

badvertising

Upselling Smoke

The case to end
advertising of the largest,
most polluting new cars





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Authors

Jamie Beevor and Leo Murray with Andrew Simms, Emilie Tricarico and Robbie Gillett.

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Executive Summary



- Rapidly increasing sales and market shares of larger, more polluting SUVs are jeopardizing climate goals in the UK and worldwide
- In 2019 alone, over 150,000 new cars were sold in the UK which are too big to fit in a standard parking space
- Consumer demand for these vehicles is actively shaped by the marketing strategies of automotive manufacturers
- The top 10 selling cars that fall into the 10% of the market with the highest model average carbon emissions are all SUVs
- Available evidence suggests that car makers are disproportionately promoting larger, more polluting SUVs due to higher profit margins on these vehicles
- There are clear parallels with advertising tobacco products, which is now banned in the UK by law in recognition of the serious harm these products cause to public health
- Advertising the largest and most polluting vehicles is likewise undermining public policy goals on climate change and should be regulated as part of meeting the UK's net zero target
- Advertising the 'dirtiest third' of new cars sold in the UK – comprising all cars in ranges with average emissions exceeding 160gCO₂/km – should be immediately legislated against, alongside advertising cars which are too large for a standard UK parking space
- Government should develop a strategy for a complete phaseout of all advertising for fossil fuelled private vehicles over the coming years
- The same logic applies to marketing and promotion of other high carbon goods and services, the consumption of which is exacerbating the climate crisis
- Whilst this briefing note looks in detail at the UK context, the approach outlined here should be applied in all territories where SUV sales are threatening climate goals

Introduction



This report looks at the global trend of rapidly increasing sales of larger, more polluting private cars, and the implications of this trend for climate change goals in the context of the UK automotive market. The analysis goes on to suggest one policy remedy that so far remains unexplored: curbs on advertising of the dirtiest vehicles, with reference to the clear similarities and legal precedent of legislation prohibiting advertising tobacco products in the UK.

Problem



The UK government's plan for reaching net zero emissions relies on British drivers quickly switching away from buying traditional petrol and diesel cars to cleaner electric vehicles (EVs) instead. That is now starting to happen, but there's a problem: we've been switching to buying SUVs even faster, and as a result the average carbon emissions of a new car sold in the UK have been going up instead of down for the past four years. The same problem is emerging in other markets around the world from Europe to the US to China¹. As the UK Energy Research Council have warned, meeting our climate change commitments means that "immediate action is also required to counter the rapid increase in sales of larger cars"².

Government plans for CO₂ emissions standards for new cars in the UK after Brexit³ have been designed to align closely with those of the EU, which commit car manufacturers to delivering a 37.5% reduction in CO₂/km by 2030 (from a 2021 baseline)⁴. This will not be sufficient on its own to get overall road transport emissions onto a trajectory which is capable of meeting our legally binding carbon budgets. Additional policy measures will therefore be required.

The trend towards bigger, more polluting car sales is being driven, worldwide and in the UK, by the marketing strategies of the big automotive manufacturing brands. Their combined might is daunting: in 2018 the automotive sector spent over \$35.5 billion on advertising worldwide, including \$1.2bn in the

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<https://www.iea.org/commentaries/growing-preference-for-suvs-challenges-emissions-reductions-in-passenger-car-market>

2

https://d2e1qxpsswcpgz.cloudfront.net/uploads/2020/03/ukerc_review_energy_policy_19.pdf

3

<https://www.gov.uk/government/consultations/regulating-co2-emission-standards-for-new-cars-and-vans-after-transition/co2-emission-performance-standards-for-new-passenger-cars-and-light-commercial-vehicles#mainchanges>

⁴ https://ec.europa.eu/clima/policies/transport/vehicles/regulation_en

UK alone⁵. Whilst the automotive industry prefers to characterise the shift to ever larger vehicles as a passive response to changing consumer preferences, this is disingenuous because it does not acknowledge the industry's own role in shaping those preferences through advertising in order to maximise profits.

For example, analysts say that Ford makes most of its profits from sales of large SUVs and pickup trucks, and breaks even or loses money on sales of smaller models⁶. From an amoral corporate perspective then, it makes sense that over the course of just two years from September 2016 to 2018 Ford went from a roughly 50/50 split in its US advertising spend between cars on the one hand and SUVs and pickup trucks on the other, to allocating 85% of its ad spend to promoting SUVs and pickup trucks⁷.

This period also coincides with the point at which the average CO₂ emissions of a new car sold in the EU stopped falling and began to rise. Vehicle fuel efficiency standards had previously yielded a steady year-on-year reduction in CO₂ from new cars since the turn of the century. But in 2016 this trend reversed – with the rapidly increasing market share of SUVs being the primary cause⁸. This worrying development is seen in automotive markets all over the world, prompting the International Energy Agency to warn in their World Energy Outlook 2019 that the trend towards bigger vehicles like SUVs is jeopardising climate goals, and is now the second largest contributor to the increase in global emissions since 2010, after power generation but ahead of heavy industry and aviation.⁹ Figure 1 shows how this has played out in the UK automotive market.

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<https://www.zenithmedia.com/wp-content/uploads/2019/03/Automotive-adspend-forecasts-2019-executive-summary.pdf>

⁶ <https://lga-consultants.com/seven-global-car-makers-kpis-part-3-profitability/>

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http://www.insideradio.com/free/ford-ad-spend-predicted-company-s-shift-away-from-cars/article_69c0c832-e65a-11e8-a609-5b56473df19e.html

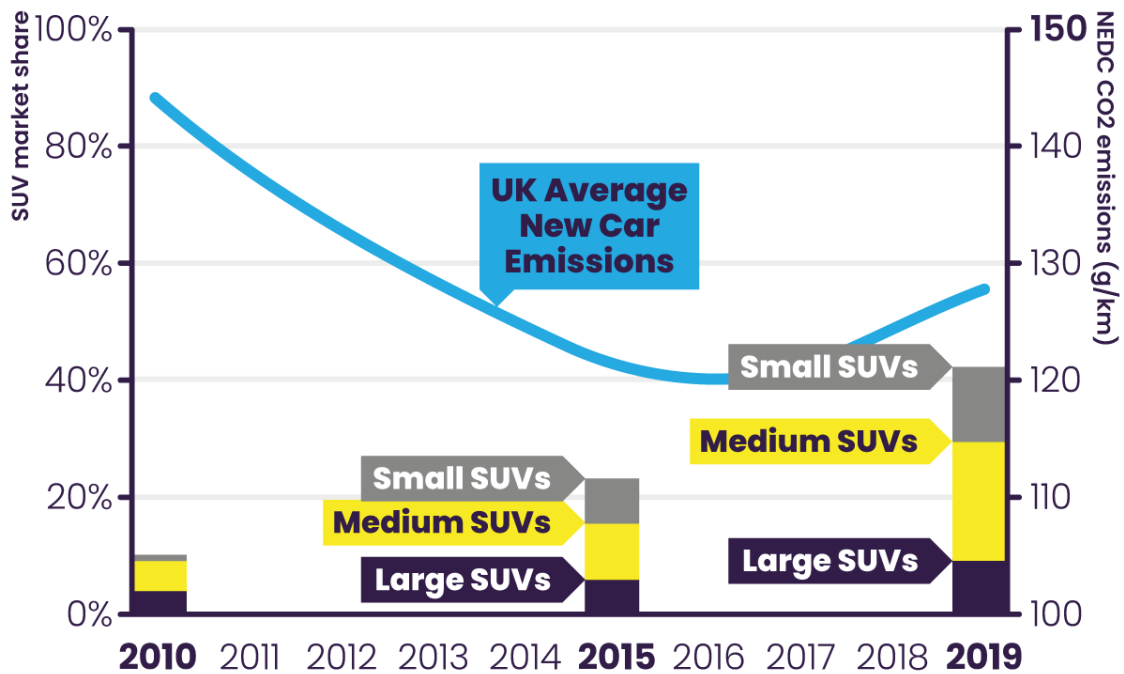
⁸ Although the switch away from diesel back to petrol vehicles following the 'Dieselgate' scandal did contribute to an increase in the average emissions from new cars, analysts at Transport & Environment estimate this effect to be an order of magnitude smaller than the effect of increasing SUV market share.

https://www.transportenvironment.org/sites/te/files/publications/T%26E_201909_Mission%20possible_vE.pdf

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<https://www.iea.org/commentaries/growing-preference-for-suvs-challenges-emissions-reductions-in-passenger-car-market>

Figure 1. UK Average New Car CO₂ emissions (NEDC) and SUV Market Share.



Sources: Society of Motor Manufacturers and Traders, analysis of EEA Monitoring of CO₂ emissions from passenger cars

Whilst UK sales of zero tailpipe emissions electric vehicles (EVs) have also grown in recent years, consumers have switched to SUVs at a much faster rate.¹⁰ Unless this trend is reversed, UK climate targets will become unattainable.

In addition, ‘size creep’ in new car sales is also exacerbating the crisis of urban public space brought on by the coronavirus pandemic. Our analysis found over 150,000 new cars sold in the UK in 2019 that were over 4.8m in length – physically too large to fit in a standard UK parking space. Many other models are so wide that it would not be possible to open the car doors in a perpendicular bay such as those typically found in car parks. Such excessively sized cars impose extra costs on society which are not reflected in the price of the vehicle. Whilst there are sometimes good reasons for owning an oversized vehicle, there is no good reason to

¹⁰ Analysis in late 2019 by Professor Jillian Anable at the Institute for Transport Studies found that for every one new fully electric vehicle sold in the UK in the last four years, 37 new SUVs hit Britain’s streets. The ‘SUV’ classification used in this analysis (the ‘dual purpose’ market segment) is narrower than the industry definition of SUVs we have used in this briefing note; this ratio would be even higher using our definition, which is based on manufacturers’ marketing literature (see below). https://d2elqxpsswcpqz.cloudfront.net/uploads/2020/03/ukerc_review_energy_policy_19.pdf

allow these cars to be actively promoted to consumers over smaller models.

The parallels between smoking and advertising climate-damaging activities like driving gas-guzzlers are close. Tobacco causes damage to the consumers, and tobacco companies benefit from the way that they hook their most loyal customers, and while, for example, SUVs are marketed as providing protection for drivers, their physical size, weight and pollution levels create a more dangerous and toxic urban environment for both drivers and pedestrians. Both too represent products seeking to create their own marketplace. Similarities don't end there, where cigarette smoke contains ingredients like benzene, nitrosamines, formaldehyde, hydrogen cyanide, polycyclic hydrocarbons and carbon monoxide, car exhaust has benzene, particulates, nitrogen oxide, polycyclic hydrocarbons and carbon monoxide.

The official recognition that public health policy goals could not be met whilst swimming against a tide of billions of pounds worth of annual advertising spend by the tobacco industry was a landmark moment in the fight against smoking-related diseases in the UK. With the dawning realisation across government and society of the very serious threats to human welfare represented by the climate crisis, it is past time to act on this understanding in the same way we did with tobacco - only on a much shorter timescale.

Solution



We propose an immediate end to advertising in all online, print, broadcast and out-of-home media of the 'dirtiest third' of new cars sold in the UK, as well as any cars which are too large to fit in a standard parking space. This would disallow advertising new cars with average emissions exceeding 160gCO₂/km¹¹ or with an overall length exceeding 4.8m.

Because the automotive sector tends to advertise ranges of vehicles rather than individual models, we propose using the average emissions of a range, by volume of new UK registrations in the most recent year of sales, to determine whether advertising that range should be permitted¹². For ranges that include fully electric models but whose average emissions exceed the threshold, the specific EV models would be allowed to be advertised, but the rest of the range would not.

We have selected this 160gCO₂/km threshold to begin with because it is growing sales of the least energy efficient vehicles which are dragging the average off target with respect to UK carbon budgets and international emissions standards, and it is here that new policy interventions in the automotive market are most urgently required. By ending advertising for these very high carbon vehicles we will remove a key driver for their growing market share. At the same time, forcing manufacturers to concentrate their advertising spend on smaller, more fuel efficient cars - as well as towards fully electric versions of higher end models - should help to create a pull towards cleaner cars as well as a push away from the dirtiest ones.

In the medium term, there is a strong case for ending all advertising of all fossil fueled personal vehicles. The government's statutory advisors, the Committee on Climate Change, have recommended a total phase out of sales of new internal combustion engine cars by 2030 to ensure the UK can meet its net zero commitments. Clearly advertising for

¹¹ Under the Worldwide Harmonised Light Vehicle Test Procedure (WLTP)

¹² For clarity 'range' here means e.g. Golf; 'model' here means e.g. GTI

new fossil fuelled cars should be phased out well in advance of this date. We therefore also propose that the government should develop a strategy and a regulatory pathway towards ending advertising for internal combustion engines altogether.

The history of campaigns against tobacco advertising provide a useful case study that should caution against self-regulatory approaches from industry. From the 1980s onwards, tobacco companies adopted a succession of voluntary agreements with governments to place health warning labels on packaging and restrict the quantity of their poster advertising. But many of these promises were never fulfilled, and voluntary measures were not enough to protect people's health. 23 years later, the Tobacco Advertising and Promotion Act 2002 would effectively prohibit cigarette adverts in the UK.

The parallels with the automotive sector here are striking. In 1998, manufacturers entered into a voluntary agreement with the European Commission which committed them to achieve a 25% reduction in emissions from new cars over the following ten years. But after a promising start, the agreement failed to achieve its targets¹³, and eventually the EU introduced new regulation mandating CO₂/km reductions from automobile manufacturers¹⁴. Although much of the industry's response has been to lobby for the targets to be as weak as possible, and to devise methods of cheating the tests¹⁵, it is clear that mandatory, legally enforceable targets have been far more effective at driving down emissions than voluntary agreements and self-regulation¹⁶.

With regards to polluting vehicles, our legally binding climate targets mean that we cannot waste decades on further dither and missed targets from the motor industry. Government must act now to protect consumers from being manipulated into making decisions which are manifestly against their own long term interests, as well as the wider public interest.

¹³ https://www.transportenvironment.org/sites/te/files/media/05-1_te_co2_cars.pdf

¹⁴

https://ec.europa.eu/clima/policies/transport/vehicles/cars_enhttps://ec.europa.eu/clima/policies/transport/vehicles/cars_en

¹⁵ <https://www.ft.com/content/2a123e88-9582-11e8-b747-fb1e803ee64e>

¹⁶

https://www.transportenvironment.org/sites/te/files/publications/T%26E_201909_Mission%20possible_vE.pdf

Technical analysis



NEDC and WLTP

There are two approaches to measuring emissions from passenger cars. The New European Drive Cycle (NEDC) is a standardised test procedure developed in the 1980s and used until recently to assess the fuel consumption, CO₂ and air pollutant emissions of new passenger cars. The intention was to measure vehicle fuel consumption and emissions under controlled conditions so that meaningful comparisons could be made between different vehicles.

Over time, the emissions measured by the NEDC test cycle have increasingly diverged from real world emissions tests, with the gap increasing from 9% in 2001 to 42% in 2016.¹⁷ Part of the reason for this gap is that the NEDC test procedure is not representative of real world driving but the manufacturers have also become much more adept at exploiting loopholes in the test procedure, as well as deploying new technologies which perform better under test conditions than in real life.¹⁸

In an attempt to address the disparity between real world and test emissions, the Worldwide Harmonised Light Vehicle Test Procedure (WLTP) was developed. WLTP was designed to be a better representation of real world driving and, on average, produces emissions results around 20% greater than the NEDC test cycle, making them closer to real world emissions, though still falling short. The process of changing from NEDC to WLTP commenced in 2017 and since April 2020, the use of WLTP figures has been required in all vehicle advertising.

¹⁷ <https://theicct.org/publications/laboratory-road-2017-update>

¹⁸

<https://www.transportenvironment.org/news/evidence-carmakers-manipulating-new-test-cheat-co2-targets-%E2%80%93-commission>

What is an SUV?

There is no hard and fast definition for what a Sports Utility Vehicle (SUV) is and the common theme that unites them is that they are vehicles which incorporate design elements of off-road vehicles.

In some cases (for example some of Land Rover's products) they are bona fide off-road vehicles which can handle rough terrain thanks to four-wheel drive, increased ground clearance, low range transmissions and differential locks.

In most cases SUVs are not at all suited to off-road driving and are essentially no different to conventional cars other than having taller, heavier bodies, 'rugged' design cues and being sold at a premium price. The increased size, weight and drag of these vehicles leads to higher fuel consumption and CO₂ emissions compared with conventional vehicles, as well as increased risk to pedestrians.

The market for SUVs has changed substantially over the years. In 2010 we estimate that around 200,000 SUVs were registered in the UK, accounting for about 10% of the market that year. Most of these were medium and large SUVs. Over the course of the decade, the market for SUVs quadrupled so that nearly 1 million SUVs were registered in 2019, with the biggest growth being seen in the small SUV market which has grown 15 times. During the same period the number of medium SUVs has grown four times and the number of large SUVs has more than doubled, to the point that 3 cars in every 10 sold are medium or large SUVs.

Table 1. Estimated registrations and market share of SUVs in the UK.

	2010		2015		2019	
	Registrations	Market Share	Registrations	Market Share	Registrations	Market Share
Small SUV	18,427	1%	200,618	8%	277,729	12%
Medium SUV	109,262	5%	253,275	10%	480,008	21%
Large SUV	80,891	4%	160,565	6%	213,700	9%
All SUV	208,580	10%	614,458	23%	971,437	42%
Non-SUV	1,814,072	90%	2,007,848	77%	1,333,121	58%
All Cars	2,022,652		2,622,306		2,304,558	

New car CO₂ emissions

The data set underpinning this analysis is the European Environment Agency’s Monitoring of CO₂ emissions from passenger cars data¹⁹ which is used to monitor progress towards compliance with the European Union’s new car CO₂ emissions legislation.

This database contains information about all cars registered in the European Union and includes data on the manufacturer, model, variant, fuel type, engine power, CO₂ emissions, wheelbase, axle track and vehicle mass.

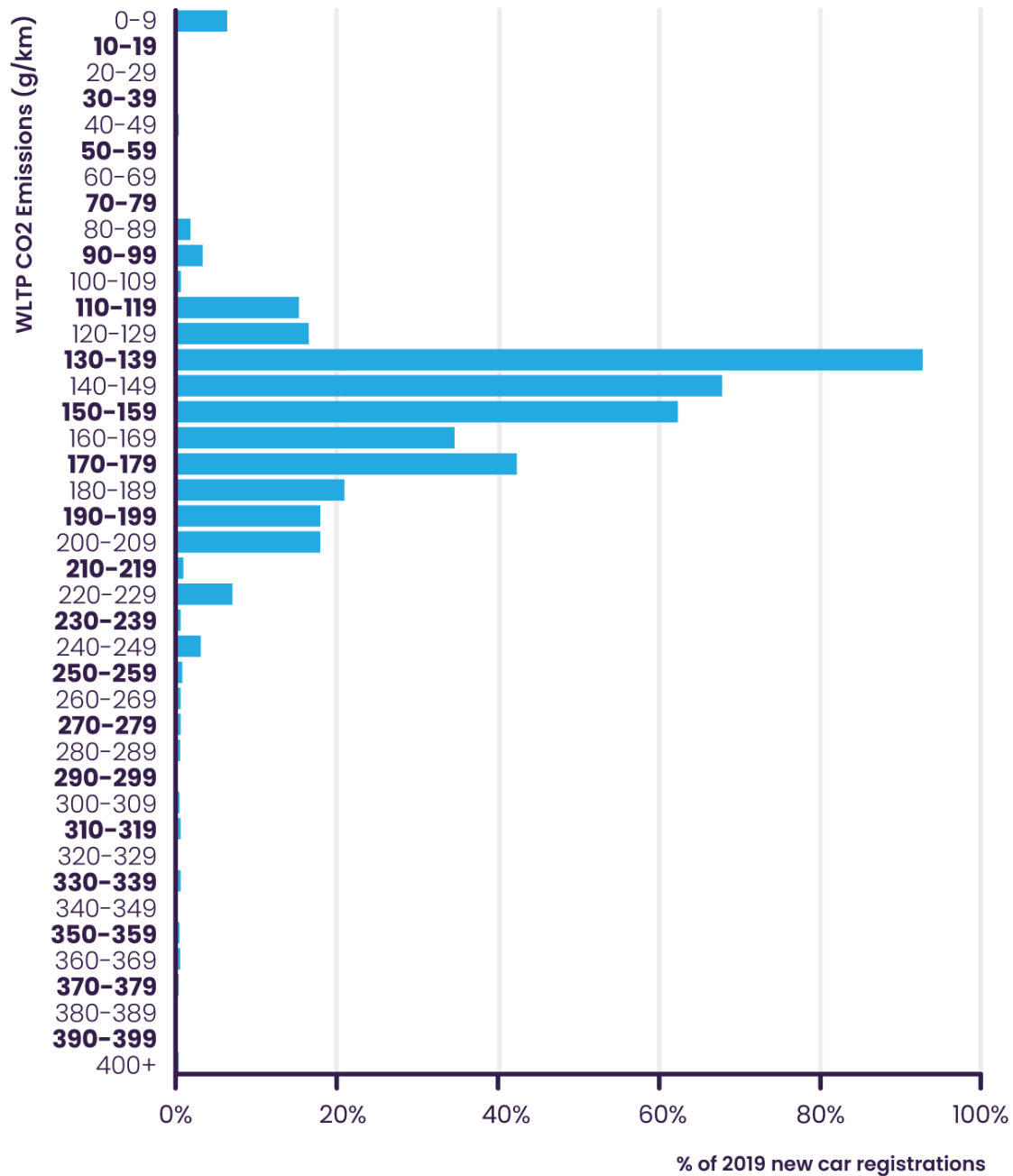
In order to undertake the analysis it was necessary to clean the data, taking detailed model and variant information (e.g. Golf SE Navigation TSI EVO) and reducing it to the appropriate model (e.g. Golf) for each of the more than 2 million vehicles sold in a given year in the UK. This process groups high CO₂ variants of vehicles with the vehicle on which they are based (for example the Audi S3 would be grouped with the Audi A3) and also combines lower emission drivetrains (for example battery electric and hybrids) with internal combustion engine

¹⁹ <https://www.eea.europa.eu/data-and-maps/data/co2-cars-emission-18>

powertrains in order to estimate average emissions for the whole model range.

Once this process was completed it was possible to allocate each vehicle model to a CO₂ 'bucket' using the model average emissions in order to develop a view of the distribution of the market:

Figure 2. Distribution of registrations by model average WLTP CO₂ in the UK in 2019.



This distribution could then be used to set a threshold model average CO₂ emission level which would restrict advertising

of vehicles that exceed it. A threshold of 160gCO₂/km WLTP or more would apply to slightly more than half of the approximately 400 models which were sold in the UK in 2019. As many of these models are sold in low volumes, this equates to the third of the market, in terms of registrations, which has the highest CO₂ emissions.

In addition to this process we wanted to be able to identify which vehicles were SUVs in order to establish how many were being sold, what type of SUV they were and what their emissions and dimensions were.

In order to achieve this we derived a market segmentation based on the classification found on the car review website What Car? This classification divides SUVs into Small (with an overall length up to about 4.3m), Family (between about 4.3m and 4.5m) and Large (over 4.5m).

From the data set we could now identify the extent to which SUVs make up the most polluting vehicles. The top 10 selling cars that fall into the 10% of the market with the highest model average emissions are all SUVs:

Table 2. Top 10 vehicles with average WLTP CO₂ emissions in the top 10% ranked by registrations in the UK in 2019

Rank	Manufacturer & Model	WLTP CO ₂ (g/km)	Registrations
1	Land Rover Range Rover Evoque	188	23,230
2	Mercedes-Benz GLC	193	19,363
3	Land Rover Discovery Sport	204	17,111
4	BMW X3	196	16,188
5	Audi Q5	192	13,130
6	Land Rover Range Rover Sport	225	12,911
7	Jaguar E-Pace	197	11,492
8	Jaguar F-Pace	198	10,104
9	Land Rover Range Rover Velar	199	9,958
10	BMW X5	209	9,680

Vehicle Length

In addition to calculating the average CO₂ emissions by vehicle model, we also made use of the wheelbase data contained in the EEA data set in order to establish which vehicles do not fit into a standard UK parking space of 4.8m in length.

The wheelbase is the distance between the front and rear vehicle axles and is a useful proxy for overall vehicle length. An analysis of the relationship between overall vehicle length and wheelbase of the top 5 selling vehicles in each of SMMT's nine market segments found that the proportions of modern vehicles are relatively consistent, with larger vehicles having an overall length around 67% greater than the wheelbase. This allowed us to identify which vehicles were likely to exceed 4.8m in length and this was confirmed using manufacturer specifications.

The analysis revealed that over 150,000 vehicles registered in the UK in 2019 had an overall length of 4.8m or more, making up around 7% of the market. Whilst some of these are 'multi-purpose vehicles' like people carriers for large families, a market segment in which practicality is the key concern, the list of top selling oversized vehicles is dominated by SUVs, Luxury and Executive cars.

Table 3. Top 10 vehicles exceeding 4.8m in length ranked by registrations in the UK in 2019

Rank	Manufacturer & Model	Registrations	Overall length (mm)
1	BMW 5 Series	18,710	4,936
2	Mercedes-Benz E-Class	22,119	4,933
3	Land Rover Range Rover Sport	12,910	4,879
4	Audi A6	10,945	4,939
5	BMW X5	9,680	4,922
6	Volvo XC90	7,821	4,953
7	Land Rover Discovery	6,910	4,956
8	Land Rover Range Rover	6,213	5,000
9	Audi Q7	5,021	5,063
10	Ford Tourneo	6,562	4,973

Air Quality

In 2019, 55% of diesel vehicles sold were SUVs and most of these diesel SUVs were in the medium and large categories:

Table 4. Fuel mix by vehicle type in the UK in 2019.

Fuel	Large SUVs	Medium SUVs	Small SUVs	All SUVs	Non SUVs	All Cars
Diesel	57%	39%	11%	35%	21%	27%
Petrol	33%	61%	86%	62%	76%	70%
Petrol/Electric	7%	0%	2%	2%	1%	1%
Electric	3%	0%	1%	1%	2%	2%

The vehicles registered in 2019 would have been required to comply with the European Union's Euro 6 standards, the industry has been struggling to meet these in real world driving conditions.

While the Euro 6 standard allows Oxides of Nitrogen (NO_x) emissions for diesels to be a third higher than for petrol cars²⁰, tests of real world NO_x emissions from diesel cars have found diesel cars to have NO_x emissions nearly 5 times those of petrol cars and 6 times the level allowed by the Euro 6 standard²¹. NO_x emissions lead to the formation of the pollutant NO₂ and as such are one of the principal human health risks from vehicle emissions.

In order to address this problem the European Union has had to instigate Real Driving Emission tests which monitor emissions under real world conditions and had allowed manufacturers to exceed the standard by a 'conformity factor' of 2.1, reducing to 1.43 in 2020.

Emissions from diesel cars remain a serious problem for the air quality in our towns and cities and the increasing popularity of diesel-fueled medium and large SUVs exacerbating the issue.

²⁰ <https://dieselnet.com/standards/eu/ld.php#stds>

²¹ <https://theicct.org/publications/on-road-emissions-paris-201909>