The EV Outlook: Contradictory or Inexorable

The New Peak Oil

There was a documentary film called “Collapse,” which premiered at the Toronto International Film Festival in 2009 about a self-styled investigative journalist named Michael Ruppert who claims to have predicted the 2008 financial crisis. In this film, he purports to forecast a looming disaster caused by an insufficient supply of fossil fuels to support a growing world economy. “The mortal blow in human industrialized civilization will happen when oil prices spike and nobody can afford to buy that oil and everything will just shut down,” is how he characterized it.

Had that come to pass, it would certainly would have created some urgency to find alternatives. But that was then. Less than a decade later, we find ourselves awash in fracked oil and natural gas, and in the midst of a slow-burning (pun intended) climate crisis, where the political leadership at the Federal level in our own country, the largest country in terms of cumulative greenhouse gas emissions and the second largest in terms of current emissions, is more resistant to doing something about it than almost all other countries.

While Ruppert was wrong about “peak oil”, he made another comment that was more prescient with respect to the larger political dynamic: “It’s kind of sad because we as a species have become so disconnected from the Earth. We don’t have any real contact with the Earth. We don’t have any sense of its functions, its feeling, its seasons, its timings.”

If you would like more of a freak-out, albeit in a more

soberly detailed, journalistic style, try reading The Sixth Extinction by Elizabeth Kolbert, who discusses (among other things) species adaptation in past cycles of climatic change and how this time is different. (It's happening a lot faster, folks, too fast for evolution to keep up.)

Peak Oil and EVs

Where this fits with EVs, of course, is that transportation accounts for 40% of petroleum use globally. The meaning of the phrase "peak oil" has changed from meaning the scarcity of supply to the turning point in consumption level. The projected EV adoption rate is a big factor in determining when that occurs.

According to a survey of forecasts published by Bloomberg, the earliest this is likely to happen is shortly before 2030, as forecasted by Bank of America. The intersection point in terms of the cost curves of EVs and conventional vehicles is forecasted to be 2025. The point at which EV sales surpass ICE sales is forecasted to be 2038. Others, such as major petroleum exporters Saudi Arabia and Russia, forecast this peak oil point to be further out, more like 2050.

The Landscape

One may be forgiven for feeling a sense of cognitive dissonance when looking at the landscape for EVs in the USA.

- We have not reached the tipping point with consumers purchasing plug-in vehicles.
- There is a Federal tax credit, flaws and all.
- Tax credit notwithstanding, the political environment at the Federal level is largely unfavorable to clean energy. Auto manufacturers have had success in persuading the current administration to back away from phase two of the Obama CAFÉ requirements.

- There is a mixed landscape across the states with some offering incentives and others that add a surcharge to EV registrations.
- Many dealers are reluctant to sell EVs. (This is a link to a 2015 NY Times articleabout this subject. This is a link to a more recent, candid, and thoughtful article by an employee at a Chevy dealership about the challenges of selling EVs, even when working for a dealer who is supportive.)
- EVs remain under-marketed.
- A recently reported study conducted by KPMGof 1000 auto industry executives reported negative sentiment for near/medium term EV prospects. To quote from Green Car Reports, "76% of executives see internal combustion engine vehicles as still more important than electric drivetrains for a very long time." They felt the biggest hurdle is a lack of charging station infrastructure. (Strangely, they were more bullish on fuel-cell vehicles to break out, even though there is even less hydrogen infrastructure.)

And yet there have been numerous ambitious announcements by major legacy auto manufacturers.

- GM has announced the development of a modular EV platform that will be the basis for 20 or more vehicles. This flexible platform is intended to lower the cost substantially. They anticipate selling1MM EVs per year (globally) by 2026 (and "bury Tesla").
- Ford announced an $11 billion investment in 40 plug-in vehicles by 2022.
- Volvo intends to phase out gasoline engines by 2024.
- Fiat/Chrysler announced the future of automobiles is electric. This by CEO Sergio Marchionne, the same person who several years ago asked customers not to by his Fiat 500e BEV.
- Volkswagen, in the wake of "dieselgate," has announced a

pivot to EVs and, as part of the settlement for the diesel emissions fraud, a $2 billion investment in charging infrastructure.

At least part of the reason for these plans is what is happening outside of the USA.

- The EV poster child is Norway, where 52% of new car sales are now EVs, and their goal is to phase out diesel and gasoline by 2025. They are using a panoply of carrots and sticks, including generous subsidies, to drive this result which they hope can be phased out over the next 10 years. And the price of gasoline is 15.86 krone per liter (Jan 2018), or about $7.65 per gallon (compared to $2.53 in the USA, per AAA).
- Paris plans to ban diesel by 2025 and phase out gasoline vehicles by 2030. Britain and France plan to ban the sale of gasoline and diesel vehicles country-wide by 2040.
- China has ordered the discontinuation of 553 vehicle models that are the most polluting.
- Japan now has more charging stations than gasoline stations.

Plug-in vehicle models are becoming more numerous. Electric propulsion is beginning to be incorporated into larger vehicles. The energy density in batteries is steadily improving. Prices are coming down to the point where, eventually, incentives won't matter. The EVs on the market now have mostly been well-received, are fun to drive, and will only get better and more diverse.

While there are different forecasts about when EV sales will overtake those of internal combustion vehicles and when peak oil consumption will occur, nobody thinks it won't happen. The Georgetown Climate Center held a webinar on February 13 regarding planning for charging infrastructure for an EV corridor in the Northeast. Just to excerpt one sentence with

respect to combating carbon emissions, “Without electrification of the transportation sector, there is no clear path to meeting our goals.”