

**BlackRock®**

# Investing Today in the Car of Tomorrow

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The private companies that are driving  
the future of the automotive industry



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# The car of tomorrow

BlackRock is one of the largest investors in the automotive sector. On behalf of our clients, we have about US\$170 billion<sup>1</sup> invested in public automotive companies. And in private markets, we're putting money to work in the next-generation technologies that will define the low-carbon car of the future.



**Charging at home**  
by solarZero



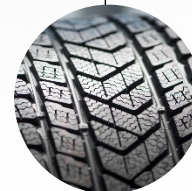
**Battery: efficiency**  
by Group14  
**manufacturing**  
by Northvolt  
**materials and recycling**  
by Ascend Elements



**Recycled plastic body**  
by E360S



**Mycelium leather upholstery**  
by MycoWorks



**Low-emission carbon-black rubber tires**  
by Monolith



**Pan-European charging network**  
by Ionity

1. BlackRock, as of Sept. 13, 2023



## Battery efficiency

### Group14

Next-generation materials that help conventional lithium-ion batteries deliver 50% higher performance

One common concern about electric vehicles is how far they can go between charges. Washington-state-based Group14 is addressing that concern with next-generation materials that help conventional lithium-ion batteries deliver 50% higher performance, extending the distances that EVs can travel before they need to be plugged back in. Its patented material, SCC55, offers five times the energy density as the graphite employed in conventional lithium batteries. We invested in the company alongside Porsche, which will be using Group14's materials in their next-generation line of Taycan EVs.



## Battery manufacturing

### Northvolt

Batteries designed to be durable, lasting for a minimum of 1,000 charging cycles

While EVs operate with lower carbon emissions, their manufacturing comes with environmental costs. That's why Northvolt is focused on becoming the greenest battery manufacturer in the world. Based in Sweden, it owns and operates manufacturing and recycling facilities across Europe, including a joint venture with Volvo in Gothenburg. Its batteries are designed to be durable, lasting for a minimum of 1,000 charging cycles. It has set a target of deploying 50% recycled material in its batteries, and to use 90% renewable power in its operations, by 2030.



## Battery materials and recycling

### Ascend Elements

Will produce enough sustainable cathode precursor for 750,000 electric vehicles per year

The batteries that power EVs don't last forever. And Ascend Elements is turning that potential problem into an opportunity. The Massachusetts-based company, with facilities in Kentucky and Georgia, is tackling the critical minerals shortage that faces the battery supply chain. Ascend's patented process turns battery manufacturing scrap and end-of-life batteries into cathode active material and its precursor of comparable quality to virgin materials, while eliminating process steps, lowering costs and reducing emissions. Its new factory in Kentucky, when complete, will produce enough sustainable cathode precursor for 750,000 EVs a year.

Source: BlackRock, 2023. Case studies are for illustrative purposes only; they are not meant as a guarantee of any future results or experience, and should not be interpreted as advice or a recommendation.

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## Recycled materials

### E360S

Provides vertically integrated recycling, waste management, and environmental services for more than 33,000 municipal, commercial, and industrial customers

The average car has more plastic than ever before – 411 pounds, according to the American Chemistry Council. And the plastic of the future will increasingly come from the plastic of the past, making a recycling and waste management company like E360S crucial to the cars of the future. Providing vertically integrated recycling, waste management, and environmental services for more than 33,000 municipal, commercial, and industrial customers in Canada, E360S is poised to play an important role as a provider of recycled materials.



## Tires

### Monolith

Has pioneered a manufacturing process that employs renewable energy and a patented low-emission methane pyrolysis process instead of combustion

Carbon-black is a major component of car tires, among dozens of other everyday items. Monolith has pioneered a manufacturing process that employs renewable energy and a patented low-emission methane pyrolysis process instead of combustion, to produce not only low-emission carbon black, but also hydrogen that can be reused for energy or in other products, such as fertilizer. Goodyear has partnered with Monolith to produce their ElectricDrive GT tire for EVs using Monolith's clean carbon-black material.



## Upholstery

### MycoWorks

Uses a patented technology to develop a leather alternative made from mycelium – an organic thread

Leather interiors are common in many cars. MycoWorks uses a patented technology to develop a leather alternative made from mycelium – an organic thread that grows from mushroom roots. This soft yet resilient fabric is used by fashion brands such as Hermes as well as other industries. More recently, the company has entered into an agreement with General Motors to use its biomaterial to upholster EV interiors. Founded in San Francisco, the company will open its first commercial-scale manufacturing plant in South Carolina later this year.

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## Home EV charging

### solarZero

Provides affordable renewable electricity generation and storage to more than 11,000 customers

Most EV journeys begin at home, and solarZero is a part of that journey as the leading rooftop solar business in New Zealand. It installs and maintains solar panels and batteries at homes, schools, and commercial buildings. Its solar panels provide affordable electricity to more than 11,000 customers, while its distributed batteries work together to stabilize the grid in the event of blackouts, brownouts or natural disasters. Its proposition to customers is that it will install the solar panels and batteries at no upfront cost, providing up to two-thirds of its customers' energy needs, at fixed rates over 20 years.



## Roadside charging

### Ionity

Plans to install an EV charging station every 100-150km on Europe's highways, with an increase to roughly 7,000 stations by 2025

Wider adoption of EVs require more locations for quick, convenient charging. Developed as a joint venture of leading car manufacturers, Ionity builds and currently operates more than 500 high-speed electric charging stations and over 2,700 chargers in 24 countries across Europe. With the backing of automakers including BMW, Daimler, Volkswagen (including Audi and Porsche), Ford and Kia/Hyundai, it plans to install an EV charging station every 100-150km on Europe's highways, with an increase to roughly 7,000 stations by 2025.

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