

World leading EV incentives in UK from 6 April 2020

With the UK Government playing a leading role on emissions reduction, a major uprating of UK incentives for EVs comes into force in April 2020, writes Alan James.

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With the world's attention rightly focussed on the massive and urgent planet-wide battle against coronavirus, it is perhaps easy to forget that the long term health of the planet still depends on curing an even more difficult, chronic and persistent condition: the world's addiction to hydrocarbons. Just as the virus attacks the lungs of the individual, the stubborn pandemic of CO₂ emissions destroys the lungs of the planet, as climate change kills rainforests and accelerates desertification.

To its credit, the UK Government is taking a leading role in the fight against emissions. On 27 June 2019 the UK became the first major economy in the world requiring all greenhouse gas emissions to be reduced net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels under the Paris climate agreement. This legislative commitment has already been shown to be not just fine words, but to have sharp legal teeth which can take incisive bites out of emissions-increasing projects. On 27th February 2020, the Court of Appeal in London issued the first major legal judgement in the world to be based on the Paris agreement, ruling the proposed construction of Heathrow Airport's long-planned third runway illegal "because [previous] ministers did not adequately take into account the government's [own] commitments to tackle the climate crisis" when giving consent for it to proceed.

Tellingly, the current Government chose not to appeal the Heathrow ruling, sending a clear signal that emissions reductions outrank the economic benefits the runway would have delivered. The strategic logic is clear, as the Government itself puts it: "The UK kick-started the Industrial Revolution, which was responsible for economic growth across the globe but also for increasing emissions." But now, taking a proactive lead on emissions reduction "could see the number of 'green collar jobs' grow to two million and the value of exports from the low carbon economy grow to £170 billion a year by 2030." In short, emissions reduction is good business for 'UK plc'.

Real world, hard cash, benefits.

A very tangible example of how the UK's climate commitments translate into policies with a direct, practical impact comes into effect on 6 April 2020, the start of the new tax year. From that date, a very significant shift in the way cars owned by businesses are taxed will make electric vehicles (EVs) overwhelmingly more attractive than internal combustion engine (ICE) vehicles.

The tables in this article highlight the hard cash benefits. These are calculated on the basis of 45,000 miles driven over three years by an employer earning paying the UK's 40% tax rate on any taxable income above £50,000, and who receives a car as part of their remuneration package. Importantly, for all the incentives to apply, the EV must be owned – outright or under a Hire Purchase deal – by the company which gives the employee the benefit of use of the car.

In the comparison detailed here, a Tesla Model S Performance EV priced at £95,800 goes head-to-head with a luxury ICE car costing exactly the same, but emitting 170g/km of CO₂ versus the Tesla's zero tailpipe emissions.

The key is that the whole of the UK's tax treatment of cars is now directly coupled to their emissions, with the heaviest polluting ICE cars emitting over 170g/km taxed punitively, and a very steep curve meaning that even mid-range family cars using ICE technology are hit hard.

The first major incentive is the highly preferential *personal* taxation of company car drivers, as shown in Table 1. The table shows the different taxes levied on EV versus ICE on the 'Benefit In Kind' (BIK) of a car made available by a company to an employee as part of her/his overall remuneration package. BIK simply applies tax to a certain proportion the benefit of having a company car, as if that benefit were taxable cash income. The key point is that the taxable proportion (the 'BIK rate' multiplier) is very considerably higher for ICE than for EV.

TABLE 1: BENEFIT IN KIND TAX ON THE EMPLOYEE USING THE CAR	Tesla	ICE
Value of car for tax purposes (the “P11D” value in UK tax system)	£95,800	£95,800
Tailpipe emissions (g/km CO ₂)	0	170
Benefit In Kind multiplier in 2020-21 (BIK rate)	0%	37%
Benefit In Kind multiplier in 2021-22 (BIK rate)	1%	37%
Benefit In Kind multiplier in 2022-23 (BIK rate)	2%	37%
Driver’s marginal tax rate applicable for BIK purposes (UK higher rate)	40%	40%
Benefit in Kind tax calculation: P11D value x BIK rate x driver’s tax rate		
BIK tax to be paid by driver in 2020-2021	£0	£14,178
BIK tax to be paid by driver in 2021-2022	£383	£14,178
BIK tax to be paid by driver in 2022-2023	£766	£14,178
Total BIK tax paid by employee driving the car over three years	£1,150	£42,535
Saving over three years: £41,386		

As the table shows, after three years, the employee receiving a Tesla Model S Performance as part of her/his remuneration package will be £41,386 better off in post-tax take home pay. Put another way, if a company partly ‘pays’ its employee with the Tesla rather than, say, a luxury German car, it will effectively be giving that person a tax free pay rise of £13,795 a year averaged over the three year period - surely a fantastic HR tool for attracting and retaining top talent. And the best bit: the company itself doesn’t even have to pay for it; from the company’s perspective it’s all ‘free money’ from the tax system.

The *company* itself is also incentivised to switch from ICEs to EVs by two further major tax breaks. The first is to be found in the somewhat arcane workings of the system which taxes companies which provide Benefits In Kind, such as cars, to their employees. Here the formula is P11D value x BIK Rate x 13.8%, the output of which are the grippingly exciting ‘Employers Class 1A National Insurance Contributions (NIC)’.

TABLE 2: NIC TAXATION OF THE COMPANY OWNING THE CAR	Tesla	ICE
Value of car for tax purposes (the “P11D” value in UK tax system)	£95,800	£95,800
Tailpipe emissions (g/km CO ₂)	0	170
Benefit In Kind multiplier in 2020-21 (BIK rate)	0%	37%
Benefit In Kind multiplier in 2021-22 (BIK rate)	1%	37%
Benefit In Kind multiplier in 2022-23 (BIK rate)	2%	37%
NIC tax rate applicable	13.8%	13.8%
NIC tax calculation: P11D value x BIK rate x NIC tax rate		
NIC tax to be paid by company in 2020-2021	£0	£4,892
NIC tax to be paid by company in 2021-2022	£132	£4,892
NIC tax to be paid by company in 2022-2023	£264	£4,892
Total BIK tax paid by employee driving the car over three years	£397	£14,675
Saving over three years: £14,278		

£14,278 NIC savings are already a substantial incentive to the company which owns the EV and gives the car to its employee as part of their overall pay package. However, that's not the only sweetener the tax system is aiming at companies to encourage them to switch their company car fleets from ICE to electric.

Another major benefit comes through the the Capital Allowances system, which allows companies to account for depreciation by 'writing down' a proportion of the value of any asset they own (including cars) in each tax year. This Writing Down Allowance (WDA) is also calculated for cars on an emissions-related basis, on the formula P11D Value x Allowable Percentage. The full amount of resulting figure is then used to reduce the tax on the company's profits in the year in question. The allowable percentages are as follows.

- A standard WDA of 18% of the P11D value applies to cars emitting under 135 g/km.
- Only 6% of the P11D value for cars emitting over 135 g/km can be written off each year.
- A full 100% of the P11D value for cars with zero tailpipe emissions can be written off in Year 1.

Table 3 shows how the company owning the Tesla benefits in cashflow terms by front-loading 100% of WDA into Year 1 and thus reducing the tax on its profits in that year, compared to only being able to depreciate 6% of the cost of an identically priced ICE car for each of the three years of our comparison.

TABLE 3: Writing Down Allowance benefit to the company	Tesla	ICE
Value of car for tax purposes (the "P11D" value in UK tax system)	£95,800	£95,800
Tailpipe emissions (g/km CO ₂)	0	170
WDA allowable to reduce profits tax payable by company in 2020-2021	100%	6%
WDA allowable to reduce profits tax payable by company in 2021-2022	0%	6%
WDA allowable to reduce profits tax payable by company in 2022-2023	0%	6%
UK Corporation Tax (Profits Tax) Rate	19%	19%
Tax reduction benefit in 2020-2021 (P11D Value x WDA x Corp Tax Rate)	£18,202	£1,092
Tax reduction benefit in 2021-2022	£0	£1,092
Tax reduction benefit in 2022-2023	£0	£1,092
Total corporation tax saved by the company over three years	£18,202	£3,276
Saving over three years: £14,926		

Taken together, across employee and company taxes together, as shown in Tables 1, 2 and 3, the EV is taxed total £73,866 less than the ICE car. That equates to 77.1% of the sticker price of the Tesla. This is an extraordinarily generous incentive to Go Electric. But there's more.

- If any EV is used for commuting into London for 5 days a week, for 46 weeks a year, over the three years of the comparison, a total of £30 administration charge is payable to enter the London Congestion Charge zone.
- If any ICE car is used in exactly the same way, a total of £7,245 Congestion Charge would be payable over the three years.

The London Congestion Charge adds £7,215 further potential savings over the three years. And there's still more to come.

Simply driving the vehicle produces savings too. Fuelling any EV with electricity costs substantially less than filling the petrol tank on a comparable ICE car. This can be modelled as follows.

- Assume a typical 15,000 miles per year (45,000 miles over the three year comparison period).
- Assume a generous 36.2 mpg for a large luxury ICE car.
- Would require 414 gallons (= 1,881 litres) to cover the 15,000 miles per year.
- Assume petrol costs a typical £1.32 per litre.
- Annual petrol costs are £2,483
- **Three year petrol costs total £7,450**

For the Tesla:

- Model an exceptionally conservative average 428 Wh/mile, to allow for hard real-world driving.
- Requires 6,420 kWh (6.42 MWh) to cover 15,000 miles per year.
- Assume 60% (3,852 kWh) charged at home @ discounted Time Of Use Tariff of 5 pence/kWh.
- Assume 40% (2,568 kWh) charged at Tesla Superchargers at 24 pence/kWh.
- Annual electricity costs to cover 15,000 miles are £809.
- **Three year electricity costs total £2,427**

Electricity versus petrol cost savings total £5,203 over the three years.

If the company buying the car takes advantage of Tesla's 'free supercharging for life' offer, which is currently available in the UK on Model X and Model S, the total electricity costs are only £192.66 a year; totalling only £578 over three years.

With free supercharging the electricity versus petrol cost savings would amount to £6,872 over three years.

Fuel costs bring a tax benefit too. If the company is reimbursing the employee's petrol costs, the employee must also pay a Benefit In Kind tax on that fuel too. The formula applicable is BIK rate x Fuel Charge Multiplier x Employee's Tax Rate. In tax year 2020-21, the Fuel Charge Multiplier is £24,500. In the case of our ICE car, the calculation for each year is:

- $37\% \times £24,500 \times 40\% = £3,626$ per year

Over 3 years, the Fuel Tax Benefit payable by the employee would be £10,878, assuming the Fuel Charge Multiplier stays the same. Usually it goes up every year by an inflation factor, so this tax bill is likely to be marginally higher over the three years. **Electricity is not counted as a "fuel" for tax purposes and zero tax is payable. Over the three years, the employee's fuel tax savings benefit will be at least £10,878.**

Whilst savings versus petrol would be made if the EV was 'fuelled' with electricity at the UK average cost of around 15p/kWh, these cost-of-driving savings can be 'turbocharged' by using super-cheap electricity in the small hours to charge the EV when it is parked at home overnight. A further Government incentive is available to enable this. If one uses a scheme-accredited electrician, the Office for Low Emissions Vehicles will subsidise up to £350 of the cost of installing a dedicated 7.4 kW EV chargepoint (maximum £750 for two units) on domestic or workplace premises.

Such chargepoints typically enable an EV to charge at a rate of 18 miles for every hour it is connected. Using a market-leading UK 'Time Of Use Tariff' of 5p/kWh (compared to 15p/kWh UK average price) enables an EV to charge around 72 miles of a cost of only £1.48 in the four hour off-peak period between 00:30 and 04:30.

Links to the author's recommend electricity supplier, chargepoint installer and smart EV chargepoint are at <https://electrifylife.co.uk/links>.

That's part of a broader website – [How To Electrify Your Life, Save Loads Of Money And Save The Planet Too](#) which presents in-depth practical data on using EVs, chargepoints, solar micro-generation to 'fuel' EVs and domestic storage batteries.

If the Fuel Tax Benefit is the icing on an incentives cake largely consisting of BIK, NIC and WDA tax breaks, then Vehicle Excise Duty (VED, commonly called 'Road Tax') is the cherry on top.

TABLE 4: Vehicle Excise Duty (VED)	Tesla	ICE
Tailpipe emissions (g/km CO ₂)	0	170
Emissions related VED payable in 2020-2021	£0	£530
Standard VED payable in 2021-2022	£0	£155
Luxury Car Supplement (cars over £40,000) Year 2, not payable Year 1	£320	£320
Standard VED payable in 2022-2023	£0	£155
Luxury Car Supplement (cars over £40,000) Year 3	£320	£320
Total VED payable by the company owning the car over three years	£640	£1,480
Saving over three years: £840		

Total benefits over 3 years and 45,000 miles: Tesla Model S Performance versus ICE.

Table 5 summarises tax benefits over three years based on a £95,800 Tesla Model S Performance versus a high-end ICE car costing exactly the same amount of money. As previously stated, the comparison assumes:

- The car is purchased and owned, or Hire Purchased, by a company which pays 19% Corporation Tax on its profits.
- It is made available as a Benefit in Kind to an employee whose marginal tax rate is 40% (a higher rate taxpayer under the UK tax system).
- It is driven for 15,000 miles over three years.

TABLE 5: Summary of all tax benefits and savings over three year	Tesla	ICE	Saving
Value of car for tax purposes ("P11D" value in UK tax system)	£95,800	£95,800	
Tailpipe emissions (g/km CO ₂)	0	170	
Personal tax on the employee using the car			
Benefit in Kind (Table 1)	£1,150	£42,535	£41,386
Fuel Benefit Charge	£0	£10,878	£10,878
Total personal tax payable over three years	£1,150	£53,413	£52,264
Business tax on the company owning car			
NIC tax on car given as Benefit in Kind (Table 2)	£397	£14,675	£14,278
Vehicle Excise Duty (Table 4)	£640	£1,480	£840
Corporation tax saved with Writing Down Allowance (Table 3)	-£18,202	-£3,276	£14,926
Total business tax payable over three years	-£17,165	£12,878	£30,044
Other savings			
Fuel costs (assuming free supercharging)	£578	£7,450	£6,872
London Congestion Charge (if applicable)	£30	£7,245	£7,215
Total other costs over three years	£608	£14,695	£14,087
Total taxes, fuel costs and congestion charge paid out over three years by both company and employee, with car travelling 45,000 miles.	-£15,408	£80,986	
GRAND TOTAL INCENTIVES AND SAVINGS OVER 3 YEARS			£96,394

It does not take a maths genius to work out that the UK Government is getting properly serious with its tax breaks here. On the basis of these two cars over three years, the company gets a £30,000 incentive to Go Electric and the employee gets a massive £52,000 sweetener from the Treasury.

If the maximum possible savings of free supercharging and exemption from the London Congestion Charge are applicable, the total three year benefits, shared between company and employee, could amount to **£96,394 less paid out in tax, fuel and congestion charge for the EV versus the ICE car. That's a total incentive of 100.6% of the sticker price of the car.** Short of simply giving everybody an EV, it is difficult to see how Government could make its intentions any clearer. As Avril Lavigne put it Sk8er Boi, "can I make it any more obvious"? Probably not.

The policy objective of incentivising company EV fleets.

So why is the UK Government doing this? This answer is twofold. Firstly, it is providing a powerful fiscal and financial incentive for companies to electrify their fleets right now. It is putting in place an unarguable framework of good old-fashioned economic self interest to make it, frankly, pretty dumb for any responsible CEO, CFO or fleet manager to hold out for gas guzzlers.

But the company car tax breaks are only the front-end of the deal, it's the second part which is probably even more important. That's all about *used* cars.

In the UK, the vast majority of citizens buy their cars used, not new. According to SMMT data for 2019, there were 2.3 million new car registrations in 2019, but 7.9 million used cars were sold. This is the real nut which must be cracked before electric motoring truly gains wide public acceptance. There must be a good supply of *used* electric cars, at prices affordable by used car buyers, before EVs truly gain mass market traction.

That's where the company car fleets come in. Typically, companies renew their fleets on a two or three year cycle. There are around 900,000 company car drivers paying BIK in the UK, and their companies will be heavily incentivised from 2020 onward to make their fleets electric. So it can be expected that large numbers of used electric cars will hit the second hand market from around 2023 onwards as companies refresh their fleets. It is also likely that this supply of used EVs rotating out of company fleets will be sustained over time a number of years, because Government has given fleet managers clarity that the 'electric advantage' taking effect in 2020-21 tax year will be sustained over several tax years to come.

By the time company fleet EVs start cascading in large numbers into the used market, several other Government initiatives should also have delivered real world results too, most notably the £400m Charging Infrastructure Fund, which aims to double the number of rapid chargers in the UK to over 5,000, overcoming range anxiety associated with longer road trips by EV. That programme has the target that nowhere in the UK should be over 30 miles from a rapid chargepoint.

The medium term impact on the private citizen used car market will only become clear in a few years time, but it is already obvious that one of the most compelling incentives regimes anywhere in the world will come into force on 6 April 2020, to promote and support the adoption of EVs by UK business users.

Clear benefits also apply for lower cost vehicles.

Obviously, the Tesla Model S versus top-end ICE car comparison shines a light only on the uppermost end of the market. These are cars that only company directors and very senior employees would usually drive on a BIK basis.

So how do things look further down the scale, looking at the kinds of a broader spectrum of taxpayer drivers would normally use on a company cars?

Using the same underlying tax and savings calculations as for the high-end comparison, but adjusting for the lower costs of the cars concerned and the lower rated emissions and better mpg of the ICE competitor, Table 6 summarises the benefits of a mid-market head to head between a Tesla Model 3 Standard Range Plus and a BMW 330i M Sport Saloon (Sedan). Both of these cars cost less than £40,000 so are not liable for the 'luxury car' Road Tax (VED) supplement.

As the table shows, the maximum possible three year combined savings, incentives and benefits between employee and employer could amount to over 120% of the sticker price of the EV, calculated on the same delta between the total taxes, fuel costs and congestion charge payable for the EV versus the ICE competitor. It is very hard to envisage a more compelling set of incentives.

TABLE 6: MID-MARKET COMPARISON Summary of all tax benefits and savings over three year 45,000 miles, driver higher rate tax payer	Tesla Model 3 SR+	BMW 330i M Sport	Saving
Value of car for tax purposes ("P11D" value in UK tax system)	£38,500	£39,285	
Tailpipe emissions (g/km CO ₂)	0	134	
Personal tax on the employee using the car			
Benefit in Kind (Table 1)	£462	£14,143	£13,681
Fuel Benefit Charge	£0	£8,820	£8,820
Total personal tax payable over three years	£462	£22,963	£22,501
Business tax on the company owning car			
NIC tax on car given as Benefit in Kind (Table 2)	£159	£4,879	£4,720
Vehicle Excise Duty (Table 4)	£0	£520	£520
Corporation tax saved with Writing Down Allowance (Table 3)	-£7,315	-£1,344	£5,971
Total business tax payable over three years	-£7,156	£4,055	£11,211
Other savings			
Fuel costs (assuming free supercharging)	£578	£6,498	£5,920
London Congestion Charge (if applicable)	£30	£7,245	£7,215
Total other costs over three years	£608	£13,743	£13,135
Total taxes, fuel costs and congestion charge paid out over three years by both company and employee, with car travelling 45,000 miles.	-£6,086	£40,761	
GRAND TOTAL INCENTIVES AND SAVINGS OVER 3 YEARS			£46,847

Finally, further down the market, Table 7 sets out a comparison between a Nissan Leaf and a popular specification of the mass market Ford Focus.

In this instance, both cars still travel 45,000 over three years, but the driver is a standard rate taxpayer, with a total taxable income of less than £50,000 per year.

TABLE 7: MASS MARKET COMPARISON Summary of all tax benefits and savings over three year 45,000 miles, driver standard rate tax payer	Nissan Leaf	Ford Focus Titanium 1.5L EcoBoost 150PS	Saving
Value of car for tax purposes ("P11D" value in UK tax system)	£26,345	£25,095	
Tailpipe emissions (g/km CO ₂)	0	125	
Personal tax on the employee using the car			
Benefit in Kind (Table 1)	£158	£4,367	£4,209
Fuel Benefit Charge	£0	£4,263	£4,263
Total personal tax payable over three years	£158	£8,630	£8,472
Business tax on the company owning car			
NIC tax on car given as Benefit in Kind (Table 2)	£109	£3,013	£2,904
Vehicle Excise Duty (Table 4)	£0	£480	£480
Corporation tax saved with Writing Down Allowance (Table 3)	-£5,006	-£2,575	£2,431
Total business tax payable over three years	-£4,897	£918	£5,815
Other savings			
Fuel costs (assuming 40% at 24p/kWh, 60% overnight)	£1,503	£5,618	£4,115
London Congestion Charge (if applicable)	£30	£7,245	£7,215
Total other costs over three years	£1,533	£12,863	£11,330
Total taxes, fuel costs and congestion charge paid out over three years by both company and employee, with car travelling 45,000 miles.	-£3,206	£22,411	
GRAND TOTAL INCENTIVES AND SAVINGS OVER 3 YEARS			£25,617

Here again, the incentives and savings achievable are exceptionally compelling, taking the employer and employee benefits as a whole. If the car is used to commute into London, the EV is a £25,617 better bet than the ICE car. That's 97.2% of the sticker price of the Nissan Leaf.

Those Leafs (Leaves?) will hit the second hand dealers in a couple of years, and they will be on the forecourts with a windscreen sticker price around £12,000 to £14,000 assuming typical depreciation rates for that model. And that's the point when a huge swathe of the UK car buying public can finally afford to Go Electric.

About the author.

Dr Alan James is Partner at [Expert Alliance \(expall.com\)](http://expall.com), the specialist rail, maglev and hyperloop consultancy, and has extensive experience in mobility and GreenTech. He also publishes the website [How to Electrify your Life, Save Loads of Money and Save the Planet Too \(electrifylife.co.uk\)](http://electrifylife.co.uk). Alan also serves as Ambassador for Transport and Infrastructure, Institute of Directors Yorkshire & North East.

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