



Electric Vehicles 2.0

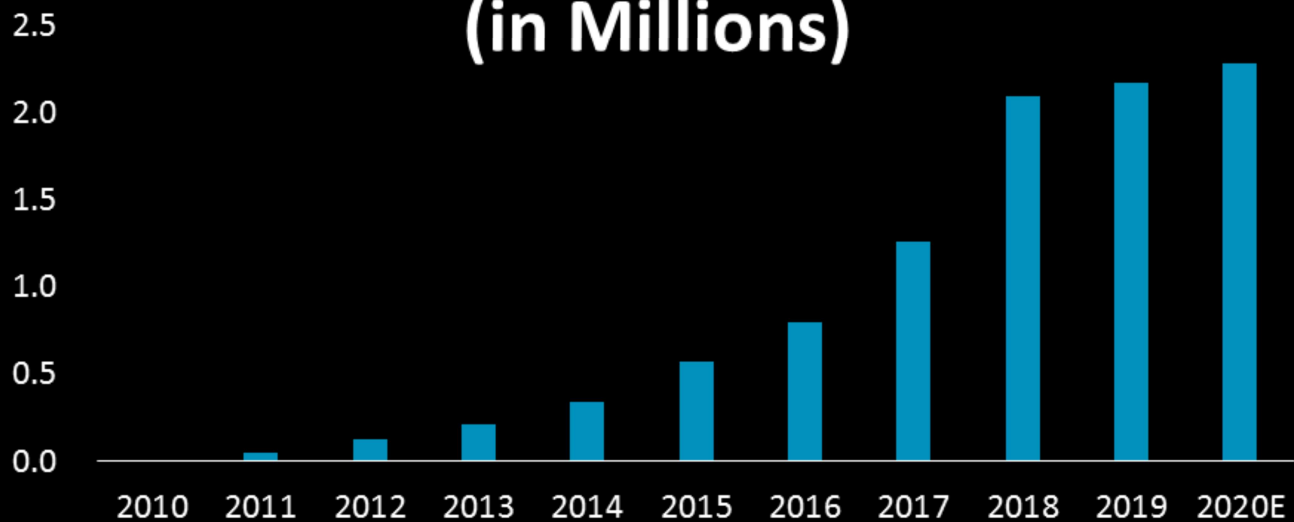
By Fai Lee, CFA, CPA, CGA, MBA | Equity Analyst

In 2018, I discussed electric vehicles, or EVs for short, and the potential implications of rising EV sales on oil demand.

In this presentation, I will be discussing electric vehicles and General Motors.

General Motors, the well-known car maker with brands such as Cadillac, Buick, Chevrolet and GMC, is a relatively new addition to the Odium Brown Model Portfolio. We added the company to our coverage list because we believe it is well positioned to capitalize on growth in EV demand, and we are very excited about its future prospects. But before I talk more about GM, let's check in on how the EV market is doing.

Electric Vehicle Sales (in Millions)



Source: International Energy Agency

Over the last decade, we've seen a significant increase in the number of electric vehicles sold globally. In 2010, the number of EVs sold annually was close to zero; 10 years later, that number is now over two million, which is pretty impressive!

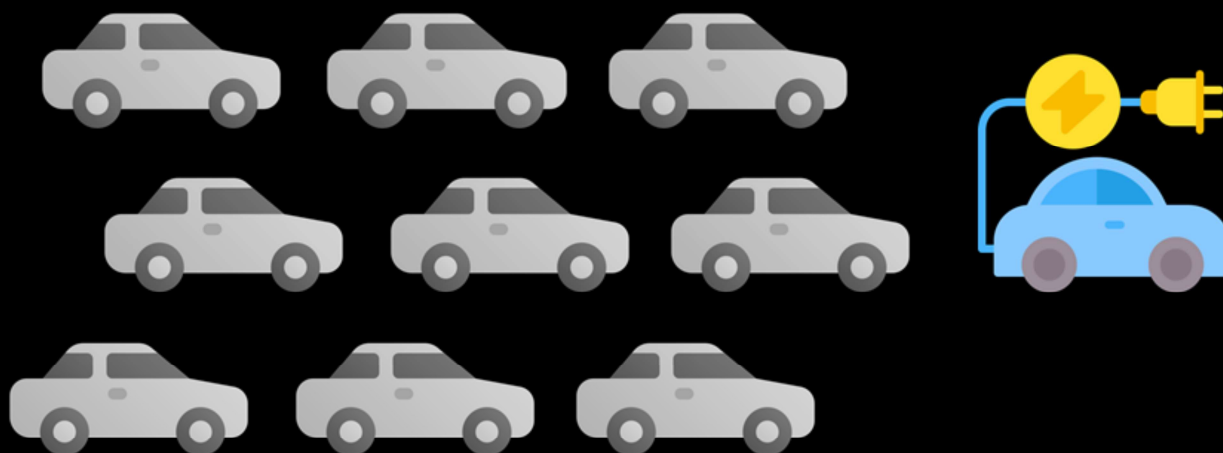
You might be wondering why the growth rate slowed in 2019 and 2020.

China is the world's largest market for electric vehicles. In mid-2019, China reduced its subsidies for electric vehicles by approximately 50%, which led to a significant slowdown in sales in the second half of the year.

In 2020, the COVID-19 pandemic dampened electric vehicle sales growth. However, government subsidies in Europe helped offset the pandemic's negative impact.

Notwithstanding the slowdown over the last couple of years, sales of electric vehicles are expected to accelerate in the future.

1 out of 10 Cars Sold Will Be Electric by 2025



At less than 3%, electric vehicles still represent a relatively small percentage of total auto sales. However, this is expected to change.

For example, Bloomberg New Energy Finance estimates that approximately one out of 10 new passenger vehicles sold in 2025 will be electric.

By 2040, it estimates that over half of all passenger vehicles sold will be electric.

Price



In 2018, I discussed three common reasons cited for not purchasing an electric vehicle, and they are still relevant today.

Cost is one of the biggest impediments. Electric vehicles are more expensive in the absence of government subsidies.

Price



Range



Range anxiety is another concern. Drivers worry about being stranded and having insufficient battery power to reach their destination or a charging station.

Price



Range



Choice



Finally, limited choice is another common reason cited for not buying an electric vehicle.

We believe these challenges are starting to dissipate. This will likely lead to increased adoption of electric vehicles over time.

To highlight the transformation underway, let's look at each of the three issues in the context of General Motors and its plans to move toward an all-electric future.



General Motors is a global automotive company. It has the largest market share in the U.S. and is the market leader in trucks, crossovers and sport utility vehicles.

Over the next five years, GM will be investing over US\$27 billion in electric vehicle development.

GM is on the verge of an exciting transformation with its strategic shift into electric vehicles.

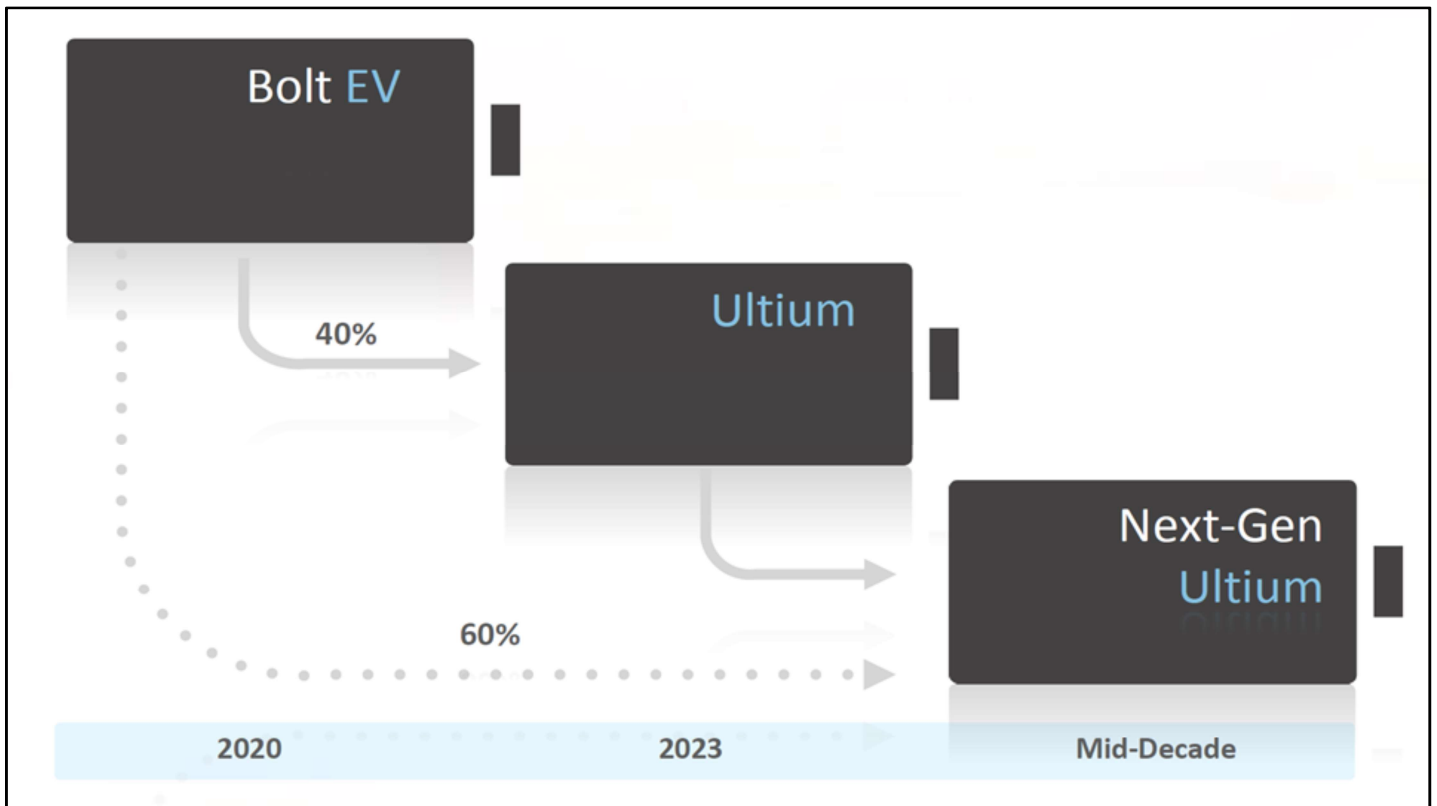
Highlighting this move, the company recently changed its corporate logo for the first time in over 50 years. Here's how they describe it:

“The new GM logo features a color gradient of vibrant blue tones, evoking the clean skies of a zero-emissions future and the energy of the Ultium platform. The rounded edges and lower-case font create a more modern, inclusive feel. The underline of the “m” connects to the previous GM logos as well as visually representing the Ultium platform. And within the negative space of the “m” is a nod to the shape of an electrical plug.”



GM's transition into an all-electric future revolves around its new Ultium Battery System, which is shown here.

We believe Ultium could be a game-changer for GM as it helps the company overcome the three common impediments cited by buyers that we just talked about.



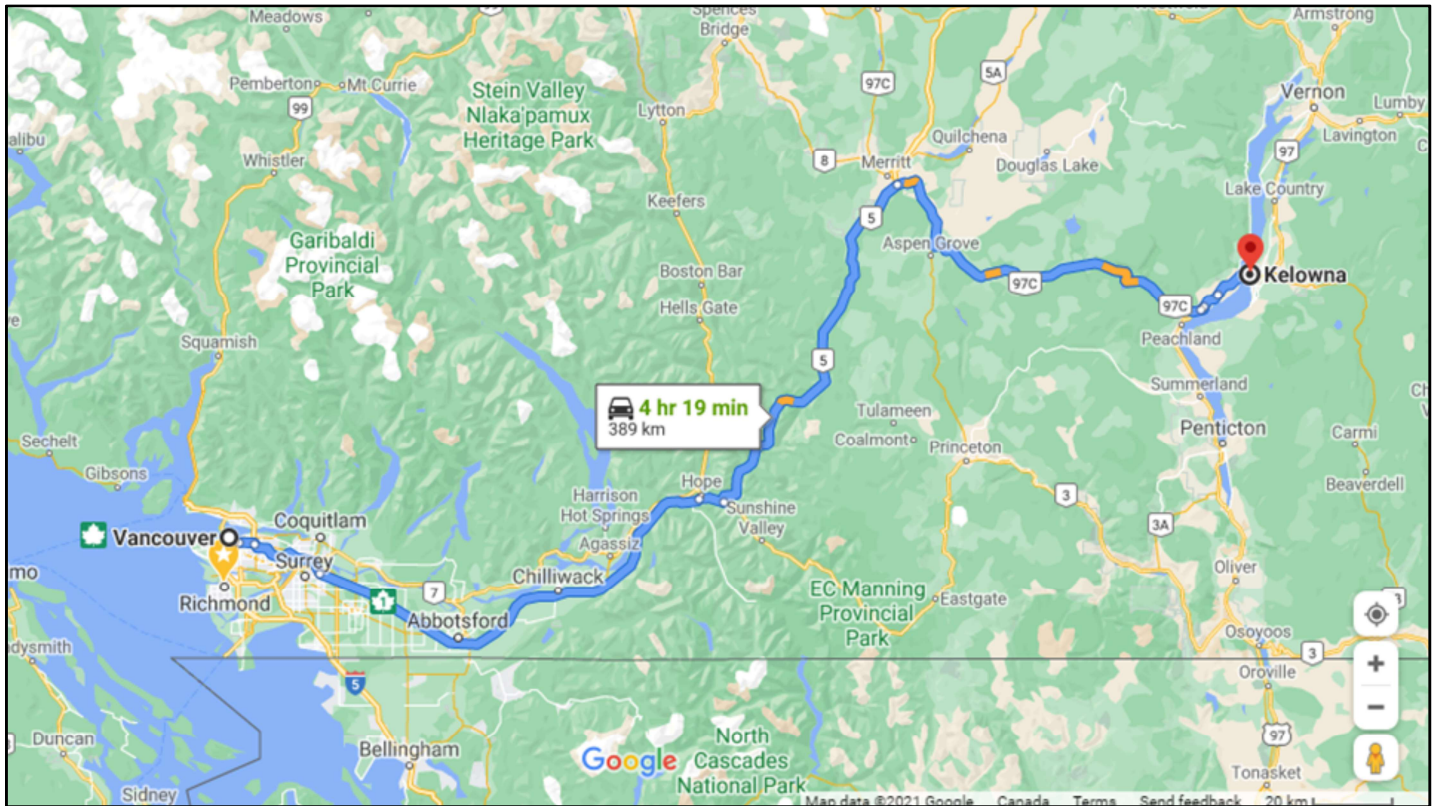
Instead of an internal combustion engine, EVs have battery packs. These battery packs are expensive and have typically been the main reason for the higher cost associated with EVs.

However, battery costs are declining as technology improves, and the need for subsidies should dissipate as this occurs.

For example, General Motors expects its first-generation Ultium batteries to be about 40% cheaper to produce than the batteries in its existing Chevrolet Bolt EV.

As a result, GM's Ultium battery technology is expected to make its EVs cost competitive with internal combustion engine vehicles.

Looking further out, its next-generation Ultium batteries, currently under development, are expected to cost even less to manufacture.



Ultium also addresses consumer concerns about range anxiety.

With its first-generation Ultium batteries, GM expects to deliver a driving range of up to 400 miles or 650 kilometres on a full charge.

This could increase even further with GM's next-generation batteries, as the company has discussed the possibility of eventually achieving a driving range of 600 miles or 965 kilometres.

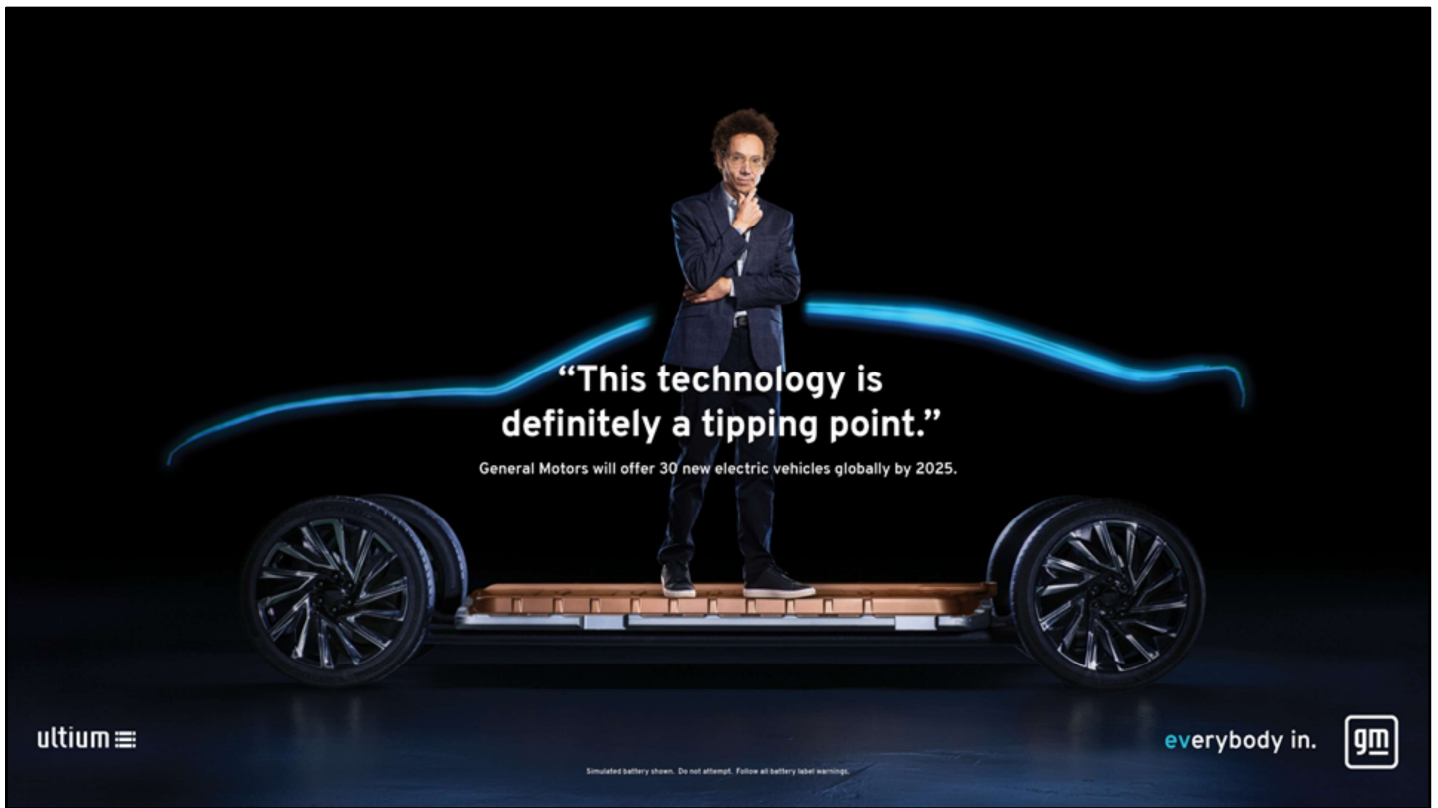


When it comes to electric vehicles, there aren't a lot of choices available right now.

GM plans to introduce 30 new electric vehicle models globally by 2025. Two-thirds of these models will be available in North America, including the Hummer EV super truck and the Cadillac Lyriq SUV.

GM will be able to offer a wide range of choices because its new Ultium battery system provides significant design flexibility. Using one common battery platform also reduces development times for new electric vehicle models.

With its modular Ultium battery system, GM can build a complete lineup of electric vehicles ranging from trucks, SUVs and crossovers to high-performance sports cars.



Malcolm Gladwell, well-known author of *The Tipping Point*, describes it as “the moment of critical mass, the threshold, the boiling point.”

Electric vehicles are approaching their “tipping point” as battery technology improves and costs decline.

With respect to GM, its Ultium battery technology is a tipping point for the company as it moves toward the electrification of its vehicles.

Investors may be getting a bit carried away when it comes to the valuation of certain electric vehicle-related companies. However, given its low valuation, the market is not giving GM much credit for its strategic shift into EVs.

The company’s attractive valuation and our bullish outlook for its EV business make us very excited about General Motors’ stock.

Thank you for your time, and I will leave you with this: GM Commercial (see 7:22 of the video).



Please read our Odlum Brown Limited Disclaimer and Disclosure - It is important!

Odlum Brown Limited is an independent, full-service investment firm focused on providing professional investment advice and objective research. We respect your right to be informed of relationships with the issuers or strategies referred to in this report which might reasonably be expected to indicate potential conflicts of interest with respect to the securities or any investment strategies discussed or recommended in this report. We do not act as a market maker in any securities and do not provide investment banking or advisory services to, or hold positions in, the issuers covered by our research. Analysts and their associates may, from time to time, hold securities of issuers discussed or recommended in this report because they personally have the conviction to follow their own research, but we have implemented internal policies that impose restrictions on when and how an Analyst may buy or sell securities they cover and any such interest will be disclosed in our report in accordance with regulatory policy. Our Analysts receive no direct compensation based on revenue from investment banking services. We describe our research policies in greater detail, including a description of our rating system and how we disseminate our research, on the Odlum Brown Limited website at www.odlumbrown.com.

This report has been prepared by Odlum Brown Limited and is intended only for persons resident and located in all the provinces and territories of Canada, where Odlum Brown Limited's services and products may lawfully be offered for sale, and therein only to clients of Odlum Brown Limited. This report is not intended for distribution to, or use by, any person or entity in any jurisdiction or country including the United States, where such distribution or use would be contrary to law or regulation or which would subject Odlum Brown Limited to any registration requirement within such jurisdiction or country. As no regard has been made as to the specific investment objectives, financial situation, and other particular circumstances of any person who may receive this report, clients should seek the advice of a registered investment advisor and other professional advisors, as applicable, regarding the appropriateness of investing in any securities or any investment strategies discussed or recommended in this report.

This report is for information purposes only and is neither a solicitation for the purchase of securities nor an offer of securities. The information contained in this report has been compiled from sources we believe to be reliable, however, we make no guarantee, representation or warranty, expressed or implied, as to such information's accuracy or completeness. All opinions and estimates contained in this report, whether or not our own, are based on assumptions we believe to be reasonable as of the date of the report and are subject to change without notice.

Please note that, as at the date of this report, the Research Analyst responsible for the recommendations herein, associates of such Analyst and/or other individuals directly involved in the preparation of this report may hold securities of some of the issuer(s) referred to directly or through derivatives.

No part of this publication may be reproduced without the express written consent of Odlum Brown Limited. Odlum Brown Limited is a Member of the Canadian Investor Protection Fund.