

First Discussion Draft: Reforming Road Vehicle Taxation

1 Context and Timescale

This paper is the first in a series covering some of the more detailed aspects of transport taxation, in particular those with the overall purpose of encouraging more sustainable travel, both for people and goods. It is also clear that the increases in public borrowing from the 2008 recession and Covid 19 and the impact of recent inflationary pressure have combined to make the financial context extremely tight for both Government and public alike. The obvious point is that some charges to discourage unsustainable behaviours tend to generate Government income in the short to medium term. How this impacts families and individuals will depend on how that money is used: either to avoid regressive tax increases elsewhere or possibly to be returned more directly.

The overall approach for all the papers in this series will be to consider three basic timescales:

- 1 the annual fiscal event in the Autumn
- 2 the life of a parliament (say 4-5 years)
- 3 parliament plus – a longer term of over 5 years

2 Introduction and Summary

Overall the system is surprisingly complicated, especially for HGVs, out of date and in many cases poorly related to government policies. It is however a major source of income for the Government. While the achievement of sustainable transport outcomes is the focus of this report it has to be seen in the context of other priorities such as economic growth but also in the overall fiscal context. It is self evident that this is one of severe pressure on taxation, income and borrowing.

While the concept of balancing the books is easy to understand, the growth impacts of fiscal policies for transport are much more complex. They depend on a range of assumptions – for example whether user charging should reflect direct costs. If users do not pay their costs these will have to be met elsewhere. In this context the use of Heavy Goods Vehicles (HGVs) is a well known example. While road maintenance has traditionally been under funded and surface damage largely attributed to HGVs, charging for road use by these vehicles has been very poorly related to such costs. Other costs ranging from congestion to emissions from engines, brakes and tyres are not being met.

As regards passenger travel, the key question here is less about economic growth and more about tax income. Most responsible commentators from the Transport Planning Society to the Institute for Fiscal Studies have identified the fall in fuel duty revenue caused by the electrification of cars and vans as not just serious but at the scale of the pension impacts of an aging population. The sooner this is recognised by Government the better. Fears over public reaction to policies such as Low Emission Zones or the Manchester road user charge need to be addressed – and that means enabling a full discussion sufficiently early in the

process of change to achieve genuine engagement – i.e. open to new ideas. That very debate should be a means of opening out the issues and the facts of the case.

In a sense that is the easiest recommendation of this report. The Chancellor should recognise publicly that the fall in fuel duty is a very significant loss which must be addressed. She should open up the debate on how to do this, starting by saying nothing is set in stone and separating out the arguments about congestion charging (the most efficient in terms of classical economics) from a simpler pay as you go system, for example based on distance alone. The fact that people are likely to react rather badly if they get caught in congestion unpredictably and are then charged for it is a good example of how classic economic theory can conflict with real life.

Meanwhile the long run reduction in fuel duty caused by cancelling the inflation linked rise, and the 5p Covid concession, should not be continued. This is sold as a political give away but has damaged transport policy as well as the Exchequer.

The social impact has been studied for as long as this problem has been identified and the basics remain that better off people drive more and the least well off have low car ownership. This is clear from the data set out later in this report.

The report goes on to give more detail on individual proposals but the recommendations can be summarised as follows:

Next fiscal event

- 1 A debate about how best to replace fuel duty should begin as soon as possible
- 2 At the next fiscal event the fuel duty concession should be removed
- 3 The level of fuel duty should be inflation linked
- 4 Government policies to encourage EV purchase need tax changes in the context of the reduced obligations on manufacturers: the first year VED should be adjusted to provide a smoother increase according to emissions
- 5 LGVs (including vans) should be brought into the first year VED system to encourage EV uptake and more efficient vehicles generally
- 6 Zero emission LGVs should have a concession on annual VED, other rates should rise to ensure an overall rise in income linked to inflation
- 7 HGV taxation needs to more realistically reflect their road costs, first by simplifying the system and increasing the HGV levy (paid by foreign as well as UK HGVs)

Within this Parliament

- 8 Increasing the HGV levy would be a pre-cursor to implementing a weight/distance based system using existing technology and building on the work already done by DfT
- 9 Implementation of a new method of charging for road use would begin resulting from the national debate on the future of passenger vehicle taxation (including VED, fuel duty and cost of charging EVs)

Longer term

- 10 Full implementation of the new national road user charging framework

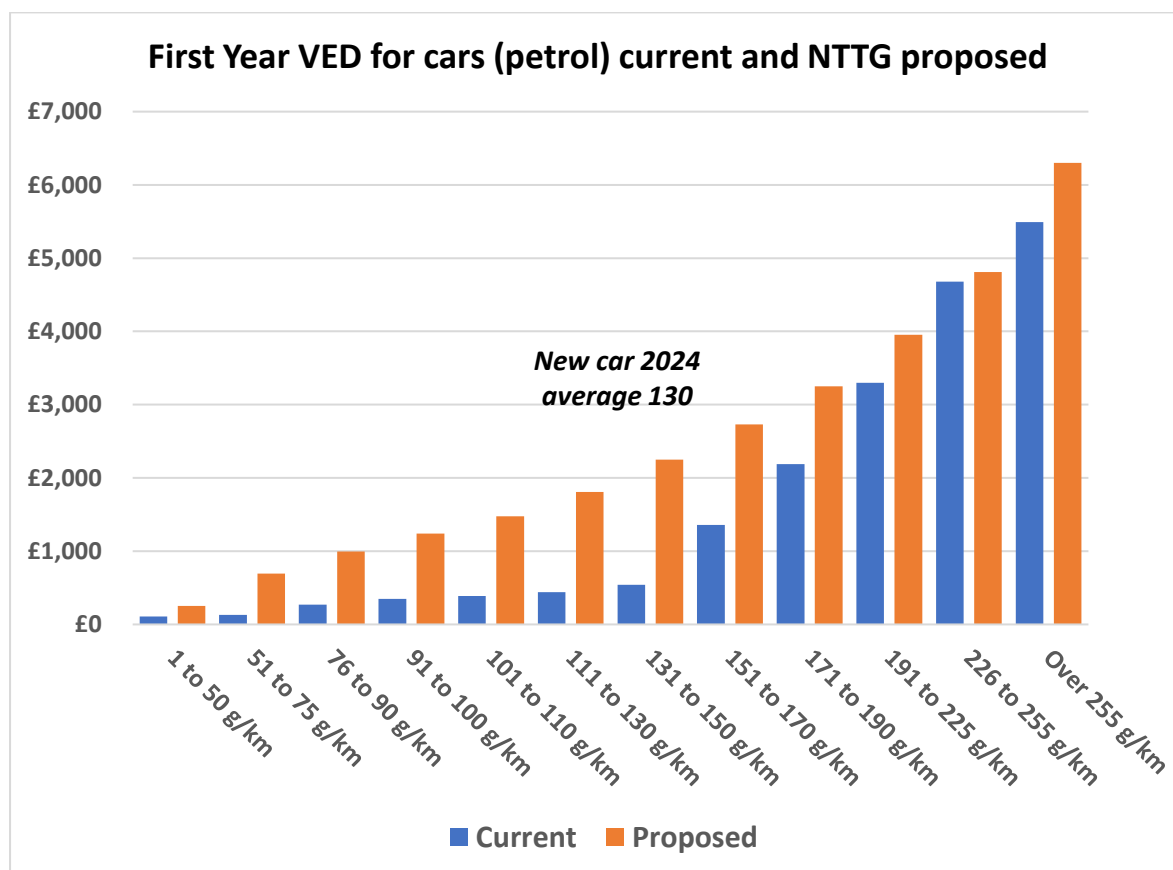
3 Passenger cars and VED

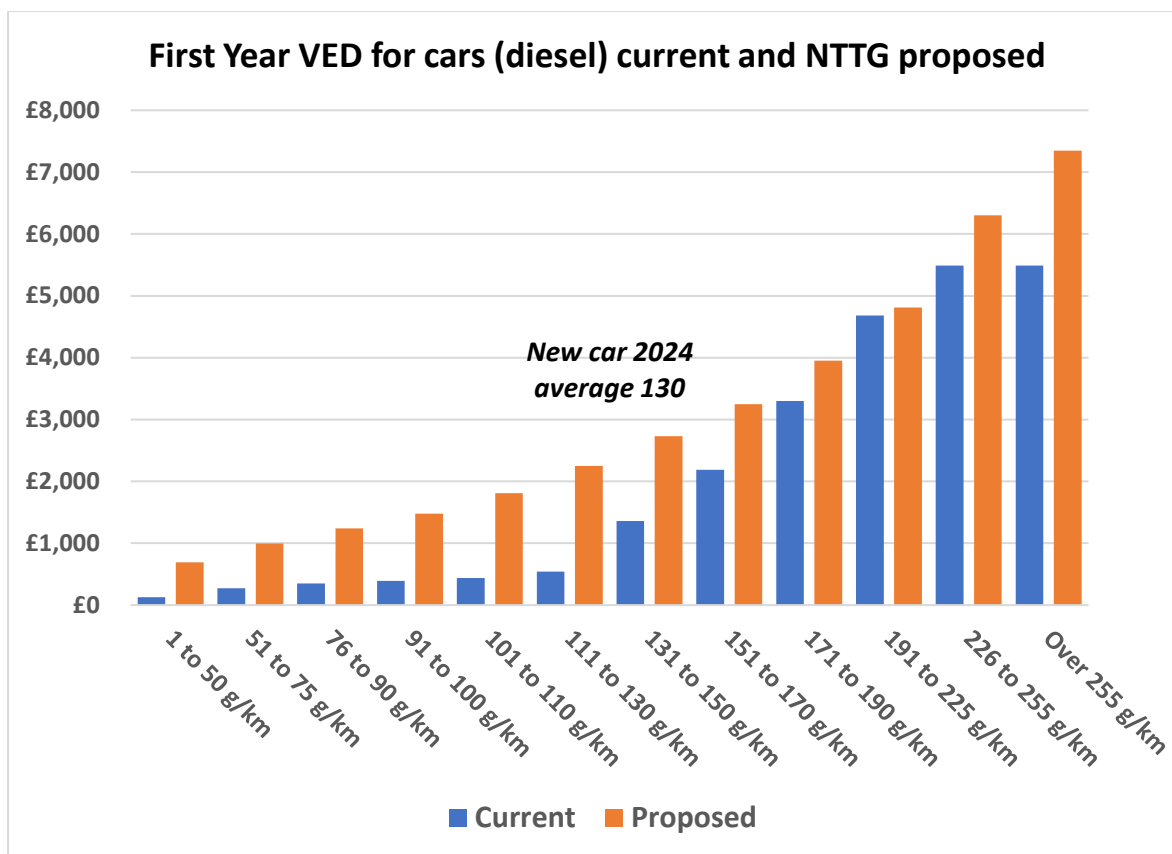
First year and annual Vehicle Excise Duty for cars

Cars are responsible for about 60% of road transport CO₂ emissions¹ and a range of other pollutants. In the current system there are two types of VED: one for the first year and another for each subsequent year. The latter has been subject to some variation so that vehicles registered between 2001 and 2017 have annual rates of £20 to £760 according to CO₂ emissions. After that date the annual charge is fixed in two bands, a standard rate of £195 and a higher rate of £620 for years 2 to 6 for vehicles costing more than £40,000. It then falls back to the standard rate. The latter appears to be more revenue raising than policy driven.

On the other hand, first year VED is strongly related to CO₂ emissions: ranging from £10 for zero emission cars to £5,490 for those consuming very high amounts (relatively small in number). However the increase in the charge only rises slowly in the middle range of emissions where many cars are bought: around 130gms/km. For context, about 1.95 million cars were sold in the UK in 2024.

The NTTG approach is designed to balance the April 2025 Government amendment to the Zero Emissions Vehicle (ZEV) mandate, which increases emissions to 2050 by 4.2 million tonnes CO₂e². The proposal is to smooth the transition up the fuel consumption curve using a simple plus one formula³. This is shown in the chart below, first for petrol cars, then diesels.





It is not considered that there is any reliable elasticity information to predict how the exact impact would be spread between people acting without changing their purchases (inelastic) or changing so much that there was no extra income and instead a substantial reduction in emissions over the lifetime of the vehicles (i.e. in the crucial period up to 2025). In other words the lower the income the higher the CO2 reductions.

One reason for the difficulty in assessing the impact is how new vehicles are purchased. About 60% of purchases are made by fleet buyers, 2% by other business users⁴. For private buyers the first year charge is often rolled into a monthly finance package which is the dominant means of purchase (80-90%)⁵ so may be less well perceived. These deals are becoming more transparent however and the proposed new 1st year VED could become more visible especially if contrasted with EVs as part of the Government's ongoing public information campaign.

To provide at least some parameters for the financial impact, a figure for new sales was derived by subtracting the total cars registered in 2024 from those in 2023. It was then assumed that purchasing patterns continued without change to create a maximum income. This resulted in a £2.3billion increase in revenue. Data is being sought to refine this figure but given other uncertainties is a good base estimate. It would clearly decline increasingly over the next 10 years (to 2035) while manufacturers switch to EV production. This would be balanced by a longer term acceleration of the loss of fuel duty, compensated for by increasing and then reforming fuel duty.

4 Light Goods Vehicles VED

There are about 350,000 new LGVs registered in the UK each year. The latest data⁶ shows average emissions for these is 85% higher than for cars, as might be expected given the greater weight. In terms of potential carbon emissions between now and 2050 they are significant at about 19% of road transport and will be rising given that cars are electrifying faster. At the moment battery powered LGVs are just over 8% of new sales while the equivalent for cars is 21%. Given this there seems to be no clear justification to keep LGVs outside the 1st year VED carbon based system.

The inclusion of LGVs in the 1st year system would, as with cars, generate extra income or move companies towards more efficient vehicles. Given e-LGV manufacturing capacity this does not mean an immediate large scale move to new zero emission vehicles. However any improvement in average efficiency of all new purchases will have significant ongoing carbon benefits. Data for sales of LCVs by emissions is being sought to provide a similar estimate for revenue for that from cars. However, using average emissions rather than the detailed categories gives an approximate figure of £0.7billion. This would be balanced by a longer term acceleration of the loss of fuel duty. As with cars this is intended to be compensated for by increasing and then reforming fuel duty.

There remain some oddities in the LGV tax rates, in particular the concessionary rate for Euro 4 and Euro 5 emission standard vehicles registered at various dates up to 2010 (£140 compared to the standard £345). Both of these standards are well out of date and the number of vehicles must now be small. This creates the illogicality that LGVs with worse pollution standards than currently in force (Euro 6 since 2015 and Euro 7 about to be introduced) pay lower annual VED. Providing there is no legal obstacle these concessions should be removed and instead this concession for early adopters transferred to zero emission LGVs registered between now and 2030. In order to compensate and achieve an increase in overall revenue, the non-zero emission LGVs VED would rise by £50 a year.

There remains the category of private/light goods which is both cars and LGVs registered before March 2001⁷. No change is proposed.

All of these figures are based on existing rates (April 2025 to April 2026). It is proposed that these are raised in line with inflation from April 2026.

5 Fuel duty and VAT

Revenue from fuel duty in 2024 was about £25billion, plus VAT, amounting to £30billion. There is about another £6 billion of VAT collected on the fuel itself. While it is hard to predict exact take up rates for electric vehicles, NTTG calculations based on the ZEV mandate suggest this will fall by about £5billion by 2030 and even more rapidly thereafter. RAC Foundation modelling based on slightly earlier data but with more variation in the assumptions used produced a central forecast close to this figure (£5billion by 2028)⁸. It is already lower than it would have been in this financial year by about £900million.

In addition, the “temporary” reduction in fuel duty of 5p per litre has been continued as a Budget give away every year since it was introduced. The OBR estimated a loss of £65billion between 2011 and 2022 of the 5p concession alone.

Various sources have drawn attention to both of these issues, including the Transport Select Committee in its 2022 report, which estimated a fuel duty loss of £35billion by 2050, and a wide range of independent bodies such as the OBR, IFS, RAC Foundation and TPS. The seriousness of this issue is not matched by any proposed Government action to date.

The proposal in this report is for the Chancellor and the Secretary of State for Transport to start a national discussion on a replacement for fuel duty as soon as possible and certainly at the next fiscal event this year. There are many detailed proposals in existence, for example reports from the bodies listed above, and the Wolfson Economics prize winner as far back as 2017⁹. As well as an open minded approach in line with the Gunning principles it must address the differences between simpler distance based schemes which are very similar in impact to fuel duty and the more complex congestion based variants. The key commitment must be that a package of measures must be settled and implemented as a result. Transition will be a major issue and it is unlikely that a new system could be fully in place by the end of this Parliament. However it could be agreed and begun. Charging for HGV road use is considered separately later in this report and could be implemented far more quickly and within the Parliamentary timescale.

In the mean time the 5p concession must be removed, and the fact that fuel duty has not been raised in line with inflation addressed. The failure to do this has meant a restoration of value would probably require a 25p increase but this would be disruptive if applied in a single Budget. Phasing it in could take beyond the life time of a Parliament and, more importantly, interact with proposals for its replacement. A rise of inflation + 1% per year is proposed, based on 2024/25 rates plus the 5p. This would be reviewed in light of the proposals arising from the national discussion on paying for road use.

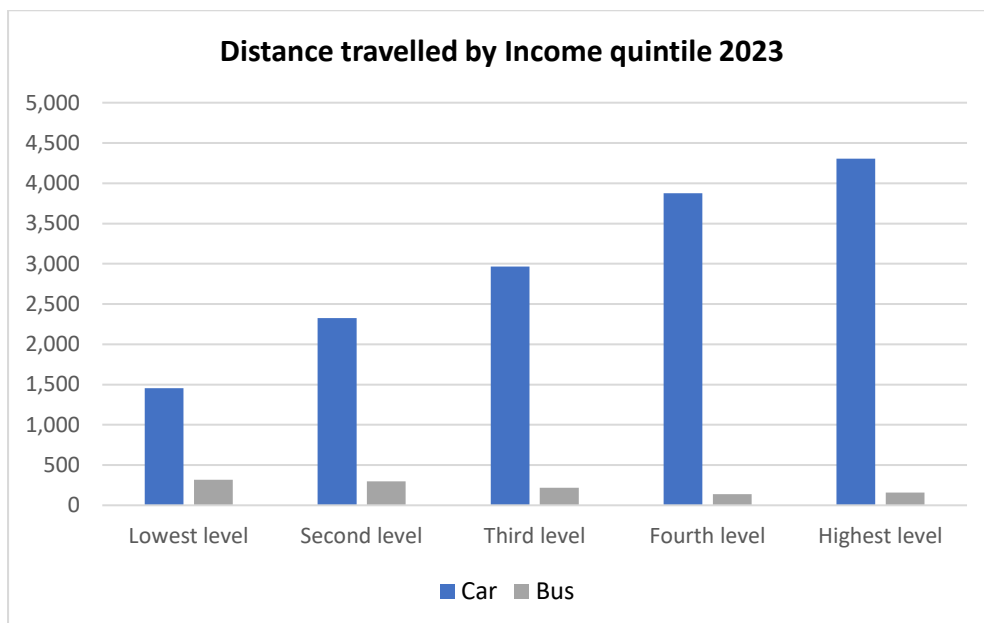
Thus the proposal for fuel duty from April 2026 is 60.85p per litre. This would raise about £4.5billion more than in the financial year 2025/26. This of course would have negative impacts on people who use cars. However the facts are that better off people drive more and high number of the less well off don't have a car. The two following charts illustrate this point¹⁰.

The only problem with this is the impact on inflation which could rise by about 0.3% in 2026 if cars, LGVs and HGVs are included. This is based on the OBR estimate for continuing the concession in 2024/25¹¹.

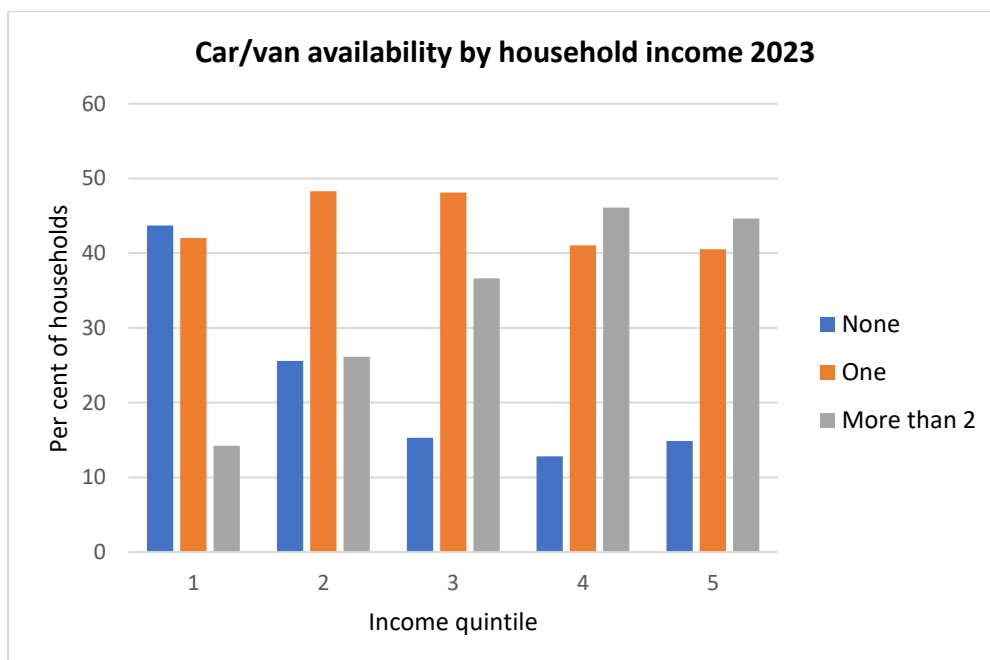
This reflects the Government's commitment not to raise non-consumer taxes on basic income. However, any alternative tax which impacts consumer prices will have an inflationary impact. This includes taxes such as VAT but also employer national insurance which has a less direct impact. One way round this effect is to balance the inflationary impact by reducing another consumption tax but with a clearly beneficial social impact. An

obvious way of doing this would be through the VAT system, targeting items which will benefit the less well off or as part of strategy such as child poverty. Other options in transport would include maintaining lower bus fares.

The first chart illustrates how distance travelled increases with income. Bus use is shown to illustrate that reducing bus fares has social benefits as well as encouraging less polluting ways of travelling. The second shows how many lower income households do not have access to a car.



Source: NTS Table 0705



Source NTS Table 0703

6 Heavy Goods Vehicles (HGVs) VED and the Levy

The current system for HGVs is complex and does not reflect a number of factors which have been discussed extensively since the 1970s debate on road track costs¹². It has two main parts (there are a lot of individual categories)¹³:

- Traditional VED (paid by UK owners)
- The HGV Levy (paid by all users including those from abroad)

HGVs are obviously larger but have a disproportionate impact on third party costs such as congestion and road maintenance – the damage caused by their very heavy axles increases exponentially with the 4th power law. This makes them responsible for most of the maintenance costs from this source. Other pollutants such as particulates also rise with weight. Overall CO₂ emissions from HGVs are about 19% of road transport emissions and this proportion will rise as cars and vans are electrified.

There have been discussions over how to improve this situation for some time and many countries in Europe have successfully implanted a weight distance charge which is now going EU wide¹⁴. It was actively considered by DfT in the early noughties with a Lorry Road User Charge (LRUC) scheme due for implementation in 2008. This was abandoned as part of the decision not to proceed with wider road user charging. After this a simpler scheme was proposed and this is the origin of the current HGV Levy, introduced in 2014.

One fact which reflects a lack of charging on use is how much empty running and part loading is carried out by HGVs. They run empty for 30% of their time¹⁵ and this has if anything got slightly worse over the years. Encouraging improved load efficiency, on economic and environmental grounds, is one aim of any LRUC scheme.

At the moment VED and the Levy variously reflect weight, number of axles and engine pollution (through the Euro standards) and whether the HGV is rigid or articulated. The two are added together to provide the total to be paid by UK owners. Non-UK users pay only the Levy, based on 3 weight categories and two emission standards (Euro 5 and 6)¹⁶. It can be paid annually or shorter periods. The day rate is 2% of the annual but the heaviest HGVs are capped. This is probably a hangover from EU rules limiting the daily rate at the time.

The Levy was suspended for 3 years (2020-2023) as a result of Covid, and when it was reintroduced was drastically simplified. Originally, to reflect road damage, there were 132 weight and axle categories, although only 7 charging rates (plus some for specialised units). The new system had only 3 categories, plus a discount for less polluting engines. While not quite directly comparable, it is now less in cash terms than it was in 2014¹⁷ and less reflective of road costs due to the limited categories.

The VED element is by contrast still very complex and combined with the Levy has hundreds of potential categories. This reflects the DVLA registration data¹⁸ which also has hundreds of categories often with single vehicles in them. Fortunately many of the VED categories have the same rates and some are for specialised vehicles with low numbers actually registered.

This brings the main combinations to less than a hundred: 18 for VED combining with 6 for the Levy.

This report proposes major simplification and rationalisation: moving the revenue emphasis towards the Levy, reforming it in preparation for a use based charge, and drastically simplifying the VED element.

The key mid term (single Parliament) proposal is to replace the HGV Levy and VED with a distance based charge varied by gross vehicle (plated) weight (GVW)¹⁹. This would apply to all HGVs over 12 tonnes GVW. A discount for the old Euro 6 standard is no longer appropriate and should be replaced by one for adopters of Euro 7 which is about to come into force (2027). The LRUC could be implemented within a Parliament but would have to undergo consultation and technical definition so the timetable is tight. However there is much established 2nd generation technology, work undertaken by DfT for the 2008 proposal and subsequent reports²⁰.

In the mean time the Levy should be reformed at the next fiscal event. The aim is to make it provide a greater proportion of revenue from both UK and non-UK users and to better reflect road damage and environmental impact. It would also pave the way to a weight distance charge. The reform would allow for some catch up in terms of inflation to better meet HGV road costs. The target would be around £2billion.

In terms of the reforms three options emerged. The first was to update the Levy by inflation, drastically simplify VED and move some of it to the Levy. On reflection this doesn't address the issue that the Levy is designed to capture the higher costs of road use more directly. Using some of the data in Appendix 2 new rates were constructed, one using a multiplier on standard car based VED reflecting size, area and a safety component, the other related to average damage based on axle weights.

As with any HGV taxation approach using average figures is problematic. Goods vehicle operation is very diverse, subject to commercial and security issues with distances varying hugely. Nowadays technical changes such as raising or lowering axles so the weight distribution changes create further complexity. The proposals here only claim to make significant improvement on the current confused and ineffective system and to better reflect true marginal cost. A distance based charge would improve the situation further.

In addition simple comparisons have been made of road space occupied, in terms of length, height and width for the largest rigid and articulated vehicles. The thinking here is that road space relates to area (Width X Length), visual intrusion relates to the face on view (Height X Length), and severance relates to overall size (W x L x W). These provide upper bounds. However, registrations are actually quite concentrated at the upper limits.

It is also possible to compare involvement in road casualties for all HGVs over 3.5 tonnes with passenger cars using available data but not in greater detail. The Table and chart below sets out the result of those comparisons.

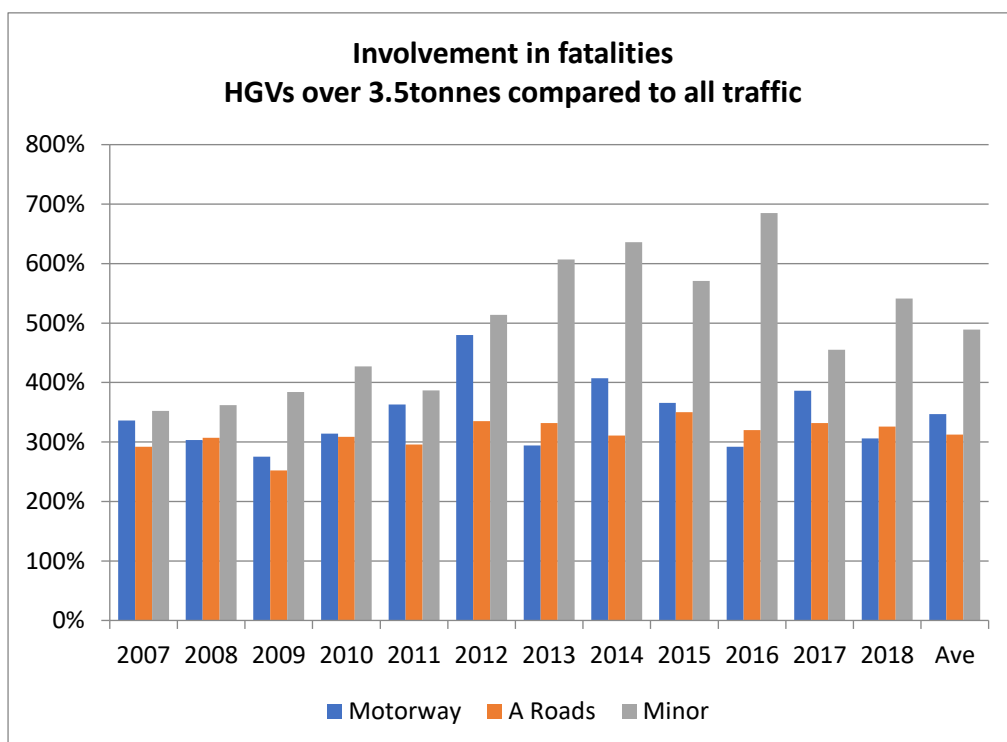
Table X: Factors comparing HGVs to cars

Type of impact	Level of impact relative to cars
Fatal casualties (all >3.5 tonnes)	3.1 to 4.9 (across road types)
Visual (Height X Length) Artic	5.6
Visual (Height X Length) Rigid	4.1
Static road space (Width X Length) Artic	4.9
Static road space (Width X Length) Rigid	3.5
Volume (W x L x W) Artic	7.3
Volume (W x L x W) Rigid	5.3
HGVs moving in traffic stream <i>As well as methodological issues the definition of an HGV is usually very wide and includes much smaller vehicles than those in this report</i>	Diverse values of 2.3 to 7 (pcu) have been suggested depending on methodology and road type, level of flow and weather ²¹

Source: MTRU using car data from Autocar²² and Nimblefins²³ and HGV from DfT²⁴

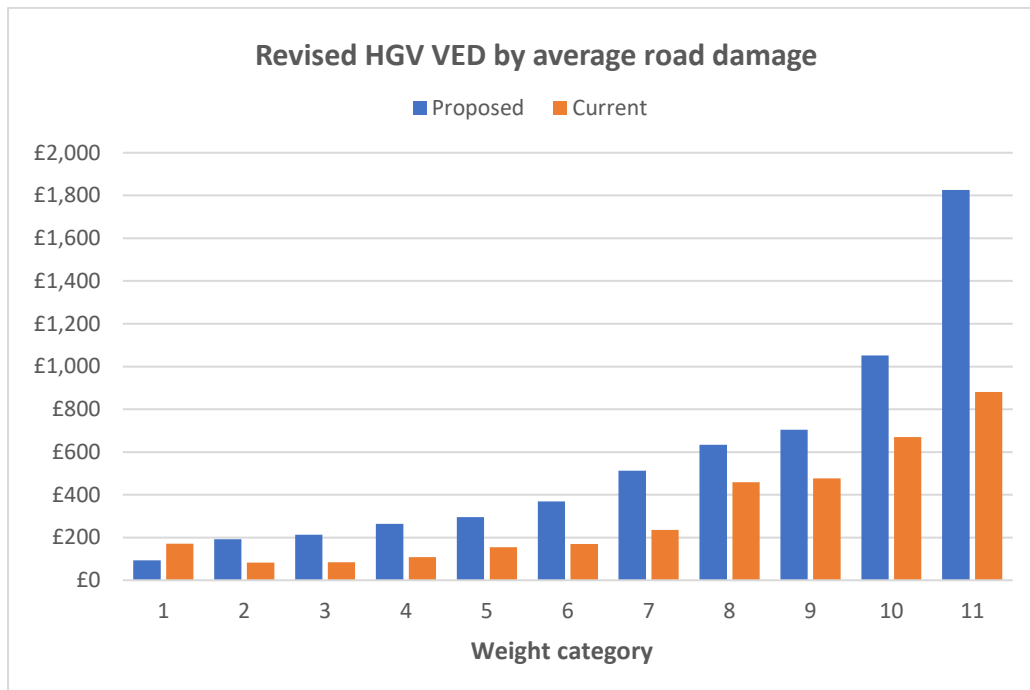
Using the average results from the table apart from moving traffic suggests a multiplier of 4.3 for rigid HGVs over 12 tonnes and 5.9 for artics.

The chart below shows a 12 year average for fatal involvement rates for HGVs.

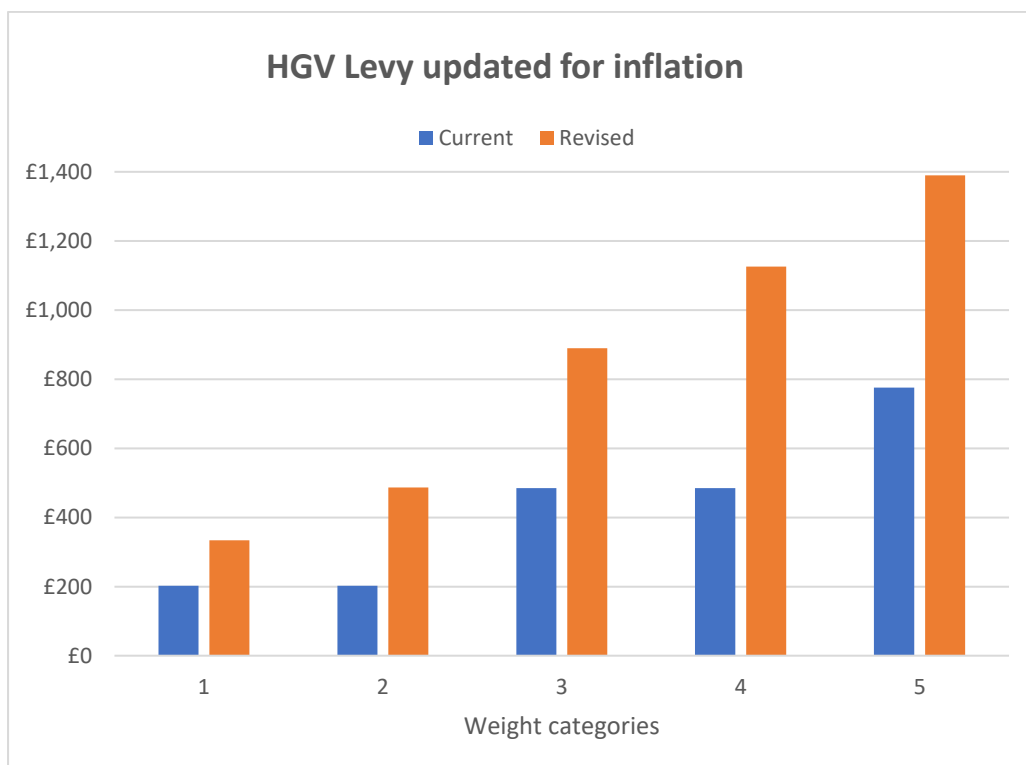


Source: Traffic statistics table TRA0104, Accident statistics Table RAS 30017, both DfT

The next chart shows the impact of adjusting the current annual VED to better reflect road damage. The second shows a calculation based on restoring the Levy to 3 categories and updating in line with inflation.



Source: MTRU calculation based on V149/1, HGV maximum weights and average number of axles²⁵ and the 4th power law



Source: MTRU calculation based on 2014 Levy Rates¹⁶ and BoE inflation calculator (CPI)

Proposed way forward

Given that the Levy is targeted towards road damage and pollution it seems odd to make it so simplified while making the basic VED so complex and often lacking clarity in how the categories have evolved. One option is to base VED on how much more the larger HGVs impact on a range of factors compared to a car. This could have four categories only as below.

Vehicle type	Average factor basis	Previous Levy for Euro 5
Rigids 3.5-12 tonnes	£364	N/A
Rigids over 12 tonnes	£729	£202-486
Artics	£1,003	£202-776
Discount	50% (EV)	20% (Euro 6)

This sum would be added to the Levy but derived from the average road damage chart. The categories and Levy rates for artics are shown below. The old equivalent for VED is shown to show the impact of the methodology.

Gross Weight tonnes	New Levy	Previous VED (average in category)
3.5 to 12	£195	£171
12 to 22	£195	£83
22 to 23	£213	£84
23 to 25	£265	£108
22 to 26	£295	£154
26 to 28	£369	£170
28 to 31	£512	£235
31 to 33	£634	£459
33 to 34	£704	£476
34 to 38	£1,052	£670
38 to 44	£1,825	£881

As at present: Day rates would be 2% of annual. Weekly rate 5%, Monthly rate 10%. Instead of a maximum there would be a minimum £5 day rate.

Both of these charges would be rolled into the weight distance charge which would also allow for discounts for the lower Euro7 pollution standards and electrification.

References and notes

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- ¹ For 2022: <https://www.gov.uk/government/statistics/transport-and-environment-statistics-2024/greenhouse-gas-emissions-from-transport-in-2022>
- ² <https://questions-statements.parliament.uk/written-questions/detail/2025-04-08/45359>
- ³ The average gm/km is taken from each category then a £10 per gram charge is applied rising by £1 for each successive category. £1 was chosen to replicate the current starting point and reach a compatible end point.
- ⁴ <https://www.smmmt.co.uk/vehicle-data/car-registrations/>
- ⁵ According to Which research around 80% of private purchases are made using monthly finance, others quote 90%: <https://pcpclaim-uk.co.uk/news/the-pcp-car-finance-market-how-popular-is-it/>
- ⁶ TSGB Table VEH0156 Q1 2025
- ⁷ For details on vehicle classification see: “Notes about tax classes” *DVLA undated* <https://www.gov.uk/government/publications/v3551-notes-about-tax-classes>
- ⁸ <https://www.racfoundation.org/research/economy/fuel-duty-decline-a-technical-note>
- ⁹ <https://www.newcivilengineer.com/archive/amey-graduate-wins-250000-wolfson-prize-14-07-2017/> There were several alternative proposals as part of the competition.
- ¹⁰ The Social Market Foundation has also explored this issue with the same conclusions. https://www.smf.co.uk/commentary_podcasts/the-chancellor-can-save-15-billion-by-allowing-fuel-duty-cuts-to-expire/
- ¹¹ <https://www.gov.uk/government/publications/fuel-duty-extending-the-temporary-cut-in-rates-to-march-2025/extension-to-the-cut-in-fuel-duty-rates-to-march-2025>
- ¹² For example see “Mode shift benefit values: update” *DfT 2022* <https://www.gov.uk/government/publications/freight-mode-shift-benefit-values-technical-report-an-update/mode-shift-benefit-values-update#updated>
- ¹³ See V149/1 “Rates of vehicle tax” *DVLA 2025*
- ¹⁴ By 2030 several existing schemes will be brought under an EU wide system for HGV road user charging https://transport.ec.europa.eu/news-events/news/greening-road-transport-eu-adopts-new-road-charging-rules-2022-02-18_en
- ¹⁵ 30% empty running <https://www.gov.uk/government/statistics/road-freight-statistics-2023/domestic-road-freight-statistics-united-kingdom-2023>
- ¹⁶ See <https://www.gov.uk/guidance/how-to-use-the-hgv-levy-service#:~:text=You%20have%20to%20pay%20the,Northern%20Ireland%2C%20Scotland%20and%20Wales.>
- ¹⁷ See HGV Levy Bands and Rates Tables 2014, *DfT 2014*
- ¹⁸ See Table VEH0520
- ¹⁹ Plating is set out in <https://www.gov.uk/vehicle-weights-explained>
- ²⁰ For example see “Lorry Road User Charging – A way forward for the UK” *MTRU for CfBT 2010*
- ²¹ For an overview of the many methods available for dynamic road conditions see “Review of Methods for Estimation of Passenger Car Unit Values of Vehicles” *Article in Transportation Engineering Journal of ASCE · June 2019*
- ²² See <https://www.autocar.co.uk/car-news/new-cars/average-weight-new-cars-rises-nearly-400kg-seven-years>
- ²³ See <https://www.nimblefins.co.uk/cheap-car-insurance/average-car-dimensions>
- ²⁴ For example as quoted in <https://hgvlgvtraining.co.uk/truck-dimensions-uk>
- ²⁵ DfT and DVLA February 2010.