EVOLUTION
CAPITAL ADVISORS

ASX: BSX

BLACKSTONE MINERALS LTD

Equity Research

27th September 2021

SPECULATIVE BUY

Price Target	$1.900
Share Price	$0.475

52-Week Range	$0.31 - $0.59
BSX Shares Outstanding	341.2m
Broker Options (60¢, 11 Dec 2021)	4.0m
Unlisted Options (20¢, 12 Jun 2022)	1.0m
Performance Options (various)	2.5m
Performance Options (0.1¢, 20 Feb 2025)	0.9m
Performance Options (0.1¢, 20 Aug 2025)	3.9m
Market Capitalisation	$162.1m
Cash (30 Jun 2021)	$14.3m
Enterprise Value	$147.8m

Board & Management:

Hamish Halliday	Chairman
Scott Williamson	Managing Director
Andrew Radonjic	Non-Executive Director
Alison Gaines	Non-Executive Director
Hoirim Jung	Non-Executive Director
Jamie Byrde	CFO / Company Secretary
Dr Stuart Owen	Exploration Manager

Major Shareholders:

Deutsche Balaton	17%
Ecopro	12%
Fidelity	6%
Board & Management	12%

Blackstone Minerals Ltd (ASX: BSX) is a battery and precious metals exploration and development company focused on the flagship Ta Khoa Nickel (Co Cu PGE) sulphide project, in Vietnam.

Downstream Refinery Brings Significant Value-Add

Downstream Refinery: BSX strategy is to build a downstream refinery (Ta Khoa Refinery or TKR) in Vietnam to produce Nickel-Cobalt-Manganese (NCM) precursor for the booming Lithium-ion battery industry. The PFS results released late July considers a 400,000 tpa feed of nickel concentrate. About half of the feed will come from a new 6 mtpa Ban Phuc concentrator and the other half needs to be purchased from third-parties with the assistance of Trafigura, a global metals trader.

New Upstream Concentrator: In October 2020, BSX announced a maiden mineral resource for the Ban Phuc disseminated sulphide deposit: 44 million tonnes indicated @ 0.53% Ni and 14 million tonnes inferred @ 0.35% Ni. At the same time, BSX released the results of a Scoping Study for a 4mtpa (base case) and 6 Mtpa new concentrator. To provide at least half of the TKR feed, we have retained the 6 Mtpa case with a 48 million tonnes mining inventory @ 0.48% Ni, operating for 8 years.

Existing Upstream Concentrator: the existing 450,000 tpa concentrator will focus on treating massive sulphide veins (MSV) as they are discovered and developed. At this time, BSX needs to delineate sufficient mineral resources to justify a restart of the plant.

Ta Khoa Business Units Valuation: We have modelled the two business units separately assuming a 100% payability of the Ni-Co-Cu-PGE concentrates produced at Ta Khoa.

Scenario / Item	US$16,000/t	US$18,000/t	US$20,000/t
Downstream Business Unit (DBU)			
TKR capex	A$673m	A$673m	A$673m
$NPV_{8\%}$ post tax	A$2,461m	A$2,757m	A$3,054m
IRR post tax	63%	68%	73%
Risk factor (PFS level)	20%	20%	20%
Risked NPV	A$492m	**A$551m**	A$611m
Upstream Business Unit (UBU)			
6 mtpa concentrator capex	A$338m	A$338m	A$338m
$NPV_{8\%}$ post tax	A$172m	A$368m	A$563m
IRR post tax	19%	33%	45%
Risk factor (Scoping Study level)	20%	20%	20%
Risked NPV	A$36m	**A$77m**	A$117m
450 ktpa concentrator restart capex	A$55m	A$55m	A$55m
Risked NPV	A$132m	**A$160m**	A$188m

Note the DBU results of US18,000/t price scenario are quite close to the results released in BSX PFS (NPV US$2.01 billion and IRR of 67%). The DBU is clearly bringing most of the value-add to the company.

News flow: We anticipate several share price catalysts including PFS for the Upstream Business Unit, completion of the Ta Khoa Refinery DFS, Phased construction of a pilot plant in Vietnam to produce NCM811 Precursor (phase 1: 20kg/hour Ni concentrate feed, phase 2: 1,000kg/hour), continued aggressive drilling to increase mineral resources at the Ta Khoa Nickel Project, secure off-take for third-party feed, final investment decision in CY2022.

BSX Valuation: As the company continues to de-risk the various parts of the project and build new mining inventory in the form of DSS and MSV, it continues to add value to shareholders. Our speculative value currently stands at A$805 million or $1.90 per share, including some A$40m of new equity raised at $0.50 per share.

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All currencies are in Australian dollars unless otherwise specified.

1. BSX Valuation

Ban Phuc NPV Valuation

We have modeled the development of the Ta Khoa project according to the two business units structured by BSX:

Downstream Business Unit (DBU)

- Construction and operation of a refinery to treat the nickel concentrate from the UBU: 200,000 t of nickel concentrate at 8% Ni
- Purchase of third-party concentrate feed to complement and upgrade the feed to reach head grades of 11.5% Ni and 0.3% Co

Upstream Business Unit (UBU)

- Development of an open pit mine based on the Disseminated Sulphide (DSS) mineralisation with a mineral resource of 44mt @ 0.52% Ni (indicated), plus 14 mt @ 0.35% Ni (inferred)
- Construction and operation of a new treatment plant with a capacity of 6,000,000 tpa, running for 8 years, producing 210,000 t of nickel concentrate at 8% Ni, cobalt grade estimated at 0.1% Co (10x the ore grade)

The assumptions relevant to each business unit are detailed in sections 4 and 5 of this report. In terms of nickel prices, we used US$16,000/t flat, US$18,000/t flat and US$20,000/t. The US$18,000/t price assumption delivers very similar results to the price scenarios assumed by BSX in its downstream PFS.

Table 1.1 – Ban Phuc NPV Valuation

Scenario / Item	Unit	US$16,000/t	US$18,000/t	US$20,000/t
Downstream Business Unit (DBU)				
Ta Khoa Refinery capex	US$m	491	491	491
NPV @ 8% post tax	US$m	1,797	2,013	2,229
NPV @ 8% post tax	A$m	2,461	2,757	3,054
IRR post tax	%	63%	68%	73%
Risk factor (PFS level)	%	20%	20%	20%
Risked NPV	A$m	492	**551**	611
Upstream Business Unit (UBU)				
6 mtpa concentrator capex	US$m	247	247	247
NPV @ 8% post tax	A$m	172	368	563
IRR post tax	%	19%	33%	45%
Risk factor (Scoping Study level)	%	20%	20%	20%
Risked NPV	A$m	34	**74**	113
450 ktpa concentrator restart capex	US$m	40	40	40
NPV @ 10% post tax	A$m	265	320	376
IRR post tax	%	196%	232%	268%
Risk factor (existing concentrator)	%	50%	50%	50%
Risked NPV	A$m	132	**160**	188

Source: Evolution Capital Advisors estimates

Note the DBU results of US18,000/t price scenario are quite close to the results released in BSX PFS (NPV US$2.01 billion and IRR of 67%).

There is no doubt that DBU will be bringing most of the value-add to the overall project.

Despite the DBU being more advanced with a PFS compared to the UBU 6mtpa with a scoping study, the risk factors selected are identical at this time considering the higher level of risks associated with the TKR at this time. For the UBU 450ktpa, the risk factor of 70% takes into consideration the existing concentrator for which minor refurbishment is expected.

BSX Sum of the Parts Valuation

Table 1.2 summarises the sum of the parts valuation for BSX.

Table 1.2 – BSX Sum of the Parts Valuation

Asset	Value Range	Preferred	Per Share
Ta Khoa DBU TKR refinery	$492-$611m	$551.0m	$1.30
Ta Khoa UBU 6 mtpa concentrator	$34-$113m	$74.0m	$0.18
Ta Khoa UBU 450 ktpa concentrator	$132-$188m	$160.0m	$0.38
Ta Khoa exploration upside	$10-$20m	$15.0m	$0.04
Cash (30 Jun 2021)		$14.3m	$0.03
Options/rights exercised over next 12 months		$0.2m	$0.00
Development study, pilot plant, long lead items		($40.0m)	($0.09)
Corporate costs		($8.9m)	($0.02)
New equity		$40.0m	$0.09
Total		**$805.7m**	$1.91

Source: Evolution Capital Advisors estimates

The valuation assumes a capital raising of 80 million shares at $0.50 for A$40 million.

BSX Valuation Compared to Market Peers

As BSX progresses its integrated development strategy including the significant value-add from the production of NCM precursor, it will become less and less relevant to compare the company with ASX-listed nickel developers. Nevertheless, BSX market valuation is currently lagging this peer group.

Table 1.3 – BSX and Market Peers

Company	Blackstone	Poseidon	Centaurus	Panoramic	Mincor
Code	BSX	POS	CTM	PAN	MCR
Resource	✓	✓	✓	✓	✓
Study	✓	✓	✓	✓	✓
EV/Resource	$0.24	$0.31	$0.24	$0.64	$1.22
EV/Reserve	n/a	$1.69	n/a	$1.31	$3.62
Market Cap.	$162m	$306m	$351m	$441m	$614m
Enterprise Value	$176m	$286m	$321m	$406m	$567m

Source: S&P Capital IQ. Evolution Capital Advisors.

2. BSX Strategy

The objective is to produce a high value downstream nickel product for the Li-ion battery manufacturing hub being developed in the port city of Hai Phong[1], where leading manufacturing companies have existing large-scale electronics manufacturing facilities.

[1] *See news release LG Chem announcing development of US$2 billion EV battery plant in Hai Phong, Vietnam*

The Board and Management of Blackstone Minerals Ltd believe the Ta Khoa district and Ban Phuc mine represent a rare opportunity to invest in a premier, infrastructure advantaged, district scale, Nickel PGE (Cu Co) sulfide project, with a downstream nickel sulfate value-add opportunity, located in an emerging hub for Electric Vehicle Lithium-ion battery manufacturing.

Results focused Management Team

Considering that the Ta Khoa project was purchased in May 2019, a bit more than two years ago, the BSX team has done tremendous work pursuing its exploration and development strategy delivering:

1. A relatively cheap acquisition (about A$1.7 million in cash and shares) vs. US$136 million invested by the previous owner
2. Good drill intercepts such as 45m @ 1.2% Ni and 60m @ 1.3% Ni
3. A new discovery with the King Cobra mineralisation
4. A strategic partnership with South Korea's largest electric vehicle (EV) battery cathode manufacturer, Ecopro BM Co Limited (12% interest in BSX)
5. Successive capital raisings at higher share prices. Previous raisings:
    a. 10 May 2019: 40 million shares at $0.05 for $2.0 million
    b. 23 Sep 2019: 30 million shares at $0.15 for $4.5 million
    c. 7 Apr 2020: 60 million shares at $0.17 for $6.8 million (with a 62% premium to the last BSX traded price)
    d. 14 Sep 2020: 42 million shares (+SPP) at $0.42 for $21 million
6. Attracting an institutional investor with Fidelity (6% interest in BSX)
7. Scoping Study for the Ta Khoa project (October 2020)
8. Pre-Feasibility Study for the Downstream Business Unit (July 2021)
9. A market capitalisation increasing from A$7m to A$162m
10. A share price increasing from $0.064 to $0.475 (with a high at $0.59)

Potential off-take

EcoPro Co. Limited (EcoPro, market cap ~US$1 billion). EcoPro's subsidiary, EcoPro BM, is the world's second largest and South Korea's largest nickel-rich cathode materials manufacturer.

Furthermore Ecopro and Blackstone are to form an alliance to whereby the next stage of the partnership will be an additional investment via a Joint Venture Agreement at project level to develop the downstream processing infrastructure project.

We note that both LG and Samsung are also investing significantly in Vietnam. Vietnam is already a major manufacturing location for Samsung and the company is currently investing US$220m in a R&D center. LG Chem (currently the holder of various world-leading battery technologies) has established a JV with Vinfast, Vietnam first automaker, to build battery

packs for electric vehicles. As well as Ecopro, those groups must be keen to secure the raw materials such as nickel sulphate, hence creating some competitive tension between them.

3. Ta Khoa Refinery (DBU)

Introduction

In July 2021, BSX released the results of a PFS focused on processing nickel sulphide concentrates to produce battery grade NCM811 Precursor for the Lithium- ion battery industry.

PFS report focuses on the development of a Ta Khoa Refinery (TKR), to treat 400,000 tpa of nickel concentrate feed and produce an advanced battery precursor material called NCM811 Precursor, which is the technical name for a mixed hydroxide precipitate with nickel, cobalt and manganese hydroxides present in a ratio of 8:1:1.

The concentrate feed is to be sourced from the Ban Phuc DSS deposit (200ktpa) and third-party sources (200ktpa).

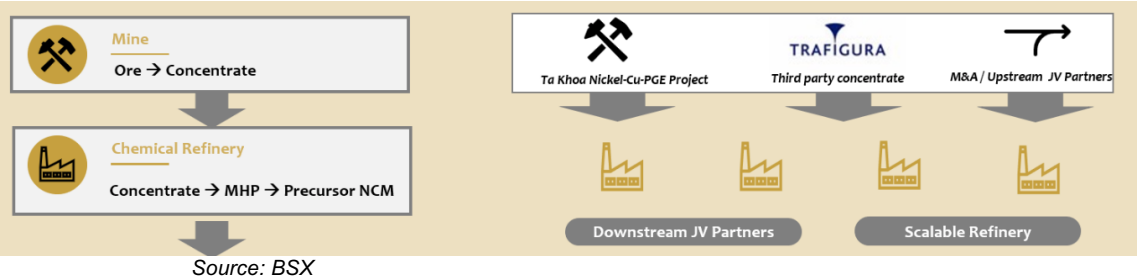
The location of the TKR will be confirmed after completion of the PFS with further trade-off studies, but it will be situated in Northern Vietnam. The TKR will prioritise feed from the Ta Khoa Nickel Project, with top-up from third party sources.

Development Strategy

The BSX development strategy (see Figure 3.1) is supported using 3PF to supplement nickel concentrate supply from the Ta Khoa Nickel Project, and to improve the overall operational flexibility of the TKR. BSX is in discussion with multiple 3PF suppliers and has obtained concentrate specifications from the respective suppliers. In addition, BSX has signed a Letter of Interest with Trafigura for the supply of nickel and cobalt sulfide concentrates. It should be noted that the TKR has been valued as a standalone business, and the purchase of concentrate, including from BSX's Ta Khoa Nickel Project, is assumed to occur at arm's length.

The development of the TKR is reliant on final offtake agreements, with Trafigura and other 3PF suppliers, and will be the subject of ongoing negotiations that are commercial in confidence. Further, the ability for the TKR to process 3PF is contingent upon receipt of Vietnamese import approval.

Figure 3.1 – Development Strategy



Source: BSX

Financing Strategy

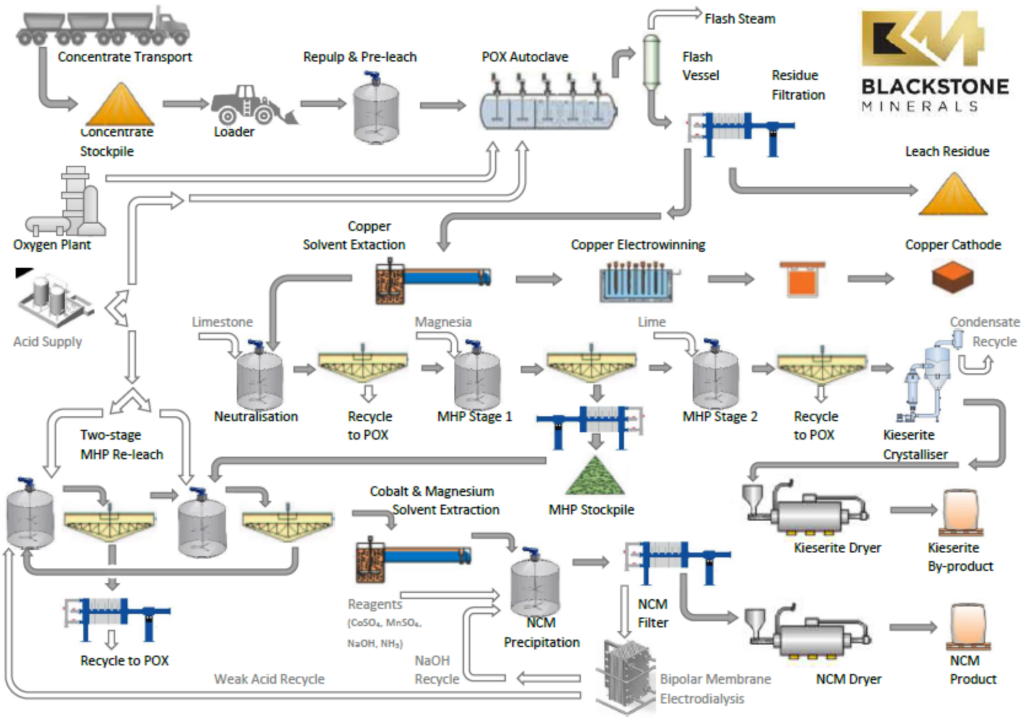
BSX intends to develop and fund the construction of the TKR via a collaborative partnership-based model. Blackstone's intention is to retain a significant interest in the TKR and expects that its portion of funding will be met through a combination of debt, equity, and offtake financing.

Flowsheet Development

The major unit operations from concentrate input through to the NCM precursor product include:

- POX pre-leach
- POX
- Leach residue thickening and filtration
- Cu SX
- Neutralisation (precipitation)
- Neutralisation thickening
- MHP precipitation
- MHP thickening
- Magnesium sulfate crystallisation
- MHP leach
- CoMg SX
- NCM precipitation

Figure 3.2 – Process Flowchart for Downstream Processing



Source: BSX

The flotation concentrate is repulped in site process water and fed with sulfuric acid to an atmospheric pre-leach and pressure oxidation leach (POX) to recover the cobalt, copper, and nickel. Following solid and liquid separation, the combined leach and wash liquor would then be fed to a solvent extraction and electrowinning circuit (Cu SX/EW) to recover copper as LME grade A copper cathode.

The raffinate from Cu SX would be neutralised with limestone forming a precipitate containing impurities that are recycled back into the process. Magnesia has been added to the neutralised liquor to precipitate the bulk of the nickel and other base metals as MHP1, which has been thickened, filtered, and washed. The barren liquor from MHP1 still contains some nickel, which has then been recovered by raising the pH with hydrated lime. The precipitate, MHP2 has been recycled. Barren liquor from MHP2 still contains significant concentrations of magnesium. This liquor is fed to a crystallisation circuit, which produces kieserite, a marketable fertiliser product.

The MHP1 solids are re-leached in two counter-current stages with sulfuric acid to give a concentrated nickel sulfate liquor with low levels of soluble impurities. To remove the remaining impurities, the leach liquor has been fed to a solvent extraction circuit (Co Mg SX) that produces an aqueous raffinate containing nickel and sodium. The scrub liquor has then been returned to the MHP1 unit, the cobalt strip liquor has then been fed to an ion exchange column to remove impurities and the zinc strip liquor is pumped to effluent treatment.

The Co Mg SX raffinate containing the nickel in solution is combined with cobalt sulfate and manganese sulfate in a molar ratio of 8:1:1 (Ni:Co:Mn). This mixture has then been fed to the NCM precipitation circuit along with aqueous ammonia and sodium hydroxide to raise the liquor pH. The precipitate is then separated and dried as the NCM 811 ternary precursor product. The ammonia, sodium hydroxide and sulfuric acid has then been recovered from the barren liquor via bipolar membrane electrodialysis for reuse and as such has been recycled back to the process.

4. Ta Khoa Mining Project (UBU)

Location and Infrastructure

The Ta Khoa Nickel-Copper-PGE Project is located 160km west of Hanoi in the Son La Province of Vietnam and includes an existing modern nickel mine built to Australian Standards, which is currently under care and maintenance. The Ban Phuc nickel mine successfully operated as a mechanised underground nickel mine from 2013 to 2016.

Previous project owners invested more than US$136m in capital and generated US$213m in revenue during a 3.5-year period of falling nickel prices. The project was placed into care and maintenance in mid-2016 during some of the lowest nickel prices in the past 10 years.

Existing infrastructure associated with the project includes an internationally-designed 450 ktpa processing plant connected to local hydro grid power with a fully-permitted tailings facility and a modern 250-person camp.

Figure 4.1 – 450,000 tpa processing plant

Source: BSX

Power is to be supplied from the national 35kV grid power via a 6kV substation for distribution within the site via low voltage motor control centres.

Process water will be recycled from the Tailings Storage Facility (TSF) with make-up and raw water drawn from the Chen Stream which feeds into the Da River. The camp will draw water from the Da River to supply a reverse osmosis plant for domestic (non-potable) water use.

The camp is located 3 km from the mine site on the east bank of the Chen Stream downstream of its confluence with Dam Creek, on a site already acquired by BPNM. The site is 35m to 100m wide and approximately 300m long.

Jurisdiction

Vietnam has an established mining industry with 22 open cut mines and 23 underground mines throughout the country.

The government is focused on tax reform and improving the operating environment to entice foreign investment into the mining industry. In July 2018, the Prime Minister approved the Vietnamese Mining Master Plan (2020-2035) which specifically identifies the Ban Phuc Nickel mine as a project of national significance which eliminated key permitting and approval obstacles. The government recently halved the Mining Licence Grant Fee (MLGF) for new nickel mines and recently announced a new-generation Foreign Direct Investment (FDI) attraction and orientation strategy for 2018-2030. Through the Trans-Pacific Partnership (TPP), the government has committed to eliminating existing export taxes in Vietnam. These initiatives all point to an improved operating environment for multinational mining companies investing in Vietnam.

The taxation regime includes a 20% corporate tax. Blackstone Minerals could benefit from a tax holiday for the first few years. Tariffs on base metal concentrates should be waived, as the company aims to produce a downstream nickel product.

Ownership

In April 2020, BSX announced it had exercised the option to acquire a 90% interest in the Ta Khoa project. The Ta Khoa project is own by Ban Phuc Nickel Mines (BPNM), which is an incorporated joint venture company owned by:

- AMR Nickel Limited, a wholly owned subsidiary of Blackstone Minerals Limited 90%, and
- Son La Mechanical Engineering Joint Stock Company (Coxama) 10%.

Permitting

BPNM was granted a seven hectare Mining Licence covering the Ban Phuc deposit on 17 December 2007.

The existing mining licence will need to be updated to include the new open pit and underground operations. The licence related to processing will need to be updated if the throughput is increased.

The existing tailings dam has spare capacity.

Geology

The Ta Khoa Nickel District shows some analogy with world class Norilsk District. Middle to Late Permian age associated with extensive flood basalts. Intra-cratonic rift setting. Significant palladium, platinum, (rhodium?) mineralisation.

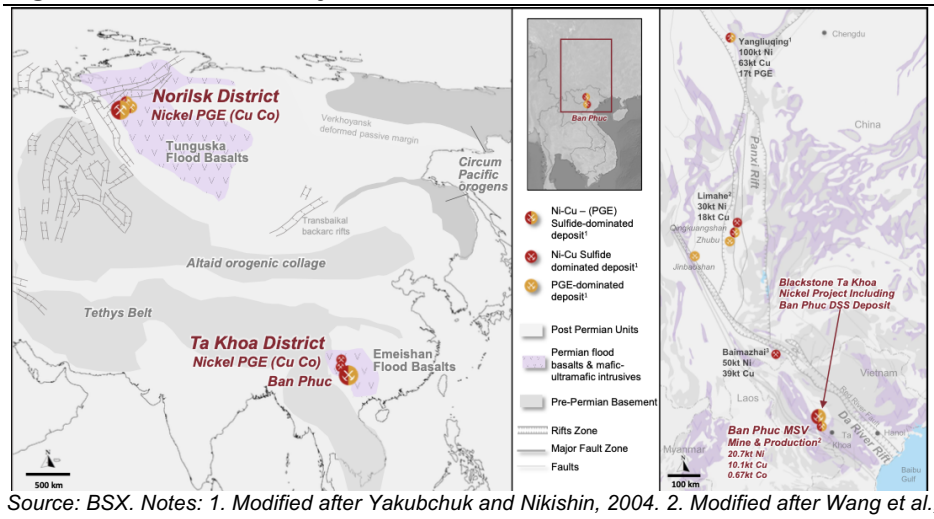
Deposits consist of a mix of massive sulphide veins (MSV) and disseminated sulphides (DSS)

BSX strategy is to pursue the exploration and development of both types of deposits:

DSS deposits provide the tonnage and the longevity of the operation

MSV deposits provide the grade, potential for an early restart with strong cash flow

Figure 4.2 – Ta Khoa Project Location



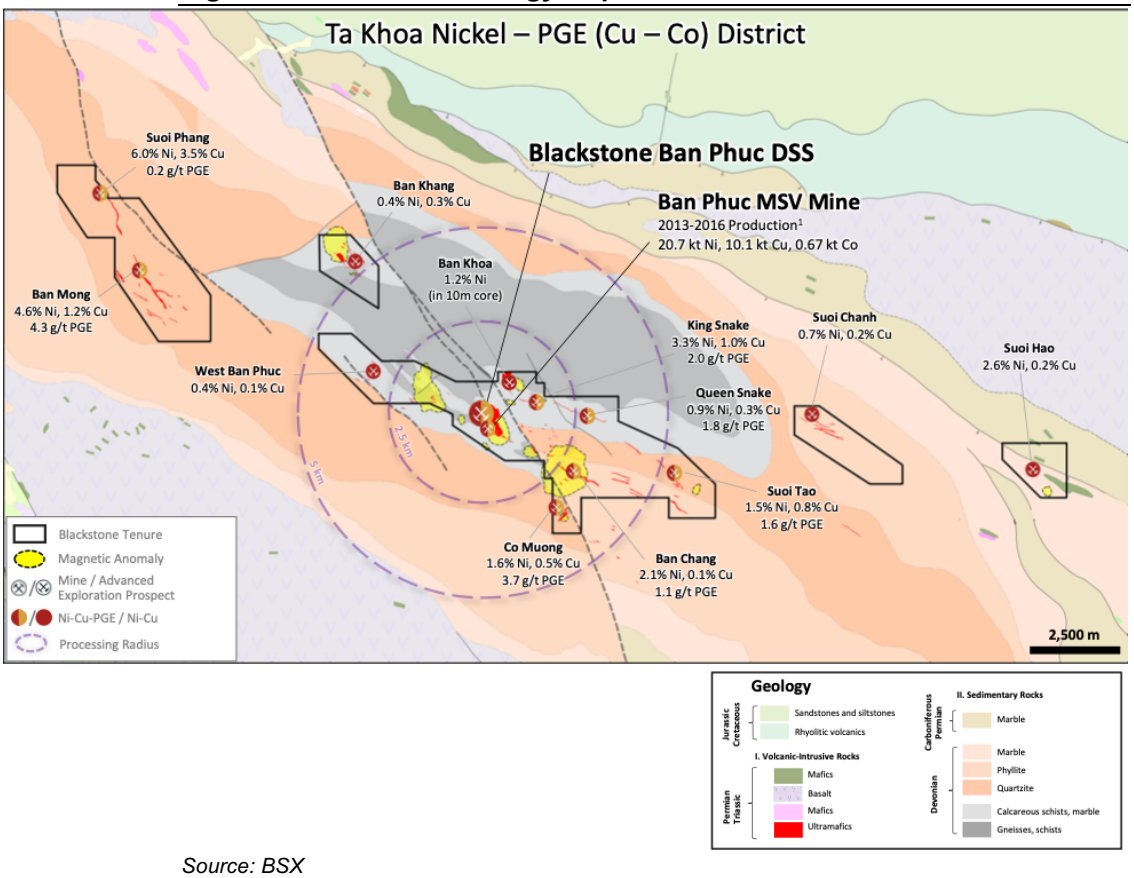
Source: BSX. Notes: 1. Modified after Yakubchuk and Nikishin, 2004. 2. Modified after Wang et al., 2018. 3. Earth Science Australia: http://earthsci.org/mineral/mindep/ma_sulp/ma_sulp.html

Deposits

Within the Ta Khoa Nickel – PGE – Cu – Co District, a number of deposits or prospects have been identified:

- Ban Phuc MSV Mine operated from 2013 to 2016, 20,700 t nickel produced as well as 10,100 t of copper and 670 t of cobalt in concentrates
- Ban Phuc/King Cobra Zone DSS deposit discovered and drilled over the last 12 months.

Figure 4.3 – Ta Khoa Geology Map



Source: BSX

Mineralisation

To simplify, the Ta Khoa presents two main types of nickel sulphide mineralisation:

- The massive sulphide veins (MSV) occurs in the major shear controlled veins. At Ban Phuc, previous owners mined 975kt of high-grade ore at average grades of 2.4% Ni & 1.0% Cu from an average vein width of 1.3m, producing 20.7kt Ni, 10.1kt Cu and 0.67kt Co
- The disseminated sulphides (DSS) are present within the Ban Phuc intrusive body with nickel grade typically ranging between 0.5% and 1.0% Ni.

Exploration Tools

The key exploration tools are mapping, ground electro-magnetic (EM) surveys, drilling and downhole electro-magnetic (DHEM) surveys.

Drilling

BSX currently owns three diamond drill rigs and an additional drill rig is contracted by the company.

5. DSS Development Scenario

Mineral Resources

The maiden Ban Phuc DSS indicated mineral resource stands at 44.3 Mt @ 0.52% Ni for 229,000 t Ni and the inferred mineral resources amounts to 14.3 Mt at 0.35% Ni for 50,000t Ni at a 0.40% at 0.3% Ni lower cut-off. The cut-off is similar to the ones used by BHP for the disseminated sulphide deposits at Leinster (0.40% Ni), Mt Keith (0.35% Ni to 0.40% Ni) and Yakabindie (0.35% Ni).

Mining Inventory

To convert the DSS mineral resource to a mining inventory, we have considered that the indicated mineral resource tonnage (44 mt) converts to mining inventory as well as 4 mt out of the 14 mt of inferred mineral resource and diluted the grade by 5%: 48 million tonnes at 0.49% Ni.

Mining Scenario

The Ban Phuc deposit is a large, near-surface disseminated nickel sulfide orebody amenable to bulk open pit mining with a pre-strip requirement of approximately 25 Mt and a life of mine strip ration of 6.1:1.

Throughput and Mine Life

From the 4 mtpa and 6 mtpa options evaluated in the scoping study, we have to retain the 6 mtpa, as the 4 mtpa would deliver only 147,500 dmt of concentrate at a grade of 8% Ni as targeted in the scoping study (page 53). At 6 mtpa capacity, the DSS treatment plant should deliver 217,500 t of concentrate at 8% Ni.

Note BSX could possibly treat lower grade nickel sulphide ore.

Given the mining inventory of 48 Mt and a processing rate of 6 mtpa, the resulting modelled mine life is 8 years.

Metallurgical Recovery

DSS mineralisation does not perform as well in terms of metallurgical recovery. For example, BHP reports a metallurgical recovery of 64% for the Mt Keith deposit and concentrator and 63% for Yakabindie, based on metallurgical test work. In comparison the recoveries observed at Cliffs, Leinster UG and Venus are 83%, 88% and 89% respectively.

We assumed a metallurgical loss of 0.20% Ni, resulting in a recovery of 59% for the Ta Khoa project at 6 Mtpa.

For the sake of simplification and considering the level of approximation of the financial modelling, the other metals, cobalt, copper and PGE are ignored in the model. Instead an overall increase of the NPV by 15% has been assumed to take into consideration the contribution of those metals.

Concentrate Grade and Payability

A concentrate grade of 8% Ni was assumed as targeted in the scoping study, with a payability of 100% considering the concentrate is aimed to be fed to the DBU refinery in its entirety.

Capital Costs

For the 6 mtpa mine and processing plant, the capital cost estimate is US$247.1 million (US$356m - US$108.9m for the downstream refinery) as per the scoping study.

Operating Costs

The operating costs are summarised in Table 5.1 below.

Table 5.1 – Operating Costs Assumptions

Cost	Unit	Value	Notes
Open it mining cost	US$/t mined	2.0	
Open it mining cost	US$/t ore	13.4	
Processing cost	US$/t ore	11.9	
Other cost (G&A, royalties, etc)	US$/t processed	3.1	

Source: BSX, Evolution Capital Advisors estimates

Corporate Tax

Vietnam applies a corporate tax rate of 20%, which we apply for the UBU. Contrary to the refinery, we did not assume that the future operation should also benefit from a 4-year tax holiday from re-start and a tax rate of only 5% for the first 10 years.

6. Restart of 450ktpa Concentrator with MSV

In this section, we assumed a restart of the existing 450,000 tpa plant using the massive sulphide deposits recently discovered at Ban Chang.

Mineral Resources

Considering the recent drilling success at Ban Chang MSV, a mineral resource similar to the one delineated at Ban Phuc pre-production has been assumed.

Mining Inventory

For Ban Chang (MSV), we assumed a mining inventory equivalent to the ore reserve estimated for Ban Phuc pre-production. See Table 6.1.

For the MSV, we assumed a mining inventory equivalent to the ore reserve estimated for Ban Phuc pre-production.

Table 6.1 – Ore Reserve – Ban Phuc Deposit Pre-Production

Category	Tonnes	% Ni	% Cu	%Co
Proven	0.71 Mt	2.40	1.0	0.06
Probable	0.90 Mt	2.10	1.0	0.04
Total	1.6 Mt	2.20	1.0	0.05

Source: Asian Mineral Resources Ltd

Mining Scenario

The MSV mineralisation will be mined underground. We assumed an capital expenditure of US$20 million to setup an underground mine at Ban Chang. The initial capital cost to setup the Ban Phuc mine was estimated at US$6.2 million in 2013.

Throughput

The plant throughput remains unchanged. Nevertheless, we assumed US$20 million capex for possible refurbishments.

Metallurgical Recovery

A metallurgical recovery of 89% has been assumed.

Operating Costs

The operating costs are summarised in Table 6.2 below.

Table 6.2 – Operating Costs Assumptions

Cost	Unit	Value	Notes
Underground mining cost	US$/t mined	49.0	Actual from Ban Phuc
Processing cost	US$/t processed	27.0	Actual from Ban Phuc
Other cost (G&A, royalties, etc)	US$/t processed	10.0	Actual from Ban Phuc

Source: BSX, Evolution Capital Advisors estimates

7. Directors & Management Team

Hamish Halliday, Chairman

Qualifications: BSc (Geology), MAusIMM

Geologist with over 20 years' corporate and technical experience, founder of Adamus Resources Limited, a A$3M float which became a multi-million ounce emerging gold producer.

Scott Williamson, Managing Director

Qualifications: BEng (Mining), BCom, MAusIMM

Mining Engineer with a Commerce degree from the West Australian School of Mines and Curtin University, over 10 years' experience in technical and corporate roles in the mining and finance sectors.

Andrew Radonjic, Non-Executive Director

Qualifications: BAppSc (Mining Geology), MSc (Mineral Economics), MAusIMM

Mine Geologist and Mineral Economist with over 25 years' experience with a focus on gold and nickel exploration, instrumental in three significant gold discoveries north of Kalgoorlie, Executive Director of Venture Minerals Limited and co-lead the discovery of the Mount Lindsay Tin-Tungsten-Magnetite deposits.

Alison Gaines, Non-Executive Director

Qualifications: BSc Law, BSc Arts, Grad.Dip. Legal Practice, FAICD

Alison has over 20 years of experience as a director in Australia and internationally. She has experience in the roles of Board Chair and board committee chair, particularly remuneration and nomination and governance committees. Alison is the Managing Director of Gaines Advisory P/L and was recently global CEO of international search and board consulting firm Gerard Daniels, with a significant mining and energy practice.

She currently holds positions as the Governor of the College of Law Ltd and Non-Executive Director of Tura New Music Ltd.

Hoirim Jung, Non-Executive Director

Qualifications: BEcon

Mr Jung has almost a decade of financial management experience, specifically in financing and feasibility studies for new projects. He began his career with KPMG Samjong Accounting Corporation, one of Korea's 'big four' accounting firms, providing advisory services for various M&A transactions. He then moved to Atinum Partners, where he was involved with investments in the oil and gas industry and managed the invested assets in North America.

In 2016, he joined EcoPro where his accomplishments include the securing of finance for precursor business from foreign investors, as well as successfully dealing with the initial public offering of subsidiary EcoPro BM (KOSDAQ: 247540). Mr Jung's skill set includes corporate strategy, capital raises, and business development. He holds a Bachelor of Economics from Seoul National University, and has a qualification with the Korean Institute of Certified Public Accountants (KICPA).

Jamie Byrde, CFO and Company Secretary

Qualifications: BCom, CA

Chartered Accountant with over 14 years' experience in accounting, company secretarial and corporate advisory roles specialising in Financial Accounting and Reporting and Corporate Governance, currently the Company Secretary for Venture Minerals Limited and Alicanto Minerals Limited.

Dr Stuart Owen, Exploration Manager

Qualifications: BSc (Geology), PhD (Geology), MAIG

Bsc & PhD in Geology with over 20 years' experience in mineral exploration, Senior Geologist in the team that discovered the Paulsens Mine (+1Moz) and as an Exploration Manager at Adamus discovered the Southern Ashanti Gold deposits (+2Moz) and at Venture discovered the Mt Lindsay Tin-Tungsten-Magnetite deposits.

8. Investment Risks

BSX is exposed to a number of risks including:

- **Geological risk**: the actual characteristics of an ore deposit may differ significantly from initial interpretations.
- **Resource risk:** all resource estimates are expressions of judgement based on knowledge, experience and industry practice. Estimates, which were valid when originally calculated may alter significantly when new information or techniques become available. In addition, by their very nature, resource estimates are imprecise and depend to some extent on interpretations, which may prove to be inaccurate.
- **Supply risk:** the downstream refinery will critically rely on third-party concentrates to complement the tonnage and lift the grade of the Ban Phuc internal feed. Factors such as supply and demand, specifications and price could affect the operation and financial parameters of the overall business.
- **Commodity price risk:** the primary cost of the downstream refinery is the purchase of third-party nickel-cobalt concentrates exposing the cost to metal price risk. The price of nickel and other metals fluctuate and are affected by many factors beyond the control of BSX. Such factors include supply and demand fluctuations, technological advancements and macro-economic factors.
- **Exchange Rate risk:** BSX revenues and costs derived from the sale and purchase of metal products exposes the potential income and costs to exchange rate risk. International prices of nickel, cobalt, manganese as well most of the costs base are denominated in United States dollars, whereas the financial reporting currency of BSX is the Australian dollar, exposing the company to the fluctuations and volatility of the rate of exchange between the USD and the AUD as determined by international markets**.**
- **Mining risk:** A reduction in mine production would result in reduced revenue.
- **Processing risks:** A reduction in plant throughput would result in reduced revenue. In all processing plants, some metal is lost

rather than reporting to the valuable product. If the recovery of metal is less than forecast, then revenue will be reduced.

- **Operational cost risk:** an increase in operating costs will reduce the profitability and free cash generation of the project.
- **Management and labour risk**: an experienced and skilled management team is essential to the successful development and operation of mining projects.

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