siliconcarbideinsider.com No. 111/ February 2026

4 CHAVISMO: Venezuelan Mining's Decline and Fall
5 Digging Through the Archives
7 Franciso Batista– The Word from Brazil
10 Graphite Market Update

SIC– WHAT DOES THE FUTURE HOLD?



Pictured above is a Chinese linear furnace roll being cooled and cracked.

It's that time of year when the Chinese SiC producers and traders typically make efforts to increase prices. ***SiC & More*** has reported on these efforts for many years and the list of reasons to support the price increases is similar year after year. Will 2026 be any different? The answer is a resounding "No".

In previous issues, ***SiC & More*** has reported that typically about a month before the Chinese New Year the SiC producers claim the Chinese "heating season" is justification for an increase. Another claim is that the Chinese New Year itself represents a period when industrial activity grinds to a halt, which supposedly causes supply shortages and upward pressure on pricing. Also Included in the laundry list of reasons to increase prices is that the "Environmental Police" have shut down or curtailed production at high energy consuming industries such as SiC furnacing. In addition, in issue #110 we reported that pet coke and anthracite (one of two key ingredients in the production process) had increased in price, but we believe the effect on SiC pricing should be negligible. Then there is the exchange rate. The dollar is currently softer against the Chinese yuan (CNY) so that represents additional upward price pressure.

Many in the "West" will recall January 2018 when Chinese producers attempted to increase metallurgical and refractory grade prices by approximately $175 net ton, which at that time represented an astonishing 21%. The effort failed miserably and the price settled with a $25 ton increase. The situation was similar for both abrasive grade crude and refined (sized) SiC.

As we embark upon February 2026, the upward pressure is $20-40 ton on abrasive grade and $40-plus per ton on metallurgical and refractory products. According to one trader, "Most everyone is fighting the increases, and we expect to settle somewhere in the middle."

There is significant rhetoric about bringing jobs and manufacturing back to the West, with emphasis on the U.S. where the current administration is vocal about that objective. It appears as if that mission is yielding results whether through tariffs or hardline negotiating. When it comes to SiC, however, China's global dominance seems to only increase.

As we entered 2025, China appeared to represent 66% of global SiC furnace capacity but only 44% of global production. As 2025 closed, there is an argument to be made that China's percent of global production had reached 50%, or possibly more. The global shift towards China began in earnest in the mid to late 1990's and that trend is going to continue.

In the U.S. for example, imports of crude SiC into the U.S. through 10/31/25 represented 98% of all imports. By the time year-end data is available, China's percent of crude imports will set a record probably exceeding 98.5%. As recent as 2020 China's share was 78.3%. In 2016 it was 67.4%. The last five years represent a minimum of 95%.

> Next Page

© 2026 SiC & More. All Rights Reserved.

News

> Continued from front page

As of this writing, ***SiC & More*** did not have access to EU SiC import data, however, be rest assured that crude SiC imports from China over the last few years are more than likely at record levels.

The primary reason for this development, something ***SiC & More*** has written about since its inception almost 25 years ago, is the cost of kWh. The cost per kWh in the "West" is becoming cost prohibitive, not to mention the cost of labor and environmental controls particularly in the EU and U.S.

Keep in mind, energy remains the most significant cost line item when producing a ton of SiC. Assuming it takes about 7,000 kWh to produce a ton of SiC, and the furnace plants in China can produce essentially the same quality with an input of $.06 to $.07 (cents) per kWh, how does a producer in EU, South Africa, or Ukraine, for example, hope to compete.

For example, in the European Union (EU-27), the average industrial electricity rate for 1H 2025 was about $.205 per kWh. Obviously, the exact conversion depends on precise time and larger industrial users often pay lower rates based on negotiated contracts, off-peak power usage, and rebates. According to Eurostat, special circumstances could mean a rate in the range of Euro 0.10-0.15 per kWh or about $0.113-0.170 per kWh.

Assuming a rate as low as $0.10 per kWh, one might invest as much as $700 n/t electricity vs. about $490 n/t from counterparts in China and that number doesn't address the difference in labor and environmental costs.

The global SiC furnace landscape of 2026 doesn't resemble the landscape of 2000 or 1990 let alone 1980 as "Western" producers continue to fade away. This is a trend that is likely to continue.

To truly appreciate the trials and tribulations of owning and operating a high energy consuming facility in Europe, in regard to kWh, consider Electricity prices Europe (https://euenergy.live/). This website provides free access to the latest electricity prices in Europe for the day-ahead.

As the world's advanced economies shift into high gear to develop data centers and AI driven computing, cryptocurrency, electrification of transport, electrification of heat pumps and air conditioning, and advanced manufacturing such as semiconductors, one can begin to see the strain on power generation and grids and the eventual price pressure on kWh.

In issue #112, ***SiC & More*** will estimate the costs associated with producing one ton of SiC in different global regions and how those numbers are likely to change over the next few years. As the witty and paradoxical Yogi Berra once said, "It's tough to make predictions, especially about the future."

Trump to Overturn Biden Minnesota Mining Ban

From *Mining Network North America* with Paul Harris

The administration of US president Donald Trump is seeking to remove a ban on mining in Minnesota implemented by the administration of his predecessor Joe Biden, which stopped copper development projects. It is undertaking a transmittal of Public Land Order (PLO) 7917 to Congress for review under the Congressional Review Act (CRA). PLO 7917 of 2023 saw the Biden administration withdraw over 225,000 acres in the Superior National Forest from mineral entry, on the grounds that the Biden Administration failed to notify Congress. If overturned, a beneficiary would be Antofagasta plc subsidiary Twin Metals Minnesota and its Twin Metals Cu-Ni project in Minnesota. The company had previously challenged a Biden administration decision not to renew two key federal mineral leases for the planned project, which is located near the Boundary Waters Canoe Area, a popular recreational destination.

© 2026 SiC & More. All Rights Reserved.

News

ZAPORIZHABRASIVE'S ALUMINUM OXIDE FOOTPRINT



Pictured above are samples of Zaporizhabrasive's fine line of premium grade abrasive products.

SiC & More has closely followed activities at Zaporizhabrasive (ZAP) dating back to when this newsletter was first launched in 2003. Additional emphasis, however, has been placed on ZAP and its activities since the Russian invasion of Ukraine in February 2022. Despite horrendous conditions, including many thousands having been killed and millions displaced, Zaporizhabrasive continues to persevere.

In issue #109, ***SiC & More*** published a feature called, *Seven Things You Probably Don't Know about Zaporizhabrasive.* This was an interesting article even for those of us at ***SiC & More*** who have continuously followed this intriguing company that is considered the largest supplier and effectively the dominant producer of abrasive products in Ukraine. Producing abrasives since 1939, ZAP is also considered the largest producer of abrasives in Eastern Europe.

Zaporizhabrasive is considered one of the world's leading producers of brown fused aluminum oxide products. With the European Commission having levied provisional duties on BFA and WFA ranging from 111.9% to 136.3%, depending on the exporting producer, Zaporizhabrasive's footprint in Europe has never been more important.

Zaporizhabrasive's mission to penetrate the U.S. market has proven to be a resounding success with about 20% of 2025 export sales made to U.S. industry. To compliment that success, the company has been gradually increasing the volume of abrasive tools being supplied to the European Union market.

Included in Zaporizhabrasive's list of business development activities for 2026 is an investment plan focused on production expansion. The company calls on European partners and EU institutions to support this strategic project, which aligns with the European Union's industrial-security interests and contributes to strengthening Ukraine's industrial sector during wartime.

SIC MORSELS

Schunk Group: The Schunk Group is a German technology company specializing in high-tech materials ranging from reaction-bonded and sintered SiC to nitride-bonded and mullite-bonded variants. In a major move, on January 1, 2025, Schunk fully acquired ESK-SIC GmbH, a leading producer of high-quality SiC powder. This acquisition created upstream production to compliment the highly regarded downstream processing. (See press release from Schunk on page 8)

NHQ: Vietnam's first SiC furnace commissioned its first furnace in 2013. Since that time, NHQ has expanded furnace capacity on several occasions and, with the completion and increased capacity for the 2nd production line in late 2024, has capacity of up to 80,000 metric tons per year. In 2025, NHQ achieved a goal of increasing recovery of #1 grade (97% SiC) by 5% compared to 2024. As a result, recovery of #1 stabilized at 60% compared to 40% for metallurgical grade. This improvement contributed to a 15% year-over-year growth in sales revenue and overall quantity volume.

University of Arkansas Multi-User Silicon Carbide Facility: MUSIC, as the title of this morsel is known, recently dedicated the only openly accessible fabrication facility of its kind in the U.S. The grand opening marks a major milestone in Arkansas' emergence as a center of excellence in semiconductor and power electronics technology. According to the press release, alumni from semiconductor powerhouses, including Wolfspeed, GlobalFoundries, Onsemi, Microchip, Texas Instruments and others joined to celebrate the opening, touring what many called "the most advanced SiC fab in the country." U of A Dedicates First-of-Kind Semiconductor Fabrication Facility | University of Arkansas



Pictured above is the air classifier line at GNP Ceramics.

© 2026 SiC & More. All Rights Reserved.

News

CHAVISMO: VENEZUELAN MINING'S DECLINE AND FALL RESOURCE GRAB?

BY PAUL HARRIS

The Bolivarian Revolution, initiated in Venezuela by former President Hugo Chávez in 1998, promised to bring greater equality to the country's people and lift them out of poverty.

This effort failed, as evidenced by the exodus of more than 3 million people to Colombia and other parts of Latin America over the past decade due to economic shortages. As repeatedly happens in Socialist movements, greater quality is achieved by rounding down in fortunes rather than the promised uplift.

One of the reasons for the failure of Chavez and his successor, Nicolas Maduro, to achieve an economic uplift is the nationalisation of the economy and of its key productive elements under the 2011 nationalisation plan, which resulted in chronic underinvestment in oil and gas, and the country's mineral industry.

With critical minerals top of mind among the world's leading economies and high commodity prices, Venezuela should be experiencing an economic boom, as its geology, especially the Guiana Shield, is prospective for the industrial metals and high-value commodities that are in demand, as well as precious metals.

Instead of enjoying bonanza income streams, Santiago, Chile-based consulting group GEM documented how its mining industrial capacity has withered during the years of Chavismo.

"The paradox is that, despite the endowment, Venezuela's formal mineral production and industrial processing have fallen sharply over the past 25 years. This decline has weakened supply reliability, increased the share of informal and illicit activity in the mineral economy, and raised the risk premium for any private investor," it said.

Almost all metals have experienced 10% compound annual production declines in the 1999-2024 period, with gold down 19.1%, bauxite by 11.5%, aluminium by 13.6% and iron ore by 7.2%

Years of under-maintenance and capital scarcity have left mines, concentrators, smelters, rail and port assets, and the national grid in fragile condition. Any restart plan must assume non-trivial rehabilitation capex, long lead times for critical spares, and high sensitivity to electricity and fuel availability.

"This production collapse is not a marginal decline, but a structural break. ... Commodities that require heavy infrastructure, stable power, and functioning plants —bauxite-to-aluminium or iron ore-to-steel— have suffered the steepest and most persistent declines because they cannot be sustained without reliable electricity, logistics, maintenance supply chains, and capital discipline," said GEM.

The forced removal of Maduro by the US provides Venezuela with an inflexion point to change its economic direction and once again welcome foreign direct investment. The US wants this, but has so far refrained from taking direct or partial control of Venezuela or its government. Whether issuing requests or demands from the sidelines will bring about meaningful change remains to be seen.

Currently, Maduro's vice president, Delcy Rodríguez, has assumed control as interim president and has said she will work with the Trump administration.

Venezuela's constitution states that a presidential election must be held within 30 days if the president is "permanently unavailable" to serve. The Supreme Court declared Maduro's absence temporary, which gives Rodríguez 90 days at the helm before an election is held, extendable to six months.

The upside is significant. "If governance, infrastructure, and market access are restored, Venezuela could re-enter global supply chains faster than a typical greenfield jurisdiction by rehabilitating idle assets and formalising existing mining districts," said GEM.

> Continued on page 6

© 2026 SiC & More. All Rights Reserved.

News

DIGGING THROUGH THE ARCHIVES – Sol-Gel



Grinding wheel– stock photo

It's always an adventure trying to locate old documents in your library that might prove interesting to readers. During our most recent effort to locate such a paper, we found two that we believe will interest readers. Marissa decided to go with the Sol-Gel paper in this issue so we will return in issue #112 with a report on *The Efficient Use of Foundry Coke.* This report doesn't include an author but appears to be an excerpt from a much larger marketing research project. Although a date does not appear on the document, we believe it was from the late 1990's.

The word "sol" means a dispersion of very fine or colloidal particles in a liquid. Colloid particles have diameters within the range 10-1000A. Colloids can interact to become unstable and precipitate, they can also interact in another way to give very viscous or even rigid materials: such a rigid material is called a "gel". The transition from sol to gel can be influenced by many factors, including the adsorption of ions on the surface of the colloidal particles, the amount of liquid available, the average distance between the particles, temperature, pressure, and time. Silica gel was one of the first commercial products made by this route.

The 3M company has a long history of exploiting the sol-gel route: for example, it commercialised a sol-gel derived aluminum oxide-borosilicate fiber, known as NEXTEL, more than 20 years ago. (Note: if this paper is from 1998 like we believe, for example, the author is referring to 1978). 3M was also the first to develop and patent a microcrystalline aluminum oxide material, known as CUBITRON. The possible starting materials include aluminum hydroxide (boehmite) and aluminum chloride. Nucleation agents or seeds are incorporated into the mixture. There are also aluminum alkoxide substances that could be used, but they are significantly more expensive than the simpler inorganic compounds. The material is subjected to drying after gelling, is crushed, and then heated to temperatures in the range of 1200-1500 Celsius to produce the desired crystalline microstructure.

Norton followed a somewhat different route to produce its "seeded gel" or SG aluminum oxide material. In recent years, several other abrasive companies have commercialised their own version of microcrystalline aluminum oxide, i.e., Hermes, Pechiney, and Treibacher. Whilst 3M sells CUBITRON material to other abrasive products manufacturers, Norton uses all its SG production for in-house products, including bonded and coated abrasives. Hermes' material, which is known as SAPPHIRE BLUE, is also reserved for internal consumption.

In the various patents, impurities are introduced into the gelled aluminum oxide, either through deliberate additions, such as nitrates of magnesium or other cations; or alternatively the material is milled with impure aluminum oxide containing silica, magnesia, titania, iron oxide, lime, etc. The well-disbursed impurities have several functions, including lowering the sintering temperature, nucleating the growth of alpha-alumina crystals, and preventing excessive crystallite growth during the sintering phase. In some cases, an aqueous dispersion of very fine alpha-alumina grains is used to serve as a nucleating aid.

During 1996, Norton began to publicise a new microcrystalline grain, known as TG. The main difference between TG and SG is that the former is produced by

> Next Page

© 2026 SiC & More. All Rights Reserved.

News

> Continued from previous page

extrusion, as irregular, elongated, angular grains: this geometry facilitates the production of bonded abrasives with high porosity, such as those specified for creep feed grinding. TG's peculiar shape can also be used in special grades of coated abrasives.

Microcrystalline aluminum oxide derived from sols is much more expensive than fused aluminum oxide grains. It is, however, very rare for abrasive products to be made from 100% sol-gel aluminum oxide: it is far more common to blend the grains with conventional fused aluminum oxide, for example at the level of 50%, 30%, or even 5% or 10% by weight of sol-gel-derived grains. Grinding wheels containing 30% sol-gel aluminum oxide cost approximately 2 to 3.5 times as much as conventional aluminum oxide wheels; and at 50% ratio can be five times more. These grades are, nevertheless, cost-effective in many operations where heavy stock removal rates of hard materials are required. The advantages are not so clear in finishing or in lighter grinding. High speed grinding machines in particular can take advantage of the sol-gel blends: however, in many countries and companies across Wester Europe and the USA, the market for 30% and 50% sol-gel aluminum oxide grades in tool rooms and machine shops is already reaching saturation levels.

Manufacturers such as Norton, have, therefore, started to emphasise the value of 5-10% sol-gel aluminum oxide combinations with fused aluminum oxide. In this case, the cost ratio is down to about 1.25, but the material gives much better performance and productivity in light and medium grinding jobs.

The microcrystalline structure of the SG material ensures that the wear of the individual grains is relatively slow, while the sharp, angular nature of the interface is easier to maintain than is the case with the relatively coarse crystalline texture of fused aluminum oxides.

> Chavismo—continued from page 4

In addition to the potential to revitalise bauxite, aluminium, nickel, iron ore and steel production, Venezuela could become a significant player in critical minerals de jour through coltan (niobium–tantalum) and rare earth elements.

The US will not be the only nation eyeing potential gains from Venezuela as the exodus of Western investment during the Chavismo years saw an increase in Chinese investment, estimated at around US$90 billion, mainly in oil infrastructure.

China and its state-owned enterprises that advanced this investment and loans will not walk away empty-handed.

Will Venezuela be the site of an entente between the US and China that divvies up its natural resources?

© 2026 SiC & More. All Rights Reserved.

News

FRANCISCO BATISTA: THE WORD FROM BRAZIL

a) Energy: Brazil is in the middle of the rainy season and so far, rainfall is still below averages everywhere in the country. It is expected that the La Niña effect fading out by mid-February, might bring rainfall back to averages improving reservoir levels, especially in the southeast region of the country. Prices for 2026 are up from last report, at R$300/MWh ($57/MWh), while 2027 remains stable at R$275/MWh ($52/MWh). The electric sector in Brazil is a victim of very powerful lobbies. Recent changes in regulation have renewed subsidies for fully amortized small hydro plants along with brand new subsidies for coal thermal generation. Yes, you've heard it correctly, the most renewable country in the world, host of the COP-30 with vast amount of excess renewable energy capacity from wind, solar, and water passed a law to make energy consumers subsidize coal thermal generation despite the fact that Brazil has very limited and low-quality coal available. Brazil has one of the lowest LCOE (Leveled Cost of Energy) in the world while it has one of the highest energy tariffs. The principal reason for that is the insane number of subsidies (some of them unrelated to energy) that have been created and added to energy tariffs since early 2000's.

b) Commodities: As producers in Brazil face the challenge of re-contracting energy in much higher level there are also other hurdles to overcome in order to keep their operations viable and protect their market shares such as the European CBAM, higher logistic costs (when compared to its peers), stalled local demand, increasing imports, slow growing Chinese economy and high interest rates. Iron ore exports reached 416.4 million tons in 2025 (+7.1%) a new record high. Every other hard commodity performed positively as well with emphasis on Nickel (+18% - 85kt), Bauxite (+12% - 35MT) and Manganese Ore (+9% - 1.1Mt). In terms of soft commodities, wheat had the highest increase (+40%) reaching 6Mt followed by Corn (+15% - 60 Mt) and Cotton (+10% - 3.2Mt). Soybeans remained mostly stable (2% - 102Mt) while animal protein (Brazil's champion) exported 10.5Mt representing an increase of 6%.

c) Politics: Brazil is now in a major election year and the race has started. Politicians are already organizing its support, campaigns, and funding. Although it's not clear who will be the most competitive adversary to Lula, it is clear that there will be a run-off. It is expected, on the first round that a second leftist candidate competing with Lula for the same voters, a centrist candidate, and at least two contenders from the right. Former president Bolsonaro has announced his son (Flavio Bolsonaro) will run for PR and everyone understood it as leverage so Flavio could "sell" the withdrawing of his candidacy in exchange for nominating the Vice-President on another ticket. Flavio, however, has been growing so fast on the polls that his candidacy became real forcing the governor of São Paulo State (by far the best candidate of the right) to step down and run for re-election in the state. The financial market has been quite optimistic recently, as new polls regarding Lula's approval indicate a decline in his support in the northeastern region, particularly among the poorest population. This is a significant setback for Lula, who has traditionally held a huge advantage in this region. Additionally, the aftermath of the liquidation of Master Bank, which occurred on November 18th, presents another challenge for Lula. What was initially perceived as a mere failure of a medium-sized bank has turned into a nightmare, as news reports suggest that numerous members of Lula's party (PT - Working Party), prominent congressmen, and even some Supreme Court members are possibly involved in fraudulent financial transactions that either occurred within or with the assistance of Master Bank. The formation of a CPMI (Inquiry Parliamentarian Commission) to investigate this matter is expected to further complicate Lula's situation throughout the upcoming election year.

d) Macroeconomics: The fiscal deficit is still Brazil's economy Achilles' heel as it reached 2.8% in 2025, driven by persistent social spending and weak tax revenues despite new levies on e-commerce and offshore assets. Central Bank has kept interest rates stable (15%) but its last report indicates the beginning of an easing cycle for next meeting (March 18). Cuts are expected to be 25bps but might be bigger depending on how much the economy slows down and the FX rate performs. It is expected the Brazilian Real to gain value against the dollar as a consequence of a global movement. While on one hand it will help control inflation and speed up cutting interest rates, on the other hand it will reduce competitiveness of Brazilian exports. 2027 remains the year of the economic adjustment to be mandatorily done by next administration. It will be unpleasant and painful.

FOCUS projections are:
Interest Rates: Dec/26: 12.25%; Dec/27: 10.50%.
FX Rates: Dec/26: R$ 5.50; Dec/27: R$ 5.50.

© 2026 SiC & More. All Rights Reserved.

News

Top Political Representatives Visit Schunk in Willich

Press Release Source Schunk Group: Willich, January 29, 2026

NRW Minister of Economic Affairs Mona Neubaur and Matthias Hauer, Parliamentary State Secretary at the Federal Ministry of Research, Technology, and Space, learn about key technologies

Two high-ranking political visits within 48 hours: it was not without reason that the Schunk site in Willich was recently the focus of political attention. After all, the global player makes an important contribution to the technological sovereignty of Germany and Europe here. The discussions focused on the diverse applications of the high-tech material silicon carbide (SiC) in the semiconductor industry, aerospace, and defense.

NRW Minister of Economic Affairs Mona Neubaur, together with Guido Görtz, member of the state parliament for Schwalmtal, Viersen, and Willich, gained an impression of the company's expertise. Just one day earlier, Schunk welcomed Matthias Hauer, Parliamentary State Secretary to the Federal Minister of Research, Technology, and Space, and Dr. Georg Kippels, member of the Bundestag.

From North Rhine-Westphalia into orbit: satellite mirrors for space travel

During a tour of the factory, both delegations were able to see for themselves the diverse applications of technical ceramics. Silicon carbide is the key to high-resolution optical satellites, which are indispensable for Earth observation, space exploration, reconnaissance, and communication. “With our 3D printing and a value chain that is entirely based in Germany, Schunk is a key player in the aerospace sector. We are therefore delighted about the great interest in our technologies,” emphasizes Dr. Lars Schnetter, Managing Director of Schunk Ingenieurkeramik. Schunk is also the market leader for ceramic protective plates used in body armor for police and security forces.

Securing raw materials through circular economy

With the acquisition of raw materials manufacturer ESK-SIC and the construction of a new recycling plant in Frechen, the Schunk Group is investing more than €100 million in sustainable value creation. The plant for the globally unique recycling of silicon carbide (“RECOSiC®”) will be built over the next two years – made possible by €30 million in funding from the state of North Rhine-Westphalia and the EU. Schunk is thus making a decisive contribution to the establishment of independent supply chains for strategically important raw materials.

Politics and industry: shared responsibility

“With our technology from North Rhine-Westphalia and Hesse, we cover the entire value chain from powder to finished mirror. This gives us the opportunity to be a leader in Germany in the development of solutions for high-resolution optical reconnaissance systems from space,” explains Dr. Ulrich von Hülsen, member of the Schunk Group's management board.

The visits highlight the shared responsibility of politics and industry to further strengthen the foundation for key technologies in North Rhine-Westphalia and Germany and to actively shape the transformation towards a sustainable economy. Schunk will continue to invest in research and development in order to drive innovation for the future.

Sophie Kauffeld
Senior Manager Public Affairs & Corporate Communication

t +49 641 608 2651
m +49 151 2552 7445
e sophie.kauffeld@schunk-group.com
w www.schunk-group.com

© 2026 SiC & More. All Rights Reserved.

METALS INDUSTRY UPDATE



Payloader-Stock Photo

LIGHT VEHICLE SALES

U.S. sales of light vehicles increased to 16.3 million vehicles in 2025, which was a 2.3% increase over 2024. China is expected to come in at 28.4 million, India 4.5, Japan 4.2, Germany 3.2, Brazil 2.6, France 2.1, UK 2.0, South Korea 1.8, Indonesia 1.0. Some of the above numbers are preliminary but give one an appreciation of the global light vehicle market.

CUTTING TOOLS

Cutting tool demand has historically been considered an index for overall manufacturing activity. Cutting tool orders are considered an index because of their downstream demand in automotive, aerospace, construction, defense, energy, etc. CNC machine shops and other U.S. manufacturing entities purchased $206.1 million in cutting tools during November 2025. Although this figure represents a 17.6% decrease in order value compared to October 2025, it is 9.9% more than November 2024. YTD 2025 shipments of $2.34 billion are 1.3% over the same period in 2024.

GLOBAL STEEL PRODUCTION

Global steel production in 2025 decreased by 2% year-on-year – to 1.8 billion tonnes. This is evidenced by the World Steel Association's global ranking of steel-producing countries also included in issue #111 of *SiC & More*.

3M

Sales at 3M reached $6.1 billion for Q4 2025. Sales for 2025 came in at $24.9 billion, which was a 1.5% increase over 2024.

BRAZIL & IRON ORE

According to Reuters report, data released by Brazil's Ministry of Industry and Trade showed that Brazil's iron ore exports in 2025 increased by 7.1% year over year reaching a record 416 million metric tons. Increased production by Vale and increased foreign demand were key to export growth. Brazil's previous export record was set in 2018, when exports totaled 390 million metric tons.

JOHN DEERE

Deere recently announced a major expansion of the company's excavator complex in Kernersville, North Carolina. According to a press release, the excavator facility will see at least some production moved back to the U.S. from Japan. Since Deere and Hitachi dissolved their join venture on excavators in 2022, Deere has worked busily to design, develop, and produce its own excavators in the U.S.

HYUNDAI

Hyundai plans to build an ultra-low carbon electric arc furnace steel mill in Ascension Parish, Louisiana. Construction is expected to begin in 2026 and be completed in 2029. The facility is rumored to eventually employee 1300 direct employees.

ALGOMA

Algoma Steel is switching to EAF steelmaking and recently announced it had shut down its coke plant. Algoma began production of green steel on its #2 EAF during the summer of 2025 while construction of the #1 unit was still in progress. Both furnaces are expected to be fully operational before the end of 2026.

U.S. LIGHT VEHICLE SALES

January 2026 represented the lowest level of vehicle sales in three years. The seasonally adjusted annual rate for January is 14.936 million units. Light vehicle sales for 2025 came in at a healthy 16.3 million units.

© 2026 SiC & More. All Rights Reserved.

News

GRAPHITE MARKET UPDATE

by Harry Minnis



Harry Minnis founder of GraphiteHub.

The United States has taken one of the strongest policy positions on critical minerals in decades, with graphite increasingly central to that agenda. Vice President Vance recently summarised the cycle perfectly: critical mineral projects get announced, financing comes together, then foreign supply floods the market, prices collapse, and the project dies on the vine. This is the graphite story. But for the first time in years, Washington is attempting to break it.

Stockpiling Reserves: What Does This Actually Mean for Graphite?

On the face of it, stockpiling reserves sound good. But what does it mean for graphite? At this stage, we don't have the details. But the core issue is that graphite's value lies not in the concentrate but in the processing. So, the question becomes: reserves of what? Concentrate? PSG? AAM? The technical specifications demanded by end users make stockpiling processed material far more complex and less effective. Most strategic reserve programs are designed for commodities where stockpiling the raw or semi-processed form makes sense. Graphite doesn't fit that model, and until policy frameworks acknowledge this, the entire concept remains largely symbolic.

Floor Pricing

Floor pricing is the most straightforward mechanism on the table. Guarantee a minimum price for domestically produced graphite, giving projects the certainty they need to attract financing while reducing exposure to foreign market volatility. However, where do you set the floor, and how does it sit against the incentive price? Too low and it fails to unlock investment. Too high and downstream manufacturers push back. And a floor on concentrate alone doesn't solve the problem if processing still happens offshore, any mechanism will need to extend across the value chain to be meaningful.

AD/CVD / Section 232

The ITC investigation into active anode material from China continues to progress. Commerce has already released its preliminary findings: a 93.5% antidumping duty and 11.58% countervailing duty. The final outcome has been delayed due to the US government shutdown, however the final determination is expected in early to mid March.

On Section 232, the investigation wrapped up in October 2025 with a clear finding: imports of processed critical minerals - including graphite - threaten US national security. The President's proclamation followed on January 14, 2026. Tariffs weren't imposed immediately. Instead, the administration is negotiating with foreign nations to secure supply. If talks stall, tariffs will follow.

China Trip Insights

Recently I spent a week in China meeting with people across the entire graphite supply chain. One of the key observations was understanding the natural versus synthetic split, both inside China and what we can expect to see outside of China.

On the ground, the common theme was the split ex-China will look nothing like China's domestic market. In China, it sits at around 11% natural and 89% synthetic. Based on who I spoke to, outside China, expect something closer to 30-50% natural and 50-70% synthetic. The difference comes down to cost structure and feedstock availability.

The Bottom Line

At this stage, it's all headlines. The policy signals are loud, but nothing tangible has landed yet. AD/CVD duties are preliminary. Section 232 is in negotiation. Stockpiling and floor pricing remain concepts. The intent is clear, but until capital flows and processing gets built, the gap between rhetoric and reality continues to stay wide.

Note from Harry: GraphiteHub has launched a new website and an updated weekly newsletter, in response to growing demand for insights on the graphite market. The new platform will provide more frequent, actionable insights and news (including updates coming from China) as the sector enters what feels like a critical period. If you haven't done so already, I'd appreciate if you'd check it out and subscribe to my free weekly newsletter at graphitehub.com.

© 2026 SiC & More. All Rights Reserved.

WOLFSPEED

Press release January 13, 2026:

Wolfspeed, Inc. (NYSE: WOLF), a global leader in silicon carbide technology, today announced a significant industry milestone with the successful production of a single crystal 300mm (12-inch) silicon carbide wafer. Backed by one of the industry's largest and foundational silicon carbide IP portfolios, comprising more than 2,300 issued and pending patents worldwide, Wolfspeed is pioneering the transition 300mm technology, establishing a clear path to future volume commercialization.

This technology advancement represents a major step forward for next-generation computing platforms, immersive AR/VR systems, and high-efficiency, advanced power devices. By expanding silicon carbide to 300mm, Wolfspeed is unlocking new performance thresholds and manufacturing scalability for some of the world's most demanding semiconductor applications.

"Producing a 300mm single crystal silicon carbide wafer is a significant technology achievement and the result of years of focused innovation in crystal growth, boule and wafer processing," said Wolfspeed Chief Technology Officer Elif Balkas. "It positions Wolfspeed to support the industry's most transformative technologies, especially critical elements of the AI ecosystem, immersive augmented and virtual reality systems, and other advanced power device applications."

Wolfspeed's 300mm platform will unify high-volume silicon carbide manufacturing for power electronics with advanced capabilities in high-purity semi-insulating substrates used in optical and RF systems. This convergence will support a new class of wafer-scale integration across optical, photonic, thermal, and power domains.

Wolfspeed powered AI – Unlocking More than Moore™
As AI workloads push data centers to their power limits, the demand for improved power density, thermal performance, and energy efficiency will continue to accelerate. Wolfspeed's 300mm silicon carbide technology will enable integration of high-voltage power delivery systems, advanced thermal solutions, and active interconnects at wafer scale, extending system performance beyond traditional transistor scaling.

AR/VR – Powering Optical and Thermal Integration
Next-generation AR/VR systems require compact, lightweight configurations that integrate high-brightness displays with expansive fields of view and effective thermal management. Silicon carbide's unique material properties, including mechanical strength, thermal conductivity, and optical refractive control, make it ideal for multifunctional optical architectures.

Beyond AI infrastructure and AR/VR, transitioning silicon carbide to a 300mm platform represents a major step forward in scaling the production of advanced power devices. The larger wafer diameter enhances the ability to cost-effectively meet growing demand for applications including high-voltage grid transmission and next-generation industrial systems.

Poshun Chiu, Principal Analyst, Compound Semiconductor, Yole Group said: "This 300 mm breakthrough is more than a technical milestone — it unlocks new opportunities for silicon carbide as a strategic material. It clearly demonstrates that silicon carbide is advancing to the next level of manufacturing maturity required for the coming decade of electrification, digitalization, and AI. It provides the market with a credible roadmap toward higher-volume production, improved economics and long-term supply assurance(1)."

About Wolfspeed, Inc.
Wolfspeed (NYSE: WOLF) leads the market in the worldwide adoption of silicon carbide technologies that power the world's most disruptive innovations. As the pioneers of silicon carbide, and creators of the most advanced semiconductor technology on earth, we are committed to powering a better world for everyone. Through silicon carbide material, Power Modules, Discrete Power Devices, and Power Die Products targeted for various applications, we will bring you The Power to Make It Real.™ Learn more at www.wolfspeed.com.

Wolfspeed® is a registered trademark and Wolfspeed powered AI – Unlocking More than Moore™ and The Power to Make it Real™ are registered trademarks of Wolfspeed, Inc.

Sources: Power SiC 2025 – Front-End Manufacturing Equipment report and Power SiC 2025 – Markets and Applications report, Yole Group

Forward-Looking Statements
This press release contains forward-looking statements involving risks and uncertainties, both known and unknown, that may cause Wolfspeed's actual results to differ materially from those indicated in the forward-looking

> Next Page

© 2026 SiC & More. All Rights Reserved.

News

BFA, MgO & MORE

In previous issues, ***SiC & More*** has pointed out that if China's steel industry is flat or tonnage is in decline, that global supply of MgO and BFA are likely to exceed demand. China's National Bureau of Statistics recently reported that China's final crude steel production for 2025 was 960.81 million metric tons, which represents a 4.4% decline from the 1,005.1 million metric tons in 2024. December 2025 was reflective of further production erosion as it was 10.3% less than December 2024. In addition, December represented the seventh consecutive monthly decline in China's raw steel production. The 2025 result is the lowest annual output sine 2018 and the first time since 2018 that China's raw steel production fell short of 1 billion tons.

The 45 million m/t shortfall alone would make China the seventh largest steel producer in the world just behind South Korea's 62 million m/t and the 45 Mt represents over half of what was produced in the U.S. in 2025 (82 Mt). One can hardly expect a shortage or healthy pricing of steel-related commodities when that sort of situation exists.

SiC & More reported in issue #110 that there was a flicker of hope for MgO pricing with FM97 increasing in price by $10 m/t. Although DBM remains flat, there is continued upward price pressure in China for kWh thus affecting pricing for fused MgO. BFA consumers will also feel the sting of increased KWh pricing as FOB Chinese port pricing for BFA is expected to increase by $20 m/t for February shipments.

The tariff on Chinese BFA in the U.S. is holding at 27 ½% while the European Commission levied provisional duties on Chinese BFA and WFA ranging from 111.9% to 136.3%, depending on the exporting producer.

U.S. imports of MgO through the month of October had already exceeded calendar year 2024. 2025 is annualizing at 193,405 million metric tons whereas 2024 was only 159,367, which was the lowest import number since 2017. A healthier U.S. steel industry in 2025 and depleted inventory levels led to a stronger than expected 2025 for MgO.

What will happen with pricing during 1H 2026? A trader told ***SiC & More***, "We expect to see the Chinese push for price increases on all abrasive, refractory, and metallurgical products. Justification for increases will come from increased energy prices across China and currency exchange. Most are estimating $20 m/t on BFA, $10-20 m/t on fused MgO, and a range of $10-30 m/t on SiC products."

We can't help but to once again reflect on a subscriber's pain when he voiced his anxiety over the situation with Brazil. "This is crazy. We want alternatives to China, and we have diligently purchased Brazilian aluminum oxide over the years only to discover that Brazil is getting hit with a 40% tariff while China receives only 27%. Does that make sense? Brazil has most generally been considered a loyal ally to the U.S. and a seemingly fair trading partner. We are at a loss. The 40% tariff appears to be mostly political and has nothing to do with dumping, reciprocal, or fair trade. Additionally, the dumping duties on Chinese finished grain represent yet another reason why we need a legitimate alternative to Chinese aluminum oxide."

Quote of the day: "I support free trade 100% - as long as it doesn't interfere with my need for cheap fast fashion and bargain-bin electronics."

> Continued from previous page

statements. Forward-looking statements by their nature address matters that are, to different degrees, uncertain, such as statements about Wolfspeed's strategic plans, priorities, growth opportunities, and ability to achieve profitability. Actual results could differ materially due to factors detailed in Wolfspeed's filings with the U.S. Securities and Exchange Commission ("SEC"), including its most recent Annual Report on Form 10-K and subsequent SEC filings. These forward-looking statements represent Wolfspeed's judgment as of the date of this release. Except as required under U.S. federal securities laws, Wolfspeed disclaims any intent or obligation to update any forward-looking statements after the date of this release.

Media Relations: media@wolfspeed.com
Investor Relations: investorrelations@wolfspeed.com

© 2026 SiC & More. All Rights Reserved.

ElementUSA

ElementUSA Inc. is accelerating America's access to critical minerals by unlocking overlooked domestic resources and delivering the processing strength to supply industry and defense. The company develops innovative midstream processing infrastructure to recover minerals from both primary and secondary sources, addressing the rising demand from U.S. manufacturers in sectors like semiconductors, national defense, and energy infrastructure. ElementUSA is pioneering Waste2Market solutions that offer faster and more sustainable pathways than traditional mining. At the center of this effort is the Critical Resource Accelerator, a premier research and development hub focused on scalable mineral recovery processes.

ElementUSA recently announced an $850 million investment to build a rare earth and critical minerals refining facility, strengthening the U.S. supply chain for materials essential to advanced manufacturing, national defense and energy technologies.

The company is expected to create 200 direct new jobs with an average salary of $90,000. Louisiana Economic Development estimates the project will result in an additional 554 indirect new jobs, for a total of 754 potential new job opportunities in the Southeast Region.

"ElementUSA's investment marks a major step in strengthening America's critical minerals supply chain, and Louisiana is proud to play a leading role in that effort," Governor Jeff Landry said. "This project advances essential mineral production in the United States and positions Louisiana's workers and communities at the forefront of a rapidly growing industry. As President Trump has consistently said, strengthening America's industrial base is a top priority, and Louisiana is delivering the projects that turn that vision into reality."

ElementUSA will use its proprietary processes to extract gallium, scandium, iron and other critical minerals from more than 30 million tons of bauxite residue, the byproduct of the alumina refining process. Supported by a $29.9 million U.S. Department of War grant, the company will first construct a demonstration facility to validate its extraction process and guide the design of a future commercial-scale facility.

Watch for a feature on ElementUSA, including an interview with Ellis Sullivan, Chief Executive Officer, in a future issue of SiC & More.

Syrah Resources:

Press Release

Syrah Resources LtdSyrah Resources Ltd
Quarterly Activities Report for the three months ending 31 December 2025.

Syrah Managing Director and CEO, Shaun Verner noted: "Syrah's operational highlights for the fourth quarter included stable operations at Balama with excellent recovery and completion of further large-volume breakbulk shipments to Indonesia in addition to further container shipments. We aim to continue Balama production and sales momentum in 2026.

We are demonstrating high quality AAM product performance, setting up our Vidalia AAM facility to meet the very high standards in materials processing necessary in the battery manufacturing industry. The policy and market backdrop moves into a pivotal period for support of the growth and potential development of our Vidalia AAM business – a period in which there is potential for acceleration of qualification and commercial activity.
Syrah is focused on delivering production and sales safely to improve cashflow and strengthening ex-China supply resilience with a focus on our stakeholders' objectives."

#SYR #Syrah #NaturalGraphite #GraphiteSupplyChain #BatteryMaterials #SustainableMining #CriticalMinerals #GraphiteSustainability #BatterySupplyChain #CarbonNeutral #NetZero #ZeroEmission #EV #Anode #ActiveAnodeMaterial #Lithiumionbatteries

© 2026 SiC & More. All Rights Reserved.

News





Silicon Carbide & More

Publisher: Kormac Kennedy Editor: Marissa Decklin. Copyright information: Copyright © 2018 by Silicon Carbide & More Inc. All rights reserved. Information contained in Silicon Carbide & More may not be redistributed, reproduced or put into an information retrieval system without prior written permission. *Silicon Carbide & More* is published five-eight times per year. Subscriptions: US$375 per year for a single user; US$475 per year for a multiple-user company subscription. For more information call +57 321 720 1537 or email kormackennedy@aol.com. Silicon Carbide & More, PO Box 503, Glen Ellyn, IL 60138-0503. Information contained in *Silicon Carbide & More* has been obtained from sources believed to be reliable but due to the possibility of error by *Silicon Carbide & More*, or others, *Silicon Carbide & More* does not guarantee the accuracy, adequacy or results obtained from the use of such information.

SiC Feedback & News line

Our staff is dedicated to seeking out the information you need to stay on the leading edge of silicon carbide and related businesses. Please email industry news, press releases or details of other events of note to us at the address below. If there are specific supply issues or topics that you would like to see discussed in future issues of *Silicon Carbide & More,* please email your ideas to us at:

kormackennedy@aol.com

www.siliconcarbideinsider.com

Silicon Carbide & More: Posts | LinkedIn

© 2026 SiC & More. All Rights Reserved.