Office for Budget Responsibility

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Supplementary forecast information release

Costing of eVED: a new mileage-based charge on electric and plug-in hybrid cars

1.1 The OBR is releasing this information following a request for further detail in respect of the costing of the introduction of a new mileage-based charge on electric cars, in our November 2025 *Economic and fiscal outlook*. We will, as far as possible, meet any requests to release supplementary forecast information where this will improve the quality of public debate on the public finances. Our full release policy is available on our website.

1.2 This release briefly describes the measure, sets out the data sources and modelling used to estimate the costing, and discusses the main sources of uncertainty around this central estimate, following the OBR's policy costings process.[1] As set out in the *Charter for Budget Responsibility*, the Government is responsible for producing all policy costings. In the case of tax policies the costings are typically produced by HMRC. The OBR's role is to provide independent scrutiny and certification of whether the Government's policy costings are reasonable and central. This means that the full datasets underpinning tax policy costings are generally held by HMRC. Therefore, requests for access to any datasets not available at the sources referenced in this note should be directed to HMRC.

Policy description

1.3 From April 2028, a new mileage-based charge on electric cars – eVED – will be introduced, additional to the current vehicle excise duty (VED) charges paid by all vehicles. In 2028-29, the charge will equal £0.03 per mile driven in battery electric cars (BECs) and £0.015 per mile driven in plug-in hybrid electric cars (PHECs), with the rate per mile increasing annually with CPI.[2]

Data

1.4 The tax base for this policy is the mileage of BECs and PHECs. The following data sources were used in the costing to estimate the stock of BECs and PHECs in traffic and their associated annual mileage:

- Data collected by the Driver and Vehicle Licensing Agency (DVLA) measured the stock of BECs and PHECs liable for VED. This data underpins the baseline VED forecast model, used to project uptake of electric cars in the pre-measures forecast.[3]

[1] See our *Briefing paper No.6: Policy costings and our forecast*, March 2014.
[2] For more information on the policy see HM Treasury, *Policy Costings Document*, November 2025.
[3] For more information on the OBR's VED forecast, see OBR, Forecast in-depth: *Vehicle excise duty*, November 2025.

- Vehicle registration data collected by the Department for Transport was used in the costing to account for the stock of cars which will be subject to eVED but are excluded from DVLA data as they are not liable under the current VED system.[4,5] Car-age specific scaling factors were calculated as the ratio of the total registered car stock to VED-liable car stock. The costing assumed the ratio is similar across different car fuel types (petrol, diesel, hybrid, plug-in hybrids, battery electric) in outturn data, and assumed the ratio will remain constant over time. A scaling factor which is fixed, conditional for car age, was therefore applied across the forecast period.[6]

- MOT mileage data collected by the Driver and Vehicle Standards Agency (DVSA) was used to estimate average annual mileage of vehicles conditional on car age. The costing estimated average mileage combined across BECs and PHECs due to data limitations.[7]

Modelling

Static costing

1.5 The tax base for this costing is the annual mileage of the total stock of BECs and PHECs in traffic. The static costing was calculated in the costing as the product of the **total stock of BECs and PHECs in traffic** and the estimated **average annual mileage**.

1.6 To estimate the **total stock of BECs and PHECs in traffic** across the forecast period, the costing used outturn data on the stock of existing cars, and the pre-measures VED forecast for electric car uptake to project the car stock across the forecast period. The VED forecast model uses OBR economic assumptions for consumption and market expectations of the Bank of England interest rate, shown in Table 1.2.

1.7 Car sales in the VED forecast model are then broken down by fuel type using assumptions informed by the Government's zero-emission vehicle mandate (ZEV mandate), which requires EVs to make up an increasing minimum proportion of total manufacturer sales over the next five years, reaching 80 per cent in 2030. The car stock is uplifted by scaling factors, described in paragraph 1.4. The tax base and static yield grow across the forecast period as the total electric car stock expands, which is uncertain.

1.8 **Average annual mileage** conditional on car age was estimated in the costing using MOT mileage data, described in paragraph 1.4. For BECs and PHECs aged up to four years, mileage was estimated as the combined average across both fuel types. For cars older than five years, mileage was estimated as the average across all fuel types due to data reliability concerns. Where the all-fuel-type average was used, however, mileage was scaled up by 5

[4] For example, cars leased through the Motability scheme are not liable for VED but will be liable for eVED.
[5] HM Government, *Vehicle licensing statistics data tables,* January 2026.
[6] Car-age specific scaling factors are calculated for 2021-22, 2022-23, 2023-24 and 2024-25 as the ratio of total registered cars relative to the stock of cars liable for VED in each year of the data, conditional on car-age. Final scaling factors used in the analysis are obtained by averaging across the four years of data for a more stable estimate.
[7] Cars under the age of three years in Great Britain, and under the age of four years in Northern Ireland, are not required to undergo an MOT, and mileage data is therefore unavailable. Data for each of these years is estimated as equal to one-third of the mileage observed at the car's first MOT reading.

per cent to adjust somewhat for higher observed mileage in younger BECs and PHECs. The costing assumed this trend would continue to some extent for older electric cars because they have lower operating costs than petrol and diesel cars.

Behavioural response

1.9 The behavioural response to the measure is highly uncertain. The behavioural channels affecting revenue from eVED which were considered in this costing were changes in purchasing behaviour, a manufacturer pricing response, changes in driving behaviour, and non-compliance.

1.10 The main behavioural channel considered in this costing was **changes in purchasing behaviour** of PHECs and BECs, which affected revenue from eVED because car purchases determine the size of the tax base. The introduction of eVED will increase the total cost of owning an electric car. As a result, we expect a reduction in electric car purchases relative to the pre-measures forecast which depends on the magnitude of increase in lifetime costs and the purchasing elasticity of demand for electric cars.

1.11 The costing compared the average **lifetime costs** of owning an electric car before and after the introduction of eVED, using assumptions on purchasing and operating costs:[8]

- To estimate initial purchasing costs, the costing used outturn data on the average list price of electric cars from commercial data, grown across the forecast period using assumptions consistent with the baseline VED forecast.[9] In each year of the forecast period, list prices were reduced by 11 per cent to reflect the level of discounts offered in the current electric car market.

- To estimate annual operating costs before the introduction of the policy, shown in Table 1.1, the costing used assumptions on annual charging, insurance, maintenance and VED costs. The net present value of lifetime costs was calculated as the discounted sum of annual costs, assuming cars remain in traffic for 15 years and operating costs remain constant in real terms, using a discount rate of 5 per cent.

- Annual eVED charges (estimated using average mileage conditional on car age, described in paragraph 1.8) were included within operating costs to estimate the post-policy net present value of owning an electric car. By comparing the net present value pre-policy and post-policy, the costing estimated that eVED will increase lifetime costs for BECs and PHECs in 2030-31 by 4.3 per cent and 2.2 per cent respectively. This estimate is highly uncertain and dependent on the assumptions used in the modelling.

1.12 The costing used a **purchasing elasticity of demand** of -2 for the change in purchasing behaviour. This is a highly uncertain judgement which used evidence from a range of sources, including a UK-based study using car purchase data between 2008 and 2019

[8] The lifetime costs of BECs and PHECs are modelled identically except for eVED where PHECs are charged at a half-rate.
[9] The costing does not model the impact of changing lifetime costs on leasing costs due to uncertainty. In practice, more than 80 per cent of new car sales are purchased through leasing or financing arrangements. Sensitivity testing indicated that considering alternative financing methods did not have a material impact on the revenue from this measure.

which identified an elasticity of -1.5 for an increase in the price of a single EV model.[10] The costing used a slightly higher elasticity to reflect that individuals purchasing electric cars in future, when the ZEV market share will be higher, could be more price-elastic than early adopters of electric vehicles.

1.13 In absence of any **manufacturer pricing response** to eVED, the changes in purchasing behaviour (paragraphs 1.10 to 1.12), when considered alongside additional measures announced at Budget 2025 (paragraphs 1.17 and 1.18), would result in the ZEV mandate (paragraph 1.7) being breached. The baseline pre-measures VED forecast already assumes that manufacturers will make full use of existing ZEV mandate flexibilities. The costing therefore assumed that manufacturers will rely on price discounts on BECs and PHECs to meet the mandate, subsidised by price increases on petrol and diesel cars.[11] This behaviour is highly uncertain but is likely to affect revenue from eVED because price changes will affect electric car sales. Manufacturer discounts were calibrated to the level at which electric car sales return to ZEV mandate compliant levels, using the methodology described in paragraphs 1.10 to 1.12, but capped at 4 per cent to reflect an assumed minimum price at which selling an additional electric car is no longer profitable for manufacturers.[12] Additionally, the costing modelled a fall in petrol and diesel car sales as a result of price increases, using the methodology described in paragraphs 1.10 to 1.12, with some buyers substituting to an electric car purchase instead.[13]

1.14 In the costing, the modelled manufacturer pricing response mitigated the fall in electric car purchases because, relative to a counterfactual where eVED is not implemented, the increase in lifetime costs after policy implementation is smaller. The costing, combined with the purchasing effect of other Budget measures (described in paragraphs 1.17 and 1.18), modelled a total reduction in electric car sales of 120,000 or 2.2 per cent across the forecast period. This is a 220,000 increase in car sales relative to the modelled consumer behavioural response without pricing changes, after the purchasing effect of other Budget measures. Fewer car purchases reduces the total stock of BECs and PHECs relative to the pre-measures forecast. As a result, the growth in electric cars is somewhat slower across the forecast period, with the stock of BECs and PHECs expected to grow from 3.6 million in 2026-27 to 8.7 million in 2030-31 (Table 1.2). Fewer electric car purchases reduces the static yield of this costing by £150 million or 7.1 per cent in 2030-31, accounting for the purchasing effect of other Budget measures and the impact on other tax heads.

1.15 The costing also estimated the effect of eVED on **changes in driving behaviour** after reductions in electric car purchases. This was modelled in the costing as the product of the price elasticity of demand of driving costs and the proportional change in driving costs due to eVED. The costing used a price elasticity of demand of -0.16, within the range of the

[10] Mandys, F. and Taneja, S. 'Demand for green and fossil fuel automobiles', *Transportation Research Part A: Policy and Practice*, December 2024.
[11] OBR forecasts are conditioned on stated Government policy. The pre-measures VED forecast therefore assumes car sales will be compliant with the ZEV mandate, and the costing note implemented the manufacturers' behavioural response to ensure the post-measures forecast is also consistent with stated Government policy.
[12] The discount cap used in the costing is highly uncertain but used evidence on existing levels of discounts available for electric cars across the market. The modelling implemented a highly simplified version of the potential behavioural response which, in reality, will vary across manufacturers and may also include strategies such as adjusting supply plans.
[13] The proportion of buyers of petrol and diesel cars who substitute to an electric car was modelled as equalling the ZEV market share.

short-run and long-run elasticities used within the baseline fuel duty forecast model.[14] This estimate is uncertain, for example because drivers of electric cars will pay eVED annually or via direct debit rather than each time they go to a petrol station, which may affect the salience of the charge. Given that the price elasticity of demand was calibrated to drivers of petrol and diesel cars, the proportional change in driving costs was calculated relative to the baseline level of driving costs of petrol and diesel cars. This modelling estimated a 20 per cent increase and 10 per cent increase in driving costs per mile driven for BECs and PHECs, respectively, due to eVED. As a result, the costing modelled a 3.2 and 1.6 per cent fall in mileage for BECs and PHECs respectively, leading to a £60 million, or 3.0 per cent, reduction in revenue relative to the static yield, after the purchasing effect of other Budget measures.

1.16 The final behavioural response modelled in the costing was a reduction in revenue due to eVED **non-compliance**. The costing assumed a 98.5 per cent compliance rate, in line with the level of non-compliance in the current VED system. This behaviour reduced revenue in 2030-31 by a further £30 million, or 1.4 per cent relative to the static yield, after the purchasing effect of other Budget measures.

Interactions with other measures

1.17 The Government announced a range of other measures which affect car purchasing behaviour alongside eVED. This included an increase to the expensive car supplement threshold for electric cars, an expansion of the electric car grant, changes to the emissions regulation of plug-in hybrid electric vehicles and the introduction of VAT on additional payments and insurance premium tax on vehicles leased from the Motability scheme.[15]

1.18 The effect of the additional policy measures is uncertain, but in aggregate they are likely to increase electric car purchases. In the costing of eVED, this is accounted for before the **manufacturers' pricing response** (paragraphs 1.13 and 1.14). Additional car sales as a result of these measures offsets some of the fall in sales due to eVED, somewhat mitigating the level of repricing necessary for manufacturers to remain compliant with the ZEV mandate.

[14] For more information on the OBR's fuel duty forecast, see OBR, Forecast in-depth: *Fuel duties,* February 2026.
[15] For more information on these policies see HM Treasury, *Policy Costings Document*, November 2025.

Table 1.1: Key parameters

Parameter	Value	Description
eVED charge rates (£ per mile driven, real 2027/28 £)		
Pre-policy	£0	eVED charge on electric cars under previous policy.
Post-policy, battery electric cars	£0.03	eVED charge on BECs under new policy.
Post-policy, plug-in hybrid electric cars	£0.015	eVED charge on PHECs under new policy.
Final costing		
Average annual mileage, car age 0	8,450	Modelled average mileage post-policy of cars age 0 used in the costing
Average annual mileage, car age 15	5,870	Modelled average mileage post-policy of cars age 15 used in the costing
Purchasing behavioural response		
Average EV discount from list price (per cent)	11	The level of discount applied to the list price of electric cars across the forecast period, reflecting discounts observed in the current electric car market.
Pre-policy annual operating costs (real 2025 £)	1,849	Assumption used in the costing for the annual costs of operating an electric car age 0
Average lifetime of car (years)	15	Assumption used in the costing for the average lifetime of a car, used to estimate the net present value of car
Discount rate (per cent)	5	Real discount rate used to estimate the net present value of car ownership
Purchasing price elasticity of demand	-2.0	The percentage change in the quantity of new electric car purchases as a result of a 1% increase in the lifetime costs of owning an electric car.
Driving behavioural response		
Price elasticity of demand of driving costs	-0.16	The percentage change in the number of miles driven as a result of a 1% increase in the driving costs of a BEC/PHEC.
Proportional change in BECs driving costs (per cent)	20	Proportional change in driving costs of BECs as a result of eVED.
Proportional change in PHECs driving costs (per cent)	10	Proportional change in driving costs of PHECs as a result of eVED.
Non-compliance behavioural response		
eVED compliance rate (per cent)	98.5	The proportion of liable eVED revenue successfully collected due to tax compliance.

Source: HMRC, OBR

Table 1.2: OBR determinants used in costing

	Forecast				
	2026-27	2027-28	2028-29	2029-30	2030-31
Post-measures stock of BECs and PHECs (millions)	3.6	4.5	5.7	7.1	8.7
CPI annual growth (per cent)	2.2	2.0	2.1	2.0	2.0
Consumption annual growth (per cent)	3.9	4.6	4.7	4.6	4.5
Bank rate (per cent)	3.6	3.7	3.8	3.9	4.1

Source: HMRC, OBR

Final costing

1.19 The final costing estimated a central revenue yield of £1.1 billion in 2028-29, the first year of the policy, rising to £1.9 billion at the forecast horizon. In 2030-31, the direct

behavioural effect outlined above reduces the static yield, equal to £2.1 billion, by £0.2 billion or 12 per cent. Revenue from this policy will increase beyond the forecast period as the share of electric cars on the road continues to grow over time, reaching steady state when all cars are electric. In 2050-51, when around 90 per cent of cars on the road are projected to be fully electric, this measure is estimated to raise £7 billion in today's prices.

Table 1.3: Costing of a new mileage-based charge on electric cars

	£ billion				
	Forecast				
	2026-27	2027-28	2028-29	2029-30	2030-31
Static costing	0.0	0.0	1.3	1.6	2.1
Direct behavioural effect	0.0	-0.1	-0.2	-0.2	-0.2
Post-behavioural costing	**0.0**	**-0.1**	**1.1**	**1.4**	**1.9**

Source: HMRC, OBR

1.20 This policy costing was assigned a high uncertainty rating.[16] The main driver of uncertainty relates to the uptake of electric cars over the forecast period.

[16] See the 'Policy costings uncertainty ratings database – November 2025' spreadsheet at OBR, *Policy costings*, November 2025.