

Is the Electric Car the Future of Ireland? And is this a consumer want or need?

For our project we decided to research the economic future of the electric car. We planned to investigate if consumers are willing to purchase and drive electric cars. We want to conclude whether Ireland can achieve the goal of 1M electric cars on the road? And have 100% of new car be electric by 2030? We did both primary and secondary research to find our conclusion o “Is the electric car the future of Ireland? And if this is a consumer want or need?”
 In this project of Electric Cars in Ireland we will discuss if the Electric Car is the future of Ireland? And if this is what the Consumer wants?

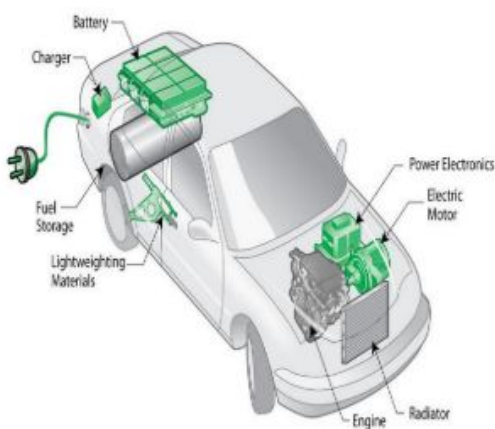
Electric cars

An electric vehicle (EV) is a vehicle that uses an electric motor to propel it. Vehicles equipped with only an electric motor are called ‘fully electric’. The electric motor is a device that converts electrical energy into motive force (mechanical energy). Rotational force is called torque and the torque produced by an electric motor is instant and constant. That is why electric cars have better acceleration than standard diesel or petrol vehicles. Fundamental to the motor’s operation is the fact that when a conductor located in a magnetic field is carrying a current, a force is exerted on the conductor. Those equipped with both an ICE (internal combustion engine) and an electric motor are called hybrid electric vehicles.

Research has shown that electric cars are better for the environment than conventional gasoline cars. They emit less greenhouse gases and air pollutants over their life than a petrol or diesel car. This is even after the production of the vehicle and the generation of the electricity required to fuel them is considered.

Some Diagrams to explain the Makeup of the Electric Car

Difference Between Electric & Non Electric



Fuel Vehicle Parts	Electric Vehicle Parts	Functions
Fuel tank	Battery	Stores energy to make the vehicle run
Fuel Pump	Charger	Puts energy/fuel into the vehicle to make it run
Fuel Engine	Electric Motor	Makes the vehicle move
Carburetor	Controller	Controls starts, stops, speed, acceleration
Alternator	DC / DC Converter	Provides power to accessories such as radio, lights, air conditioner
	DC / AC Converter	Converts DC to AC Power to make the motor run

GENERAL INFORMATION

- 4,825 electric cars at the start of 2019 out of 2.7M vehicles
- The target for 2020 is for electric cars to make up 10% of all vehicles so about 230,000 vehicles
- Research has shown that electric cars are better for the environment than conventional gasoline cars. They emit less greenhouse gases and air pollutants over their life than a petrol or diesel car. This is even after the production of the vehicle and the generation of the electricity required to fuel them is considered.
- Compared with internal combustion engine cars electric cars are quieter and have no tailpipe emissions.

Advantages of electric cars

- 🗝 battery electric vehicle has a lot fewer moving parts than a conventional petrol/diesel car. There are fewer servicing costs and no expensive exhaust systems, starter motors, fuel injection systems, radiators and many other parts that aren't needed in an EV.
- EVs generally tend to be more eco-friendly in their production and materials. Such as the Ford Focus Electric which is made up of recycled materials and the padding is made of bio-based materials. The Nissan Leaf's interior and bodywork are partly made of green materials such as recycled water bottles, plastic bags, old car parts and even secondhand home appliances.
- Also, research has shown numerous EV features can improve safety. EVs tend to have a lower center of gravity that makes them less likely to roll over. They can also have a lower risk for major fires or explosions and the body construction and durability of EVs may make them safer in a collision.

Disadvantages of electric cars

- Electric fueling stations are still in the development stages. Not a lot of places will have electric fueling stations for an EV, meaning that if on a long trip the car could run out of a charge, leaving the owner stuck.
- While it takes a couple of minutes to fuel a gasoline powered car, an electric car takes about 4-6 hours to get fully charged. Therefore, dedicated power stations are needed and the time taken to recharge them is quite long.
- Sometimes electric cars require a huge charge in order to function properly – which may have negative effects on the consumer's electricity bill each month.

VAT relief for hybrid vehicles and benefit in kind zero rate on electric cars extended to 2020.

→ 8M euro allocated to maintain grants for those buying electric cars

ARTICLE FROM AUGUST 29TH 2019, JOURNAL.IE

- ✓ First 3 hybrid buses run on diesel and electricity in May.
- ✓ EPA in 2017 under 20% of Ireland's GHG emissions came from the transport sector making it the second largest contributor behind agriculture.

ARTICLE FROM IRISHMIRROR.IE

✓ GUILLAUME SEGUIN from Cork said about his Electric Car;

“If I charge at home, it costs me €2.50 overnight. That gets me 150km to 200km in range. It gets me going around Cork for a week,” he says, “Of course the car’s a bit more expensive in the first place, but you get the cost back in a few years, depending on your mileage.”

SUSTAINABILITY GOALS

The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by all United Nations Member States in 2015 as a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030.

13th Goal; Climate Action

- The sustainability goal we are focusing on is the 13th goal;
- Greenhouse gas emissions are more than 50 percent higher than in 1990.
- As of 2017 humans are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels.
- To limit warming to 1.5C, global net CO2 emissions must drop by 45% between 2010 and 2030, and reach net zero around 2050.
- Climate pledges under The Paris Agreement cover only one third of the emissions reductions needed to keep the world below 2°C.

The Electric Car and Climate Action (13th Goal)

❖ Direct emissions are emitted through the tailpipe, through evaporation from the fuel system, and during the fueling process. Direct emissions include smog-forming pollutants (such as nitrogen oxides), other pollutants harmful to human health, and greenhouse gases (GHGs), primarily carbon dioxide. All-electric vehicles produce zero direct emissions, which specifically helps improve air quality in urban areas.

❖ Life cycle emissions include all emissions related to fuel and vehicle production, processing, distribution, use, and recycling/disposal. EVs typically produce fewer life cycle emissions than conventional vehicles because most emissions are lower for electricity production than burning gasoline or diesel.

❖ They are a feature in reduction pathways that limit global warming to well-below 2C or 1.5C, which would be in line with the Paris Agreement’s targets.

❖ In Norway or France, almost all electricity comes from near-zero carbon sources, such as hydroelectric or nuclear power, so lifecycle emissions for electric vehicles in these countries are much smaller.

❖ Climate Change is such a serious issue and there’s many different ways to take Climate Action, but we feel as if the Electric Car is one of the best ways to tackle Climate Change.

In Conclusion... is the Electric Car the future of Ireland? And is this a Consumer want or need?

From our survey 5 out of 25 people said they would not purchase an electric car; this is a problem as the government must combat the reasons why people don't want to buy an electric car. One of the biggest reasons is the low number of charging stations available, although there's 1100 charging points available, we feel that there's not enough accessible in rural parts of Ireland.

This is a huge factor as to why there were only 4,825 electric vehicles are on the roads at the start of 2019 as well as the initial cost to purchase. These two factors affect the future of Ireland and the electric car. Right now, *from our research it's clear the electric car is a want rather than a need, but it's important that the electric car becomes a need, in order to tackle climate change* and complete the 13th sustainability goal of Climate Action.

Because we feel the need of an electric car is extremely important, we've come up with some solutions;

1. Raise Awareness:

Raise awareness to price offers as many people are still unaware of the various grants and reduced taxes available to them when purchasing an electric car. Raise awareness to the impact it has on our climate, referring to the 13th sustainability goal (Climate Action) and the importance of tackling climate change in Ireland and the rest of the world.

2. **Advertisements** on climate change, the electric car, etc. To make the purchasing of an electric car more favourable as well as giving out more information to the consumer in what they're buying.

3. **Invest** in more charging points, as this was the main turn off in our survey, so obviously this isn't just an issue for the teachers in our school but in the wider community.

We do not think Ireland will reach the Goal of have 1M electric cars on the road by 2030 considering the rate of growth in electric cars at the moment. We speculate that Ireland can achieve the goal of having 100% of new cars be electric considering the governments ban on new petrol and diesel vehicles from 2030. We conclude that Electric vehicles (cars, buses, tractors, etc.) are the future of Irish travel and that they are a necessity to achieve the 13th sustainability goal. But to achieve this we will need the cooperation of both consumers and the government to make Electric vehicles more accessible.

Notes:

The students carried out a detailed survey to further investigate the issue. The results of which have not been included here.

The students included a bibliography of sources which has not been included here.

The layout of this report has been altered from the original.