**The fact that you’ve been kind enough to tune into this little YouTube channel today means you’ve probably got more than a passing interest in our rapidly changing climate and perhaps in the sustainable technologies that might just make a little dent in the impacts that are coming our way. And if it’s the latter that piques your interest the most then I guess you’ve also been keeping your eye on developments in the electric vehicle sector.**

**And if you haven’t already got an electric vehicle, or EV, then you’ve probably noticed the relentless onslaught of negativity about them in the mainstream press and on social media over the last 12 to 18 months or so, and you’ve perhaps been asking yourself whether they’re really all they’re cracked up to be, and whether or not you should take the plunge yourself.**

**Well, stay tuned, because I’ve got some news for you…**

**Hello and welcome to Just Have a Think,**

**So, what’s this news then Dave, I hear you ask. Well, it’s two bits of news actually.**

**The first is the publication of a new piece of research by respected industry analysts EMBER, which looks at full lifecycle emissions of Electric Vehicles versus combustion engine cars. The second is the launch of a brilliant information website from a new organisation called Electric Vehicles UK, which may well serve as a blueprint for similar umbrella bodies in Europe, Australia and North America.**

**I’ll come back to that organisation a little bit later in the video and provide all the details of how you can access it and get involved, but first of all, let’s take a look at the findings of our friends at EMBER.**

**The report actually looks at all aspects of electrification here in the UK. And don’t worry – if you’re outside the UK, I’ve got some good news for you too, a little later in the video, so don’t switch off just yet.**

**The folks at EMBER found that clean energy sources now supply just under two-thirds of all UK power generation. And because wind turbines and solar panels make much better use of their energy than coal and gas, the share of wasted total input energy has fallen from sixty percent in the year two thousand, to forty-seven percent in twenty-twenty-three. And it’ll continue to drop rapidly in the coming years as more and more renewables are added to the grid. The EMBER team also found that electrification here in the UK displaced the equivalent of fourteen million barrels of oil, just in twenty-twenty-three alone.**

**Heat pump sales, for example, have picked up significantly in twenty-twenty-four in this country, despite what you might have read in the press, and this analysis points out, as if it really still needed to be pointed out, that gas boilers use four times more fossil fuels than heat pumps, even taking into account the fuel sources powering the electricity grid. The EMBER team found that the impact on grid demand of electric vehicles and heat pumps has still been relatively small so far, adding six-point-three terawatt-hours to UK electricity demand in twenty-three, which is only about two percent of the country’s total. That’s projected to be more like thirty-three terawatt-hours within five years but, as I just mentioned, the efficiency gains from electrification and decarbonisation mean that, despite this increase in electricity demand, energy use and fossil fuel consumption will continue to rapidly decline, according to the EMBER team.**

**So, let’s cut to the specifics of electric vehicles then.**

**First of all, the authors of the report tell us that to compare apples with apples, you need to use a common unit across all fuel types.**

**That’s work that’s already been done by the US Environmental Protection Agency, and the unit used is the kilowatt-hour.**

**So, the EMBER team looked at how many kilowatt-hours of energy**

**were needed for a hundred kilometres, or roughly sixty miles, of travel in an electric car versus a petrol, or gasoline, powered car.**

**The combustion engine gets its fuel from a crude oil refinery and straight away there are some losses in that process. About six-point-three kilowatt-hours for every one-hundred kilometres driven. Then there’s just this massive quantity of a hundred and five kilowatt-hours worth of fossil fuel, eighty-one percent of which is wasted through inefficiency and largely through heat in the combustion process in car engines, which even after more than a hundred years of fettling and tweaking, are still only about thirty percent efficient. So, ALL of that wasted fuel is necessary to provide the twenty kilowatt-hours of energy needed to propel an average vehicle a hundred kilometres.**

**Meanwhile, over on the electric vehicle side, we do still have some electricity being produced by methane gas and biomass on our UK grid, so there’s about eight kilowatt-hours in the EMBER calculations to account for that. But we also have plenty of clean power that doesn’t suffer any of those primary energy losses. And electric motors themselves are so efficient that only two-point-four kilowatt-hours of energy is lost there. Overall, the EMBER team found that the twenty-kilowatt hours required to drive a hundred kilometres in an electric vehicle can be provided by only thirty kilowatt hours of input energy compared to the one hundred and five kilowatt-hours of input energy on the combustion side.**

**Now, there are other considerations of course. You may have read media reports about the energy and environmental cost of manufacturing the enormous BATTERIES for electric vehicles for example, and you’d be forgiven for thinking that those carbon costs outweigh the energy efficiencies we’ve just looked at. Well, here’s an interactive online calculator from the International Energy Agency that provides that comparison for all different vehicle sizes and different annual mileages for various different countries, including the United Kingdom and the USA.**

**Strict European emissions legislation has minimised the volume of greenhouse gases coming out of the tail pipes of modern combustion engine cars.**

**Even so, a medium sized electric car driving sixty kilometres, or about thirty-seven miles, a day in the UK would break even on emissions in about 12 months, after which the emissions gap gets larger and larger over the course of the fifteen-year lifetime of a typical vehicle as the combustion engine continues to require fossil fuel to make it work.**

**Now you might think that break-even point would take much longer to reach in vehicles across the pond because of the amount of coal that still exists on the electricity grids over there. But because American gas guzzlers are not subject to the same stringent emissions rules as we are here in Europe, and therefore churn out far more greenhouse gases from their tail pipes, the same medium sized electric car, driving the same number of miles each day in the States would break even practically as soon as it’s driven off the forecourt! Well, I exaggerate a little, but certainly within the first three or four months of use anyway. And as electricity grids decarbonise in the coming years the EV line starts to curve down even lower.**

**Now there are of course lots of other scurrilous accusations levelled at electric vehicles by certain elements of the media, largely influenced by powerful interests in the fossil fuel industry. Most of it is spurious nonsense, accidental misinformation or deliberate disinformation, but there’s no doubt that utterly ludicrous, sensationalist headlines like this one do tend to catch the eye of the unsuspecting reader.**

**Which brings me nicely to the recent launch of a brilliant umbrella organisation called Electric Vehicles UK.**

**It’s an initiative set up by our friends over at the Fully Charged channel and supported by Octopus Energy. The leadership team includes a wealth of experience from the automotive industry and clean energy sectors, and the website is your one-stop shop for pretty much anything you might be looking for when it comes to electric vehicles.**

**Whether it’s debunking the sort of misinformation that we just looked at or learning more about how home charging and public charging networks operate, or comparing the relative merits of different vehicles and systems. It’s all there.**

**Plus, the site will serve as a repository for all your favourite EV YouTube videos. It’s not just from The Fully Charged show and Everything Electric either. You’ll find relevant video content from other channels too, like the team at Electrifying for example. You’ll even find the occasional offering from me as well.**

**And it’s not some underhand scheme to raise revenue from the unsuspecting public either. It’s just a really useful resource of information for folks like you and me who may be thinking about what to buy as their next car. The organisation itself has set a pretty exciting and stretching agenda for twenty-twenty-five.**

**They’ll be working on a public affairs strategy alongside the UK government’s Department for Transport as well as all other political stakeholders. They’re setting up a rapid response PR team to immediately address any inaccurate reporting in the press or on social media, and in many cases seek public retractions from those outlets. They’ll also be launching a campaign called Voices of the Million to highlight the overwhelming positive lived experience of existing EV drivers.**

**If you live in the UK you’ll have the opportunity to be driven in an electric vehicle by one of your favourite social media EV influencers at various events throughout the year and there will be a National Electric Vehicles UK Roadshow coming to a UK town near you over the course of the next 12 months too, so you can talk to the experts, and see for yourself just what a step change these things represent.**

**And as I mentioned earlier, once the team has gained the learnings for all those activities, they will be looking further afield to expand the initiative to other major car markets around the world.**

**It’s certainly ambitious, I’ll give them that! But it’s precisely the sort of thing that’s missing from the mix right now, which is why it’s been so easy for the naysayers in the fossil fuel propaganda machine to spread the dreaded fear, uncertainty and doubt, known collectively as FUD, among the buying public.**

**So, watch that space folks, and maybe see how you can get involved.**

**Now I’m sure you’ve got your own strong views one way or the other on this apparently subject of electric vehicles. If you’re already an EV driver and part of the ninety-five percent plus of EV owners who say they would never go back to combustion engines, then it would be great to hear why you feel that way. And conversely if you think the electric vehicle revolution is nothing short of the work of Beelzebub, then why not chip in too. We do live in a democracy after all. At least for the time being anyway. So, you’re just as entitled to express your view as anyone else. Whatever your opinion though, the place, as always, to leave your thoughts, is in the comments section below.**

**That’s it for this week though. Thanks, as always to the amazing folks who support my work via Patreon, and who enable me to keep ads and sponsorship messages out of your way. Don’t forget to jump over to Patreon dot com forward slash just have a think to find out how you can join them and have a look at all the exclusive perks you can get there, including free membership. And if you enjoyed this video then you really can hugely support me by hitting the subscribe button on YouTube and clicking on all notifications. It won’t cost you a penny to do that and it’s just a simple click away, either down there or on that icon there.**

**Most important of all though, thanks very much for watching! Have a great week, and remember to just have a think.**

**See you next week.**