

Q&A with Richard Pearce, President & CEO of South Star Mining Corp.

Q Graphite doesn't seem to be a hot commodity these days. Why, in your opinion, investors should be looking at it?

A The world is electrifying at a rapid pace with continued growth in usage of laptops, mobile phones, games, home devices, and particularly electric vehicles. These devices and vehicles are almost exclusively powered by lithium-ion batteries, of which graphite is a major constituent. **A typical lithium-ion battery contains 10 to 15 times more graphite than lithium.** Forecasts of the battery demand growth show compounded annual growth rates of 15 to 25% per year over the next 10 years. Over 2,000 Gwh of new battery manufacturing capacity has been announced worldwide. Which, if built, would require an additional 2-3 million tonnes of graphite per year.



Beyond batteries, graphite has a number of traditional markets such as steelmaking, foundries, lubricants, electronics and automotive industries, which have shown a steady growth over the last 100 years.

Many exciting new technologies that are graphite based are steadily making their way out of the lab and into production. These include graphene, fire resistant insulation and coatings, and construction materials, all of which are forecast to grow rapidly over the next decade.

Overall, the graphite market has the potential to grow from the current demand of about 1 million tonnes per year to over 5 million tonnes per year by 2030.

Q Many investors claim there is an over-supply of the material in the market. Is that so?

A There has been a near-term over-supply situation developed as a couple of large projects came online and pushed the supply curve above the current demand growth. We believe **this is a temporary situation in the market** as the demand factors mentioned previously begin to really accelerate. This is also mainly affecting the small to medium grain size distributions. While all graphite product prices have been affected by these price pressures, the strength of the Santa Cruz Project is that a large percentage of the product is high-quality, large to jumbo size flake distribution.

Santa Cruz is also a strategic project because **Brazil has a large internal demand** for refractory and industrial uses. In addition, many clients are looking to diversify supply chain away from a Chinese production dependency. **Santa Cruz can be a world-class deposit that supplies high-quality product for decades to come.**

Q Some investors seem to be cautious and even skeptical of mining companies operating in Brazil. Can you address some of the concerns? What are the perks of working in Brazil?

A Brazil is an excellent place to be in the mining business with a **well-developed mining code, low government royalties and a long history of multiple commodity mining.** The country hosts a skilled labour force and multiple equipment suppliers and service companies. Santa Cruz is in the geographical area and on the geological trend that has been continuously producing high-quality flake graphite for over seventy years.

In terms of safety and sustainability, it is important to point out that South Star will incorporate filtered tailings and dry stack co-disposal at our Santa Cruz Graphite Project. **There will not be a need for a tailings facility, which will create a safer and greener operating environment and a streamlined permitting process.**



Q Exploration companies operating in Canada have a privilege of flow-through financings. South Star's operations are in Brazil, so you are not FT eligible. What kind of incentives would STS have for Canadian investors to prefer STS over its competitors with operations in Canada?

A The Santa Cruz project will qualify, under the SUDENE program, for a **75% reduction in its federal income tax rate.** This would reduce the project's federal rate from 25% to 6.25% for the first ten years with a potential for further extensions.

South Star has **access to Brazil development bank financing**, with attractive rates and terms, to finance a substantial portion of its capital expenditures. Discussions are well underway, with the Project already pre-approved for the debt financing. The Bank is now reviewing the technical documents and advancing with the Project credit analysis

It's also worth noting that **current favourable exchange rates** are also big positive for the Project as the USD versus the Brazilian Real is near a 10-year high. Product will be generally priced in USD while the vast majority of CAPEX and OPEX will be in reals. This should help both the CAPEX and keep the OPEX in the lower quartile of the cost curve.

Q If we take graphite companies worldwide, what kind of competitive advantage do you have? What differentiates South Star?

- A**
- **Experienced management** that has developed and put several mines into operations in Brazil in recent years. As a result, there is a platform in place of strong governance, accounting standards, controls and a network of suppliers and technical expertise.
 - Brazil has over 70 years of continuous, high-quality graphite production, which is well regarded in the marketplace. The product is **large flake sizes**, high crystallinity, **with minimal impurities.**
 - **Low cost of production** with at-surface mineralization in highly weathered material that requires no drilling and blast blasting.
 - The proposed flowsheet is a **simple, proven technology** with the addition of filtered tailings and co-disposal in the wasterock facility.
 - **Great infrastructure** – roads, power, natural gas, deep water port, workforce, equipment.

Q What stage are you at now and what are your near-term plans?

A On January 6, 2021, we announced the receipt of a three-year mining license for the Phase 1 pilot plan operation of our Santa Cruz graphite project in Brazil. Phase 1 pilot plant operation has a US\$7.3M in CAPEX including 5,000 tpy of 95% Cg concentrate in the first two years. The objective of this program is to test and optimize flowsheet, develop commercial relationships, and optimize product mix. This will be followed by a larger 25,000 tpy Phase 2 operation (US\$27.2M CAPEX).

Q When will you be at the production stage and do you have all the licenses needed for that?

A Plant construction begins in Q3 2021 and we expect production to commence in Q4 2022. We have all the necessary licenses and permits in place and a pre-approved C\$7.5M loan commitment at a rate of 5.3% p.a. from the Brazilian Development Bank to fund Phase 1 CAPEX. We have had extensive interaction with local, state and federal agencies and foresee no issues in having all necessary approvals in place to meet that first production forecast.

Q Do you have any offtake agreements in place?

A No formal offtakes in place at this time but we are working on it. Samples of the concentrates produced in our initial pilot plant test have been provided to multiple end-users. Feedback has been very positive and **commercial discussions are on-going**. The benefit of starting production with a pilot plant with 5,000tpy concentrate is to allow time to qualify the products across a diverse client base and without having a large CAPEX and associated financings looming in the near future. The 5,000 tpy concentrate is a very reasonable amount to place in the Brazilian and global supply chain.

Q Describe your corporate structure. How much do insiders own?

A 69.9 million shares outstanding with approximately **21% owned by insiders**.

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