

# [Electric cars a more sustainable method of transport](https://assignbuster.com/electric-cars-a-more-sustainable-method-of-transport/)

Are electric cars a more sustainable method of transport than diesel or petrol powered cars? In this Case Study, I explored whether electric cars are as eco-friendly as they claim to be, providing a sustainable method of transport that could significantly reduce our carbon footprints if we all ditched the convectional vehicles, and changed to electric cars. I found many arguments both for and against electric cars. Electric cars are powered by an electric motor which draws its power from an on-board battery pack which acts as an energy store for the car.

Energy is measured in joules. A joule is a very small amount of energy so a domestic electricity metre measures the energy in kilowatt hours. Stoical Energy Transferred = Power x Time (Joules, J) (Watts, W) (Seconds, S) (Kilowatt hours kWh) (Kilowatts, kW) (Hours, H) Source; GCSE Core Science revision guide (Information collected from GCSE Science revision guide 13: 26hours) Batteries are charged by simply connecting the vehicle to a mains power supply, and are usually need to be charged overnight (or 7-8 hours) for a full charge.

Electricity is a secondary source of energy. This means that the electricity is generated elsewhere from another energy source, in the case of an electric car, the primary source (where the electricity first comes from) is from coal powered power stations. Some people believe that coal powered stations, release the same if not more emission of harmful gas into the atmosphere. Conversely, others feel that they do not pollute, and save money, whilst reducing the Carbon Footprint, that would otherwise be increasing if a petrol or diesel powered vehicle was used.

Fors Electric cars produce no CO? emissions when they are running, and neither do they emit nitrous oxide or produce other harmful particle emissions either. Regular fossil fuelled road transport accounts for around one fifth of all global greenhouse gas emission. Emissions from the combustion of a diesel or petrol powered engine, are carbon based fuels, which release, unpleasant and potentially dangerous fumes. Electric cars, on the other hand, do not produce any waste gases when on the move.

In Europe, where electricity is produced in a number of different ways, electric cars do offer environmental benefits when compared with cars with internal combustion engines. Electric vehicles powered by the present European electricity mix, have been found to offer a 10% to 24% decrease in their global warming potential relative to conventional diesel or petrol vehicles. An electric car consumes energy, at a level far less than that of petrol or diesel powered cars. As well as this they are extremely cost effective.

The purchase price of electric cars is significantly higher than that of diesel/petrol powered vehicles, but this is all outweighed when the cost of running the car is taken into consideration. Electric cars run longer, faster and more efficiently than convectional vehicles. Against Electric cars are only at “ zero emission” if they get their power from a renewable source. Coal powered power factories, along with other sources used to provide for electricity for these electric cars do not provide this, as they tend to use non-renewable.

Whenever fossil fuels, such as coal are burned they increase the amount of carbon dioxide (CO? ) in the atmosphere. Charging an electric car only uses 3% of renewable resources, the colossal amount of 97% comes from resources such as coal; which are non-renewable, a percentage that is not much better than a normal car. An option here is to use a green tariff for your electricity supply which will lower the carbon intensity of your electricity supply. Electric cars run off batteries made from metals such as lithium or zinc.

These metals come from recycled batteries, other cars, forklifts or in some cases wheelchairs. However the actual production of these batteries, rely on demands of virgin materials. This consequently means that these batteries have a huge carbon footprint Another source I found, actually said that electric cars cause more pollution than diesel and petrol powered cars. The electricity generated to power electric cars caused more particulate matter pollution than that caused by an equivalent number of petrol driven vehicles.

Particulate matter comes from the combustion of fossil fuels and includes acids, organic chemicals, metals, and soil or dust particles. For electric vehicles, combustion emissions occur where electricity is generated rather than where the vehicle is used. The power generated to power electric vehicles, emit harmful particles at a much higher rate than diesel and petrol vehicles do. In terms of air pollution impacts, they found, electric cars are more harmful to public health per kilometre travelled than conventional vehicles.

A similar source was found, but this time written by BBC. They say that not only do electric cars pollute more than diesel and petrol powered cars, but they also pose an environmental threat. It has been discovered that electric car factories also emitted more toxic waste than conventional car factories. The production phase of electric vehicles proved substantially more environmentally intensive, and the global warming potential from electric vehicle production is about twice that of conventional vehicles.

As well as this the use and the end-of-life dismantling of a car affects the environment far more than diesel/petrol-powered cars. In addition, producing batteries and electric motors requires a lot of toxic minerals such as nickel, copper and aluminium. Hence, the acidification impact is much greater than that of conventional car production. Similar information was also found on the Guardian Website, which is another source than is considered to be quality media, as reports are written by a recognised expert in the field.

The batteries used to power electric cars are heavy, and this may affect the speed somewhat along with the distance that the car can travel. Battery costs vary, but they tend to be extremely expensive, costing around several thousand pounds, and the necessity to be replaced every 5 years, at best. The maximum range that the car will allow you to travel before it needs to be recharged is about 100 miles, and charging can take up 7 or 8 hours, before the battery is full and the car can run efficiently again.

The charging can be done at charging stations, but the numbers of these are in their few, and far between. Disposing of the batteries can also cause real environmental issues and problems. Chemicals spilled from the battery may also be extremely dangerous.? The main primary energy source that is used by humans is through the burning of fossils fuels, such as oil, coal or gas. Nuclear fuels, biofuels, such as wood, waves and radiation from the sun (solar energy). To generate electricity, fuel is burned to produce heat.