



BLACKSTONE
MINERALS

Looking forward. Mining green.

BSX NICKEL DAY

ASX:BSX

July 2021



CAUTIONARY & FORWARD LOOKING STATEMENT



The PFS referred to in this Presentation is the study of the potential viability of the Ta Khoa Refinery Project. It has been undertaken to understand the technical and economic viability of the TKR.

The Company has concluded that it has a reasonable basis for providing the forward looking statements included in this announcement. The reasons for this conclusion are outlined throughout this announcement. However, the assumptions and results of the PFS set out above and elsewhere in this announcement (“PFS Parameters”) have been developed through feasibility work completed to the level of AACE/AusIMM Class 4 (+/-25% accuracy) and the use of macroeconomic assumptions. For the avoidance of doubt, investors are advised that the PFS Parameters do not constitute a production forecast or a target in relation any mineral resources associated with wit the Company. The Company wishes to expressly clarify that the PFS Parameters are based on the expected grade of nickel, cobalt and copper that is reliant upon 3PF for which there is currently no supply agreement. The PFS Parameters have been disclosed by Blackstone to provide investors with an intended scale and nature of the Project.

The PFS referred to in this announcement has been undertaken to assess the technical and financial viability of the Project. Further evaluation work, including a Definitive Feasibility Study (“DFS”) is required before the Company will be in a position to provide any assurance of an economic development case. The PFS is based on material assumptions set out in Section 1.13 of the Executive Summary in this announcement. These include assumptions about the availability of funding and the pricing received for the Ta Khoa Refinery Project products. While the Company consider all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by this PFS will be achieved. To achieve the outcomes in this PFS, the pre-production capital (including contingency) of US\$491m, additional capital for pre-commitment activities such as a DFS, pilot plant development and working capital is likely to be required.

Investors should note that there is no certainty that the Company will be able to raise this amount of funding required when needed. It is also possible that such funding will only be available via equity funding which may have a dilutive effect on the Company’s share value. The Company may also pursue other strategies in order to realise the value of the Ta Khoa Refinery Project, such as a sale, partial sale or joint venture of the Ta Khoa Refinery Project. If this occurs, this could materially reduce the Company’s proportionate share of ownership of the Ta Khoa Refinery Project. Accordingly, given the uncertainties involved, investors should not make any investment decisions based solely on the results of the PFS.

This report contains certain forward-looking statements. The words "expect", "forecast", "should", "projected", "could", "may", "predict", "plan", “will” and other similar expressions are intended to identify forward looking statements. Indications of, and guidance on, future earnings, cash flow costs and financial position and performance are also forward-looking statements. Forward looking statements, opinions and estimates included in this announcement are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. Forward looking statements may be affected by a range of variables that could cause actual results or trends to differ materially. These variations, if materially adverse, may affect the timing or the feasibility of the development of the Ta Khoa Nickel Project.

The project development schedule assumes the completion for the Downstream Business Unit of a Definitive Feasibility Study (DFS) by mid-2022. A PFS & DFS for the Upstream Business Unit is assumed to be completed in 2021 and 2022 respectively. Development approvals and investment permits will be sought from the relevant Vietnamese authorities concurrent to studies being completed. Delays in any one of these key activities could result in a delay to the commencement of construction (planned for early 2023). This could lead on to a delay to first production, currently planned for 2024. It is expected that the Company’s stakeholder and community engagement programs will reduce the risk of project delays. Please note these dates are indicative only.

The JORC-compliant Mineral Resource estimate forms the basis for the Scoping Study in the market announcement dated 14 October 2020. Over the life of mine considered in the Scoping Study, 83% of the processed Mineral Resource originates from Indicated Mineral Resources and 17% from Inferred Mineral Resources; 76% of the processed Mineral Resource during the payback period will be from Indicated Mineral Resources. The viability of the development scenario envisaged in the Scoping Study therefore does not depend on Inferred Mineral Resources. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realised. The Inferred Mineral Resources are not the determining factors in project viability. Please refer to the Cautionary Statement in the Scoping Study market announcement dated 14 October 2020.

SESSION 1 – COMPANY UPDATE & EXPLORATION



Scott Williamson

Managing Director

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



Stuart Owen

Head of Exploration

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.

INVESTMENT THESIS



Exposure to rapidly intensifying green electrification movement

- Blackstone provides excellent exposure to the growing electric vehicle and Li-ion battery thematic
- Once in a generation opportunity to position for the movement towards high nickel content cathodes needed for the EV revolution



District scale nickel sulfide opportunity, significant existing infrastructure and competitive operating advantages

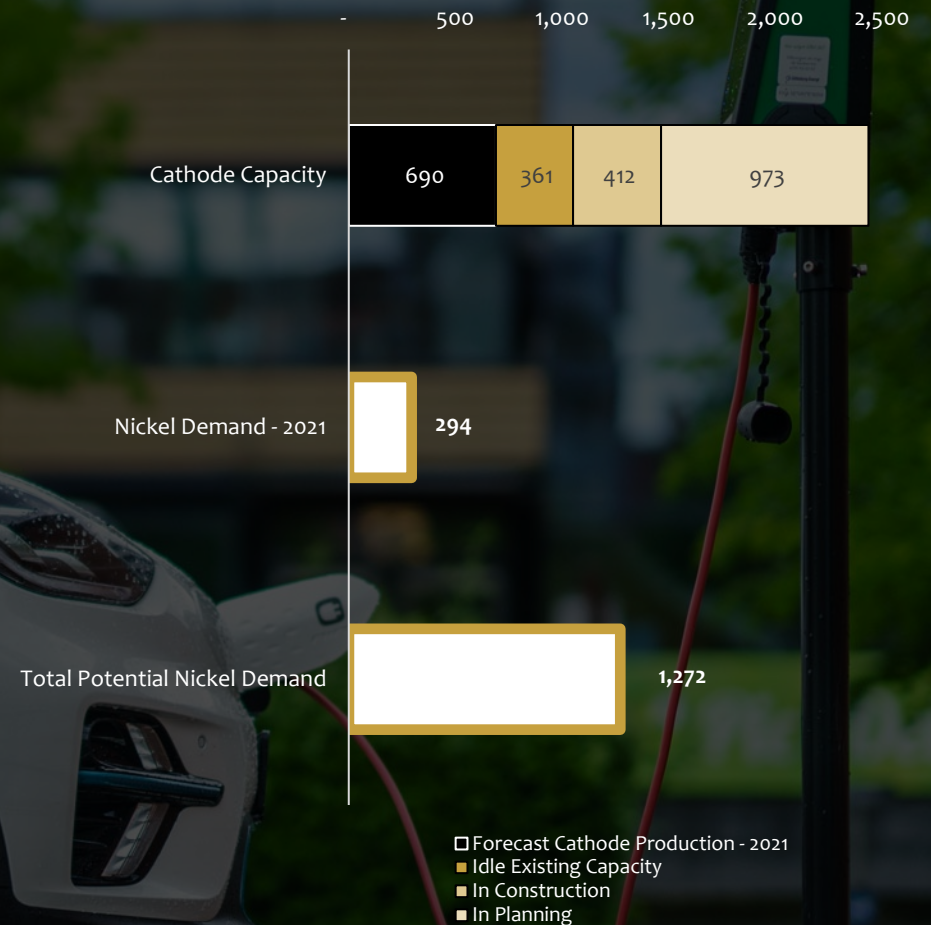
- Flagship Ta Khoa mine in Northern Vietnam has up to 25 massive sulfide vein (MSV) and disseminated sulfide (DSS) targets
- Attractive product pricing, low-risk investment jurisdiction, abundant access to renewable hydro power and low labor costs



Scalable and modular, globally relevant downstream refinery

- Blackstone's intention is to collaborate with Tier 1 partners to unlock the value of its expanded downstream refinery strategy, initially in Vietnam with future potential to enact a global strategy

Cathode Production Capacity* (kt) vs Nickel Demand (kt)



Source: Benchmark Minerals Intelligence
 *Cathodes with nickel-based chemistries as at June 2021

CORPORATE SNAPSHOT

BLACKSTONE MINERALS LIMITED

ASX Code	BSX
OTCQX Code	BLSTF
Shares on Issue	331.8m
Last Share Price (23 July 2021)	\$0.455
Market Capitalisation	A\$151m
Cash at 30 June 21	~A\$14m
Options	14m
3-month Avg Daily Vol. (shares)	0.5m

KEY SHAREHOLDERS

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

BOARD OF DIRECTORS

Scott Williamson



Managing Director

Hamish Halliday



Non-Executive Chairman

Andrew Radonjic



Non-Executive Director

Alison Gaines

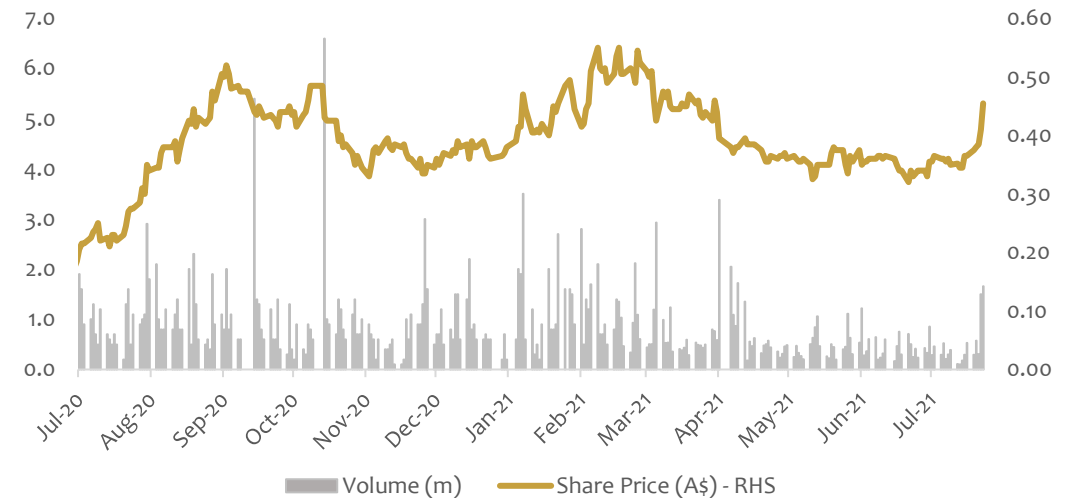


Non-Executive Director

Hoirim Jung

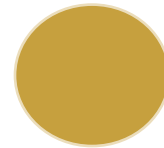


Non-Executive Director

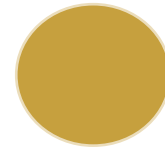


BLACKSTONE MISSION AND VALUES

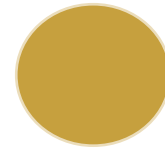
“Blackstone Minerals is a passionate leader in the battery revolution. We enable green solutions from mine to consumer”



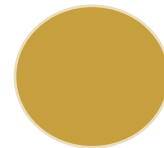
AGILITY



UNITY



TRANSPARENCY



INTEGRITY

Our ESG priorities:

Environmental Sustainability

- Work towards a Net-Zero operation through electrified operations and renewable power sources
- Responsible water, and waste and materials reuse and management
- Biodiversity protection and rehabilitation

Social Performance

- Transparent resettlement options to minimise disruptions to livelihoods
- Safety Culture
- Community employment pathways
- Employee engagement and development
- Economic opportunities and capacity building for local suppliers

Good Governance

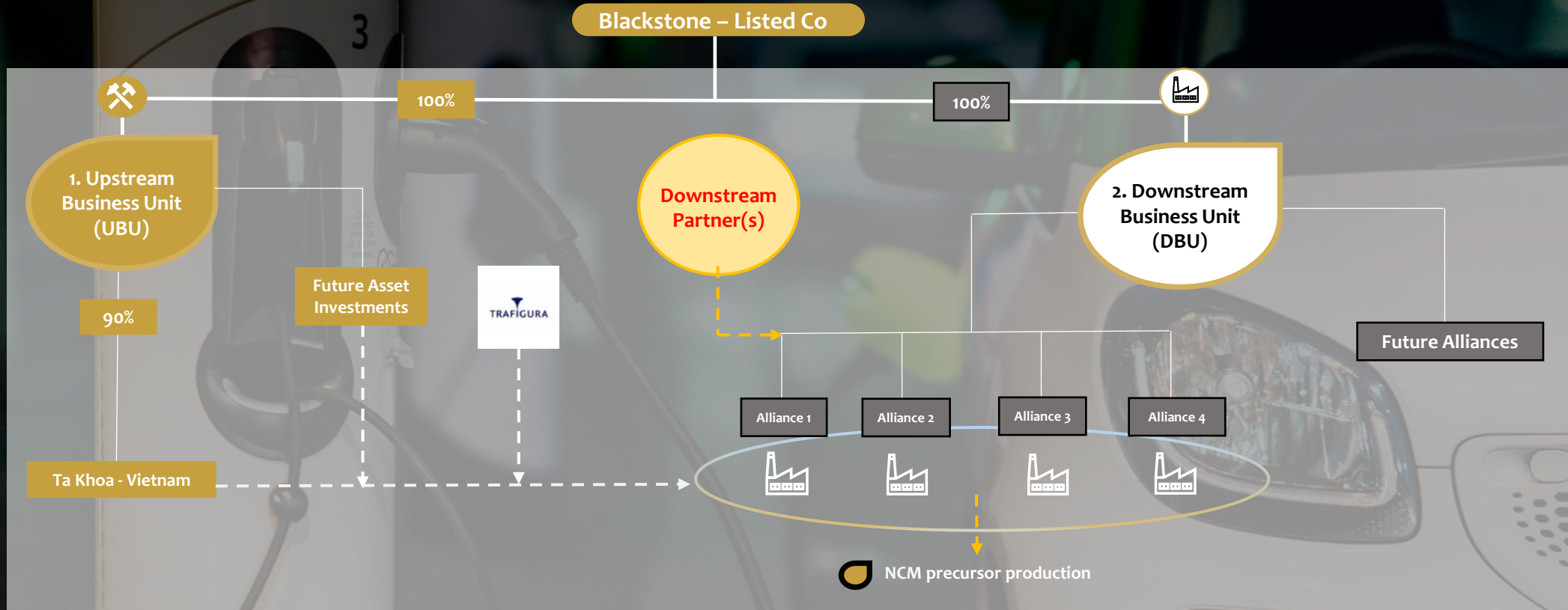
- Transparency and business ethics
- Diversity across our offices and operations
- Human Rights due diligence and compliance
- Grievance mechanisms for employees, suppliers, community and other stakeholders

KEY ESG action areas next 6-12 months

- 1** *Publish inaugural Sustainability Report*
- 2** *Develop and implement ESG strategy and measurement indicators*
- 3** *Commence Taskforce for Climate-related Financial Disclosures Pathway (gap analysis and benchmarking)*

BLACKSTONE BUSINESS MODEL

INTEGRATED UPSTREAM & DOWNSTREAM BUSINESS UNITS



TIMELINE

UPSTREAM BUSINESS MILESTONES

Blackstone continues to aggressively drill several high confidence exploration targets within the Ta Khoa district.

MSV & DSS
Resource
Delineation

PFS

DFS

Restart
Mining &
Existing
Concentrator

Commercial
Production

2021 H1 - 2021 H2

2022

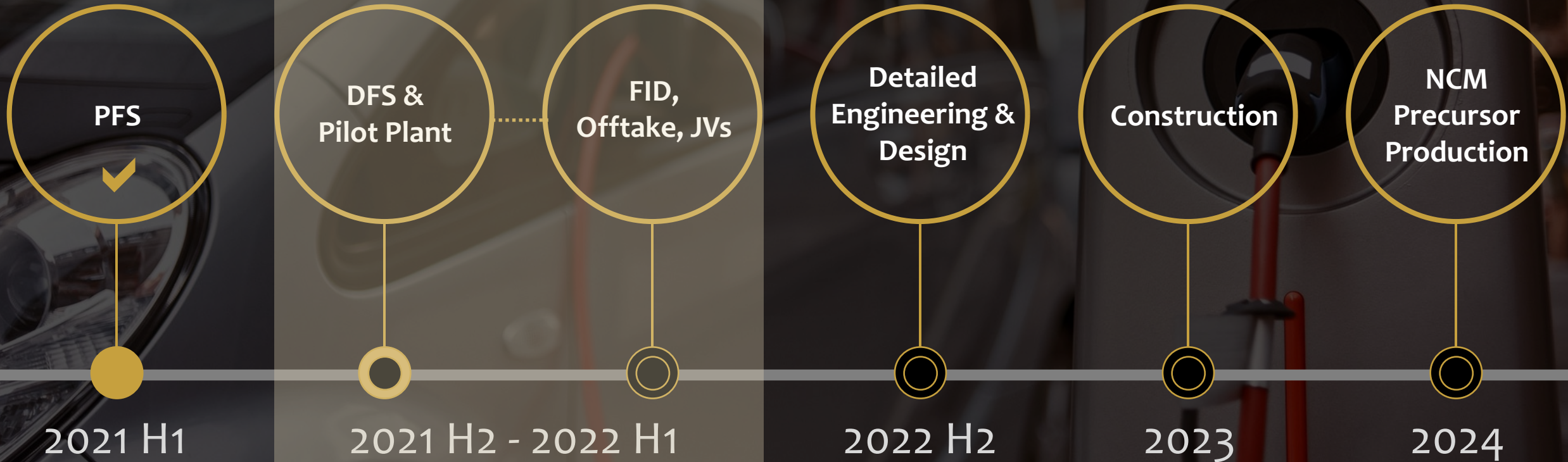
2023

2024

TIMELINE

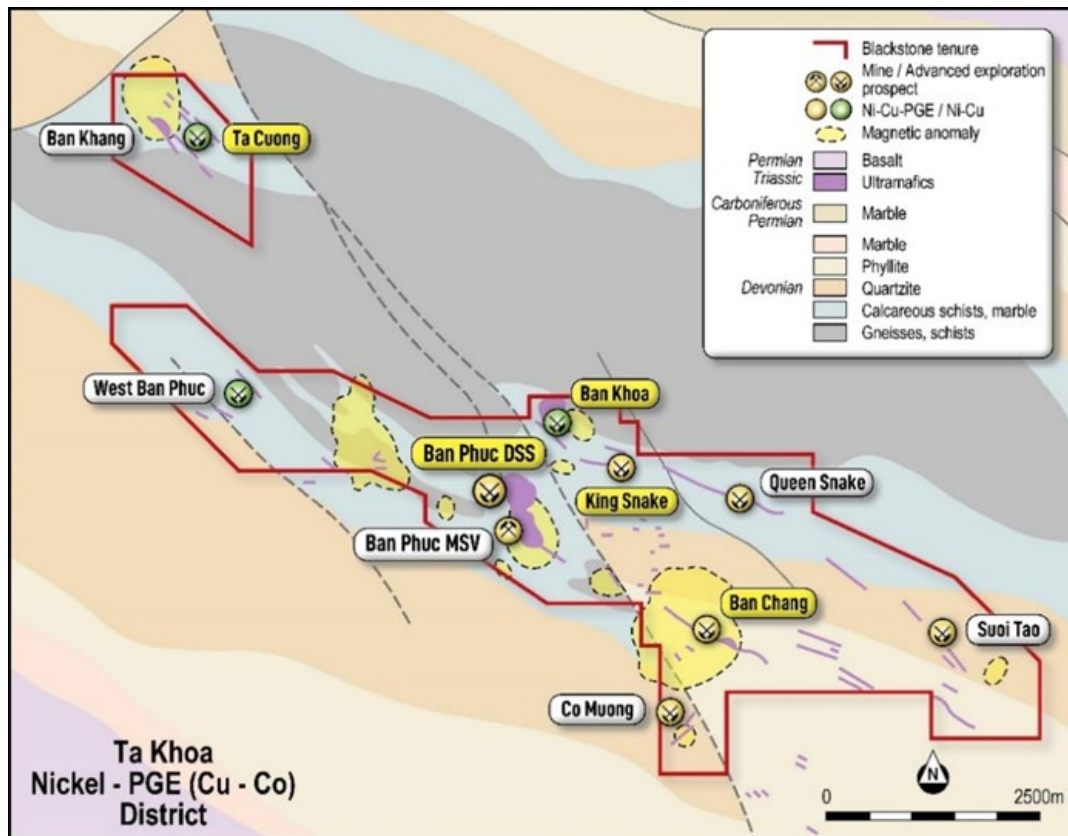
DOWNSTREAM BUSINESS MILESTONES

Over the next 12 months Blackstone will increase confidence in the Ta Khoa Refinery by progressing a DFS and proceeding to build a pilot plant in Northern Vietnam. Blackstone is inviting interested parties to collaborate during this phase.



DISTRICT SCALE NICKEL SULFIDE OPPORTUNITY – TA KHOA PROJECT

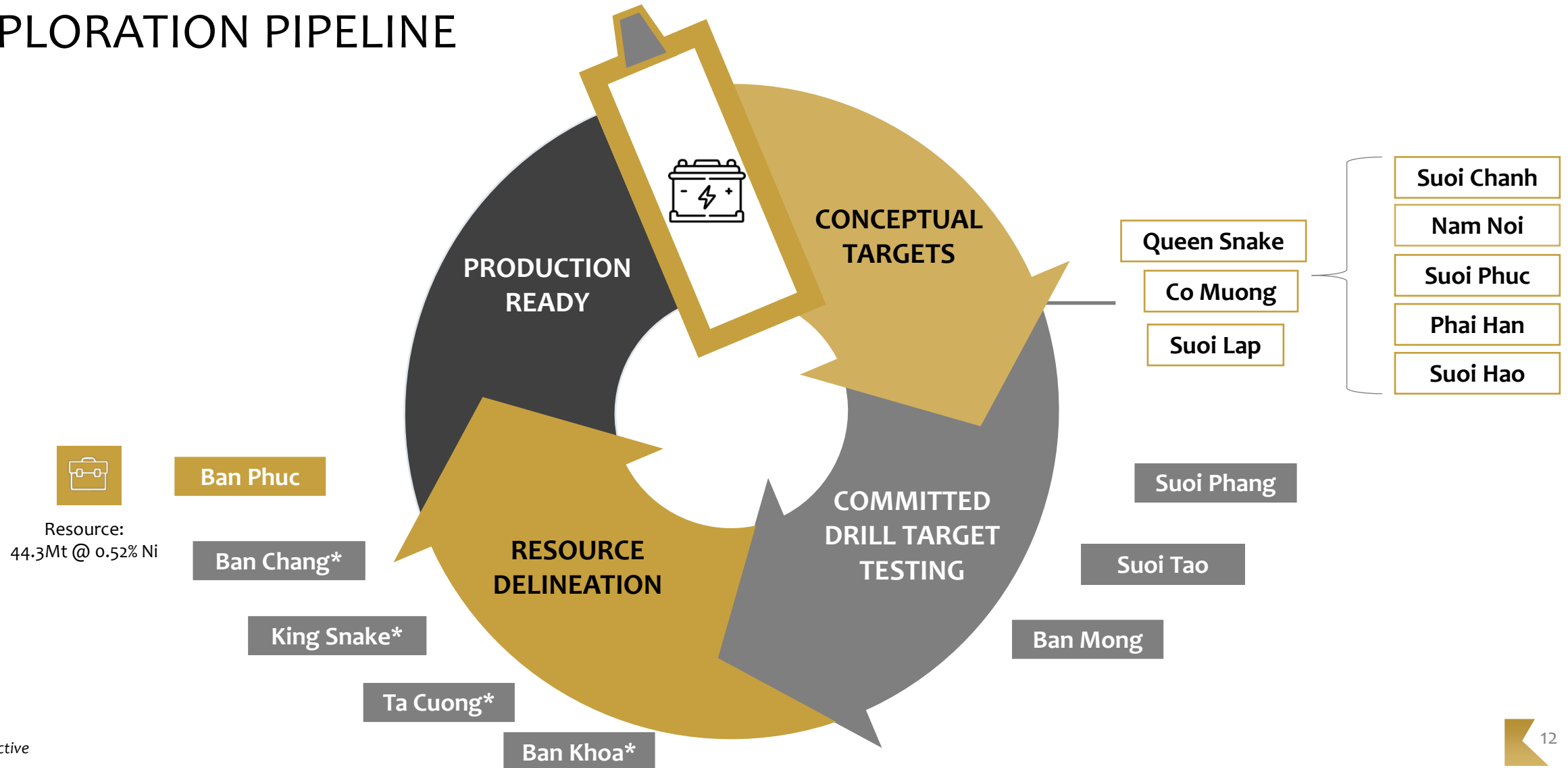
AGGRESSIVE EXPLORATION TARGETING HIGH GRADE MSV & DSS MINE LIFE EXTENSIONS



- District scale Nickel PGE (Cu Co) green nickel™ sulfide project
- Limited regional exploration
- Target identification and prioritisation within a 5km of existing Ban Phuc 450ktpa concentrator
 - Modern geophysical methods
- Blackstone has defined a maiden resource for the Ban Phuc DSS deposit, a bulk-mining proposition
- A number of advanced stage MSV targets and a number of large bulk-tonnage DSS prospects
 - Ban Chang infill drilling for resource estimation is at an advanced stage
 - Immediate success at King Snake being followed up aggressively, mineralisation open down dip and down plunge
 - Potential DSS mine life extensions are being investigated, Ban Khoa being the highest priority

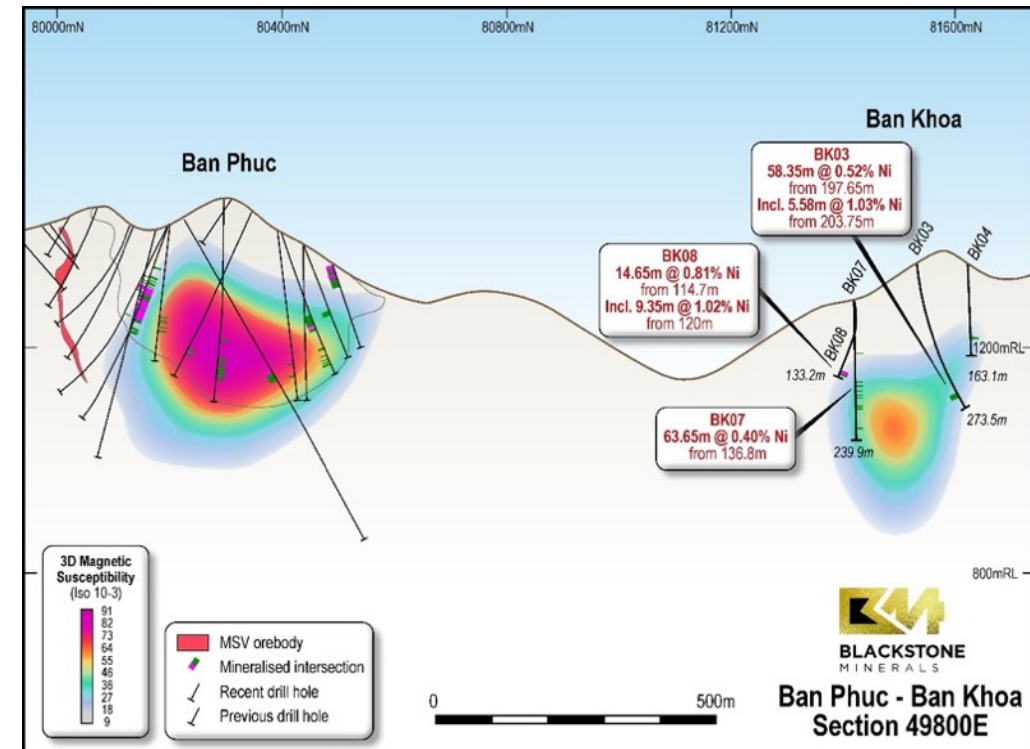
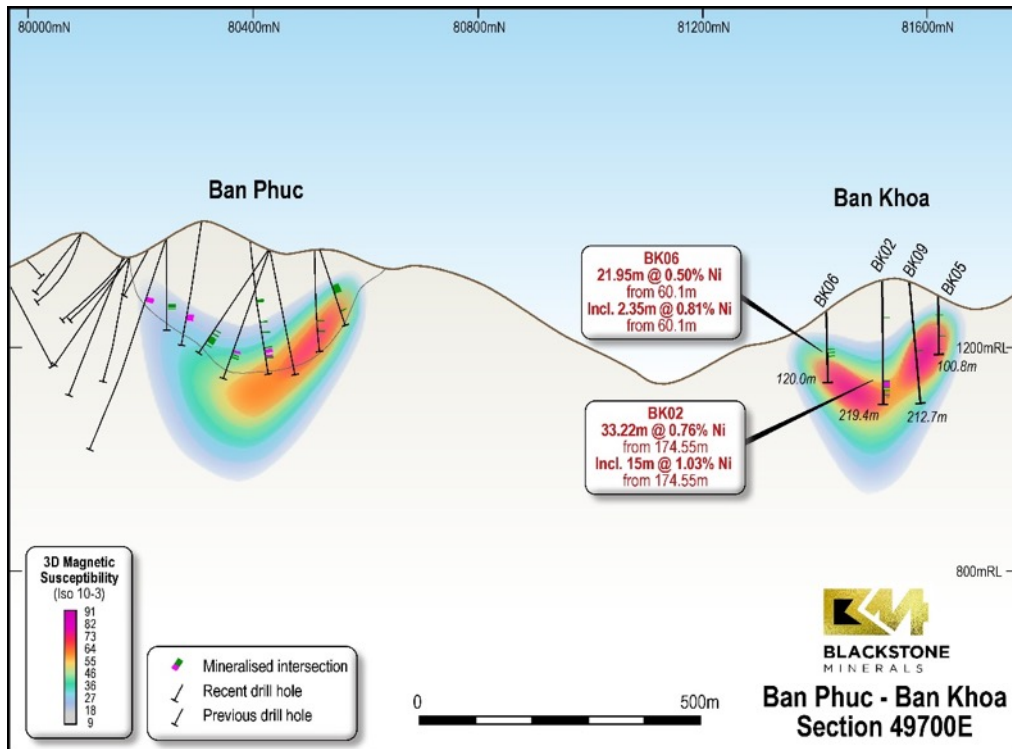
DISTRICT SCALE NICKEL SULFIDE OPPORTUNITY – TA KHOA PROJECT

EXPLORATION PIPELINE



DISTRICT SCALE NICKEL SULFIDE OPPORTUNITY – TA KHOA PROJECT

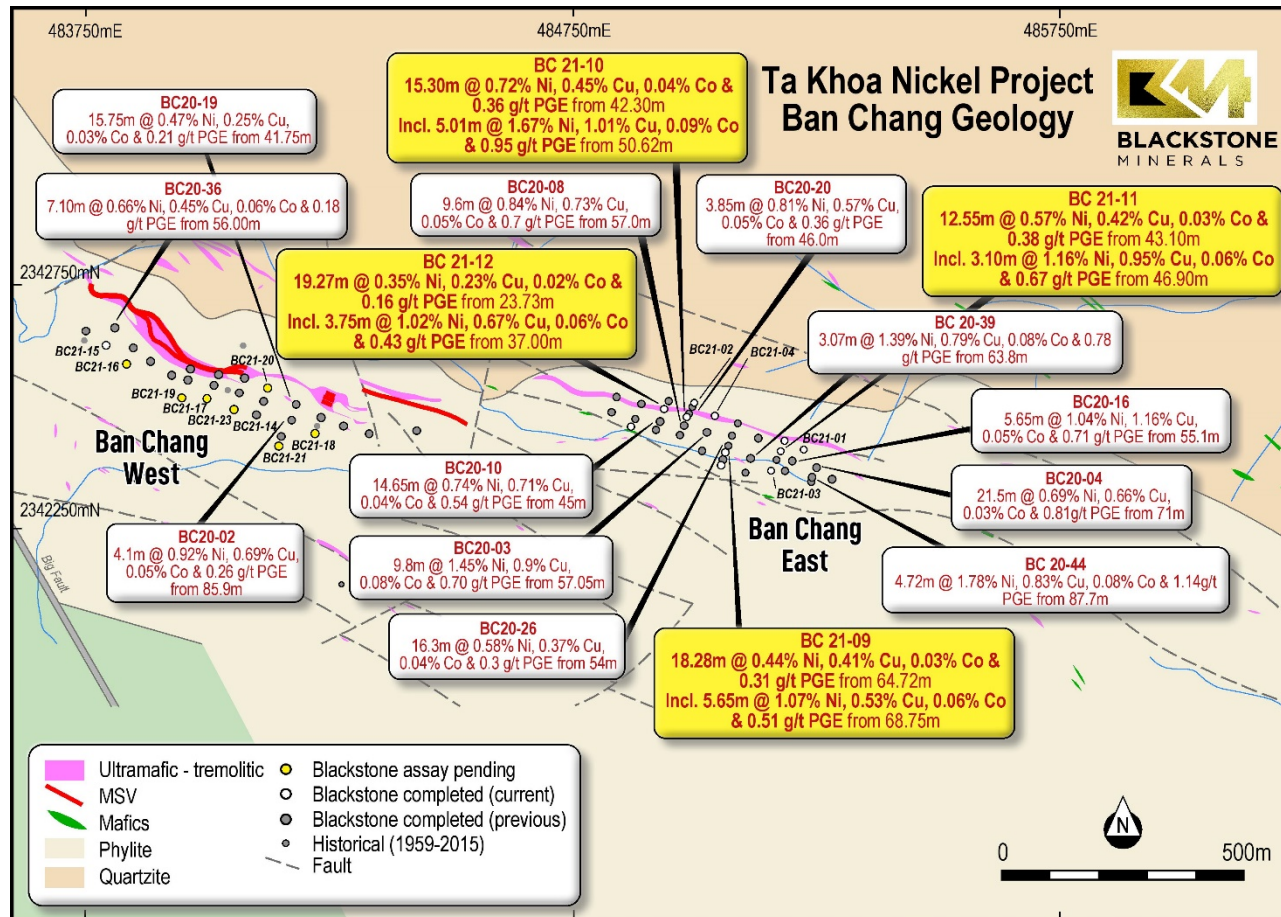
BAN KHOA HAS POTENTIAL TO ADD SIGNIFICANT MINE LIFE



- The Ban Khoa prospect is analogous to the Ban Phuc DSS orebody
- Blackstone has commenced drilling to delineate DSS resources at Ban Khoa

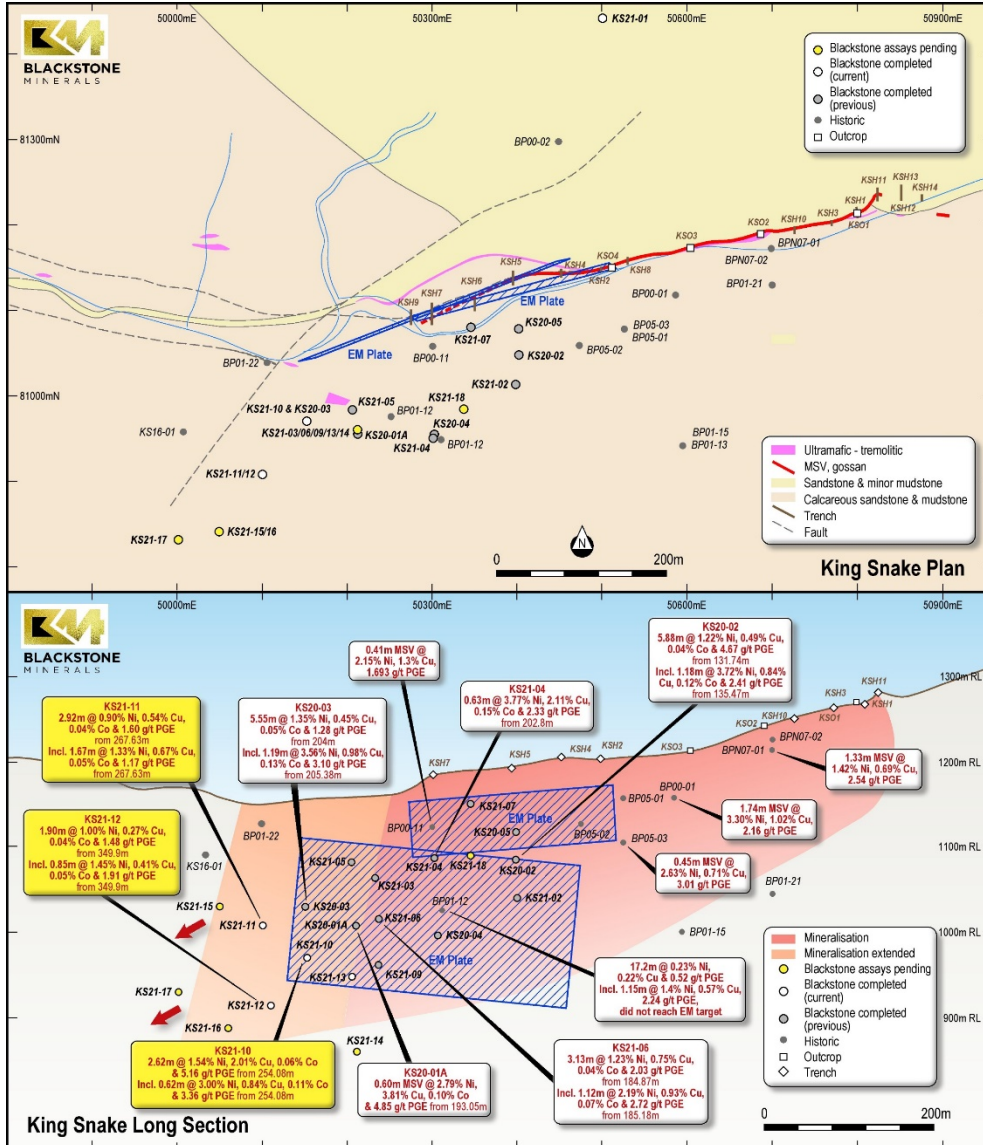
DISTRICT SCALE NICKEL SULFIDE OPPORTUNITY – TA KHOA PROJECT

MAIDEN RESOURCE AT BAN CHANG (MSV) EXPECTED IN 2021 Q3



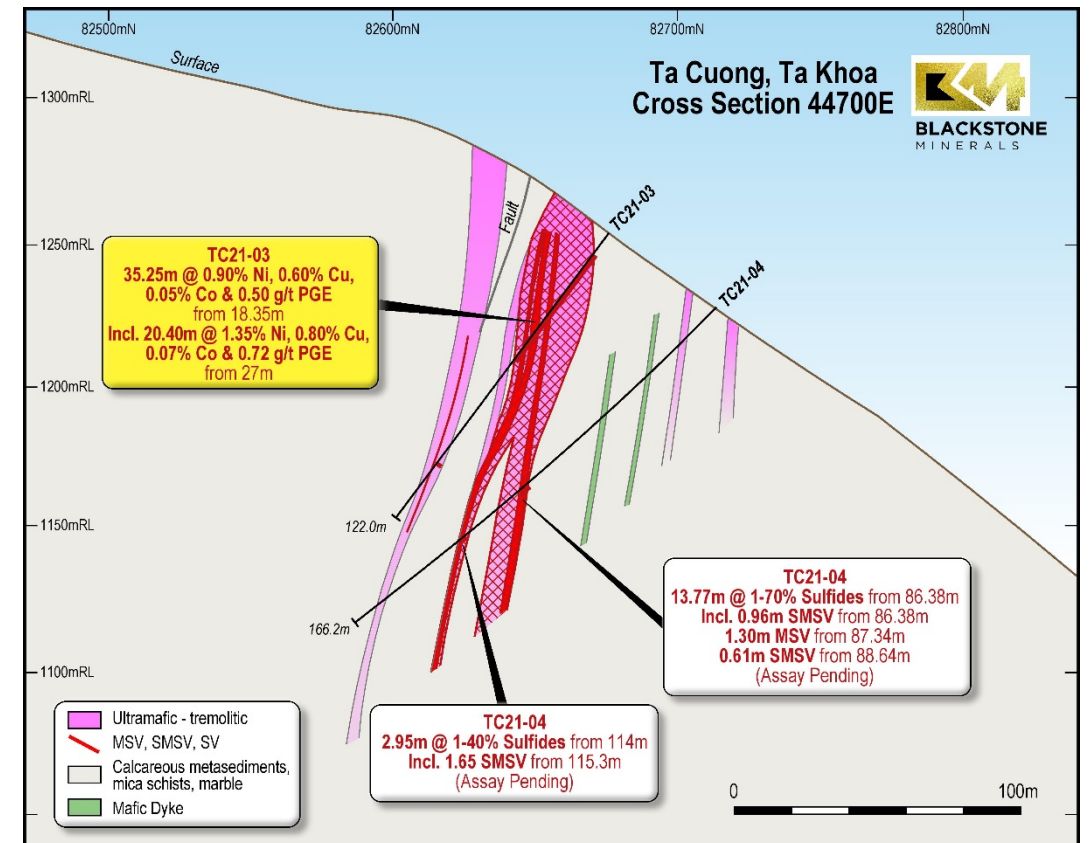
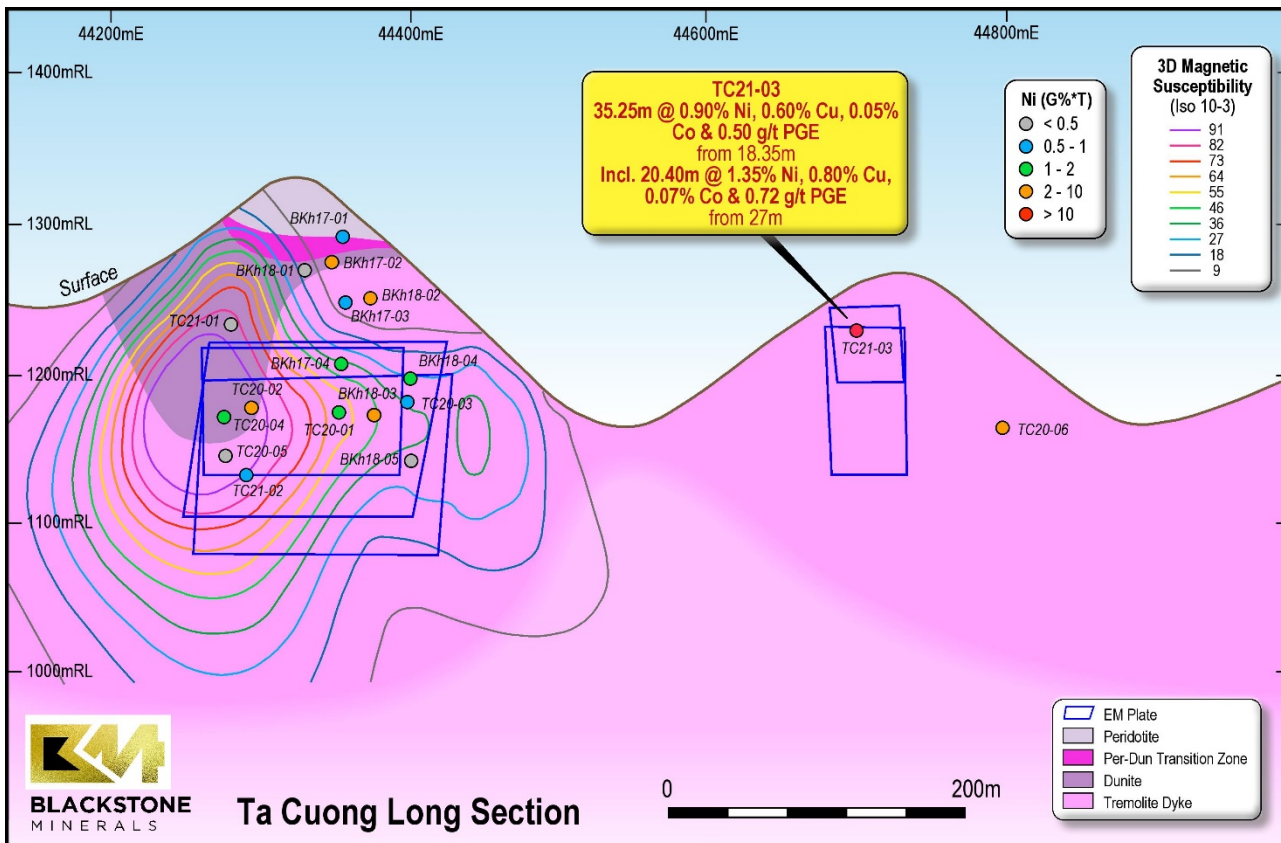
DISTRICT SCALE NICKEL SULFIDE OPPORTUNITY – TA KHOA PROJECT

DRILLING OF NEW EM CONDUCTORS AT KING SNAKE IS INTERSECTING MASSIVE Ni SULFIDES - RESULTS INDICATE SYSTEM IS OPEN DOWN PLUNGE AND DOWN DIP



DISTRICT SCALE NICKEL SULFIDE OPPORTUNITY – TA KHOA PROJECT

TAIPAN (TA CUONG) DISCOVERY HOLE INTERSECTS 20.4m @ 1.35% Ni



SESSION 2 – DOWNSTREAM PFS UPDATE



Andrew Strickland

**Head of Project
Development**

Mr Strickland is an experienced Study and Project Manager, a Fellow of the Australian Institute of Mining and Metallurgy, University of WA MBA graduate, with undergraduate degrees in Chemical Engineering and Extractive Metallurgy from Curtin and WASM.

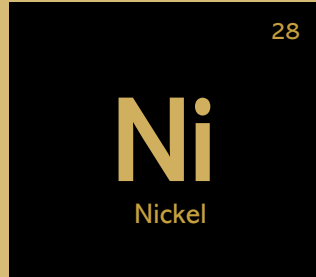


Tony Tang

**General Manager Project
Development (Downstream)**

BSc Chemical and Metallurgy, a chartered professional member of FAusIMM (CP), with over 25 years experience in the resources sector. Mr Tang's experience spans laboratories, operations, engineering consultancies – projects development, studies, EPC, EPCM, sustaining capitals and commissioning.

DOWNSTREAM PRE-FEASIBILITY STUDY HIGHLIGHTS



43.5ktpa

Globally significant refined annual nickel output



85.6ktpa

Production of premium NCM811 Precursor for the Li-ion battery industry



US\$451m

Average annual operating cash flow



US\$2.01bn

Post-tax NPV based on a 10 year life-of-operation



Post-tax IRR of 67%

Superior margins drive strong returns on invested capital



Low Capital Intensity

US\$491m project capital paid back in 1.5 yrs

TA KHOA REFINERY

STUDY TEAM

Contributor	Scope
ALS	Upstream metallurgical testwork and sample preparation
Ban Phuc Nickel Mines	Vietnamese salary expectations Local contractor pricing and consumables rates Project permitting planning
Blackstone Minerals	Strategic Planning Operational readiness and implementation planning
ERM	Environmental baseline study planning and recommendations
Fremantle Metallurgy	All dynamic thickening testwork for solid liquid separation
Optimize Group	Project infrastructure design, implementation planning
Simulus Engineers	Refinery process design and plant engineering, CAPEX and OPEX estimating, project development schedule, risk
Simulus Laboratories	Refinery metallurgy testwork
Trafigura	Provision of third party feed samples

PRE-FEASIBILITY STUDY HIGHLIGHTS CONT'D

TECHNICALLY AND ECONOMICALLY ROBUST DOWNSTREAM REFINERY

OPERATIONAL HIGHLIGHTS

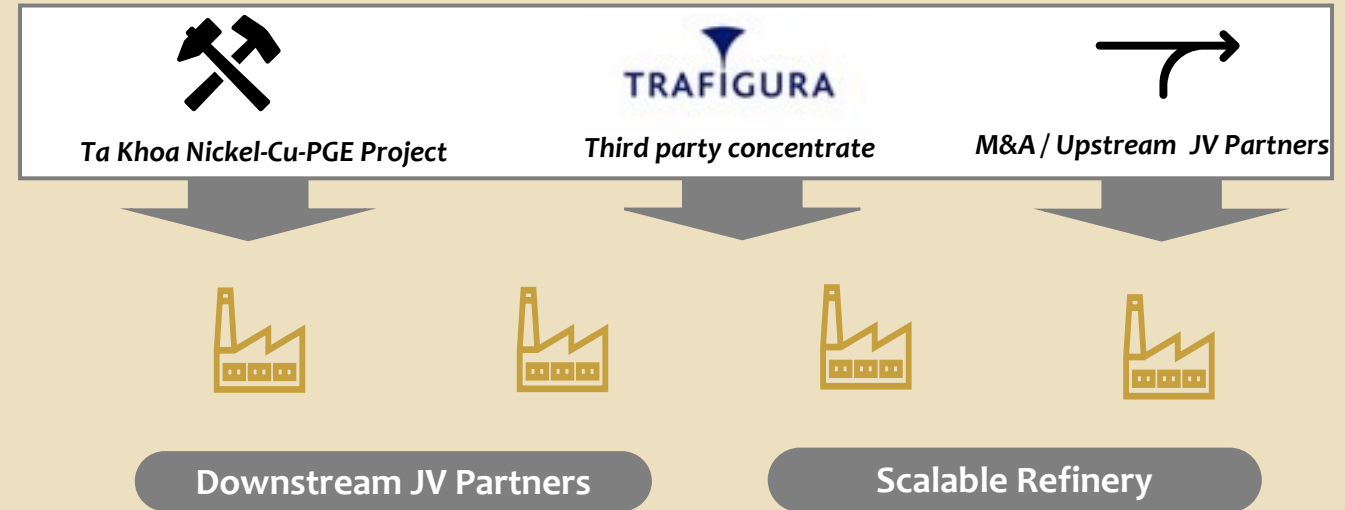
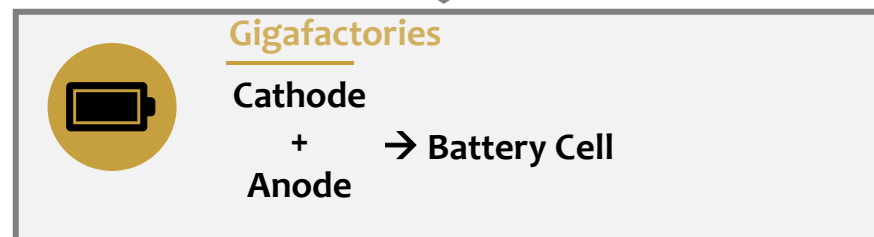
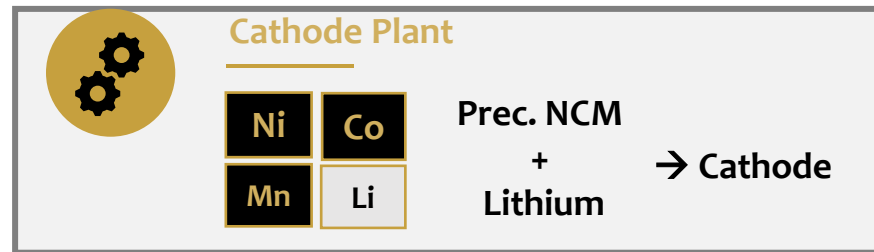
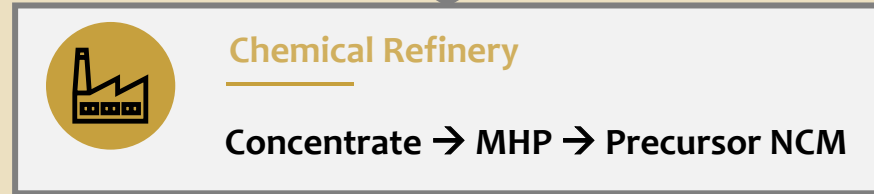
- **10-year life-of-Operations** aligned with the Ban Phuc disseminated orebody Scoping Study and availability of known third party concentrate feed (3PF)
- Average annual refined nickel output of **43.5ktpa**
- Average annual NCM811 Precursor Production of **85.6ktpa**
- **First production** targeted in **2024** and ramp up to steady state operations forecast to be achieved in CY 2026
- **3.9Mt** of concentrate feed with average Ni in concentrate grade of 11.5%, Co in concentrate grade of 0.3% and Cu in concentrate grade of 1.1%
- Average annual copper by-product of 4.1ktpa

ECONOMIC HIGHLIGHTS

- Post-tax NPV₈ of **US\$2.01bn** and internal rate of return (IRR) of **67%**
- Upfront Project Capital of **\$491m** paid back in **1.5 years** from first production
- Life-of-Operations revenue of **US\$14.0bn** and operating cash flow of **US\$4.5bn**
- Average annual operating cash flow of **US\$451m**
- Average annual post-tax cash flow of **US\$365m**
- Life of operations All-in Cost of **US\$11,997/ t NCM811** as compared to average forecast price on sale of NCM811 of **US\$16,397/ t NCM811**

PFS DEVELOPMENT STRATEGY

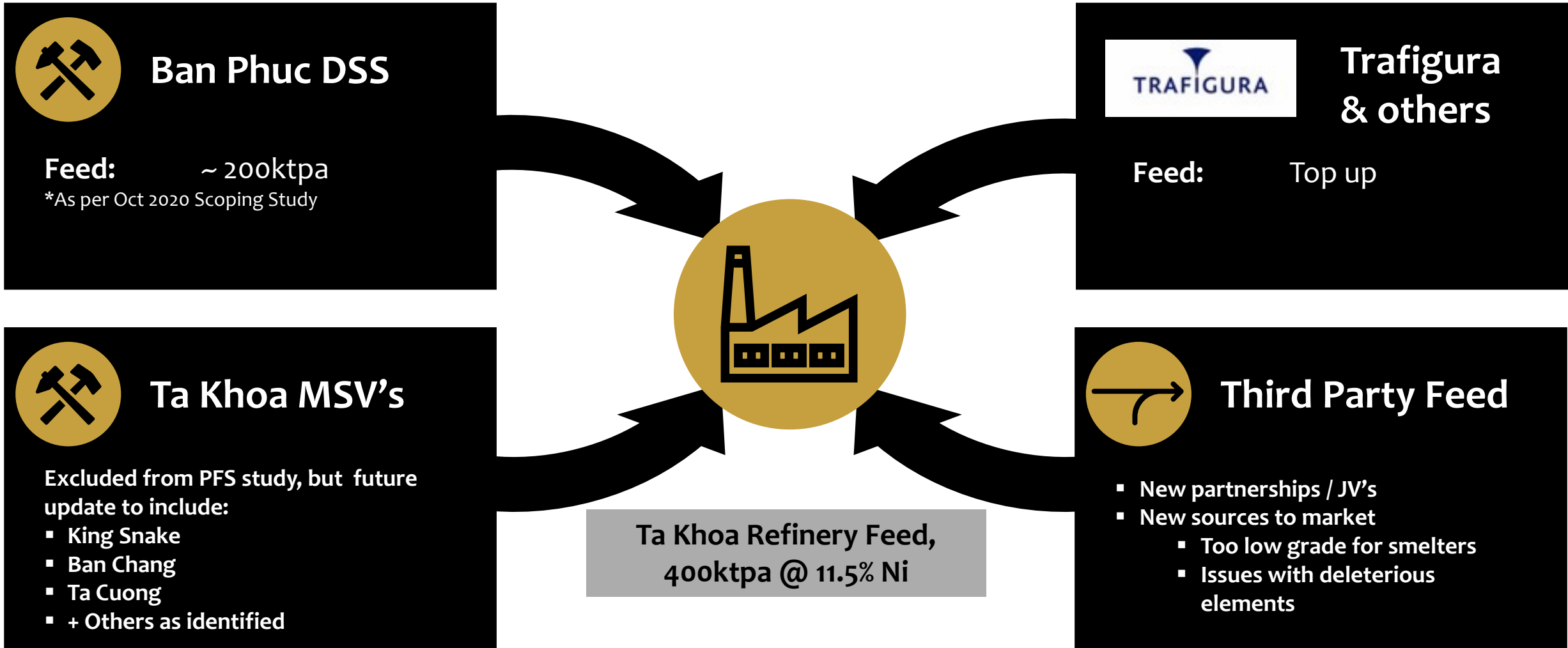
INTEGRATION OF NICKEL SUPPLY CHAINS



- The BSX development strategy is supported using third party feed (3PF) to supplement nickel concentrate supply from the Ta Khoa Nickel Project, and to improve the overall operational flexibility of the Ta Khoa Refinery (TKR).
- Funding for the TKR is expected from multiple sources, including but not limited to Joint Venture (JV) partners, investment loans, equity and offtake prepayment.
- The Base Case feed profile is based on treating 400ktpa of nickel concentrates which is the most achievable development scenario
- The TKR is scalable and Blackstone would be able to upgrade its operations from 400ktpa to 800ktpa depending on the ability to secure 3PF and market conditions (i.e., consumer demand for NCM811 Precursor)

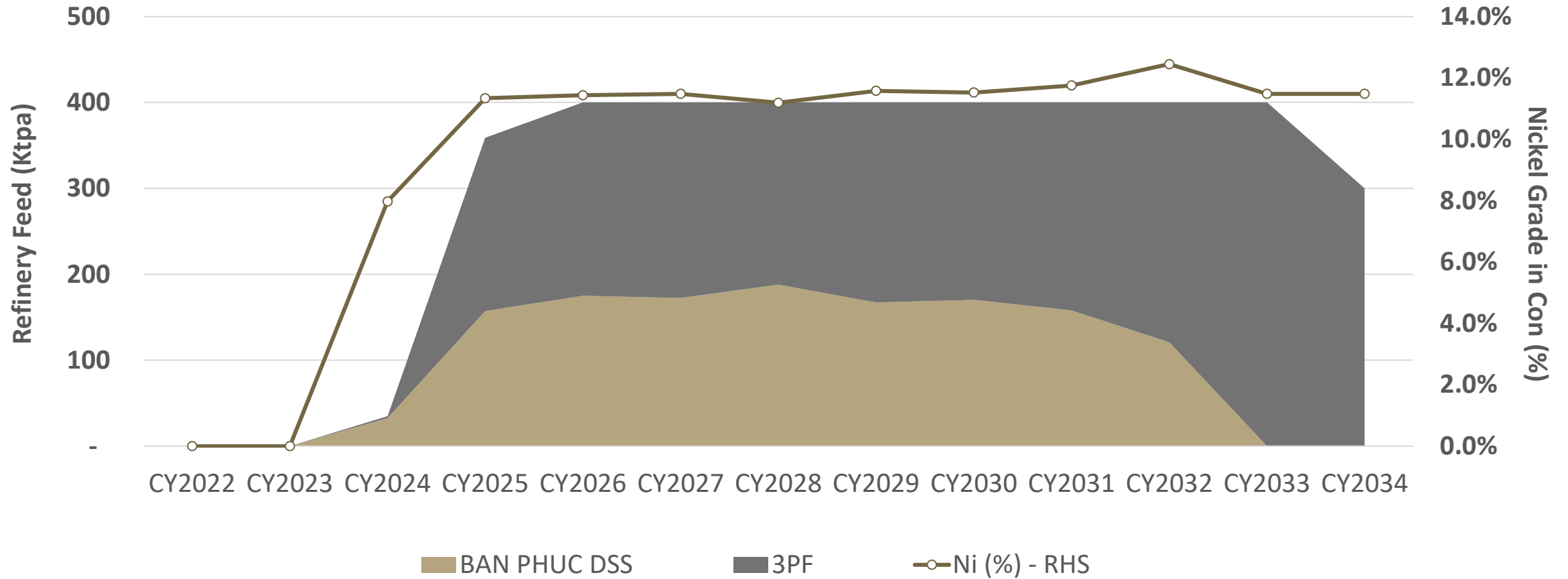
TA KHOA REFINERY FEED SOURCES

BLACKSTONE IS CONFIDENT IT WILL BE ABLE TO FILL THE BASE CASE 400KTPA
TA KHOA REFINERY



PFS Production Profile

10 years, 400ktpa, 11.5% Ni



PFS LOCATION STUDY

BLACKSTONE HAS RECEIVED STRONG PROVINCIAL GOVERNMENT SUPPORT

The prevailing law for investments in Industrial Zones / Industrial Clusters in especially difficult areas (including Mai Son and Tan Phu) stipulate a corporate tax holiday of 4 years, followed by 9 years of 5% tax and 2 additional years of 10% tax. After 15 years, the corporate tax will be 20%.



A trade-off study was completed to assess the optimal location for the Ta Khoa Refinery



All analysis to date indicates that the TKR should be located either in Son La or Phu Tho provinces.



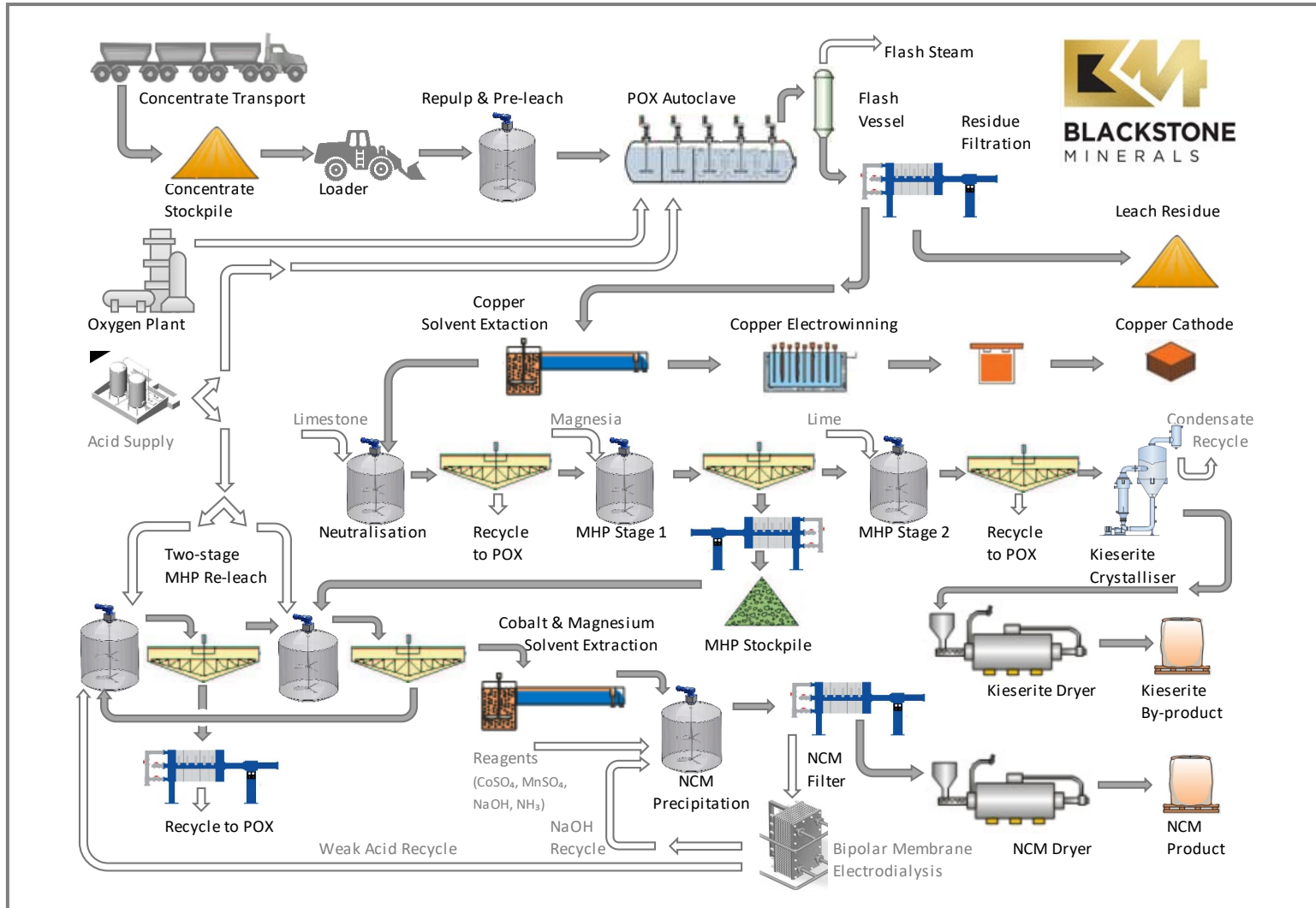
The Study considered eight key factors in the assessment. Each of the proposed locations mentioned above were qualitatively judged against each of the key factors

- Provincial level support from the Government and the community
- Residue disposal
- Tax incentives
- Logistics
- Availability of renewable power supply
- Power cost and connection complexity
- Availability of water
- Availability of labour

TA KHOA REFINERY

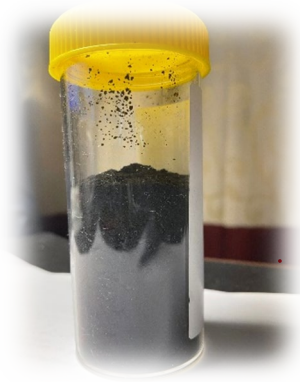
PFS REFINERY PROCESS FLOW DIAGRAM

Conversion of nickel concentrate into a MHP chemical, and thereafter to Precursor NCM uses established and well understood technology.



METALLURGICAL TESTWORK

Pressure Oxidation Leaching



Concentrate [11.5% Ni]



15L POX autoclave

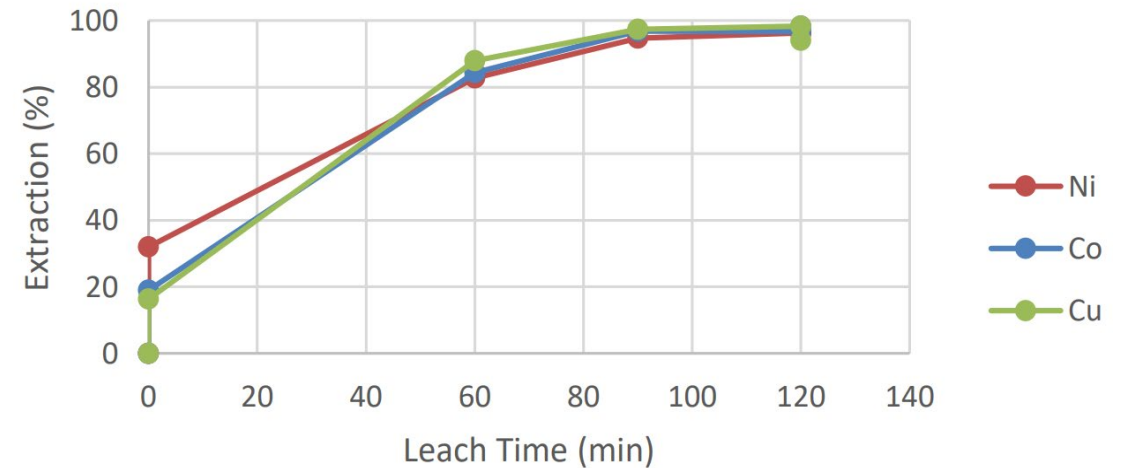
Test ID	Vol.	Time	Solids	Temp	Oxygen	Metal Extraction (%)		
Units	L	Minutes	%w/w	°C	kPa	Ni	Co	Cu
TAKH-0142	2	120	15	180	1000	97	98	92
TAKH-0143	2	120	15	220	1000	96	98	98
TAKH-0144	2	120	15	230	1000	93	94	97
TAKH-0152	15	120	15	230	1000	90	94	93
TAKH-0153	15	120	15	230	1000	97	98	98



Dynamic Leach Discharge Thickening

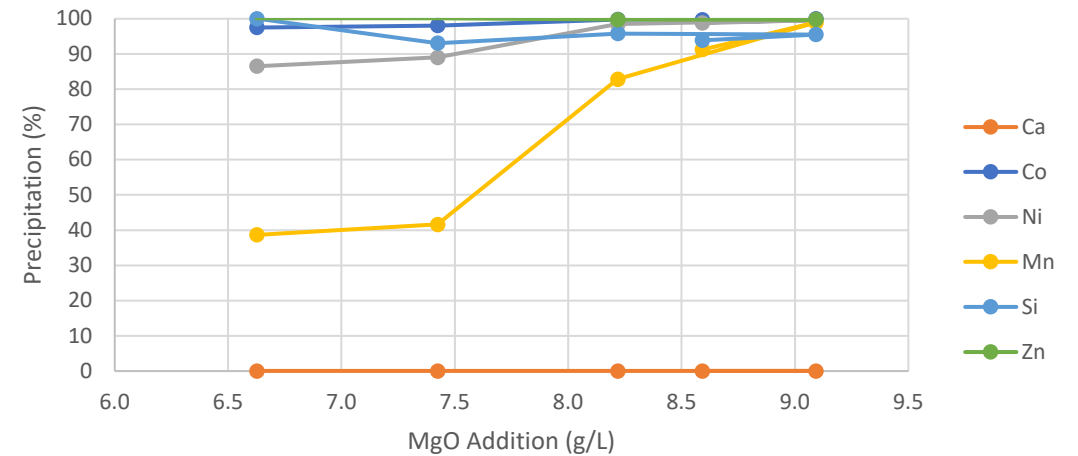
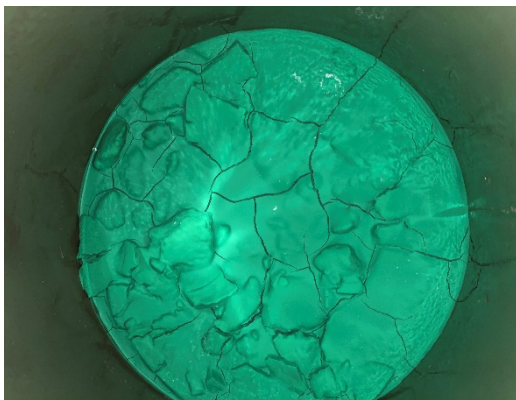
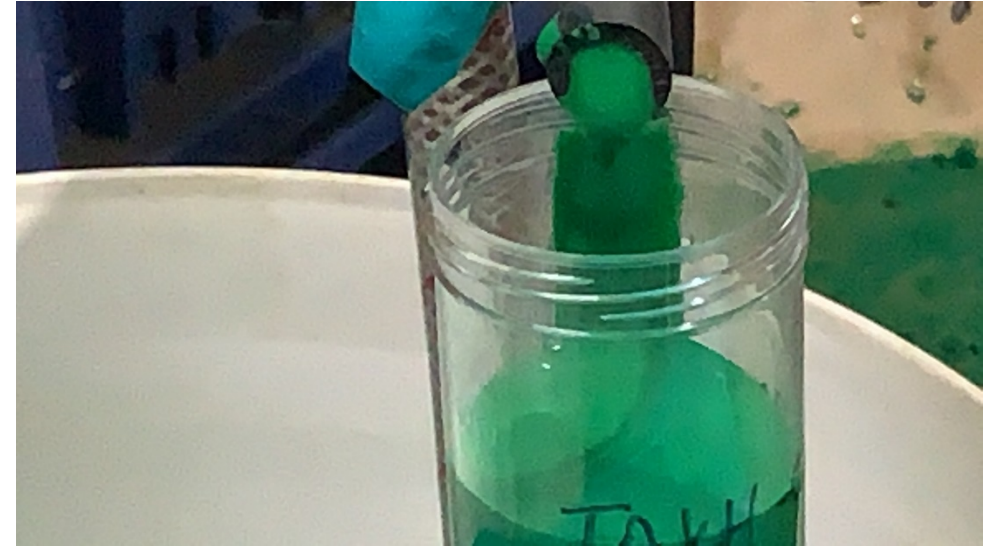


Pressure Filter



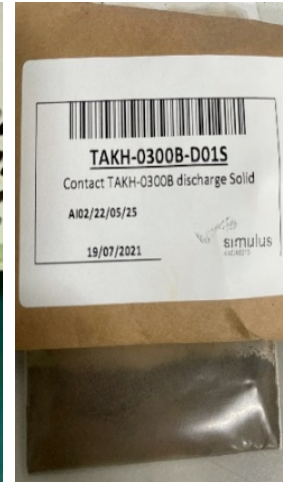
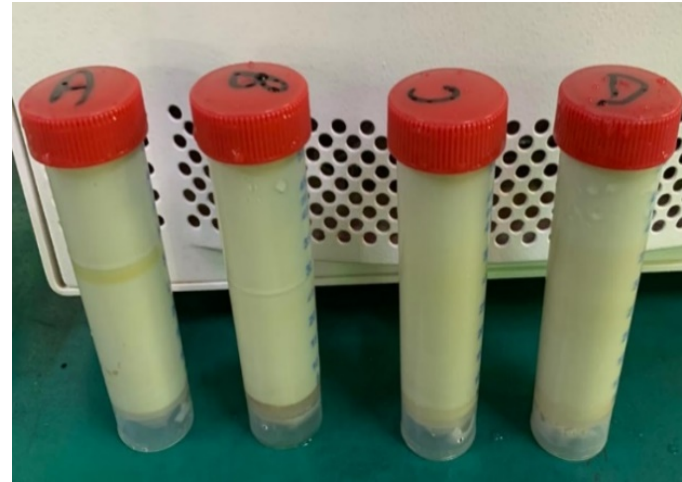
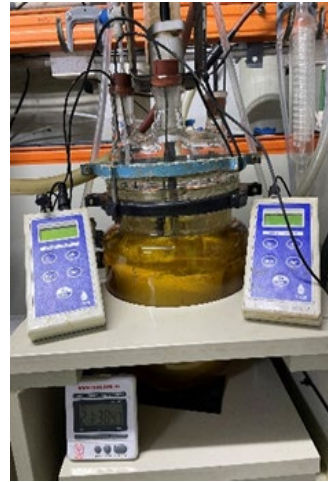
METALLURGICAL TESTWORK

MHP Precipitation, Thickening and Filtration



METALLURGICAL TESTWORK

NCM Precipitation and Filtration



NCM Ratio												
NCM	0.8		0.1		0.1							

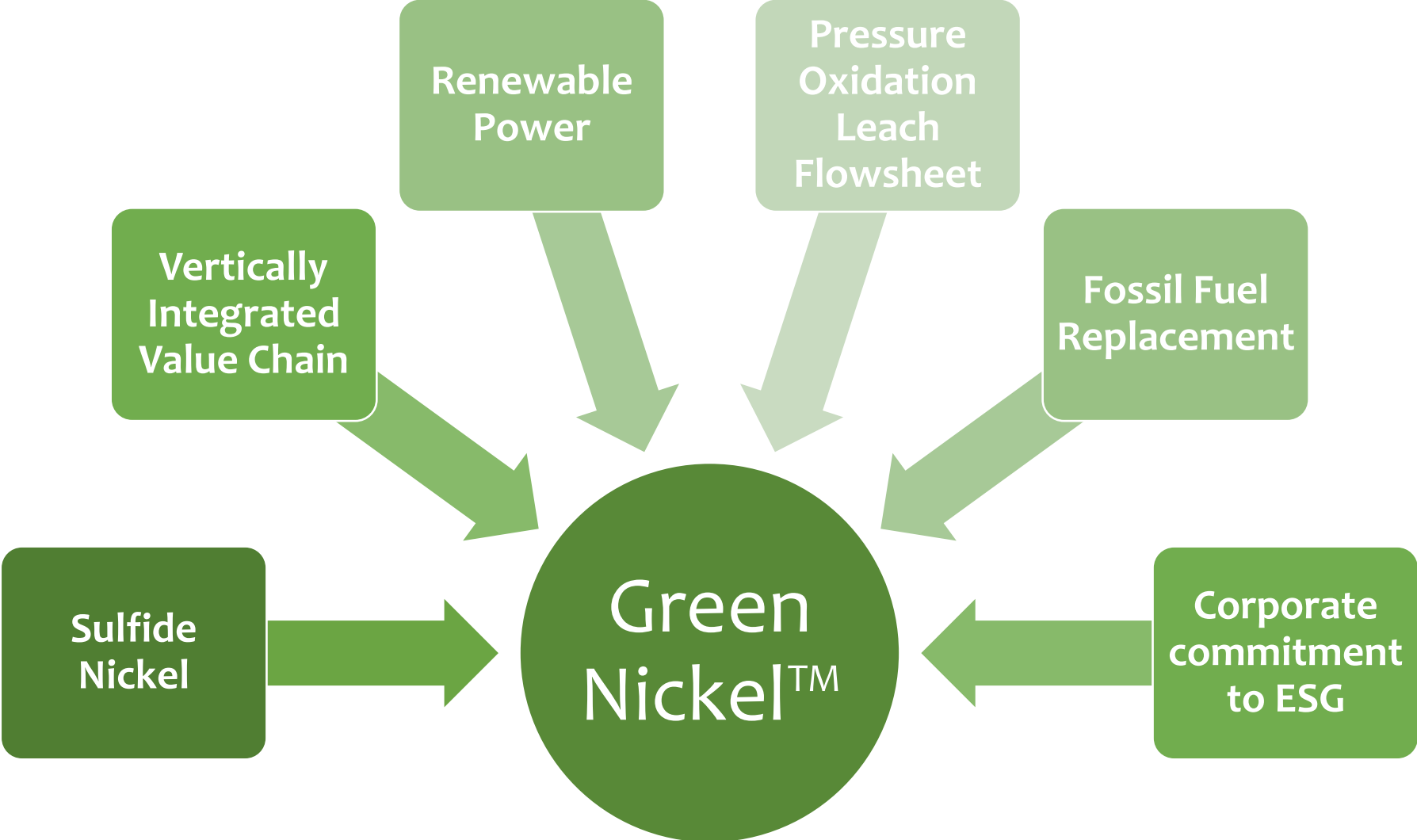
TAKH - 0299-Tool		Ni	Co	Mn	Al	Ca	Cu	Cr	Fe	K	Mg	Na
	s.g.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Feed solution	1.28	94694	11640	10907	0.2	1.2	0.4	0.2	0.3	11	1	1097
NH ₃		0.4				0.1		0.1	0.1	0	1.8	3.8
NaOH		-	-	-	2.7	-		2.2	3	47		92000
	%w/w	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
NCM precipitate	6.2	507198	60,705	58155	-	-	1	-	-	-	50	455
Filtrate	1.09	1853	4.78	0.42	0.047	3.22	0.41	-	0.5	9	5	35760

METALLURGICAL TESTWORK

Key Metallurgical Testwork Outcomes

- Reduced acid requirement for POX – sulfuric acid plant not required
- High metal extraction
- Very low free acid in POX discharge – less reagent required for neutralisation – less residue
- High metal tenor in leach solution – POX PLS
- Cu SX performed well
- High quality MHP product produced
- Excellent MHP selective leach of MHP
- Selective solvent extraction (SX) produced very high purity NiSO₄ solution for NCM
- Selective metals stripping
- NCM precipitation responded well with stoichiometric chemical dosing to produce high purity NCM product

WHAT DO WE MEAN BY GREEN NICKEL™?



TA KHOA REFINERY

PRESSURE OXIDATION (POX) TECHNOLOGY IS MATURE & ROBUST

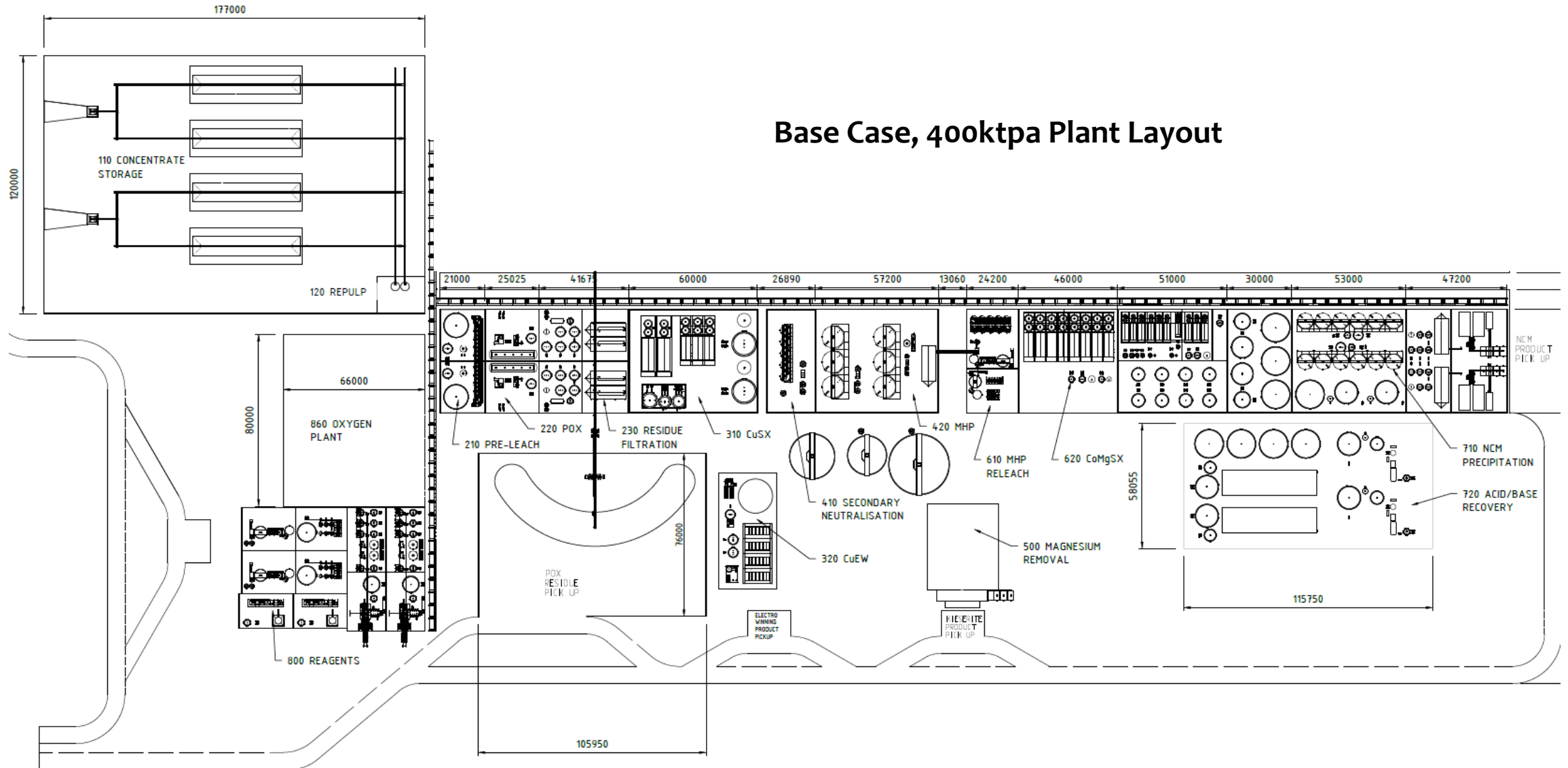
Blackstone will investigate the potential to repurpose waste residues from the Ta Khoa Refinery

	Ta Khoa – Pressure Oxidation (POX) - Hydrometallurgy	Typical High Pressure Acid Leach (HPAL) - Hydrometallurgy	Pyromet (Smelter)
Typical Feed Ni grade, %	~10	0.8-1.5	>10
Mineral Type	Sulfide concentrate from sulfide ore	Oxide – laterite ore	High grade Ni ore, typically sulfide ore
Extraction process conditions	150-210 degree C, high pressure oxygen	250-270 degree C high pressure steam and high acid	1100-1700 degree C furnace - Energy intensive + Coke
Capital investment	Low – exotic material not required for construction	Very High – exotic material, acid plant, steam boiler, very large equipment need for high tonnage	Low-Medium
Technology	Mature since 1960s – low risk	Since 1990s – high risk	Mature – low risk
Ore Sensitivity	Robust	Sensitive with acid consumption	Sensitive with Arsenic, Magnesium, and sulfur
Waste Residues	Low or net neutral solid residue mass –potential to be repurposed	Approximately 200% solid generated in tailing storage facility	Low, hard residue slag

PFS REFINERY LAYOUT

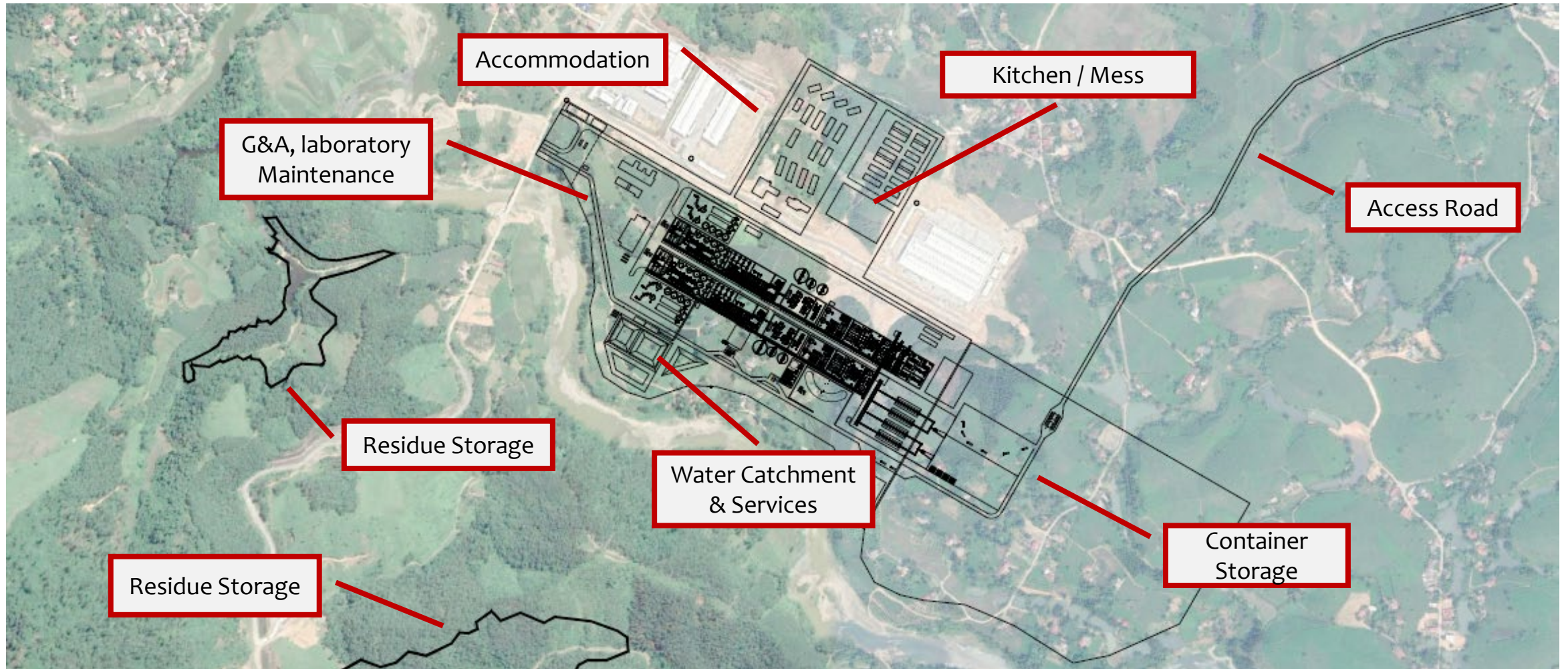
Expansion Option, 800ktpa Layout

Base Case, 400ktpa Plant Layout



PFS LOCATION STUDY OUTCOMES

Suitable location within existing industrial cluster, meaning reduced project permitting



RESIDUE STORAGE FACILITIES

Sufficient storage identified for the life of operation

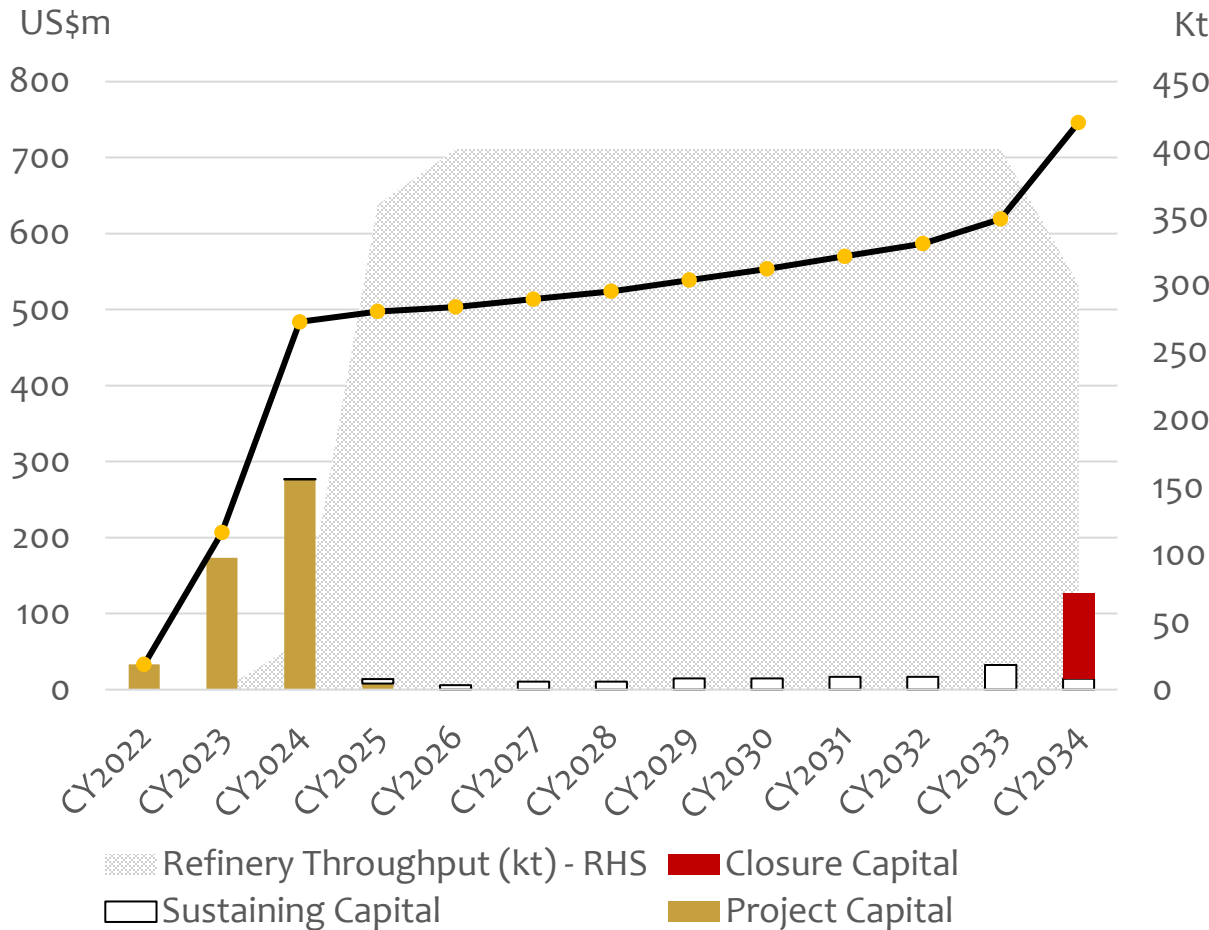
- Blackstone exploring opportunities for residue reuse / recycling
 - Commenced discussions with brick makers
 - Potential to blend residue into brick feed stock, and minimise waste production
- PFS based on contingency plan which is to establish conventional valley fill dry stacked residue facilities
 - Local governments supportive
 - Valleys adjacent to refinery, with short residue haulage distance
 - Blackstone will look to shape the final landforms to increase usable agricultural lands through filling disused valleys



CAPITAL COST ESTIMATE

PFS Capex completed to AACE / AusIMM Class 4 Level Accuracy ($\pm 25\%$)

Low Capital Intensity Drives Robust Returns



Capital Cost Area (US\$m)	Base Case
Process Plant	245
Site Infrastructure	16
Residue Storage	8
Owners Direct	43
Precommitment Costs	-
EPCM	51
Owners Costs	47
Contingency	82
Total Project Capital	491
Sustaining Capital	143
Closure	113
Total Capital	746

Operating Cost

PFS Opex completed to AACE / AusIMM Class 4 Level Accuracy ($\pm 25\%$)

The Ta Khoa Refinery generates strong operating margins which benefit from access to renewable hydro power and competitive labour costs

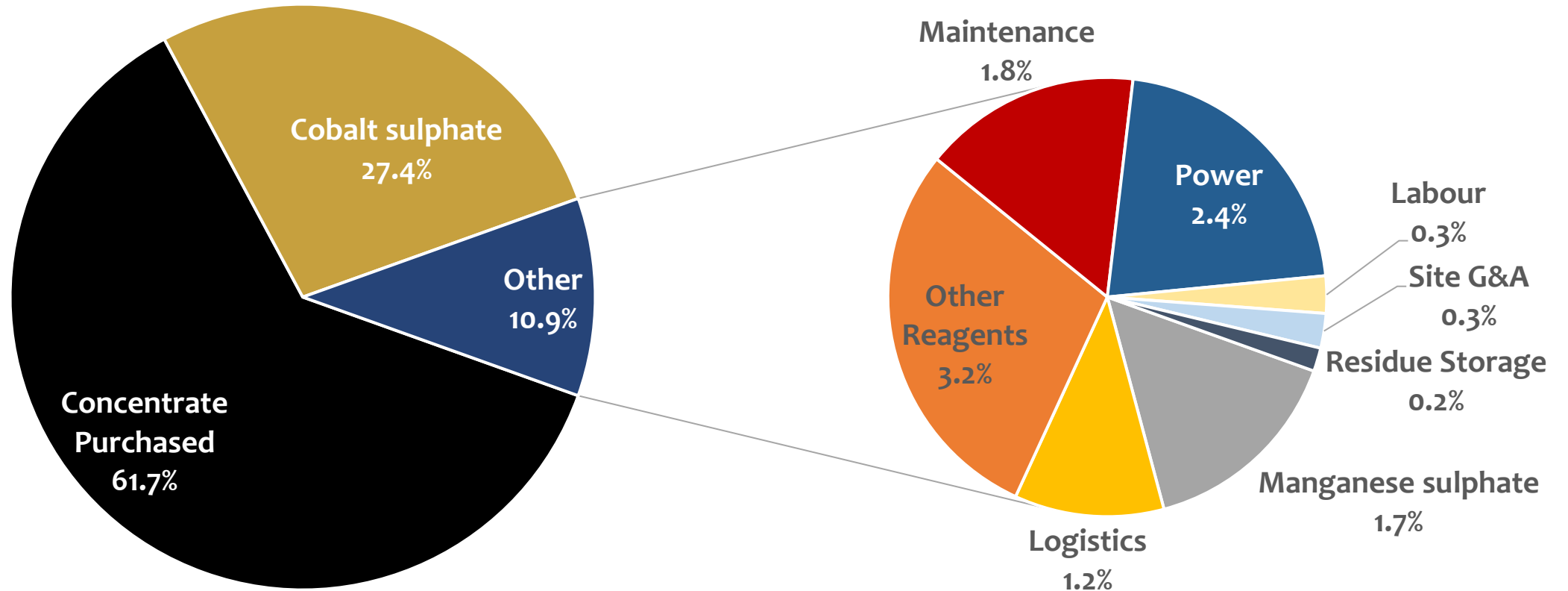
- Purchase of nickel & cobalt in concentrate is the largest operating cost for the refinery
 - Independent expert appointed to provide guidance on payability and penalties

- Highest proportion of refining cost relates to the purchase of cobalt sulfate and manganese sulfate
 - Cobalt sulfate referenced from Benchmark Minerals Intelligence
 - Manganese sulfate price referenced from Simulus study

Base Case – Operating Costs	US\$m Life of Operations	US\$/t NCM811 Precursor	US\$/t Conc
Purchase of Ni & Co Concentrate (Net of Penalties)	6,043	7,062	1,552
Refining	3,590	4,195	922
Logistics	118	138	30
G&A	27	32	7
Residue Storage	18	22	5
By-Product Credit (Copper)	(276)	(323)	(71)
By-Product Credit (PGEs)	-	-	-
Operating Costs (C1 Cash Costs)	9,521	11,125	2,445

Operating Cost

PFS Opex completed to AACE / AusIMM Class 4 Level Accuracy ($\pm 25\%$)



PFS OPERATIONAL OUTCOMES

GLOBALLY SIGNIFICANT CLASS I NICKEL PRODUCTION

Life-of-Operation Physicals	Unit	Base Case
Refinery Capacity	ktpa	400
Life of Refinery	years	10.0
Concentrate Feed	kt	3,894
Ni in Concentrate Grade	%	11.5%
Co in Concentrate Grade	%	0.3%
Cu in Concentrate Grade	%	1.1%
Metallurgical Recovery - Ni into NCM Precursor Product	%	96.8%
Metallurgical Recovery - Co into NCM Precursor Product	%	96.7%
Metallurgical Recovery - Cu into Copper Cathode	%	93.1%
NCM Precursor Production Breakdown:		
Nickel recovered in NCM Precursor Product	Kt	435
Cobalt recovered in NCM Precursor Product	Kt	11
Cobalt make-up Quantities	Kt	44
Manganese	Kt	51
Hydroxide	Kt	315
Total NCM Precursor Production	kt	856
Average Annual NCM Precursor Production	ktpa	85.6
Average Annual Refined Nickel Output	ktpa	43.5

- Life-of-Operation
 - Limited to 10 years
 - Feed blend based on:
 - Ban Phuc Scoping Study
 - Third Party Feed Partners
 - Trafigura
- By-Products
 - Copper Included
 - PGE's excluded (pending final study)
 - Green Hydrogen excluded (pending final study)
 - Kieserite

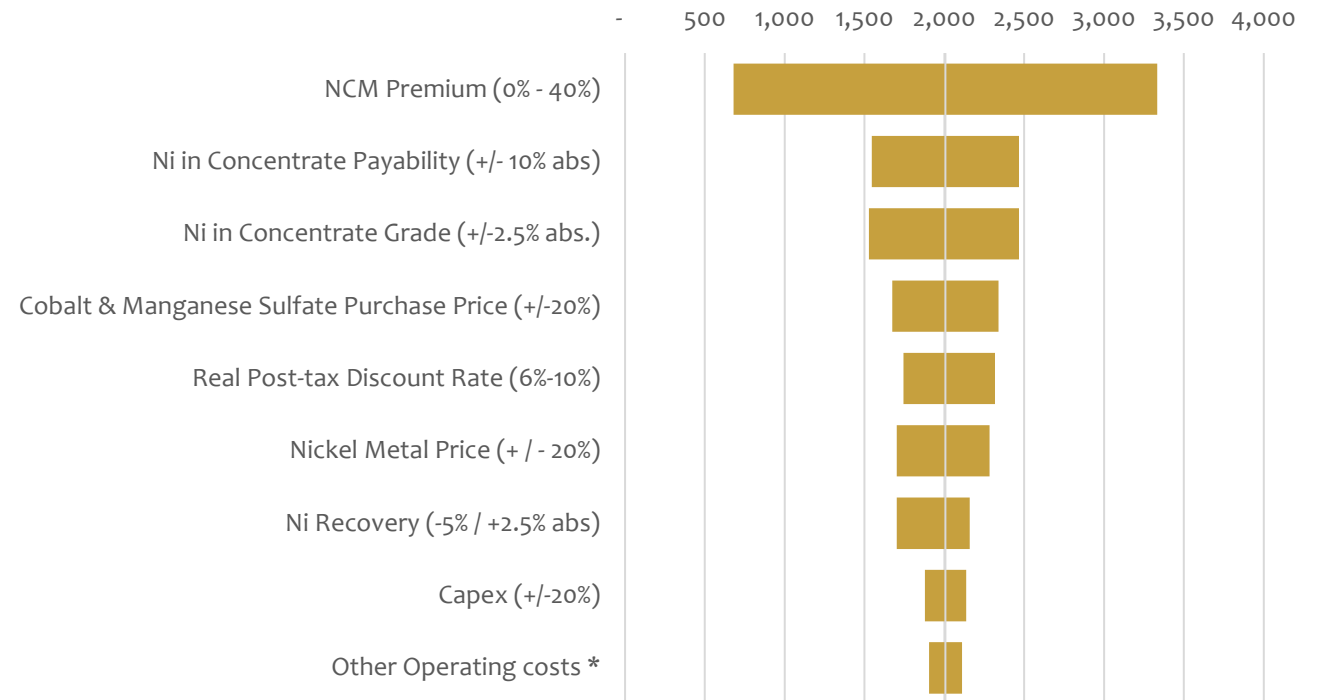
PFS ECONOMIC OUTCOMES

BASE CASE TA KHOA REFINERY GENERATES A POST-TAX NPV OF US\$2.01bn

The Ta Khoa Refinery valuation applies a conservative NCM811 Precursor price below current observable spot market rates. The economics of the Ta Khoa Refinery has low sensitivity to capital costs, with upfront project capital estimated to be repaid in 1.5 years from first production.

Life-of-Operation Economics	Unit	Base Case
Revenue - Sale of NCM811 Precursor	US\$m	14,032
NCM811 Precursor Price (avg realised)	US\$/t NCM811	16,397
C1 Cash Costs	US\$/t NCM811	11,125
All-in Sustaining Costs	US\$/t NCM811	11,423
All-in Cost	US\$/t NCM811	11,997
Avg Annual Operating Cash Flow	US\$mpa	451
Operating Cash Flow	US\$m	4,512
Net Cash Flow (Pre-tax)	US\$m	3,766
Net Cash Flow (Post-tax)	US\$m	3,646
Post-tax NPV (8% real)	US\$m	2,007
IRR (Post-tax)	%	67%
Capital Payback Period - from first production	years	1.5

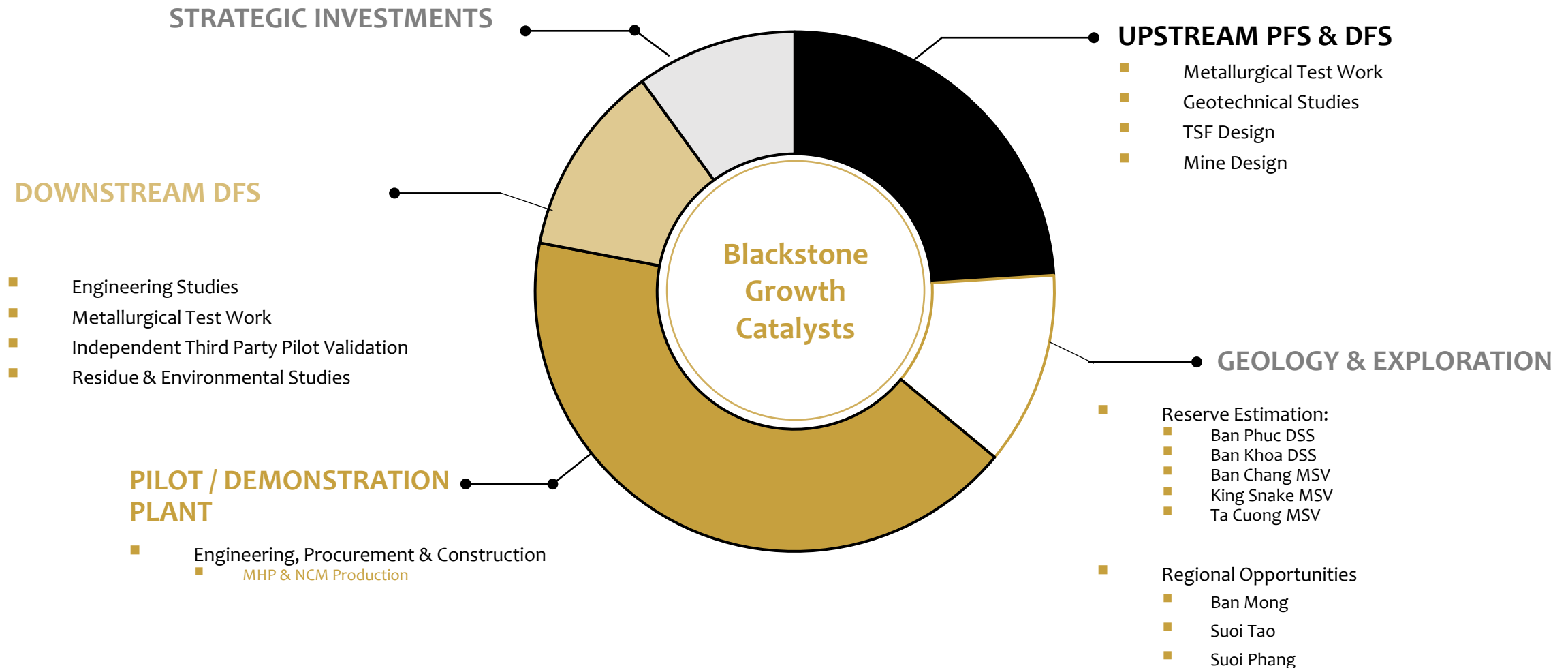
Post-tax NPV Sensitivity Analysis (US\$m)



Note: The Other Operating Cost sensitivity analysis applies a +/- 20% adjustment to reagents, power, labour, site G&A, residue storage, maintenance and logistic costs.

NEXT 12 MONTHS - WORKSTREAMS

BLACKSTONE WILL CONTINUE TO ACCELERATE ITS DEVELOPMENT PATHWAY



PROJECT INTEGRATED PILOT PLANTS

- Phase 1 Pilot Plant in support of the upcoming DFS study.
- PP1 Objectives:
 - Confirm process design inputs for Definitive Feasibility Study (DFS)
 - Basic engineering design and all document to converted/translated in Vietnamese
 - Procure off the shelves equipment
 - Evaluation of local suppliers, fabricators, and construction
 - Integrate with upstream concentrator pilot plant
 - Training downstream team and local services
 - Provide samples further evaluation such as NCM, residues, vendors' testwork
 - Laboratory analytical matrix development, procedures and build library calibration data
 - Environmental survey data collection
- Phase 2 Pilot Plant in support detailed engineering design for full commercial plant.
- PP2 Objectives: *(In addition to PP1 objectives)*
 - ✓ Detailed engineering design
 - ✓ Evaluating recycling streams
 - ✓ Full team training and safe work procedures development in Vietnamese
 - ✓ Engineering data collection – process modelling, electrical loading, process control.
 - ✓ Process Onstream Analysis instrument evaluations and calibrations
 - ✓ Development of a fullscale laboratory – analytical library data collection and analytical methodology development
 - ✓ NCM products.



Definitive Feasibility Study

- Appoint Engineering Firm – Pilot Plant Phase 2 EPC
- Engage Engineering Firms for DFS
- Award DFS
- Set up Engineering Centre of Excellence – Australia and Vietnam
- Early engagement for long lead items procurement

SESSION 3 – NICKEL & MARKET OUTLOOK



Patrick Chang

**Head of Corporate
Development**

Master of Science Degree in Geology, a Master of Computer Science Degree and Chartered Financial Analyst. Previously Corporate Development Officer with ASX-listed gold producer Medusa Mining. Ex-Mining Analyst focused on precious and nickel sectors.



Dhanu Anandarasa

**Manager, Corporate
Development**

A Chartered Financial Analyst, Mr. Anandarasa has ten years' experience in corporate finance roles specialising in mining. His experience is predominantly in-house, working collaboratively with technical teams for planning and strategic purposes.

BLACKSTONE TA KHOA PROJECT

THE TA KHOA MINE & DOWNSTREAM REFINERY IS LOCATED IN THE HEART OF A MAJOR LITHIUM-ION BATTERY HUB




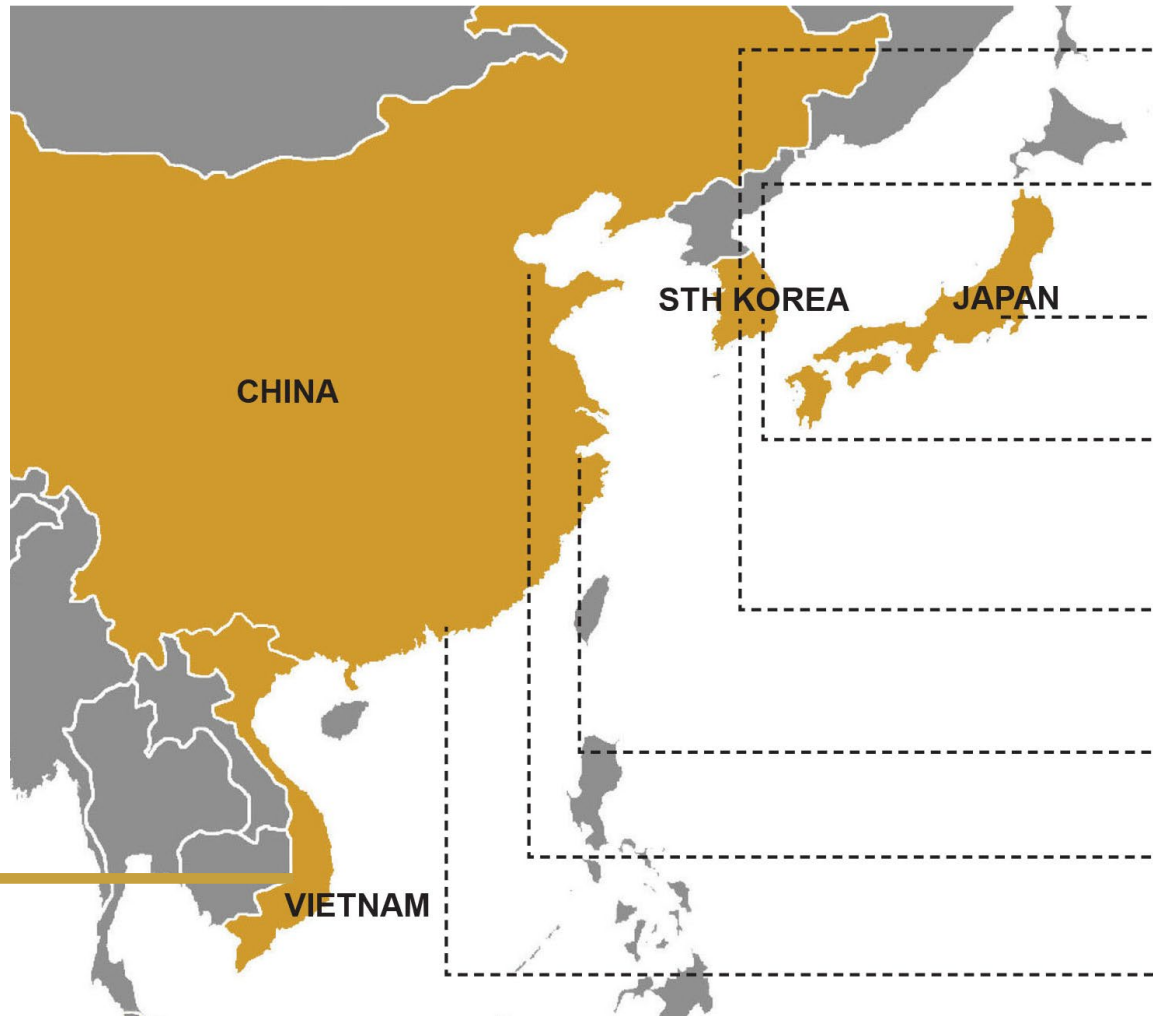
Ta Khoa Mine
(Nickel-PGE-Copper-Cobalt)

- 34.8km² of tenements with multiple Ni PGE (Cu Co) prospects, a well maintained 450ktpa mill, concentrator and mine facilities built to international standards in 2013 for US\$136m

Ta Khoa Refinery
(NCM Precursor)

- Blackstone and JV partner to complete studies and construct a downstream processing facility in Vietnam

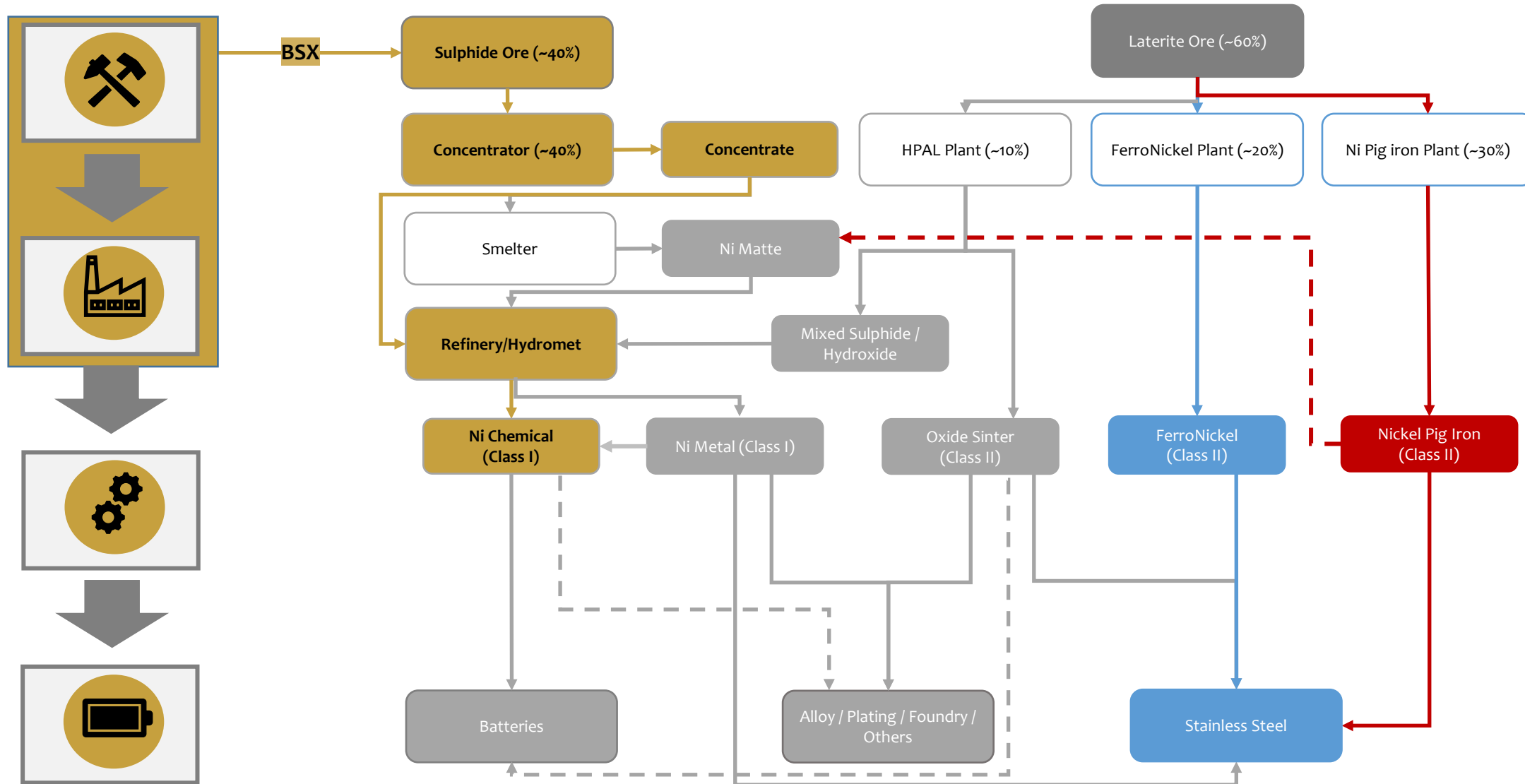
 ~40,000tpa refined nickel out plans with future potential for expansion



- EcoPro ^{BM} 에코프로비엠
- SK innovation
- Panasonic
- LG Chem
- SAMSUNG
- Envision AESC
- CATL
- BASF_{HK}

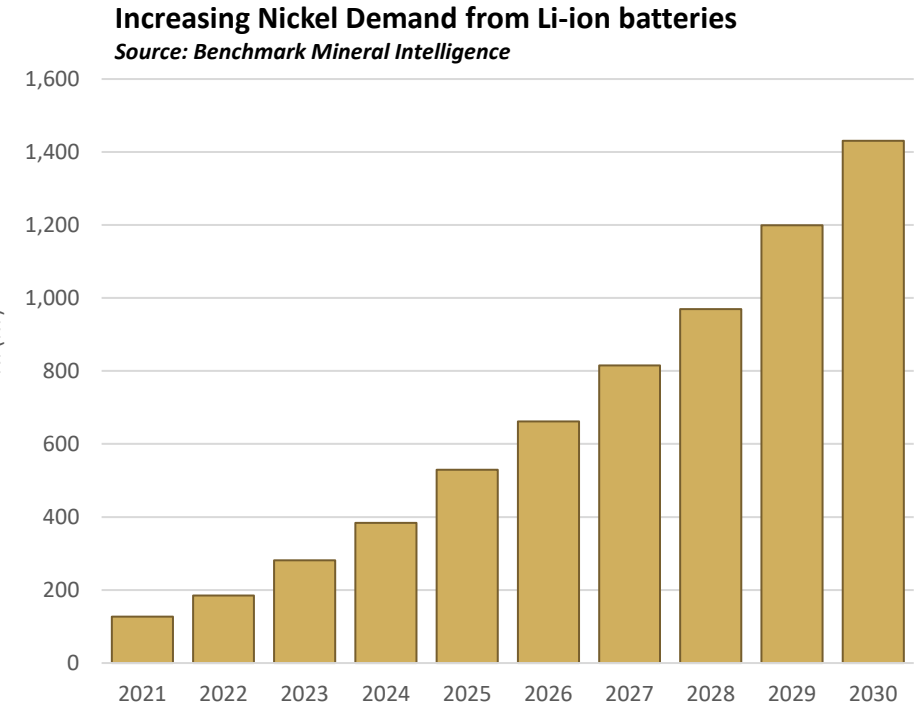
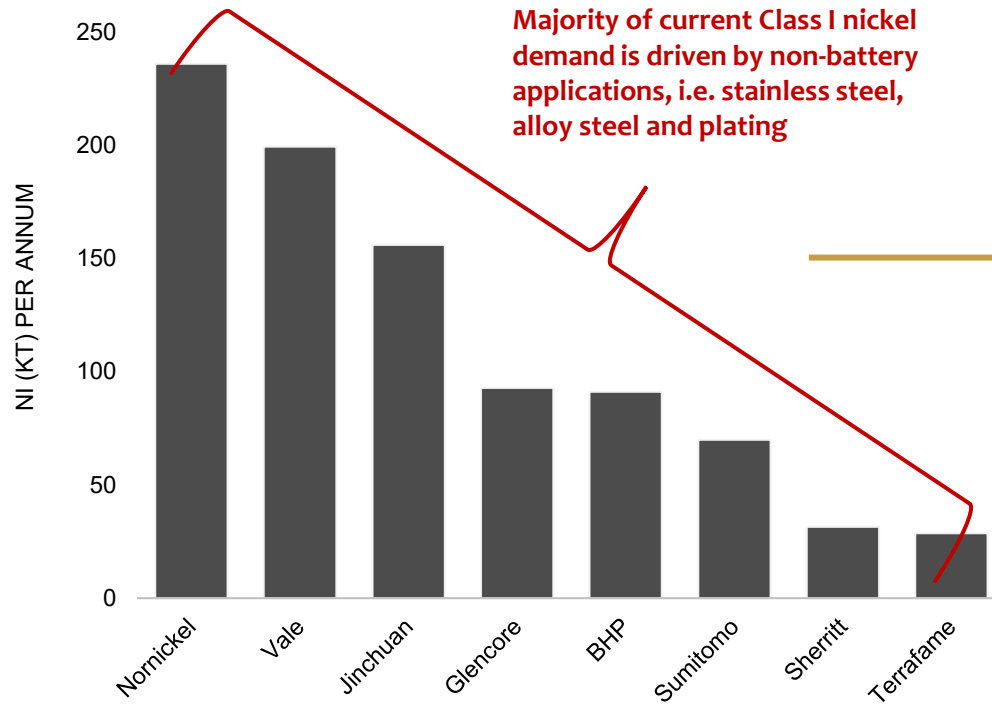
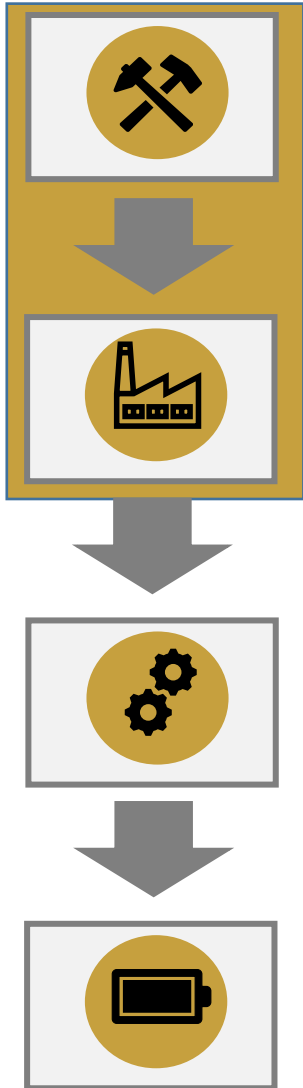
SIMPLIFIED CLASS I & II PROCESSING ROUTES

LOW CAPITAL INTENSIVE, CONVENTIONAL AND ENVIRONMENTALLY FRIENDLY ROUTE TO PRODUCE HIGH VALUE PRODUCTS FOR THE LI-ION BATTERY INDUSTRY



GLOBAL CLASS I NICKEL PRODUCERS

FUTURE DEMAND FOR CLASS I NICKEL TO BE DRIVEN BY RAPID GROWTH IN THE LI-ION BATTERY INDUSTRY



Sources for Global Class I Nickel Producers

Nor Nickel	Q4 & 2020 Report	https://www.nornickel.com/upload/iblock/eee/NORNICKEL_PRODUCTION_RESULTS_FOR_FY2020_full.pdf
Vale	Q4 Report	http://www.vale.com/EN/investors/information-market/quarterly-results/QuarterlyResultsDocs/20210203%20PREREPORT%204T20_i.pdf
Jinchuan	镍行业深度报告	https://pdf.dfcfw.com/pdf/H3_AP202009301418401737_1.pdf?1601483998000.pdf
Glencore	Full Year 2020 Production Report	https://www.glencore.com/dam/jcr:9a549d01-c619-4e0d-b043-403a417bd79b/GLEN_2020-Q4_ProductionReport.pdf
BHP	Half Year and Quarterly Reports	https://www.bhp.com/investor-centre/financial-results-and-operational-reviews/
Sumitomo	Integrated 2020 Report	https://www.smm.co.jp/E/ir/library/annual/pdf/2020_All_EN.pdf
Sherritt	2020 Production Result and 2021 Guidance	https://www.sherritt.com/English/Investor-Relations/News-Releases/News-Release-Details/2021/Sherritt-Announces-2020-Production-Results-and-Guidance-for-2021/default.aspx
Terrafame	Full Year 2020 Results	https://www.terrafame.com/news-from-the-mine/news/2021/02/terrafames-net-sales-in-2020-were-eur-338.3-million-ebitda-for-q4-was-17.1-of-net-sales.html

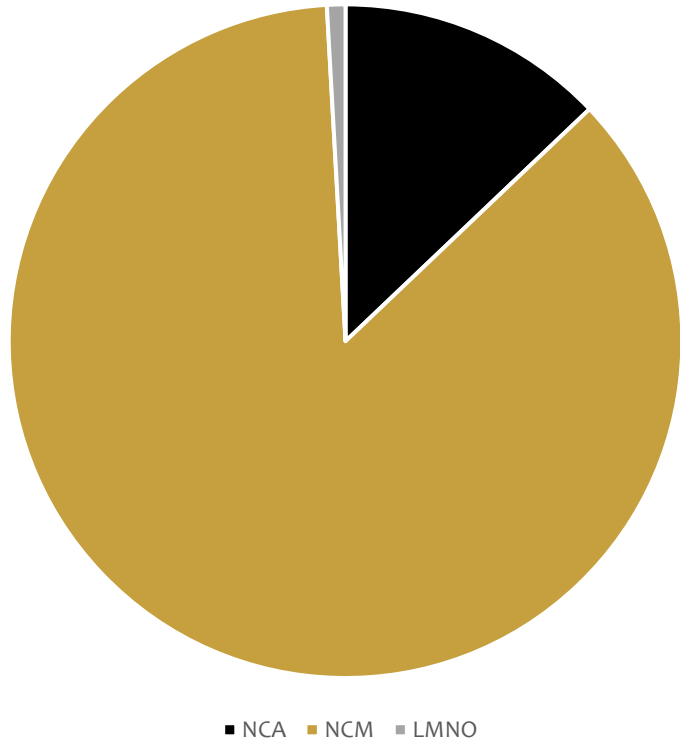
NCM MARKET

BY 2030, NCM IS EXPECTED TO DOMINATE OTHER NICKEL RICH CHEMISTRIES INCLUDING NCA AND LMNO

Within the NCM chemistry class, NCM811 Precursor is expected to gain the largest market share

2030 Snapshot – Adoption of Nickel Rich Battery Chemistries

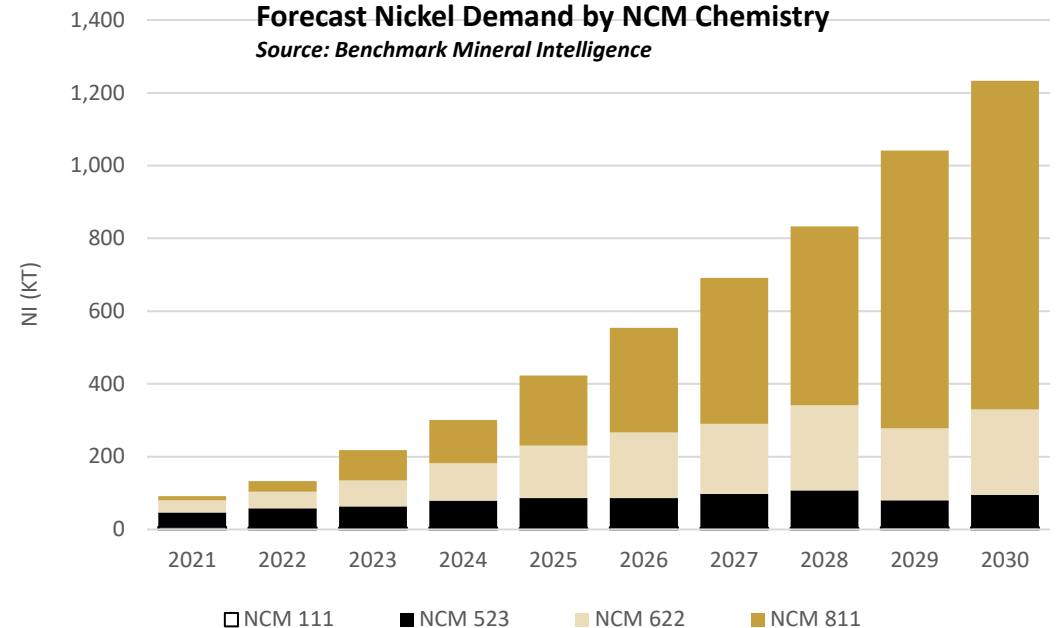
Source: Benchmark Mineral Intelligence



- Blackstone began its life as an explorer when the predominant NCM battery chemistry had ratio of nickel , cobalt and manganese of 1:1:1
- The last few years have seen rapid advancement towards higher nickel content cathodes, with NCM811 expected to be the dominant battery chemistry
- The market for NCM Precursor is still maturing, as such there is limited price forecast information (see next slide for Blackstone price forecast methodology)

Forecast Nickel Demand by NCM Chemistry

Source: Benchmark Mineral Intelligence



COMPETITIVE OPERATING ADVANTAGE

NCM811 PRECURSOR TRADES AT A SIGNIFICANT PREMIUM TO METAL SPOT PRICES

Metal Spot Price	(US\$/t)
Nickel	19,613
Cobalt	51,907
Manganese	2,696

Raw material cost of 1 tonne of NCM 811 based on metal spot prices				
8	1	1		
Ni	Co	Mn		OH
US\$9,972	US\$3,312	US\$160		
~51%	~6%	~6%		~37%

1 tonne of NCM 811

Raw material cost = US\$13,444 / tonne of NCM 811

Market/ Traded price = US\$19,559 / tonne of NCM 811

NCM811 trades at a significant premium to metal spot prices

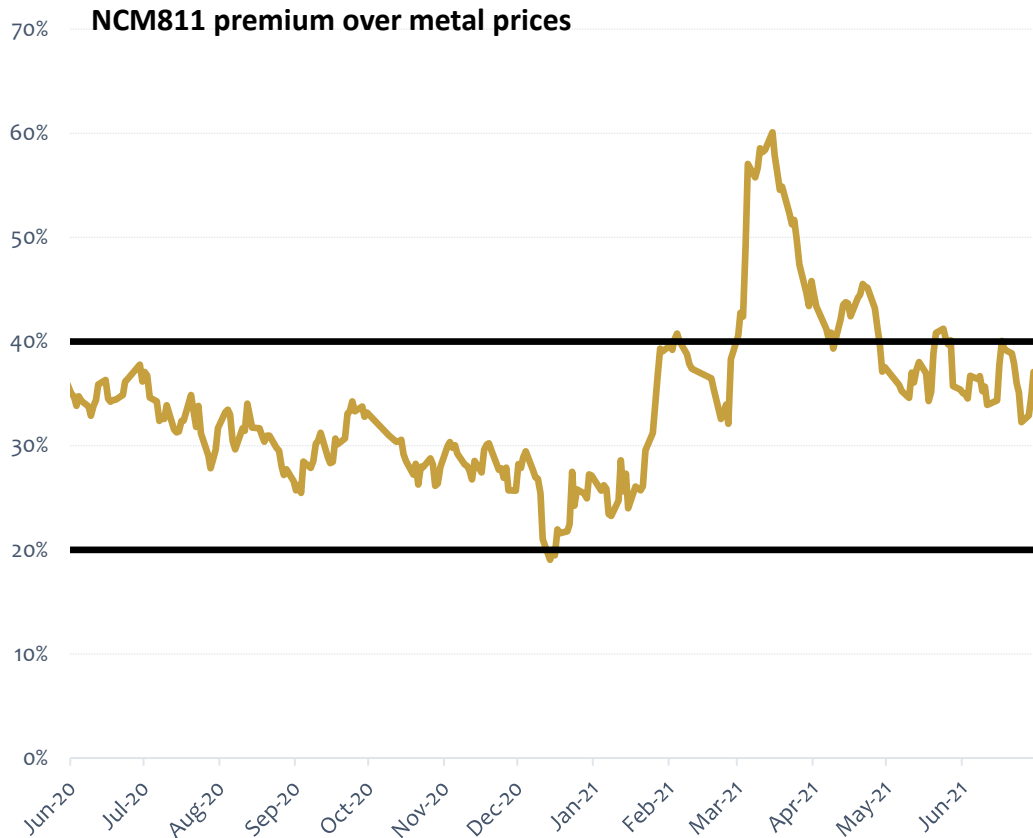
Source: SMM (Shanghai Metals Market) with VAT removed

Note: This is an illustrative analysis performed in July 2021. Commodity prices can be volatile and fluctuate daily, which influence the premium at which NCM811 Precursor can trade compared to spot metal prices

NCM811 PRECURSOR PRICE FORECAST

THE PFS ASSUMES AN NCM811 PRECURSOR PREMIUM of 20%

The realised NCM811 Precursor Price in the PFS modelling is below currently observable on the spot market.



Source: BSX analysis of SMM data

Item	Nickel Metal Forecast (50.8%)	Cobalt Metal Forecast (6.4%)	Manganese Metal Forecast (6.0%)	NCM811 Precursor Price Based on Metal Inputs (a)	NCM811 Precursor Premium (b)	NCM811 Precursor Price Forecast	NCM811 Precursor Spot Price
Source:	BMI	BMI	SMM		BSX analysis of SMM	a*(1+b)	SMM
CY2024	16,000	58,387	2,696	12,020	20%	14,425	19,559
CY2025	16,400	67,145	2,696	12,783	20%	15,339	19,559
CY2026	17,300	72,011	2,696	13,551	20%	16,261	19,559
CY2027	17,800	75,904	2,696	14,053	20%	16,864	19,559
CY2028	18,300	77,850	2,696	14,432	20%	17,318	19,559
CY2029	18,500	75,933	2,696	14,354	20%	17,224	19,559
CY2030	18,800	61,227	2,696	13,625	20%	16,350	19,559
LT	18,800	58,577	2,696	13,456	20%	16,147	19,559

Note: Prices quoted in table above are denominated in US\$

Note: Benchmark Mineral Intelligence did not provide forecast information for nickel metal prices beyond CY2030, as such BSX has carried forward the CY2030 estimate as the Long Term (LT) price applied in the economic modelling.

Note: Limited relevant forecast data is available for manganese metal, as such BSX has applied current observable market rates for the life-of-operations as evidenced from Shanghai Metal Markets (SMM).

CONCENTRATE PAYABILITY

HOW WE MODELLED CONCENTRATE PAYABILITY

An independent consultant was engaged to benchmark concentrate pricing according to specifications received

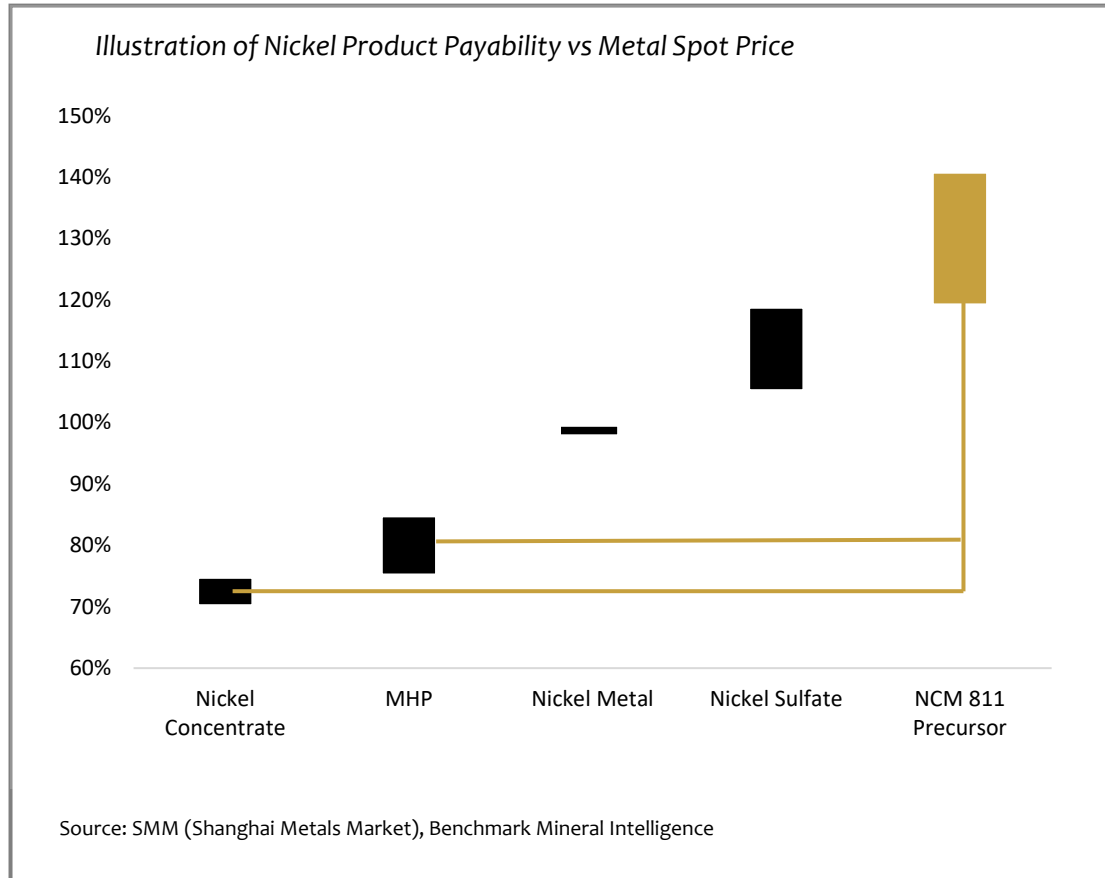
	Nickel Price (US\$/lb)			
Conc grade (NI%)	6.00	8.00	10.00	12.00
5%	x%	x%	x%	x%
6%	x%	x%	x%	x%
7%	x%	x%	x%	x%
8%	x%	x%	x%	x%
9%	x%	x%	x%	x%
10%	x%	x%	x%	x%
11%	x%	x%	x%	x%
12%	x%	x%	x%	x%
13%	x%	x%	x%	x%
14%	x%	x%	x%	x%
15%	x%	x%	x%	x%
16%	x%	x%	x%	x%
17%	x%	x%	x%	x%
18%	x%	x%	x%	x%
19%	x%	x%	x%	x%
20%	x%	x%	x%	x%

- Key variables determining payability of Ni concentrates are nickel grade and nickel price
- By-product credits (e.g. copper, cobalt) are given when thresholds are met
- Penalties are applied when threshold for deleterious elements are exceeded

COMPETITIVE OPERATING ADVANTAGE

ATTRACTIVE PRODUCT PRICING

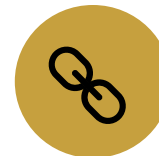
The PFS refinery design will enable the production of multiple products, including NCM 811 which attracts a strong premium to metal prices.



Blackstone will be able to process and upgrade a number of products, including nickel concentrate and mixed hydroxide precipitate (MHP)



Hydrometallurgical downstream process enables Blackstone to accept low-cost nickel concentrates undesirable to the traditional pyrometallurgical downstream process route



Blackstone will be able to blend different feedstocks to optimise operational and cost performances, and capture significant premiums on the sale of NCM precursor products

BASE CASE SENSITIVITY ANALYSIS

THE TA KHOA REFINERY IS A CYCLE PROOF ASSET

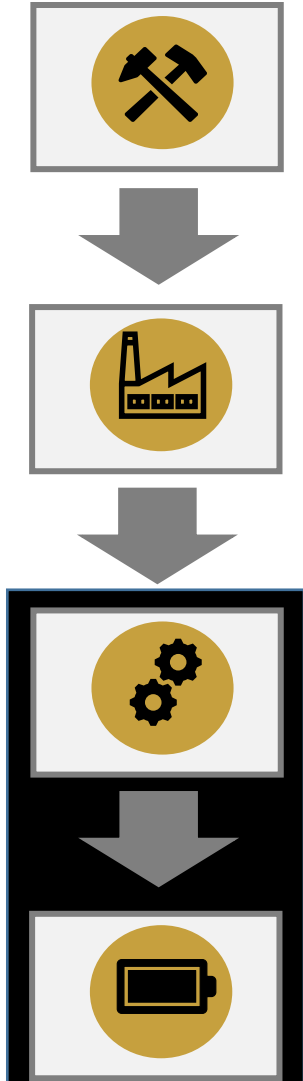
The table below is a two-way sensitivity analysis for the post-tax valuation of the Ta Khoa Refinery assuming a range of NCM811 Precursor Premium and concentrate payability.

Post-tax NPV (US\$m) Sensitivity Analysis	Realised NCM Precursor Price (US\$/ t NCM 811)					
	Premium	0%	10%	20%	30%	40%
		13,664	15,030	16,397	17,763	19,129
Movement in Ni Concentrate Payability (Net of Penalties) %	-10%	1,141	1,804	2,468	3,131	3,795
	-5%	910	1,574	2,237	2,901	3,564
	0%	680	1,343	2,007	2,670	3,334
	+5%	449	1,113	1,777	2,440	3,104
	+10%	219	883	1,546	2,210	2,873

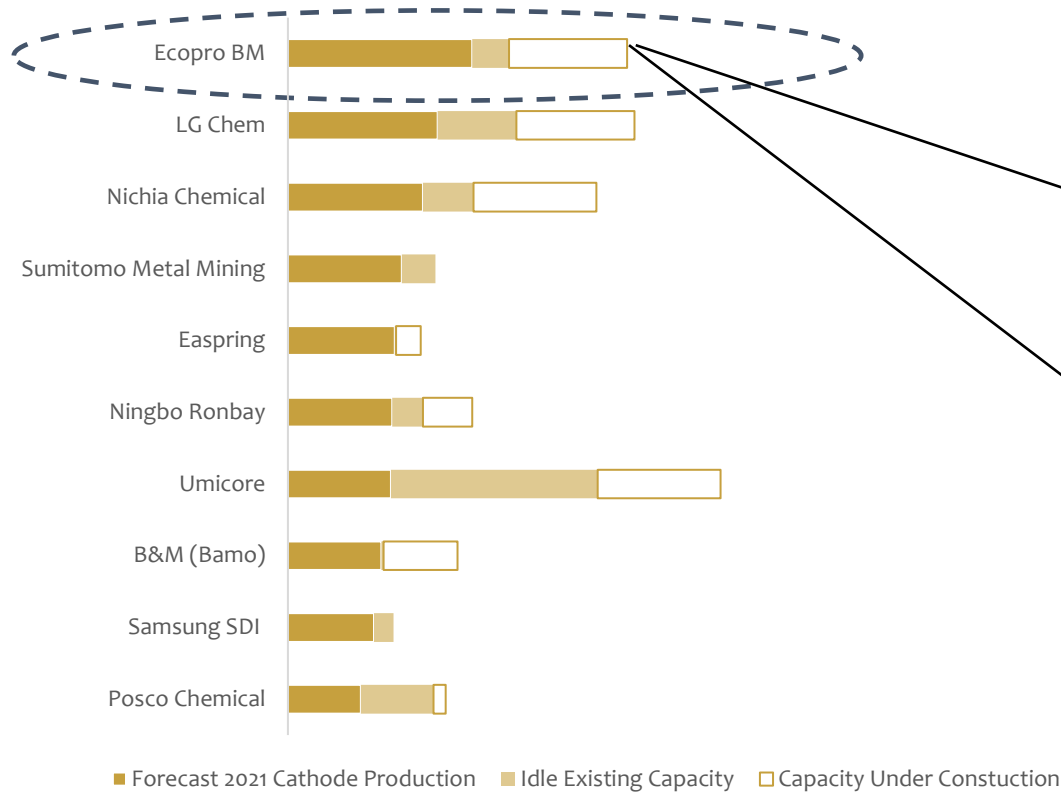
- The Ta Khoa Refinery is a margin-based business with lower leverage to nickel metal prices as compared to a mining operation.
- In general, a movement in nickel metal prices affects the two biggest drivers of value for the TKR in the same direction.
 - For example, an increase in nickel metal prices will typically lead to an increase in **NCM811 precursor price** as well as an increase in the **cost of purchasing nickel concentrates**
- Post-tax NPV₈ Spot Case valuation of US\$3.51bn (refer ASX announcement 26 July 2021 – Blackstone Delivers Exceptional PFS Results)
 - Current premium is >40%

MAJOR CATHODE AND EV BATTERY MANUFACTURERS

SIGNIFICANT INVESTMENT INTO CATHODE AND BATTERY MANUFACTURING IS EXPECTED TO FLOW UPSTREAM IN ORDER TO SECURE RAW MATERIAL



Top 10 cathode producers globally*



Major producers of batteries with high nickel content

Panasonic



SAMSUNG SDI

CATL



northvolt

Source: Benchmark Mineral Intelligence

*Cathode producers in which primary chemistry is nickel-based as at June 2021

Note: EcoPro has ~140kt of cathode production capacity (existing + under construction)

ENVIABLE TRACK RECORD OF FOREIGN DIRECT INVESTMENT

VIETNAM HAS SIGNED A NUMBER OF TRADE AGREEMENTS IN RECENT YEARS AND IS IMPLEMENTING POLICY THAT PROVIDES CLARITY, CERTAINTY AND INCENTIVES TO INVESTORS

Significant corporate tax incentives are available to the Ta Khoa Refinery

Years of Operation	%	Corporate Tax Rate
0-4	%	0%
5-13	%	5%
14-15	%	10%
>15	%	20%



FDI into Vietnam increased from ~US\$13bn in 2014 to **~US\$20bn in 2019**¹



The Vietnamese government is focused on initiatives and policy to support FDI. Recent trade agreements signed include:

- RCEP
- CPTPP
- FTA with South Korea
- TA with Europe
- Economic partnership with Japan



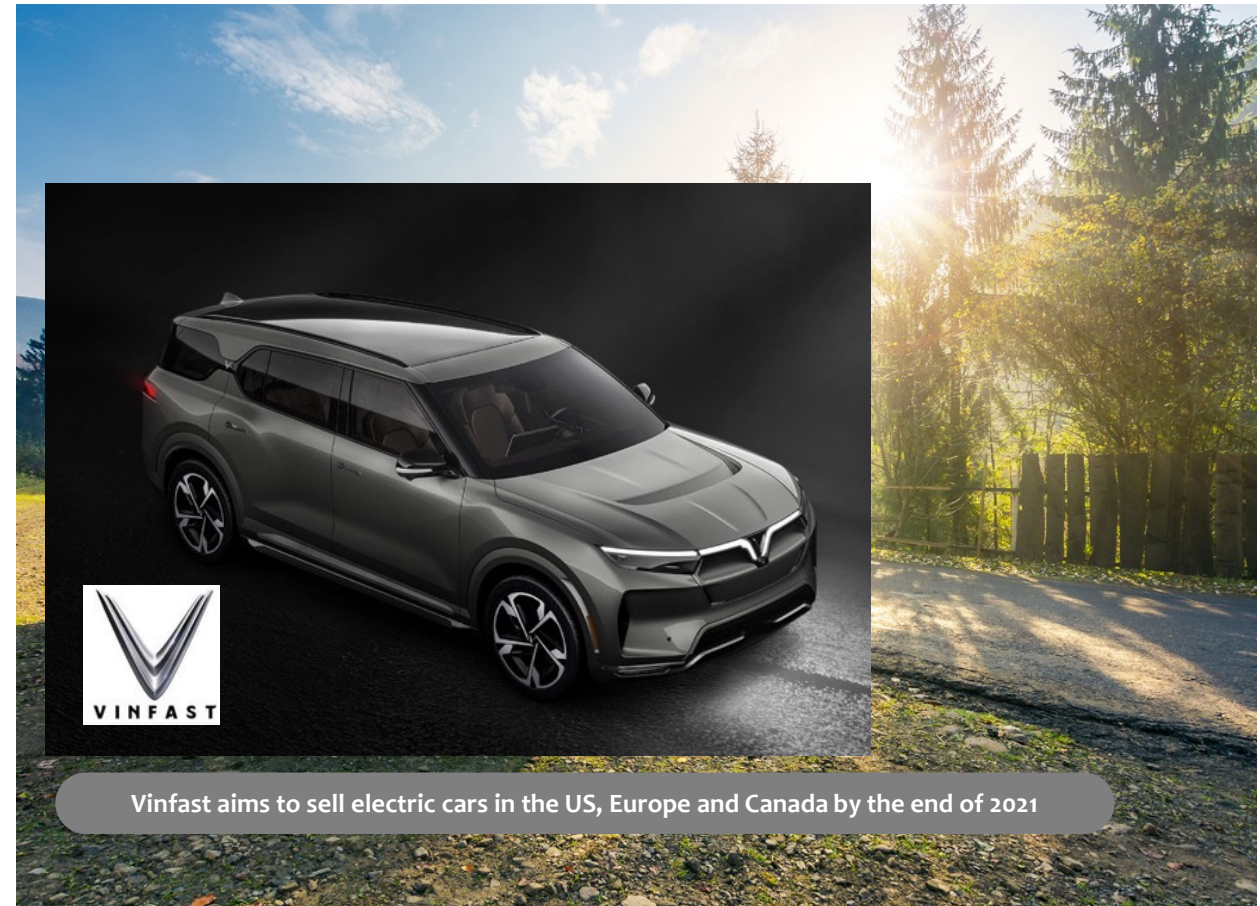
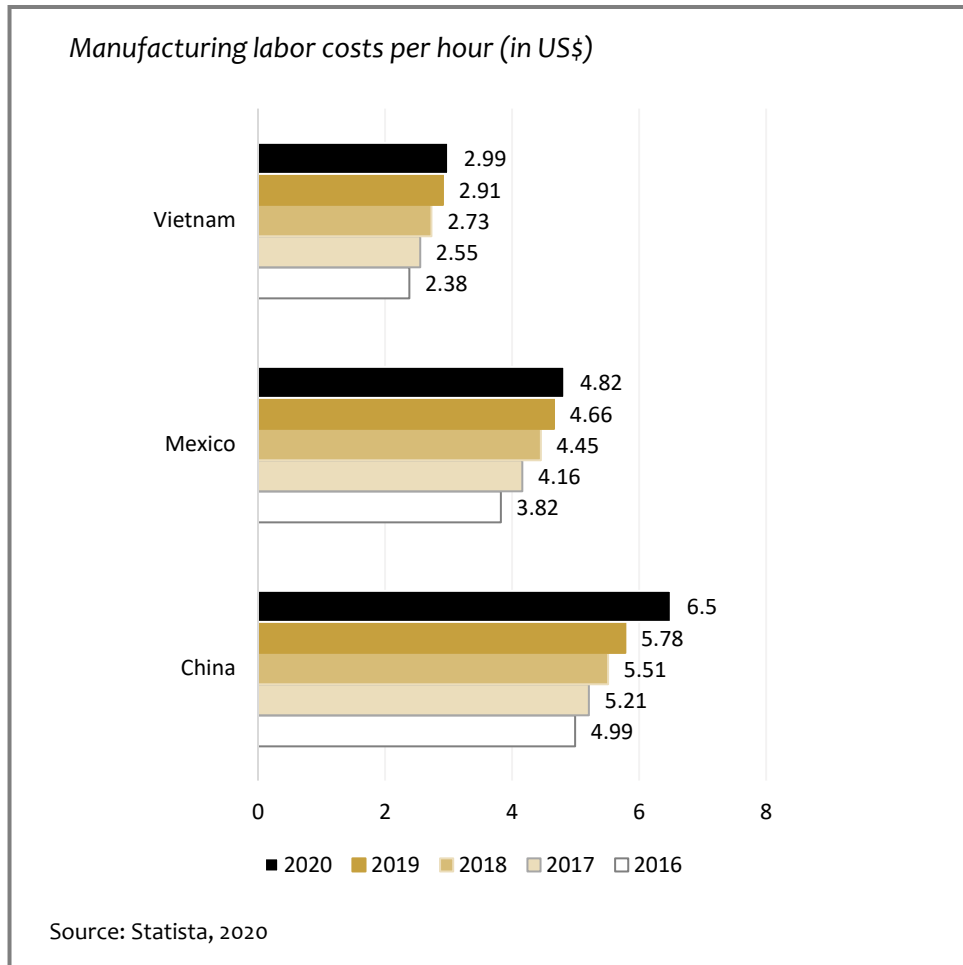
The top five foreign investors (by registered capital) into Vietnam include **South Korea, Hong Kong, Singapore, Japan & China**

1. Ministry of Planning and investment of Vietnam, 2020

COMPETITIVE OPERATING ADVANTAGE

VIETNAM HAS SOME OF THE MOST COMPETITIVE LABOR COSTS IN THE WORLD

Low labor costs are a competitive advantage for Blackstone's DBU and make Vietnam an ideal location for a future EV manufacturing hub.

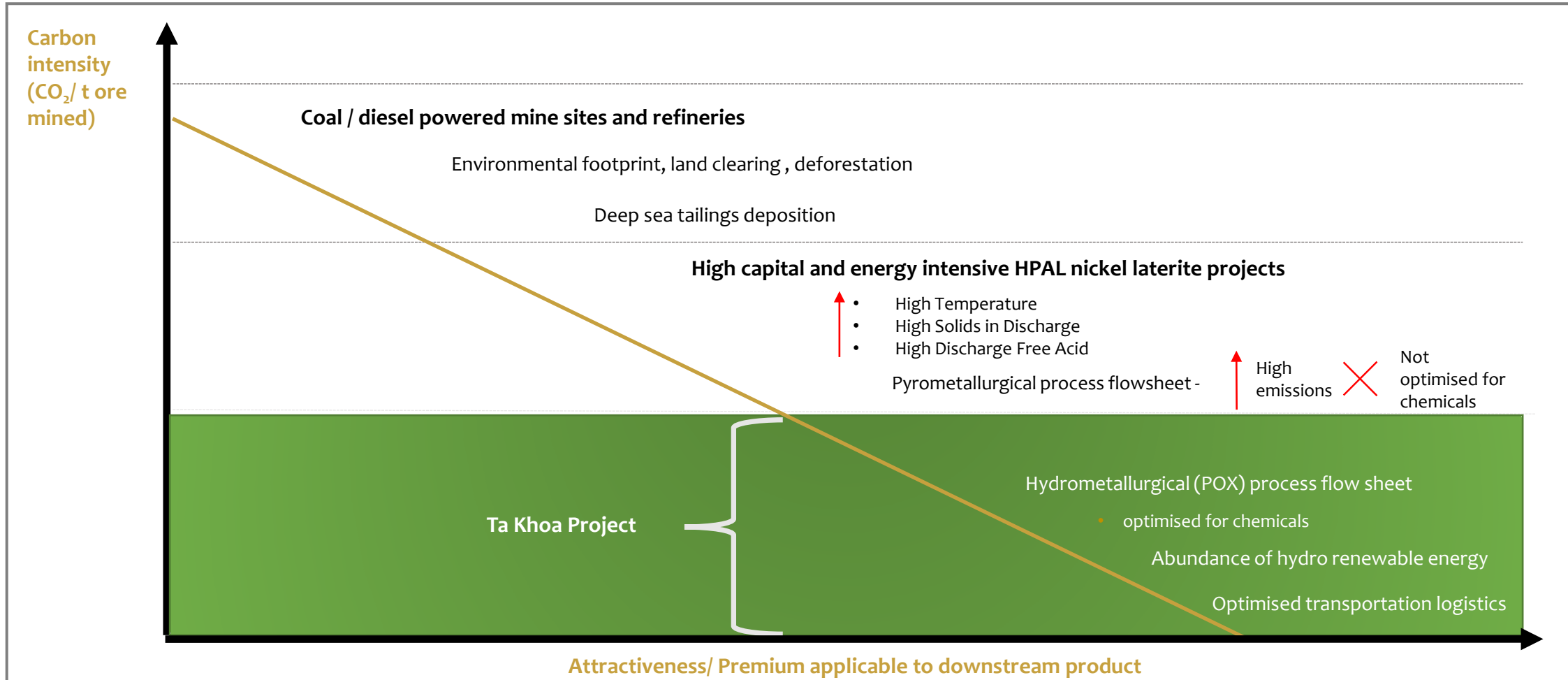


Note: To date, Samsung and LG have invested a combined total of ~US\$20bn into electronics manufacturing in Vietnam and both Companies have announced plans to construct Lithium-ion battery manufacturing plants in Vietnam to service the local and global EV market

COMPETITIVE OPERATING ADVANTAGE

GREEN CREDENTIALALED NICKEL PRODUCTS

OEMs are demanding Li-ion batteries sourced from green nickel™ supply chains. The industry will be willing to pay a premium for responsibly sourced green nickel™.





BLACKSTONE
MINERALS

APPENDICES

Suite 3, Level 3, 24 Outram Street, West Perth,
WA, 6005

T: +61 8 9425 5217 | F: +61 8 6500 9982
E: admin@blackstoneminerals.com.au | www.blackstoneminerals.com.au



APPENDIX 1 - BLACKSTONE BOARD

BEST IN CLASS LEADERSHIP WITH A PROVEN TRACK RECORD OF CORPORATE SUCCESS



Scott Williamson

Managing Director

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



Hamish Halliday

Non-Executive Chairman

More than 20 years corporate and technical experience, founder of Adamus Resources Ltd, a A\$3M float which became a multi-million ounce emerging gold producer and eventual takeover by Endeavour Mining for >\$160M



Andrew Radonjic

Non-Executive Director

Mine Geologist and Mineral Economist with more than 25 years' experience with a focus on gold and nickel exploration and mining, MD of Venture Minerals Ltd (ASX: VMS), led the Feasibility Study of the Mount Lindsay Tin-Tungsten-Magnetite project.



Alison Gaines

Non-Executive Director

20 years of experience as a director in Australia and internationally. Experienced in the roles of Board Chair and board committee chair, particularly remuneration and nomination and governance committees.



Hoirim Jung

Non-Executive Director

More than 10 years financial management experience, specifically in financing and feasibility studies for new projects. Holds a Bachelor of Economics from Seoul National University and has a qualification with the Korean Institute of Certified Public Accountants (KICPA).

APPENDIX 2 - MANAGEMENT TEAM

DRIVING THE DEVELOPMENT OF TA KHOA AS A MINE-TO-MARKET NICKEL BUSINESS



Jamie Byrde

CFO & Company Secretary

Chartered Accountant with more than 16 years' experience in accounting, company secretarial and corporate advisory.



Dr Stuart Owen

Head of Exploration

BSc & PhD in Geology with more than 20 years' experience in mineral exploration.



Andrew Strickland

Head of Project Development

Experienced Study and Project Manager, Fellow of the Australian Institute of Mining and Metallurgy, BSc (Extractive Metallurgy), BEng (Chemical), MBA.



Patrick Chang

Head of Corporate Development

Master of Science Degree in Geology, a Master of Computer Science Degree and Chartered Financial Analyst. Previously Corporate Development Officer with ASX-listed gold producer Medusa Mining.



Steve Ennor

GM Project Development Ta Khoa Project

Metallurgist with 30 years of experience in gold and base metals processing, including senior management and operational positions in Australia, Africa and South East Asia.



Vũ Hồng Cẩm Vân

GM Commercial Ta Khoa Project

Joined Ban Phuc Nickel Mines in 2006 and has successfully performed in several roles transitioning from senior environment officer to HSE & CSR manager and government affairs director.

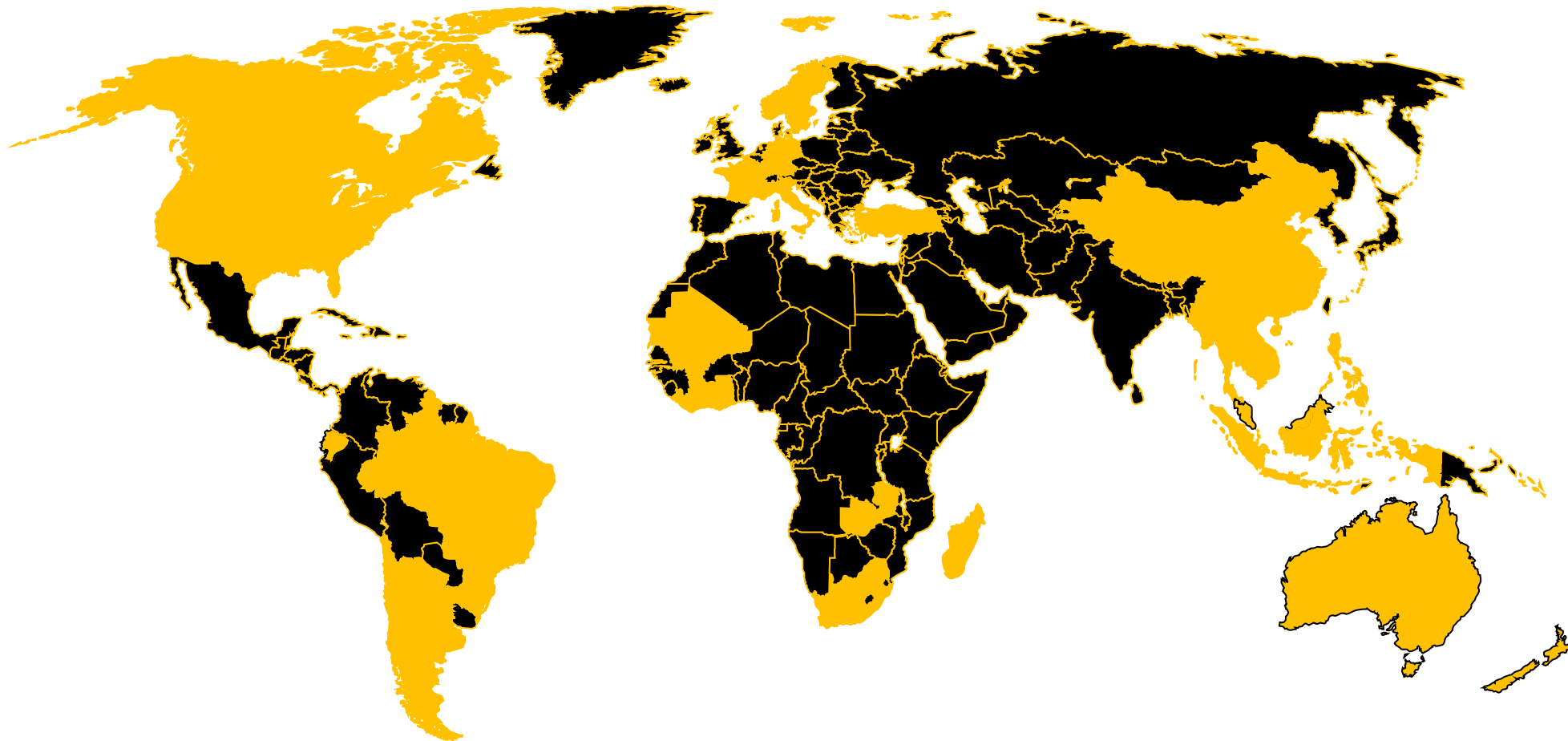


Tony Tang

General Manager Project Development (Downstream)

BSc Chemical and Metallurgy, a chartered professional member of AusIMM - FAusIMM(CP), with over 25 years experience in the resources sector.

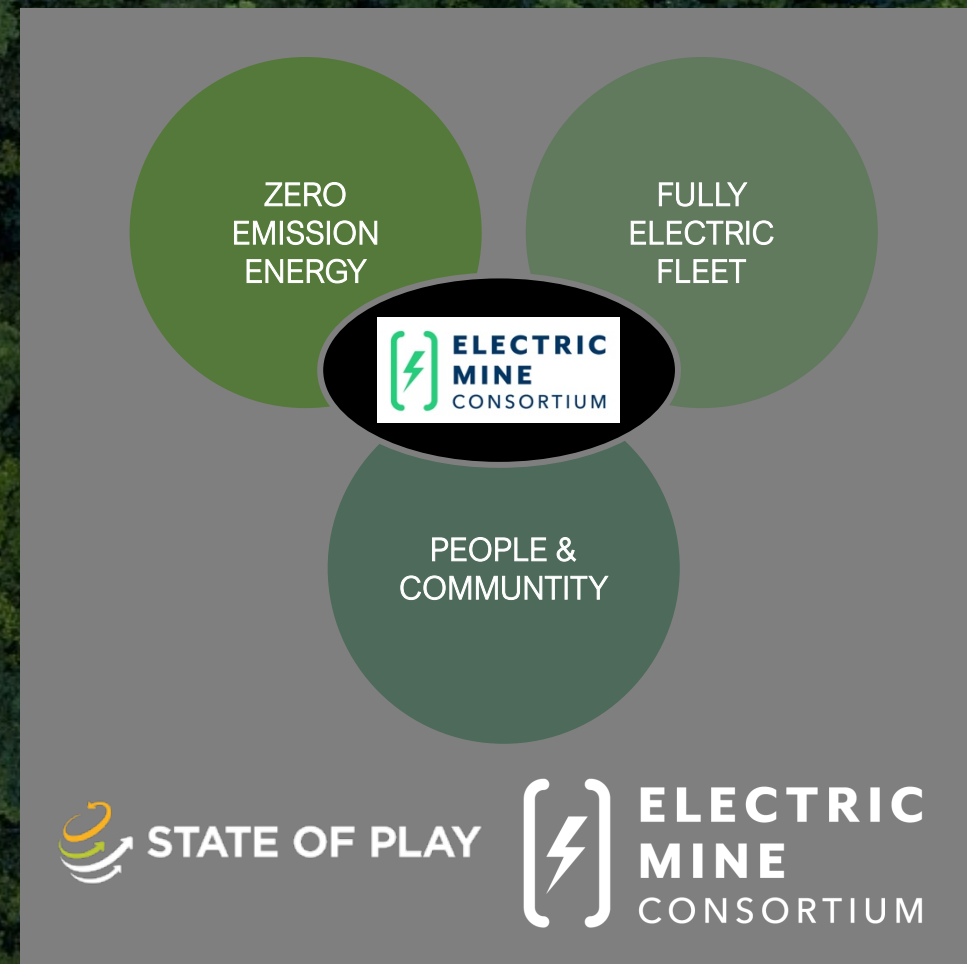
APPENDIX 3 – MANAGEMENT TEAM WITH INTERNATIONAL EXPERIENCE ACROSS MULTIPLE REGIONS



APPENDIX 4 - TARGETING ZERO CARBON MINING

The Electric Mine Consortium

- Blackstone is targeting fully electrified, zero carbon mining at Ban Phuc
- In April 2021, Blackstone joined the Electric Mine Consortium
- The Electric Mine Consortium's vision:
 - A zero-carbon emission mine powered by 100% renewables
 - A fully electrified, data-driven fleet, unlocking greater productivity
 - A people and community approved mine, that is safe and healthy
- Currently entering Phase 2, the consortium is progressing 6 workstreams:
 - Energy Storage
 - Electric Mine Design
 - Underground Haulage
 - Surface and Long-Distance Haulage
 - Electrical Infrastructure
 - Light BEV's and Ancillary Equipment



APPENDIX 5 – OUR PARTNER

- Spun off from its parent company ECOPRO in May 2016
- Main Business Areas
 - Cathode Active Material
 - Precursor
- Specialization in cathode materials
- Leads the high-volume cathode material market at home and abroad, based on its success in developing and mass-producing high-nickel cathode materials for the first time in Korea



COMPETENT PERSON STATEMENT



The information in this report that relates to Exploration Results and Exploration Targets is based on information compiled by Mr Andrew Radonjic, a Non-Executive Director and Technical Consultant of the company, who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Andrew Radonjic has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Mr Andrew Radonjic consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Mineral Resource Estimation was conducted by BM Geological Services (BMGS) under the supervision of Andrew Bewsher, a director of BMGS and Member of the Australian Institute of Geoscientists with over 21 years of experience in the mining and exploration industry in Australia and Vietnam in a multitude of commodities including nickel, copper and precious metals. Mr Bewsher consents to the inclusion of the Mineral Resource Estimate in this report on that information in the form and context in which it appears.

Information in this Presentation relating to processing metallurgy is based on technical data compiled and reviewed by Tony Tang, a full-time employee of the company. Tony Tang is a Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM) and has sufficient experience relevant to the metallurgical test-work discussed in this piece of news and the activity which he is undertaking to qualify as a Competent Person under the 2012 Edition of the 'Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves. Tony Tang consents to the inclusion of the technical data in the form and context in which it appears.

No New Information or Data

The Company confirms that it is not aware of any new information or data that materially affects the information including in the original market announcements above, and in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' finding are presented have not been materially modified from the original market announcements.