

WELCOME



ZERO EMISSIONS



Go Electric now at O'Sullivan Auto..





Overview

- Climate Change
- Sustainability and EV's
- Global Auto Industry
- EV costs and incentives
- Top 5 EV's in Ireland
- Some EV Myths
- Questions

Climate Change



Scientific Consensus

97% of climate scientists agree that climate-warming trends over the past century are **extremely likely** due to human activities.

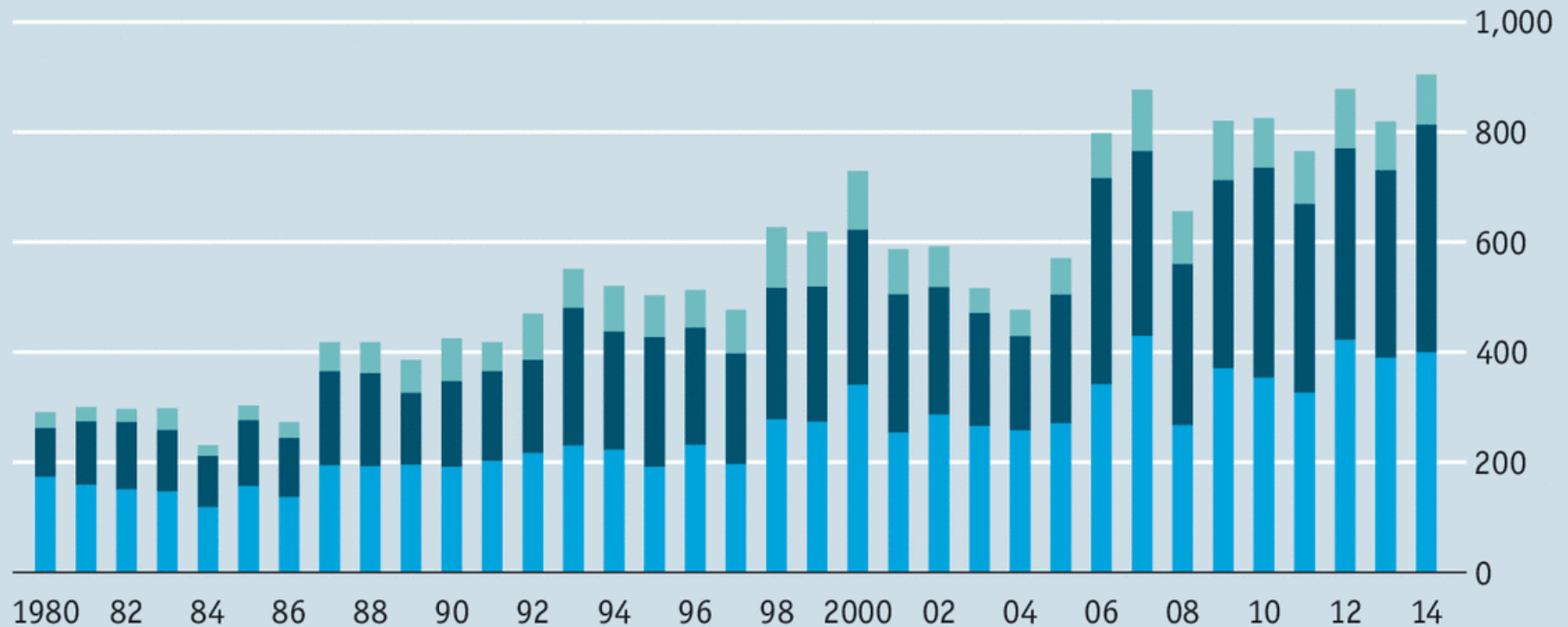
What's the evidence ?

Scientists have **millions of years** of long term data relating to atmospheric **CO₂ levels**, global temperature and sea level from the fossil record.



Disasters caused by weather and climate

■ Meteorological events (*Storms*) ■ Hydrological events (*Floods, landslides and avalanches*)
■ Climatological events (*Extreme temperatures, droughts, forest fires*)



Source: Munich Re

“scientists now believe we are witnessing Earth’s sixth mass extinction event – the last one marked the end of the dinosaurs,”

David Attenborough

8 MILLION +
METRIC TONS OF PLASTIC
ENTER THE OCEANS ANNUALLY



IF NOTHING IS DONE BY
2050
PLASTIC IN THE OCEAN
WILL OUT-WEIGH FISH

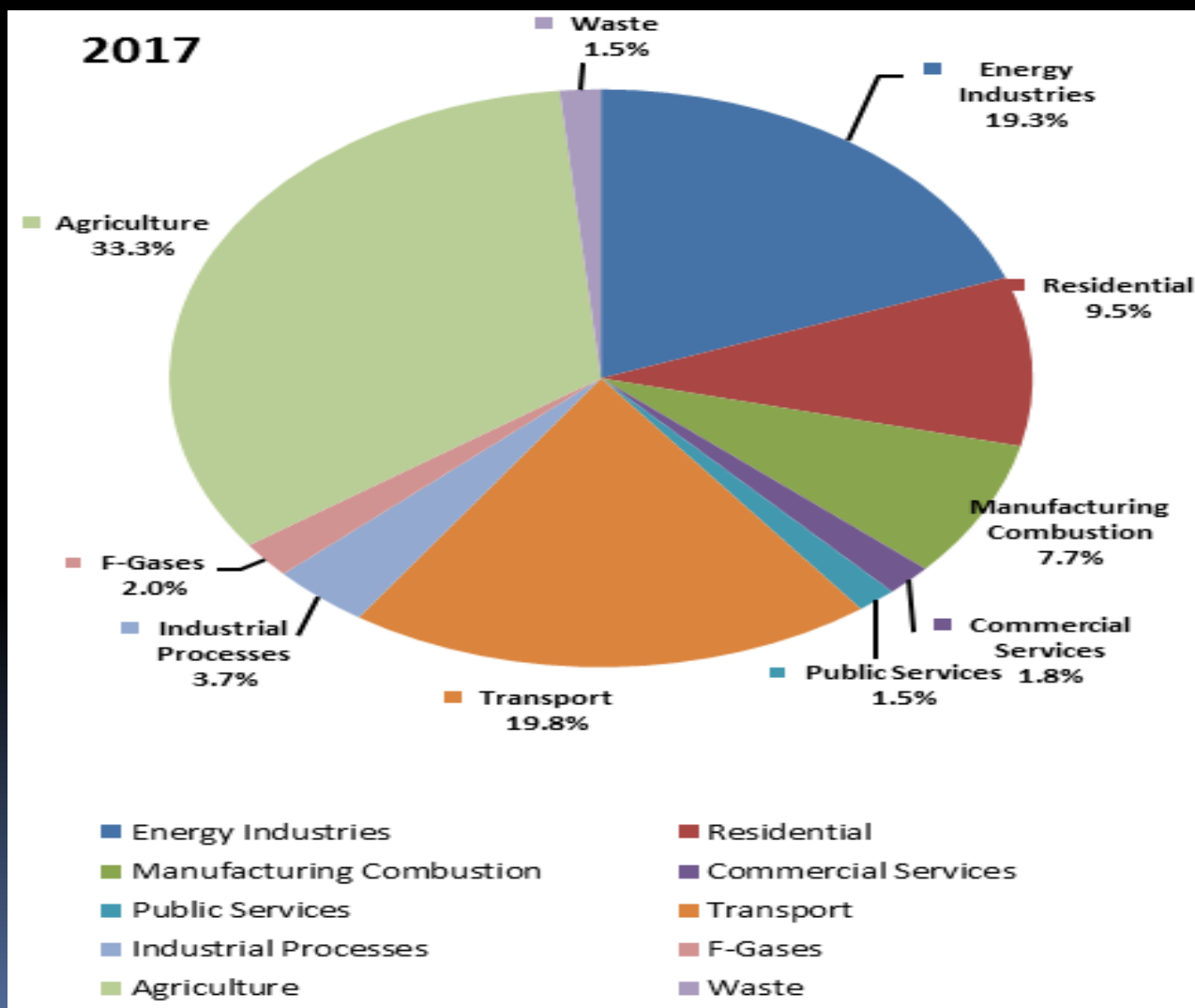


1,000,000,000

METRIC TONS OF PLASTIC WILL BE CONSUMED BY 2050

Ireland is a small country however, Ireland's greenhouse gas emissions per person are amongst the highest of any country in the world. The argument that we are too small a country to make a difference holds no ground - climate change is a global problem involving all countries.

Ireland's Green House Gas Emissions



Ireland transport Sector 2019



60 million tonnes of carbon dioxide per annum

2.68 million vehicles

2.1 million passenger vehicles

Increase of 181% cars since 1985

Population increased 35% in same period

5,444 EV's currently registered in Ireland

Sustainability



How green are electric cars?



Norway, the world leader in electric car take-up, can boast that the vehicles are **clean** because they're almost exclusively run on hydropower. But how **environmentally friendly** is an electric car if its ultimate energy source is an oil-fired power plant?



Multiple scientific studies have found that electric cars are **more efficient**, and therefore responsible for less greenhouse gas than cars powered solely by internal combustion engines.

Plus emissions are far less harmful to human health when they happen at a power plant outside of towns and cities than at the roadside near schools and houses.





Irish Government pledges to
generate **70%** of electricity
from **renewable sources** by **2030**

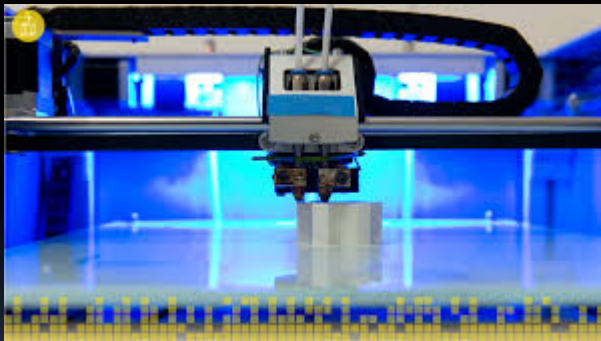


Don't be fooled by attacks on the lithium battery



Most lithium isn't mined. More than 95 per cent comes from underground pumping allowing liquid to evaporate and separating out the lithium using electrolysis.

Batteries in the future could charge in seconds, last months and power over the air.



Battery breakthrough as Irish researchers triple storage capacity

Irish Times February 2019



Researchers at [Trinity College Dublin](#) have found that incorporating a type of ultra-thin **nano material** into the structure of a battery's electrode could triple the storage capacity compared to a conventional battery, and their hope is that the technology can be easily incorporated into battery manufacture.

When the first mass-market EVs were introduced in 2010, their **battery** packs cost an estimated \$1,000 / (kWh).



**Envision Energy Says
EV Battery Cell Costs
Will Fall Below
\$50/kWh By 2025**



**EV Battery
Recycling
Market Cycling
Towards \$2+
Billion**

Finnish innovation boosts EV
battery recycling rate to over 80%

China scrambles to tap EV
battery recycling opportunity

Wave of used lithium-ion cells a
potential gold mine for battery
makers and recyclers alike

Global Auto Inc announces over 37,000 jobs cut in first three months of 2019

Economic Times 04/2019



Uncertainty stalks global car industry as it
prepares to go electric
Irish Times March 15th 2019

Global gloom sweeps car industry
as market stalls
Financial Times 04/2019

'is the industry ready to embrace the greatest
revolution since the first horseless carriage hit
the road ?'



Global automakers are planning a **€300 billion** investment in **EV technology** over the next five to 10 years, according to figures compiled by Reuters last month.



Norway to 'completely ban fossil fuel cars by 2025'

Ireland plans to follow by 2030
as do most other EU countries

Easter morning 1900: 5th Ave, New York City. Spot the automobile.



Source: US National Archives.

**Easter morning 1913: 5th Ave, New York City.
Spot the horse.**



Source: George Grantham Bain Collection.



Tesla is world's best selling EV passenger car manufacturer in 2018 with 245,240 units delivered and a market share of 12% of the plug-in segment sales. Tesla vehicle sales increased by 280% from 2017 to 2018.

3 Million plus global vehicle sales industry prediction by **2025**

From 2019 to 2023 Volkswagen is investing €9 billion solely in e-mobility. The next ten years will see 10m electric cars produced by VW globally.



Volvo plans to make its entire global operation climate neutral with 50% of sales volume to be fully electric by 2025.

Mercedes-Benz has committed to making all its German factories carbon neutral with an EV options in every model by 2022.



Global EV Sales 2019



Bloomberg predicts 2.6 million electric vehicles to be sold globally in 2019. This represents an annual 40% growth rate.

Norway



*The health benefits of switching to electric vehicles has been estimated in Norway at €5 billion per year.

58% of all new cars sold to date in 2019 are EV

China 2019



EV sales up 118% year on year, to over 254,000. Meanwhile, fossil fuelled vehicle sales have fallen 13%

Ireland's EV sales up 287% in 2019



EV Ownership



How a new electric car could save you money



There are a number of incentives available for switching to electric vehicles

The SEAI offers a grant of up to **€5,000** on the purchase of a new electric vehicle while VRT of up to **€5,000** can be paid back on fully electric cars, so you're typically looking at a Government incentive of about €10,000 on an electric car.

€600 grant available towards the purchase and installation of an electric vehicle home charger unit.



Home Charge Point options include –

Charging Sockets – 3.6kW or 7.4kW

Tethered Charging Units

Charge Point Control with Mobile Apps

Timers and data on power usage

Priority Switching or Smart Load Management

Pricing from *€350



There are currently almost
1,100 public charge points
available across Ireland.



Government invests €20m to
supply 50 new electric car
hubs capable of charging 2 to
8 cars at a time

April 2019



What will my electricity bill be?

According to the [ESB calculator](#), if you travel 20,800km a year, the charging will cost you about *€132 in added electricity costs
*based on Night Saver electricity.

That works out at about €11 a month, for an average motorist charging the new Nissan Leaf twice a week.

Comparatively, a vehicle with 5.5ltr/100km average fuel consumption would cost €1,521 a year, or €127 a month, for the same distance, using 1144 litres of fuel at €1.33 per litre.



Servicing

Servicing of ICE vehicles can include- exhausts; catalytic converters; starter motors, spark plugs, oil, cooling systems; engine dampers; fuel injection systems; fuel pumps. timing belts... the list goes on.....

Pure electric cars, on the other hand, have only three main components: the electric motor; the on-board charger and the inverter.



EV Road Tax €120

Up to 70%
saving on toll
charges



Revenue



Cáin agus Custaim na hÉireann
Irish Tax and Customs

*No BIK on Electric cars

For higher rate tax payer

On a €50,000 car the saving

could be as much as **€7,800**

A BIK is a non-cash benefit an employer gives to an employee and the retention of the 0 per cent rate effectively means that no taxable benefit arises for an employee where they're given an electric car or van by their employer. The current cap is *€50,000.

Revenue



Cáin agus Custaim na hÉireann
Irish Tax and Customs

20% of VAT can be reclaimed on a passenger vehicle that:

Is used for at least 60% business purposes.

Was first registered on or after 1 January 2009.

Has CO₂ emissions of less than 156g/km.

Revenue



Cáin agus Custaim na hÉireann
Irish Tax and Customs

Electric vehicles qualify for accelerated capital allowances of **100%** in the year they are purchased. The maximum allowance is restricted to €24,000.

This equates to tax relief of **€3,000** i.e. €24,000 * 12.5%

Top 5 EV's Ireland 2019



1 Hyundai Kona 711 units YTD



From €38,150

Battery Warranty: 8 years/200,000kms

Vehicle Warranty: 5 years Unlimited Mileage

WLTP Range of 449 km

64kW Lithium Ion Battery

Max Speed: 167km/h

0-100km/h: 7.6s

Rapid Charging From 50kW Charger: 75mins to 80%

Normal Charge 7.2Kw: 9h 35m

2 Nissan Leaf 642 units YTD



From €28,690

Battery Warranty: 8 years/160,000kms
Vehicle Warranty: 3 years Unlimited Mileage
WLTP Range of 270/385 km
40kW/62 Lithium Ion Battery
Max Speed: 167km/h

3 VW Golf 131 units YTD



From* €39,495

Battery Warranty: 8 years/160,000kms

Vehicle Warranty: 3 years Unlimited Mileage

WLTP Range of 230 km

Lithium Ion Battery

4 Renault Zoe 124 Units YTD



From *€24,990

Battery Warranty: 8 years/160,000kms

Vehicle Warranty: 5 years Unlimited Mileage

WLTP Range of 382 km

40kWh Lithium Ion Battery

5 BMW i3 99 units YTD



From *€41,470

Battery Warranty: 8 years

Vehicle Warranty: 3 years Unlimited Mileage

WLTP Range of 266 km

44kW/h Lithium Ion Battery

Common EV Myths





Myth #1: EV's cars are slow.

Wrong —Tesla Model S is one of the quickest production cars on planet earth — racing from 0-60mph in just **2.28 seconds**.



Myth #2: There aren't enough public charge points

There are 1,100 public charge points in Ireland with constant new investment

Everyone already has the infrastructure in their homes

Longer range EV's means less demand for chargers



Myth #3: You can't put an EV through a car wash

42% of Britons in a survey conducted in 2018 thought that you could not put an EV through a car wash. We all know water and electricity don't mix. That's why manufacturers are really careful to seal all of the electrified components to make sure there aren't any problems when driving through puddles or charging in the rain.



Myth #4: EV's pollute more than ICE

It's not true, but the main claim is that swapping from ICE to electric cars in an area where electricity comes from coal-fired power plants is still producing pollution. While this is true, power plants are more efficient than internal combustion engines, are easier to modify or improve with filters etc, can be replaced by renewable electricity generation and are farther from population centres so fewer people are affected by the pollution.

There's also a claim the mining and manufacturing involved in battery production is considerably polluting, but every single study indicates that the mining and manufacturing of the rest of the car (the frame, doors, panels, windows etc) is far, far, far greater than the batteries. So adding a huge battery bank still doesn't really change the pollution from car manufacturing.



Myth #5: "EVs will be a huge burden on the electric grid."

A study done by [Navigant Research](#) found that millions of electric cars can be added to the current American grid without requiring any new power generation mainly because most of the charging occurs overnight (when power usage is down).

A person wearing a blue suit and a white shirt is holding a white rectangular sign with both hands. The sign has the word "QUESTIONS?" written on it in a bold, dark blue, sans-serif font. The person's hands are visible, and they are holding the sign in front of their chest. The background is a plain, light-colored wall.

QUESTIONS?