US and European powers scramble to acquire critical minerals necessary for EV vehicle production

Gabriel Black
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Electric vehicle (EV) sales are surging around the world. In just three years, between 2019 and 2022, global EV sales increased from 2 million to over 10 million units. The International Energy Agency (IEA) estimates that by 2030, EVs will compose 60 percent of all car sales in the combined area of China, Europe and the United States.

This rapid growth in electric cars has important implications for the global economy. While total spending on the renewable energy transition remains substantially below the levels required to halt global warming, a transition of sorts is occurring.

About 7 percent of all greenhouse gases comes from cars. Unlike other sources of emissions, such as flying, shipping or the production of steel and cement, passenger cars can be relatively easily transitioned out of dependency on fossil fuels.

Amid highly volatile and increasingly expensive gas prices, as well as a general concern over the catastrophic effects of climate change, electric cars are being widely adopted.

The growth of EVs has enormous implications: for the capitalist economy, for workers around the world, but above all in the context of the United States' struggle to maintain its role as the dominant imperialist power.

As the US economic situation deteriorates, and its relative economic power declines, the planners in the Pentagon increasingly see China as a mortal threat to a US-dominated capitalist system.

The US has now been preparing to wage a war against China for over 10 years. Just this March, a leaked memo showed a top US general predicting the US would be at war with China by 2025.

A major problem, however, exists for the military strategists and policy experts in Washington. China controls a large portion of both the mining and processing of the minerals required to make EV batteries. In other words, they control the supply chains for a new technology that is rapidly becoming central to the global economy.

A previous report by the *New York Times*, basing itself on data from the CRU consulting group, shows that China is responsible for the global production of:

- 54 percent of electric cars
- 66 percent of battery cells
- 77 percent of cathodes (the positive electrode in a battery)
- 92 percent of anodes (the negative electrode)

While China does not directly produce most minerals (except for rare earths and graphite), the country dominates the processing of minerals. China refines:

- 95 percent of the world's manganese (used primarily as a key alloy in steel)
- 73 percent of cobalt
- 70 percent of graphite
- 67 percent of lithium
- 63 percent of nickel

Meanwhile, by these same estimates, through its companies, China indirectly controls more than half of lithium mining operations and 41 percent of cobalt operations, largely in the Congo.

For decades, the US and its European allies have been content with this situation. While US and European companies owned much of the world's intellectual property and leading corporate brands, China was made into the sweatshop of the world. Hundreds of millions of Chinese workers have ground their lives away, six days a week, 10 hours a day, in the sprawling factory complexes largely controlled by US and European capital.

Exploiting China's lower environmental regulations and cheaper labor, Western suppliers have relied on China to perform the toxic task of refining and processing mineral ores into usable material. The fact that most of the minerals would ultimately then be used in production chains located in China further cemented this relationship.

But now, as the Biden administration more imminently prepares for war, the US, Japan and its main imperialist allies in the EU are all scrambling to find alternative sources for these minerals.

In order to produce the batteries for EVs, a significant quantity of lithium, nickel, cobalt and graphite are required, alongside several rare earth minerals and a host of other so-called "critical minerals."

The IEA predicts that under a modest renewable energy development scenario, global demand for lithium alone will *multiply* by 42 times between 2020 and 2040. For cobalt, the demand will grow 21 times, and for nickel 19 times. In short, an unprecedented surge of mining and processing of these minerals must now rapidly unfold.

Because electricity, without batteries, must be consumed when it is produced, energy storage is central to the renewable transition, beyond just EVs.

When electricity is generated by a solar farm, its height of production will be in the middle of the day. Peak power use, however, happens in the morning and evening when workers are home. To better coordinate renewable energy production with its consumption, massive batteries will be required to hold charge.

These problems, known as "intermittency" problems, complicate all forms of renewable energy production. They necessitate, alongside EVs, a massive expansion in battery and thus critical mineral production.

It is in this context of the explosive growth of mineral demand for various types of batteries, and China's dominance in their supply chain, that the Biden administration has launched a series of measures to develop a new US- and European-controlled supply chain.

A recent *New York Times* article reports that "U.S. officials have begun negotiating a series of agreements with other countries to expand

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America's access to important minerals like lithium, cobalt, nickel and graphite."

However, the *Times* notes, "it remains unclear which of these partnerships will succeed, or if they will be able to generate anything close to the supply of minerals the United States is projected to need."

Here are just a few of the known national agreements that have been made or are being negotiated:

• Japan and the US signed an initial deal in March 2023 over critical mineral supplies. It pledges shared "standards" for mining and processing as well as reviewing foreign investors.

• During the G7, the US and Australia announced a similar new partnership on shared standards for "sustainable supply chains" of critical minerals.

• The EU and the US are in the midst of negotiating a new comprehensive trade deal, of which EVs and critical minerals are an important part. Biden said the agreement "would further our shared goals of boosting our mineral production and processing and expanding access to sources of critical minerals that are sustainable, trusted, and free of labor abuses."

• Indonesia, the world's largest producer of nickel and main alternative to Russian nickel, has also approached the US regarding some kind of critical mineral agreement.

The common thread in all of these initial series of trade agreements are words like "sustainable," "trusted," "standards, and "free of labor abuses."

All of these terms are just euphemisms, however, for excluding China and Chinese-owned suppliers.

If Biden or his European or Japanese counterparts were seriously concerned about "labor abuses," all they would have to do is look outside their own window. In the US, over a dozen people die every day due to workplace accidents overwhelmingly caused by poor safety standards. Meanwhile, child labor is returning to the US with children as young as 12 working in factories.

By pledging themselves to "trusted" and "sustainable" mineral supply chains, the major imperialist powers are signaling their commitment in creating an alternative supply network not dominated by Chinese companies. Among other things, such a supply chain would guarantee some degree of production of these essential minerals in the event of war between the US and China.

However, in the words of Scott Kennedy, an adviser at the Center for Strategic and International Studies quoted by the *Times*, "There is no way anybody is going to become successful in electric vehicles without having some type of cooperation with China, either directly or indirectly."

It is, in this sense, unimaginable how a war between the Untied States and China would not lead to a catastrophic breakdown of the global economy given how central this—and many other—Chinese supply chains are. Such a situation would also lead to a doubling-down of oil and gas dependency (something the United States, unlike China, dominates).

A central feature of the growing scramble for critical minerals is the resurgence of inter-imperialist rivalries and conflicts.

At the G7, European Commission President Ursula von der Leyen stressed in a speech that the renewable energy transition should "not come at each other's expense."

Two months earlier, in March, the EU released a major act called the European Critical Raw Materials Act, which aims to build a so-called "Critical Minerals Club" to lead €20 billion worth of investment by 2030 into critical minerals. The act is seen as a response to and based off of the US CHIPS act.

Underlying von der Leyen's comments is a growing concern among the US's imperialist allies that they will be left behind as the US implements a series of protectionist, wartime, non-market measures to create a new critical mineral supply chain.

For example, a major issue at the G7 is the fact that the new US Inflation Reduction Act excludes European car makers from EV tax benefits. This essentially makes American-made electric vehicles more competitive in the massive American car market.

The EU has strongly petitioned the US to include European-made EVs and critical minerals in these tax credit schemes. Under the Inflation Reduction Act, consumers can get up to $7,500 in credit for buying EVs if both the battery components and final assembly have 50 percent or more of their value originating from North America (the NAFTA trio of Mexico, the US and Canada).

Von der Leyen speaks for an entire layer of European capitalists who, in joining the US-led drive to oppose China, fear that they will suffer from the growing nationalist protectionism of the US.

Previously, the WSWS explained that the war in Ukraine plays a key role in the effort of the American ruling class to acquiring critical minerals.

The eastern expansion of the US-led NATO alliance has always had as its primary goal subduing or even breaking apart Russia, with a particular eye to controlling its natural resources.

Russia plays a particularly important role in high quality nickel production—the demand for which is expected to multiply 19 times in the coming two decades—as well as the platinum-group metals, especially palladium. Russia is also the world's largest producer of diamonds, the second largest reserve holder of coal and gold, the third largest of iron, and the fifth in silver. This is not to mention Russia's massive oil and gas reserves. Russia produced 12 percent of the world's oil prior to the Ukraine war.

The reports coming out of the G7, showing a flurry of activity to develop a new critical mineral chain, confirm this analysis of the central role of critical minerals in the war in Ukraine.

Noting the growing importance of critical minerals to a host of new technologies, the WSWS wrote:

> The deep need of American finance capital to dominate current and future sources of critical minerals, as well as the disproportionate control of China over them, forms an important part of the backdrop to the drive to war against Russia…
>
> The breaking apart of Russia and its domination by American capital would be a strategic stepping stone in the efforts of the American ruling class to impose a "new American century" through the subordination of China and Eurasia more broadly to its aims. Resources play a role in this. Amid the enduring need for oil and natural gas, as well as the rapidly growing need for critical minerals, Russia is seen as a vital landmass with a vast array of riches.

The US-EU-Japanese push to secure new minerals forms part of this larger effort to impose a "new American century." They see the development of alternative supply chains to China as an urgent necessity.

The implications of the EV revolution and the new scramble for critical minerals are not just geopolitical.

Leaving aside the cataclysmic impact that a war between the US and China would have, there are other ways in which this transformation in car and energy production—two of the world's largest industries—will affect workers, workplaces and capitalist society.

For one, EV production assemblies involve substantially less labor than combustion engine-based cars. The offshoring of most EV production (at major car manufacturers in the US, Japan and the EU) leaves significantly less work to be done. Additionally, with the need to retool and construct a more modern assembly line, car companies use EVs as an opportunity to

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introduce other far-reaching automation.

The auto companies are planning massive layoffs and an enormous increase in the exploitation of workers as part of the transition to EV production.

Another impact of this shift in global production will be in the labor-intensive mining industry. If the IEA's estimates of a 4,100 percent increase in lithium production and similar giant leaps for other minerals is to be believed, a vastly expanded mining industry will emerge. Centers of global mineral production, such as the Democratic Republic of Congo (DRC), Chile, Russia, Indonesia, Australia, China and others are poised for explosive booms around their key mineral reserves.

While the US, EU, and Japan claim to be seeking "sustainable" modes of producing such goods, with better labor practices, the profitability of these operations will ultimately rely on slashing wages and cutting back on safety to better compete on the global market.

Whether an autoworker in Detroit assembling a new EV or a critical mineral miner in Chile, China, the DRC or Australia—all will be squeezed and pressed by this new, ferocious drive to dominate renewable energy production.

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