Evolve Automobile Innovation Index

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

**Investment Thesis:** The car is becoming digital. Autonomous, Connected & Electric (‘ACE’)

<table>
<thead>
<tr>
<th>Electrification</th>
<th>Autonomous Technology</th>
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<tbody>
<tr>
<td>• Technological advances</td>
<td>• Smarter chips</td>
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<tr>
<td>• Improved vehicle experiences</td>
<td>• Better and cheaper sensors</td>
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<tr>
<td>• EVs becoming cost competitive with ICE (Internal Combustion Engine) counterparts</td>
<td>• Smart infrastructure</td>
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<td>• Government mandates on carbon</td>
<td>• Government mandates for safety</td>
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<tr>
<td>• Charging network build-out</td>
<td>• Only Level 2 (partial automation) is available today</td>
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<tr>
<td>• Re-charge times</td>
<td>• Advanced Driver Assist (‘ADAS’) in most cars</td>
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<tr>
<td>• Battery capacities / range</td>
<td>• Level 3 (conditional), 4 (high) and 5 (full) years away</td>
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**MACRO ECONOMIC HIGHLIGHTS**

The global EV Market is expected to grow 10x this decade.

32 million passenger vehicles are projected to be sold in 2030 (up from 3 million in 2020). China, Europe and the US will remain the top markets. During the same period, EVs will jump to 33% of total global sales (vs 4.3% in 2020).

On August 5th, Biden set the goal that 50% of all new cars sold by 2030 be battery-electric, plug-in hybrid or fuel cell-powered.

Currently, the main barriers for widespread EV adoption are batteries, charging infrastructure, and chip shortages.

1 **Batteries**

Demand for lithium-ion batteries could surge as much as 5.9 terawatt-hours a year in 2030, putting a strain on supply chains.

Solid-state battery technology will be key to increasing cell-level energy density up to 500Wh/kg and driving battery prices down to $61/kWh by 2030. Solid-state batteries should be a cheaper and safer alternative to current lithium-ion batteries.

At the end of July, QuantumScape announced it’s testing a 10-layer solid state battery cell.

![High Demand for Lithium-Ion Batteries](image-url)
Charging Infrastructure

Biden’s $1 Trillion infrastructure bill will allocate $7.5 billion to EV charging stations. However, industry experts say an investment of $50 billion is required to build a charging network that can support the number of EVs by 2030.

Looking for an electric vehicle charging station?
The U.S. has about 43,000 public EV charging stations and 166,000 public chargers, but they get harder to find when traveling long distances in rural areas.

Chip Shortage

Vehicle manufacturers, including EVs, were affected by supply chain issues this month. The chip shortage that was predicted to start easing by Q2 2021 shows no signs of slowing yet.

Toyota, who claimed to be unaffected by the shortage in May, just announced it would cut production in Japan by 40% because of the shortage. In August, GM, Ford, Stellantis and VW all said they would also likely have to cut production.

Automakers EV Investments

Despite these challenges, automakers are committed to developing their EV line ups to hit sales and net-zero goals. According to Bloomberg, reaching net-zero requires 355 million EVs by 2030 – or 1 in 5 cars need to be electric.

The chart to the right shows automakers EV and digital R&D commitments as a percentage of total capex. Volkswagen is investing 58% of all capex into EVs and digital.

Capex Is Destiny

Automakers’ electric vehicle and digital R&D and capex commitments as a percentage of total R&D and capex

- Volkswagen: 58%
- Mercedes-Benz: 33%
- Stellantis: 52%
- GM: 51%
- Ford: 47%

Sources: Companies, BloombergNEF
Note: calculated as equal annual investment over companies’ stated investment periods, divided by 2020 R&D and Capex.
PERFORMANCE ATTRIBUTION
For the month, SiTime Corp Inc. made the biggest contribution to the Fund, followed by ITM Power and Ceres Power.

<table>
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<th>PERFORMANCE (%)</th>
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<tr>
<td>TOTAL RETURNS'</td>
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<td>1 MTH</td>
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<tr>
<td>CARS (HEDGED)</td>
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<td>CARS.B (UNHEDGED)</td>
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<td>CARS.U (USD)</td>
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Source: Bloomberg, as at August 31, 2021. ** Performance of CARS & CARS.B since inception on September 27, 2017 and CARS.U performance since inception on November 1, 2017.

Sources:
- https://www.bnef.com/shorts/12005

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The indicated rates of return are the historical annual compound total returns net of fees (except for figures of one year or less, which are simple total returns) including changes in per unit value and reinvestment of all dividends or distributions and do not take into account sales, redemption, distribution or optional charges or income taxes payable by any securityholder that would have reduced returns. The rates of return shown in the table are not intended to reflect future values of the ETF or returns on investment in the ETF. ETFs are not guaranteed, their values change frequently, and past performance may not be repeated.

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