

How we calculate the cost savings...

Using guidance from Next Greencar¹, there are a number of formulas which provide the basis for our cost calculator

1. Journey Fuel Costs - calculated by multiplying fuel economy (litres or kwh/100km) x distance (miles or km) x fuel price (in pence per litre)
2. Cost Per Mile - calculated by multiplying fuel economy (litres or kwh/100 km) x fuel price (in pence per litre)
3. Annual Fuel Costs - calculated by multiplying fuel economy (litres or kwh/100km) x distance (miles or km) x fuel price (pence per litre) x annual mileage

The calculations will vary based on the type of vehicle selected, however for the purposes of the FASTER Project we will focus on comparing three of the best-selling ICE vehicles classified by size and Battery Electric Vehicles of an equivalent size.

For vehicles which are fueled by petrol or diesel, the fuel cost is calculated by multiplying the fuel economy (in litres per 100km) by fuel price (in pence per litre) and the distance drive (in km or miles). For vehicles which are fueled by electricity, the fuel cost is arrived at by multiplying the fuel economy (in kWh per 100km) by fuel price (in pence per kWh) and the distance driven (in km or miles).

In developing the savings calculator we are making a number of assumptions:

- **Distance Driven:** The average driver in the UK travels approx. 7,900 (UK - 2019)² miles on an annual basis. In the Republic of Ireland the average driver travels approx. 10,500 miles per year.³ The calculator will automatically default to 10,000 miles (16,093.44km) - however users will be able to modify this number based on their own estimated annual mileage.
- **Fuel Price UK (Petrol and Diesel Vehicles):** The average fuel price in the UK at June 2021 is 132.3p (Petrol 131.1)⁴ + (Diesel 133.5)⁵ and this will be the default fuel price – users will be able to manually modify this based on current prices at the time of using the calculator. Therefore the costs for users of petrol vehicles will be over-estimated and the costs for diesel drivers under-estimated.
- **Fuel Price ROI (Petrol and Diesel Vehicles):** The average fuel price in the Republic of Ireland in June 2021 is 143.1 (Petrol 148.2)⁶ + (Diesel 138.1)⁷ and for users who select to calculate ROI prices this will be the default price – users will be able to manually modify this based on current prices at the time of using the calculator. Therefore the costs for users of petrol vehicles will be under-estimated and the costs for diesel drivers over-estimated.

¹ <https://www.nextgreencar.com/content/NGC-Fuel-Cost-Calculator-Methodology-2015.pdf>

² <https://www.bymiles.co.uk/insure/magazine/mot-data-research-and-analysis/>

³ [https://www.ccpc.ie/consumers/cars/car-clocking/#:~:text=The%20average%20annual%20mileage%20of,24%2C000%20kilometres%20\(15%2C000%20miles\).](https://www.ccpc.ie/consumers/cars/car-clocking/#:~:text=The%20average%20annual%20mileage%20of,24%2C000%20kilometres%20(15%2C000%20miles).)

⁴ https://www.globalpetrolprices.com/United-Kingdom/gasoline_prices/

⁵ https://www.globalpetrolprices.com/United-Kingdom/diesel_prices/

⁶ https://www.globalpetrolprices.com/Ireland/gasoline_prices/

⁷ https://www.globalpetrolprices.com/Ireland/diesel_prices/

- **Electricity Price UK:** The average price of Electricity per kWh in the UK at June 2021 is 17.2p⁸ and this will be the default electricity price – users will be able to manually modify this based on the current price per kWh at the time of using the calculator
- **Electricity Price ROI:** The average price of Electricity per kWh in the Republic of Ireland in June 2021 is 26c⁹ and this will be default electricity price – users will be able to manually modify this based on the current price per kWh at the time of using the calculator
- **Fuel Economy:** The fuel economy figures for each of the vehicle are based on ‘Real World’ average values provided for the following vehicles

Small ICE	Vauxhall Corsa (2014 – 2020)	53.3mpg ¹⁰
Medium ICE	Volkswagen Golf (2013 – 2020)	50.4mpg ¹¹
Large ICE	Nissan Qashqai (2014+)	45.4mpg ¹²

The fuel economy for equivalent Electric Vehicles is as follows

Small EV	Renault Zoe (2020)	18kWh/100 KM ¹³
Medium EV	Volkswagen ID3 (2021)	16kWh/100 KM ¹⁴
Large EV	Kia E-Niro (2021)	16kWh/100 KM ¹⁵

⁸ <https://www.nimblefins.co.uk/average-cost-electricity-kwh-uk>

⁹ <https://www.statista.com/statistics/418082/electricity-prices-for-households-in-ireland/>

¹⁰ <https://www.auto-data.net/en/vauxhall-corsa-d-1.0i-60hp-25436>

¹¹ <https://www.honestjohn.co.uk/realmpg/volkswagen/golf-2013>

¹² <https://www.honestjohn.co.uk/realmpg/nissan/qashqai-2014>

¹³ <https://www.nextgreencar.com/cost-calculators/renault/zoe/>

¹⁴ <https://www.nextgreencar.com/cost-calculators/vw/id.3/76944/>

¹⁵ <https://www.nextgreencar.com/cost-calculators/kia/e-niro/76565/>