Methodology

For 'The negligible inflationary impact of an HGV zero emission mandate'

May 2026

Key assumptions

Throughout our analysis we took an approach which attempted to produce an overestimate of the inflationary impact of the proposed heavy goods vehicle (HGV) zero emission mandate. So when there were questions around how to model certain aspects, we chose to follow the option which produced the figure with a larger magnitude. The reason for this is that a smaller inflationary or disinflationary magnitude would support the zero emission mandate. Therefore, we have produced a ceiling for the mandate's effect.

We have used the direct and indirect gross value added (GVA) contributions of 'Land transport services and transport services via pipelines, excluding rail transport' to 'total final consumption expenditure by households GVA' ratio, as a proxy for HGV transport's contribution to consumer prices. This includes more than HGV transport, so is an overestimate. GVA is also not a perfect proxy (for example, it does not account for taxes and subsidies).

We used Transport & Environment (T&E) and Element Energy's figures for the total cost of ownership and the proportion of vehicles sold or purchased that will be included in the mandate. We assume these figures have not varied significantly since they were produced.

Our analysis assumes that changes in the total cost of ownership (TCO) follow a linear trend. While we think it is more likely that they follow a logarithmic decline, the linear trend produces figures with larger magnitudes, which is in line with our attempt to overestimate.

We assume all zero emission vehicles (ZEVs) will be battery electric, as opposed to hydrogen or other alternatives to fossil fuels. This will not be absolutely correct, but the vast majority of zero emission HGVs will be electric as they are cheaper than hydrogen and it is the more mature technology.

Process

The equation for the annual price change is:

$$((\text{Fleet} \times \text{TCO})_{<26t} + (\text{Fleet} \times \text{TCO})_{>26t}) \times \text{HGV price component}$$

Where:

TCO is the price differential between the total cost of ownership (TCO) of battery electric HGVs (eHGVs) and diesel HGVs.

1. **Fleet** is the proportion of the total fleet that will be new eHGVs, which would otherwise have been new diesel HGVs, in a given year.

HGV price component is the proportion of consumer prices comprising HGV costs.

As the mandate is expected to differ for HGVs both above and below 26 tonnes in weight, we calculated them separately as proportions of the total fleet before summing to obtain a total figure. We have not attempted to separate GVA contributions for HGVs above and below 26 tonnes.

Once we had annual price changes, we applied them to a 2027 baseline to calculate the total change in prices from 2028 to 2040, which is the period during which the mandate is expected to be implemented.

Fleet

We calculate the proportion of the total fleet replaced in any given year using T&E's submission to the policy consultation (see table below, as T&E's submission was private, we are unable to provide a publicly available data source), along with the Department for Transport's (DfT) 'VEH0520 dataset'.

Year	Under 26t ZEV sales target (%)	Over 26t ZEV sales target (%)
2028	12%	6%
2029	19%	11%
2030	30%	20%
2031	44%	28%
2032	58%	36%
2033	72%	44%
2034	86%	52%
2035	100%	60%
2036	100%	68%
2037	100%	76%
2038	100%	84%
2039	100%	92%
2040	100%	100%

Using the DfT data, we looked at the whole UK and split the fleet into vehicles over and under 26 tonnes. We then considered the number of new vehicles and the total fleet size between 2015 and 2024. We then projected these figures between 2025 and 2040.

The fleet figure from the equation is then calculated for each year by multiplying T&E's figures for the proportion of new vehicles that must be electric by the proportion that new vehicles over and under 26 tonnes that make up the total fleet.

TCO

To model the TCO we used T&E's *Battery electric HGV adoption in the UK: barriers and opportunities* report. This contains multiple TCO rates across a variety of HGV size and operation archetypes. We selected those that have later TCO equalisation dates and higher starting differences between eHGV and diesel HGV TCOs, for HGVs over and under 26 tonnes. Specifically, we used the rigid, regional deliveries archetype for under 26 tonnes and double decker DC-DC trunking for those over 26 tonnes (with one hour per day warehouse charger utilisation). This relates to ensuring our results were an overestimate.

Based on the starting values (2022 and 2025 for under and over 26 tonnes respectively) and the equalisation dates, we modelled TCO differentials for the other years, using both a linear and a logarithmic trend. These provided us with price differences between eHGVs and diesel HGVs between 2028 and 2040. We selected a linear trend as it overestimates inflationary impact.

We had confidence in T&E's data and our modelling as the 2024 TCO differentials we produced were similar to those found in a 2024 study, the results of which showed an 11 to 33 per cent premium for eHGVs. Our results for 2023 were 14 to 49 per cent, which again indicates that we were conservative in estimating the TCO differentials and partity dates.

HGV price component

To calculate the proportion of consumer prices made up of HGV costs, we used the Office for National Statistics' (ONS) 'Input output by product tables'. The most recent year available at time of publication was 2023, and we assume the ratio stays constant throughout the period.

We used the 'GVA by final uses' tab, and the direct and indirect 'Land transport services and transport services via pipelines, excluding rail transport' row with the total 'Final consumption expenditure by households' column. We took this ratio as the contribution of HGVs to consumer prices.

Diesel inflation

To compare to the impact of the eHGV mandate, we assessed the inflationary result of the current diesel price shock on HGVs. We looked at inflation between 2025 and 2026, as opposed to the potential eHGV mandate period. To do this we projected at least seven years of diesel prices from the year we looked at to obtain the TCO. If we had modelled the same period as the eHGV mandate, we would have needed to project diesel prices to 2047 which would have been extremely uncertain.

Our modelling of diesel inflation combines the TCO data from T&E at a more detailed level, along with the HGV price component, exactly as it is described above. We also used the Department for Energy Security and Net Zero's (DESNZ's) 'Weekly road fuel prices' data. We removed the cost of VAT from diesel prices, as HGV operators can reclaim this cost.

Additionally, the price of diesel has historically been subject to a level of inflation, which on average was 2.9 pence per year between January 1990 and January 2026. This is therefore included in our modelling once prices have returned to normality following price shocks.

The cost of diesel was forecasted under three scenarios. Each used the 2022 spike in diesel due to the Russia-Ukraine war to model the shape of any forecasted spikes in diesel cost. We also found that the price after the 2022 spike took around three years to settle. The cost settled on a value around seven per cent larger that the pre-Covid price, taken as a baseline due to the impact of the pandemic in artificially decreasing the cost of diesel.

The scenarios we forecasted were:

1. The low scenario. The cost of diesel falls from its current price rapidly to its pre-2026 spike cost. It then rises by 1.4 pence per year to the end of the forecast to provide a low estimate of normal diesel inflation.
2. The mid scenario. The cost of diesel falls from its current price rapidly to its pre-spike level and takes three years to settle on a price above the pre-crisis level. It then rises by 2.2 pence per year to the end of the forecast to provide a middle estimate of normal diesel inflation.
3. The high scenario. The cost of diesel falls rapidly from its current price to a price seven percent above the pre-crisis level before spiking again in 2030. After the 2030 spike, the cost falls rapidly to an equilibrium seven per cent above the 2030 spike level. It then rises by 2.9 pence per year to the end of the forecast to provide a high estimate of diesel inflation.

The five pence cut in fuel duty introduced in March 2022, in response to the 2022 price spike, is set to be phased out between September 2026 and March 2027. From April 2027 fuel duty is set to increase with the retail price index

(RPI). This is layered onto high and medium forecasts but excluded from the low scenario.

The average cost of diesel across the five and seven year period of each forecast is calculated to determine the impact they would have on the TCO of under and over 26 tonne diesel vehicles, respectively.

We then isolated the diesel price component from T&E's TCO data before inflating it by the diesel inflation rate for HGVs over and under 26 tonnes. Then we added back the non-diesel costs to obtain the new TCO.

Next, we calculated the amount of diesel vehicles over and under 26 tonnes as a proportion of the UK's fleet. Finally, we apply the following formula to obtain our result:

$$((\text{Diesel fleet} \times \text{TCO}_{\text{increase}})_{<26t} + (\text{Diesel fleet} \times \text{TCO}_{\text{increase}})_{>26t})$$

$$\times \text{HGV price component}$$

Where:

2. **Diesel fleet** is the number of diesel vehicles in each weight category as a proportion of the whole fleet in 2024.
3. **TCO increase** is the proportional increase in the TCO following the rise in fuel costs.

HGV price component is the proportion of consumer prices made up of HGV costs.

The result is the 2025 to 2026 increase in total final consumption expenditure by households as a result of changes in the diesel price.

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