm), some variants of the Toyota HiLux (which can be up to 202 cm) and the Dodge RAM (up to 208.5 cm).

A key question in setting a volume-based threshold (discussed above) is whether it could be abused by a hyper-large pick-up or SUV. The internal passenger area of such a vehicle today is in the region of 3.74 cubic metres,⁴⁹ a figure which does not include the flatbed area. Therefore, if a threshold of 7 cubic metres was set (for passenger vehicles), the passenger space of large pick-ups would need to be almost doubled if such vehicles were to qualify for the proposed higher maximum width of 207 cm. As signalled above, further analysis of this issue is required. Overall, however, the exploration of a volume requirement in the range of 7 to 10 cubic metres appears a useful avenue to explore in aiming to design a practical anti-avoidance strategy (to prevent a hyper-large pick-up or SUV being expanded to avail of the greater width limit of 207 cm).

⁴⁷ <https://www.stardodge.net/new-ram-1500-dimensions-weight.html>

⁴⁸ <https://www.edmunds.com/ford/f-150-lightning/2022/features-specs/>

⁴⁹ Converting 132 cubic feet to cubic metres; see <https://www.stardodge.net/new-ram-1500-dimensions-weight.html>.

2.7. Suggested approach in the UK to reforming maximum light duty width

The UK has inherited EU legislation on vehicle width which has not been changed since Brexit. The UK has introduced its own type approval system with the UK's Vehicle Certification Agency responsible for this.

The UK seeks to keep EU derived legislation under review and to reform it where it can support domestic UK objectives.⁵⁰ The UK government explicitly said that the purpose of leaving the EU was to have the power to diverge from EU rules.⁵¹ Consulting on a new UK width limit for cars would be consistent with setting regulations that suit the UK. Much of the UK is densely populated leading to high pressure on the road network from competing uses as a result. The growth in the width of cars is exacerbating those pressures.

We submit that the overall type approval process should still remain consistent with EU regulations to reduce compliance costs for car makers, but can exclude some specific models where the width impacts on other users. As noted above, the EU is currently reviewing the Weights & Dimensions directive. Rather than waiting to respond to any change from the EU, the UK government is urged to consult stakeholders on introducing specific width limits for light duty vehicles to be introduced from 1 January 2030 (consistent with the dates we propose for changes to EU regulations). For further information regarding proposed reform in the UK, please get in touch with our UK office.⁵²

3. Conclusion

Relying on the evidence set out here, T&E urges decision-makers to support the inclusion of a review clause to examine the maximum width of light duty vehicles in their revision of the Weights & Dimensions directive, currently being discussed in the European Parliament and Council.

Importantly, to support the inclusion of a review clause is not to specify new limits. Rather, it is to agree that the ever-wider trend warrants examination, and to entrust this examination to the European Commission within a defined timeframe.

⁵⁰ UK Gov (2023). Retained EU law dashboard. [Link](#).

⁵¹ UK Gov (2019). Letter to Donald Tusk on the United Kingdom's exit from the European Union. [Link](#).

⁵² T&E (2023). T&E United Kingdom. [Link](#).

A revised width limit - assuming it becomes law in some years time - will not be a panacea. By definition, it cannot prevent vehicle widening up to a newly-agreed limit. Other expansionary trends, such as the rise in the height of vehicle fronts and increased vehicle weight, could only be indirectly affected. At the same time, however, a revised width limit would place a highly tangible, physical limit on at least one aspect of SUVisation, namely the ever-wider tendency. Its impact will be felt most at the market edge, keeping in mind that the edge is influencing the centre.

Further information

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Annex

Vehicle categorisation

In this document we have used the term “cars” in a wide sense, encompassing cars, crossovers, MPVs and SUVs. From small cars to very large SUVs, cars account for 87% of the vehicles on European roads, or 250m of the 286m vehicles in circulation.

A further 29 million vehicles (roughly 10% of the total) are light commercial vehicles, mainly vans, but also pick-ups and mini-buses.⁵³ The key characteristic common to light duty vehicles is that they do not weigh more than 3.5 tonnes.⁵⁴ Altogether, therefore, the light duty category accounts for 97% of all vehicles on the road. The remaining 3% comprises heavy duty vehicles, namely, trucks, buses and coaches over 3.5 t in weight.

This 97% figure underlines the need to restrain further outward expansion, and strongly underpins the evidence case for a dedicated width limit for light duty vehicles. Whatever the reasons in the past to use the heavy duty limit to govern light duty width, to continue this approach would fail to contain further encroachment by the expansion of light duty vehicles.

Measurement of width

Vehicle width can be measured as follows:

1. Without mirrors, and also excluding mirror mounts (‘without mirrors’, in short)
2. With mirrors folded in
3. With mirrors folded out

Current EU legislation excludes mirrors and their mounts (i.e. number 1, above). No change to this methodology is proposed. Future technology may partly (or completely) replace externally-mounted mirrors with in-vehicle screens. The prospect of such technological change supports staying with the EU’s current methodology, and to measure width excluding mirrors and mirror mounts.

While the methodology to measure vehicle width should remain as it is, it’s worth noting the impact of the height at which mirrors are mounted on large SUVs and pick-ups in particular - and comparing it to buses and trucks. Most bus and truck mirrors are high-mounted, meaning they infrequently obstruct the movement of cyclists, pedestrians or light duty vehicles. On the other hand, the mirrors of large

⁵³ ACEA (2023) The Automobile Industry Pocket Guide 2023/2024. [Link](#). Motorcycles and scooters are not included in these figures (of which there are an estimated 39 million in Europe ([link](#))).

⁵⁴ There are some exceptions, e.g. an alternatively fuelled vehicle can be 750 kg heavier but still qualify as light duty where the additional weight comprises an electric powertrain and batteries, for example.

SUVs and pick-ups are generally positioned at the typical height of the handlebars of an adult bike. The result is that, measured at handlebar height, large SUVs built by vehicle-makers such as BMW, Daimler, Audi and Jaguar Land Rover, and pick-up trucks made by Dodge and Ford, already occupy a road width comparable to European-made trucks and buses⁵⁵ - while often carrying little more than one person. This adds to the public policy case for a revised width limit for light duty vehicles.

⁵⁵ See the [joint letter](#) from civil society organisations on the back-door importation of pick-up trucks into Europe through the abuse of the Individual Vehicle Approval process. Dodge RAMs are up to 208.5 cm wide without mirrors (~260 cm with mirrors).