

ASX ANNOUNCEMENT

ASX : BSX

21 December 2023

## Blackstone Signs Offtake MOU for Refinery Byproduct

### HIGHLIGHTS

- Blackstone identifies exciting strategy to convert Ta Khoa Refinery (“TKR” or “refinery”) residue into construction materials;
- The Company signed a 3-way Memorandum of Understanding (“MOU”) with Phu Minh Vina Environment Company Ltd (“Phu Minh”) and Viet Trung Refractory Material Construction Joint Stock Company (“Viet Trung”) to research opportunities to repurpose and trade waste material (or residue) from TKR into construction material products;
- Execution of residue offtake agreement/s will yield significant cost savings for the Ta Khoa Project as it will reduce on site storage requirements;
- Successful implementation of this strategy will reduce environmental impact of the residual storage facility, assisting permitting and licensing schedule. It will also allow for the development of locally produced construction materials and employment;
- Blackstone is actively in discussion with Vietnamese companies to develop offtake agreements for the remaining refinery byproducts as well as supply of reagents for the refinery.



**Figure 1: Bricks made from Ta Khoa Refinery Residue**

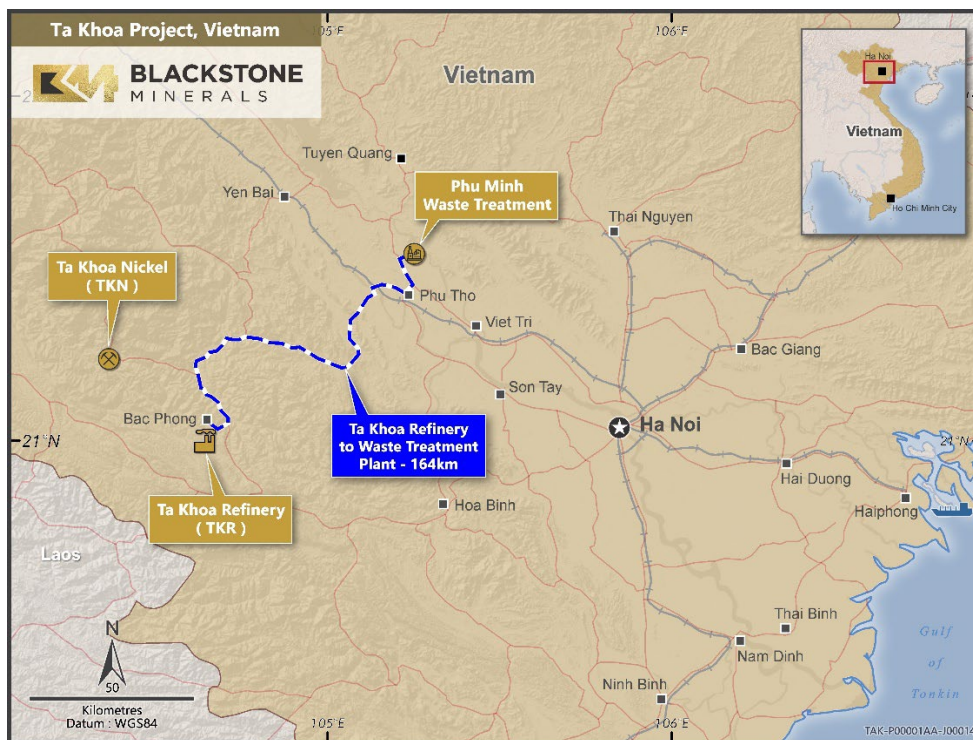
For a video summary of the announcement head to the Blackstone Investor Hub <https://investorhub.blackstoneminerals.com.au/link/WPGXxy>

## RESIDUE OFFTAKE MOU

Blackstone Minerals Limited (“Blackstone” or the “Company”) is pleased to announce that it has entered into a MOU with Phu Minh and Viet Trung to research opportunities to repurpose and trade waste material (or residue) from its Vietnamese Ta Khoa Refinery into construction material products.

The MOU demonstrates that the refinery residue not only holds value but will result in less residue treatment and storage for Blackstone during the life of the operation, significantly improving financial metrics for the project.

Phu Minh own and operate a waste treatment plant in the Phu Tho Province, which is adjacent to the Son La Province in Vietnam, where Blackstone is building the refinery. Phu Minh commenced in 2007 working in the fields of environmental management and waste treatment.



**Figure 2: Location of Phu Minh Waste Treatment Plant**

Viet Trung own and operate a refractory material company in Hoai Duc, Vietnam. Viet Trung commenced in 2017, licenced to produce construction refractory materials in Vietnam and manage hazardous waste treatment.

Under the MOU, the following initiatives will be explored;

1. Negotiate offtake agreements for Ta Khoa Refinery residue;
2. Research and provide solutions/processes/business for repurposing residue from the refinery, ensuring that any developed construction material meets or exceeds Vietnamese standards;
3. Collaborate on strategic solutions to ensure construction material products meet Son La Provincial People’s Committee (“SLPPC”) development strategy;
4. Confirm waste treatment capacity, ensuring it can match or exceed TKR’s maximum waste production volume;
5. Identify technology and equipment to process TKR residue for construction material products (such as, but not limited to, bricks, pavers, blocks etc.) or feed material for other plants.

## Background

In August 2023, Blackstone engaged Real Material Solutions Pty. Ltd. (“Real Material Solutions”) (<https://realmaterial.com.au/>) to conduct testwork on the TKR pilot program residue to confirm if the residue would be suitable as construction material. Real Material Solutions specialise in manufacturing building materials from waste products. The program involved developing preliminary recipes to produce a brick to achieve Australian Standards. As such, the program not only produced a structurally sound brick, but confirmed the residue would be suitable as a building material.

The technology developed by Real Material Solutions does not require firing bricks in a kiln. In 2020 the Vietnam government released a circular to erase traditional fired brick production facilities across the country towards boosting the production and consumption of more environmentally friendly building materials. Blackstone believes it can be well placed to help with this transition and build a local industry based on the work done by Real Material Solutions. In addition, future recipes may consider other local waste materials as aggregate, such as fly ash, waste rock and sand, crushed waste glass, blast furnace waste, and others further supporting the circular economy.

Real Material Solutions director Blake Stacey commented: *“The testwork completed to date demonstrates there is real potential to repurpose the refinery residue, which would otherwise be considered as waste, into something of value, not just for Blackstone but the community as well, generating local building materials and employment. With some additional work, we could move beyond residential construction material and into paving, retaining walls, bund walls, sea walls etc. It is exciting to think how this initial work could transform the landscape in Son La”.*

## Establishing the Circular Economy

In 2021 Blackstone identified the potential for conversion of refinery residue into building materials. In mid-2023 the Company commenced investigations into the repurposing of its residue into construction material, specifically if the material would be suitable for the manufacturing of residential bricks. Blackstone saw this as a significant opportunity as the repurposing of residue material would:

- Generate additional industry opportunities for the people of Son La Province, Vietnam;
- Reduce the dependency of a residue storage facility, ultimately yielding both capital and operating cost benefits to the Ta Khoa Project;
- Significantly reduce the environmental impact of the project and thus improve permitting timelines;
- Improve social licence to allow Blackstone to operate within Son La Province, Vietnam;
- Generating a new circular economy within Vietnam.

In December 2023, Blackstone attended the monthly permitting working group meeting which includes government organisations such as the Son La Provincial People’s Committee, Department of Natural Resources and Environment, Department of Planning and Investment, Department of Industry and Trade, Department of Agriculture and Rural Development, and the Phu Yen District People’s Committee, among others. The working group expressed particular interest in examining the residue repurposing project. Notably, members of the working group acknowledged the work done by Blackstone to consider many options to manage site waste and seeing the repurposing of waste as beneficial for the Son La Province.

Blackstone will continue to work closely with Phu Minh, Viet Trung and the SLPPC to progress the development of construction material products and establish a new industry within Son La Province, Vietnam.

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Blackstone is in discussions with other Vietnamese companies who are also interested in the TKR residue. Blackstone will report on this progress in the new year once MOU terms have been agreed.

### Offtake Development Pipeline

The refinery will produce a number of different byproducts, these are;

- copper cathode (LME grade)
- magnesium sulphate in the form of epsomite
- sodium sulphate

Although copper cathode will be sold on the London Metal Exchange ("LME"), buyers of epsomite and sodium sulphate will need to be identified. Blackstone has engaged several Vietnamese chemical companies who are interested in the purchase of both the epsomite and sodium sulphate byproducts, thus improving project financial metrics.

The engaged companies explained they will use these byproducts to produce products such as fertiliser, detergents, construction materials and other chemical products. These products are then used in Vietnamese and global industries such as, but not limited to, agriculture, construction, industrial cleaning and chemical products, medical, textile, paper and glass manufacture.

Importantly, the engaged companies are capable of taking the full amount produced by the refinery. The companies confirmed the produced amount from the refinery is only a small portion of what is currently being imported into Vietnam, demonstrating offtake security.

Blackstone will progress these relationships with the aim to sign MOU's in early 2024.

### Supply Agreement Update

The refinery requires a large range of reagents to convert nickel concentrate feed into precursor cathode active material. Blackstone has been investigating the capability of Vietnamese companies to produce/supply these reagents in Vietnam to reduce cost, benefit the Vietnamese economy, reduce supply risk and logistical risk. This strategy aligns with previous announcements to explore and contract local companies to assist with project development and execution (refer ASX announcement 20 July 2023).

A number of Vietnamese companies have been identified to provide these reagents. Site visits were conducted in December 2023 to investigate the capability of these companies. It was pleasing to see that these companies service both local and international customers, are ISO accredited and were able to demonstrate high quality of operation and safety standards.

Blackstone will continue to investigate reagent supply within Vietnam with the aim to sign MOU's in early 2024.

Blackstone Minerals' Managing Director, Scott Williamson, commented:

*"At Blackstone we are committed to reduce our carbon footprint and social impact, as well as assist and support our local communities to develop additional industries which complement our Ta Khoa Project. This recent development, repurposing the refinery residue into useful building materials is testament to our commitment. The team has worked hard to find value in our byproducts. When those byproducts can be used by the community and help grow a circular economy, then we really have achieved something great. In addition, Vietnam is proving to be a fantastic jurisdiction to support the Ta Khoa Project. The ability to buy and sell reagents and chemical products within Vietnam demonstrates maturity and opportunities in this great industrial centre."*

Authorised by the Managing Director on behalf of the Board.

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Investors are also encouraged to join and engage through the Blackstone Minerals Investor Hub, post questions and feedback through the Q&A function accompanying each piece of content, and [engage directly](#) with the Blackstone team.

**How to join the Blackstone Minerals InvestorHub**

1. Head to our [Investor Hub](#) or scan the QR code with your smart device
2. Follow the prompts to sign up for an Investor Hub Account
3. Complete your account profile and link your shareholdings if you are a current shareholder.



**About Phu Minh Vina Environment Company Ltd**

Phu Minh own and operate a waste treatment plant in the Phu Tho province, Vietnam, approximately 164 km from Blackstone's Ta Khoa Refinery. Phu Minh commenced in 2007 working in the fields of environmental management and waste treatment. Currently Phu Minh has been granted a license on hazardous waste management by the Ministry of Natural Source and Environment and is ISO accredited (certificates 9001, 14001, 45001). With 16 years experience working in collection, waste treatment and business development, Phu Minh has an extensive list of projects with customers including Toyota, Yamaha, Spindex, and Masan Group (Nui Phao Mining).

<https://moitruongphuminh.vn/>

**About Viet Trung Refractory Material Construction Joint Stock Company**

Viet Trung own and operate a refractory material company in Hoai Duc, approximately 190 km from Blackstone's Ta Khoa Refinery. Viet Trung commenced in 2017, the company is licensed to produce construction refractory materials in Vietnam and manage hazardous waste treatment. Viet Trung have done many projects as a supplier and installer for refractory materials in the oil and gas and thermal power plant sector, and have experience to manufacture bricks from waste materials for wall and embankments installations, as well as supplying repurposed materials to cement plants.

<https://vatlieuchiuluaviettrung.com/>

**About Blackstone**

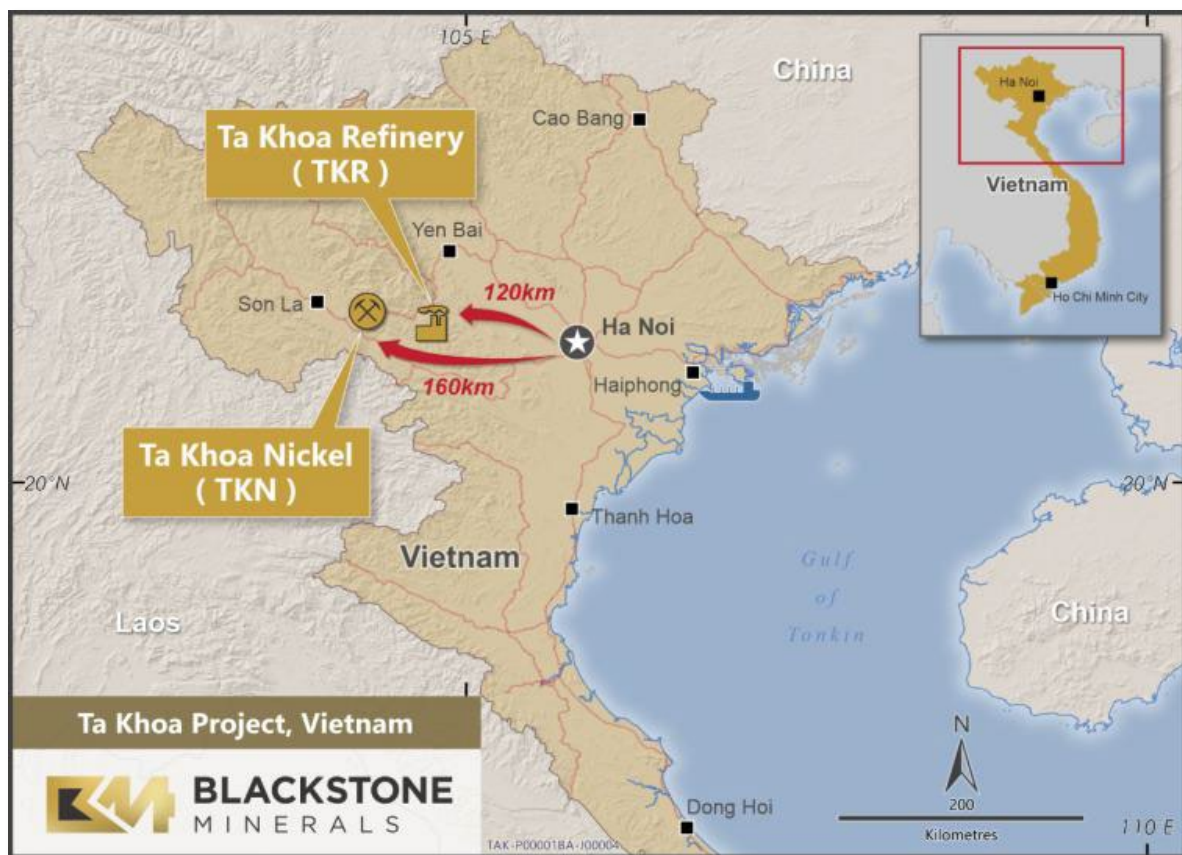
Blackstone Minerals Ltd (ASX: BSX / OTCQX: BLSTF / FRA: B9S) is focused on building an integrated battery metals processing business in Vietnam that produces Nickel:Cobalt:Manganese precursor products for Asia's growing lithium-ion battery industry.

Blackstone will produce the lowest emission precursor as verified by Minviro and the Nickel Institute (refer ASX announcement 15 September 2022).

The existing business has a modern nickel mine built to Australian standards, which successfully operated as a mechanised underground nickel mine from 2013 to 2016. This will be complemented by a larger concentrator, refinery and precursor facility to support integrated production in-country.

To unlock the flowsheet, the Company is focused on a partnership model and is collaborating with groups who are committed to sustainable mining, minimising the carbon footprint and implementing a vertically integrated supply chain.

The Company's development strategy is underpinned by the ability to secure nickel concentrate and Ta Khoa is emerging as a nickel sulphide district with several exploration targets yet to be tested.



**Figure 3: Ta Khoa Project Location**

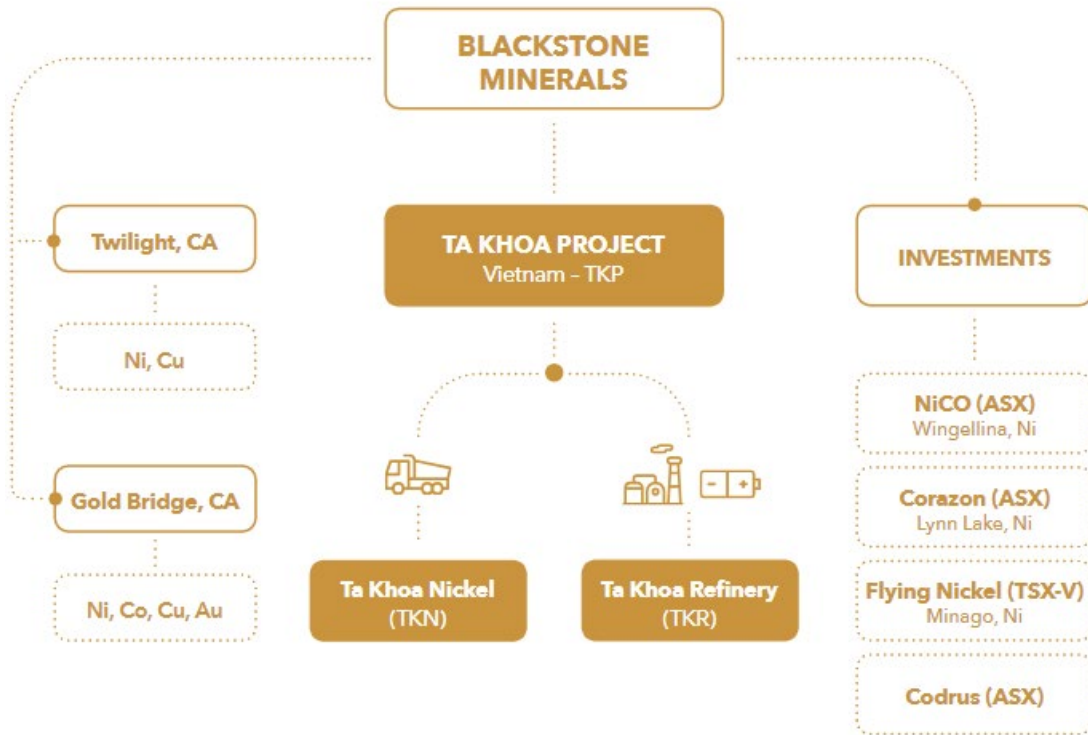


Figure 4: Blackstone Minerals Business Structure Schematic

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