OCTOBER 2021 COMMENTARY

Evolve Automobile Innovation Index Fund

CARS invests primarily in equity securities of companies that directly or indirectly involved in developing electric drivetrains, autonomous driving or network connected services for automobiles.

TSX **CARS**

ETF TICKERS: CARS (HEDGED); CARS.B (UNHEDGED); CARS.U (USD)
MUTUAL FUND FUNDSERV CODES: EVF140 (CLASS F); EVF141 (CLASS A)

Investment Thesis: The car is becoming digital. Autonomous, Connected, Electric and Shared ('ACES')

Electrification

- Technological advances
- Improved vehicle experiences
- EVs becoming cost competitive with ICE (Internal Combustion Engine) counterparts
- Government mandates on carbon
- Charging network build-out
- Re-charge times
- Battery capacities/range

Autonomous Technology

- Smarter chips
- Better and cheaper sensors
- Smart infrastructure
- Government mandates for safety
- Only Level 2 (partial automation) is available today
- Advanced Driver Assist ('ADAS') in most cars
- Level 3 (conditional), 4 (high) and 5 (full) years away

GENERAL INDUSTRY UPDATE

Batteries Spotlight

Lithium-ion batteries are a crucial component in electric vehicles. Between 2016 and 2020, **global lithium production increased by 116%**. Lithium's dominance comes from its low cost, wide availability, and flexible performance.[1]

Canada has recently started repositioning itself to take advantage of this battery demand. Despite having all the critical components of lithium-ion batteries – nickel, cobalt, lithium, and graphite – Canada doesn't currently have any EV cell or component manufacturing. There is a similar dynamic overseas in Australia. In 2020, Australia accounted for almost 50% of the global lithium production but exported the majority to China. China on the other hand accounts for 75% of battery materials refining capacity while importing almost all its raw materials. Canada has a unique opportunity to benefit from the battery supply chain due to domestic battery demand, existing vehicle production and the USMCA free trade agreement, which allows batteries produced in Canada can be sold to the EV supply chain in the U.S.[2]

Two factors driving the growth in demand for lithium-ion batteries are the increased number of EVs on the road and historically falling battery prices. According to Bloomberg, the price of **lithium-ion batteries has declined 90% over the last decade,** however the expensive materials found in these batteries are limiting how far the price can fall. In fact, these batteries have **more than doubled in price this past year.** Bloomberg estimates that global lithium consumption will grow fivefold by the end of this decade.[3]

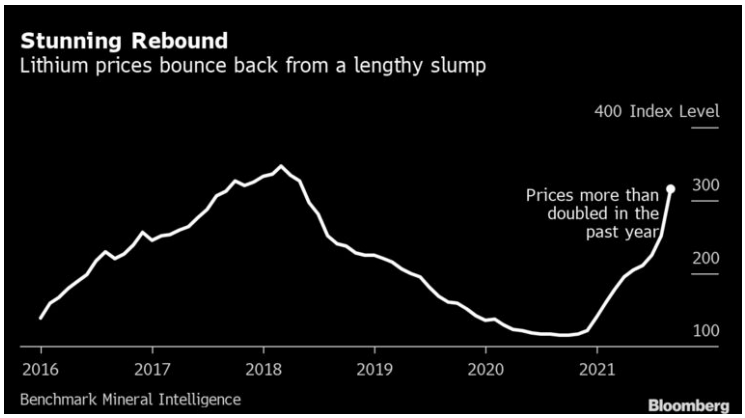
Source: Shutterstock

This month, **GM** announced it would build a **new battery development center** to reduce costs and increase future EV range.[4] Toyota also plans to invest **$3.4 billion is a US battery plant** that would start production in 2025. These are just two recent examples of global automakers accelerating their transition to electric vehicles through a battery push.[5]

In addition to rising prices, Lithium-ion batteries have also been under scrutiny around safety concerns. **GM** had to **recall the company's flagship EV,** the Chevrolet Bolt, due to faulty lithium-ion batteries which caused several fires. The company will replace every Bolt's EV battery pack totaling a cost of **~$2 billion.**[6]

The combination of rising prices and safety concerns have fueled the search for a lithium-ion alternative. Sodium-ion batteries are one example of a technology that shows promise. The main difference between the two batteries come from substituting out lithium for

Batteries Spotlight Cont.



more abundant sodium, which also allows the use of other lower-cost materials instead of cobalt and nickel. The main drawback is the lifecycle is not as long as lithium-ion batteries. The progress of battery technology innovation will be a key trend to watch over the next several years.[7]

COMPANY SPECIFIC UPDATES

Tesla

Tesla posted record revenue and profits in the company's Q3 earnings this month. This marks the 9th straight quarter of profits for Tesla. On the topic of batteries, Tesla announced it would be shifting to cheaper lithium-iron-phosphate (LFP) batteries globally, a move away from lithium-ion batteries as prices continue to rise. LFP batteries are significantly cheaper than lithium-ion batteries but have less energy density, resulting in lower EV ranges. Tesla is already producing vehicles with LFP batteries at its factory in Shanghai, which it sells in Asia and Europe. Musk sees an opportunity in battery manufacturing as the company works towards building more powerful and affordable batteries.[8]

Also, this month, **Hertz Global Holdings Inc** announced it placed an order for **100,000 Tesla's valued at $4.2 billion.** This is one of the largest purchases of electric vehicles ever. The rentals will be available in various cities across the US and parts of Europe. The announcement drove Tesla's valuation over $1 trillion for the first time and passed Facebook for the 5th spot in the S&P 500. At first only two-way rentals will be permitted to ensure vehicles are adequately charged after being returned. The news fueled a rally in Asian EV stocks on new optimism for the sector.[9]

Xpeng

This month Xpeng hosted a technology event where it announced plans to produce a **flying car** that can also drive on roads.[10] The news sent the stock flying although the car isn't the only reason Xpeng's shares are up significantly for the month. Recent gains have been driven from strong EV sales in China. The company's EV penetration of new car sales in China hit 20% in September.[11]

Bloom Energy Corp

Bloom Energy is a fuel cell manufacturer held by the fund. Shares of the company soared this month on the back of a **$4.5 billion fuel-cell deal with SK group.** SK will buy at least 500 megawatts of Bloom's systems over 3 years, representing a $4.5 billion revenue commitment. Bloom's revenue for 2020 was $794 million. The stock was up 37% that day.[12]

TSX CARS Evolve Automobile Innovation Index Fund

PERFORMANCE (%)

TOTAL RETURNS*	1 MTH	YTD	1 YR	2 YR	3 YR	4 YR	SI**
CARS (HEDGED)	12.69	13.20	65.53	59.76	45.44	26.98	28.29
CARS.B (UNHEDGED)	10.35	9.55	56.35	59.70	45.14	27.24	29.40
CARS.U (USD)	12.93	12.68	68.17	64.25	48.02	28.09	28.16

Source: Bloomberg, as at October 29, 2021.
** Performance since inception of CARS and CARS.B on September 27, 2017.
Performance since inception of CARS.U on November 1, 2017.

Sources:

1. https://www.visualcapitalist.com/visualizing-the-global-demand-for-lithium/
2. https://www.bloomberg.com/news/newsletters/2021-10-19/canada-poised-to-become-battery-leader-in-north-america
3. https://www.bnef.com/news/968199?e=News%20Watch:sailthru
4. https://www.edmunds.com/car-news/gm-to-build-wallace-battery-innovation-center.html
5. https://www.bnef.com/news/972241?e=News%20Watch:sailthru
6. https://www.cnbc.com/2021/10/12/lg-chem-to-pay-up-to-1point9-billion-to-gm-over-bolt-ev-battery-fires.html
7. https://www.bnef.com/news/967951?e=News%20Watch:sailthru
8. https://www.bnef.com/news/973555?e=News%20Watch:sailthru
9. https://www.bnef.com/news/976039
10. https://www.cnbc.com/2021/10/24/xpeng-launches-flying-car-that-can-also-operate-on-roads.html
11. https://www.barrons.com/articles/xpeng-revealed-three-things-and-a-flying-car-51635113480
12. https://www.bloomberg.com/news/articles/2021-10-25/bloom-surges-on-4-5-billion-fuel-cell-deal-with-sk-group

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