

# Electric-Vehicle Bulls Shake Up Metals Markets

Fear of missing out is driving investors into rare metals used in electric vehicles, but some wonder how the rally might end



Trucks haul ore at the Montana Resources mine in Butte, Mont. PHOTO: NICK COTE FOR THE WALL STREET JOURNAL

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A boom in electric vehicles is stoking demand for a wide range of metals, a shift some investors believe will have a far-reaching impact on commodity prices around the world.

Investors eager to get in early have doubled the price of [lithium](#) and [cobalt](#)—key components of electric-car batteries—in the past two years. Shares of companies that claim to sit on deposits of the metals have soared this year, too, even though some have yet to bring any production to market.

Many investors also have found fresh reasons to love some of the better-known metals, which are used more heavily in electric and hybrid vehicles than in ordinary cars. Prices for nickel, copper and other base metals have hit [multiyear highs](#) in 2017, although some have receded in recent weeks.

Meantime, analysts expect a host of minor metals such as manganese, vanadium and molybdenum to become more important in coming years.

It's a bet that coincides with Tesla Inc.'s [soaring market value](#) and [bitcoin's surge](#); the latest wager tied to disruptive technology with uncertain ramifications. As more countries pave the way for electric vehicles to supplant gasoline-powered ones, the most bullish investors are convinced the world is about to experience its biggest shift in commodities demand since the 19th century, when petroleum replaced whale oil as lamp fuel.



Lithium-ion batteries for Toyota's new Prius plug-in hybrid vehicle are on display. PHOTO: TOMOHIRO OHSUMI/BLOOMBERG NEWS

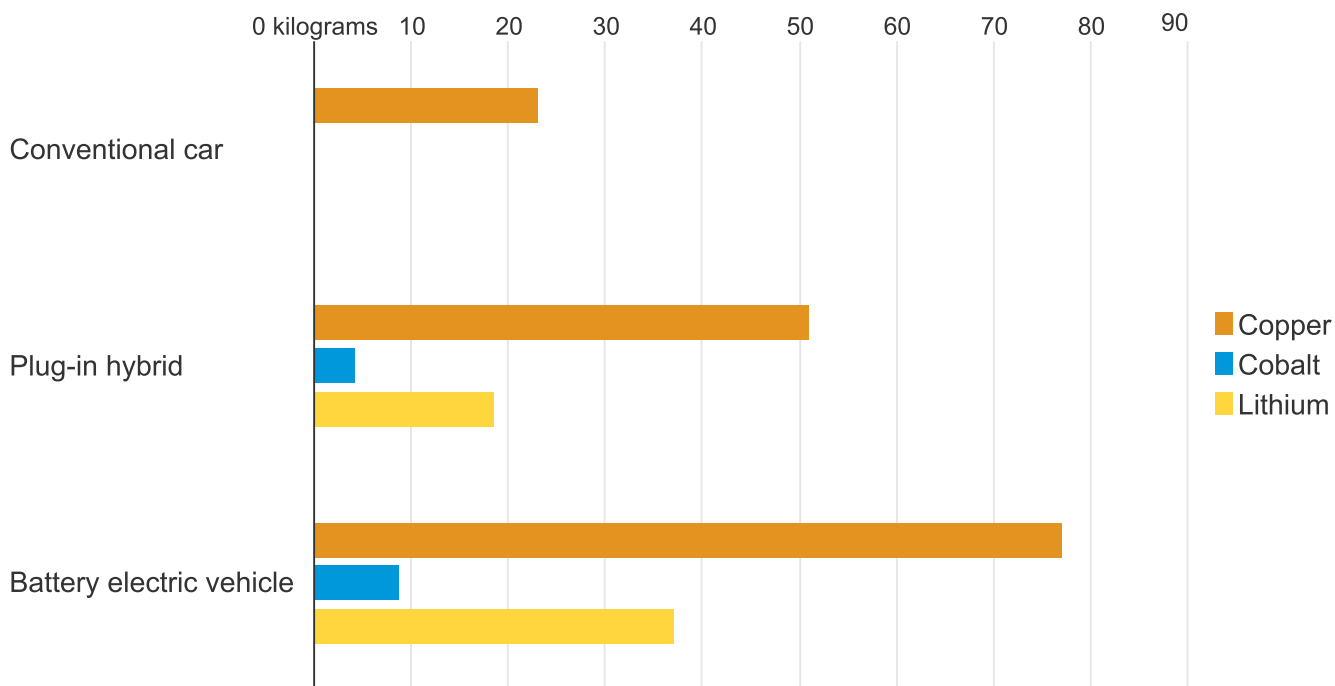
More skeptical observers see echoes of the late '90s dot-com era, when most investors correctly predicted the internet would change the world, but few found the handful of companies that would survive the sector's brutal crash and thrive in the 21st century.

“We’re at a tipping point where this next generation of commodities becomes more significant for industry and growth,” said Maxwell Gold, director of investment strategy at ETF Securities.

However, “it is so early in the process that it is difficult to determine who the winners and losers will be,” he said.

## Metals Mayhem

Electric cars are expected to stoke demand for raw materials, but much of the shift depends on the EV adoption rate.



Note: For a conventional lithium-ion battery with a nickel-cobalt-manganese cathode  
Source: Citigroup

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As sales of electric vehicles ramp up, so will the need for a spectrum of metals that are used to make everything from batteries to wiring, some investors said.

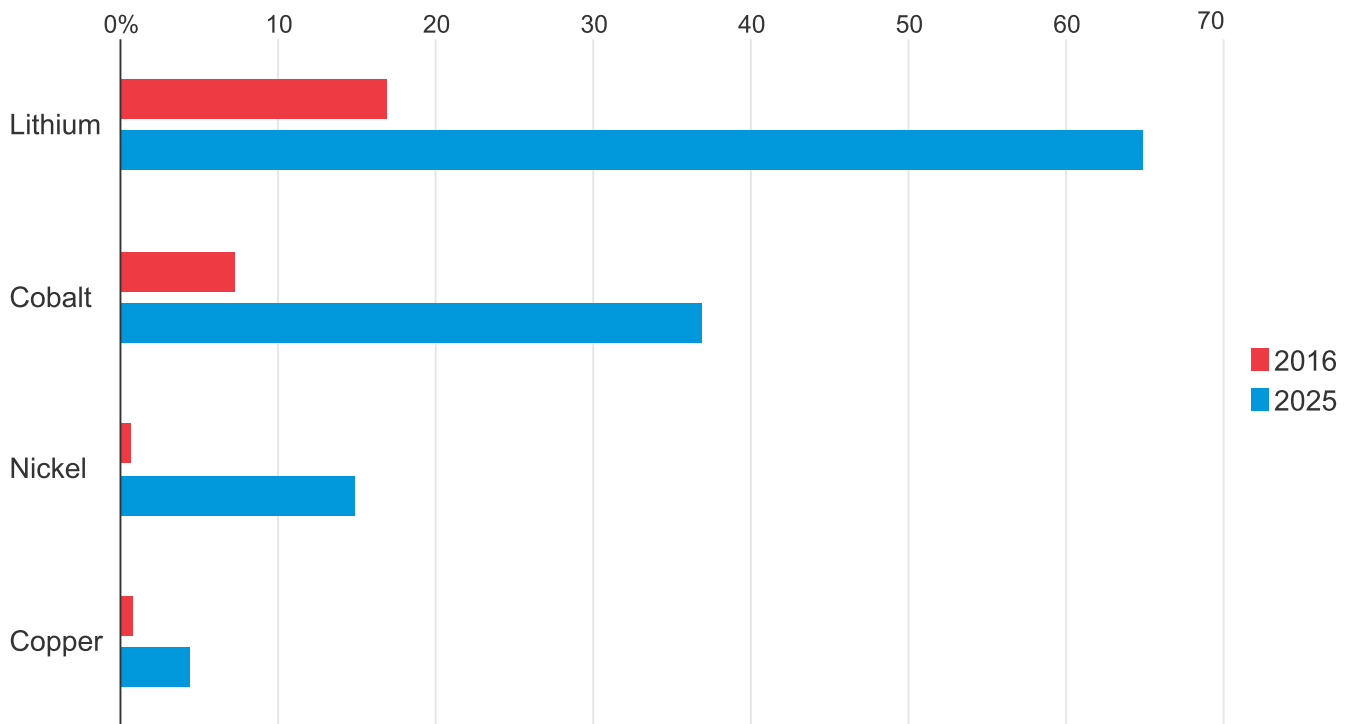
Automotive demand for lithium is set to climb 35% each year through 2021, according to Citigroup Inc. projections. Cobalt used in electric vehicles will increase roughly 450% from this year to 2025, Morgan Stanley said. Electric vehicles will become the second-largest nickel consuming sector by that year, with demand rising nearly 10-fold, while copper demand for cars and infrastructure is also expected to grow steadily, a JPMorgan Chase & Co. forecast showed.

Ralph Aldis, director of research and fund manager at U.S. Global Investors, said he has picked up shares of several lithium producers for the firm's World Precious Minerals fund.

"I just know that's the direction that the world seems to be going, and I'm not going to fight it," Mr. Aldis said.

## Growing Prominence

Many analysts think that electric vehicles will account for a higher percentage of raw materials demand.



Note: Based on projection that fully electric vehicles account for 9.2% of global auto sales in 2025

Source: Morgan Stanley

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Shares of [Lithium Americas Corp.](#) have soared 202% this year to C\$12.07 on the Toronto Stock Exchange. [First Cobalt Corp.](#), which is exploring cobalt mines in Canada, has notched a 215% gain to C\$1.23.

“People are following the money,” said Trent Mell, chief executive of First Cobalt, which hasn’t yet extracted any cobalt and recently began drilling in a group of 50 mines that once produced cobalt and silver. “I’m able to raise a lot of capital I wouldn’t have been able to even a year ago.”

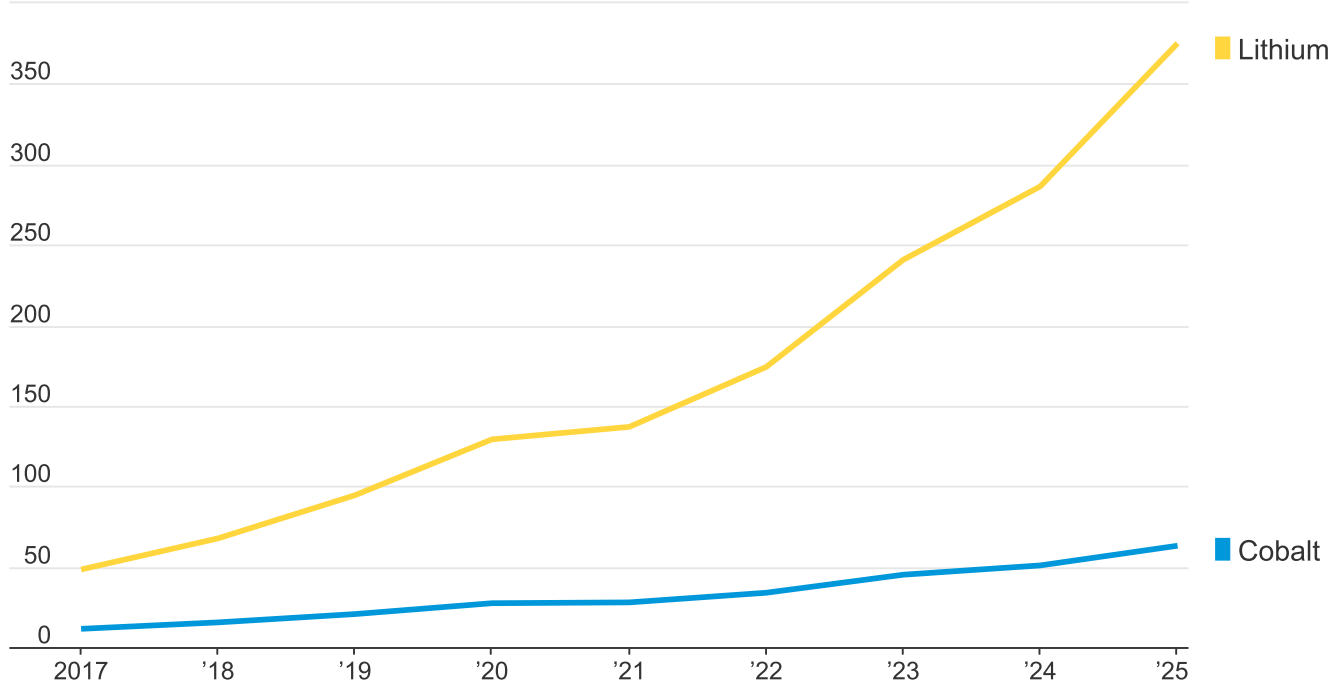
The gains have accompanied a surge in global electric and hybrid vehicle sales, which rose 50% in the first 10 months of 2017 from the same period a year earlier, according to EV-Volumes, a research group that tracks electric-car sales.

And growth is expected to continue. Sales of electric and hybrid vehicles are slated to surge to 31.5 million units in 2035, from 1.2 million units in 2017, according to Jefferies Group.

## Projected to Soar

The amount of raw materials in electric and hybrid vehicles is projected to grow rapidly.

400,000 kilotons



Note: Based on projection that fully electric vehicles account for 9.2% of global auto sales in 2025

Source: Morgan Stanley

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Driving that growth is China, which will demand auto makers meet gradually escalating quotas for energy-efficient cars [starting in 2019](#). [The U.K.](#) and France are set to phase out sales of diesel and gasoline vehicles by 2040, while India plans to [sell only electric vehicles](#) by 2030. In the U.S., auto makers are [investing billions of dollars](#) in electric vehicles despite expensive technology costs and lukewarm customer demand.



A technician checks the possible remaining voltage of a completely burned Lithium-ion car battery at a German recycling firm. PHOTO: WOLFGANG RATTAY/REUTERS

Forecasts say that the impact of electric vehicles could even ripple through other commodity markets. Many analysts believe electric vehicles will help crimp oil demand in the coming decades.

Some investors think the long-term losers could include palladium and platinum, which are used to scrub emissions in gasoline and diesel engines. Even perceived winners like cobalt could be vulnerable if battery companies find cheaper alternatives, a process some skeptics say has already started.

These analysts say there are plenty of other reasons to be cautious. Forecasts on the use of electric vehicles are vulnerable to a wide range of factors, from a slowdown in global growth to low gasoline prices, and it is difficult to predict how readily consumers will buy the vehicles when governments slash incentive programs. Tesla's sales in Hong Kong came to a standstill in the month after authorities slashed a tax break for electric vehicles on April 1.

## Wild Ride

Shares of lithium and cobalt miners large and small have swung on their way up this year.



Source: FactSet

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Higher metals prices also typically spur increased production, which eventually forces prices lower as supply floods the market.

“It’s very speculative,” said Nick Page, a global emerging market analyst for asset-management firm Fiera Capital’s European division. “Everyone is jumping on this bandwagon because people are scared of missing out.” Mr. Page said his firm hasn’t made investments based on electric-vehicle-related bets but is monitoring their adoption rate.

Other challenges include a sparse infrastructure of charging stations, needed to keep vehicles powered. Analysts say there is little chance oil will soon return to its 2014 level above \$100 a barrel, keeping gasoline relatively inexpensive. Meanwhile, car makers and big oil companies [have joined forces](#) to make internal combustion engines more efficient.

“You just don’t know what’s out there,” said Edward Meir, a strategist at INTL FCStone. “To extrapolate 10 or 15 years out is dangerous.”

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