

Louise Hirst - Response to WSP "Carbon assessment responses 14/10/2025"

There are several incorrect statements made in WSP "Carbon assessment responses 14/10/2025", as set out below. The WSP note provides a summary on p. 18. Each point of this summary is addressed in turn. Quotes from the WSP note are in green text. Quotes from other documents are in blue text.

- The TAG data book versions used for the assessments in the Environment Statement is considered appropriate.

1. This claim is repeated several times throughout the note. This conclusion is reached on the basis that (a) it was not appropriate to use the forthcoming changes version which was available at the time of assessment [e.g. stated in points 31, 32, 39] and (b) it would not be proportionate to update the assessment on the basis of the latest evidence prior to release of the Environmental Statement [points 8, 33, 47]. In response to these positions:

(a) WSP say in their point 32 (pp. 6-7):

It is not best practice to utilise the 'Forthcoming Changes' version in advance of the actual update to the TAG data book because a 'Forthcoming Changes' data book is not formally in use.

2. This is in error. Guidance accompanying the forthcoming changes was published in May 2022 and is prominently displayed alongside the TAG databook (included here as Appendix B). It states (Appendix B, p. 11):

As per the TAG orderly release process, the publication of a set date for when the change will occur (November 2022) allows users to plan their work appropriately. **Where your work is due to report after this date, you should work to the updated values** or guidelines if it is appropriate to do so, following guidance in the proportionate update process.

(emphasis added). As the assessment was not performed until October 2022 and was due to report after November 2022 it cannot be argued that it was not appropriate or proportionate to use this data as directed.

(b) WSP say in their point 33 (p. 7):

In May 2023, when the modal shift assessment was updated, traffic modelling derived user emissions were not updated on the basis of proportionality, as supported by The Department for Transport's January 2014 guidance on proportionate update applies (TAG TPM - The Proportionate Update Process) (see also paragraph 47 below and Appendix B below). This acknowledges the rate at which the TAG data book is updated (see also paragraph 8 above), as it may not be proportionate to update all assessments across a submission every six months, i.e., with the release of every new TAG data book.

3. This point is irrelevant given that the November 2022 TAG data was always the appropriate data to use (see point 2 above). However, even in isolation it does not hold up to scrutiny. While it is true that TAG databooks are released every six months, it is not common for the data to change, so the implication that regular updates would be required is misleading. The fleet assumption numbers have only been updated once more since November 2022 (in May 2025).
4. "TAG TPM - The Proportionate Update Process" included in the WSP note as Appendix B describes how the decision not to adopt the latest evidence should be made (pp. 32-33 of WSP note Appendix B):

How should this be decided?

It is difficult to set down overarching guidance on what this balance should be for different types of project, decision points, or TAG changes and the relevant considerations and factors for each project may be different. However, it is reasonable to presume that the case for not adopting latest evidence would be stronger the more it can be shown that:

- the changes are not material to the decision at hand;
- adopting the change would require significant increase in the resources, cost, and/or time needed to prepare the decision advice; and

[subsequent points omitted as all are conditional on the above which already fails]

On criterion 1 "the changes are not material to the decision at hand": The changes are clearly material to the assessment at hand, and the most realistic assumptions should have been used. Indeed, this is the reason a forthcoming changes TAG databook was provided, where the guidance states (Appendix B, p. 9):

The update will ensure that analysts have the most unbiased and realistic set of assumptions available to inform decision making.

We will take up the material effect on carbon recovery calculations as a direct response to a later point (point 6 below).

5. On criterion 2 "adopting the change would require significant increase in the resources" etc.: These calculations do not appear to take significant resources to perform. Several calculations, including some not requested, have been provided during the enquiry on short timeframes. The relevant TAG databook was published 2 years prior to publication of the Environmental Statement and the position that performing a recalculation during this time would not be proportionate is not reasonable. To reiterate from point 2, this decision should not have even come up as the November 2022 data was always the correct data to use.
 - Updating the TAG data book values would not result in a material change in the carbon significance rating of the Scheme reported in the Environmental Statement.
6. This is inaccurate. WSP have chosen not to present an analysis of the impact on using updated TAG databook values alongside the E-series traffic modelling that was used to prepare the Environmental Statement. They have instead "taken the opportunity to update traffic modelling" (Andy Saunders Appendix to Proof of Evidence, CD26-01-APP-W3-2, p.18) and only present this analysis.
7. Despite this it is relatively simple to calculate what conclusion would be reached using up-to-date TAG fleet composition projections alongside the previous transport modelling. We can determine a correction factor using the numbers provided in the WSP note Table 3 (p. 13) as the ratio of AADT savings in the "Original Assessment" (column 1) and the "July 2025 assessment, Original methodology" (column 2), where the only thing that has changed is the traffic model. This gives a correction factor of 0.54 (30960/56915). We have recreated WSP Table 3 below, inserting additional columns giving the net impact for all WSP modelled scenarios (Table 1). The assessments using up-to-date fleet composition data with the original model show the scheme as a net emitter of between 8858 and 11909 tCO₂.

Component of carbon assessment	Original assessment E-series TAG May 2022	Original assessment F-series TAG May 2022 Original methodology	July 2025 assessment TAG May 2025 Original methodology		July 2025 assessment TAG May 2022 New QCQ methodology		July 2025 assessment TAG May 2025 New QCQ methodology	
			F-series	E-series*	F-series	E-series*	F-series	E-series*
Traffic modelling derived user emission calculation (based on Annual Average Daily Traffic (AADT))	-30,960 tCO ₂ e	-56,915 tCO ₂ e	-34,895 tCO ₂ e	-18,982 tCO ₂ e	-49,767 tCO ₂ e	-27,072 tCO ₂ e	-29,286 tCO ₂ e	-15,931 tCO ₂ e
Net Impact (including modal shift user carbon impacts, capital carbon, and vegetation impacts)	-5,020 tCO ₂ e	-30,491 tCO ₂ e	-7,055 tCO ₂ e	+8,858 tCO ₂	-23,342 tCO ₂ e	-647 tCO ₂ e	-1,446 tCO ₂ e	+11,909 tCO ₂ e
Carbon assessment period	2026-2085	2028-2087	2028-2087		2028-2087		2028-2087	
Carbon payback period	2078	2058	2078	-	2059		2084	-
Assumed final year electric vehicle percentage [†]	27%	34%	75%		44%		82%	

* Extrapolated from correction factor based on columns 1 and 2, 30,960/56,915 = 0.54

[†] Entry not included in WSP Table 3. Data from Table 4 of WSP note.

N.B. this analysis does not consider differences in carbon savings due to modal shift as these savings are not presented and are very small compared to those from changes in general traffic.

Table 1: E-series assessment results extrapolated from F-series results presented by WSP.

- The difference in carbon impact between E-Series and F-Series traffic model results can be explained by the difference in the change in vehicle kilometres travelled estimated by each model series. The F-series model shows much greater reductions in vehicle kilometres travelled, which translates to higher user emissions savings.

8. Such a dramatic change serves to highlight the unreliability of this modelling. In addition, it is not clear how the modelling presented in the Transport Assessment supports the stated reduction in vehicle kilometres travelled, or general traffic flow changes. [CD1-25.01 Transport Assessment November 2024, Section 8.2.3., p. 39](#) gives:

It can be seen that there is very little difference in the performance of the high network across both the Do Minimum and Do Something scenarios.

Traffic flows and junction capacities are shown to be essentially identical in the two scenarios.

9. Other issues with the traffic modelling, primarily regarding the effects of Covid19, have been covered by CPPF witnesses Steve Johnstone and Edward Leigh. These arguments would also apply to the Carbon assessment.

- Using QCG guidance (not available at the time of preparation and publication of the Environmental Statement) to forecast emissions beyond the final modelled year, tempers the emissions savings, but does not result in a material change in the carbon significance rating of the Scheme reported in the Environmental Statement.

10. The note does however imply that additional guidance has not been followed which may make a material change. It appears that only a single future model year was considered (2041 for F-series model) contrary to [CD8-21 Department for Transport - Transport Analysis Guidance Unit M4 Forecasting and Uncertainty 2023, Section 7.2.1, p. 22](#):

usually it will be necessary to appraise the intervention for **at least two different future years**, and make a sensible assumption about the profile of the change in benefits over time.

(emphasis added).

11. The Quantifiable Carbon Guidance emphasises the impact of ZEV uptake, and suggests authorities may test alternative scenarios ([CD8-41 Government Guidance - Quantifying Carbon Emissions for Local Transport Planning - August 2025, p. 23](#)):

3.25 Future user carbon will be significantly influenced by the rate of ZEV uptake. Authorities may therefore wish to test alternative scenarios of ZEV uptake, such as scenarios of mileage split by fuel type provided in DfT's Common Analytical Scenarios (CAS).

This references the Common Analytical Scenarios databook which is a DfT document that supplements the TAG databook, first published in August 2022. It provides mileage split by fuel type for a number of scenarios which give less than 1% petrol + diesel in 2050 (and much faster declines leading up to this date), which would clearly lead to a material change. Screenshots showing fleet composition assumption for the "Technology" scenario are included as Appendix A (p. 6).

- It is not appropriate in this case to extrapolate emissions changes beyond 2050 because extrapolating the trend between 2041 and 2050 to well beyond 2050 would imply electric vehicle uptake exceeds 100% before the end of the assessment period, which is not possible.

12. This is an extraordinary claim. It would of course be appropriate to cap electric vehicle use at 100%, but if the extrapolated data suggests that this will occur at some point before 2086 this should form part of the assessment. Given a 2030 ban on the sale of new petrol and diesel vehicles this seems more likely than not and is for example reflected in the Common Analytical Scenarios databook. It is certainly less unreasonable than the assumption used in the original Environmental Statement that petrol and diesel vehicles would make up 66% of the fleet used in the original Environmental Statement (as clarified in Table 2, p. 12 of the WSP note to which this is a response).
13. The QCG suggests that extrapolation is the best approach to use (section 7.20, p. 69):

Emissions can be derived for years not represented by the traffic model by interpolation and extrapolation. Extrapolation outside the range of the available modelled years is best based on the trend determined by interpolating between the two closest modelled years.

Summary

14. WSP claim they have used the correct dataset in the Environmental Statement, but DfT guidance required them to use the November 2022 TAG databook as they were reporting after this date. This would have made a material difference.
15. It would have been proportionate to update the carbon assessment following TAG databook updates, especially given more than two years between availability of updated evidence and publication of the Environmental Statement.
16. The DfT Common Analytical Scenarios Databook provided alternative fleet compositions that could have been used, giving less than 1% petrol+diesel use in 2050, eliminating carbon savings for the scheme.
17. To suggest it was not possible to extrapolate emissions changes beyond 2050, as provided for in the QCG, is not correct. It would be reasonable to extrapolate to 100% electric vehicle use and then maintain at that level to the end of the assessment period.
18. Had WSP used the QCG approach, which permitted linear extrapolation until the EV fleet composition reached 100% and fixed at 100% for the remainder of the assessment period, this approach would have been reasonable, and it would have eliminated any carbon saving leaving the scheme a net emitter.

Appendix A

Extract from Common Analytical Scenarios databook. Worksheet T4: Mileage splits in the Technology Scenario

Worksheet T4: Mileage splits in the Technology scenario

This worksheet contains one table showing mileage splits (the percentage of the fleet that is petrol, diesel and electric) in the Technology scenario. [note 8]

The tables lists the percentages of each vehicle and fuel / energy type: Cars, LGVs, OGV1s, OGV2s, Rigid, Artics and PSVs; Petrol, Diesel and Electric.

Please note mileage splits are held constant from 2050 onwards. If you require a year further in the future than 2060, please continue using the values available for 2050-2060.

Table T4: Mileage splits in the Technology scenario

Year	Cars: Petrol	Cars: Diesel	Cars: Electric	LGV: Petrol	LGV: Diesel	LGV: Electric	OGV1: Diesel	OG
2010	59.90%	40.10%	0.01%	3.45%	96.46%	0.09%	100.00%	
2011	57.78%	42.21%	0.01%	3.11%	96.80%	0.09%	100.00%	
2012	55.70%	44.27%	0.02%	2.86%	97.05%	0.09%	100.00%	
2013	53.66%	46.30%	0.04%	2.62%	97.28%	0.09%	100.00%	
2014	51.78%	48.13%	0.09%	2.41%	97.48%	0.11%	100.00%	
2015	50.08%	49.74%	0.18%	2.22%	97.65%	0.13%	100.00%	
2016	48.72%	50.99%	0.30%	2.03%	97.81%	0.15%	100.00%	
2017	48.26%	51.30%	0.44%	1.99%	97.83%	0.18%	100.00%	
2018	48.80%	50.59%	0.61%	2.07%	97.71%	0.22%	100.00%	
2019	49.96%	49.21%	0.84%	2.13%	97.55%	0.32%	100.00%	
2020	50.93%	47.61%	1.46%	2.14%	97.35%	0.51%	100.00%	
2021	51.71%	45.55%	2.74%	1.98%	97.10%	0.92%	100.00%	
2022	51.83%	43.44%	4.73%	1.96%	96.93%	1.10%	99.95%	
2023	51.42%	41.09%	7.49%	1.93%	96.43%	1.64%	99.89%	
2024	51.07%	38.84%	10.10%	1.90%	95.34%	2.76%	99.73%	
2025	50.32%	36.31%	13.36%	1.86%	93.92%	4.22%	99.46%	
2026	49.25%	33.63%	17.12%	1.81%	92.19%	5.99%	98.69%	
2027	47.78%	30.78%	21.43%	1.75%	89.08%	9.18%	97.44%	
2028	45.50%	27.62%	26.88%	1.64%	84.33%	14.03%	95.71%	
2029	42.42%	24.22%	33.35%	1.51%	78.10%	20.38%	93.53%	
2030	38.56%	20.71%	40.73%	1.35%	70.56%	28.09%	90.89%	
2031	34.82%	17.59%	47.59%	1.20%	63.16%	35.64%	87.22%	
2032	31.26%	14.87%	53.87%	1.07%	56.31%	42.62%	82.43%	
2033	27.79%	12.55%	59.66%	0.94%	49.87%	49.19%	76.61%	
2034	24.45%	10.56%	64.99%	0.83%	43.80%	55.36%	69.81%	
2035	21.29%	8.83%	69.88%	0.73%	38.09%	61.17%	62.11%	
2036	18.40%	7.33%	74.28%	0.64%	33.07%	66.29%	54.68%	
2037	15.68%	6.03%	78.29%	0.56%	28.66%	70.78%	47.55%	
2038	13.22%	4.94%	81.85%	0.49%	24.79%	74.72%	40.83%	
2039	10.98%	4.02%	85.00%	0.43%	21.38%	78.19%	34.57%	
2040	8.95%	3.25%	87.80%	0.37%	18.42%	81.20%	28.85%	
2041	7.20%	2.60%	90.20%	0.33%	15.90%	83.77%	23.81%	
2042	5.68%	2.07%	92.25%	0.29%	13.72%	86.00%	19.48%	
2043	4.41%	1.63%	93.97%	0.25%	11.85%	87.90%	15.82%	
2044	3.38%	1.27%	95.34%	0.22%	10.26%	89.52%	12.77%	
2045	2.58%	0.99%	96.43%	0.20%	8.92%	90.88%	10.27%	
2046	1.96%	0.76%	97.27%	0.18%	7.83%	91.99%	8.20%	
2047	1.48%	0.59%	97.93%	0.16%	6.91%	92.93%	6.53%	
2048	1.11%	0.46%	98.43%	0.14%	6.15%	93.71%	5.18%	
2049	0.84%	0.36%	98.80%	0.13%	5.50%	94.37%	4.11%	
2050	0.65%	0.29%	99.07%	0.12%	4.95%	94.94%	3.26%	
2051	0.65%	0.29%	99.07%	0.12%	4.95%	94.94%	3.26%	
2052	0.65%	0.29%	99.07%	0.12%	4.95%	94.94%	3.26%	
2053	0.65%	0.29%	99.07%	0.12%	4.95%	94.94%	3.26%	
2054	0.65%	0.29%	99.07%	0.12%	4.95%	94.94%	3.26%	
2055	0.65%	0.29%	99.07%	0.12%	4.95%	94.94%	3.26%	
2056	0.65%	0.29%	99.07%	0.12%	4.95%	94.94%	3.26%	
2057	0.65%	0.29%	99.07%	0.12%	4.95%	94.94%	3.26%	
2058	0.65%	0.29%	99.07%	0.12%	4.95%	94.94%	3.26%	
2059	0.65%	0.29%	99.07%	0.12%	4.95%	94.94%	3.26%	
2060	0.65%	0.29%	99.07%	0.12%	4.95%	94.94%	3.26%	

Appendix B

Guidance accompanying TAG databook forthcoming changes, "Updates to the TAG Data Book regarding fleet assumptions" May 2022



Department
for Transport

Forthcoming Change to TAG

Details

Description	Updates to the TAG Data Book regarding fleet assumptions
Unit	TAG Data Book
Change announced	May 2022
Expected release date	November 2022

Description

This Forthcoming Change sets out updates to the TAG Data Book to reflect the latest forecast fleet assumptions from DfT's Environmental Analysis team. This consists of updated vehicle kilometre (vkm) splits in table A1.3.9, fleet fuel efficiency growth projections in table A1.3.10 and base year electric vehicle consumption in table A1.3.8. A Forthcoming Change version of the Data Book (v1.19) has been made available to support analysts in applying these updates. A Forthcoming Change version of the TUBA economics file will also be made available as soon as possible.

Contact

For further information on this guidance update, please contact:
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Detail

Background to assumptions

We are updating the fleet assumptions used in TAG in a staged manner, reflecting recent accelerations in the uptake of electric vehicles (EVs) but holding off fully reflecting the ambition set out in the [Transport Decarbonisation Plan \(TDP\)](#) until the constituent planned policies have been further defined. The update also assumes a continuation of current taxation policy. Overall therefore, the aim is to balance alignment of analytical assumptions with announced policy (such as the TDP), and to assume-in the delivery of policies only once they are sufficiently implemented.

The update will ensure that analysts have the most unbiased and realistic set of assumptions available to inform decision making. The fleet assumptions will inform the National Road Traffic Projections (NRTTP) and Common Analytical Scenarios, both of which will be published in summer 2022. The update will also provide the basis for the fleet assumptions used in the 2021-2040 Energy and Emissions Projections (due to be published by BEIS later in 2022).

Fleet modelling details

UK CO₂ 2025-2030 regulations for cars, vans and HGVs require vehicle manufacturers to ensure that their overall fleet of new vehicles sold in each year meet emissions targets. Manufacturers may meet these targets by either selling increased numbers of Ultra-Low Emission Vehicles (ULEVs), or by improving the average fuel efficiency of conventional vehicles. We assume that manufacturers will meet the targets but will not overachieve against them.

We assume that uptake of ultra-low emission cars and vans is limited by consumer demand (as modelled by the Electric Car Cost Model (ECCo)) and that any further required improvement will be met by improved fuel efficiencies/hybrid uptake. For HGVs, we assume that all targets are met by

improving diesel fuel efficiency, as there is currently no large-scale roll-out for ULEV HGVs.

Modelling updates:

- The Road Carbon and Fuel Fleet Model (RoCaFF) calculates vkm splits and fuel efficiencies for cars, vans, HGVs and PSVs. The model has been updated with the latest statistics and sales figures. Latest sales figures show increased sales of ULEV cars compared to 2020.
- Falling battery prices have led to higher projections of ULEV uptake for all road vehicles.
- Consumer choice modelling (from ECCo) of ULEV uptake for cars and vans has been updated to include the latest market data, including lower battery costs. This results in updated vkm electric split forecasts (TAG table A1.3.9).
- There have been revisions to input assumptions on vehicle characteristics, which has led to updates to the electricity consumption of electric vehicles (TAG tables A1.3.8 and A1.3.10).
- Forecasts of ULEV bus sales have been updated to reflect the latest policy commitments.
- Updated biofuels modelling has been incorporated, leading to small changes in petrol/diesel fuel consumption for cars, vans, HGVs and PSVs (TAG table A1.3.10).
- Latest data on new vehicle fuel consumption has been taken into account, leading to changes in petrol/diesel fuel efficiency for cars and vans (TAG table A1.3.10).

Changes to the TAG Data Book

The following updates will be made to the TAG Data Book to account for the updated fleet assumptions. For more details of the changes please refer to the annex.

- **Table A1.3.8:** Updated base year electric vehicle consumption factors, for cars, LGVs and PSVs.
- **Table A1.3.9:** Updated proportions of car, LGV and PSV vkms using petrol, diesel and electricity, with projections to 2050.
- **Table A1.3.10:** Updated forecast fuel efficiency change for car, LGV, HGV and PSV, to 2050.

Scheme promoters should follow the [TAG proportionate update process](#) when deciding how to apply the update fleet assumptions in modelling and appraisal. The Department expects that such decisions should be made on a scheme by scheme basis and be based on balancing the need to ensure decisions are based on up-to-date evidence with the need to support decision makers in delivering their programme. This should involve reasonably balancing (a) the greater time, cost, and/or resource needed to deliver programmes, with (b) the quality of the analysis submitted to assist the decision required, including its robustness against potential challenge from all sources.

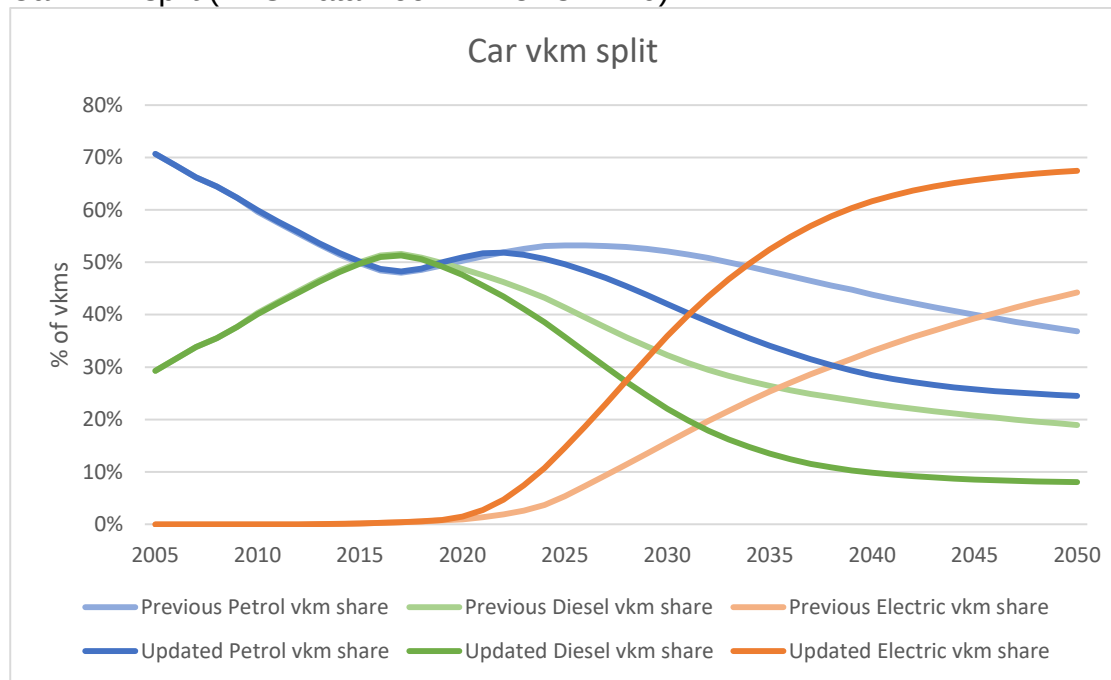
As per the [TAG orderly release process](#), the publication of a set date for when the change will occur (November 2022) allows users to plan their work appropriately. Where your work is due to report after this date, you should work to the updated values or guidelines if it is appropriate to do so, following guidance in the proportionate update process. Where the fleet assumptions cannot be fully applied in scheme modelling and appraisal, it may be appropriate to adopt the new assumptions via a sensitivity test. If you are unsure, please contact us at TASM@dft.gov.uk.

Annex: Details of changes to fleet assumptions

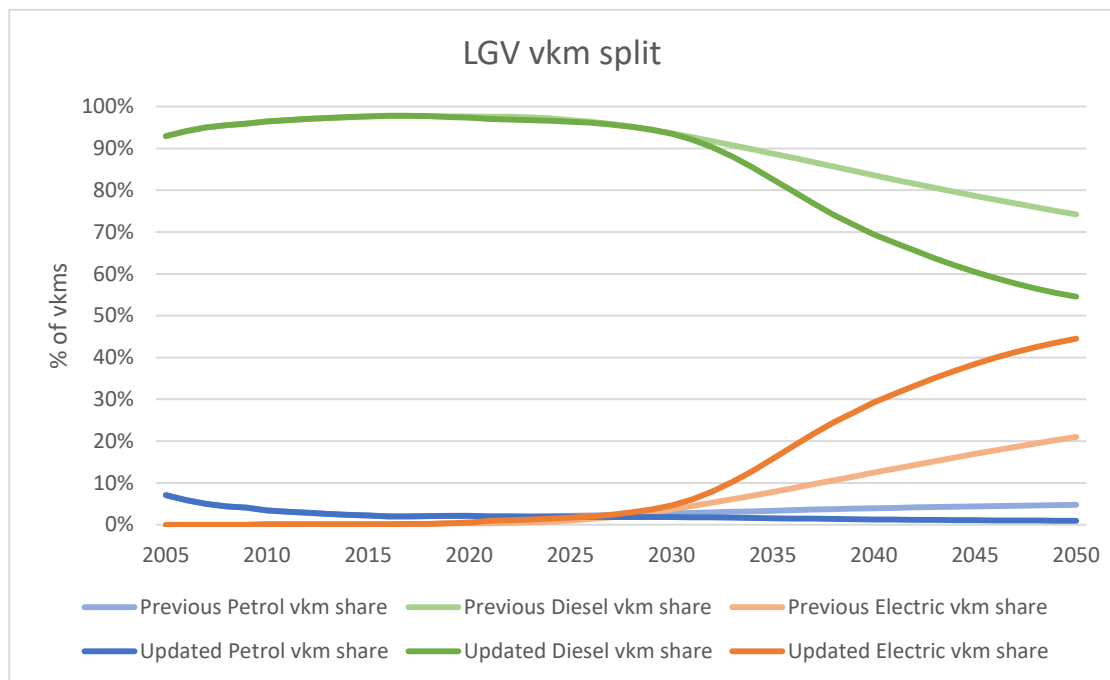
Changes to A1.3.8 (electricity consumption, kWh per km, 2015)

	Previous value (kWh/km)	Updated value (kWh/km)
Car	0.2191	0.2207
LGV	0.2335	0.2590
PSV	N/A	1.1798

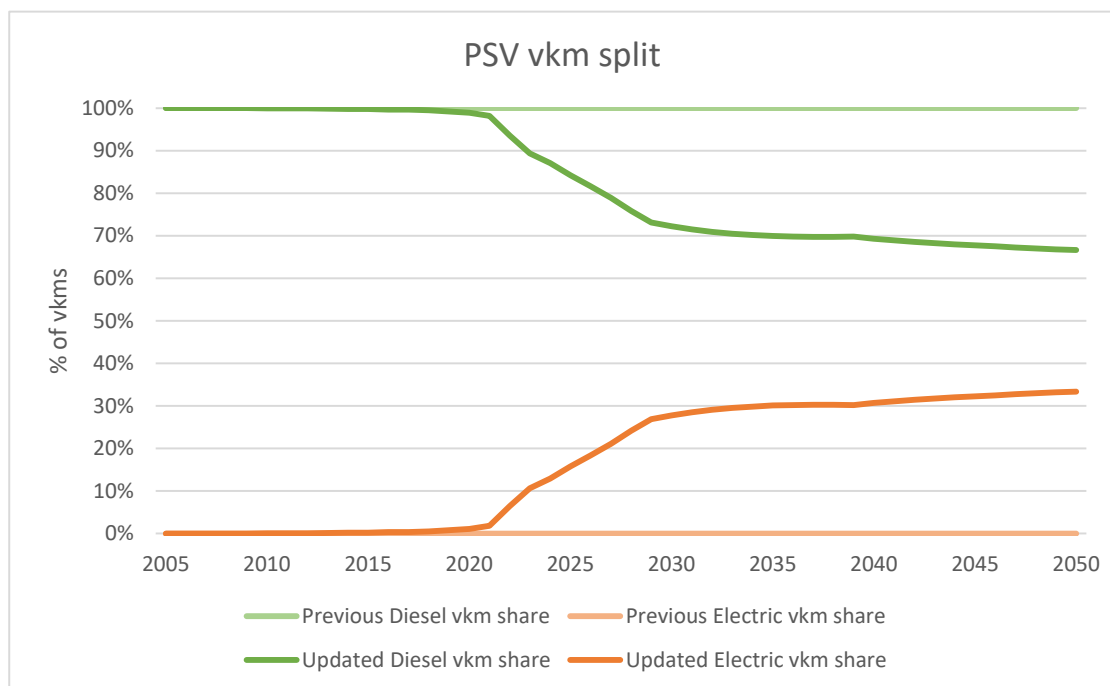
Car Vkm split (TAG Data Book v1.18 vs v1.19)



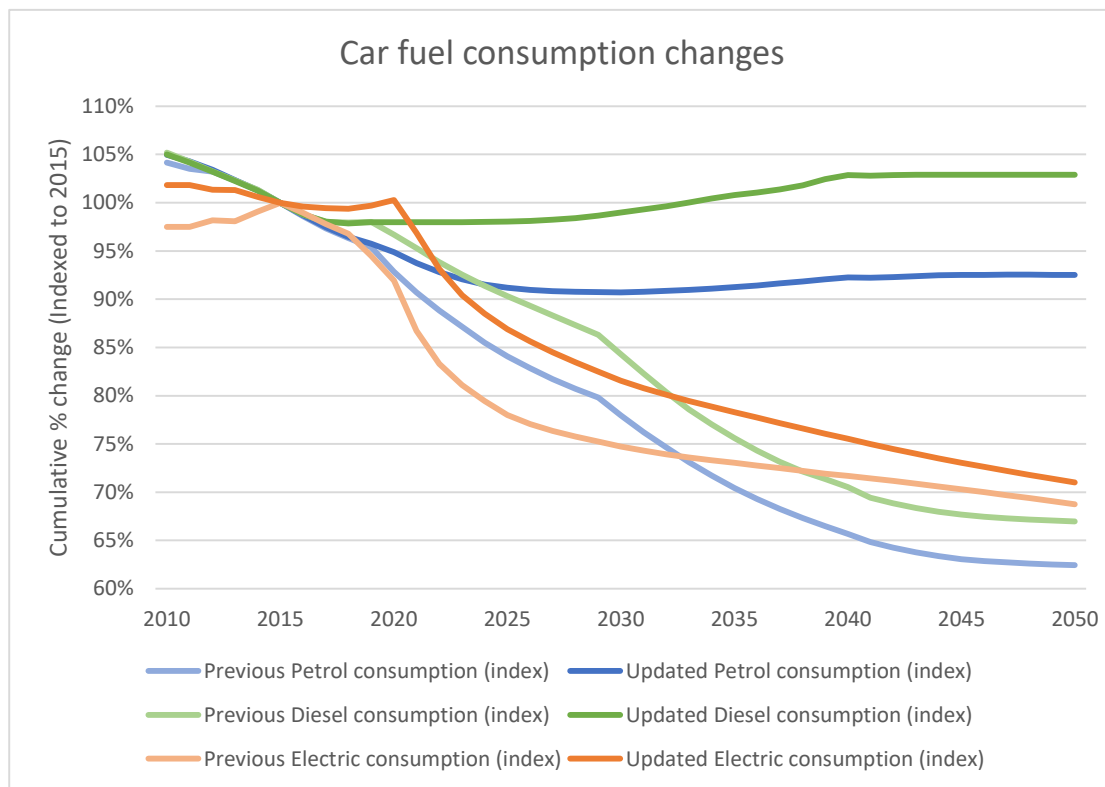
LGV Vkm split (TAG Data Book v1.18 vs v1.19)



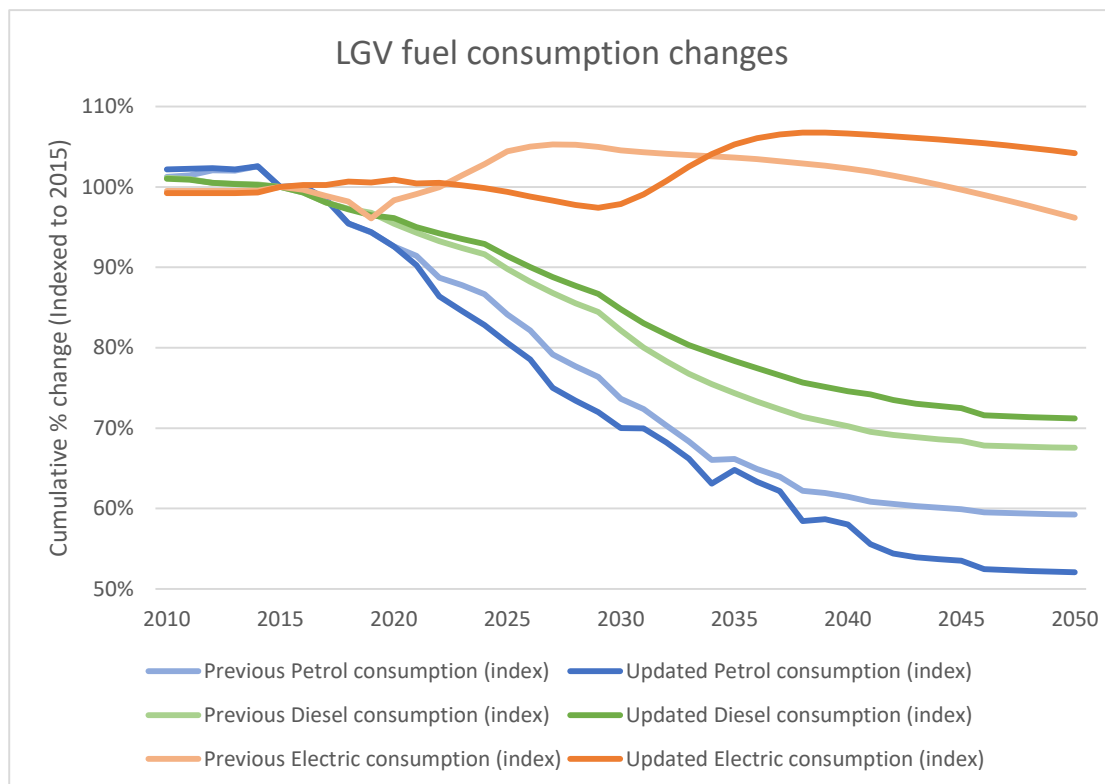
PSV Vkm split (TAG Data Book v1.18 vs v1.19)



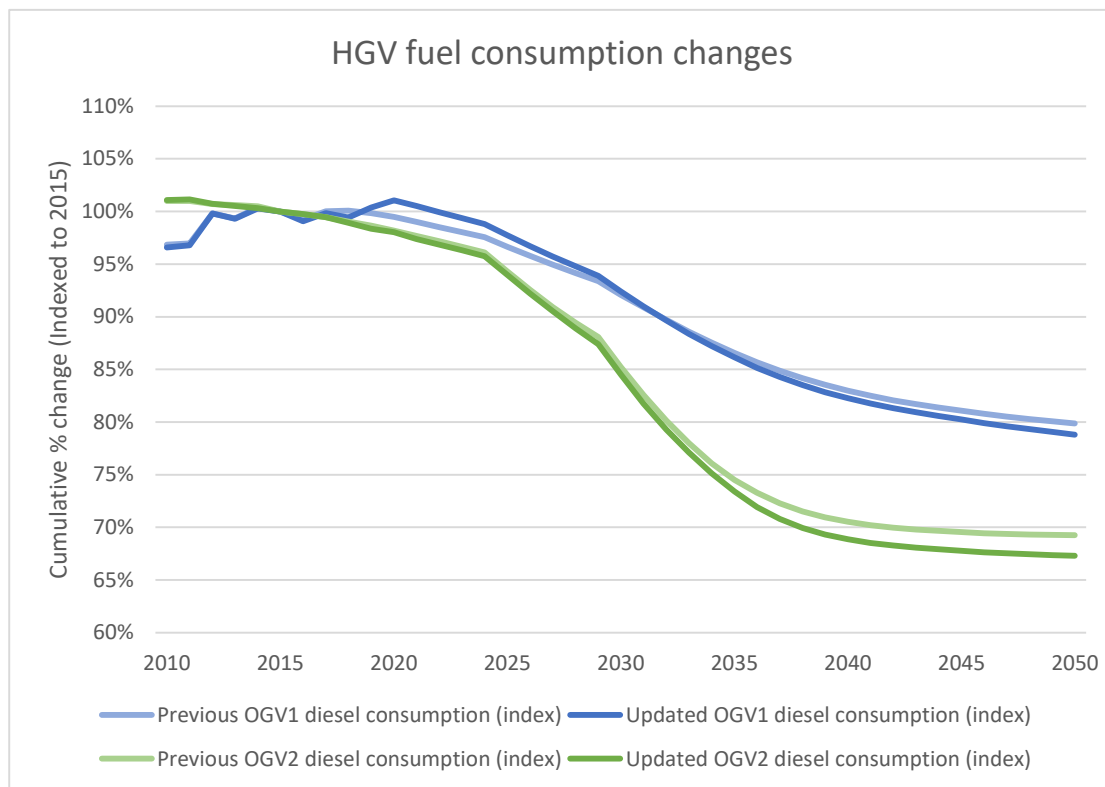
Car fuel consumption forecasts (TAG Data Book v1.18 vs v1.19)



LGV fuel efficiency forecasts (TAG Data Book v1.18 vs v1.19)



HGV fuel efficiency forecasts (TAG Data Book v1.18 vs v1.19)



PSV fuel efficiency forecasts (TAG Data Book v1.18 vs v1.19)

