The Electric Car Myth

The governor of California has just signed the bill that will phase out the sale of new gasoline powered cars, trucks and SUVs culminating in a total ban of new sales of the vehicles by 2035.

In a free market economy should a government be dictating one technology over another, creating winners or losers? If the electric car is so superior to the gasoline powered car wouldn't the consumer be embracing it?

The modern electric car has been around for over 25 years yet in 2022 just under 1% of all the cars in the US are fully electric vehicles (EVs) with the 2022 EV share of the overall market in the U.S. at 4.6 percent.

- In 1996, General Motors released the EV1 – the first mass-produced, purpose-built modern electric car
- The first-generation Prius was launched in October 1997 as the world's first mass-produced hybrid passenger vehicle
- In 2008 Tesla Motors released its first car, the completely electric Roadster
- In late 2010, the Chevy Volt and the Nissan LEAF were released in the U.S.

Outside of the Prius and the Tesla the rest have been market failures.

The most common reasons drivers avoid EVs include fear the battery will run out of charge before reaching their destination, also known as "range anxiety," fear of too few charging stations, long charge times, and initial higher upfront vehicle costs. The average price of an electric vehicle is currently $66,000, well beyond the means of many people.

The rational for going electric is to cut the level of CO_2 in the atmosphere. The problem with this is California is already buying 25% of its energy from out of state using non green sources. Going to 100% electric vehicles will only drive this percentage up.

It's not clear how much of an already fragile and vulnerable electric grid can handle. During the present heat wave the Governor has asked people not to charge their vehicles between the hours of 4 to 9 pm.

So in reality this is only a feel good move by politicians at a tremendous cost to the consumer where all you are doing is shifting where the CO_2 is being generated.

The final selling point for the EV is the cost of fuel with gasoline in California at $5 per gallon. Assuming a year 2022 car gets the fleet average of 36 MPG, a car going 150 miles would cost $20.83 in gasoline. A car averaging 20 MPG, the fuel would cost $37.5.

Assuming that charging an EV would put you in the high usage category with a rate of $0.45 per KWH, charging an electric car, at home, such as the Nissan LEAF with a 40-kWh battery with a 150-mile range would cost about $17.5 to fully charge. At a public charging station the rate could be $0.70 KWH or $27.22.

So for a best case assuming a new car and you charge your EV at home you would save $3.33 for 150 miles or for 15,000 miles a year $333.

But this is not the full story. At this time EV's are not being charged for both Federal and State road tax. The State is already talking about adding a mileage tax for EV's.

California	Tax/Gal	Total
State Underground Storage Tank Fee	$0.02	
State and Local Tax	$0.11	
State Excise Tax	$0.54	
Federal Excise Tax	$0.18	$0.85

Assuming the new car rate of 36 MPG and 15,000 miles per year the State would have to add $354.17 to recoup the funds lost by going electric.

Once the Electric Car becomes a significant percentage of the cars on the road the state will be forced to add the road taxes and the cost advantage will disappear.

Finally, industry is predicting that the cost of the lithium batteries will go down to the point of being competitive with a gasoline engine. The problem is there is an issue with the availability of lithium. China currently dominates the rare earth mineral market and the auto industry has long relied on the country to source EV batteries. Something in the order of about 90% of the lithium that's used in batteries is processed in China right now.

With the increase in demand and China controlling 90%, the price can only go up making the electric car unavailable to the average consumer.

As for pollution, aren't we just shifting the pollution from say, in the case of CO_2 from California, to another state if we have to import energy? What about the strip mining of lithium cobalt and nickel? The mining of rare earths and processing has severely damaged surface vegetation, caused soil erosion, pollution, acidification, and reduced or even eliminated food crop output. The processing, of the rear earths minerals needed to manufacture the batteries, has developed toxic chemicals that have leaked into groundwater affecting entire waterways. This is not even to mention the human tragedy of using child labor.

The bottom line of all this is that all we have here is a feel good for rich people and profits for friends of the government.