Briefing: **Over-charged?**

Adverts for electric vehicles allow car makers to promote their green credentials - but are they indicative of a true transition to low-carbon transport?

August 2023

Over-charged?

Some of the largest car manufacturers in the world are bombarding us with adverts extolling the virtues of Electric Vehicles (EVs), and the supposed environmental benefits they will bring. Yet these adverts often overstate the companies' own investment in EVs and omit a number of environmental, social and economic contradictions at the heart of electrifying the global automobile fleet. Notably, many of these manufacturers are heavily invested in selling petrol and diesel vehicles for decades to come, and continue to aggressively lobby governments around the world to delay legislation around phasing out polluting vehicles or cleaning up the air we all breathe. In addition, car makers are still heavily promoting the sale of Sports Utility Vehicles (SUVs), with their share in new car sales in Europe recently reaching a record 51 percent. Questions have been raised about whether large, heavy electric SUVs deliver any real environmental benefit, or possibly even make things worse.[1] Make no mistake: EVs do not need to be massive and hefty vehicles. As writer David Zipper laments, "these are choices that the auto industry has made" and "all of us will pay the price".[2]

The prolific rise of EV advertisements, and their pervasiveness, enables large car manufacturers to foster positive associations with environmental sustainability, green innovation and climate action, effectively stretching their brand to encompass 'clean' technologies, while still being bound to

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1 Vilchez *et al.*, 2023, "The new electric SUV market under battery supply constraints: Might they increase CO2 emissions?", *Journal of Cleaner Production*, https://doi.org/10.1016/j.jclepro.2022.135294

2 Zipper, D., 2023, "EVs Fix One Pollution Problem—And Worsen Another", The Atlantic, https://www.theatlantic.com/technology/archive/2023/07/electric-vehicles-tires-wearing-out-particulates/674750/

polluting petrol and diesel vehicles. In addition, EV advertising can act as a greenwashing tool, whereby manufacturers improve their corporate and consumer image regardless of whether they have scientifically credible decarbonisation strategies in place.

EVs have a role to play in the shift to a low carbon transport system. But as public and political concern over the climate crisis grows, so too has the volume of physical and digital advertisements of large and heavy EVs and other 'low carbon' vehicles. At Badvertising, we are concerned at the seemingly uncritical promotion and acceptance of EVs as a silver bullet solution for road transport's climate impact that ignores the need to reduce private cars (EVs and ICEs) in favour of investment in equitable mass transit and active travel.

In this briefing we explore how EVs fit into the transition, the limitations and challenges that will arise from a wholesale shift towards EVs, and the risk of polluting car manufacturers relying on EVs in their advertisements to distract from the fact that they are still heavily invested in promoting the sale and continued use of petrol and diesel cars. **The disproportionate focus on EVs, and the positive spin given to them in carmakers' advertising exaggerates their benefits and masks a number of contradictions:**

- **EVs still make up only a minority of total sales for major car manufacturers**, many of whom are still heavily invested in selling Internal Combustion Engine (ICE) cars for decades to come.[3]
- **EVs only address tailpipe emissions, just one of multiple climate, health and environmental impacts of road vehicles**.[4] Although they have an essential part to play, a transition to EVs cannot deliver the total reduction in emissions needed to address the impact of transportation on the climate.[5]
- **Without consideration of the wider societal impacts of private cars, the shift to EVs stands to entrench many of the health and social impacts** of polluting petrol and diesel vehicles, from air pollution to road safety, urban congestion and transport inequality.[6]
- **A shift from private cars (EVs and ICEs) to mass transit and active travel is essential to reduce emissions** from transportation in line with

3 The Driven, 2023, "Toyota faces disaster unless new CEO performs miracle pivot to electric vehicles", https://thedriven.io/2023/01/30/toyota-faces-disaster-unless-new-ceo-performs-miracle-pivot-to-electric-vehicles/

4 OECD, 2020, "Non-exhaust Particulate Emissions from Road Transport : An Ignored Environmental Policy Challenge",, https://doi.org/10.1787/4a4dc6ca-en

5 ICCT, 2015, "Global climate change mitigation potential from a transition to electric vehicles", https://www.researchgate.net/publication/286623711_Global_climate_change_mitigation_potential_from_a_transition_to_electric_vehicles

6 Hosseini *et al.*, 2023, "A wolf in sheep's clothing: Exposing the structural violence of private electric automobility", *Energy Research & Social Science*, https://doi.org/10.1016/j.erss.2023.103052.

net zero targets, assist with health goals and create safer, more pleasant neighbourhoods.[7]

While a wholesale shift away from ICEs is absolutely necessary, the influx of EV advertising from car manufacturers raises serious concerns. The same car makers remain heavily invested in sales of ICE cars and are resistant to the needed shift away from private car dominated transport to safer, more sustainable and equitable mobility.

Brand stretching

Brand stretching refers to the practice of companies leveraging brand awareness and customer loyalty to introduce new products or services similar to those they already offer under the umbrella of their existing brand.[8] An example would be motorcycle brand Harley Davidson launching a clothing line, utilising the brand identity of Harley Davidson (cool, tough, freewheeling) to sell clothes with similar associations.

Brand stretching adds products to a company's line in addition to those already sold, enabling them to sell more of both the new and original products. As car manufacturers begin to produce more EVs, many are centering EVs and associated ideas like sustainability in their marketing and advertising practices, even if their commercial strategies remain dominated by polluting ICE vehicles. Analysis by DeSmog in 2022 of the adverts of carmakers Peugeot, Citroen, Jeep and Fiat found that over half of their adverts touted green credentials, while only one in eight cars sold were low-emission or EVs.[9]

This potentially misleads consumers over the scale of car manufacturers' EV range, the integrity of the company's sustainability credentials, and the environmental impact of EV vehicles.

Toyota has used brand stretching to appear "green" for over 25 years since the launch of the Prius, the world's first mass-produced hybrid vehicle, in 1997. The company's sustainability rhetoric has only intensified, with their flagship 2021 advertising campaign 'Beyond Zero', which promises "a world where your car could emit water, not CO_2." However, to date Toyota only produces one fully electric vehicle, the bZ4X,

7 Haigh, C., 2022, "Pathways to net zero: report on a roundtable discussion series", https://greener-vision.com/wp-content/uploads/2022/06/PATHWAYS-TO-NET-ZERO-Report-on-a-Roundtable-Discussion-Series.pdf

8 Mackman, 2020, "What is Brand Stretch and Brand Extension?", https://mackman.co.uk/brand-stretch-extension/

9 Sherrington, 2022, "Revealed: How Car and Airline Advertising 'Misleads' the Public and Threatens Climate Action", *Desmog*, https://www.desmog.com/2022/05/18/revealed-how-car-and-airline-advertising-misleads-the-public-and-threatens-climate-action/

and partially electric-powered vehicles make up just 20 percent of the company's total vehicle sales.[10] Meanwhile, Toyota's production of ICEs continues apace, with the company predicted to overshoot Paris Agreement-aligned targets for new ICE production by as much as 184 percent.[11]

The sheer scale of EV advertisements on billboards, print, television and online platforms suggests that car manufacturers are using brand stretching to bolster and overstate their green credentials to outwardly align with shifting public sentiment towards climate action. When these EV advertisements are not supported by a shift in the production and investment strategies of major car manufacturers, their dominance within advertising and marketing strategies constitutes greenwashing.

EV does it

How EV ads promote flawed assumptions and mislead consumers

The pervasiveness of EV advertising from major car manufacturers that are still heavily invested in the ongoing sale and widespread use of ICE vehicles promotes flawed and dangerous assumptions on several fronts.

EVs will not decarbonise road transport

While EVs must play a part in the low-carbon transport system we need to build in the next two decades, simply replacing all the existing ICEs on the roads with EVs throws up a range of problems. On their own EVs will not be able to deliver the level of decarbonisation required in road transport and the wider economy, despite their impressive growth and the insistence of car manufacturers that they are the solution. Even under the most optimistic roll-out forecasts, EVs will only deliver a 70 percent reduction in carbon emissions by 2050 when compared to a business-as-usual scenario.[12]

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10 Fung, 2022, "Toyota maintains global number one spot in 2021", *Car Expert*, https://www.carexpert.com.au/car-news/toyota-maintains-global-number-on-spot-in-2021

11 Kurmelovs, 2022, "World's biggest carmakers to build 400m more vehicles than 1.5C climate target will allow", *The Guardian*, https://www.theguardian.com/environment/2022/nov/10/worlds-biggest-carmakers-to-build-400m-more-vehicles-than-15c-climate-target-will-allow

12 ICCT, 2015, "Global climate change mitigation potential from a transition to electric vehicles", https://www.researchgate.net/publication/286623711_Global_climate_change_mitigation_potential_from_a_transition_to_electric_vehicles

EV emissions savings are overstated

Studies suggest that the emissions savings of some EVs may be overstated due to the increasing size and number of vehicles – a key trend in both European and American markets. In 2021, 45 percent of EVs sold in the UK and 57 percent of EVs sold in the US were Sports Utility Vehicles (SUVs).[13] In 2022, for the first time ever, electric SUVs accounted for over half (51 percent) of global EV sales. Among the more than 400 EV models currently available on the market in 2022, 55 percent were electric SUVs; an increase of 15 percent from 2018.[14] This growing trend will also reduce crucial supplies of key, scarce minerals and materials required for renewable energy production, including lithium and cobalt, due to the larger batteries required to power electric SUVs.[15]

One recent study concluded that electrified SUVs do not necessarily contribute to emissions reductions and therefore cannot contribute to strategies to mitigate climate change.[16] The authors state that reducing vehicle size, less driving and a reduction in total vehicle sales are policies "worth pursuing".[17] What's more, electric SUVs vehicles are so heavy that regulators and road safety organisations, such as the Insurance Institute for Highway Safety (IIHS) in the USA, are struggling to conduct crash testing.[18] Issues like this raise further questions over the safety of a wholesale shift to EVs, as it currently stands.

EVs are not pollution-free

EVs have been shown to cause air pollution and emit toxic particulate matter such as PM2.5. Due to improvements in exhaust technology over 1,000 times more particle pollution is produced through tyre wear than pollution from exhausts - a source of pollution that is currently completely unregulated.[19] While smaller lightweight EVs emit between 10 and 13 percent less PM2.5 than

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13 IEA, 2022, "Global EV Outlook 2022", https://www.iea.org/reports/global-ev-outlook-2022/trends-in-electric-light-duty-vehicles

14 IEA, 2023, "As their sales continue to rise, SUVs' global CO2 emissions are nearing 1 billion tonnes", *IEA Commentaries,* https://www.iea.org/commentaries/as-their-sales-continue-to-rise-suvs-global-co2-emissions-are-nearing-1-billion-tonnes

15 IEA, 2021, "The Role of Critical Minerals in Clean Energy Transitions", https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions

16 Vilchez *et al.*, 2023, "The new electric SUV market under battery supply constraints: Might they increase CO2 emissions?", *Journal of Cleaner Production*, https://doi.org/10.1016/j.jclepro.2022.135294

17 *Ibid.*

18 Inside EVs, 2022, "IIHS Explains Heavy EVs Are Putting Extra Pressure On Its Crash Testing Equipment", https://insideevs.com/news/626078/iihs-heavy-vehicles-crash-testing-equipment/

19 Emissions Analytics, 2020, "Tyres Not Tailpipe", https://www.emissionsanalytics.com/news/2020/1/28/tyres-not-tailpipe

petrol and diesel vehicles, heavier EVs such as battery electric SUVs emit up to 8 percent more PM2.5 than their fossil-fuelled counterparts.[20]

Once inhaled, these tiny particles enter the lungs and then spread to the rest of the organs in the body. Even short-term exposure to PM2.5 has been associated with premature mortality, increased hospital admissions for or lung problems, acute bronchitis, and asthma attacks.[21] Longer-term exposure has been linked to strokes, cancer, respiratory infections,[22], neurological damage, birth defects,[23] and even dementia.[24] As lower-income and ethnic minority communities tend to live closer to larger and busier road networks, these health impacts will further exacerbate social inequalities.

Tire pollution also has a dire impact on the natural environment, with toxic particles settling on the ground and gradually leaching into the soil, waterways and oceans. One study suggests that tire pollution could be the source of as much as 28 percent of the microplastics in the world's oceans.[25] If EVs continue to proliferate at the forecast rate, and car manufacturers continue to make the models larger, faster and heavier, this problem will only increase.

EVs also require huge amounts of energy to produce and run, from the mining of metals to the production of petro-chemical based plastics. As with most private cars, they remain an inefficient way to transport people compared to mass transit systems. And while the energy they use is still to varying degrees produced by systems that burn fossil fuels, they still have a significant environmental impact.

Challenging car bias

The bias towards private cars in planning, infrastructure and urban layouts is one of the factors that locks people into high energy use and unhealthy and polluting travel habits. The seamless shift from ICEs to EVs in carmakers' advertising uncritically assumes the continued dominance of private car use as the de facto mode of transport in society. This assumption has the consequence of perpetuating the inequalities born of car dominance and

20 OECD, 2020, "Non-exhaust Particulate Emissions from Road Transport : An Ignored Environmental Policy Challenge", https://doi.org/10.1787/4a4dc6ca-en

21 California Air Resources Board, n.d., "Inhalable Particulate Matter and Health (PM2.5 and PM10)", https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health

22 Wang *et al.*, 2020, "The impact of long-term PM2.5 exposure on specific causes of death: exposure-response curves and effect modification among 53 million U.S. Medicare beneficiaries", *Environmental Health*, https://doi.org/10.1186/s12940-020-00575-0

23 Jaishankar et al., 2014, "Toxicity, mechanism and health effects of some heavy metals", *Interdisciplinary Toxicology,* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4427717/.

24 Peters *et al.*, 2019, "Air Pollution and Dementia: A Systematic Review", *Journal of Alzheimer's Disease,* 10.3233/JAD-180631.

25 IUCN, 2017, "Primary Microplastics in the Oceans: a global evaluation of sources", *https://portals.iucn.org/library/sites/library/files/documents/2017-002-En.pdf*.

restricting the availability of more sustainable, fairer alternative transport options.

The societal overreliance on private car use has led to a whole host of physical and mental health issues. Inactivity and a sedentary lifestyle account for one in every four deaths globally through links to heart and lung diseases and obesity.[26,27] At an individual level, each additional kilometre walked per day is associated with a 4.8 percent reduction in the likelihood of obesity, whereas each additional hour spent in a car per day is associated with a 6 percent increase.[28] In a damning indictment of private car electrification as a core climate solution, Keyvan Hosseini and Agnieszka Stefaniec, writing in Energy Research and Social Science, see this more as a silver bullet with which we are going to shoot ourselves in the foot:[29]

"The strategy of private automobility electrification does not look beyond the problem of tailpipe emissions and hence cannot eliminate the deficiencies of the car-dependent system that require system-wide solutions, such as traffic congestion and road accidents. Prioritising this strategy not only maintains existing inequities but also increases social injustice and delays the implementation of more effective interventions."[30]

Further, the presumption of car ownership in policy-making has given rise to vastly unequal access to transport options and life opportunities. In the UK in 2018, just 35 percent of households in the lowest income decile owned any sort of car, compared to over 90 percent in the highest four deciles. Similarly, vehicle ownership amongst homeowners is around twice as high as that amongst social renters.[31] While exact figures on transport poverty – where households and individuals struggle or are unable to make the journeys that they need - are difficult to pin down, it could affect as many as 90 percent of UK households.[32] A shift to EVs, at the expense of a comprehensive reworking

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26 British Heart Foundation, 2017, "Physical inactivity and sedentary behaviour report 2017, https://www.bhf.org.uk/-/media/files/for-professionals/research/heart-statistics/physical-inactivity-report---mymarathon-final.pdf?rev=63e5aa4477d642d386b4e2d3ee236d44

27 WHO, n.d., "Physical inactivity", https://www.who.int/data/gho/indicator-metadata-registry/imr-details/3416

28 Douglas, 2011, "Are cars the new tobacco?", *Journal of Public Health*, https://doi.org/10.1093/pubmed/fdr032

29 Hosseini *et al*., 2023, "A wolf in sheep's clothing: Exposing the structural violence of private electric automobility", *Energy Research & Social Science*, https://doi.org/10.1016/j.erss.2023.103052

30 ibid.

31 ONS, 2019, "Percentage of households with cars by income group, tenure and household composition: Table A47", https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/expenditure/datasets/percentageofhouseholdswithcarsbyincomegrouptenureandhouseholdcompositionuktablea47

32 Lucas *et al*., 2016, "Transport poverty and its adverse social consequences", *Proceedings of the Institution of Civil Engineers*, https://doi.org/10.1680/jtran.15.00073.

of the transport system, may further entrench transport poverty.[33] A recent study concluded that a more effective approach would require focusing on "inclusive strategies, such as supporting public transportation, shared mobility, and active travel modes, instead of offering incentives for EVs" as these are "the means of progressive redistribution of wealth and can satisfactorily meet people's basic needs and governmental climate targets."[34]

Mind the gap, advertisers

Advertising drives carbon emissions. Evidence shows the disproportionate carbon impact associated with the goods and services that advertising agencies promote, with the UK advertising industry responsible for an estimated 208 million tonnes of CO_2 in 2022, 32 percent of every British citizen's carbon footprint.[35] Beyond the emissions, advertising both normalises and encourages high-carbon behaviours, such as private car use. Scaling sustainable behaviour changes in line with the latest climate science requires us to shift norms around high-carbon goods and services – especially in wealthy industrialised nations like the UK. Yet the internal logic of the advertising industry runs counter to this aim.

Advertising's link to carbon emissions is particularly stark when it comes to car manufacturers. A 2022 report from Greenpeace and New Weather Institute found that the emissions from global car advertising in 2019 are estimated to be up to 572 million tonnes of CO_2 equivalent.[36] This is significantly higher than the annual emissions of Australia in 2019 (545 million tonnes) - a country of over 25 million people and the 14th largest economy in terms of gross domestic product.[37]

Policies to limit and regulate car advertising are urgently needed in the UK and other car-dominated societies. To ensure that forthcoming regulations sufficiently address the pernicious and misleading car advertisements, there are a number of potential blueprints:

- Introducing a tobacco-style ban on high-carbon advertising, including for all SUVs regardless of fuel type (given the serious questions regarding net benefits from electric SUVs), airlines and fossil fuel companies. This would include obvious greenwash by vehicle makers still selling mostly ICE and planning to continue significant ICE production. Public transport networks especially should cease promotion of competing, high carbon transport choices on its

33 Sovacool *et al*., 2023, "Policy prescriptions to address energy and transport poverty in the United Kingdom', *Nature Energy*, https://doi.org/10.1038/s41560-023-01196-w.

34 Hosseini *et al*., 2023, "A wolf in sheep's clothing: Exposing the structural violence of private electric automobility", *Energy Research & Social Science*, https://doi.org/10.1016/j.erss.2023.103052.

35 *Ibid*.

36 Greenpeace & NWI, 2022, "Advertising Climate Chaos", https://www.greenpeace.org/static/planet4-sweden-stateless/2022/02/6652a35f-carbon-in-ads-report.pdf

37 *Ibid*.

premises. Overall the new measure should end the promotion of goods and services that harm the environment, public health and communities, and which maintain and drive up emissions.

- Strengthening and better resourcing regulators like the UK's Advertising Standards Authority (ASA) to develop more vigorous frameworks for dealing with greenwash and climate misinformation, as well as giving these regulators effective enforcement powers to tackle the issues through, for example, financial penalties.
- Collaborating with local authorities, transport bodies and media outlets to implement internal policies around greenwash, climate misinformation and mechanisms for restricting environmentally-damaging advertising to generate momentum and shift norms.

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Badvertising

'Badvertising' is a campaign to stop adverts fuelling the climate emergency. This includes ads for cars, airline flights and fossil fuels. We ended tobacco advertising when we understood the harm done by smoking. Now we know the damage done by fossil fuel products and activities, it's time to stop promoting them.

The campaign is organised by the New Weather Institute think tank and kindly funded by the KR Foundation. It is delivered in partnership with climate charity Possible and the Adfree Cities network.

Badvertising is targeting national legislation to curb high carbon advertising, as well as the advertising policies of media outlets and local and regional public bodies with commitments to tackle the climate crisis.

May 2023