BLACKSTONE MINERALS

Looking forward. Mining green.

# BSX INVESTOR PRESENTATION

**ASX:BSX**

June 2021

# CAUTIONARY STATEMENT

The Scoping Study at Ta Khoa, referred to in this announcement, has been undertaken to determine the potential to restart the Ta Khoa Nickel-Cu-PGE project and develop downstream processing

This report contains forward-looking statements which are identified by words such as 'may', 'could', 'believes', 'estimates', 'targets', 'expects', or 'intends' and other similar words that involve risks and uncertainties. These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions regarding future events and actions that, as at the date of this report, are considered reasonable. Such forward-looking statements are not a guarantee of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, the Directors and the management. The Directors cannot and do not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this report will actually occur and investors are cautioned not to place undue reliance on these forward-looking statements. The Directors have no intention to update or revise forward-looking statements, or to publish prospective financial information in the future, regardless of whether new information, future events or any other factors affect the information contained in this report, except where required by law or the ASX listing rules.

The Scoping Study referred to in this announcement is based on the scoping study released to the ASX on 14 October 2020.

Further evaluation work and appropriate studies are required before Blackstone is in a position to estimate any Ore Reserves or to provide any assurance of an economic development case. The JORC-compliant Mineral Resource estimate forms the basis for the Scoping Study that is discussed in this announcement. 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.

This Scoping Study was completed to an overall +/- 40% accuracy using the key parameters and assumptions outlined elsewhere in this announcement. . While Blackstone considers that all the material assumptions are based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by this study will be achieved. To achieve the range of outcomes indicated in the Scoping Study, further funding will be required to construct the mine, processing facilities and project infrastructure including upstream and downstream processing plants. Investors should note that there is no certainty in obtaining funding to the extent required which may be achieved through a combination of debt and equity. It is also possible that such funding will only be available on terms that may be dilutive to or otherwise affect the value of Blackstone's existing shares.

Blackstone concluded it has a reasonable basis for providing these forward-looking statements and believes it has reasonable basis to expect it will be able to fund development of the project. However, a number of factors could cause actual results or expectations to differ materially from the results expressed or implied in the forward-looking statements. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of this study. The project development schedule assumes the completion of a Pre-Feasibility Study (PFS) and a Definitive Feasibility Study (DFS) before an investment decision is finalised.

# INVESTMENT THESIS

## Exposure to rapidly intensifying green electrification movement

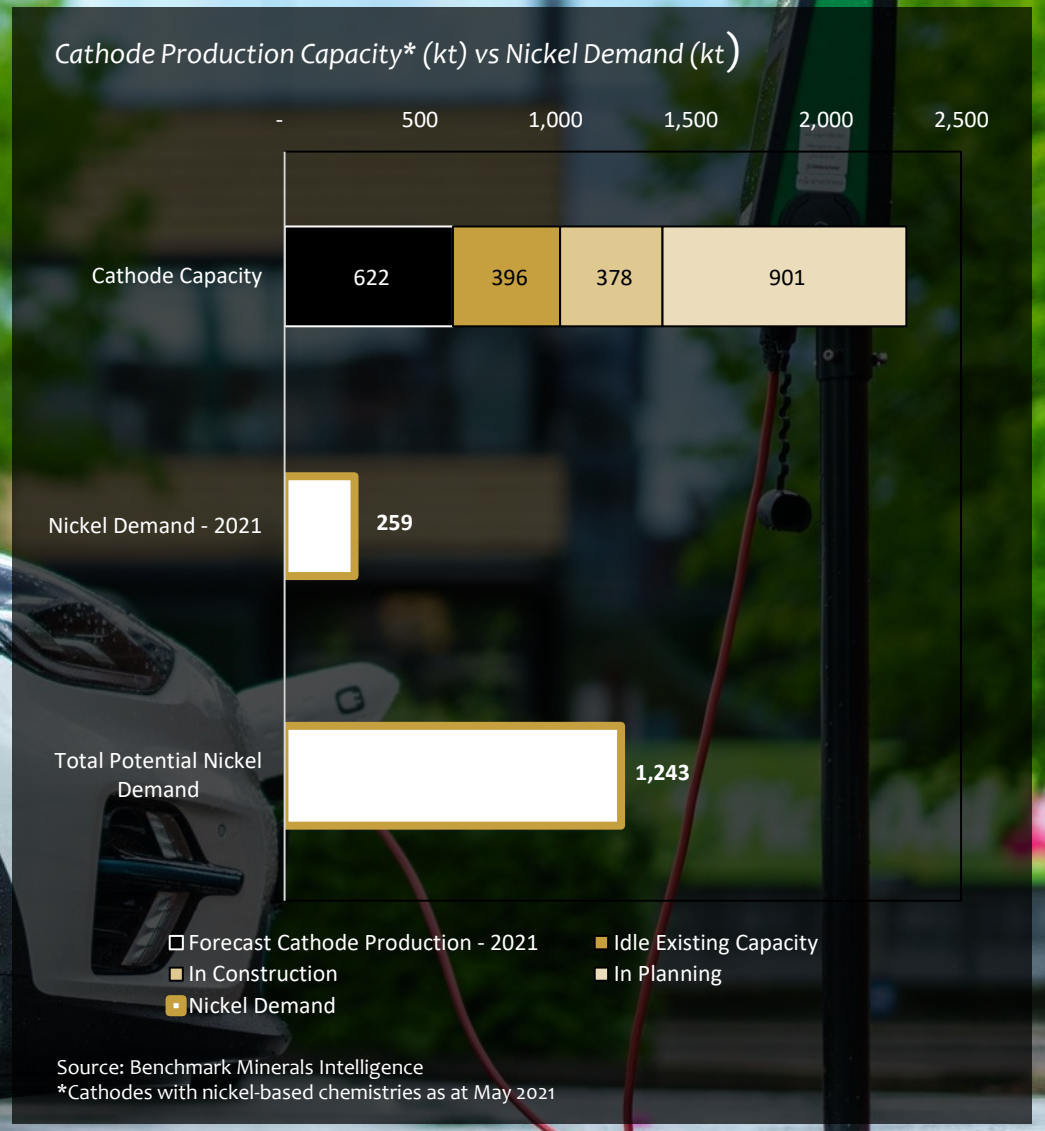
- Blackstone provides excellent exposure to the growing Electric Vehicle (EV) and Li-ion battery thematic
- Once in a generation opportunity to position for the movement towards high nickel content cathodes needed for the EV revolution

## 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

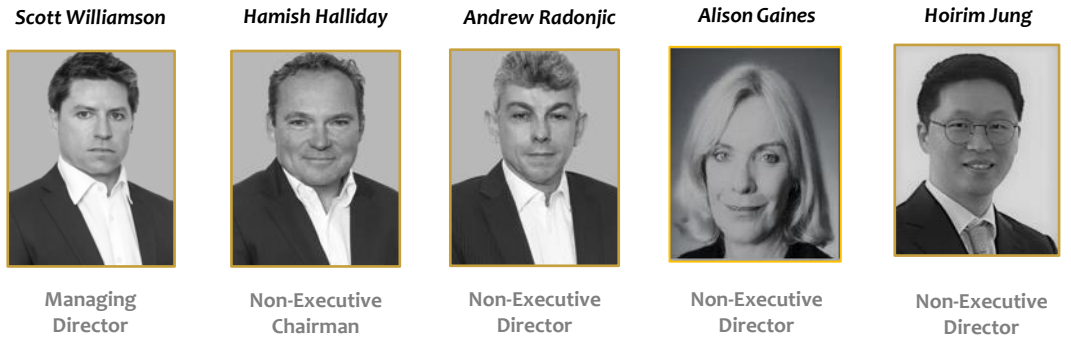


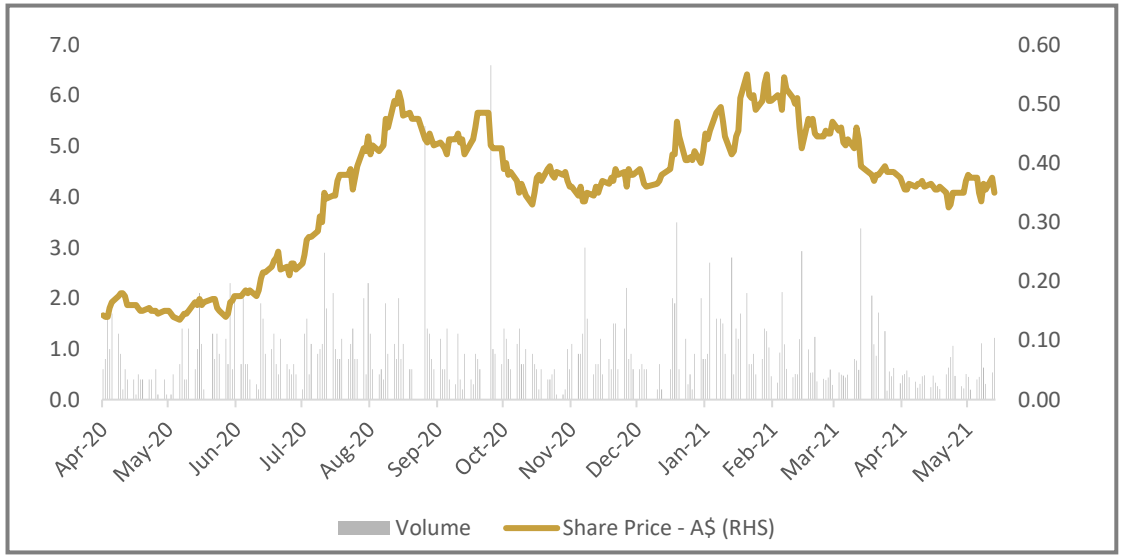
# CORPORATE SNAPSHOT

| BLACKSTONE MINERALS LIMITED | |
|---|---|
| ASX Code | BSX |
| OTCQX Code | BLSTF |
| Shares on Issue | 331.8m |
| Last Share Price (1 June 2021) | $A0.35 |
| Market Capitalisation | A$116m |
| Cash at 31 March 21 | ~A$19m |
| Options | 14m |
| 3-month Avg Daily Vol. (shares) | 0.7m |

| KEY SHAREHOLDERS | |
|---|---|
| Deutsche Balaton | 17% |
| EcoPro | 12% |
| Fidelity | 6% |
| Board & Management | 14% |

## BOARD OF DIRECTORS

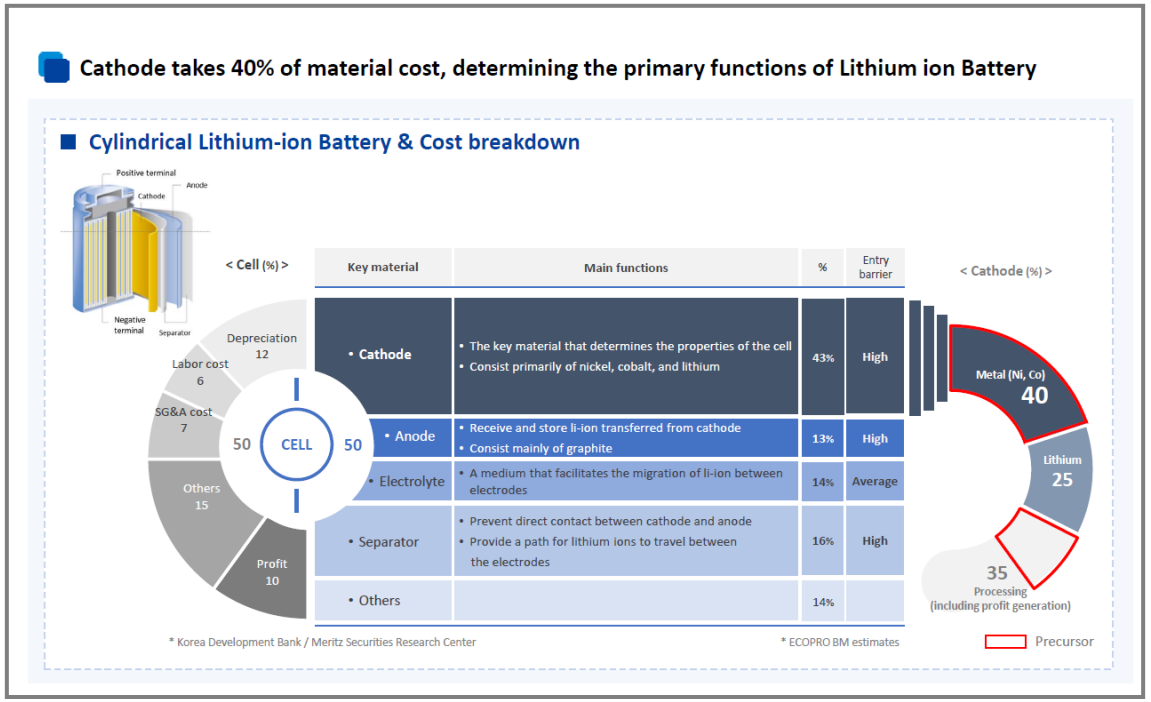


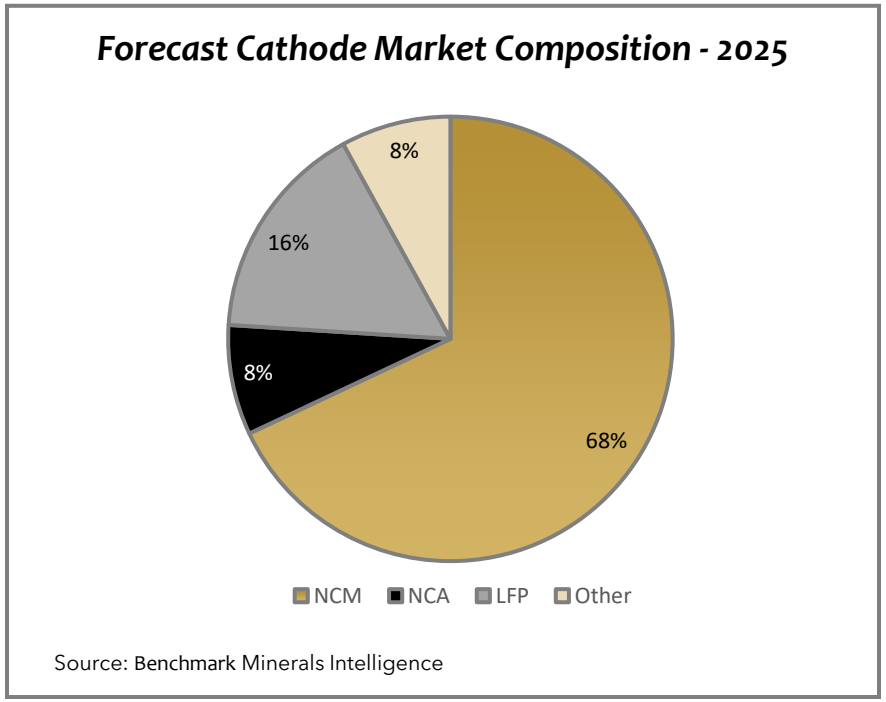



# STRONG MACRO TAIL WINDS

## NICKEL DEMAND DRIVERS

Significant amounts of capital committed (existing, under construction and planned) into production of high nickel content cathodes.




Source: Benchmark Minerals Intelligence

- Nickel rich cathodes are preferred as their chemistry enhances range, which has been long-term barrier to the adoption of EVs
- Security of supply concern is being addressed by direct investment into upstream and midstream markets
  - LG signs MOU for $9.8bn investment deal into Indonesia
  - Posco acquires 30% interest in Ravensthorpe nickel mine
- Demand for responsibly sourced nickel will direct future investment flows and locations of future EV production hubs.

# UNIQUE BUSINESS MODEL

## INTEGRATION OF NICKEL SUPPLY CHAINS

### Mine

Ore → Concentrate

### Chemical Refinery

Concentrate → MHP → Precursor NCM

### Cathode Plant

Ni Co Mn Li

Prec. NCM + Lithium → Cathode

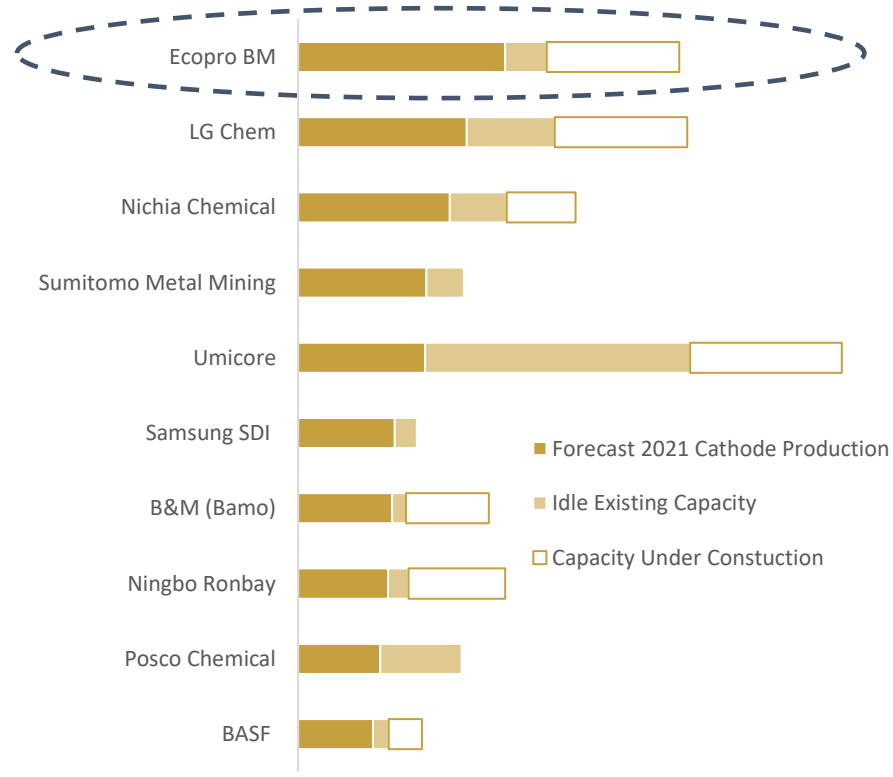
### Gigafactories

Cathode + Anode → Battery Cell

*Flow of Investment Capital*

**Security of supply concern is driving investment further upstream into Li-ion battery supply chains**

*Top 10 cathode producers globally**

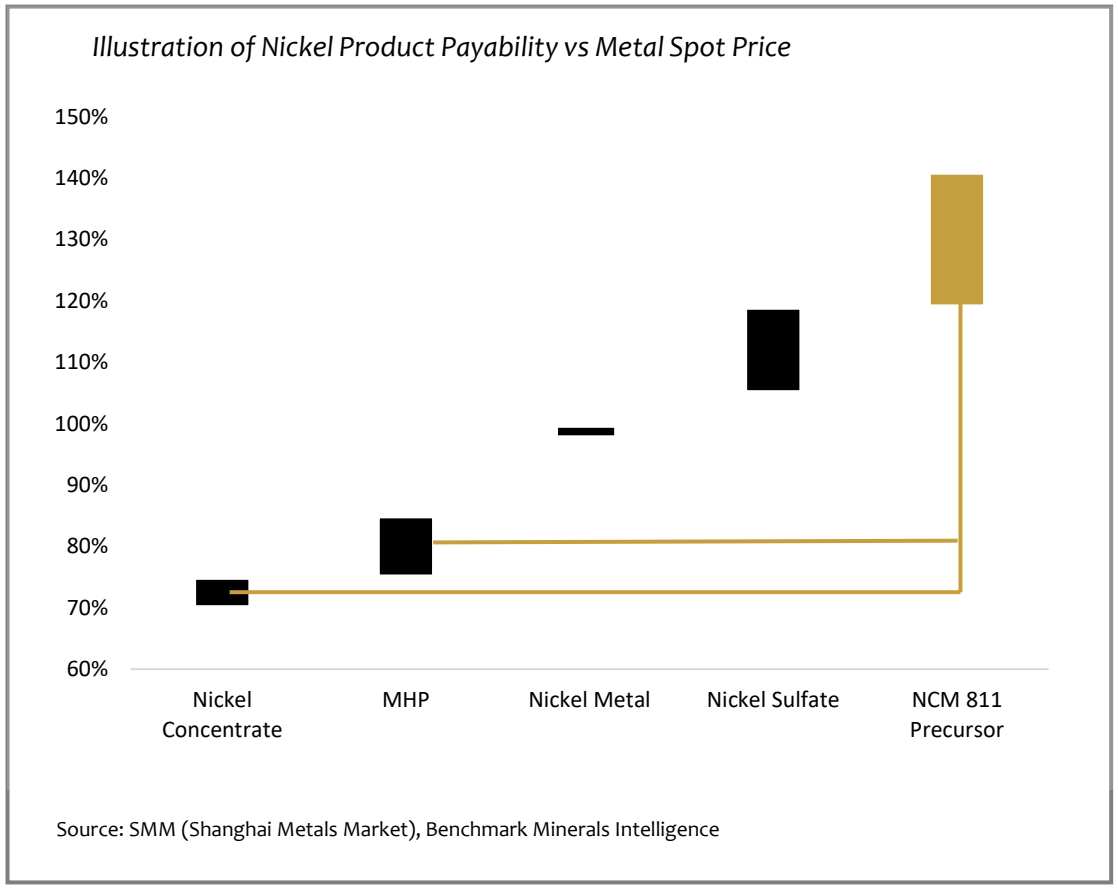



Source: Benchmark Minerals Intelligence
*Cathode producers in which primary chemistry is nickel-based as at May 2021
Note: EcoPro has ~140kt of cathode production capacity (existing + under construction)

# 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)

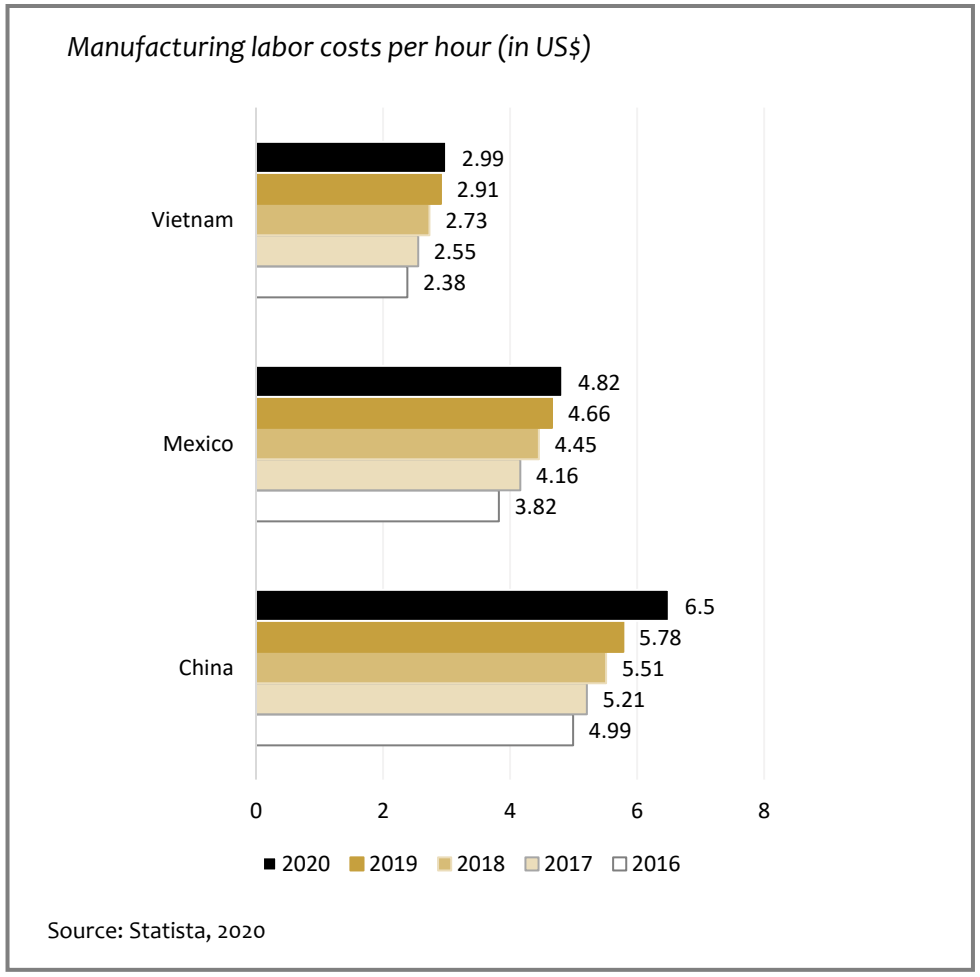
Hydrometallurgical downstream process enables Blackstone to accept low-cost nickel concentrates undesirable to the traditional pyrometallurgical downstream process route

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

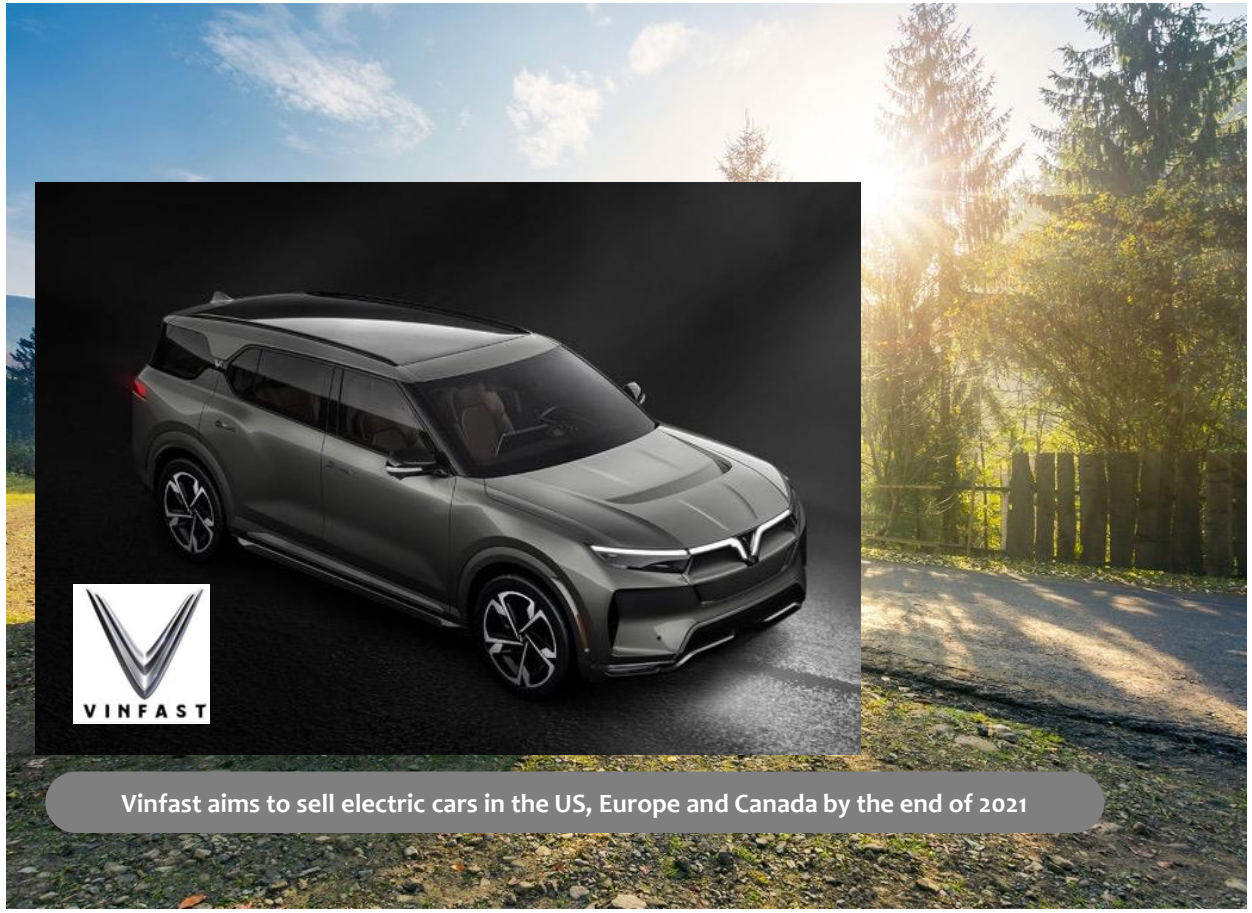
# COMPETITIVE OPERATING ADVANTAGE

## VIETNAM HAS SOME OF THE LOWEST 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.




Source: Statista, 2020

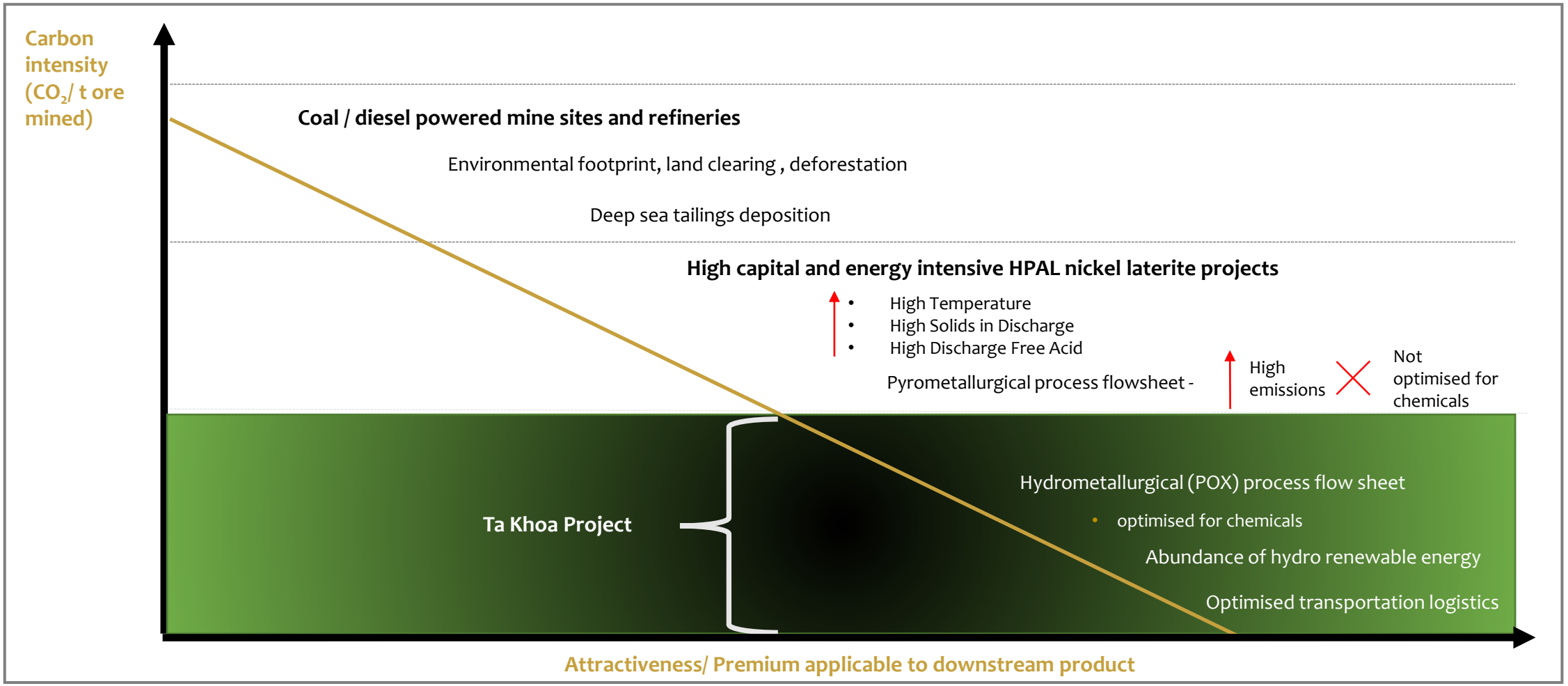



**Note: To date, Samsung and LG have invested a combined total of ~US$20bn into electronics manufacturing in Vietnam and both Companies have announced plans to construct Lithium-ion battery manufacturing plants in Vietnam to service the local and global EV market**

# COMPETITIVE OPERATING ADVANTAGE

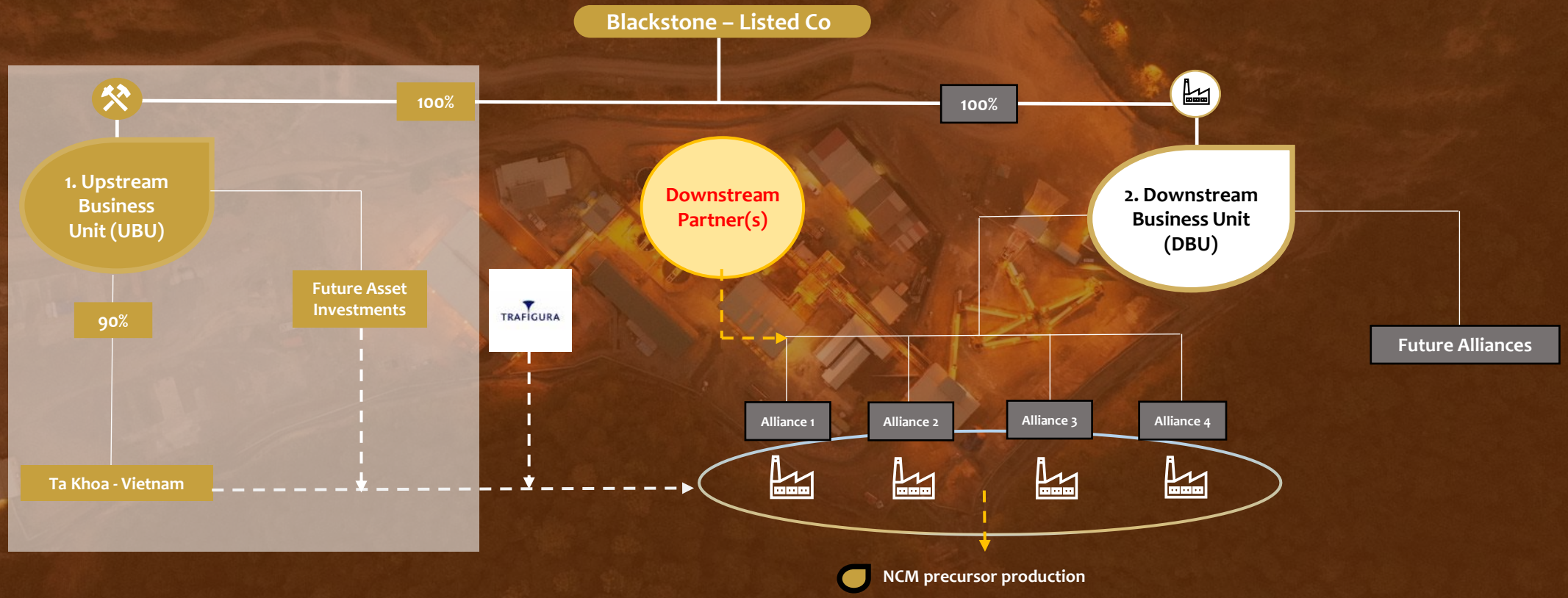
## GREEN CREDENTIALED NICKEL PRODUCTS

**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™.**



# 1. UPSTREAM

## UPSTREAM BUSINESS UNIT

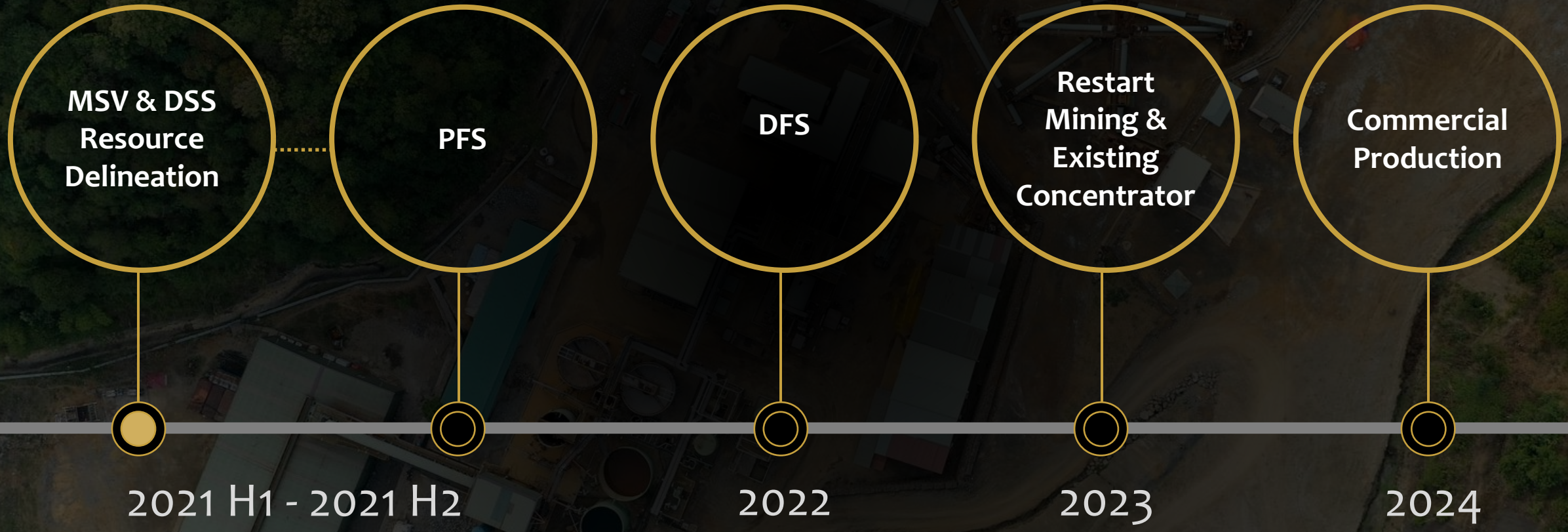



The Upstream Business Unit (UBU) will provide feedstock to the Downstream Business Unit (DBU). Feedstock to the DBU will include nickel concentrate produced from the Ta Khoa nickel mine as well as third-party supply.

# TIMELINE

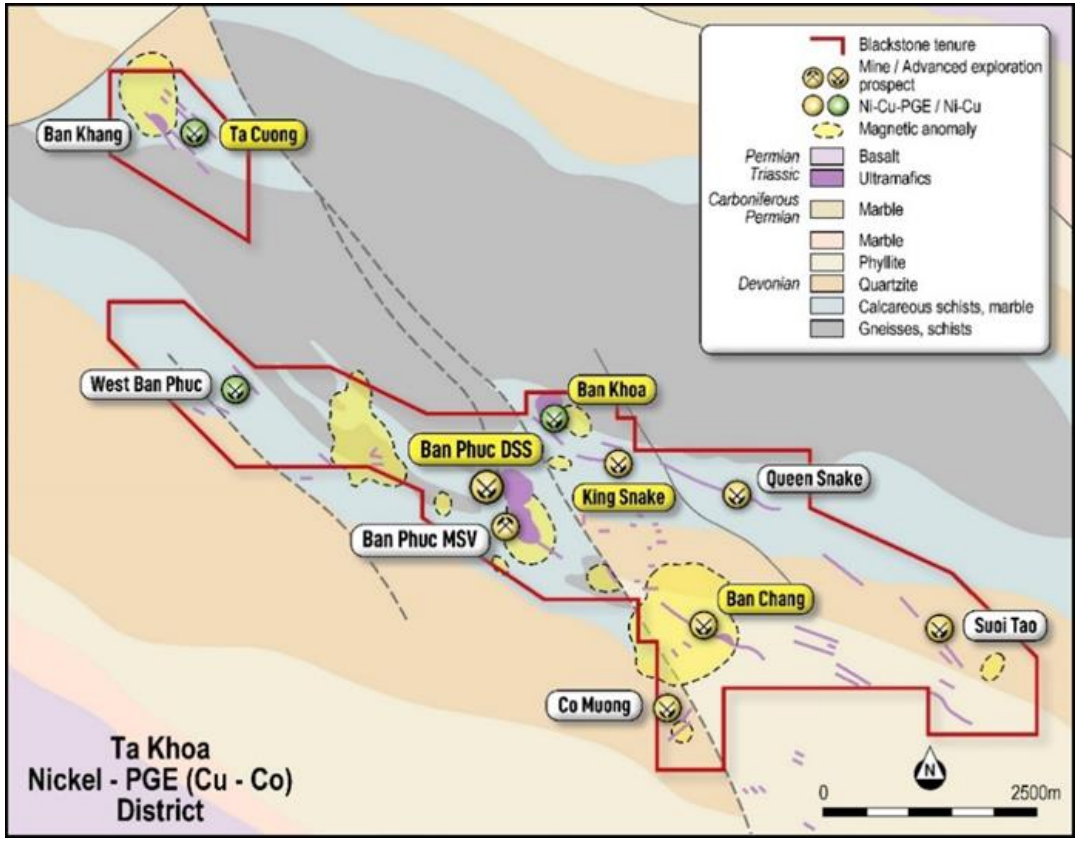
## UPSTREAM BUSINESS MILESTONES

**Multiple active drill rigs targeting Massive Sulfide Vein (MSV) and Disseminated Sulfide (DSS) prospects, intended to support the restart of the existing concentrator and subsequent construction of a new 4Mtpa concentrator**



# DISTRICT SCALE NICKEL SULFIDE OPPORTUNITY – TA KHOA PROJECT

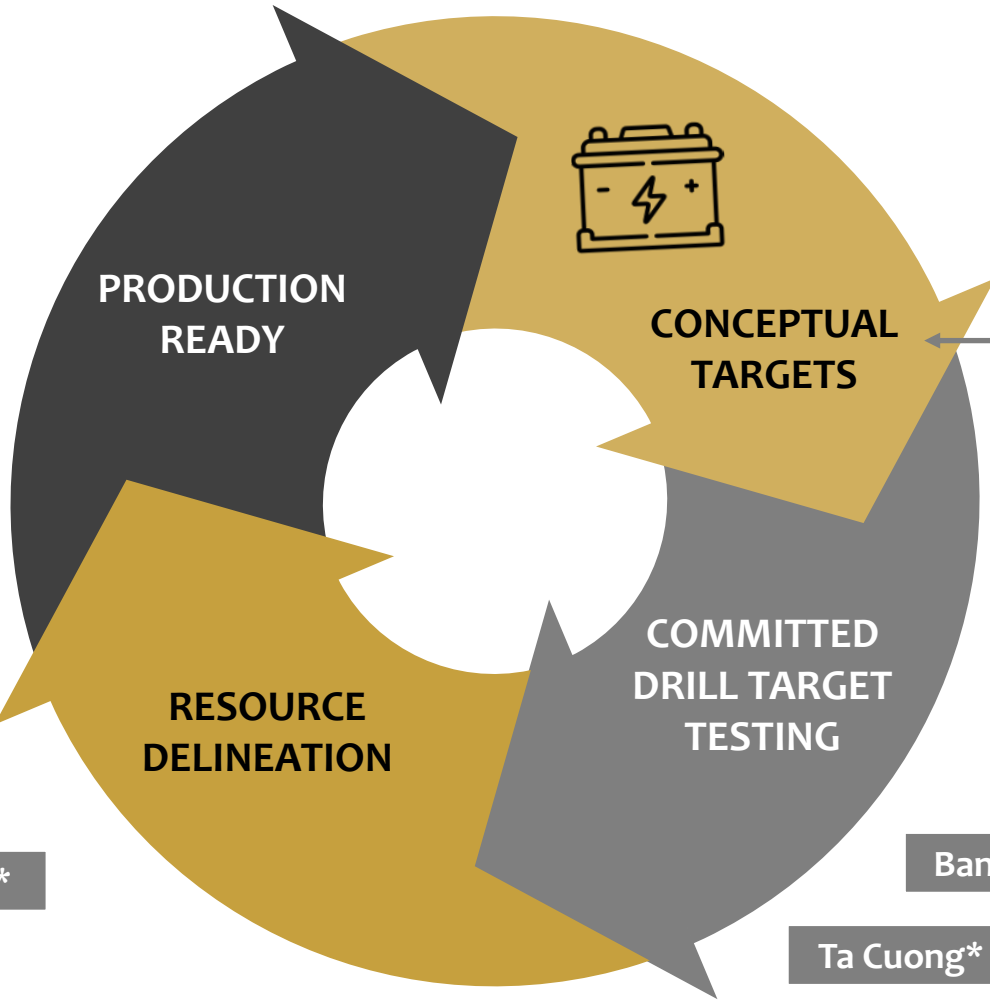
## AGGRESSIVE EXPLORATION TARGETING HIGH GRADE MSV & DSS MINE LIFE EXTENSIONS




- 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 advanced stage MSV targets and a number of large bulk-tonnage DSS prospects
  - Ban Chang infill drilling for resource estimation is at an advance 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




Resource:
44.3Mt @ 0.52% Ni

Ban Phuc*

Ban Chang*

King Snake*

Queen Snake

Co Muong

Suoi Lap

Suoi Chanh

Nam Noi

Suoi Phuc

Phai Han

Suoi Hao

Suoi Phang

Suoi Tao

Ban Mong

Ban Khoa*

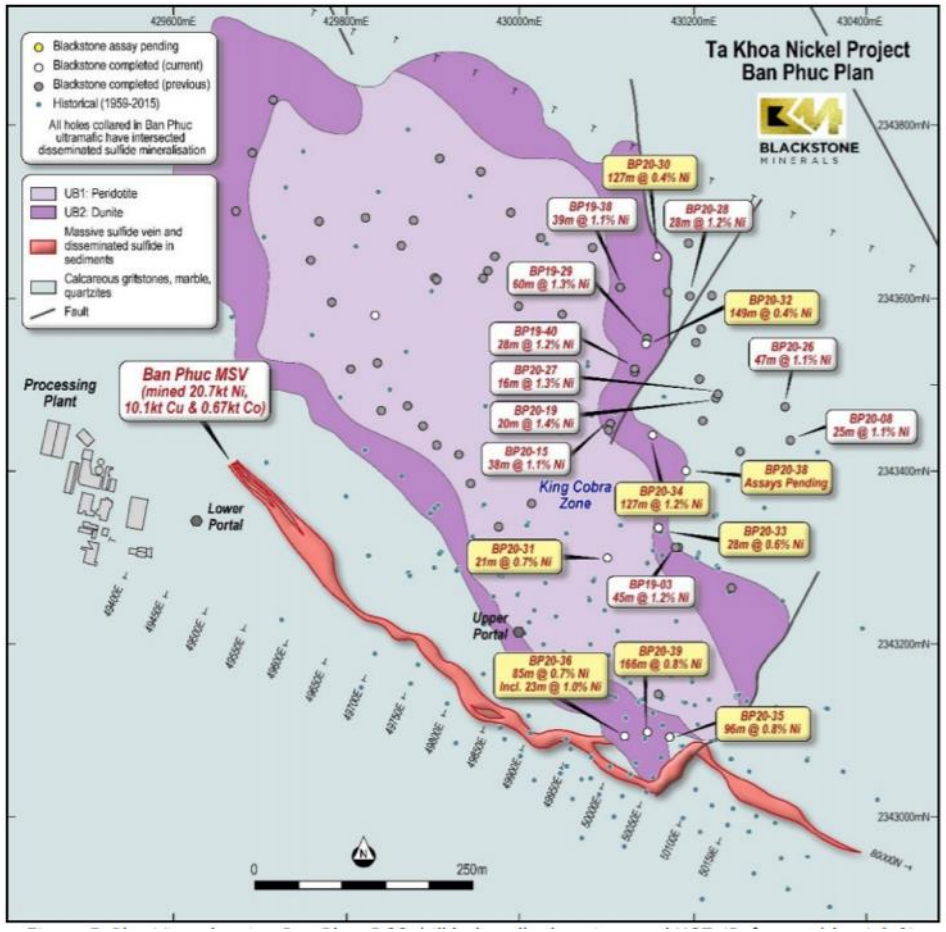
Ta Cuong*

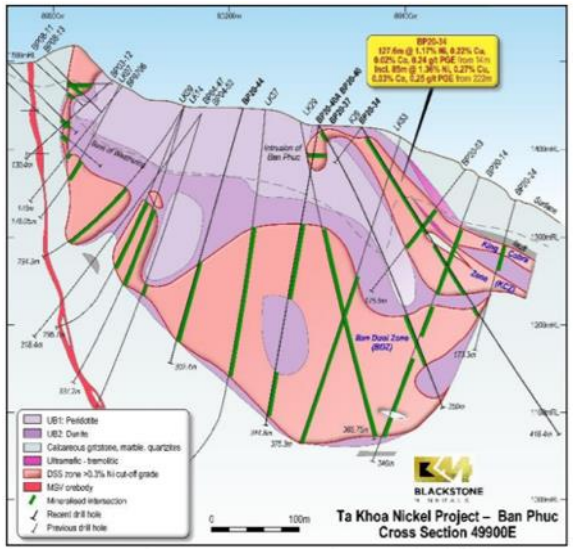
*Drill rig active

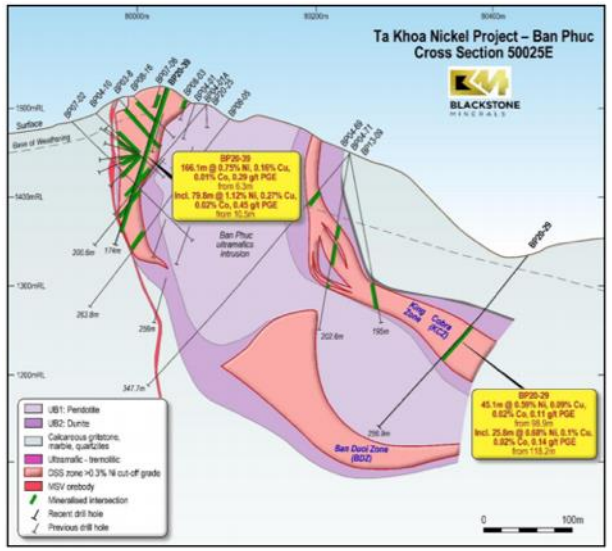
# DISTRICT SCALE NICKEL SULFIDE OPPORTUNITY – TA KHOA PROJECT

## BAN PHUC DISSEMINATED OPEN PIT OREBODY

**Resource update expected in the third quarter of 2021 to support the UBU PFS**




Blackstone discovered the King Cobra shallow, high grade zone within the Ban Phuc DSS

| Ban Phuc Maiden Resource | Mt | Ni (%) | Cu (%) | Co (%) | Pd (g/t) | Pt (g/t) | S (%) | Ni (t) | Cu (t) | Co (t) | Pd (oz) | Pt (oz) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Indicated Resources | 44 | 0.52 | 0.06 | 0.01 | 0.11 | 0.09 | 0.45 | 230,000 | 27,000 | 5,800 | 160,000 | 130,000 |
| Inferred Resources | 14 | 0.35 | 0.01 | 0.01 | 0.03 | 0.03 | 0.13 | 51,000 | 1,600 | 1,100 | 12,000 | 15,000 |

# SCOPING STUDY ECONOMICS

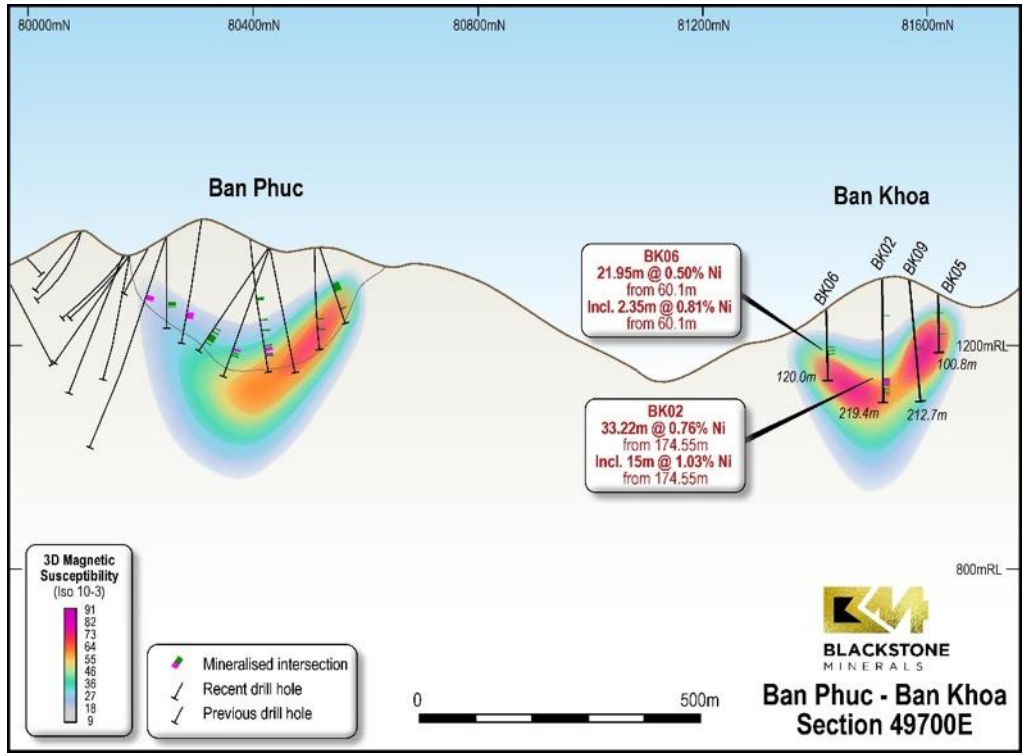
## UNDERPINNED BY THE BAN PHUC DSS OPEN PIT PROVIDING FEEDSTOCK TO ONE DOWNSTREAM REFINERY

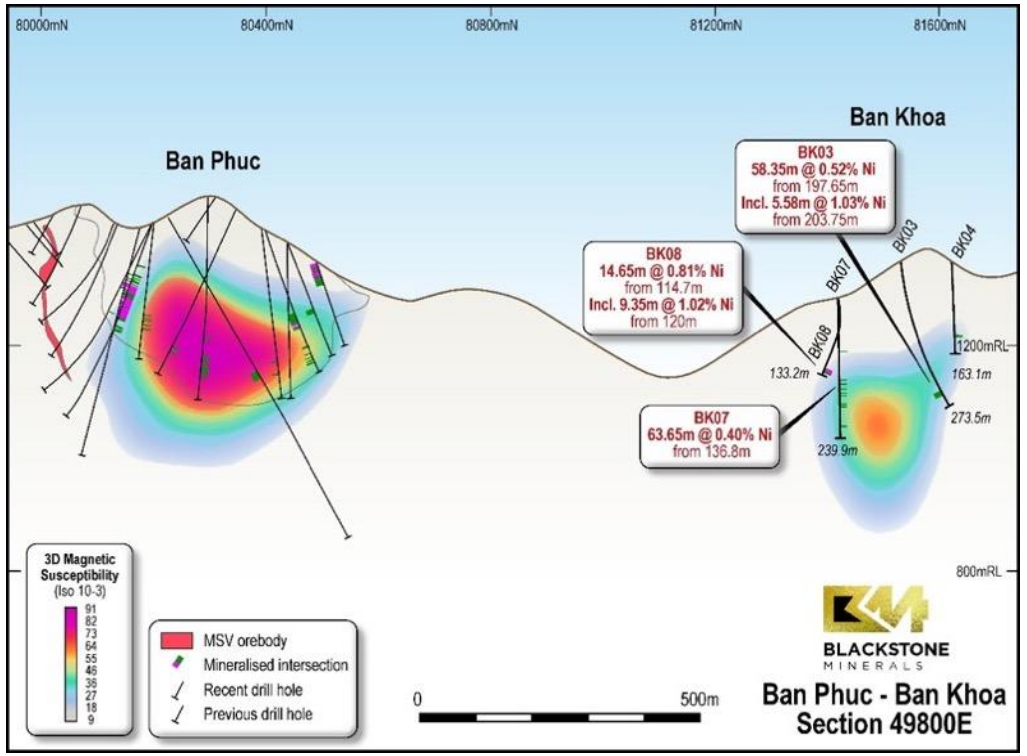
| NPV | Mining | Resource | Life of Mine | Free Cash Flow |
|---|---|---|---|---|
| US$665m | 4Mtpa @0.5% Ni | 44.3Mt @ 0.52% Ni | 8.5 Years | US$176mpa |

- Scoping Study represents base case production and economics
  - Annual NCM Precursor production of **25ktpa** (~51% Ni content) from one 200ktpa autoclave
  - Pre-tax NPV8% of US$665m and 45% IRR
  - Gross Revenue of ~US$3.3 billion
  - Capital payback period of 2.5 years
- Security of supply solution (i.e., partnership with Trafigura) enables the Scoping Study production profile to be scaled
- Downstream PFS to contemplate the construction of four 200ktpa autoclaves
  - Significantly scaled nickel output and production of NCM Precursor
  - Ability to produce tailored products, enabling Blackstone to meet the specifications of a number of different customers

# DISTRICT SCALE NICKEL SULFIDE OPPORTUNITY – TA KHOA PROJECT

## BAN KHOA HAS POTENTIAL TO ADD SIGNIFICANT MINE LIFE

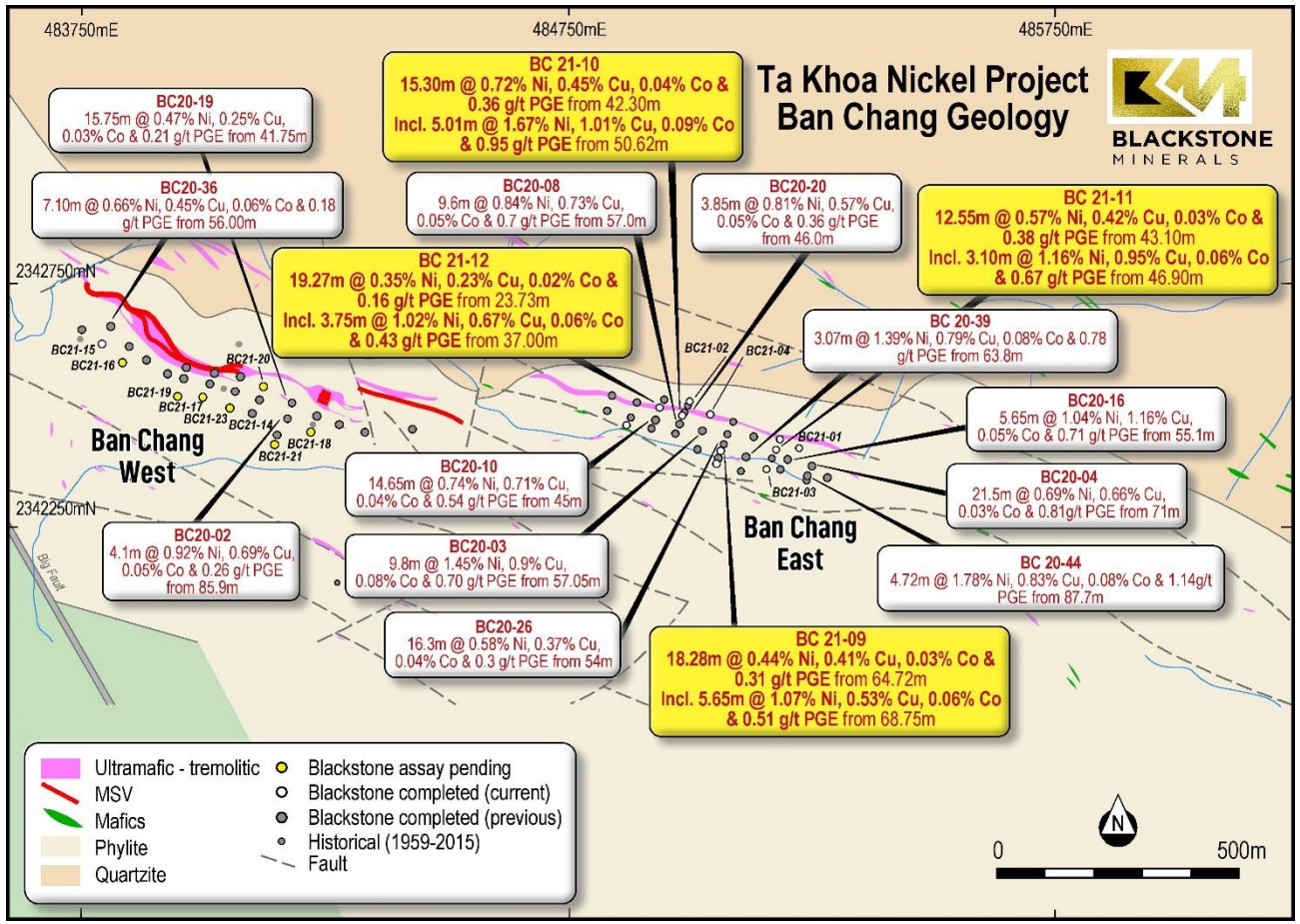



- The Ban Khoa prospect is analogous to the Ban Phuc DSS orebody
- Blackstone has commenced drilling to delineate DSS resources at Ban Khoa

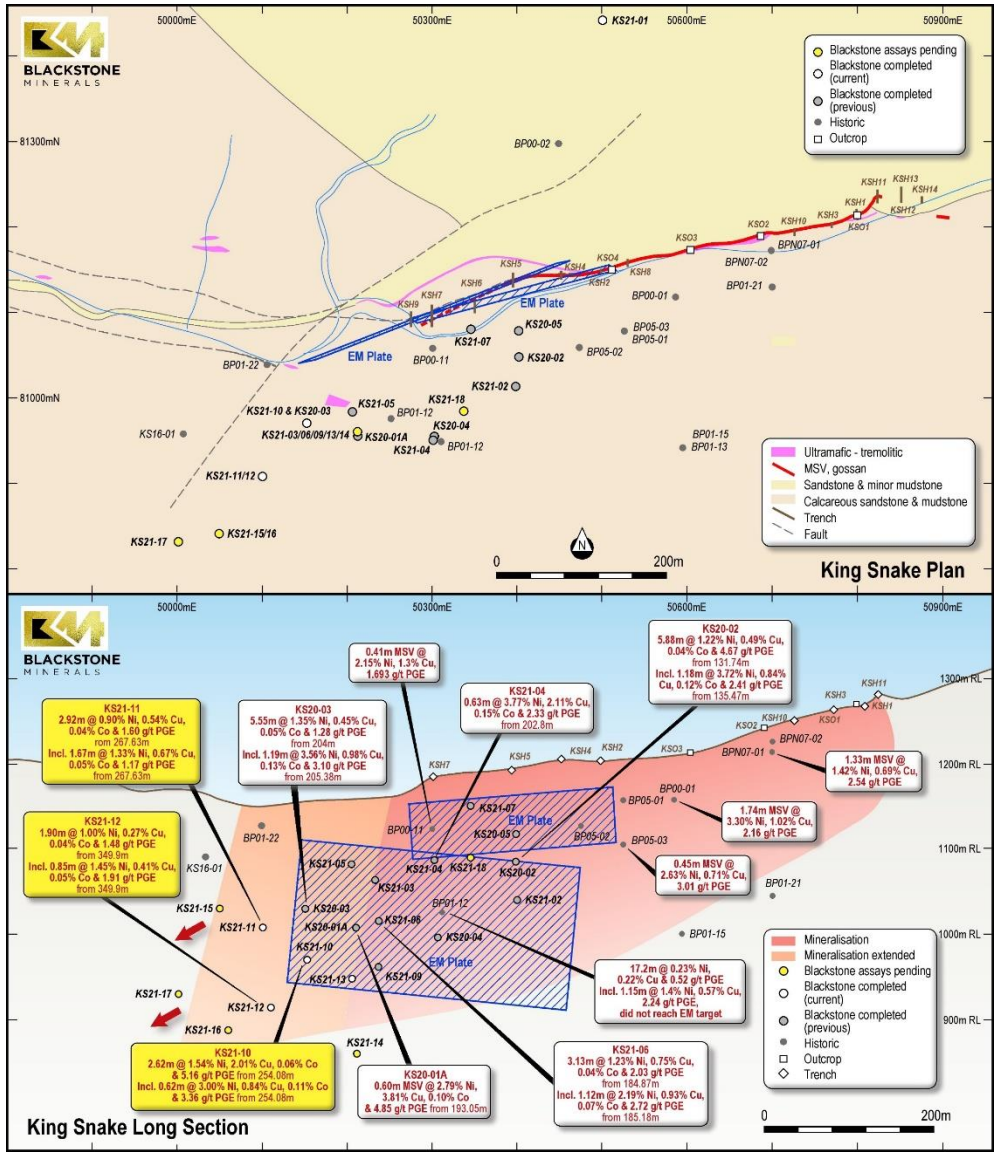
# DISTRICT SCALE NICKEL SULFIDE OPPORTUNITY – TA KHOA PROJECT

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



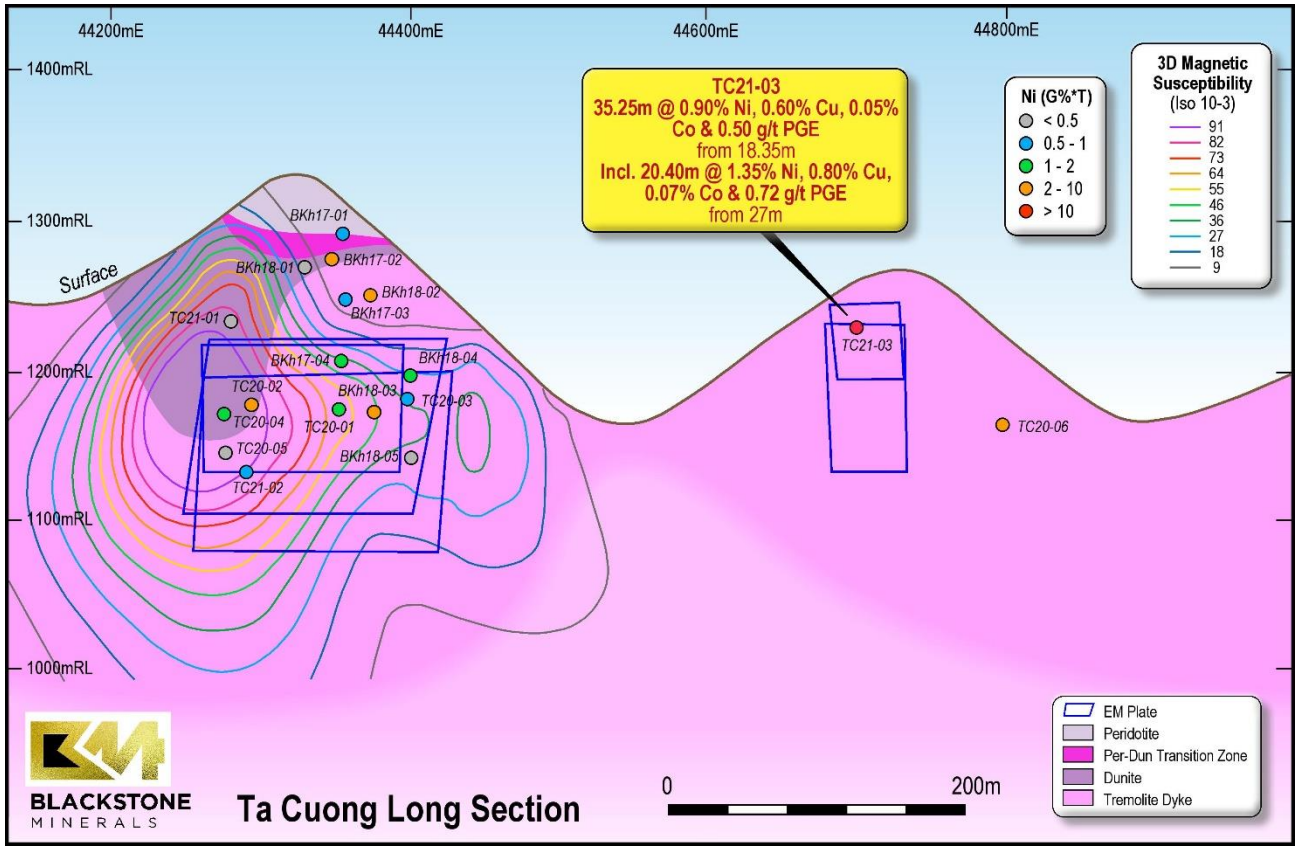

# DISTRICT SCALE NICKEL SULFIDE OPPORTUNITY – TA KHOA PROJECT

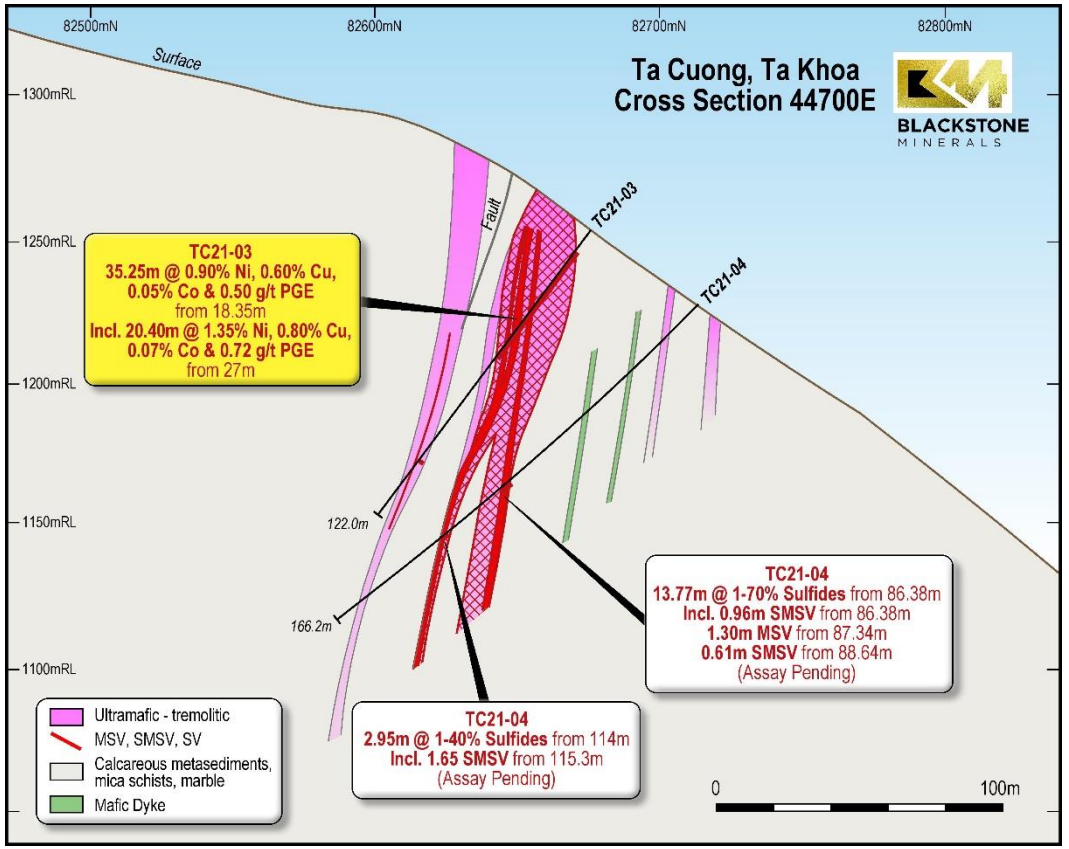
DRILLING OF NEW EM CONDUCTORS AT KING SNAKE IS INTERSECTING MASSIVE Ni SULFIDES - RESULTS INDICATE SYSTEM IS OPEN DOWN PLUNGE AND DOWN DIP




# DISTRICT SCALE NICKEL SULFIDE OPPORTUNITY – TA KHOA PROJECT

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



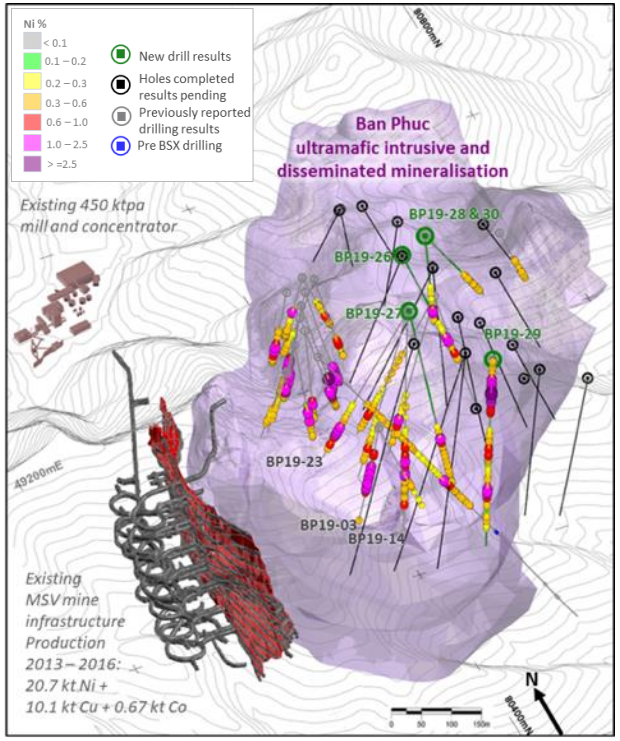



# SIGNIFICANT EXISTING INFRASTRUCTURE

## LARGE SCALE, INFRASTRUCTURE ADVANTAGE, EPICENTER OF ASIA ELECTRONICS AND EV MANUFACTURING

Resource drill out well advanced
Ban Phuc DSS Ni PGE (Cu Co) Sulfide

- 25 additional prospects in Ta Khoa district
- Include high grade MSV targets
- Underground access to DSS in place via previously mined MSV deposit




Evaluating bulk mining options

- Metallurgical testing in progress
- Prefeasibility study advancing
- Potential to be a low or zero carbon project with electric fleet options combined with renewable hydroelectric power

Mining infrastructure in place
bulk mineable option upgrade

- 450ktpa concentrator
- Permitted tailings facility
- 250 person Camp
- Assay Lab
- Skilled cost-effective workforce

Large scale modern underutilised hydroelectric power generation within Son La province, Vietnam

Evaluating Down Stream Precursor NCM refinery

- Processing of Ta Khoa sulfide concentrate to high purity Nickel Precursor for Li-ion battery cathodes
- MOU signed[2] between Blackstone and Ecopro to partner on developing a Precursor NCM refinery in Vietnam

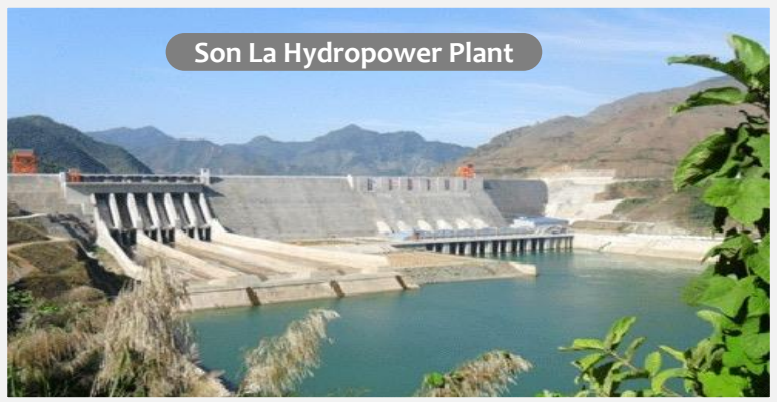

LG Chem and Vinfast US$2B alliance[1] to build EV battery plant in Hanoi, Vietnam

Vietnam is the centre of a large electronics manufacturing industry with world leaders including LG & Samsung with manufacturing facilities in Hanoi & Hai Phong

*1 Reuters April 7 2019 S.Korea's LG Chem sets up joint venture with Vietnam's VinFast*
*2 Blackstone Minerals ASX announcement December 2 2019*

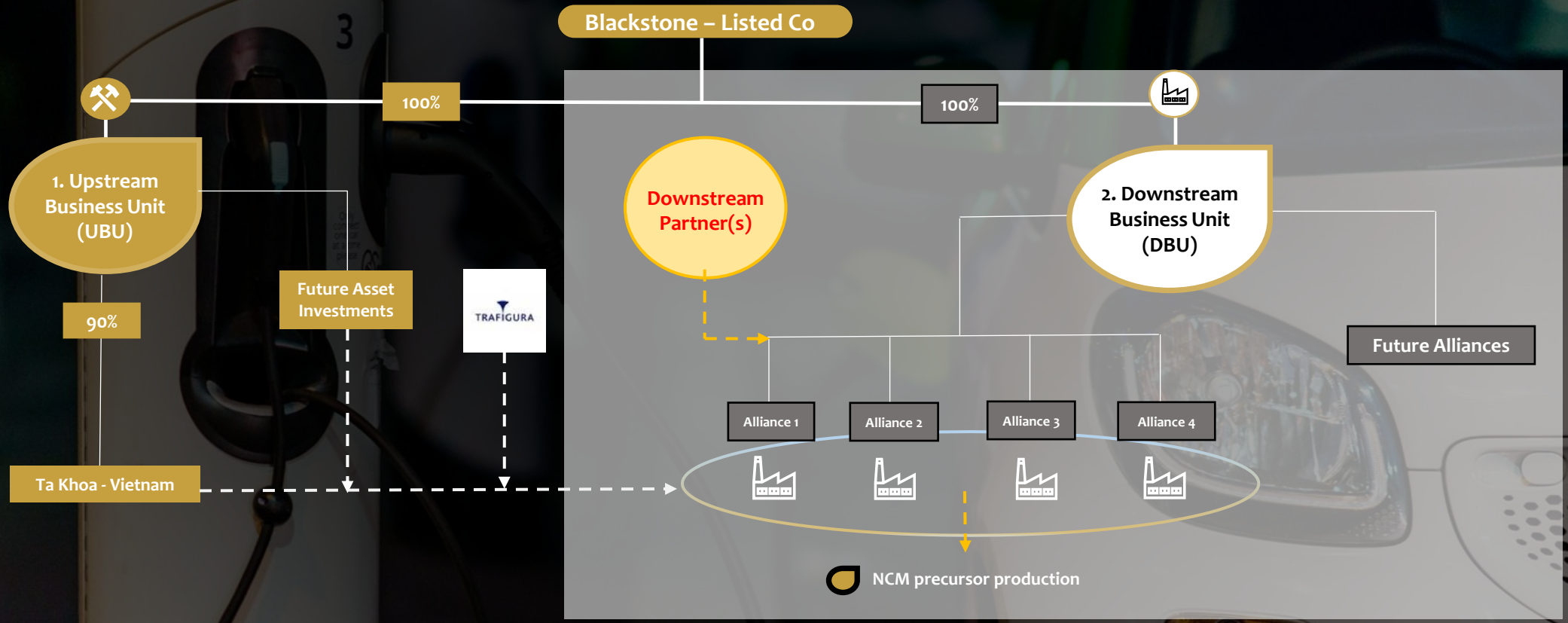
# SIGNIFICANT EXISTING INFRASTRUCTURE

## TA KHOA PROJECT LOCATION AND INFRASTRUCTURE




# 2. DOWNSTREAM
## DOWNSTREAM BUSINESS UNIT

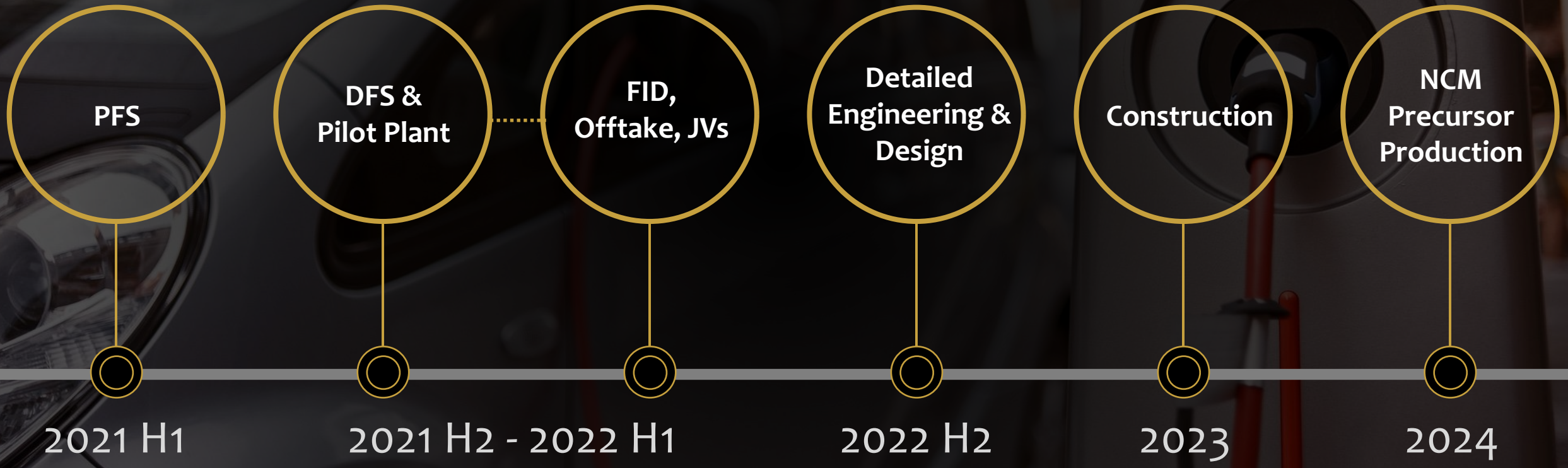



**Blackstone's intention is to collaborate with Tier 1 partners to unlock the value of its expanded downstream refinery strategy.**

# TIMELINE

## DOWNSTREAM BUSINESS MILESTONES

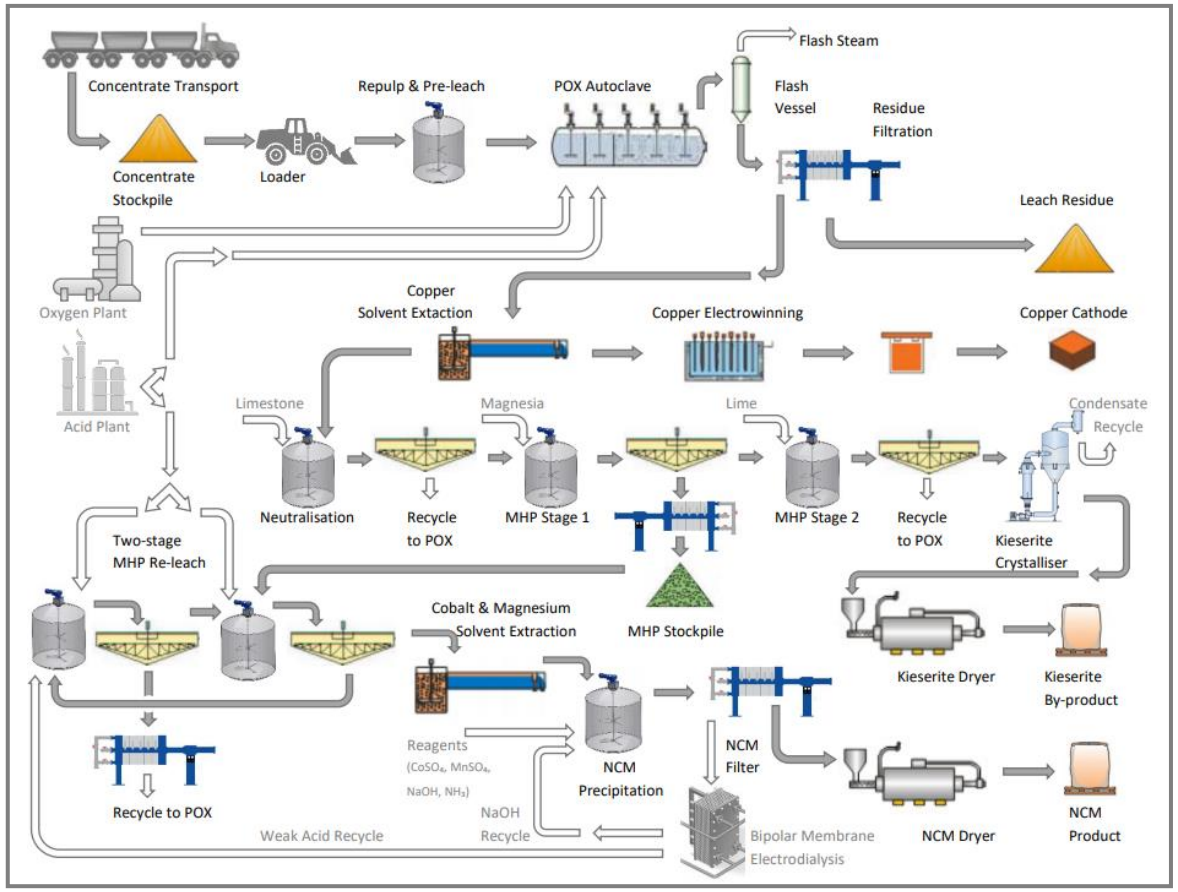
**The immediate priority is to deliver a PFS that considers expanded downstream refinery capacity in Vietnam.**



# SCALABLE AND MODULAR

## BLACKSTONE INTENDS TO PARTNER COLLOBORATIVELY ON THE DOWNSTREAM TO MAXIMISE RETURNS

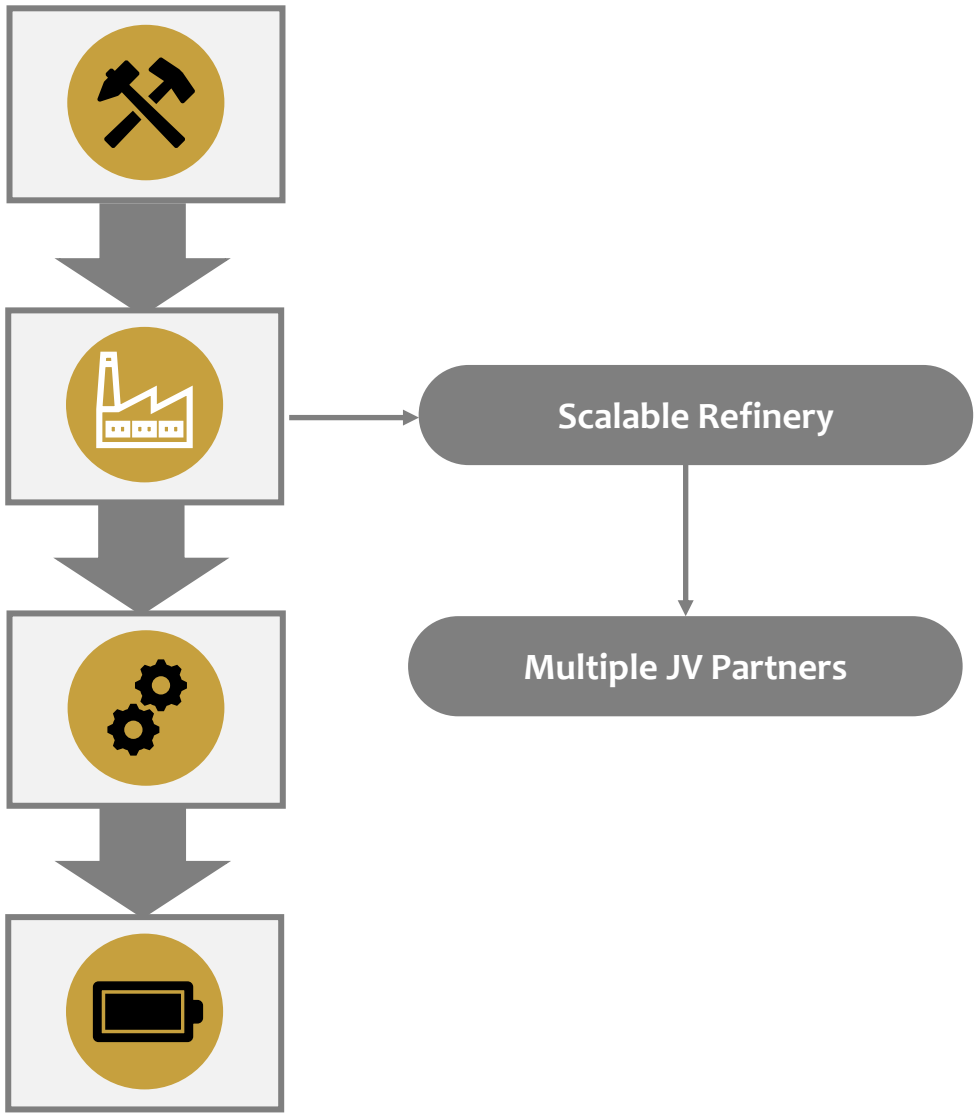
**Conversion of nickel concentrate into a MHP chemical, and thereafter to Precursor NCM uses established and well understood technology.**

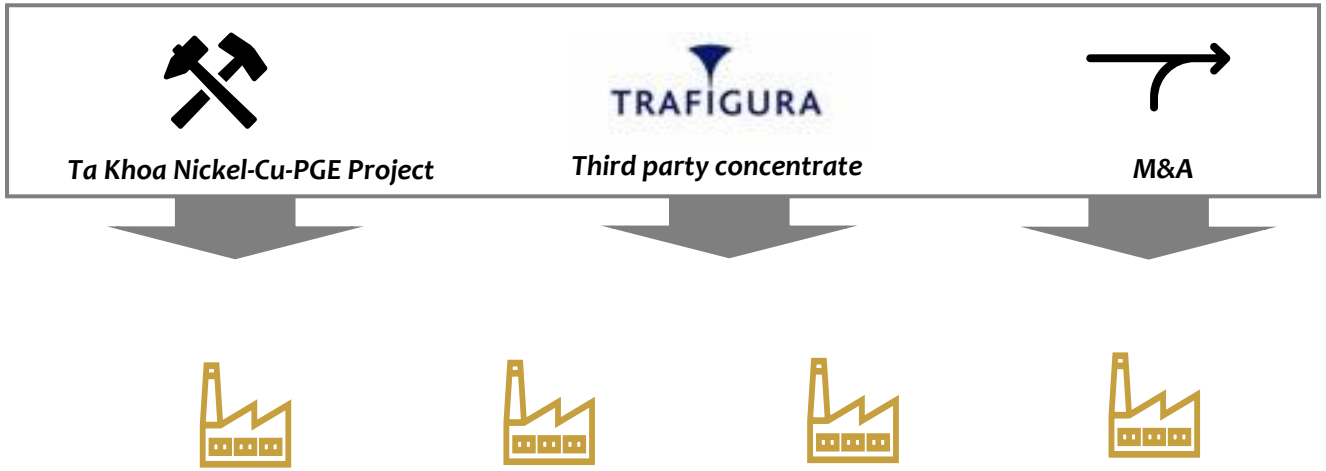



*Proposed PFS Refinery Process Flow Diagram*

# SCALABLE AND MODULAR

## POTENTIAL FOR MULTIPLE JV PARTNERS




- Blackstone's strategy to secure supply will lay the foundations to collaborate with multiple JV partners on the downstream business
- Scalable chemical refinery business producing downstream Nickel:Cobalt:Manganese (NCM) precursor products for the Lithium-ion battery industry
- Blackstone's downstream NCM precursor product significantly improves the payability of nickel, typically from ~70-80% to ~125-135% of LME metal prices
- The economics of Blackstone's downstream business is driven by superior margins, with competitive advantages including low-cost environment and access to renewable energy being key drivers of value

# COMPETITIVE OPERATING ADVANTAGE

## NCM 811 PRECURSOR TRADES AT A SIGNIFICANT PREMIUM TO METAL SPOT PRICES

| Metal Spot Price | (US$/t) |
|---|---|
| Nickel | 18,073 |
| Cobalt | 54,184 |
| Manganese | 3,053 |

| Raw material cost of 1 tonne of NCM 811 based on metal spot prices | | | |
|---|---|---|---|
| 8 | 1 | 1 | |
| Ni | Co | Mn | OH |
| US$9,188 | US$3,457 | US$182 | |
| ~51% | ~6% | ~6% | ~37% |

**1 tonne of NCM 811**

**Raw material cost = US$12,827 / tonne of NCM 811**

**Market/ Traded price = US$19,063 / tonne of NCM 811**

**NCM 811 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 March 2021. Commodity prices can be volatile and fluctuate daily, which influence the premium at which NCM811 Precursor can trade compared to spot metal prices

# COMPETITIVE OPERATING ADVANTAGE

## ABUNDANT ACCESS TO HYDROPOWER DRIVES LOWER OPERATING COSTS

**Vietnam has excellent established infrastructure including hydro power, roads, river and port.**


The Son La, Tan Phu & Mong Hoa Industrial Parks are the preferred potential locations for the downstream refineries

- Trade-off studies are being completed to assess the optimal location for downstream refineries, all with excellent access to renewable energy
- Cheap hydropower renewable energy source is a key driver for compelling downstream economics ( ~US 7 cents per kwh)
- Established logistics infrastructure including train lines and water transportation networks ensures access to feed stock outside of Vietnam
- Vietnam is located within proximity to major battery market leaders. Furthermore, major players such as LG Chem and Samsung SDI have already established electronics manufacturing supply chains in Vietnam.
- Blackstone will maximise product margin by reducing transport and rehandling costs

# 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 Cấm Vân

**GM Commercial Ta Khoa Project**

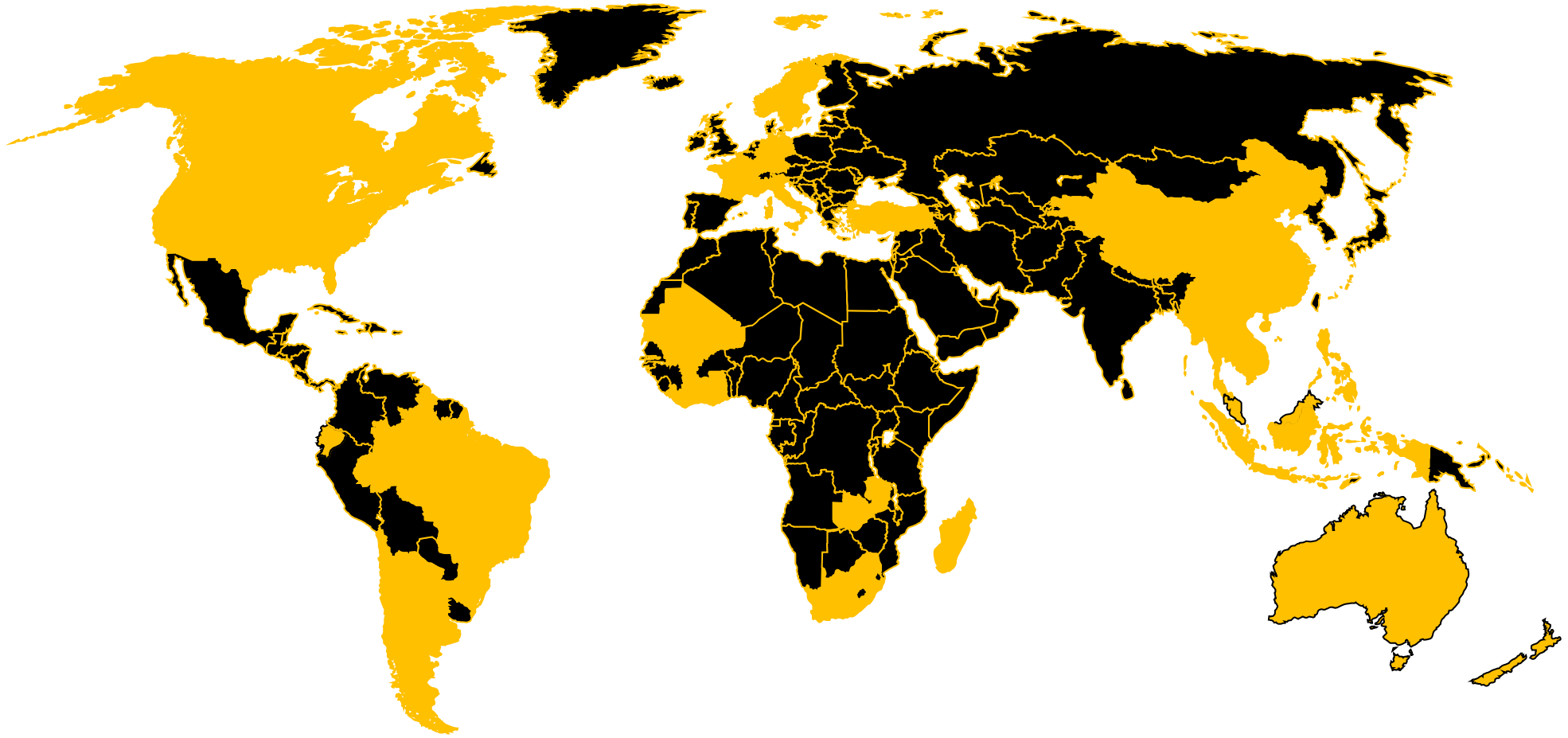
Joined Ban Phuc Nickel Mines in 2006 and has successfully performed in several roles transitioning from senior environment officer to HSE & CSR manager and government affairs director.

### Tony Tang

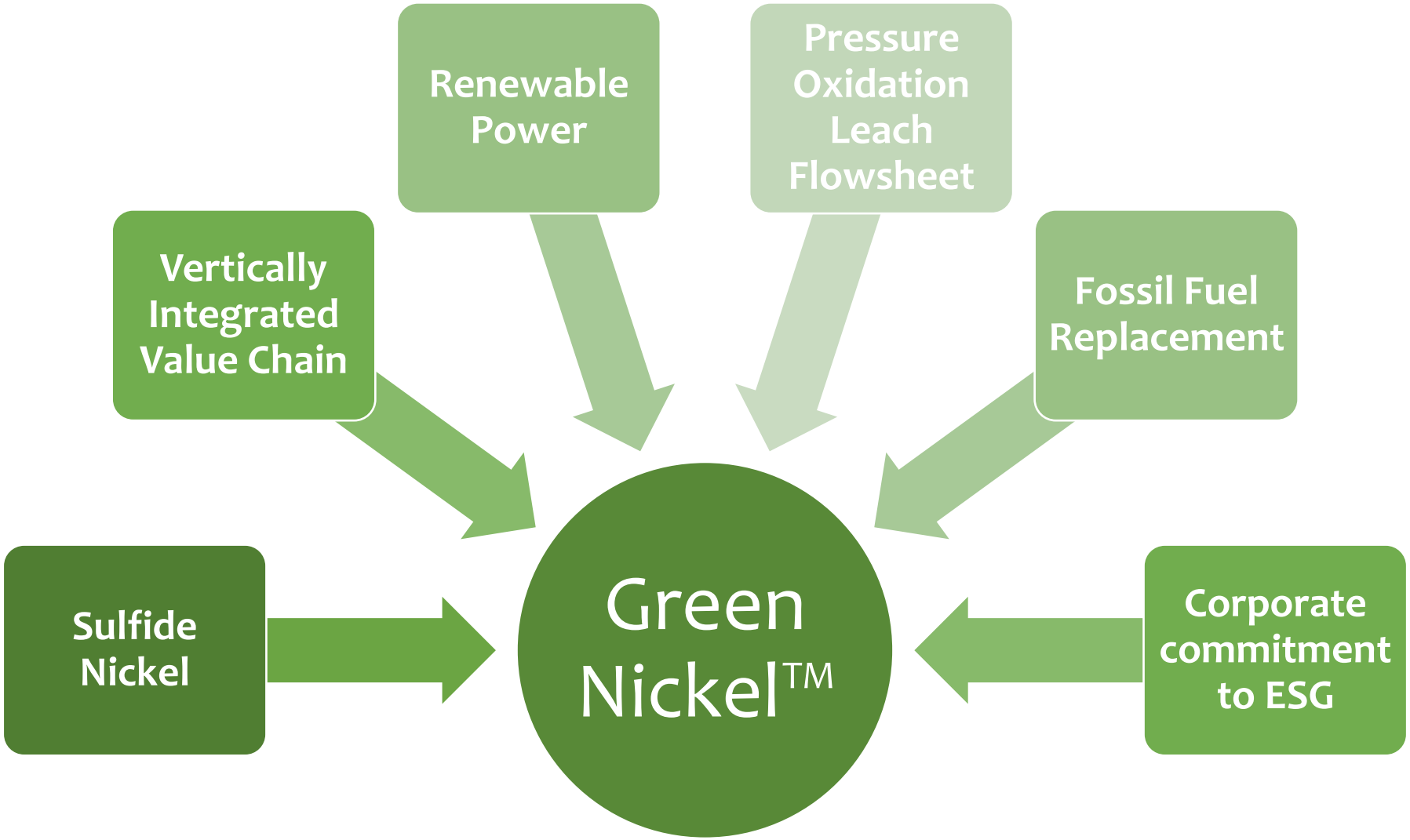
**General Manager Project Development (Downstream)**

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



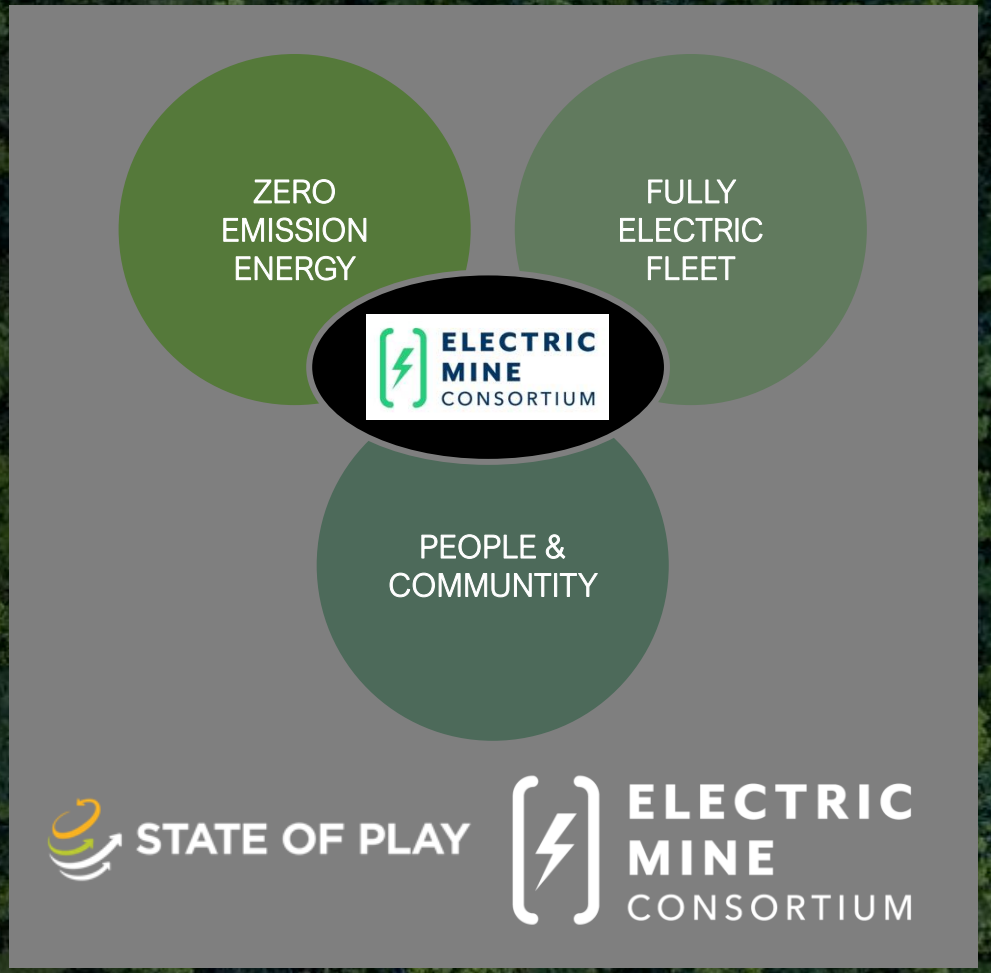
# APPENDIX 4 - WHAT DO WE MEAN BY GREEN NICKEL™?



# APPENDIX 5 -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 6 – 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.

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.