BFS on Black Swan Restart a Strong Result; Expansion Option to 2.2mtpa Ongoing

Poseidon Nickel (POS) has completed a Bankable Feasibility Study (BFS) for a restart of its Black Swan mine and processing plant. The BFS outlines a robust project with a company calculated NPV of A$248m and free cash flow of A$333m over a ~4 year life, utilising 1.1mtpa of the plant's 2.2mtpa capacity. This compares very favourably to POS's current market capitalisation of $113m.

The BFS assumes that only a fraction of the Mineral Resource is extracted at Black Swan and paves the way for a Phase 2 BFS based on the full plant capacity of 2.2mtpa.

Phase 1 BFS, 1.1mtpa: Snapshot of ~4-Year Project

The Black Swan BFS plans a 4-year project with high quality concentrate and low upfront capex and. Some key project attributes:

- high-grade high-quality concentrate grading 15% Ni
- processing a total of 5mt of feed (1.1mtpa)
- total concentrate production of ~200kt, 30kt of Ni contained
- ore reserves of 3.5mt Ni @1% for ~35kt of Ni (total resource 31.5mt @ 0.68% for 214.2kt Ni)
- pre-production capex A$50m, total LOM capex A$99m
- operating costs of A$4.60/lb.

Phase 2 BFS, 2.2mtpa: Potentially Better Economics

POS continues to study the potential to extract a larger portion of the Black Swan disseminated resource and use the Black Swan processing facility's full 2.2Mtpa capacity. This option would aim to increase the annual Ni output significantly and more fully utilise the large Black Swan resource. Additional capex would be low. Rougher concentrate product would be targeted at the high-growth battery sector. The BFS for this option will be completed in 1HCY23.

POS aims for FID in 1HCY23 (whether based on 1.1mtpa or 2.2mtpa), enabling first concentrate in early CY24.

Capital Raising Takes POS to Project Funding

POS has raised A$6m in a well-supported placement; an SPP is in place to raise up to $3m. Post placement/pre SPP, POS has $10.5m in cash.

These funds will be applied towards pre-production works at Black Swan (including long lead items); resource drilling to extend the mine life; exploration drilling at Lake Johnston; and progressing the 2.2Mtpa BFS.

Poseidon Nickel (POS) owns 100% of the Black Swan, Windarra and Lake Johnston nickel (Ni) assets located in Western Australia's Goldfields Ni province. The Black Swan project is the focus for POS, with the high-grade Golden Swan and Silver Swan adding high-grade Ni tonnes.
https://poseidon-nickel.com.au/

Stock	ASX: POS
Price	A$0.037
Market cap	A$113m
Valuation (per share)	A$0.17 (previously A$0.21)

Next steps

1HCY23 – FID Black Swan restart
1HCY23 – Complete Phase 2 BFS

POS share price – 1 year

Source: FactSet.

Michael Bentley

Nickel Market Fundamentals Strong

Demand for Ni remains robust, with POS seeing strong interest from potential customers. In particular, the macro theme of battery demand for electric vehicles remains a major factor for increasing Ni demand.

Valuation: A$0.17 (from A$0.21) – 2.2mtpa Option Included

The delivery of the Black Swan BFS and commencement of production is the key to our valuation, which implies substantial upside from the current share price. We have updated our Black Swan forecasts to incorporate a risked 2.2mtpa option from year 3 of production. Our valuation is A$0.17 fully diluted (A$0.21 previously) after reviewing our assumptions, incorporating key information from the BFS and including equity funding for the project (previously assumed fully debt funded). Key risks include delays to FID, Ni prices and rising costs.

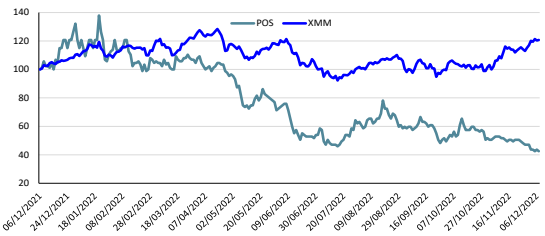
Exhibit 1 – POS company summary (year-end 30 June)

Poseidon Nickel Limited POS.AX

Year end 30 June

MARKET DATA 02 August 2022		
Price	**$**	**0.037**
52 week high / low	$	0.14-0.05
Valuation (diluted)	**$**	**0.17**
Market Capitalisation	**$m**	**121.2**
Enterprise Value	**$m**	**113.8**
Shares on issue (basic) (assumes SPP fully taken up)	m	3321.2
Options / Performance shares	m	9.3
Other equity (assumed issue FY2023 for FID)	m	400.0
Potential shares on issue (diluted)	m	**3730.5**

12 month Relative Performance versus S&P/ASX300 Metals and Mining



INVESTMENT FUNDAMENTALS		FY21A	FY22A	FY23E	FY24E	FY25E
Reported NPAT	$m	(10.9)	(11.7)	(8.0)	(12.8)	21.5
Underlying NPAT	**$m**	**(10.9)**	**(11.7)**	**(8.0)**	**(12.8)**	**21.5**
EPS Reported (undiluted)	¢	-0.33	-0.35	-0.24	-0.39	0.65
EPS Underlying (undiluted)	**¢**	**-0.33**	**-0.35**	**-0.24**	**-0.39**	**0.65**
Underlying EPS growth	%	15%	-7%	32%	61%	-268%
P/E Reported (undiluted)	x	n/m	n/m	n/m	n/m	5.6
P/E Underlying (undiluted)	**x**	n/m	n/m	n/m	n/m	5.6
Operating cash flow / share	**¢**	**(0.29)**	**(0.33)**	**(0.15)**	**(0.15)**	**1.18**
Price to operating cash flow	x	n/m	n/m	n/m	n/m	3.10
Free cash flow	**$m**	**(21.4)**	**(23.5)**	**(10.0)**	**(109.4)**	**33.9**
Free cash flow per share	**¢**	**(0.6)**	**(0.7)**	**(0.3)**	**(3.3)**	**1.0**
Price to free cash flow	x	n/m	n/m	n/m	n/m	3.6
Free cash flow yield	%	-17.6%	-19.4%	-8.2%	-90.3%	28.0%
Book value / share	**¢**	**1.81**	**2.27**	**2.91**	**2.52**	**3.17**
Price to book (NAV)	**x**	**2.0**	**1.6**	**1.3**	**1.4**	**1.2**
NTA / share	¢	1.81	2.27	2.91	2.52	3.17
Price to NTA	**x**	**2.0**	**1.6**	**1.3**	**1.4**	**1.2**
Year end shares	m	3,064	3,321	3,721	0	0
Market cap (Spot)	**$m**	**121.2**	**121.2**	**121.2**	**121.2**	**121.2**
Net debt /(cash)	$m	(7.4)	(10.7)	(29.7)	84.6	55.4
Enterprise value	**$m**	**114**	**111**	**91**	**206**	**177**
EV/Sales	x	154.20	245.57	n/m	n/m	2.07
EV/EBITDA	**x**	**n/m**	**n/m**	**n/m**	**n/m**	**4.5**
EV/EBIT	x	**n/m**	**n/m**	**n/m**	**n/m**	**6.76**
Net debt / EV	x	-0.07	-0.09	-0.26	0.74	0.49
Gearing (net debt / EBITDA)	**x**	**n/m**	**n/m**	**n/m**	**-16.27**	**1.42**

PRODUCTION AND PRICING	FY21A	FY22A	FY23E	FY24E	FY25E
Nickel Production tonnes					
Black Swan	-	-	-	-	2,693
AUD/USD	-	-	-	-	0.67
Price	-	-	-	-	
Nickel US$/lb	-	-	-	-	12.60

Resources (kt) by Asset

Nickel Sulphide Resources	Mineral Resource Category								
	MEASURED and INDICATED			INFERRED			TOTAL		
	Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Tonnes (Kt)	Ni% Grade	Ni Metal (t)
Black Swan*	10,700	0.75	80,000	18,200	0.55	101,000	28,900	0.63	181,000
Silver Swan*	138	9	12,450	8	6	490	146	9.5	12,940
Golden Swan*	111.6	4.7	5,200	48.4	2.2	1,050	160	3.9	6,250
Silver Swan Tailings**	674.9	0.92	6201	-	-	-	674.9	0.92	6,201
TOTAL	11,625		103,851	18,256	0.56	102,540	29,881	0.69	206,391

* Indicated ** Measured

Nickel Sulphide Resources	Mineral Resource Category								
	INDICATED			INFERRED			TOTAL		
	Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Tonnes (Kt)	Ni% Grade	Ni Metal (t)
Maggie Hays	2,600	1.6	41,900	900	1.17	10,100	3,500	1.49	52,000
Total	**2,600**	**1.60**	**41,900**	**900**	**1.17**	**10,100**	**3,500**	**1.49**	**52,000**

WINDARRA

Nickel Sulphide Resources	Mineral Resource Category								
	INDICATED			INFERRED			TOTAL		
	Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Tonnes (Kt)	Ni% Grade	Ni Metal (t)	Tonnes (Kt)	Ni% Grade	Ni Metal (t)
Mt Windarra	922	1.56	14,000	3,436	1.66	57,500	4,358	1.64	71,500
South Windarra	772	0.98	8,000	-	-	-	772	0.98	8,000
Cerberus	2,773	1.25	35,000	1,778	1.91	34,000	4,551	1.51	69,000
TOTAL	**4,467**		**57,000**	**5,214**		**91,500**	**9,681**	**1.53**	**148,500**

Feed Source	JORC Compliance	Feed Tonnage (mt)	Nickel Grade (%)	Contained Ni (kt)
Black Swan Disseminated	Proved and Probable	3.3	0.7%	22.1
Silver Swan		0.2	5.0%	9
Golden Swan	Reserves	0.1	4.0%	4
Ore Reesrves		**3.6**	**1.0%**	**35.1**

PROFIT AND LOSS $Am	FY21A	FY22A	FY23E	FY24E	FY25E
Sales	0.7	0.5	-	-	85.5
COGS	-	-	-	-	(41.2)
Gross profit	**0.7**	**0.5**	**-**	**-**	**44.3**
Other income	-	-	-	-	-
Other operating costs	(10.8)	(11.8)	(5.1)	(5.2)	(5.3)
EBITDA	**(10.0)**	**(11.3)**	**(5.1)**	**(5.2)**	**39.0**
Depreciation & amortisation	(0.4)	(0.4)	(3.0)	(3.0)	(12.9)
EBIT	**(10.4)**	**(11.7)**	**(8.1)**	**(8.2)**	**26.1**
Interest	(0.5)	0.0	0.1	(4.7)	(4.6)
Tax	**-**	**-**	**-**	**-**	**-**
NPAT	**(10.9)**	**(11.7)**	**(8.0)**	**(12.8)**	**21.5**
Adjustments & Significant items	**-**	**-**	**-**	**-**	**-**
Underlying NPAT	**(10.9)**	**(11.7)**	**(8.0)**	**(12.8)**	**21.5**

BALANCE SHEET $Am	FY21A	FY22A	FY23E	FY24E	FY25E
Cash at bank	7.9	11.1	29.7	9.8	59.0
Other assets	0.04	-	-	-	-
Receivables	0.9	0.9	0.9	0.9	0.9
Current assets	8.9	12.0	30.6	10.6	59.8
PP&E (with accumd dep)	24.6	24.8	21.8	118.2	105.3
Exploration and evaluation expenditure	87.4	99.9	104.9	110.0	115.2
Other assets	4.1	4.0	4.0	4.0	4.0
Non current assets	**116.1**	**128.7**	**130.7**	**232.3**	**224.6**
Total Assets	**125.0**	**140.6**	**161.3**	**242.9**	**284.4**
Trade and Payables	2.6	1.9	1.9	1.9	1.9
Employee benefits	0.1	0.2	0.2	0.2	0.2
Provisions	3.5	-	-	-	-
Borrowings	0.1	0.1	0.1	0.1	0.1
Current liabilities	**6.4**	**2.3**	**2.3**	**2.3**	**2.3**
Loans and borrowings	0.5	0.4	-	94.4	114.4
Convertible note derivative	-	-	-	-	-
Provisions	57.9	62.5	62.5	62.5	62.5
Non-Current liabilities	**58.4**	**62.8**	**62.5**	**156.9**	**176.9**
Total Liabilities	**64.8**	**65.1**	**64.7**	**159.1**	**179.1**
Share Capital	238.3	265.1	294.1	294.1	294.1
Reserves	0.3	0.6	0.6	0.6	0.6
Accumulated losses	(178.5)	(190.2)	(198.1)	(211.0)	(189.5)
Total Equity	**60.1**	**75.5**	**96.6**	**83.7**	**105.3**

CASH FLOW $Am	FY21A	FY22A	FY23E	FY24E	FY25E
Operating Revenue	0.6	0.5	-	-	85.5
Sundry receipts	-	-	-	-	-
Payments to suppliers and employees	(10.3)	(11.6)	(5.1)	(5.2)	(46.5)
Interest received	0.2	0.0	0.1	0.3	0.1
Tax Paid	-	-	-	-	-
Operating cash flow	**(9.5)**	**(11.1)**	**(5.0)**	**(4.9)**	**39.1**
Payments for PPE	(0.2)	(0.3)	-	(99.4)	-
Proceeds from sale of PPE	-	-	-	-	-
Exploration and evaluation expenditure	(11.6)	(12.0)	(5.0)	(5.1)	(5.2)
Payments for term deposits	-	-	-	-	-
Investing cash flow	**(11.9)**	**(12.4)**	**(5.0)**	**(104.5)**	**(5.2)**
Proceeds from the issue of shares	9.5	26.8	29.0	-	-
Proceeds (Repayments) borrowings	(25.2)	(0.2)	(0.4)	94.4	20.0
Interest paid	(0.2)	-	-	(5.0)	(4.7)
Financing cash flow	**(15.9)**	**26.7**	**28.6**	**89.4**	**15.3**
Net Increase/Decrease	(37.3)	3.2	18.6	(20.0)	49.2
Cash at Beginning Year	45.2	7.9	11.1	29.7	9.8
Final Cash Balance	**7.9**	**11.1**	**29.7**	**9.8**	**59.0**

Source: POS, MST estimates.

Black Swan Phase 1 BFS – A Strong Outcome

POS has completed a Bankable Feasibility Study (BFS) for a restart of its Black Swan mine and processing plant. The BFS outlines a robust project with a company-calculated NPV of A$248m and free cash flow of $333m over a 4-year life (at spot prices), using 1.1mtpa of the plant's 2.2mtpa capacity. This compares very favourably to POS's current market capitalisation of $113m.

Details of the Phase 1 BFS

The Phase 1 BFS is based on the plan to:

- mine ore from the Black Swan disseminated (BSD) open pit (serpentinite ore[1] only) and Silver Swan and Golden Swan high-grade underground mines, supplemented with Silver Swan Tailings and existing surface stockpiles (disseminated serpentinite material)
- process these feed sources through the refurbished existing concentrator and associated infrastructure at an annualised rate of 1.1mtpa, processing the current mining inventory of 5mt, giving a 4-year project life.

Exhibit 2 – Black Swan, Phase 1: BFS key inputs

Black Swan Phase 1 BFS Key Inputs	
Black Swan Ore Reserves mt	3.5
Mining Inventory / Life of Project Mill Feed mt	5.0
Annualised Mill Feed mt	1.1
Project Life - Years	4
Average Ni Grade %	1.0
Life of Project Concentrate Produced kt	200.0
Ni Concentrate Grade %	15
Life of Project Nickel Contained in Concentrate kt	30
Pre production Capex A$m	50
Total Life of Project Capex A$m	99
Estimated C1 Cash Costs US$/lb	4.56
Estimated All in Sustaining Costs (AISC) US$/lb	4.90
Ni Price US$/lb	11.60
POS Calculated Pre Tax NPV A$m*	248
POS Calculated Project Free Cash Flows A$m	333

Source: POS. *POS has A$187m of accumulated tax losses, meaning there may be minimal tax paid.

Exhibit 3 – Black Swan, Phase 1: mining inventory

Feed Source	JORC Compliance	Feed Tonnage (mt)	Nickel Grade (%)	Contained Ni (kt)
Black Swan Disseminated	Proved and Probable	3.3	0.7%	22.1
Silver Swan		0.2	5.0%	9
Golden Swan	Reserves	0.1	4.0%	4
Feed from Ore Reserve		**3.6**	**1.0%**	**35.1**
Silver Swan Tailings	Measured Resource	0.4	0.9%	3.2
Existing Surface Stockpiles	Indicated Resource	0.6	0.5%	3.2
Existing Surface Stockpiles	Inferred Resource	0.4	0.5%	2
Feed from Mineral Resources		**1.4**	**0.6%**	**8.4**
Total Feed		**5.0**	**0.9%**	**43.5**

Source: POS.

[1] Serpentine ore is metallurgically more favourable, producing a smelter-grade concentrate.

Exhibit 4 – Black Swan, Phase 1: capex

Black Swan Phase 1 Capital Costs	
Concentrator restart capital costs	37.8
Open pit mine establishment and pre-strip	1.8
Underground mine establishment and development	19.8
Other capital items	7.0
Open pit mine development	26.8
Open pit & underground contractor demobilisation	0.5
Sustaining capital – Processing plant	0.8
Sustaining capital – Underground mining	1.5
Sustaining capital – Tailings facility uplift	2.9
Total capital expenditure	**99**

Source: POS.

Exhibit 5 –Black Swan, Phase 1: POS calculated NPV at spot prices

Black Swan Phase 1 Economic Outputs Spot Prices	
Revenue A$m	919
Operating Costs A$m	487
Capital Expenditure A$m	99
Net Cash Flow A$m	333
Pre-tax NPV_8 A$m	248
IRR %	103
Payback period years	1.4
C1 Cash Cost US$/lb	4.52
AISC Cash Cost US$/lb	4.89
Average Ni Price US$/lb	11.8
Average FX (USD/AUD)	0.67

Source: POS.

Black Swan Phase 2 BFS – 2.2mtpa: Potentially Better Economics

Background – Maximising the Black Swan Open Pit Ore

The updated Black Swan Mineral Resource in July 2022 significantly improved the confidence in the Ni grade and distribution of the metallurgically important serpentinite and talc-carbonated hosted disseminated mineralisation immediately below the Black Swan open pit.

Confirming the distribution of the ore types (and quantifying the talc content) is important to identify mining blocks that will be suitable to produce a smelter-grade concentrate. The talc-carbonate ore is typically high in talc (MgO) content (and low in iron-sulphide content) and does not produce a favourable concentrate feed for conventional smelters.

POS conducted a laboratory pressure oxidation (POX) test on a concentrate produced from a ~50:50 talc–carbonate/serpentine ore blend. The POX leach extraction results were excellent, demonstrating greater than 97% Ni and cobalt extraction to the leach solution. The testwork demonstrated the amenability of concentrate produced from higher-talc ore blends to POX and has the potential to significantly increase the volume of ore from the BSD resource that could be economically mined.

Potential for 2.2mtpa Black Swan Mill

The BFS for 1.1mtpa has the Black Swan Mill at 50% of its rated capacity of 2.2mtpa in order to produce a smelter-grade concentrate, requiring low-talc ore.

With a better understanding of the BSD ore, and in order to fully understand the economics of the downstream production of a mixed hydroxide precipitate, POS has included studies on producing a rougher concentrate feed stock which could be delivered to a POX plant or sold to other Ni plants in WA that utilise autoclave leaching technology.

This option would present an opportunity to process a larger portion of the significant Ni endowment within the BSD Resource and look to significantly increase the annual Ni output and more fully utilise the large Black Swan resource. Additional capex would be minimal (MST estimate: A$20m).

Rougher concentrate product would be targeted at the high-growth battery sector. The BFS for this option will be completed in 1HCY23.

Exhibit 6 – Black Swan Open Cut Mine and Plant

Source: POS.

Exhibit 7 – Black Swan: 1.1mtpa BFS vs 2.2mtpa potential option

BLACK SWAN RESTART PROJECT OPTIONS		
1.1mtpa smelter-grade concentrate	**Mining** 	**2.2mtpa rougher concentrate**
• Potential to economically mine and process low-talc (MgO) serpentinite material • Lower capital requirement and greater near-term mining production potential		• Potential to economically mine and process a larger portion of the Mineral Resource (to include the talc carbonate ore type) • Reduces reliance on high-grade underground ore sources and tailings
• Smelter-grade concentrate production requiring suitable low-talc (MgO) ore feed • Likely project life based on suitable ore feed: less than 5 years	**Concentrate Processing** 	• Higher talc ore types amenable to POX processing, significantly increasing mine inventory • Likely project life based on suitable ore feed: significantly more than 5 years
• Truck concentrate to Kambalda, rail to Esperance/Fremantle, ship to overseas smelter • Potentially higher carbon footprint than trucking to WA downstream processing location	**Logistics** 	• PBT: truck concentrate to Kalgoorlie – 55kms • Existing WA autoclave operation: truck concentrate less than 300kms • POX located at Black Swan, nil transport
• Smelter industry proven path to market • Payabilities increased in recent times for smelter grade (low MgO) concentrate	**Downstream Processing** 	• Less established technologies compared to smelter path • Value add downstream MHP or pCAM product could attract higher payability
 • Smelter grade concentrate produces Class 1 nickel needing further processing for battery applications	**End Customer** 	• Emerging markets supporting global decarbonisation initiatives (battery, EVs) • Strong interest received from EV and battery manufacturers for product offtake 
• Both 1.1mtpa and 2.2mtpa scenarios likely to benefit from existing infrastructure, including: o lower carbon emission grid power instead of diesel generation; and o water from replenishing nearby existing open pit sources rather than bore fields	**ESG** 	• Shorter concentrate product transport to PBT Kalgoorlie refinery expected to reduce carbon emissions per nickel unit • Downstream processing in a stable mining jurisdiction provides security of supply for customers

Source: POS.

What's Next for POS? Aiming for FID 1HCY23

POS aims for FID in 1HCY23 (whether based on 1.1mtpa or 2.2mtpa), enabling first concentrate in early CY24.

With the positive results of the Phase 1 BFS, POS will conduct the following workstreams to move towards FID:

- hold discussions with potential offtake partners to agree definitive terms ahead of signing an appropriate offtake agreement
- hold discussions with potential contractors:
    - for the refurbishment of the Black Swan concentrator and associated infrastructure
    - for mining and ore processing operations
- progress the 2.2Mtpa feasibility study, which presents an opportunity to significantly increase annual concentrate production and contained nickel and enhance the project economics
- complete the 10,000 metre resource drilling program to convert more Inferred Resources at Black Swan to Indicated, and grow the Measured and Indicated resource base for the 1.1Mtpa and 2.2Mtpa projects
- hold discussions with selected project finance partners to secure appropriate funding for the restart of Black Swan.

POS Tops Up Cash – A$6m Placement and SPP Targeting A$3m

Private placement: On December 1, POS placed $6m (before costs) through a private placement of ordinary shares with the issue of 171.5m fully paid ordinary shares at an issue price of 3.5 cents per share, an 18.2% discount to the 5 day volume weighted average share price (VWAP) of $0.043 and a 14.6% discount to last closing price before the trading halt of $0.041.

Share purchase plan: POS will also conduct a non-underwritten share purchase plan (SPP) to raise up to approximately $3.0m, issued at 3.5 cents per share, the same price as the placement.

On completion of the placement, POS will have ~$10.5m cash on hand prior to any SPP funds being received.

Planned use of funds: The funds will be used:

- to commence an infill RC drilling program from the bottom of the dewatered Black Swan open pit to convert Inferred resources to Indicated for both the 1.1Mtpa smelter grade concentrate and 2.2Mtpa rougher concentrate projects
- to commence a 15,000 metre RC drilling program at Lake Johnston in early 2023
- to complete the Black Swan 2.2Mtpa Phase 2 Feasibility Study during 1H2023 to potentially support the expansion of operations at Black Swan beyond the 1.1Mtpa Phase 1 concentrate project
- to review the exploration potential of Windarra
- for general working capital purposes.

Lake Johnston and Windarra – Further Options for POS

Lake Johnston: Low-Capex Restart – Just Like Black Swan

The Lake Johnston plant started operating in 1998, treating ore from the Emily Ann underground Ni mine. 1.5m tonnes of ore were mined and processed, at an average grade of 3.8% Ni, delivering 57,000 tonnes of contained Ni between 1998 and 2007. There have been a number of expansions since, the most recent being a major expansion to 1.5mtpa throughput capacity in 2006. The Maggie Hays deposit was brought online in 2007 with a resource of 12.3m tonnes at 1.5% Ni for 182,000 contained Ni and mined and processed between 2008 and 2013. The plant was placed on care and maintenance in 2013. In 2017, certain pieces of infrastructure were removed from the Maggie Hays mine and the workings were allowed to flood.

The Lake Johnston resource is 3.5Mt @ 1.5% Ni for 52kt Ni (Maggie Hays).

In order to restart Lake Johnston, the mine would need to be dewatered and the mill refurbished. In 2020, mining consultants Entech costed the dewatering and rehabilitation of the submerged ground support and reinstallation of required infrastructure at $26.4m. The expected duration of these works was 22 months.

POS engaged GR Engineering (GRES), the same organisation that reviewed the Black Swan start up, to review a Lake Johnston mill restart scenario in late 2021. GRES estimated that the processing plant and associated infrastructure could be refurbished for an estimated cost of $31m and that this would take approximately seven months to complete. The operating cost for the process plant is estimated at approximately A$36 per tonne of ore based on a throughput rate of 0.9mtpa. The project also has a 200-person village, tailings dam and airstrip.

POS plans to conduct an aggressive exploration program to increase the Lake Johnston resources and a 15,000m RC program is scheduled to commence in the June quarter on the highly prospective Western Ultramafic. The addition of Lake Johnston to POS's production profile would contribute to its corporate strategy of producing >15,000t of Ni in concentrate per annum.

Windarra: Option to Process Nickel from Windarra Nickel Project

The Windarra Nickel project sits some 250 km north of Black Swan in WA's Mt Margaret Goldfields, about 25 km west of Laverton. The project, in a well-established mining precinct, is well serviced by regional infrastructure with a skilled labour and contracting workforce available. Since 2008, POS has completed over 550 drill holes for ~70km of drilling on the project to bring the historical mine resources into JORC-compliant status and has discovered a new resource at Cerberus.

The Windarra deposit consists of three broad geologically based mineralised areas: Mt Windarra, South Windarra and Cerberus. A more recent exploration focus lies between Cerberus and Mt Windarra at Crazy Diamond.

Windarra underground mine remnants contain resources of 148,500 t of contained Ni at an average grade of around 1.5%. There are no processing facilities at Windarra. With the Black Swan mill in operation, the option to process ore from the Windarra deposit opens up, with ore being trucked to Black Swan.

Nickel Market: Short Squeeze Drives Huge Price Action; Long Term Looks Strong as Batteries Play Increasing Role

CY2022: A Volatile Year, But Nickel Prices Up 35% YTD

Nickel has survived a volatile year.

Strong first quarter with huge surge post Ukraine invasion: Dwindling Chinese output, global supply chain issues and strong demand for stainless steel and batteries for electric vehicle (EV) manufacturing reduced global inventories, subsequently increasing Ni prices in the first two months of 2022.

In late February 2022, the Ni price jumped to above $26,000 a tonne as Russian forces began their invasion of Ukraine. Russia accounted for roughly 8.3% of global Ni output in 2021.

On 8 March 2022, the metal soared 70% in one day at the London Metal Exchange (LME). LME suspended Ni trading for several days following the massive rally, sparked by fear of supply disruptions after Russia's invasion of Ukraine with a short squeeze by one of the biggest Chinese steel manufacturers, Tsingshan Holding Group, also fuelling Ni's massive price rally.

Prices dropped after 1Q highs: After Ni prices rising to multi-year highs in the first quarter, the price of the metal began to drop after the 8 March rally as a global economic slowdown caused by central banks' aggressive monetary tightening and the effects of COVID-19 lockdowns on China's economy wiped out gains for other industrial metals.

China's recent relaxation of its Covid-related quarantine measures includes a reduced quarantine period for inbound travellers and close contacts of those who have tested positive while secondary contacts will no longer need to be traced. China's relaxation of its Covid policy would have a significant effect on the steel market, and by extension on the nickel market.

Overall, Ni has been on a strong run since the end of 2021: Although down almost 70% from its highs, the price of Ni is up about 35% YTD. The LME warehouse's Ni stocks dropped nearly 47% to around 53,600 tonnes as of 8 December 2022 vs. levels on 31 December 2021.

Exhibit 8 – Ni price, YTD CY2022

Source: FactSet.

Going Forward: Battery-Related Demand to Play Growing Role in Overall Ni Demand

Over the medium to long term, Ni demand will be incrementally driven by the battery market off the back of EV demand. Recent shifts in legislation that favour EVs will likely result in a surge in demand for Ni units to be used in battery production. Despite the general adverse economic conditions encountered in 2020 as a result of COVID-19, EV battery sales exceeded all expectations. 2020 saw EV batteries consume around 200,000 tonnes of Ni, with well over 300,000 tonnes in 2021. Total Ni demand is around 2.4mt per annum. Market consensus appears to be that by 2030, battery-related demand for Ni will be around 1.7mt, or 35% of total forecast Ni demand (compared to 12% in 2021).

The use of high-quality Ni in EV batteries represents a long-term driver for demand and upside to the Ni price. Battery manufacturers are now adopting battery chemistries with higher Ni content. The Ni market is likely to encounter significant supply deficits over this time and we expect prices to rise, incentivising new production capacity. The UK's goal to outlaw the sale of wholly petrol and diesel cars from 2030 is an indication of where the global motor vehicle industry is heading and the forces which will drive Ni demand.

In addition, the USA's desire to source minerals such as Ni from either local or 'allied' suppliers will put further pressure on Ni demand, with Australia potentially a key beneficiary.

BHP has made statements on Ni which support this view, with its Chief Commercial Officer stating in late 2021: 'Demand for nickel in batteries is estimated to grow by over 500 per cent over the next decade, in large part to support the world's rising demand for electric vehicles.' 85% of BHP's Ni is now sold to global battery material suppliers.

Valuation: A$0.17 (Previous A$0.21): Revising Our Estimates with Release of BFS

Valuation Methodology: SOTP with Risked NPV

We have reviewed our assumptions and have incorporated the results of the BFS into our modelling. Our previous model was based on high level assumptions including some information from the 2018 Black Swan Feasibility Study. We have also included a risked valuation based on the assumption that POS will expand the mill production to 2.2mtpa and produce a rougher concentrate, introducing this into our forecasts after 2 full years of production at 1.1mtpa producing a smelter-grade concentrate.

We value POS at A$0.17, down from A$0.21 previously. The key drivers are a refinement of our model to reflect higher capex, a later start of the Black Swan project and an inclusion of equity funding for the Black Swan capital (we previously assumed full debt funding). We use a sum-of-the-parts methodology, valuing Black Swan and Lake Johnston on a risked NPV basis (see Exhibit 8). We place nominal value on Windarra Nickel and see potential upside as a feed source for Black Swan.

Black Swan Constitutes Bulk of Valuation

Our valuation is based on POS adopting the Black Swan 1.1mtpa concentrator model as per the BFS for 2 full production years, utilising the Black Swan BFS modelling. From year 3 onwards we assume POS switches to the 2.2mtpa model producing a rougher concentrate and accessing the entire Black Swan Disseminated (BSD) ore body.

We have taken into consideration the additional shares issued for the recent capital raising and assume the SPP is fully subscribed. (We previously had assumed a capital raising of $10m but at a higher share price, therefore we assumed fewer shares would be issued.)

We have assumed all tax losses are utilised.

Overview of Black Swan assumptions

Black Swan 1.1mtpa smelter-grade concentrate: Our valuation of the 1.1mtpa option follows the assumptions in the BFS. As the BFS is an up-to-date document, we believe that the capex and opex assumptions take into consideration the current tight labour markets in WA and the global supply chain issues. Our key assumptions for the 1.1mtpa option are:

- first production in FY25, ramping up to full production FY26 and FY27
- WACC 10%
- total capex of $99m
- operating costs of US$4.60/lb
- full utilisation of the high-grade Silver Swan and Golden Swan deposits
- AUD/USD exchange rate of 0.70
- Ni price at spot for 1.1mtpa project
- payability on contained Ni of 80%
- recovery rates as per the BFS
- project funded 80/20 debt to equity.

Black Swan 2.2mtpa rougher concentrate: Our valuation of the 2.2mtpa option assumes that FY28 is the first full year of running a 2.2mtpa mill and mining the entire BSD open pit. We assume ~75% of the BSD resourced is mined, taking into consideration that part of the resource is not open pittable and that there is mining dilution. We assume a 9-year mine life for this project. Feed from Windarra is assumed to add an additional year's mine life to the project. Other key assumptions:

- first production in FY28, 9 year mine life
- WACC 10%
- additional capex (above 1.1mtpa project) of $20m
- operating costs of US$3.60/lb
- AUD/USD exchange rate of 0.70
- nickel price $11.00/lb escalated
- payability on contained Ni of 70%
- recovery rates of 70%
- project funded by cashflow and / or debt
- risk weighted at 50% to reflect pre-BFS assumptions and execution risk.

Our assumptions for the 2.2mtpa Black Swan rougher concentrate project are preliminary and will be refined upon the release of the BFS in 1HCY23.

We consider that the 2.2mtpa option has strong potential, because it would mean:

- producing a larger amount of concentrate sooner, thus bringing forward higher cashflows
- reducing reliance on high-grade ore
- a longer mine life
- lower unit operating costs
- minimal additional capex for the rougher concentrate option
- broader market options and possible better payment terms
- with the inclusion of a POX plant, producing a significantly higher-value product (we estimate a POX plant would cost around A$100m).

Exhibit 9 – Valuation summary

VALUATION	A$m	Risk Weighting	EQUITY VALUE A$/SHARE FULLY DILUTED	Valuation Methodology
Equity Valuation of Black Swan 1.1	$246.0	100%	$0.08	Risked NPV
Equity Valuation of Black Swan 2.2	$444.1	50%	$0.06	Risked NPV
Equity Valuation of Lake Johnston	$189.6	40%	$0.02	Risked NPV
Windarra Gold and Nickel	$40.0	100%	$0.01	Potential Sale Windarra Gold/ nominal value Windarra Nickel
EQUITY VALUE PROJECTS	**$919.6**		**$0.17**	
Add: Cash	$10.5		$0.01	After Placement pre SPP
EQUITY VALUE PRE SG&A	**$930.1**		**$0.18**	
SG&A	-$31.7		-$0.01	NPV of Corporate Costs
EQUITY VALUE	**$898.4**		**$0.17**	

Source: MST estimates.

Capex – $99m compared to previous estimate of $85m

We had increased our capex and opex estimates previously. However, as POS is in a challenging operating environment in WA, we have increased capex further to match that in the BFS estimates.

Exhibit 10 – Capex assumptions – Black Swan restart (A$m)

Black Swan Phase 1 Capital Costs	
Concentrator restart capital costs	37.8
Open pit mine establishment and pre-strip	1.8
Underground mine establishment and development	19.8
Other capital items	7.0
Open pit mine development	26.8
Open pit & underground contractor demobilisation	0.5
Sustaining capital – Processing plant	0.8
Sustaining capital – Underground mining	1.5
Sustaining capital – Tailings facility uplift	2.9
Total capital expenditure	**99**

Source: MST estimates.

Positive Catalysts for the Share Price

Key drivers of share price upside

2.2mtpa DFS

We have estimated a 2.2mtpa option in our new valuation and consider that this option has the potential to be a key catalyst for the share price.

Exploration and further resource definition

Further exploration success and reserve and resource definition at Black Swan is a key to share price appreciation.

FID for Black Swan mill refurbishment

The FID for the Black Swan mill refurbishment will mark a major step towards first production and will be a positive catalyst.

First production from Black Swan mill

The first production from the Black Swan mill refurbishment will mark the start of cash flow generation for POS.

Exploration success at Lake Johnston/Windarra Ni

The Lake Johnston and Windarra projects both have exploration potential. Exploration success at either project would accelerate the potential and add to the valuation.

Ni price increases

POS is directly leveraged to higher Ni prices. A sustainable increase in the Ni price would accelerate the potential start of Black Swan in particular, even without exploration success.

Other potential share price catalysts

Offtake agreements for Ni production

Any agreements to purchase Ni from POS would be a positive indication of the Ni market's acceptance of the product.

Potential processing of third-party ores at Black Swan/Lake Johnston

Black Swan and Lake Johnston have processing facilities. Any agreements to process third-party ore could generate cash at high margins.

Sale of Windarra Gold

The Windarra gold project has been flagged as an asset up for sale, as POS is focusing on the Ni 'fill the mill' strategy. We value the project at A$30m as a project in POS's hands. The generation of cash from such a sale would be a positive for the stock.

Risks to the Share Price and Valuation

Key risks to the share price

Delays to or not achieving FID for Black Swan mill refurbishment

The FID for the Black Swan mill refurbishment will mark a major milestone. Any delay or non-achievement of FID would be a negative catalyst for the stock.

Delay to first production from Black Swan mill

The first production from the Black Swan mill refurbishment will mark the start of cash flow generation for POS. Any delay to first production would be a negative for the stock.

Extended period of low Ni prices

Ni prices are the key driver of POS's valuation. Extended periods of low Ni prices could delay projects, even with exploration success.

Disappointing exploration at Windarra Ni/Lake Johnston

As longer-term drivers of value, any disappointing exploration results at Lake Johnston/Windarra could lead to a decrease in the share price/valuation.

Other potential risks to the share price and valuation

Further capital cost increases for projects

Capital cost increases lead to direct valuation decreases. Capital costs at the POS projects are relatively low, and therefore have a smaller effect on valuation, but increases could nonetheless be negative to stock sentiment.

Further operating cost increases

Any increase in operating costs would have a direct negative effect on valuation.

Appreciating AUD vs USD

An increasing AUD against the USD would lead to a decreased AUD Ni price, reducing cashflow and valuation.

Financials – Exploration at Golden Swan the Focus; Exploration Spend to Drive Value

Cash Position

The company has a cash position of A$10.5m post the recent placement but pre the SPP. The cash on hand will be utilised for:

- pre-production works at Black Swan to support the restart of operations, including ordering long lead items
- resource drilling from the bottom of the Black Swan open pit to convert Inferred Resources to Indicated to extend the mine life beyond four years based on the 1.1Mtpa BFS
- undertaking drilling at Lake Johnston targeting the Western Ultramafic Unit, a priority target
- progressing the 2.2Mtpa rougher concentrate feasibility study.

Black Swan Funding and Equity

We have assumed the Black Swan 1.1mtpa project is funded 80/20 debt/equity.

Windarra Gold Project – Up for Sale

The Windarra gold project has been flagged as an asset up for sale, as POS is focusing on the Ni 'fill the mill' strategy. We value the project at ~A$30m as a project in POS's hands.

Other Financials

We have assumed that any further projects such as Lake Johnston can be funded from Black Swan cashflow or via debt funding.

At 30 June 2022, POS has approximately A$56.4m (tax value) in accumulated tax losses. These losses have been applied to earnings and forecasts.

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