We have quoted a lot of different research in episode three of Which? investigates so if you want to do any more reading here are the links to all the articles we came across while doing our investigation.

At the start of this year I bought an electric car - one of the now 245,000 electric vehicles - or 'E.V.s' - on the road in the UK.
https://www.asa.org.uk/news/being-roundabout-when-advertising-hybrid-and-electric-vehicles-can-fuel-complaints.html
https://www.nextgreencar.com/electric-cars/statistics/

The UK government is set to ban the sale of new petrol and diesel cars by 2030 as part of what the PM calls a 'green industrial revolution'
https://www.bbc.co.uk/news/science-environment-54981425

It's not just CO2 - carbon dioxide - coming out the back of the ICE - the internal combustion engine. You've also got various nitrogen oxides... plus if the combustion isn't complete there'll be carbon monoxide and a whole bunch of other stuff too.
https://www.ncbi.nlm.nih.gov/books/NBK531294/

And that's not all. Some of those fumes also contribute to rising levels of air pollution that are affecting the natural world and, according to a report from the Royal College of Physicians in 20.16, the cause of 40,000 premature deaths a year here in the UK.
https://www.rcplondon.ac.uk/news/doctors-say-40000-deaths-year-linked-air-pollution

Recent Which? tests did find that newer cars have a significant decrease in emissions that harm human health... but the same QUOTE 'cleaner' cars are actually producing more CO2, so harm the planet more.
https://guides.which.co.uk/making-sustainable-choices-mfjv95u04d88/go-with-the-low-az2nr9f21m5r

In Bloomberg New Energy Finance's "Electric Vehicle Outlook" report last year, they predicted how electrification would impact road transport. They said that, across all segments 'EVs ... are already displacing 1 million barrels of oil demand per day"
https://about.bnef.com/electric-vehicle-outlook/

Our government says they're aiming for the country to be 'net zero' by 2050. To do that we'll need to hugely reduce emissions and a big part of that plan is the decarbonisation of transport - slashing the carbon footprint of making and using our vehicles.
https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution

According to the Department for Business, Energy & Industrial Strategy's latest fuel mix figures the National Grid energy mix is 'on average' 38% from renewable sources.

https://www.gov.uk/government/publications/fuel-mix-disclosure-data-table

Last year, 2020, was the first time renewables generated more electricity than fossil fuels. Windy conditions last spring meant that renewable generation reached record levels and contributed almost 43% of electricity generation compared to under 40% coming from fossil fuels.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/976000/Energy_Trends_March_2021.pdf

In all my reading there was one paragraph from one paper that really stood out. It was published in the Journal 'Energy Procedia' in May 20.17 and in the Conclusion the authors write

In this study, life cycle CO2 emissions from the production of a standard mid-size passenger E.V. and ICE.V with conventional material in China are estimated from the component point of view... The results reveal that the Co2 emissions from the production of an EV... are about 59%/60% higher than the level of an ICE.V....

https://www.sciencedirect.com/science/article/pii/S1876610217309049

Last year The International Environment Agency published their 'Global EV Outlook 2020' which estimated the material demand for the batteries of the electric vehicles sold worldwide in 2019: 19 kilotons of cobalt, 17 of lithium, 22 of manganese and 65 of nickel.

https://www.iea.org/reports/global-ev-outlook-2020

In 2019 the Institute for Sustainable Futures at the University of Technology Sydney shared their findings of the impacts of mining these elements.

https://www.earthworks.org/cms/assets/uploads/2019/04/MCEC_UTS_Report_lowres-1.pdf

President Joe Biden issued an executive order on that in February of this year directing the Secretary of Energy to identify QUOTE "risks in the supply chain for high-capacity batteries, including electric-vehicle batteries, and policy recommendations to address these risks."

https://www.whitehouse.gov/briefing-room/presidential-actions/2021/02/24/executive-order-on-americas-supply-chains/

The phrase 'Cradle to Grave' comes up a lot when assessing the impact of these vehicles, and in a report named exactly that "Cleaner Cars from Cradle to Grave" the American researchers concluded that QUOTE despite their initial footprint, the impact of lithium-ion batteries, when compared to conventional cars, is offset within 6 to 16 months of average driving (using clean energy) in the US or 2 years in the EU."

https://www.ucsusa.org/sites/default/files/attach/2015/11/Cleaner-Cars-from-Cradle-to-Grave-full-report.pdf

The UK government's Road to Zero report, which came out in 2018, estimated that an EV in the UK has lifetime emissions "66% lower than a petrol car and 60% lower than a diesel car"

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/739460/road-to-zero.pdf

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A new study published last year by Eindhoven University of Technology found that lifetime carbon emissions of electric cars are actually even lower than previously suggested.

https://www.spiegel.de/auto/elektroautos-tatsaechlicher-co2-ausstoss-niedriger-als-bisher-angenommen-a-01907849-ede6-4f24-8c3f-89475aadbe69