Marketing an Electric Vehicle in 2022[iii]

Orla was preparing for a job interview. The interviewing manager had given her a couple of hours to think about how to increase purchases of battery electric vehicles (BEVs). She looked up a few data sources and got ready to make a pitch. What were the obstacles to selling such vehicles? What could be done to lower those obstacles?

Electric Cars in 2022

The first thing Orla did was to read a survey of consumers to understand the current state of electric vehicle sales. According to a Consumer Reports survey, only 2% of Americans currently owned a BEV—a vehicle that runs only on electricity.[iii] This definition of *electric* vehicle, by the way, excludes two of the three classes of *electrified* vehicles, described below[iv].

- Battery Electric Vehicles (BEVs): Have no ability to use gas and must therefore be charged. The bestselling cars in this class in 2021 were: Tesla Model Y, Tesla Model 3, Chevy Bolt, Ford Mustang Mach-E, and Volkswagen ID.4[v].
- Plug-in Hybrid Electric Vehicles (PHEVs): Can run on electricity or gasoline. Have a smaller battery that can be charged along with an efficient hybrid gasoline engine. Toyota has long been the major PHEV manufacturer (Prius Prime and Rav4 Prime), but the Jeep Wrangler 4Xe claimed to be the best-selling PHEV in mid-2021[vi].
- Hybrid Electric Vehicles (HEVs). Derive all energy from gas but make efficient use of it. In 2021 popular models included the Honda CR-V Hybrid, Toyota Camry Hybrid, Toyota Prius, Toyota Highlander Hybrid, and Toyota Rav4 Hybrid[vii].

International data from 2021 lumped BEVs and PHEVs into the same category and, rather than interviewing respondents, measured new passenger car registrations. BEVs

and PHEVs accounted for 64.5% of new registrations in Norway, 13.6% in Denmark, 12.7% in China, 11.6% in the UK, 9.8% in France and 2.6% in the US.[viii]

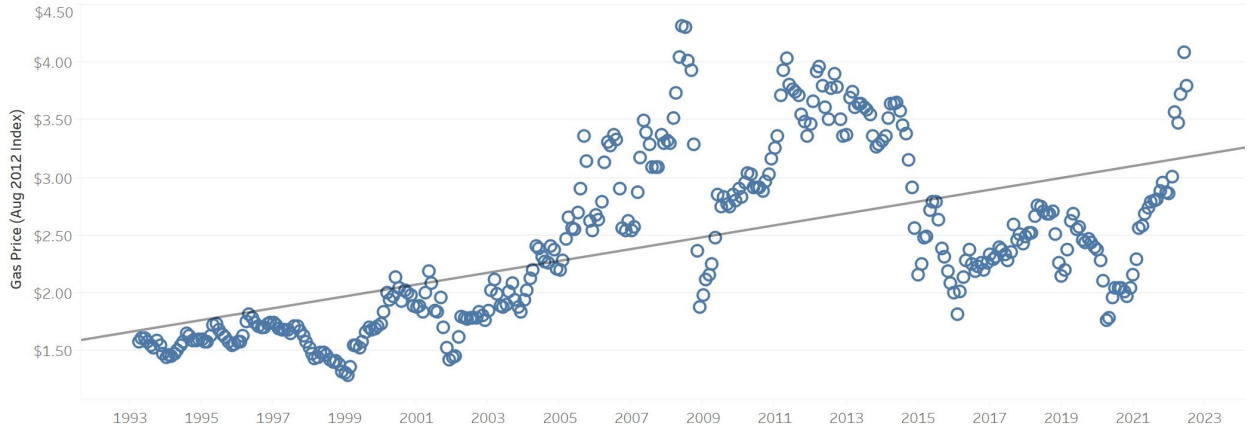
Why Would Anyone Choose an Electric Car?

Marketers often try to identify a brand's USP (Unique Selling Point). The same question could also be asked of an individual product. Why would anyone buy a BEV when traditional gas powered cars are an established technology, widely available, and do an effective job of moving people around?

Gas Prices

One consideration when buying a car is its cost to operate. Gas prices seem especially relevant, given their history of volatility (significant change), as shown in Figure 1. Adjusting gas prices to 2012 dollars allows for comparison across years; a horizontal line would be no change in real terms.

Figure 1. US Gas Prices Since 1993 (Inflation Adjusted to 2012 Prices)



Sources: US Energy Information Administration[ix] and Federal Reserve Economic Data[x]

Gas prices do seem to matter to consumers. According to the Consumer Reports survey, 33% said that a lower cost to charge a BEV than to fuel a conventional vehicle would most encourage them to buy or lease an EV. This topped the 31% who said that lower

lifetime costs and 28% who said that lower maintenance (both typical with a BEV) would most encourage them to get a BEV.[xi]

Environmental Concerns

In the Consumer Reports survey, 51% of those who currently owned a BEV said "reducing [their] impact on the environment is one of the most important factors when purchasing a vehicle." This compared to 36% of past BEV owners, and 26% of those who had never owned a BEV.[xii]

Barriers to Adoption

Costs

The cost of a BEV—specifically the higher cost to purchase one—is a disincentive to buying a BEV, according to 58% of those surveyed[xiii]. A majority of those asked (53%) said that tax incentives/discounts at purchase would encourage them to adopt a BEV[xiv]. Yet nearly half of respondents (46%)[xv] were not aware that significant incentives, such as federal tax breaks up to $7,500[xvi], already existed.

Range

Range anxiety is the fear of running out of power before one's destination[xvii]. General concerns about the distance that BEVs can travel on a single charge is a barrier to adoption. In the survey, 55% of respondents worried about the number of miles that the car could go before being charged[xviii].

Charging Logistics

Closely connected to the issue of range is charging logistics. The large batteries in BEVs require fast chargers to charge quickly. These can be expensive to install in homes, are generally unavailable for street parkers, and fast charging station availability varies across the country. In the survey, 61% of respondents worried about charging logistics[xix].

Other Objections

It's easy to find other objections to electric vehicles. Orla found a website sharing "20 drawbacks of electric vehicles drivers overlook." These include several variants on the issues described above—range and charging logistics—as well as performance in certain conditions (e.g., cold weather) and battery deterioration over time. Concerns that vehicle manufacture is not as environmentally friendly as might be hoped also featured. The author also mentioned up-front cost, cost to repair, lack of support from major car companies, problems in developing markets with limited charging infrastructures, and disruption to current business models. Finally, the author opined that EVs are unattractive. "There are some electric vehicles that are stunning beauties, but most of them are just plain ugly or ordinary at the very least."[xx]

EV Exposure

Lack of familiarity remains an issue. Although 14% of respondents said that they would definitely buy a BEV if purchasing a new car[xxi], only 9% are "very familiar" with the fundamentals of BEVs[xxii]. There was a pronounced difference between those who owned and did not own a BEV as to whether they saw one in their neighborhood in the last month. Of current BEV owners, 71% said they saw a BEV in their neighborhood in the past month, compared to 45% of past owners and 44% of those who had never owned. The Consumer Reports' authors did note: "However, it is quite possible that it's more a matter of being familiar with EVs than actually seeing or not seeing them where you live."[xxiii]

Politics does seem to have some correlation with ownership. Consumer Reports created an EV Experience Index that captured seeing BEVs, knowing people with one, driving one, and being a passenger in one. Democrats had more experience than Independents, who had more experience than Republicans. Those with more experience were more likely to say they would buy a BEV.[xxiv]

Availability

Orla quickly checked the inventory availability of BEVs, investigating the six highest-volume BEV sellers in the US in quarter 1 2022[xxv] to see if they had BEVs available in her area, Athens, Georgia[xxvi].

- The nearest Tesla store was in Atlanta, about an hour's drive away. Teslas are generally ordered online. Within 100 miles only the Model S was in inventory, which retailed around $150,000. No federal tax benefits could be claimed by consumers, since credits are limited by manufacturer and Tesla's had been exhausted.
- The nearest Kia EV6 in inventory could be found in Gainesville, 40 miles away. The nearest Kia Niro EV was in Pittsburgh, nearly 500 miles away.
- Orders for the 2022 Ford Mustang Mach-E and F-150 lightning were closed. It was possible to sign up for news about 2023 models. Customers were warned "Limited inventory may be available at selected dealers."
- No Hyundai Kona Electric was available within 250 miles. Multiple vehicles of the Hyundai Ioniq 5 were available for around $50,000 in the suburbs of Atlanta, 40-50 miles away.
- A Nissan Leaf was available 46 miles away.
- No Volkswagen ID.4 was available but could be reserved for the future.

That was a lot of information. Orla sat down and started to outline a plan to further the adoption of EVs in the US. What could, and should, be done?

Endnotes

[i] The people in the case are fictitious but the data and references are all based on publicly available information.

[ii] Case and Teaching Note written by Neil Bendle (neilbendle.com). You are free to use it in any way you wish but please do not share the teaching note with students.

[iii] Consumer Reports Survey Department, "Battery Electric Vehicles and Low Carbon Fuel Survey: A Nationally Representative Multi-Mode Survey, April 2022, page 19

[iv] EVgo Fast Charging, https://www.evgo.com/ev-drivers/types-of-evs/, accessed Aug 24, 2022

[v]Annie White, 12 Bestselling Electric Vehicles of 2021, https://www.caranddriver.com/features/g36278968/best-selling-evs-of-2021/, accessed Aug 24, 2022

[vi] Evadoption, "Was the Jeep Wrangler 4xe 2021's 3rd Highest-Selling EV in the US?" Jan 22, 2022 https://evadoption.com/jeep-wrangler-4xe-2021s-3rd-highest-selling-ev-in-the-us/, accessed Aug 24, 2022

[vii] Tom Fish, Newsweek, 05/14/2021, "The 10 Most Popular Hybrid Car Models in America", https://www.newsweek.com/most-popular-hybrid-car-models-america-1590402, accessed Aug 24, 2022

[viii] Flexi Richter, Statista, "Electric Mobility: Norway Leads the Charge", Feb 15, 2022 https://www.statista.com/chart/17344/electric-vehicle-share/, accessed Aug 25, 2022

[ix] US Energy Information Administration, "U.S. All Grades All Formulations Retail Gasoline Prices (Dollars per Gallon)", Available at https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMM_EPM0_PTE_NUS_DPG&f=M, accessed Aug 24, 2022

[x] Federal Reserve Economic Data, https://fred.stlouisfed.org, Accessed Aug 24, 2022

[xi] Consumer Reports Survey Department, "Battery Electric Vehicles and Low Carbon Fuel Survey: A Nationally Representative Multi-Mode Survey, April 2022, page 14

[xii] Consumer Reports Survey Department, "Battery Electric Vehicles and Low Carbon Fuel Survey: A Nationally Representative Multi-Mode Survey, April 2022, page 21

[xiii] Consumer Reports Survey Department, "Battery Electric Vehicles and Low Carbon Fuel Survey: A Nationally Representative Multi-Mode Survey, April 2022, page 13

[xiv] Consumer Reports Survey Department, "Battery Electric Vehicles and Low Carbon Fuel Survey: A Nationally Representative Multi-Mode Survey, April 2022, page 17

[xv] Consumer Reports Survey Department, "Battery Electric Vehicles and Low Carbon Fuel Survey: A Nationally Representative Multi-Mode Survey, April 2022, page 16

[xvi] Fueleconomy.gov, "Federal Tax Credits for New All-Electric and Plug-in Hybrid Vehicles" https://www.fueleconomy.gov/feg/taxevb.shtml, accessed August 25, 2022. At time of writing the Inflation Reduction Act was coming into force. This changed the rules for the tax incentives but maintained significant incentives.

[xvii] EV Connect, May 23, 2022, "What Is Range Anxiety and How Can Drivers Avoid It?", https://www.evconnect.com/blog/what-is-range-anxiety, accessed Aug 25, 2022

[xviii] Consumer Reports Survey Department, "Battery Electric Vehicles and Low Carbon Fuel Survey: A Nationally Representative Multi-Mode Survey, April 2022, page 11

[xix] Consumer Reports Survey Department, "Battery Electric Vehicles and Low Carbon Fuel Survey: A Nationally Representative Multi-Mode Survey, April 2022, page 11

[xx] Vukasin Herbez, Motor Junkie, December 17, 2019, "20 DRAWBACKS OF ELECTRIC VEHICLES DRIVERS OVERLOOK", https://motor-junkie.com/20-drawback-of-electric-vehicles-drivers-commonly-overlook/31416/8/, Accessed Aug 25, 2022

[xxi] Consumer Reports Survey Department, "Battery Electric Vehicles and Low Carbon Fuel Survey: A Nationally Representative Multi-Mode Survey", April 2022, page 21

[xxii] Consumer Reports Survey Department, "Battery Electric Vehicles and Low Carbon Fuel Survey: A Nationally Representative Multi-Mode Survey, April 2022, page 6

[xxiii] Consumer Reports Survey Department, "Battery Electric Vehicles and Low Carbon Fuel Survey: A Nationally Representative Multi-Mode Survey, April 2022, page 19

[xxiv] Consumer Reports Survey Department, "Battery Electric Vehicles and Low Carbon Fuel Survey: A Nationally Representative Multi-Mode Survey, April 2022, page 9

[xxv] Inside EVs, "US: All-Electric Car Sales Increased 60% To Almost 160,000 In Q1 2022", https://insideevs.com/news/585186/us-electric-car-sales-2022q1/, accessed Aug 25, 2022

[xxvi] Author search of company websites.