

PERSPECTIVES

Hedging for the Gigafactory Boom

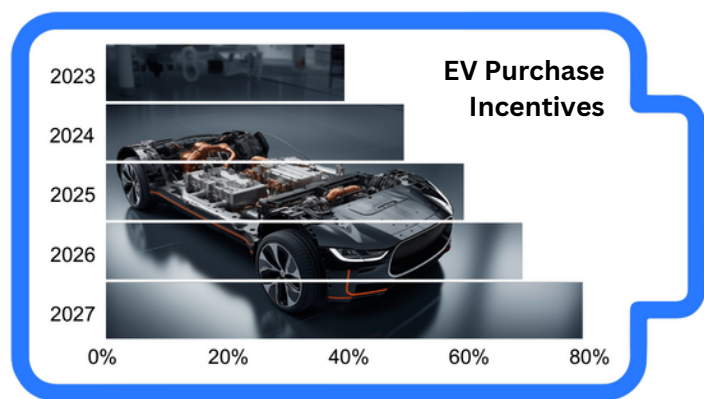
GRAPHITE IN THE SPOTLIGHT



Whether it's tit-for-tat global geopolitics between China and the United States, or growing momentum behind widescale electrification and the EV Revolution, the reasons to keep an eye on graphite availability and pricing keep adding up as the energy transition gains momentum.

It's time for battery makers to lock in their supply of graphite, the largest component of lithium-ion batteries, if they are going to be able to build the gigafactories required to power the EV revolution in the West.

Following is a short interview with Northern Graphite's chief salesman, *Marco Zvanik*, on the upcoming graphite constraints and what clients can do to ensure supply ahead of a looming global graphite deficit that is forecast for 2025.



Let's start with a snapshot of what has been happening in global graphite markets as there have been a lot of developments of late.

In a nutshell, things have changed dramatically for

graphite over the past 12-16 months. This time last year, we had a glut of availability. China, the world's dominant producer and processor of graphite, had just removed domestic subsidies on EVs, and local suppliers were exporting their surplus to the world. Our sales were directly impacted, falling sharply in the first quarter of 2023. But then China reversed course and upped the ante, first by reinstating EV subsidies through to 2027, and then, in October, by announcing export controls on battery-grade graphite. And then the United States responded with its proposed measure to restrict the use of raw materials and components from Foreign Entities of Concern (FEOC), including graphite, from the IRA (Inflation Reduction Act) subsidies for EVs.

As a result, our sales rebounded in the second half of last year and have been strong ever since. Customers see the writing on the wall, and they are concerned about being able to source sustainably produced and IRA-compliant graphite, so much so that we announced in January that we would be boosting our own production rate from our Lac des Iles mine in order to fill our order books for the year. We are also talking to clients about 2025 and beyond, and we are working with them on a two-step strategy that will allow them to hedge their supply of graphite for use in Battery Anode Material (BAM) production.

Why would clients and prospective clients be interested in a graphite hedging strategy?

Part of it is actually being driven by the market. When you consider that only 30 percent of flake graphite is produced outside of China, you have to plan for constraints in the marketplace in the next 1-3 years, so, regardless of what someone's battery strategy is,

Hedging for the Gigafactory Boom

where their plant is, what technology they are using, if they don't have the flake, they are not going to be able to convert it into anode material. So, companies are already thinking, 'how do we hedge that,' and the answer is by buying today, at today's prices and inventorying material for two to three years until they actually need to convert it into Battery Anode material. The benefit to that is that you actually buy your graphite at today's pricing. When the constraints start to happen, we already know that pricing is going to go up, so this is about hedging today against pricing increases that are coming down the road.

What do they do with all this graphite today, if they won't need to convert it to Battery Anode Material until a few years from now?

The most critical aspect to this strategy is that you are hedging against capacity constraints. Right now, our Lac des Iles mine in Quebec, which is the only producer of natural graphite in North America, can produce between 10,000 and 15,000 metric tonnes (tpy) of graphite concentrate per year. Next year we are going to increase this to 25,000 tpy, but all that capacity will go toward battery production. Under this strategy, a customer who needs 50,000 or 100,000 tonnes of flake graphite for when it starts to produce anode material can already be building up that inventory of feedstock and keep it in reserve so that it is not a constraint on availability.

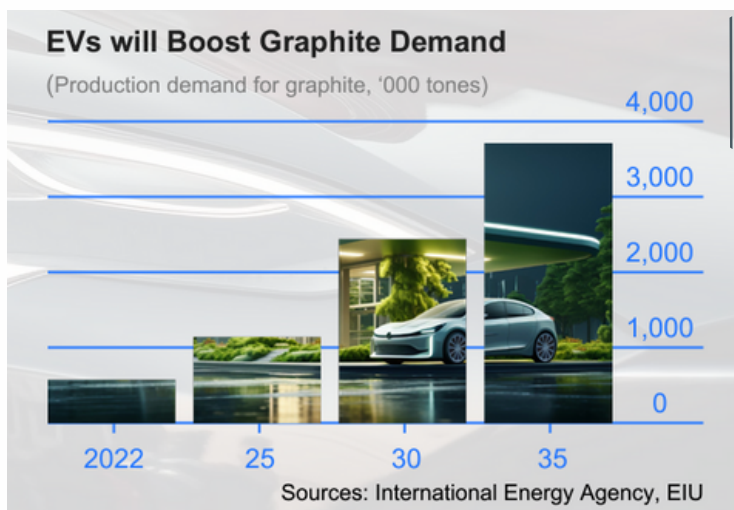
Why are there going to be constraints?

Ultimately, this comes back to the China dynamic, which makes up 70 percent of the world's graphite production and which signaled its plans back in October to restrict exports, and we are already feeling the effects of that. China wants to protect battery production in China, and they know the best way to do that is to keep the minerals that go into making those batteries. A company can build a battery plant anywhere they want in the world, but if they don't have the minerals for it, they can't build batteries, and China knows that that is their only lever to restrict the production outside of China. Having said that, because only 30 percent of graphite production is done outside of China, there is not enough volume out there to meet demand,

so if you are not able to buy from China, you are going to have to plan now for your supply needs.

As North America's only natural graphite producer, how is Northern seeing the market react to coming shortages?

As a result of these factors, we expect global graphite supplies will be in deficit by 2025. At Northern Graphite, which has been supplying graphite flake from its Lac des Iles mine in Quebec for over 30 years, we are already seeing clients become concerned about graphite constraints. Our order books are full, and the year has only just begun.



How much can you hedge? How far ahead can people buy?

Customers can purchase over the next two to three years. The material doesn't spoil and doesn't have an expiration date. It can be inventoried for decades, but it's going to be two or three or four years when we expect to see a lot of the gigafactories coming online, and they are going to need their graphite anode material before that. They need a two- to three-year gap strategy, for when they plan to be in production. This is about planning for the future, for when capacity of produced graphite exceeds the demands of battery makers, so for that reason we are looking at this hedge-now strategy.

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