

AtonRā Innovation And Artificial Intelligence Update: Electric Vehicles At An Inflexion Point

We have long been playing the electric car & autonomous driving theme in our Innovation and Artificial Intelligence portfolios through positions in specific semiconductor companies and car manufacturer Tesla, considering that the Tesla Model 3 release would lead traditional carmakers to accelerate their pace of innovation and the shipment of electric and smart cars for the mass market.

Recent political events suggest the EV market is now reaching a tipping point and that electric cars should take over fossil fuel cars much faster than expected. While the British and French governments announced during the summer they would ban sales of fossil-fuel vehicles by 2040, China's vice minister of industry and information technology just stated that the government is working on a timetable to end sales and production of fossil-fuel vehicles as well.

In addition, China is considering removing the obligation for foreign carmakers to set up JVs in the country with local partners and allowing them to set up wholly owned EV businesses, a move that is clearly designed to accelerate the transition to EVs and to tackle the pollution issues in the country.

While some of these plans may seem remote (2040 for France and Great Britain), carmakers that do not want to be left behind the electric car revolution, specifically in China which accounts for one-third of the global car market, will have no choice but to accelerate their transition to EVs. **Volvo** for instance recently announced the end of its combustion engine era and stated that it should achieve its transition between 2019 and 2021...

This shift of the auto industry is not only about Tesla. It's mainly (in the short term) about semiconductor companies that are expected to reap the benefits of a much higher technology content in an EV than in a fossil fuel car (which is expected to more than double to above \$1,000).

Driver assistance systems and autonomous driving alone could represent a market above \$50bn in the medium term, assuming tens of millions of cars come out of the factories each year equipped with such technologies and an ASP around \$1,000. This is a significant boon for **AMD** and **Nvidia** (our first and third largest positions in our Innovation and Artificial Intelligence portfolios) whose graphics cards power autonomous driving. Yesterday's reports

that AMD's technology was being used by Tesla for a new autonomous driving chip is a major positive for the company as it suggests that AMD has become more competitive across the board and is gradually becoming a second credible option behind Nvidia in GPUs designed for AI purposes.

Last but not least, this new generation of cars could also open the way for the likes of **Apple**, **Google** and even... **Facebook** which just announced it was seeking to work with automakers on various digital tools including artificial intelligence.

Even without building a car, the Tech giants could have a major role to play in the auto industry 2.0 through the provision of operating systems, digital assistants and other apps (such as in-car payments). They could even end up being the biggest winners of this revolution, assuming they emulate the success in the 80s and 90s of **Microsoft** which grabbed most of the dollars generated by the PC industry at the expense of hardware makers. History could repeat itself...