

Myth Busting EV Carbon Footprint Claims

Together We Build, September 27, 2023

By Thomas Beck, AIA, NCARB

As Electric Vehicle (EV) owners and enthusiasts, we regularly hear claims from fossil fuel advocates about the unsustainable future of EVs and the large carbon footprint of EVs from production to operation. Some are neighbors who most summer weeks drive their gas mowers around their very large meadows, eliminating the native wildflowers which feed our pollinators. That mowing is contributing the equivalent of 1,100 car driving miles per hour of operation of their fossil fuel landscaping devices to global greenhouse gases. One cited Pew Research for their conclusions that EVs were actually equally bad or worse for the environment, so we started our research there.

The search on PewResearch.org provided these 2023 results: “How Americans view electric vehicles” (July 13, 2023); “Why Some Americans Do Not See Urgency on Climate Change” (August 9, 2023); “What the data says about Americans’ views of climate change” (August 9, 2023); and “Majorities of Americans Prioritize Renewable Energy, Back Steps to Address Climate Change” (June 28, 2023).

There are plenty of skeptics regarding the infrastructure for EVs, and one of Pew’s articles cites its own survey regarding adult “confidence that the US will build necessary EV infrastructure.”

The thing about all of these articles is that they are based on surveys of opinions, and there is really no reporting on the science of the matter. In fact, the header for the website says “Numbers, Facts and Trends Shaping Your World.” On their “about” page they call themselves a “fact tank that informs the public about the issues, attitudes and trends shaping the world.” Further, they state “We do not take policy positions.”

Our focus shifts to a general internet search about whether EVs are cleaner than fossil fuel vehicles, where we found info from the Union of Concerned Scientists (UCS), dated August 30, 2022. (<https://www.ucsusa.org/resources/electric-vehicles-are-cleaner#:>) The 2 minute UCS video (<https://youtu.be/5141ufIStk8?si=awtyv1IFiRhvEcbq>) explores the “global warming emissions of EVs on a lifecycle basis, from the manufacturing of their batteries to their ultimate disposal or reuse.” According to the video, “more energy and materials are required to produce a battery-electric car. But what happens when they hit the road? Gas powered cars produce pollution with every gallon of gas they burn, with even more emissions coming from extracting, refining, and transporting to gas stations.” The carbon impact of EV operation depends on how clean the electricity is that it uses for charging. But according to these engineers and scientists, “a gas powered vehicle would have to get 91 miles per gallon to equal the global warming emissions produced by the average EV in the US.” The EV battery can be recycled or reused to further reduce the impact. The initial manufacturing energy and materials is offset in less than two years. “By the end of the vehicles lifetimes the EV will be responsible for less than half of the climate change emissions of a similar gasoline car” inclusive of mining, manufacturing, refueling, and driving. That is the fact based research of engineers and scientists.

Next in our search we find the case against EVs by the unabashedly “conservative” Heritage Foundation. In the March 30, 2023, opinion piece by Derrick Morgan, Executive Vice President, we have all of the dog whistles, like claims about state bans, EVs destroying American jobs, hurting consumers, farmers, workers and our national security. The premise that the environmental cost of extraction cancels the lifetime benefit of EVs is claimed. (Our note, this claim is “canceled” by the previously quoted UCS video.) He makes a valid national security point about the materials largely being foreign sourced. We should point out that substantial numbers of jobs and manufacturers of critical components such as computer chips have returned to our shores under the current administration.

Let’s take a fact based look at some of the statements put forth by Mr. Morgan. Point: He says the average price of an EV is \$18,000 more than a gas vehicle. Counterpoint: The cost of operating the EV is significantly less in mileage, and maintenance. It is true that to date the price of the vehicles has been much higher, but the availability of more affordable models is growing substantially. According to

reporting February 10, 2023, by the New York Times, EVs “Could Match Gasoline Cars on Price This Year.” Buyers of EVs are enjoying substantial rebate incentives, which are directly benefiting the American taxpayer far more than the billions of dollars in federal subsidies enjoyed by major oil and gas companies. According to the Senate Budget Committee taxpayers pay an estimated \$20 billion dollars every year to the fossil fuel industry.

Point: He goes on to say “If electric vehicles made significant environmental progress, that would be one thing. But they don’t.” Counterpoint: this is patently untrue, as the scientists and engineers of UCS prove in their research. As stated earlier, over the life of the vehicle the EV will be responsible for less than half of the emissions of the fossil fuel vehicles.

Point: EVs will destroy American jobs. Counterpoint: Multiple sources quote clean energy jobs in September 2022 at 12.7 million globally, growth of over 700,000 jobs in just the previous 12 months. According to Forbes in July 2023, “Brookings Institution research found that landing a clean energy job can equal an 8% to 19% income increase, and 45% of all workers in clean energy production only have a high school diploma, while earning higher wages than similarly educated peers in other industries.” (<https://www.forbes.com/sites/energyinnovation/2023/07/10/federal-policies-are-fueling-an-american-clean-energy-jobs-and-investment-boom/?sh=262362ac71b4>) The U.S. Department of Energy released the 2023 U.S. Energy and Employment Report June 28, 2023. The report includes the statement that in 2022 “jobs related to zero emissions vehicles saw nearly 21% growth, adding over 38,000 jobs.” (<https://www.energy.gov/articles/doe-report-finds-clean-energy-jobs-grew-every-state-2022>)

We have a ways to go before the infrastructure to make EVs competitive in price, driving distance, and availability of charging services is a reality. In the transition from horse and buggy to gasoline vehicles the first adopters of those vehicles encountered numerous obstacles, like naysayers who did not like the noise, fumes and speed of the newfangled transport, and finding a place to buy petrol was no doubt a challenge. Now we have EVs which produce no fumes, very little noise, and can go from zero to 60 MPH in 4 seconds. Finding that place to charge it will only get easier.

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Beck, Thomas W. “Myth Busting EV Carbon Footprint Claims” *Estes Park Trail Gazette*, Friday October 4, 2023, <https://www.eptail.com/2023/09/28/together-we-build-myth-busting-ev-carbon-footprint-claims/>