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## Electric vehicles & the environment

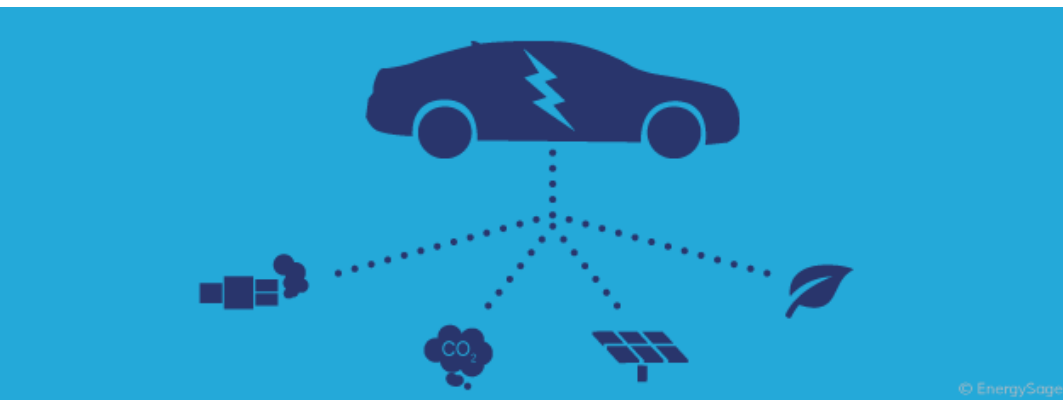
Last updated 8/25/2021

Over the last decade, there's been an increase in the purchasing of electric vehicles (EV). There are **many reasons** why one might consider making the switch to an EV – electric cars are higher efficiency than gas-powered cars, can reduce your dependence on fossil fuels and require less maintenance than most cars, to name three popular reasons.

One draw for many people who decide to buy an electric car is that EVs are often considered to be one of the most sustainable forms of transportation. Unlike hybrid vehicles or gas-powered cars, EVs run solely on electric power – depending on how that electric power is produced, your EV can be run 100% on sustainable, renewable resources. There are four factors to consider when evaluating the impact of electric cars on the environment: tailpipe emissions, well-to-wheel emissions, the energy source that charges the battery, and the car's efficiency.



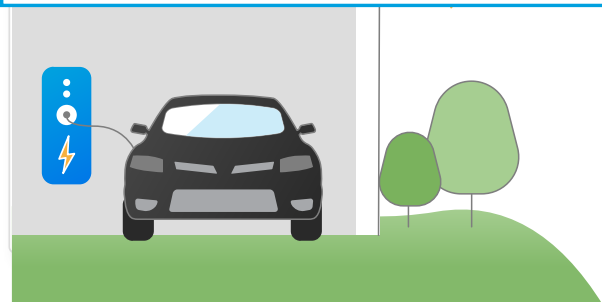
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## Electric car emissions: tailpipe and well-to-wheel

When an electric vehicle is running on electricity, it emits no tailpipe (also known as direct) emissions. When evaluated on that factor alone, EVs are a lot more eco-friendly than conventional gasoline-powered vehicles on the market today.

However, when evaluating the eco-friendliness of an electric vehicle, you also need to take the “**well-to-wheel**” emissions into account. This is an overarching term that includes greenhouse gas and air pollutants that are emitted to produce and distribute the energy being used to power the car. Electricity production results in a varying amount of emissions depending on the resource. While “being green” in the act of driving your electric vehicle is a start, if your primary goal in purchasing an electric vehicle is to reduce your greenhouse gas and pollutants emissions, you should also prioritize using zero-emissions electricity wherever possible.

When taking well-to-wheel emissions into account, all-electric vehicles emit an average of around **4,450 pounds** of CO<sub>2</sub> equivalent each year. By comparison, conventional gasoline cars will emit over twice as much annually. The amount of well-to-wheel emissions your EV is responsible for is largely dependent on your geographic area and the energy sources most commonly used for electricity. For example, if you live in California, your electricity likely comes from natural gas. This doesn't hold true if your electric vehicle is being used and charged in New Hampshire, as the state sources most of its electricity from nuclear power plants.

Natural gas provides the majority of electricity in the United States, followed closely by coal. It is often considered to be the “cleanest” fossil fuel, because it emits 50 to 60 percent less carbon dioxide than coal. Coal is responsible for around 65 percent of carbon dioxide emissions by the electric power sector in the U.S. That being said, even if your electricity is primarily from a coal plant, driving an EV will likely still overall have lower or similar well-to-wheel emissions when compared to a conventional car. In most places in the United States today, the mix of resources used to generate your electricity mean that driving an electric vehicle will produce lower well-to-wheel emissions than a traditional car.



## How to maximize the environmental benefits of your electric car

An electric vehicle will produce fewer emissions than a comparable gasoline-powered car. However, if you are looking to generate as close to zero well-to-wheel emissions as possible, not all electricity sources are created equal. If your primary motive in purchasing an electric vehicle is to be greener, you should consider powering your car with a renewable energy source that you can generate at your home (such as solar, wind, or geothermal energy).

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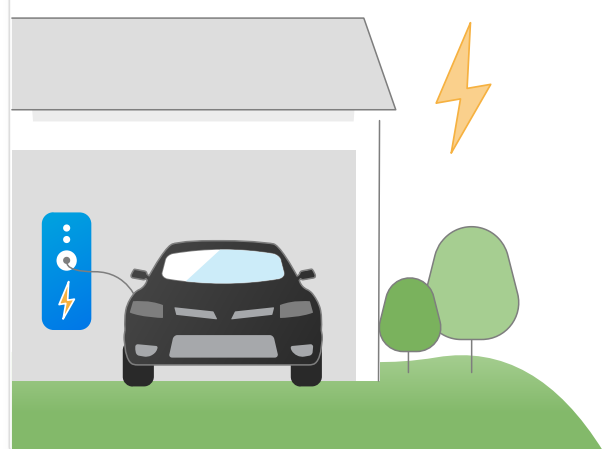
Even if you can't generate your own renewable energy at your property for your EV to use, you can look into subscribing to a [community solar share](#) or changing your electricity supplier to a "green power" option that uses renewable energy sources. Community solar is rapidly expanding across the country, and the majority of utility companies today also have options to specifically purchase electricity from renewable resources.



## Efficiency of electric cars

Outside of the resource used to produce your power, another reason why electric vehicles are considered more sustainable than traditional vehicles is because electric car efficiency is higher. When the gasoline in conventional vehicles combusts to power the car, approximately [17 to 21 percent](#) of the energy is converted into power for the car. EVs, on the other hand, are able to convert 59 to 62 percent of the electric energy to power for the vehicle.

When comparing an EV option to a conventional gasoline vehicle (or even a hybrid option), car shoppers also often evaluate MPGe, otherwise known as miles per gallon equivalent (of gasoline). The EPA [calculates MPGe](#) by representing the number of miles a vehicle can go given the same (or equivalent) amount of energy that would be contained in one gallon of gasoline. The average MPG of a typical gasoline-powered car is around [24.7 miles per gallon](#). While that's much more efficient than in the past, it's not much when compared to the MPGe of electric vehicles on the market today. Electric vehicles available now can have a comparable "fuel economy" of as high as 100 MPGe – more than quadruple the efficiency of conventional vehicles.



### Compare and discover new electric vehicles

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