



ASX: MNS

Equity Research

25th October 2022

SPECULATIVE BUY

Share Price \$0.375
Price Target \$1.150

52-Week Range	\$0.27 - \$0.755
Shares Outstanding	970.3
Options (\$0.70, exp. 31 Oct 2022)	2.0m
Options (\$0.50, exp. 25 May 2023)	77.9m
Options (\$0.50 & \$0.75, exp. 28 Nov 23)	0.75m
Options (\$0.40, exp. 25 Nov 2024)	6.0m
Options (\$0.50, exp. 25 Nov 2024)	10.0m
Options (\$0.70, exp. 25 Nov 2024)	20.0m
Options (\$0.80, exp. 9 Dec 2024)	1.4m
Performance Rights	4.0m
Market Capitalisation	\$363.9m
Cash (30 Jun 2022)	\$100.2m
Debt	\$145.1m
Enterprise Value	\$408.7m

Board & Management:

Frank Poullas	Executive Chairman
Peter Tsegas	Executive Director
Claire Bibby	Non-Executive Director
Giles Guneseckera	Non-Executive Director
Hoshi Daruwalla	Non-Executive Director
Mugunthan Siva	Non-Executive Director
Mona Dajani	Non-Executive Director
David Taylor	Chief Executive Officer

Major Shareholders:

Citicorp Nominees Pty Limited	6.3%
Mazzdel Pty. Limited	5.4%
BNP Paribas Nominees Pty Ltd	1.5%
Frank Poullas	1.4%
Top 20 shareholders	23.3%



Magnis Energy Technologies Ltd (ASX: MNS; OTCQX: MNSEF; FSE: U1P) is a vertically integrated lithium-ion battery technology and materials company with strategic assets, investments and partnerships in the electrification supply chain. The company's US based subsidiary Imperium3 New York, Inc ("iM3NY") operates a Gigawatt scale Lithium-ion battery manufacturing plant in Endicott, New York. Magnis along with its joint venture and technology partner Charge CCCV LLC ("C4V") are the major shareholders in iM3NY which plans to commercialise C4V's patented technology to produce green credentialed lithium-ion battery cells. Magnis also has a minority stake in C4V and has exclusively licensed their anode processing technology with an aim to produce high performance anode materials utilising ultra-high purity natural flake graphite from Magnis' Nachu Graphite Project in Tanzania.

Magnis Energy Technologies Ltd

On Track to Deliver Innovative Commercial LIB Solutions

Technology: from a prospective graphite miner, Magnis has evolved into a technology company about to deliver innovative commercial Lithium-Ion battery (LIB) solutions to the electric vehicle and energy storage industries.

Investments and Partnerships: MNS has now strategic assets, investments and technology partnerships in vital components of the global Lithium-Ion Battery value-chain. Magnis' technology partner, Charge CCCV (C4V) is a cutting-edge LIB technology company based in Binghamton, New York with expertise and patented discoveries in LIB composition and manufacture. MNS holds a 9.65% stake in C4V and have also licensed advanced graphite processing technology from C4V.

iM3NY: iM3NY (62% MNS, 33% C4V) is building a Gigafactory in Endicott, NY state, ramping up nameplate capacity from 1.8 GWh in 2023 to 38 GWh in 2030. We estimate that about 50% of the revenues for FY2023 have been secured by the sales' contracts announced. Many more are at various stages of negotiation.

Competitive Advantages: cells and packs are based on an improved lithium-iron-phosphate (LFP) chemistry free of expensive and price volatile nickel and cobalt, providing more than 20% energy density than traditional LFP cells with lower cost than nickel-manganese-cobalt (NMC) cells. The cells have been commercially tested and shown to vastly extend battery life, provide greater safety, lower cost and improve charge performance addressing each of the issues of current LIBs. Manufacturing will also benefit from low-cost renewable energy below 5¢/kWh from nearby Niagara Falls hydropower station.

iM3NY Financial Modelling: capex of US\$100m per GWh of additional capacity to incrementally increase nameplate capacity to 38 GWh in 2030. No allowance was made for possible funding as part of Battery Materials Processing Grants Program established by the US Department of Energy (total of US\$600m p.a.). Key opex component made of 50% materials deriving a gross margin of 35-40%. Royalties (3%) and G&A (US\$5m p.a.) reduce margin to a range of 30 to 35%.

iM3NY Valuation: using various cell/pack prices:

Cell/Pack Price	NPV _{10%} post tax	62% MNS	Risked NPV	IRR
US\$90/kWh	US\$515m	US\$319m	US\$160m	15%
US\$100/kWh	US\$1,548m	US\$960m	US\$480m	25%
US\$110/kWh	US\$2,545m	US\$1,578m	US\$789m	36%

Nachu Financial Modelling: based on updated DFS results released on 27 Sep 2022, our base case NPV matches MNS US\$1.2 billion. Capex of US\$364m is assumed to be financed in FY2025 by an equity capital raising of A\$200m and additional debt of A\$500m (debt also used for iM3NY expansion). Using various graphite flake prices, the Nachu graphite project valuation stands as follows:

Super Jumbo	Jumbo	Fine	NPV	Risked NPV	IRR
US\$/t	US\$/t	US\$/t	US\$m	US\$m	%
\$2,000	\$1,800	\$1,200	\$767	\$230	42%
\$2,500	\$2,300	\$1,500	\$1,218	\$365	61%
\$3,000	\$2,800	\$1,800	\$1,637	\$491	81%

News Flow and Share Price Catalyst: the key driver adding shareholder value is securing further sale contracts to match as much as possible the expected ramp-up of the iM3NY Gigafactory capacity and production.

MNS valuation: Considering the above parameters, an equity capital raising of A\$30m at \$0.40 (75m shares) in FY2023, and subject to securing further sale contracts, our Base Case valuation stands at A\$1,339m or A\$1.15 per share.

Magnis Energy Technologies (ASX: MNS) Financial Summary

Key metrics

Market Information	Unit	Value
Number of Issued Shares	million	970.3
Unlisted Options (@ \$0.70, expiry 31 Oct 2022) *	million	2.0
Unlisted Options (@ \$0.50, expiry 25 May 2023)	million	77.9
Unlisted Options (@ \$0.50 & 0.75, expiry 28 Nov 2023)	million	0.75
Unlisted Options (@ \$0.40, expiry 25 Nov 2024)	million	20.0
Unlisted Options (@ \$0.50, expiry 25 Nov 2024)	million	10.0
Unlisted Options (@ \$0.70, expiry 25 Nov 2024)	million	6.0
Unlisted Options (@ \$0.80, expiry 9 Dec 2024)	million	1.375
Performance Rights	million	4.0
Fully Diluted	million	1,090.3
Share Price	A\$	0.375
12 month High-Low	A\$	0.270 - 0.755
Market Capitalisation	A\$m	363.9
Cash (30 Jun 2022)	A\$m	100.2
Debt (30 Jun 2022)	A\$m	145.1
Enterprise Value	A\$m	408.7

* assumed to be not converted

Financing Assumptions	Unit	Value
Exercise of Options over 2023	A\$m	39.2
New Equity (75 million shares @ \$0.40)	A\$m	30.0
Number of Issued Shares Post Financing	million	1,165.3
Financing for the development of the Nachu graphite project and iM3NY expansion		
New Equity (300 million shares @ \$0.70) in 2025	A\$m	188.0
Debt increasing by \$500 million in 2025	A\$m	500.0
Debt increasing by \$250 million in 2026	A\$m	250.0
Debt increasing by \$500 million in 2027	A\$m	500.0
Debt increasing by \$500 million in 2029	A\$m	500.0
Number of Issued Shares Post Financing	million	1,365.3

iM3NY	Unit	2023F	2024F	2025F	2026F
Capacity	GWh	1.8	4.0	6.0	10.0
Capacity utilisation	%	80	80	85	85
Production/Sales	GWh	1.4	3.2	5.1	8.5

Cells/Packs Pricing	Unit Cost	NPV @ 10%	62% MNS	Riskd NPV	IRR
US\$ per kWh	per kWh	US\$m	US\$m	US\$m	%
\$90	\$67.9	\$515	\$319	\$160	15%
\$100	\$68.2	\$1,548	\$960	\$480	25%
\$110	\$68.5	\$2,545	\$1,578	\$789	36%

Nachu	Super Jumbo	Jumbo	Fine	NPV	Riskd NPV	IRR
	US\$/t	US\$/t	US\$/t	US\$m	US\$m	%
Low Case	\$2,000	\$1,800	\$1,200	\$767	\$230	42%
Base Case	\$2,500	\$2,300	\$1,500	\$1,218	\$365	61%
High Case	\$3,000	\$2,800	\$1,800	\$1,637	\$491	81%

MNS Sum of the Parts Valuation	A\$m	per Share
iM3NY (62% MNS, 50% Riskd NPV)	\$685.6	\$0.59
iM3TSV	\$25.0	\$0.02
Nachu graphite project (100% MNS, 30% Riskd NPV))	\$521.9	\$0.45
Other interest (9.65% in C4V)	\$25.0	\$0.02
Cash	\$100.2	\$0.09
Exercise of Options over 2023	\$39.2	\$0.03
Capex spent to complete 1.8 GWh capacity	(\$45.1)	(\$0.04)
New Equity	\$30.0	\$0.03
Corporate Costs	(\$43.0)	(\$0.04)
Base Case Valuation	\$1,338.9	\$1.15

Financial Statements

	Financial Year ending 30 June				
Profit & Loss (A\$m)	2022A	2023F	2024F	2025F	2026F
Revenue	0.4	127.5	283.4	451.7	1,375.2
Operating Costs	(9.0)	(90.2)	(200.5)	(346.7)	(718.4)
Royalties	0.0	(3.8)	(8.5)	(13.6)	(53.7)
Overhead Costs	(17.4)	(9.0)	(9.2)	(9.4)	(9.6)
Other Income/Costs	(24.8)	0.0	0.0	0.0	0.0
EBITDA	(50.9)	24.5	65.2	82.1	593.5
Depreciation	(0.7)	0.0	(16.4)	(39.2)	(80.2)
Net Interest	(10.1)	3.0	(13.0)	(17.6)	(77.6)
Tax and Other	0.0	13.2	0.0	0.0	(109.5)
Profit	(61.7)	40.7	35.8	25.3	326.1
Cash Flow (A\$m)	2022A	2023F	2024F	2025F	2026F
Net Profit	(61.7)	40.7	35.8	25.3	326.1
+/- Adjustments	0.8	(3.0)	29.4	56.8	157.8
+/- Working Capital	(9.5)	(8.5)	(18.4)	(16.6)	(143.9)
+/- Other	23.3	(2.2)	(7.0)	(8.4)	(46.2)
Cash Flow from Operations	(47.1)	27.0	39.7	57.1	293.9
Net Capital Expenditure	(51.3)	(45.1)	(178.9)	(703.3)	(541.4)
Cash Flow from Investing	(51.3)	(45.1)	(178.9)	(703.3)	(541.4)
Net proceeds from Debt	81.1	3.0	(13.0)	482.4	172.4
Changes in Share Capital	68.2	67.6	18.3	188.0	0.0
Dividends	0.0	0.0	0.0	0.0	0.0
Other Financing Cashflow	(30.0)	0.6	0.8	0.5	4.1
Cash Flow from Financing	119.3	71.2	6.0	670.9	176.5
Net Cash Change	20.9	53.1	(133.1)	24.7	(71.0)
Balance Sheet (A\$m)	2022A	2023F	2024F	2025F	2026F
Cash	100.2	153.3	20.2	44.9	(26.1)
Other Current Assets	13.9	40.0	88.9	143.9	410.4
Total Current Assets	114.1	193.3	109.1	188.8	384.3
Property, Plant & Equipment	49.5	94.5	257.1	921.2	1,382.3
Exploration, Evaluation & Dev.	6.2	6.2	6.2	6.2	6.2
Non-Current Assets	58.9	58.9	58.9	58.9	58.9
Total Non-Current Assets	114.5	159.6	322.2	986.3	1,447.4
Total Assets	228.6	352.9	431.2	1,175.1	1,831.7
Equity	256.1	324.3	343.3	531.3	531.3
Reserves	17.8	17.8	17.8	17.8	17.8
Retained Earnings	(227.4)	(186.7)	(150.9)	(125.6)	200.6
Total Equity	46.6	155.4	210.3	423.6	749.7
Current Debt	1.8	1.8	1.8	1.8	1.8
Account Payables	3.6	18.5	41.2	71.2	147.6
Other Liabilities	0.6	1.1	1.9	2.4	6.5
Total Current Liabilities	6.0	21.4	44.8	75.4	155.9
Lease Liabilities	31.0	31.0	31.0	31.0	31.0
Non-current Debt	145.1	145.1	145.1	645.1	895.1
Total Non-current Liabilities	176.1	176.1	176.1	676.1	926.1
Total Liabilities	182.1	197.5	221.0	751.5	1,082.0
Total Equity + Liabilities	228.6	352.9	431.2	1,175.1	1,831.7
Profitability indicators	2022A	2023F	2024F	2025F	2026F
EBITDA margin	-	19%	23%	18%	43%
Liquidity	2022A	2023F	2024F	2025F	2026F
Quick Ratio	2.6	1.6	1.7	1.6	2.4
Current Ratio	2.6	2.0	2.1	2.0	2.7
Capital structure	2022A	2023F	2024F	2025F	2026F
Equity ratio	1.1	0.9	0.8	0.5	0.3
Debt / Assets	0.6	0.4	0.3	0.6	0.5
Debt / EBITDA	-2.9	6.0	2.3	7.9	1.5
DSCR	n/a	n/a	0.0	0.0	0.0

Source: Evolution Capital estimates

TABLE OF CONTENTS

1. MNS Valuation	4
Imperium3 New York's (iM3NY) Gigafactory Valuation	4
Nachu Graphite Project Valuation	6
MNS Sum of the Parts Valuation	7
Valuations Compared to Market Peers	7
2. MNS Corporate Structure	8
3. MNS Strategy	8
4. Lithium-ion Battery Manufacturing	9
Imperium3 New York Inc. (iM3NY)	9
Imperium3 Townsville (iM3TSV)	10
Charge CCCV (C4V)	10
5. Nachu Graphite Project	12
Location and tenure	12
Mineral Resource and Ore Reserve Estimates	12
Processing	12
Updated Feasibility Study Results	13
6. Directors & Management Team	13
Mr. Frank Poullas, Executive Chairman	13
Mr. Peter Tsegas, Executive Director	13
Mr. David Taylor, Chief Executive Officer	13
Mr. Hoshi Daruwalla, Non-Executive Director	14
Ms. Mona Dajani, Non-Executive Director	14
Mr. Mugunthan Siva, Non-Executive Director	14
Ms. Clair Bibby, Non-Executive Director	14
Mr. Giles Gunesekera, Non-Executive Director	15
7. Investment Risks	15

All currencies are in Australian dollars unless otherwise specified.

1. MNS Valuation

Imperium3 New York's (iM3NY) Gigafactory Valuation

With limited disclosures from MNS at this time, we have modeled the cash flows from the iM3NY Gigafactory as follows:

- Model from FY2023 to FY2040
- Factory capacity ramping up from 1.8GWh in 2023 to 38 GWh in 2030
- Capacity utilisation of 85%, except first two years 80%
- All derived cells and packs production assumed to be sold
- Cells and packs sold for an average price of US\$100/kWh (base case), US\$90/kWh (low case) and \$110/kWh (high case)
- Based on US\$100/kWh price, the cost based was assumed as follows:
 - Materials: 50%
 - Energy: 5%
 - Labour: 10% (and increasing 5% per annum)
 - Other: 5% (and increasing 5% per annum)
- Base price for costs reducing from US\$100/kWh to US\$90/kWh from 2027
- Capex of US\$100 million per GWh of additional nameplate capacity.
- Sustaining capex assumed at 3% of the total opex excluding materials
- Royalties (to be paid to C4V) assumed at 3% of revenues
- General and administration costs assumed at US\$5m in 2023 and increasing at a rate of 5% per annum
- Corporate tax rate of 30% and tax losses of \$173 million (US\$121m)
- Discount rate of 10%

Details of the calculations are summarised in Table 1.2.

Table 1.1 – iM3NY Financial Model

IM3NY GIGAFACTORY	Unit	Total/ Average	2023 1	2024 2	2025 3	2026 4	2027 5	2028 6	2029 7	2030 8	2031 9	2032 10	2033 11	2034 12	2035 13	2036 14	2037 15	2038 16	2039 17	2040 18
PHYSICALS																				
Capacity	GWh		1.8	4.0	6.0	10.0	14.0	20.0	28.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0
Utilisation	%		80.0	80.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
Production / Sales	GWh		1.44	3.2	5.1	8.5	11.9	17	23.8	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3
FINANCIALS																				
Price	US\$/kWh	1	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Price	US\$/kWh	2	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Price	US\$/kWh	3	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
Selected Price	US\$/kWh	2	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Revenue	US\$m	42,624	144	320	510	850	1,190	1,700	2,380	3,230	3,230	3,230	3,230	3,230	3,230	3,230	3,230	3,230	3,230	3,230
Contract value	US\$m	440	79	79	79	79	79	44												
Proportion under contract	%	1.0%	55%	25%	16%	9%	7%	3%												
Unit costs																				
Materials	%		(100)	(100)	(100)	(100)	(90)	(90)	(90)	(90)	(90)	(90)	(90)	(90)	(90)	(90)	(90)	(90)	(90)	(90)
Energy	%		50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Labour	%		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Other	%		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Increase	%		5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Costs																				
Materials	US\$m	(19,272)	(72)	(160)	(255)	(425)	(536)	(765)	(1,071)	(1,454)	(1,454)	(1,454)	(1,454)	(1,454)	(1,454)	(1,454)	(1,454)	(1,454)	(1,454)	(1,454)
Energy	US\$m	(1,927)	(7)	(16)	(26)	(43)	(54)	(77)	(107)	(145)	(145)	(145)	(145)	(145)	(145)	(145)	(145)	(145)	(145)	(145)
Labour (+5% p.a.)	US\$m	(4,047)	(15)	(34)	(54)	(89)	(112)	(161)	(225)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)
Other (+5% p.a.)	US\$m	(2,024)	(8)	(17)	(27)	(45)	(56)	(80)	(112)	(153)	(153)	(153)	(153)	(153)	(153)	(153)	(153)	(153)	(153)	(153)
Total	US\$m	(27,270)	(102)	(226)	(361)	(601)	(758)	(1,082)	(1,515)	(2,057)	(2,057)	(2,057)	(2,057)	(2,057)	(2,057)	(2,057)	(2,057)	(2,057)	(2,057)	(2,057)
Unit cost	US\$/kWh	68	74	74	74	74	67	67	67	67	67	67	67	67	67	67	67	67	67	67
Gross margin	%	36%	29%	29%	29%	29%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%
Cash flow from Ops	US\$m	15,354	42	94	149	249	432	618	865	1,173	1,173	1,173	1,173	1,173	1,173	1,173	1,173	1,173	1,173	1,173
Capex																				
Initial capex	US\$m	(3,450)	(50)	(200)	(400)	(400)	(600)	(800)	(1,000)	0	0	0								
Sustaining capex	US\$m	(240)	(1)	(2)	(3)	(5)	(7)	(10)	(13)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)
Total capex	US\$m	(3,690)	(51)	(202)	(403)	(405)	(607)	(810)	(1,013)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)	(18)
Royalties																				
Rate	%		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Royalties	US\$m	(1,279)	(4.3)	(9.6)	(15.3)	(25.5)	(35.7)	(51.0)	(71.4)	(96.9)	(96.9)	(96.9)	(96.9)	(96.9)	(96.9)	(96.9)	(96.9)	(96.9)	(96.9)	(96.9)
G&A (increasing 5% p.a.)	US\$m	(141)	(5)	(5.3)	(5.5)	(5.8)	(6.1)	(6.4)	(6.7)	(7.0)	(7.4)	(7.8)	(8.1)	(8.6)	(9.0)	(9.4)	(9.9)	(10.4)	(10.9)	(11.5)
Cash Flow Before Tax	US\$m	10,245	(18)	(123)	(275)	(188)	(216)	(249)	(227)	1,051	1,051	1,051	1,050	1,050	1,049	1,049	1,048	1,048	1,047	1,047
EBITDA margin	%	33%								33%	33%	33%	33%	32%	32%	32%	32%	32%	32%	32%
Tax paid	US\$m		0	0	0	0	(80)	(131)	(186)	(271)	(258)	(259)	(259)	(262)	(263)	(270)	(274)	(274)	(274)	(274)
Cash flow	US\$m		(18)	(123)	(275)	(188)	(216)	(249)	(227)	780	793	791	788	786	779	774	774	773	773	773
Discount rate	%		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
NPV post-tax	US\$m	1,548		1,721	2,016	2,493	2,930	3,519	4,251	5,090	4,818	4,508	4,167	3,793	3,385	2,937	2,452	1,923	1,342	702
IRR post-tax	%	25%																		

Source: Evolution Capital estimates

At this time and for the sake of simplification, the cash flow related to licence fees and royalties perceived by C4V in which MNS has 9.65% interest have not been modelled.

With regards to funding, we note that possible funding could come from The Battery Materials Processing Grants Program established by the United States Department of Energy (DOE). The program (US\$3 billion in total or US\$600m annually from 2022 to 2026) is designed to provide grants for battery materials processing to ensure that the United States has a viable battery materials processing industry. Funds can also be used to expand our domestic capabilities in battery manufacturing and enhance processing capacity.

Overall, those parameters result in a gross margin per annum ranging from 30% to 37% with an average over the modelled period of 36% (versus company guidance of 35%-40%) and an EBITDA margin ranging from 19% to 33% with an average over the modelled period of 32% (versus company guidance of 30-35%).

Unlike other products, such as a fridge where you buy them by the piece, Li-ion battery cells are priced by the amount of energy they can store. Therefore, Li-ion battery cells are ordered in kilo Watt hours (kWh) or giga Watt hours (GWh) of energy storage capacity.

Table 1.2 – iM3NY NPV Valuation over 2023-2040

Cells/Packs Price	NPV _{10%} post tax	MNS 62%	Risked @ 50%	IRR post tax
US\$90/kWh flat	US\$515m	US\$319m	US\$160m	15%
US\$100/kWh flat	US\$1,548m	US\$960m	US\$480m	25%
US\$110/kWh flat	US\$2,545m	US\$1,578m	US\$789m	36%

Source: Evolution Capital estimates

The valuation is highly leveraged to the cells/packs price.

On one hand, the iM3NY cells/packs should attract a premium for their superior characteristics compared to traditional LFP cells. On the other hand, as volume sold increases, more discount can be expected for large orders.

Nachu Graphite Project Valuation

In addition to the parameters disclosed in the DFS results (ASX announcement 27th Sep 2022), we have considered annual sustaining capex of 5% of the opex as well as a tax rate of 30%.

Table 1.3 – Nachu Financial Model

NACHU GRAPHITE PROJECT			Unit	Total	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
					-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHYSICALS																					
Mining Schedule																					
HG ore	kt		42,089	446.7	3,433.4	3,939.7	3,707.9	2,954.5	3,837.7	3,974.3	3,775.8	3,524.4	3,518.0	3,267.0	3,770.6	1,939.1					
MG ore	kt		16,398	96.1	1,747.4	1,394.8	1,594.4	713.0	1,170.9	1,110.6	1,447.4	1,460.1	1,171.4	1,708.5	1,573.8	1,209.1					
LG ore	kt		17,793	155.5	1,360.2	1,308.3	1,854.9	662.2	1,102.9	1,486.9	2,254.7	2,163.8	1,418.5	1,602.1	1,424.9	997.8					
Total ore	kt		76,279	698.3	6,541.0	6,642.8	7,157.2	4,329.7	6,111.5	6,571.8	7,477.9	7,148.3	6,107.9	6,577.6	6,769.3	4,146.0					
Mineralised waste	kt		18,707	112.6	842.2	1,053.7	1,517.3	722.2	1,307.3	1,781.5	3,081.8	2,284.2	1,841.8	2,610.8	1,082.7	469.1					
Waste	kt		96,777	3,217.5	3,058.0	4,841.5	4,879.6	12,325.3	9,226.6	10,923.7	9,220.9	11,329.8	13,099.9	9,757.9	4,067.5	829.0					
Total tonnes	kt		267,345	4,028.4	16,982.2	19,180.8	20,711.3	21,706.9	22,756.9	25,848.8	27,258.5	27,910.6	27,157.5	25,523.9	18,688.8	9,590.1					
Strip ratio	x		1.51	4.77	0.60	0.89	0.89	3.01	1.72	1.93	1.65	1.90	2.45	1.88	0.76	0.31					
Proven	kt		50,538	588.9	4,966.6	5,377.2	5,843.1	1,673.2	2,123.9	3,220.6	5,813.0	4,881.1	2,185.7	4,664.8	5,352.4	3,847.7					
Probable	kt		25,741	109.4	1,574.4	1,265.7	1,314.0	2,656.5	3,987.7	3,351.2	1,664.9	2,267.2	3,922.1	1,912.9	1,416.9	298.2					
Total ore	kt		76,279	698.3	6,541.0	6,642.9	7,157.1	4,329.7	6,111.6	6,571.8	7,477.9	7,148.3	6,107.8	6,577.7	6,769.3	4,145.9					
Waste	kt		115,484	3,330.1	3,900.0	5,895.2	6,396.9	13,047.5	10,533.9	12,705.2	12,302.7	13,614.0	14,941.7	12,368.7	5,150.1	1,298.1					
Total tonnes	kt		191,763	4,028.4	10,441.0	12,538.1	13,554.0	17,377.2	16,645.5	19,277.0	19,780.6	20,762.3	21,049.5	18,946.4	11,919.4	5,444.0					
Strip ratio	x		1.51	4.77	0.60	0.89	0.89	3.01	1.72	1.93	1.65	1.90	2.45	1.88	0.76	0.31					
Processing Schedule																					
HG ore	kt		42,089		3,880.1	3,939.7	3,707.9	2,954.5	3,837.7	3,974.3	3,775.8	3,524.4	3,518.0	3,267.0	3,770.6	1,939.1					
	%		5.50		5.39	5.39	5.47	5.43	5.56	5.43	5.46	5.52	5.69	5.82	5.53	5.18					
MG ore	kt		16,398		1,115.6	1,057.2	1,286.9	2,046.6	1,165.4	1,026.0	1,224.2	1,475.6	1,482.1	1,734.2	1,230.0	1,553.7					
	%		4.27		4.36	4.33	4.32	4.26	4.07	4.18	4.26	4.28	4.23	4.28	4.31	4.31					
LG ore	kt		17,793														1,507.5	5,000.4	5,001.0	5,000.5	1,283.4
	%		3.54														3.58	3.54	3.52	3.55	3.58
Total	kt		76,279		4,995.7	4,996.9	4,994.8	5,001.1	5,003.1	5,000.3	5,000.0	5,000.0	5,000.1	5,001.2	5,000.6	5,000.3	5,000.4	5,001.0	5,000.5	5,000.5	1,283.4
	%		4.78		5.16	5.17	5.17	4.95	5.21	5.17	5.17	5.17	5.15	5.26	5.29	5.23	4.43	3.54	3.52	3.55	3.58
Concentrate Production																					
Super Jumbo (+500µm)	tpa		3,597,351		235,789	235,789	235,789	235,789	235,789	235,789	235,789	235,789	235,789	235,789	235,789	235,789	235,789	235,789	235,789	235,789	60,516
	%				9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Jumbo (-500µm / +300µm)	%				32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%
Fine (-300µm)	%				59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
Super Jumbo (+500µm)	tpa		324,049		21,240	21,240	21,240	21,240	21,240	21,240	21,240	21,240	21,240	21,240	21,240	21,240	21,240	21,240	21,240	21,240	5,451
Jumbo (-500µm / +300µm)	tpa		1,152,178		75,520	75,520	75,520	75,520	75,520	75,520	75,520	75,520	75,520	75,520	75,520	75,520	75,520	75,520	75,520	75,520	19,382
Fine (-300µm)	tpa		2,124,326		139,239	139,239	139,239	139,239	139,239	139,239	139,239	139,239	139,239	139,239	139,239	139,239	139,239	139,239	139,239	139,239	35,736
FINANCIALS																					
Pricing																					
Super Jumbo	US\$/t	1	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Super Jumbo	US\$/t	2	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Super Jumbo	US\$/t	3	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Jumbo	US\$/t	1	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Jumbo	US\$/t	2	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300
Jumbo	US\$/t	3	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800
Fine	US\$/t	1	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Fine	US\$/t	2	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Fine	US\$/t	3	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Selected Price		2																			
Super Jumbo	US\$/t		2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Jumbo	US\$/t		2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300
Fine	US\$/t		1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Revenue																					
	US\$m		6,646	0.0	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	435.6	111.8
Unit costs																					
Mining cost	US\$/t mined		(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)	(4.71)
Processing cost	US\$/t proc		(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)	(10.80)
Product logistics	US\$/t proc		(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)	(3.84)
General & Admin	US\$/t proc		(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)	(1.55)
Yearly costs																					
Mining Costs	US\$m		(903.2)	(18.97)	(49.18)	(59.05)	(63.84)	(81.85)	(78.40)	(90.79)	(93.17)	(97.79)	(99.14)	(89.24)	(56.14)	(25.64)	0.00	0.00	0.00	0.00	0.00
Processing cost	US\$m		(823.8)	0.00	(53.95)	(53.97)	(53.94)	(54.01)	(54.03)	(54.00)	(54.00)	(54.00)	(54.00)	(54.01)	(54.01)	(54.00)	(54.00)	(54.01)	(54.01)	(54.01)	(13.86)
Product logistics	US\$m		(292.9)	0.00	(19.18)	(19.19)	(19.18)	(19.20)	(19.21)	(19.20)	(19.20)	(19.20)	(19.20)	(19.20)	(19.20)	(19.20)	(19.20)	(19.20)	(19.20)	(19.20)	(4.93)
General & Admin	US\$m		(118.2)	0.00	(7.74)	(7.75)	(7.74)	(7.75)	(7.75)	(7.75)	(7.75)	(7.75)	(7.75)	(7.75)	(7.75)	(7.75)	(7.75)	(7.75)	(7.75)	(7.75)	(1.99)
Total	US\$m		(2,138.2)	(19.0)	(130.1)	(140.0)	(144.7)	(162.8)	(159.4)	(171.7)	(174.1)	(178.7)	(180.1)	(170.2)	(137.1)	(106.6)	(81.0)	(81.0)	(81.0)	(81.0)	(20.8)
Cash per tonne concentrate	US\$/t		(594.4)		(551.6)	(593.6)	(613.7)	(690.5)	(676.0)	(728.4)	(738.4)	(758.1)	(763.8)	(721.9)	(581.5)	(452.1)	(343.3)	(343.4)	(343.3)	(343.3)	
Cash flow from Ops	US\$m		4,527	(19.0)	305.6	295.7	290.9	272.8	276.2	263.9	261.5	256.9	255.5	265.4	298.5	329.0	354.7	354.7	354.7	354.7	91.0
Capex																					
Initial capex	-100%		(363.5)	(242.33)	(121.17)																
Sustaining capex					(6.50)	(7.00)	(7.24)	(8.14)	(7.97)	(8.59)	(8.71)	(8.94)	(9.00)	(8.51)	(6.86)	(5.33)	(4.05)	(4.05)	(4.05)	(4.05)	(1.04)
Total capex				(242.33)	(127.67)	(7.00)	(7.24)	(8.14)	(7.97)	(8.59)	(8.71)	(8.94)	(9.00)	(8.51)	(6.86)	(5.33)	(4.05)	(4.05)	(4.05)	(4.05)	(1.04)
Royalties																					
Rate	%		5		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Royalties	US\$m		0.00		(21.78)	(21.78)	(21.78)	(21.78)	(21.78)	(21.78)	(21.78)	(21.78)	(21.78)	(21.78)	(21.78)	(21.78)	(21.78)	(21.78)	(21.78)	(21.78)	(5.59)
Cash flow before tax	US\$m		3,967	(261.31)	156.11	266.89	261.90	242.88	246.47	233.50	231.02	226.16	224.74	235.12	269.88	301.91	328.83	328.82	328.83	84.40	
EBITDA margin	%				36%	61%	60%	56													

Source: Evolution Capital estimates

MNS Sum of the Parts Valuation

Table 1.4 summarises the sum of the parts valuation for MNS.

Table 1.4 – MNS Sum of the Parts Valuation

Asset	Value Range	Preferred	Per Share
iM3NY (62% MNS, 50% Risked NPV)	US\$160m-US\$789m	A\$685.6m	\$0.59
iM3TSV		\$425.0m	\$0.02
Nachu graphite project (100% MNS, 30% Risked NPV)	US\$238m-US\$499m	A\$521.9m	\$0.45
Other interest (9.65% in C4V)		\$25.0m	\$0.02
Cash		\$100.2m	\$0.09
Exercise of Options over 2023		\$39.2m	\$0.03
Capex spent to complete 1.8 GWh capacity		(\$45.1m)	(\$0.04)
New Equity		\$30.0m	\$0.03
Corporate Costs		(\$43.0m)	(\$0.04)
Total		\$1,338.9m	\$1.15

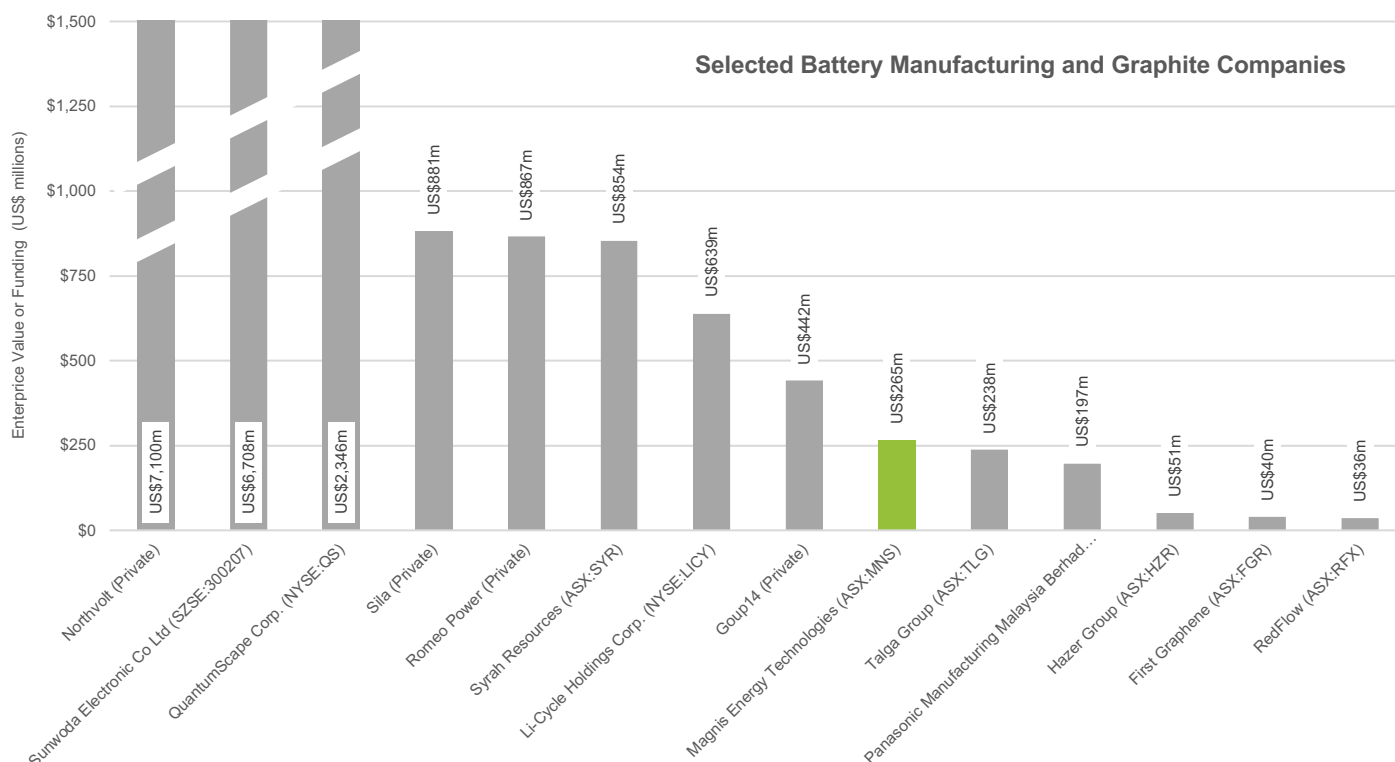
Source: Evolution Capital estimates

The valuation assumes a capital raising of 75 million shares at \$0.40 for A\$30 million sometime in FY2023 to complement the current funding for the incremental expansion of the iM3NY Gigafactory capacity.

Valuations Compared to Market Peers

As Magnis is currently sitting as the “cross-road” between graphite developers and emerging battery manufacturers, we have combined both set of companies in Figure 1.1. Note for the private companies, we used the funding as disclosed by Energy Startups (<https://www.energystartups.org/top/battery/>) as a proxy for market capitalisation.

Figure 1.1 – Valuation of Market Peers



Source: S&P Global, Energy Startups. Market data as at 24 Oct 2022.

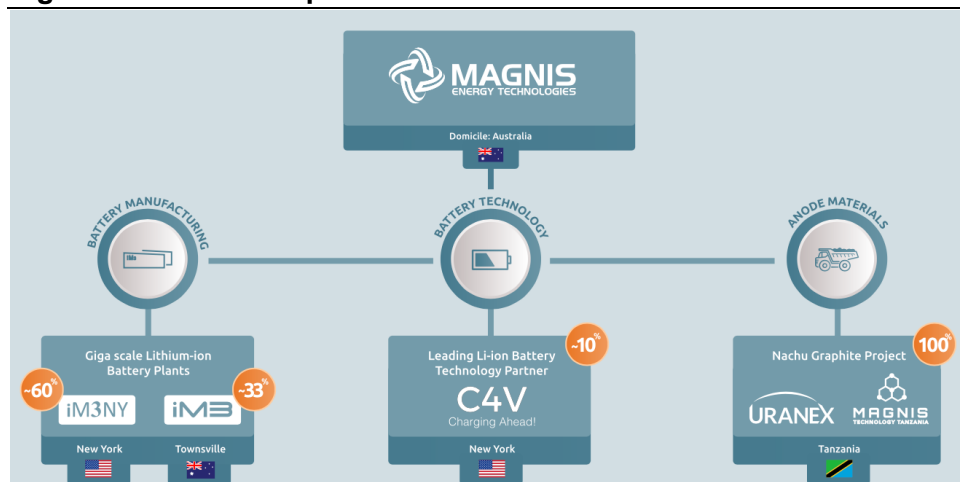
Our valuation for MNS currently sits between QuantumScape Corp (NYSE: QS) listed on the New York Stock Exchange with a market capitalisation US\$3.6 billion and an enterprise value of US\$2.4 billion and Sila, a private company. QuantumScape Corp. is a renewable energy company that develops solid-state battery technology to increase the range of electric cars. Sila Nanotechnologies is a provider and manufacturer of revolutionary car batteries.

At this time, this chart is for information. Interestingly QuantumScape currently has net debt of ~US\$1.5 billion, a level similar to what we expect in 2029 for iM3NY.

2. MNS Corporate Structure

Magnis Energy Technologies Ltd together with its consolidated subsidiaries as well as minority investment stakes have operations and projects across battery manufacturing and technology as well as battery materials in the United States, Tanzania and Australia. The current company structure along with their industry segment and geographic location is illustrated below:

Figure 2.1 – MNS Corporate Structure



Source: MNS. Read 62% rather than 60% for the interest of MNS in iM3NY

3. MNS Strategy

Magnis' vision is to be a key global player in the lithium-ion battery value chain with a key focus on the electric vehicles and clean energy storage markets. The Company envisions the following corporate developments to take place in the new financial year:

- New York lithium-ion battery plant, Imperium3 New York Inc. ('iM3NY') to gradually increase commercial production to meet customer orders.
- iM3NY seeks to raise further capital to increase capacity towards double digit gigawatt scale.
- Secure further graphite offtakes, complete the definitive feasibility study and progress the funding process for the construction of the company's Nachu Graphite Project in Tanzania.

Magnis from both a resource and technological view is positioned in the lithium-ion battery space, as such it benefits from tailwinds of political, technical, and economic changes that are focussing on that. These forces, in particular the economic, are increasingly embracing electrical power together with other renewable energy strategies.

There is an international consensus to reduce global carbon emissions. Not surprisingly, this has coincided with an increased level of 'green' investment interest and technological achievements that support a paradigm shift from the dominant reliance on fossil fuels last century. Magnis is well-positioned to capitalise on the broader macro-economic changes.

4. Lithium-ion Battery Manufacturing

Imperium3 New York Inc. (iM3NY)

The Group along with its technology partner Charge CCCV LLC (“C4V”) are the major shareholders in the New York Lithium-ion battery manufacturing facility, iM3NY. iM3NY will commercialise C4V’s patented technology to produce green credentialed lithium-ion battery cells for use in energy storage and electric vehicle applications. Over the year, iM3NY made significant progress to build out one of the largest home-grown, non-China reliant Gigawatt scale Lithium-ion Battery Plants in the US. Notable milestones achieved are as follows:

- Multi-national Engineering, Procurement and Construction contractor Ramboll together with the iM3NY team are utilising a phased approach to the design and construction of the battery manufacturing facility. Engineering, procurement, construction, process, and operational ramp up and construction are the major milestones.
- Completion of the ‘Dry Room’. The dry room is an essential part of the Lithium-ion cell manufacturing process, where most of the cell assembly is performed in an ultra-dry and ultra-clean inert environment. The ultra-dry atmosphere ensures longevity of Lithium-ion cells with minimal side reactions and degradation.
- Major New York state permits granted which are critical to continuing the construction build out, namely the Environmental Justice Plan, Air Permit and Aquifer Permit.
- Achieved semi-autonomous operation phase which allows for batches of cells to be produced for both marketing and due diligence purposes.
- Refinancing of the existing US\$50 million Riverstone debt with a US\$100 million Intellectual Property-based financing in collaboration with Aon and Atlas Credit Partners. The loan facility provides additional cash to the project’s balance sheet, significantly increasing its financial flexibility as well as plans for expansion.

Post the reporting period, iM3NY achieved the following:

- Installation and commissioning of key equipment such as Mixing, Coating, Drying, Calendaring, Slitting, Stamping, Stacking, Electrolyte Filling etc,
- Commenced the operations phase to commercially produce battery cells.

Figure 3.1 – iM2NY’s Prismatic Form Factor P series cells



Source: MNS

Imperium3 Townsville (iM3TSV)

Magnis along with technology partner C4V are members of a consortium in Imperium3 Townsville Pty Limited ("iM3TSV") to develop a lithium-ion battery manufacturing project. The project currently remains in greenfield stage after successfully completing a Queensland Government funded (\$3.1 million grant) feasibility study for an 18 GWh lithium-ion battery cell manufacturing facility in Townsville. The feasibility study was approved in August 2020 by the Queensland Government's Department of State Development, Tourism and Innovation

The core objective of the study was to assess the technical and commercial viability of developing a lithium-ion battery manufacturing plant in Townsville. A significant outcome of the study was to phase the project over 3 stages of 6 GWh each, for a total nominal capacity of 18 GWh. This not only reduces the upfront capital expenditure to a more manageable A\$1.12B for the first stage, but also allows for project expansion to occur in line with developments in technology and the market. The study results show project returns of approximately 13% per annum.

At this time, we have not modelled this project and assigned a value of \$25m to it.

Figure 3.1 – Artist impression of iM3TSV site



Source: MNS

Charge CCCV believes that commercialisation at scale is the true test of any technology and that requirement is a core part of its evaluation process when vetting new technologies.

Charge CCCV (C4V)

Charge CCCV LLC (C4V) is an energy storage technology and IP company headquartered in Vestal, New York that has discovered, patented and commercially developed processing technology and know-how for cathode and anode materials for use in Lithium-ion batteries.

C4V's commercially available P-Series battery cathode chemistry is a cobalt and nickel-free cathode chemistry that has a high voltage and cycle lifetime and importantly its compositionally patented modifications at the crystal- level provide high levels of safety in the event of thermal runaway or fire exposure.

C4V also provides value chain solutions for Li-ion battery manufacturing projects around the world through cell design and engineering, cell fabrication process, qualification of raw materials supply chain and cell fabrication equipment supplier, blueprint of plants and engaging with contractors.

Apart from being Magnis' Lithium-ion battery JV partner in iM3NY and anode materials technology partner, Magnis also has a minority investment of 9.7% in C4V.

One of the key product coming out form the C4V R&D programs is the LiSER cell technology.

C4V unveiled their Nickel and Cobalt Free Platform Solution called Lithium Slim Energy Reserve (LiSER) at the start of 2022. LiSER allows OEM's to bypass modules and build packs directly which enables maximum cell to pack translation of performance. LiSER's Cobalt and Nickel free lithium- ion battery cell technology provides an energy density of 190Wh/Kg (at the pack level).

LiSER simplifies the module structure and using C4V's BMLMP technology with its inherent oxygen deficient properties not only augments battery safety but also delivers a voltage that is at least 20% higher than the LFP formulations currently widely being used in the market. While Nickel-rich NCA or NMC chemistries emit Nickel oxide fumes, when burning with LiSER the toxic gaseous build-up is non-carcinogenic. LiSER uses elements that are environmental-friendly, sourced with a robust local supply- chain and enable a significantly lower carbon footprint.

- Cell to Chassis: LiSER enables freedom from Modules to deliver an Industry leading cell to chassis and cell to pack solution with superior performance metrics.
- Unique "Tab-less" prismatic design: LiSER is the first ever "Tab-less" prismatic design that delivers extra fast charge and higher power benefits.
- Embedded Thermal Management: built-in cell cooling loops enables LiSER to eliminate complicated thermal management systems thereby reducing the weight and energy consumption of the battery pack.
- Strong Inherent Safety: LiSER technology also includes exceptional safety characteristics due to C4V's oxygen deficient patented BMLMP technology.

C4V continued to work on their Extra Fast Charging (EFC) battery program over the year using 7Ah (Amp hour) commercial graded cells with 20 minute-charge and 20-minute discharge.

The tests were performed at 90% Depth of Discharge (DoD) which equates to 90% of the maximum energy being infused and withdrawn during charge and discharge cycles. After 1000 cycles, cells also went under impedance measurement every 100th cycle.

Figure 3.3 – C4V's LiSER cell technology platform



Source: MNS

These optimised commercial cells exhibited minimal energy density loss even at higher charge-discharge retaining 95% energy density of a regular cell run at

lower rates. To date, the EFC results showed only a 3% initial capacity loss after more than 2600 cycles. The plan is to take this program to over 3000 cycles and then run new programs at higher charging currents to achieve a 10-minute charge and then onto a 6-minute charge.

5. Nachu Graphite Project

Location and tenure

The Nachu Project is approximately 20 km from the major regional town of Ruangwa, in the Ruangwa District, Lindi Region of Southern Tanzania. The Project is approximately 220 km by road from the port of Mtwara and approximately 600 km by main road from the major port city of Dar Es Salaam.

The Nachu tenement was originally a Tenement Application held by Uranex Tanzania Ltd (UTL) when the first indications of graphite were discovered. The application was granted as a Prospecting Licence PL9076/2013 on the 8th of April 2013, covering an area of 198.57 km².

Mineral Resource and Ore Reserve Estimates

The Nachu Graphite Project Mineral Resource Estimate as of 1st February 2016 included a 174 Million Tonnes at 5.4% graphitic carbon (Cg) at a 3% Cg cut-off grade, classified as either Measured, Indicated or Inferred resources and reported in accordance with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012). The Mineral Resource and Ore Reserve estimates is summarised below in Tables 5.1 and 5.2.

Table 5.1 – Nachu mineral resource estimate

Classification	Tonnes (mt)	Grade (% TGC)	Graphite (mt)
Measured	63	4.7	3.0
Indicated	61	5.7	3.5
Inferred	50	5.8	2.9
Total mineral resources	174	5.4	9.3

Source: MNS

Table 5.2 – Nachu ore reserve estimate

Classification	Tonnes (mt)	Grade (% TGC)	Graphite (mt)
Proved	50.5	4.6	2.3
Probable	25.7	5.1	1.3
Total Ore Reserves	76.3	4.8	3.7

Source: MNS

Processing

The Nachu Project is a coarse flake graphite operation, designed to treat 5 Mt/y run of mine (ROM) ore with an average feed grade of 5.2% total graphitic carbon (TGC). The graphite ore will be hauled from an open pit mine to the concentrator to produce an average life of mine (LOM) 236,000 t/y of graphite flake concentrate at 98.5% (concentrate over 300 microns size) to 99% (concentrate under 300 micron size) TGC grades.

Run of mine ore is crushed in a 3-stage crushing circuit, followed by rod mill grinding and flotation, several stages of regrinding and cleaner flotation dewatering, drying, product handling, and tailings disposal. The final graphite flake (saleable product) is screened into three product size fractions (+500 µm, -500 +300 µm, and -300 µm) and bagged for transportation by truck to a warehouse located at the Mtwara Seaport.

A key objective of the project is to produce a high-grade graphite concentrate preserving the largest possible graphite flake size to maximise product value.

Updated Feasibility Study Results

On 27 Sep 2022, MNS released the results of an updated feasibility Study for the Nachu graphite project. Those are summarised in Table 5.3.

Table 5.3 – Key Highlights for the Feasibility Study Results

Project Metrics	Units	Value
Project NPV ₁₀ LOM (Post Tax)	US\$	\$1.2bn
Project IRR LOM (Post Tax)	%	51%
Payback Period ³	Months	19
Operating Expenditure ⁴	US\$/t	\$639
Initial Project Capital Cost ⁵	US\$	\$324mn
Special Economic Zone Period ⁶	Years	10
Concentrate Total Graphitic Carbon ⁷ (TGC)	%	98.5% - 99%
Concentrate Basket FOB Mtwara ⁸	US\$/t	\$1847
Process Plant Capacity	t/year	5,000,000
Steady State Graphite Production ⁹	t/year	~236,000
Recovery Rate	%	89.6%
Ore Reserve	t	76M @ 5.2%
Mineral Resources	t	174M @ 5.4%
Mine Life	Years	15.5

Source: MNS

Thanks to the mine plan provided, we have modelled the Nachu project.

In addition to the parameters disclosed in the ASX announcement, we have considered annual sustaining capex of 5% of the opex as well as a tax rate of 30%. Our NPV for the base case matches the NPV released by MNS (US\$1.2bn).

6. Directors & Management Team

Mr. Frank Poullas, Executive Chairman

Mr Poullas has spent over two decades working in the technology, investment banking and engineering industries. During the last 16 years, Mr Poullas has been involved with assisting several ASX-Listed entities with funding and strategic direction in the Lithium-ion Battery Materials and Energy sectors.

Mr. Peter Tsegas, Executive Director

Mr Tsegas has over 20 years of experience in Tanzania where he's been a resident for over 15 years. He has worked to engage both the private and government sectors on several projects and was Managing Director of Tancoal Energy Ltd which he successfully took from an exploration company to a JV with the Tanzanian government, and then into production.

Mr. David Taylor, Chief Executive Officer

David has 30 years of international experience leading the strategic development and growth of organisations across the property, construction, transport, renewables, energy, environmental and social infrastructure sectors. He has previously held senior leadership roles with ASX-listed firms including Worley Limited, Bingo Industries Limited, WDS Limited and Transurban Limited.

David has held diverse roles leading various functions including corporate strategy and development, commercial and risk management, mergers &

acquisitions, project development & financing, asset management, transaction management, and program / project management.

David holds a Bachelor of Building in Construction Economics (First Class Honours) from the University of Technology Sydney, an MBA from the Macquarie Graduate School of Management, and a Master of Applied Finance from the Macquarie University Applied Finance Centre. David is also a member of the Australian Institute of Company Directors.

Mr. Hoshi Daruwalla, Non-Executive Director

Mr Daruwalla is based in the United States and has a career spanning over three decades where he has started, operated and grew businesses across a variety of industries globally from start-ups to significant multinationals. He has held global senior management roles at corporations such as Daikin Industries, American Air Filter – McQuay, Hong Leong Group and Purafil. He has operated, seeded, and scaled up businesses in 93+ countries, with successful outcomes including receiving the prestigious U.S. Presidential E- and E-Star awards for Excellence in U.S. Exports awarded by the U.S. Secretary of Commerce. Recently, Mr Daruwalla held the role of Executive VP – Strategic Global Expansions; Chairman of the Board, President and CEO of the North American entity of EcoPro Battery. He is a Board Member and CEO Mentor at the State of Georgia District Export Council (U.S. Department of Commerce appointee), and holds a bachelor's degree in manufacturing engineering, Masters in Business Administration, and is an alumnus of the Wharton Business School.

Ms. Mona Dajani, Non-Executive Director

Ms. Dajani has over 20 years of practise experience as a dual qualified lawyer in the U.S. and England and as a licensed professional engineer. She serves as a lead lawyer in complex acquisitions, dispositions, financing, and project development transactions involving energy and infrastructure facilities in the United States and around the world. She is co-leader of Pillsbury Winthrop Shaw Pittman's Energy and Infrastructure Projects Team and leads the Renewable Energy practice.

Mr. Mugunthan Siva, Non-Executive Director

Mr. Siva possesses three decades of experience in the finance industry both locally and overseas specialising in funds management. Mr. Siva is the Managing Director, Chief Investment Officer, and co-founder of India Avenue, which is a business focused on providing advice and delivering client focused investment solutions to investors seeking to access India's strongly growing capital markets. Mr. Siva was Head of Portfolio Management for ANZ Wealth, where he was responsible for investment strategy and portfolio construction. Prior to that he held the role of Investment Strategist at ING Investment Management Australia and was Chief Investment Officer for ING Investment Management India. Mr. Siva has also worked for Westpac, Macquarie Bank, ING Bank and RetireInvest. Mr. Siva holds a Bachelor of Commerce from UNSW and a Masters of Business from UTS.

Ms. Clair Bibby, Non-Executive Director

Ms. Bibby has over 30 years professional experience as a senior lawyer and executive coach. Claire has founded and cofounded several businesses covering the legal, executive coaching, property-tech and legal-tech spaces and has held senior management appointments with some of world's largest companies and top-tier law firms. Claire is a Non-Executive Director of two other ASX listed companies noted below and sits on a number of unlisted companies and charities including Arowana International Limited. Claire has been recognised by several professional organisations during her career including recently being named by Australasian Lawyer as one of the Elite Women of 2021. Claire is also an Industry/Professional Fellow with the University of Technology Sydney, School of Law.

Mr. Giles Gunsekera, Non-Executive Director

Giles is the Founder and CEO of Global Impact Initiative and has over 25 years' experience of building and developing businesses for global organisations. GII is the only Impact Investing business in the world that is acknowledged by the United Nations as a Global LEAD company and recognised for their high levels of engagement in the United Nations Sustainable Development Goals (UNSDGs). Giles holds numerous Volunteer Not-for-Profit Directorships ranging from International Aid, Human Rights, Climate Action, Disabilities, Education, Arts and Sports. Giles is on Advisory Boards for the United Nations for Climate & Health and Sustainable Finance. Giles has formal academic qualifications from Oxford University, Melbourne University, Monash University, and the Financial Services Institute of Australia.

7. Investment Risks

Numerous risks are associated with the Magnis' businesses, failing to keep pace with technological advancements, capital requirements, and growing competition makes the Magnis' activities risky concerning its battery manufacturing investments.

Likewise, the realisation of the project including processing, from its Nachu graphite project will be very capital intensive. The degree of success depends on numerous factors, including negotiating suitable commercial off-take agreements, funding, sovereign risks, relevant commodity prices, the quality and scale of the resource, and commercial partnerships to manage these operations. The strategic identification of potential mineralisation targets and management oversight will require exploration and mining programmes involving careful supervision and work from a broad range of skilled specialists.

With regards to the Nachu project, MNS is exposed to a number of risks including:

- **Geological risk:** the actual characteristics of an ore deposit may differ significantly from initial interpretations.
- **Resource risk:** all resource estimates are expressions of judgement based on knowledge, experience and industry practice. Estimates, which were valid when originally calculated may alter significantly when new information or techniques become available. In addition, by their very nature, resource estimates are imprecise and depend to some extent on interpretations, which may prove to be inaccurate.
- **Commodity price risk:** the revenues MNS will derive mainly through the sale of graphite products exposing the potential income to metal price risk. The price of graphite fluctuates and is affected by many factors beyond the control of MNS. Such factors include supply and demand fluctuations, technological advancements and macro-economic factors.
- **Exchange Rate risk:** The revenue MNS derives from the sale of metal products exposes the potential income to exchange rate risk. International prices of graphite are denominated in United States dollars, whereas the financial reporting currency of MNS is the Australian dollar, exposing the company to the fluctuations and volatility of the rate of exchange between the USD and the AUD as determined by international markets.
- **Mining risk:** A reduction in mine production would result in reduced revenue.
- **Processing risks:** A reduction in plant throughput would result in reduced revenue. In all processing plants, some metal is lost rather than reporting to the valuable product. If the recovery of metal is less than forecast, then revenue will be reduced.
- **Operational cost risk:** an increase in operating costs will reduce the profitability and free cash generation of the project.

- **Management and labour risk:** an experienced and skilled management team is essential to the successful development and operation of mining projects.

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