

Rebuttal to Forbes Article: “Why Hydrogen Will Never Be The Future Of Electric Cars”

By Bill Zobel, Executive Director, California Hydrogen Business Council



Image: Fountain Valley True Zero hydrogen refueling station

The global movement towards zero emission mobility has just begun. Some, like [Forbes contributor James Morris](#), think the die has been cast and that fuel cell electric vehicles (FCEVs) [have already lost](#) to battery electric vehicles (BEVs). But this call is misleading and misguided.

It's true more BEVs have sold in these first years that electric vehicles have been available. This is partly because governments, including here in the US and especially California, have consistently directed billions of dollars to help BEV sales and charging infrastructure, while support for FCEV and hydrogen refueling has lagged. In California alone, policies have channeled about \$5 billion so far in ratepayer, taxpayer and polluter funds to BEV technologies, and only about \$0.21 billion to FCEV technologies. The scale and steadiness of BEV policy has sent the right signals to the market to continue investing, leading to lower costs, new products, and increased market share. This is a great example of how policies can work. The same if not greater success can be achieved with FCEVs with similarly generous and reliable support.

Policy signals for FCEVs in California remain uncertain, but governments elsewhere are now making bold commitments. Since automobiles are a global market, this is important to bear in mind. Germany, for example, announced [funding](#) earlier this year of 3.4 billion euros for hydrogen vehicle fueling infrastructure, in addition to 400 million euros previously provided. The country also will spend [billions more](#) to scale up green hydrogen production for transportation and other beneficial uses. [South Korea](#) is spending more than \$2 billion dollars on FCEV development. Any policymaker wanting lead on clean transportation ought to pay attention to these trends.

Analysts also [predict](#) that by 2027, the total cost of owning FCEVs will be equal to BEVs or cheaper for longer ranges and larger models like SUVs, which [clearly dominate](#) the consumer preference.

One big advantage to early BEV adoption has been being able to conveniently plug in at home. FCEVs require hydrogen stations and fuel production that are far more capital intensive up front than a garage outlet and the cost to recharge a battery. But what happens when the low hanging fruit of people with easy home charging gets picked? [Nearly half](#) of Californians don't live in single-family detached houses. For many who live in apartments or park in the street, hydrogen fueling, which takes just a few minutes at a station like getting gas, makes a lot more sense. If we're going to make zero emissions cars available to all, hydrogen FCEVs must play a major role.

Energy efficiency is another excuse used to claim BEV the winner over FCEV. Yet if personal mobility were mostly about efficiency, we'd all ride bicycles everywhere. Consumers choose cars based on needs like range, convenience, and cost. For many, like those needing fast refueling, larger cars, and options to refuel away from home, FCEVs will be the best choice. For others BEVs will make more sense.

What about the frequent claim that BEVs are greener than FCEVs? It's true that most hydrogen today is made with fossil fuels, but in California, nearly 40% used for vehicles is renewable, exceeding the 33% state requirement, and the global industry is committed to [100% decarbonized hydrogen](#) for transportation by 2030. [Expert analysis](#) also shows that FCEVs emit less greenhouse gas, and all the more so as BEV battery range increases. The higher the range of battery resources, the greater the need for constrained lithium and cobalt. FCEVs use comparatively far less mineral resources.

Lastly, hydrogen vehicle naysayers often scare people with cherry picked stories of hydrogen accidents. The fact is that vehicles and fueling carry safety risks – Mr. Morris leaves out that BEVs and charging stations have had their share of explosions – and yet have also passed rigorous safety testing and been operating with strong safety records for years. FCEVs are actually [safer](#) than gasoline vehicles because when hydrogen ignites, it quickly burns up and out instead of pooling and exploding.

The bottom line is we need to stop pitting FCEVs against BEVs and instead make them allies in fighting the real enemies - climate change and air pollution. This is all the more critical as the pandemic threatens our lungs and wildfires rage. Policymakers must accelerate all zero emissions vehicles, if we're to win the big battles for health and habitability of our planet.