



Neometals

The evolution of lithium[®]

BAML Battery & Storage Forum
Presentation

15 January 2019

ASX Code: NMT OTC/Nasdaq Intl: RDRUY

Disclaimer



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Financial data: All figures in this document are in Australian dollars (AUD) unless stated otherwise.

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Competent Persons Statement:

The information in this document that relates to “Mt Edwards Nickel- Mineral Resource Estimate”, “Barrambie Project - Mineral Resource Estimate”, “Barrambie Pre Feasibility Study Results”, “Mt Marion Mineral Resource Update and “Lithium Battery Recycling – Scoping Study Results” are extracted from ASX Releases set out below. The Company confirms that it is not aware of any new information or data that materially affects the information included in the ASX Releases set out below, and in the case of estimates of mineral resources, that all material assumptions and technical parameters underpinning the estimates in those ASX Releases continue to apply and have not materially changed.

5/5/2009	Barrambie Vanadium Project – DFS Completion and Outcomes	19/4/2018	Mt Edwards Nickel – Mineral Resource Estimate
22/02/2017	Lithium Battery Recycling – Scoping Study Results	25/6/2018	Mt Edwards – Mineral Resource Over 120,000 Nickel Tonnes`
17/4/2018	Barrambie Project – Mineral Resource Estimate	16/11/2018	Neometals Commences Update of Barrambie DFS

The Company confirms that all the material assumptions underpinning the production target and the forecast financial information derived from the production targets in the “Barrambie Vanadium Project - DFS Completion and Outcomes” released on 5 May 2009, the “Metals Commences Update of Barrambie DFS” released on 16 November 2018 and the “Lithium Battery Recycling – Scoping Stud Results ” released on 22 February 2017 continue to apply and have not materially changed.

Who are Neometals?



Neometals is an Australian listed (ASX:NMT) project developer with a clear growth plan and strong balance sheet to maximise returns from its industrial mineral feedstocks of lithium, titanium and vanadium through downstream processing into high purity chemicals.



NE Board Members

Management Team



Please refer to supporting information slides at rear of document for name and position..

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Integrated Lithium Business

- Mt Marion Lithium Mine (13.8%) – Binding Sale Agreement for A\$104M subject to FIRB and Chinese approvals
- Lithium Refinery – completing Front End Engineering Study to convert our fixed-volume Spodumene Offtake Option from Mt Marion into Lithium Hydroxide which is used in lithium batteries for EV and ESS applications
- Lithium Ion Battery Recycling – commercialising ‘end of life’ battery recycling technology for recovery of Lithium, Cobalt, Nickel and Copper.
- Mt Edwards (100%) & Mt Holland¹ (36%) – lithium exploration projects

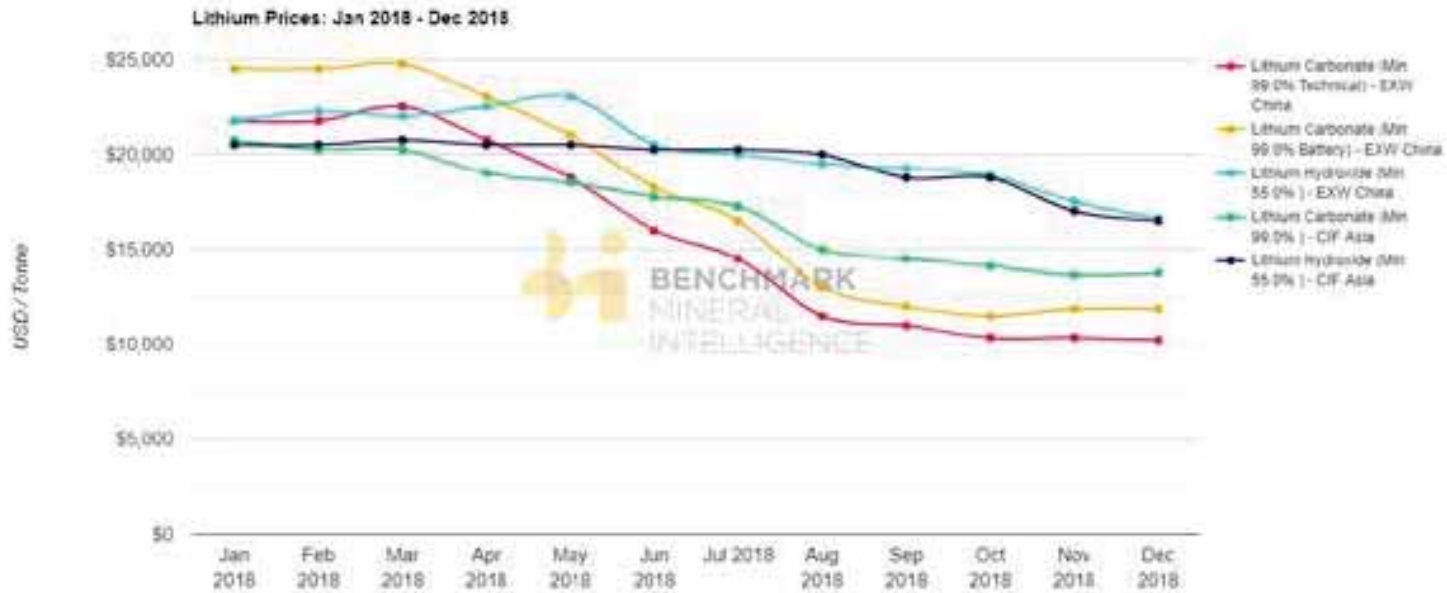


Developing Titanium / Vanadium Business

- Barrambie Titanium-Vanadium Project (100%) – one of the highest grade hard-rock titanium-vanadium resources globally
- Nearing completion of NI43-101 DFS to produce primary Vanadium at a time of structural shortage and strong prices.
- The most advanced greenfields project known with resource on granted mining leases, environmental approval and mining proposal lodged

Note 1: Held via 706.2m shares in Hannans Ltd.

Despite Lithium Price Deterioration/Normalisation? and Poor sector returns in CY18



Name	Open	High	Low	Close	Change %	Total Volume	Total Value	Daily Average Value	Turnover %
Tawana Resources NL (ASX...)	0.4623	0.583	0.22	0.31	-32.94	395M	165M	700K	71.78
Kidman Resources Limited	1.88	2.48	0.825	1.09	-42.02	716M	1,141M	4,510K	188.25
Galaxy Resources Limited	3.83	4.54	2.02	2.17	-43.34	843M	2,592M	10,243K	207.02
Pilbara Minerals Limited	1.115	1.245	0.57	0.625	-43.95	1,917M	1,700M	6,721K	111.54
Neometals Limited	0.44	0.47	0.21	0.23	-47.73	130M	41,876K	166K	23.87
Orocobre Limited	6.9414	7.44	2.91	3.23	-53.47	389M	2,044M	8,079K	151.16
Altura Mining Limited	0.395	0.505	0.135	0.14	-64.56	1,216M	402M	1,589K	66.83

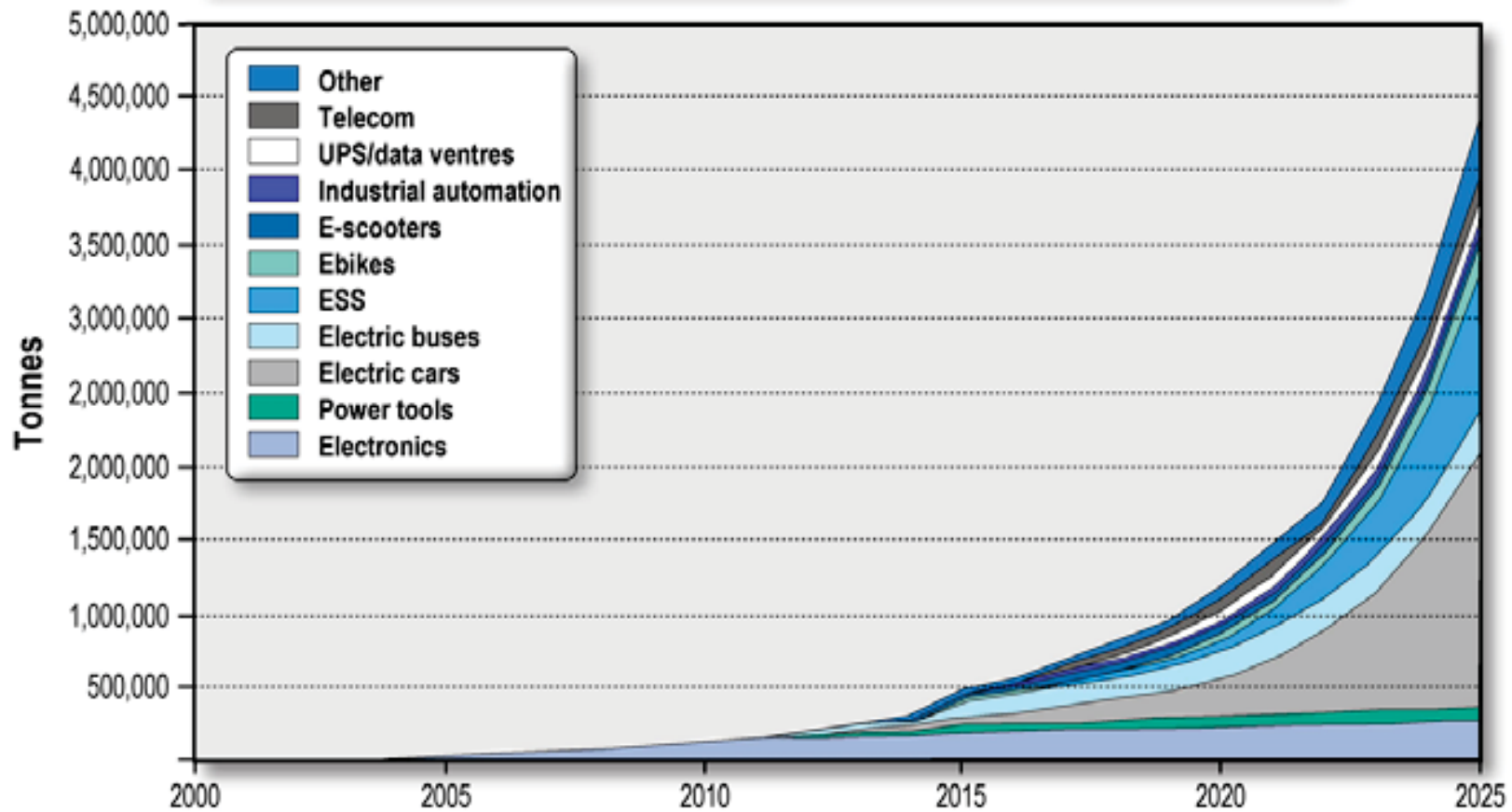
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We have strong conviction in the long term lithium battery, EV and ESS thematic



Lithium-ion Batteries Placed on the Global Market (cell level)



Source: Creation Inn

Strong Balance Sheet, Loyal Shareholders



	ASX: NMT	OTC:RDRUY
Shares on Issue ¹	m	543.9
Share Price (8-Jan-2019)	A\$	0.235
Market capitalisation	A\$m	128.0
Cash (31-Dec-18)	A\$m	30.1
Debt (31-Dec-18)	A\$m	-
Investments (31-Dec-18) ²	A\$m	9.2

Major Shareholders (7-Jan-2019)	
David Reed (Non-Executive Director)	9.0 %
Westoz Funds Management	2.9%
Global X Lithium ETF	1.8 %
Top 20	37.2 %

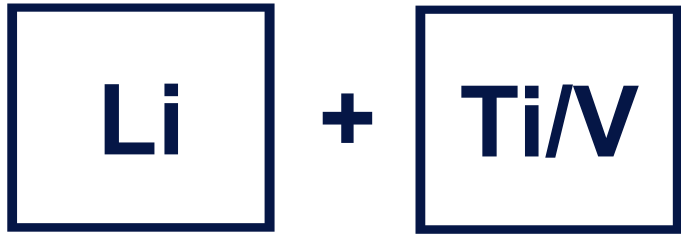


Note 1: Excludes 7.0m performance rights.
 Note 2: Loan receivables and investments
 Source: Neometals

Long-term Strategy



1 To develop a portfolio of **globally significant materials** for a sustainable future



2 Leverage **operating cashflows** to drive innovative **cost advantages** and **secure strong partners**



3 Into lower-risk, longer life, higher-margin operations to **optimise stakeholder returns**



Over the last 3 financial years, Neometals has returned ~A\$28m in 3 consecutive dividends and ~A\$6m in share buyback.





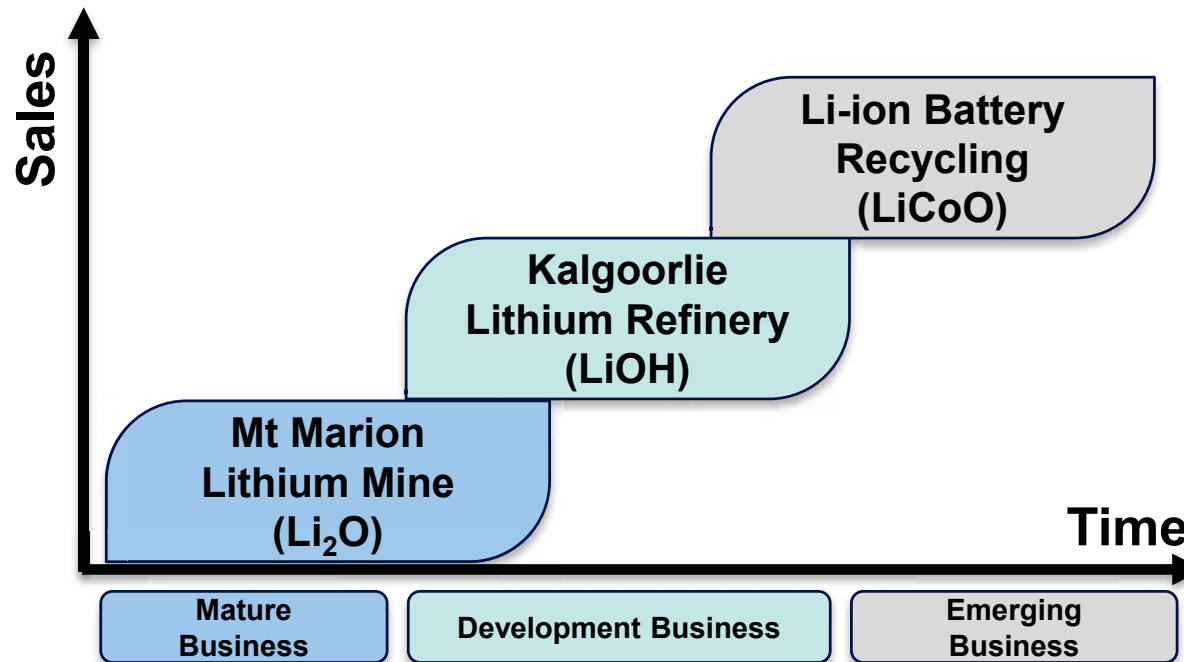
Neometals – Integrated Lithium Business

- Mt Marion Lithium Mine
- Kalgoorlie Lithium Refinery Project
- Zeolite Production from Refinery Waste Project
- Lithium Ion Battery Recycling Project
- Lithium Exploration Interests

Sustainable Integrated Lithium Strategy

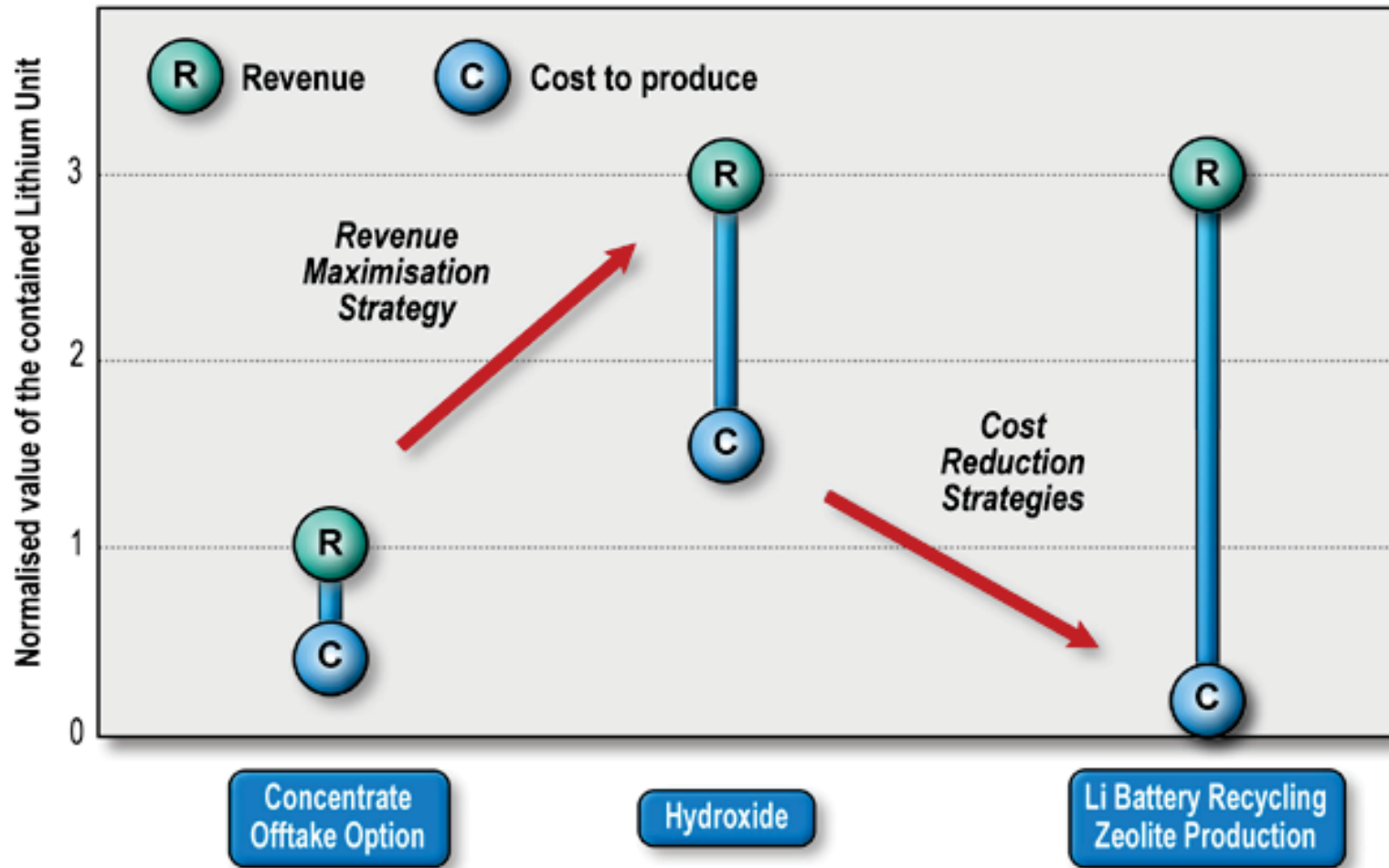


Neometals' integrated lithium strategy is based on (1) mining and producing spodumene concentrate, (2) refining spodumene to lithium compounds, and (3) recycling lithium batteries to recover battery metals.



- Downstream integration substantially enhances cost competitiveness
- Downstream processing multiplies the value of lithium units
- By creating the highest-margin, sustainable integrated lithium business, Neometals can be exposed to Li unit 'cradle to grave'

Maximise Li unit value and reduce operating cost through innovation



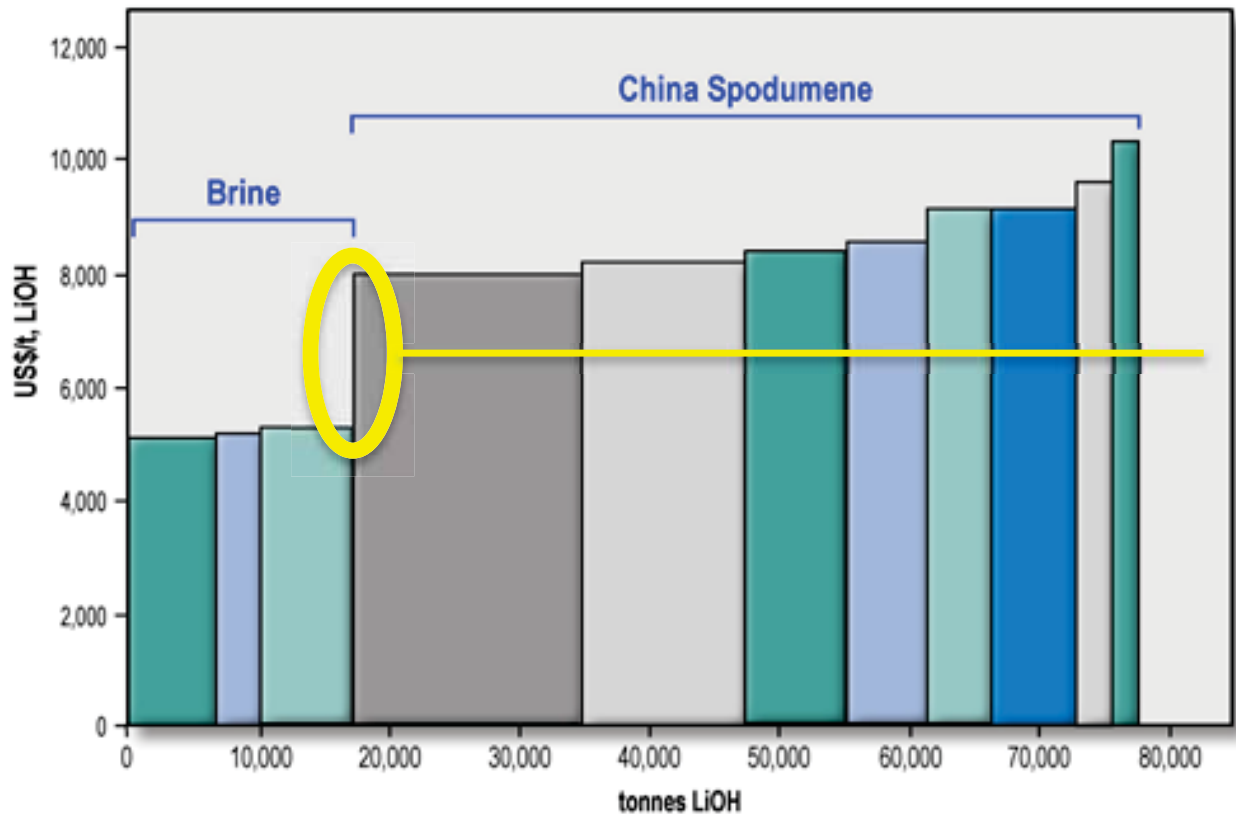
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Vital to be cost-competitive as a supplier



Lithium Hydroxide:
Est. Industry Unit Cash Costs 2017



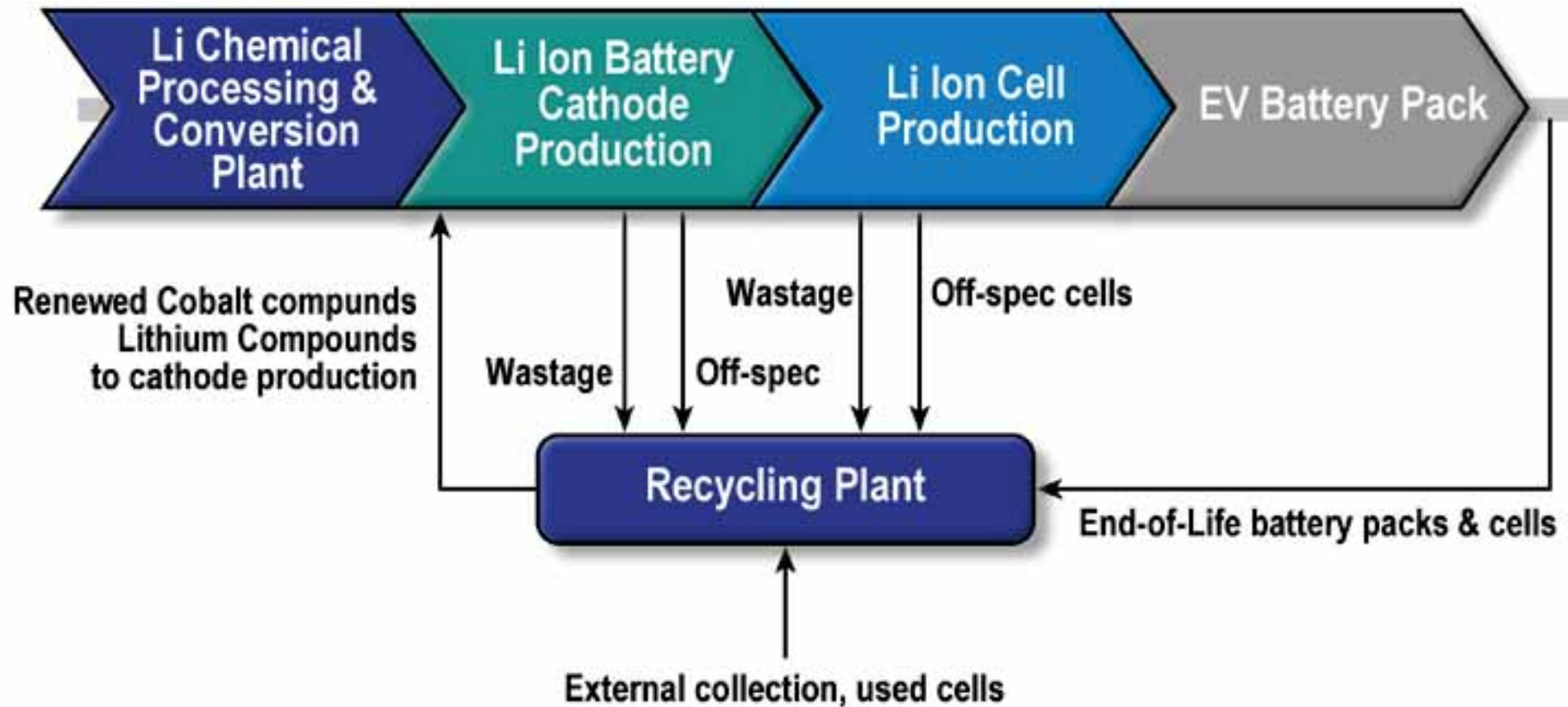
Source: Management estimates

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Closing the lithium battery supply chain loop

Li



Neometals



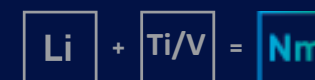


Upstream processing Mt Marion Lithium Mine



Neometals 13.8% (currently under sale contract)

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Mt Marion Equity Divestment



Highlights:

- NMT to sell its Mt Marion equity to Ganfeng and Mineral Resources
- 'Life of Mine' spodumene concentrate offtake option rights retained
- Strategy to produce higher value lithium chemicals underpinned by certainty from proven feed supply
- Balance sheet strength to support financing and partner selection process for proposed Kalgoorlie Lithium Refinery

Context:

- ❖ Total Mt Marion equity sale proceeds since 2015 will be ~A\$198m on A\$3m NMT initial investment. ~A\$34m returned via dividends and share buybacks
- ❖ Shift exposure from upstream spodumene production to pursue the lithium battery thematic further down the value/supply chain
- ❖ A stronger balance sheet with offtake volume certainty aids NMT project finance and offtake/partner selection processes

Key Terms



- Divestment comprises interrelated Sale and Offtake Agreements. Key terms as follows:
 - NMT has agreed to sell its 13.8% in the Mt Marion JV Company (Reed Industrial Minerals, “**RIM**”) for total cash consideration of A\$104M (NMT carried tax losses A\$115M)
 - Completion by 28 February at latest, targeting 31 January - conditional on Ganfeng securing FIRB and Chinese approvals for the transaction
 - Neometals and RIM parties to an offtake option agreement at completion
 - Life of mine annual option to purchase 57ktpa of 6% spodumene concentrate from February 2020
 - Pricing linked to prevailing lithium carbonate and hydroxide prices with quarterly resets.



Downstream processing

Kalgoorlie Lithium Refinery Project

Neometals 100%

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Kalgoorlie Lithium Refinery (KLR)

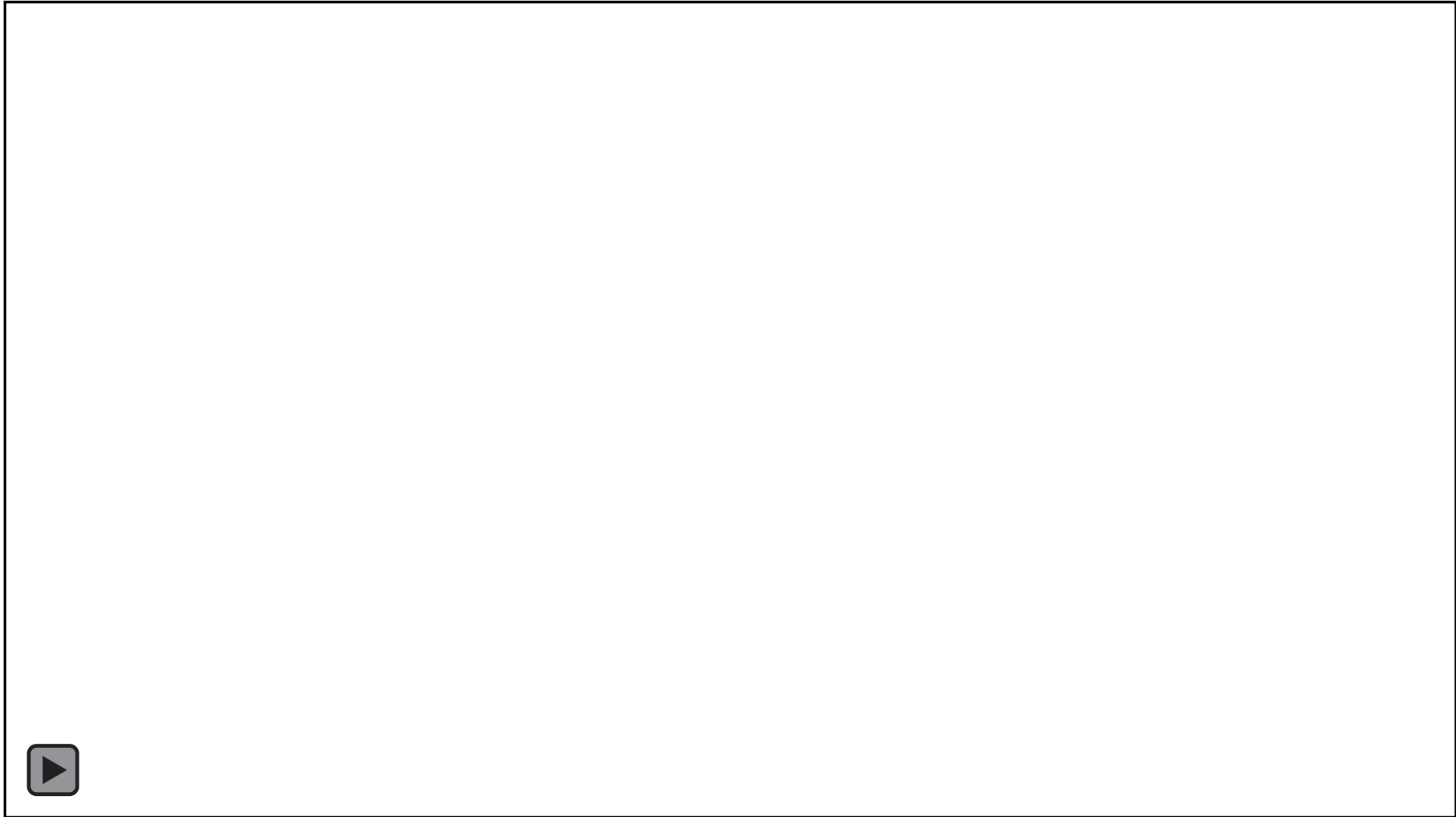


Neometals is progressing technical and commercial feasibility of a lithium chemicals refinery in Kalgoorlie, with an initial production capacity of 10ktpa of LiOH.

- Propose to utilise a modern, conventional direct-conversion sulphate process to produce battery quality LiOH monohydrate from spodumene concentrate
- The refinery baseload feed Neometals' offtake option from Mt Marion, will need supplementary feedstock source
- Successful vendor process flowsheet testing completed by Veolia Water Technologies:
 - run-of-mine Mt Marion sample produced 99.99% pure battery grade LiOH at high recovery rate
 - Similar flowsheet used successfully by leading producers Ganfeng and GRM
- M+W Group appointed to conduct a FEED Study (currently underway), with Definitive Feasibility Study to be completed Q2 CY19



KLR Flythrough Video



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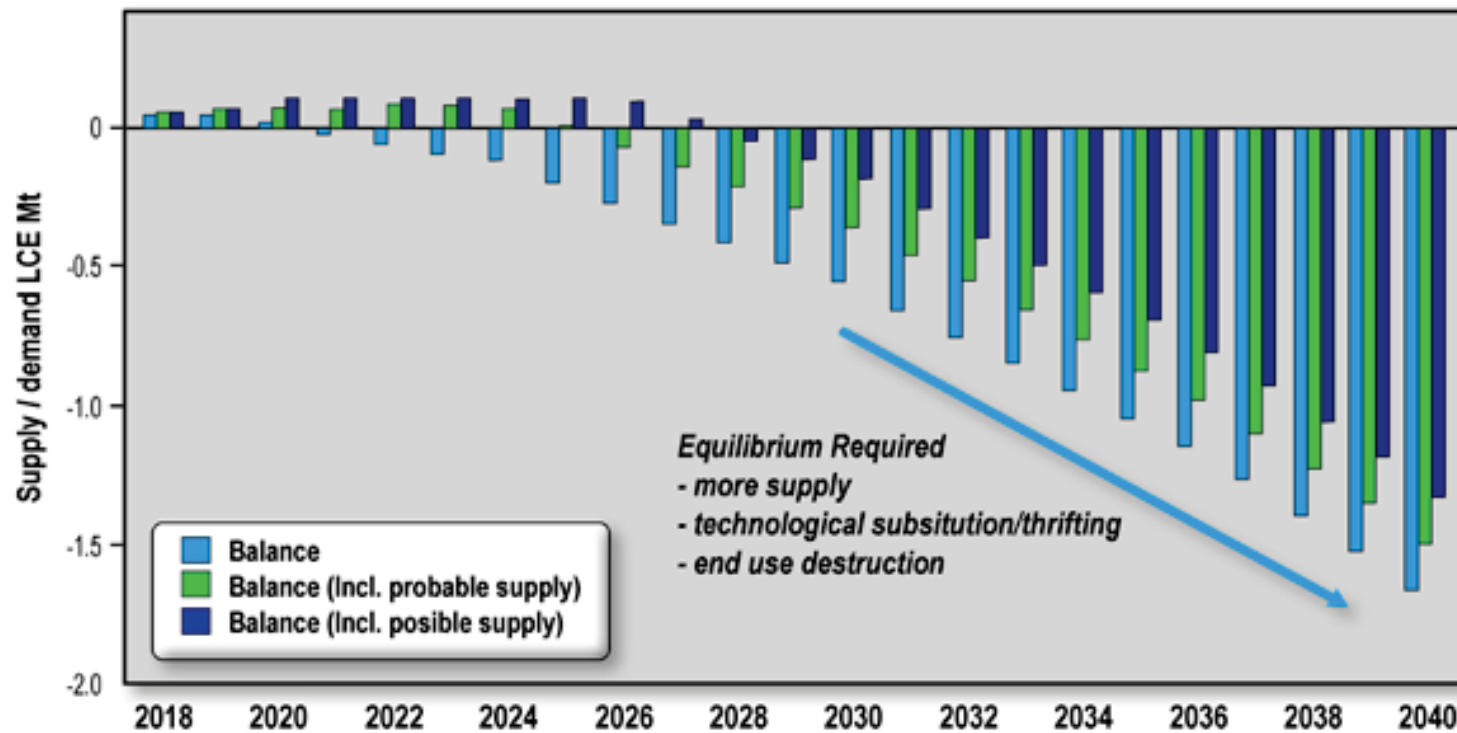
<https://youtu.be/CqIpCWY5e5M>



Strong Long-Term Supply Fundamentals



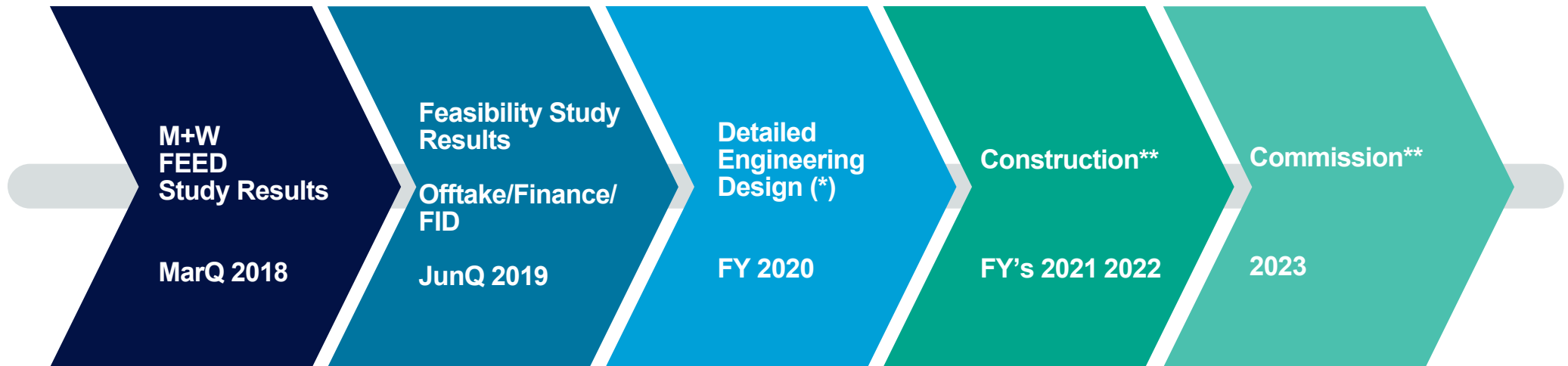
Lithium Supply & Demand Balance



Significant supply deficit expected to Emerge mid 20's

Source: SFA (Oxford)

Project Timeline



(*) Subject to NMT Board Approval (**) Subject to FID



Research & Development

Zeolite from Leach Residue

Neometals 100%

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Drivers for development

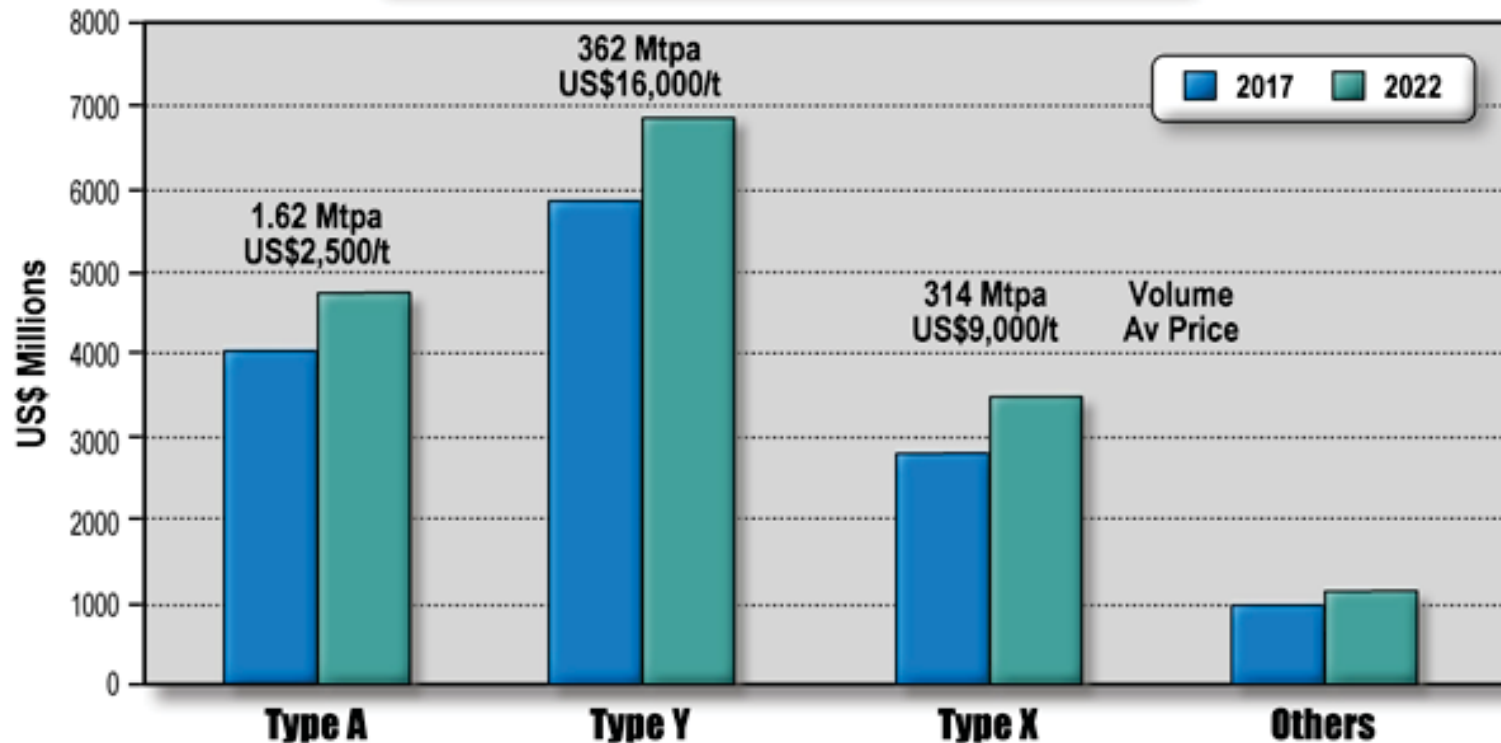


- Leach residue disposal, a component cost of LiOH opex
 - Cpresently used as a raw material for cement production or ceramics
- Neometals has proved concept of producing commercially sought type of zeolite from LiOH leach residues at both CSIRO and QUT, Australian Provisional Patent lodged
 - Synthetic zeolites are high value engineered materials
 - Synthetic zeolite applications include water removal from gas streams, gas cleaning, adsorbents, molecular sieves and catalysts
 - Residue displaces high purity industrial chemicals, reduces production cost
- Zeolite production and sale has the potential to significantly offset LiOH opex and improve LiOH competitive position
- M+W (Exyte) conducting cost study and has prior experience in zeolite plant design,
- Larger evaluation samples being produced at CSIRO and QUT
- Pilot Plant planned for 2H 2019.

Massive Global Market a multiple larger than lithium



**Synthetic Zeolite Market by Type
Market 2017 and Global Forecast 2022**

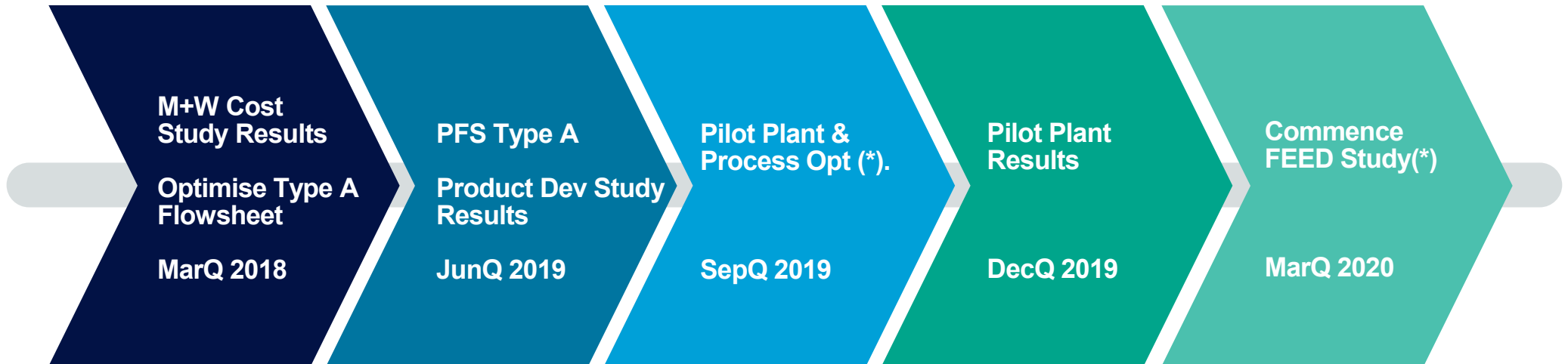


Source : Markets and Markets (2018)

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Commercialisation Plan



(*) Subject to NMT Board Approval



Research & Development

Lithium Battery Recycling

Neometals 100%

Neometals

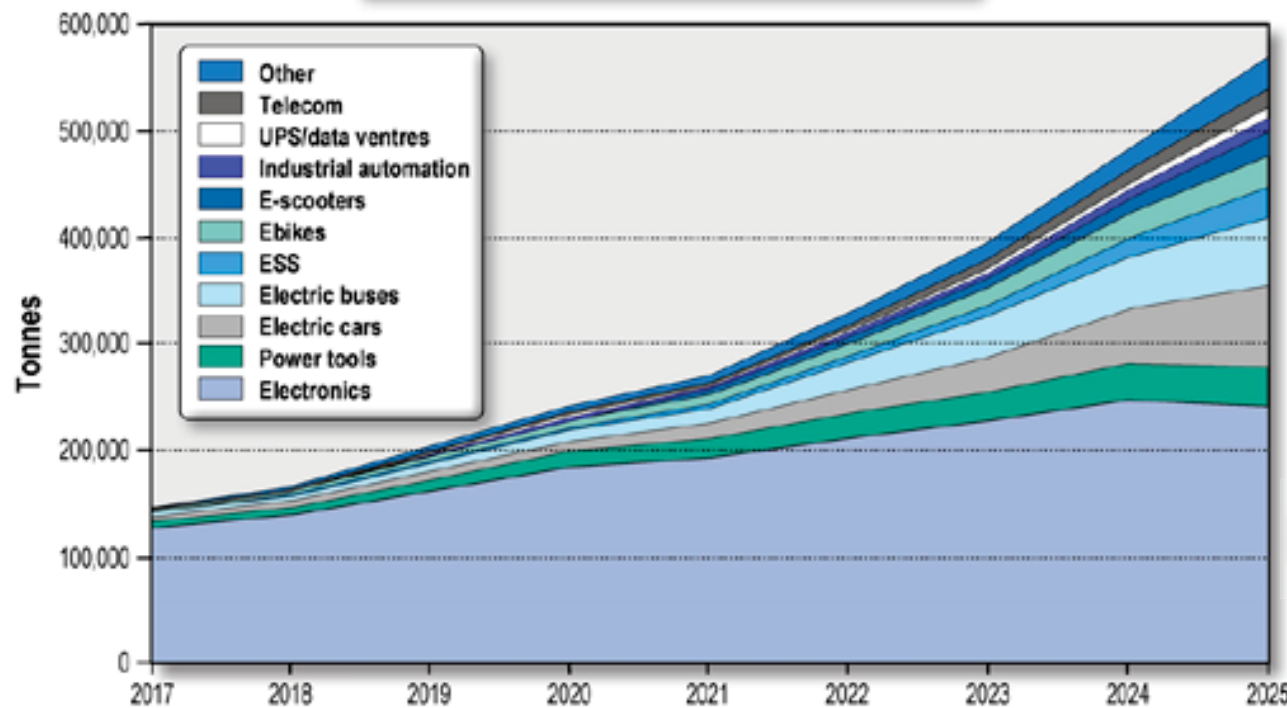


Drivers for development



Less than 5% of used Li-ion batteries are truly recycled, majority of competitors only recover base metals (40-50% overall yield)

Lithium-ion Batteries EOL (2017-2025)



Electronics LCO
Cathode contains
20% Cobalt

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Lithium Battery Recycling



Neometals is developing a sustainable technology to economically recover critical metals from spent lithium ion batteries.

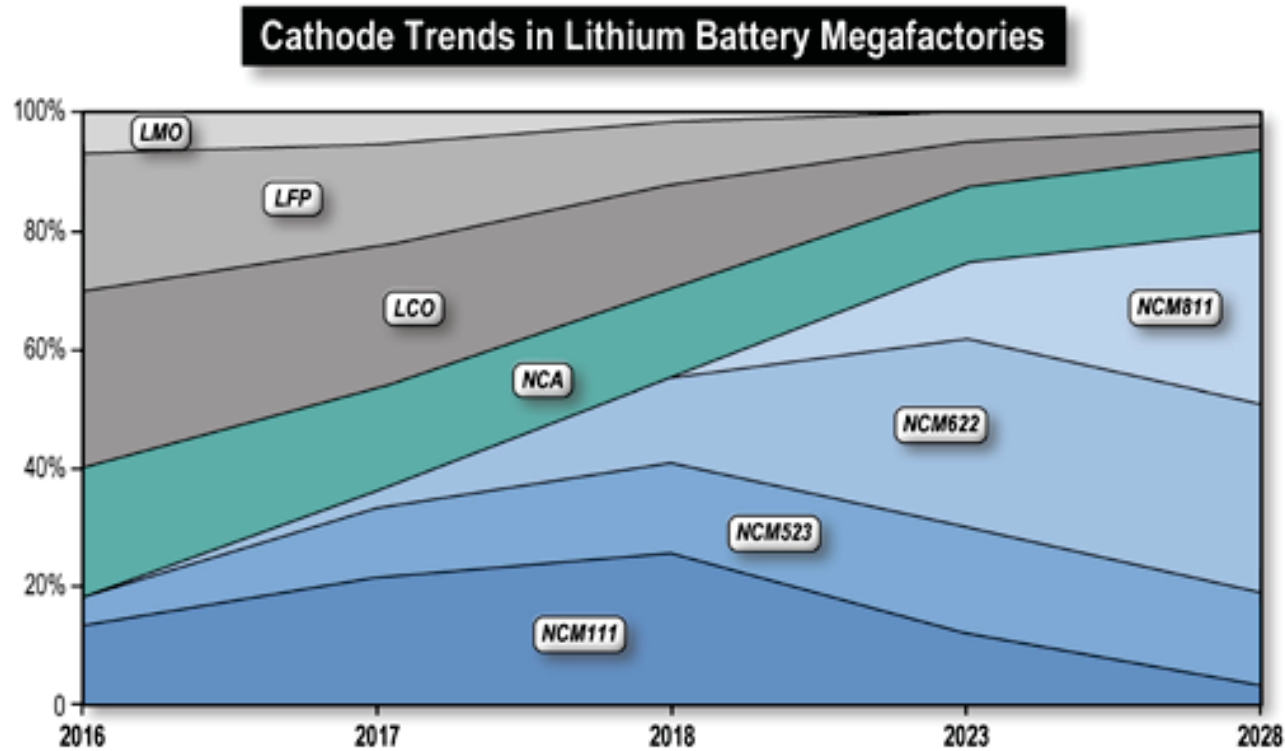
- Regulation driving ethical sourcing and disposal of lithium ion batteries
- **Cobalt supply chain under stress** - increased demand for batteries, high sovereign risk sources
- 2017 Scoping Study showed potential for viable process to recover cobalt from LCO
- Process flowsheet now designed to recover multiple critical metals from LCO and NMC
- Awarded Modular pilot (100kg/pd) to SGS Canada for completion in 1H CY19 ahead of FEED on 50tpd plant to follow
- Business model to initially focus on partnerships with auto and battery makers to recycle off spec cells that fail QA/QC and end of life returns.



New multi-cathode recycling flowsheet

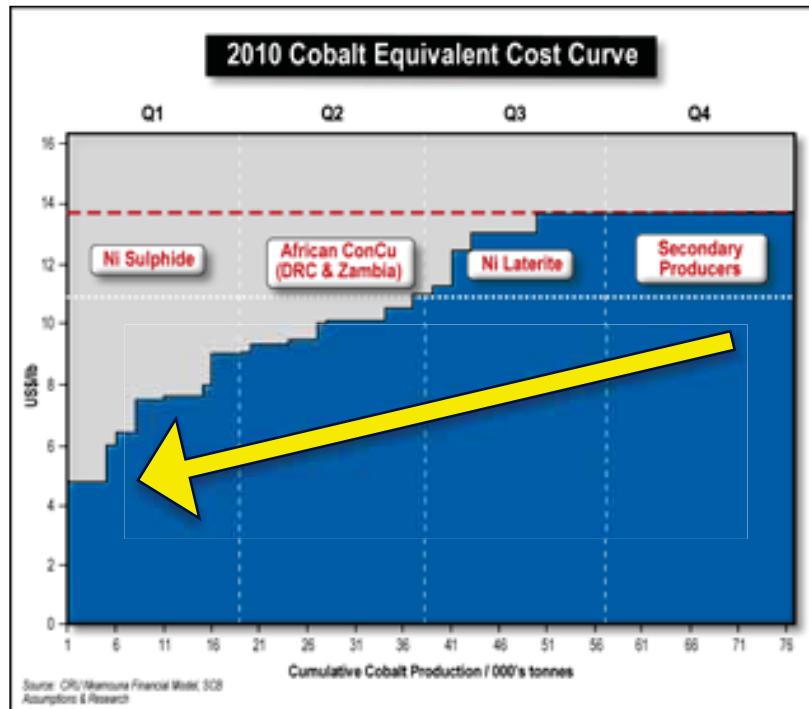


Accelerated development of universal EV battery recycling flowsheet to meet market demand as NCA/NCM volumes accelerate, new flowsheet retains flexibility to also process LCO from consumer electronics, no LFP.



Source: Benchmark Minerals Intelligence

Base metal recovery drives economics Lithium is recovered as by-product

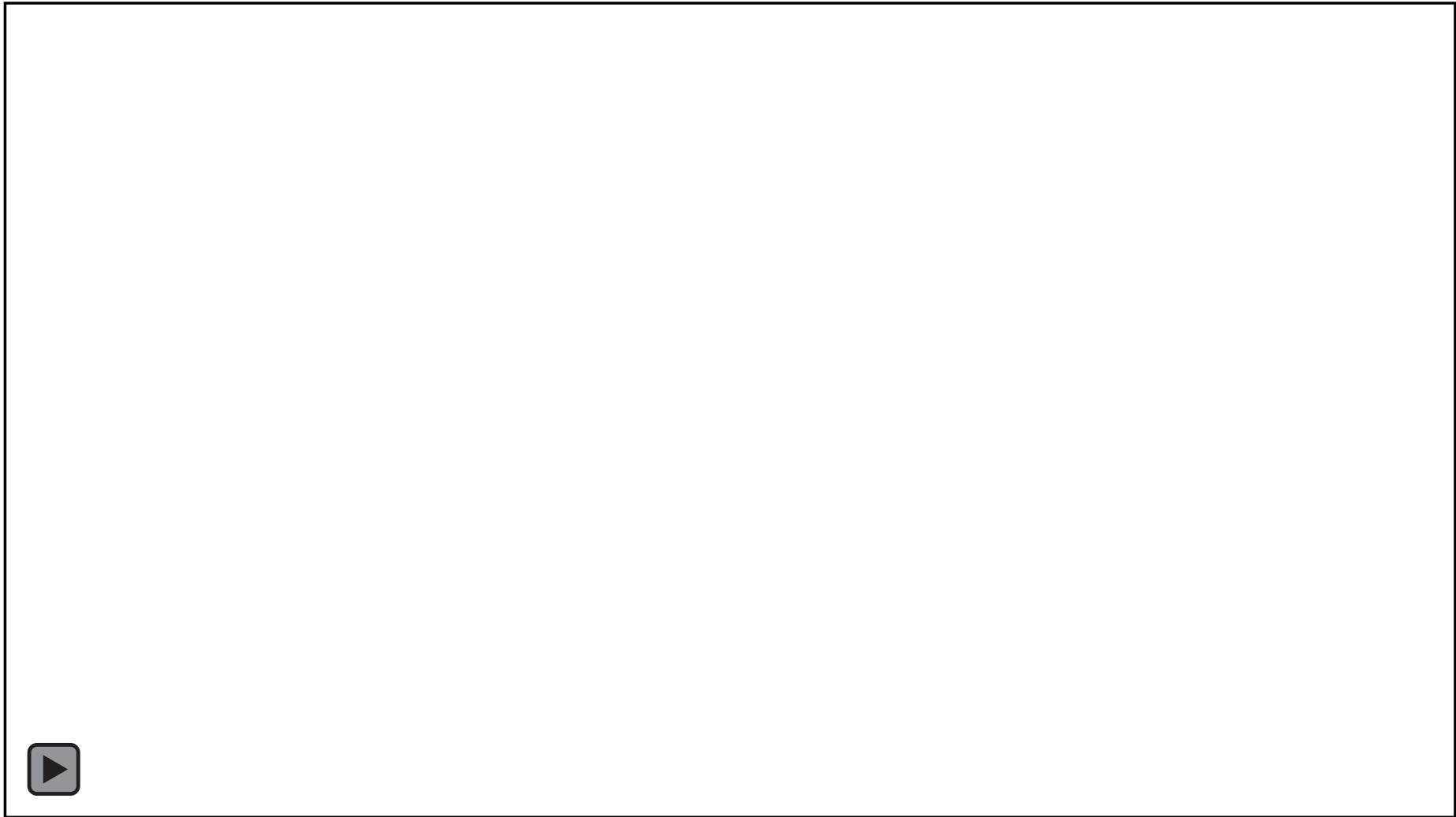


Scoping Study 2017 – 10 t/day
(3,424 tpa) Feed of LCO batteries.
(± 30% accuracy)

Operating Costs US\$4.45/lb Co (US\$10k/t)
Spot price US\$25/lb Co (US\$55k/t)
Capex US\$4.5M
NPV_{12%} pre-tax US\$145M (spot price)
Can be constructed and commissioned in 42 weeks

Significant economies of scale expected
with increase in feed rate to 50 t/day

Neometals Commercial scale (50tpd feed) Shredder Acceptance Testing Video



Project Timeline



Running Partner/Site Selection Processes in parallel with test work and engineering programs

(*) Subject to FID



Exploration

Mt Edwards Lithium Project

Neometals 100%

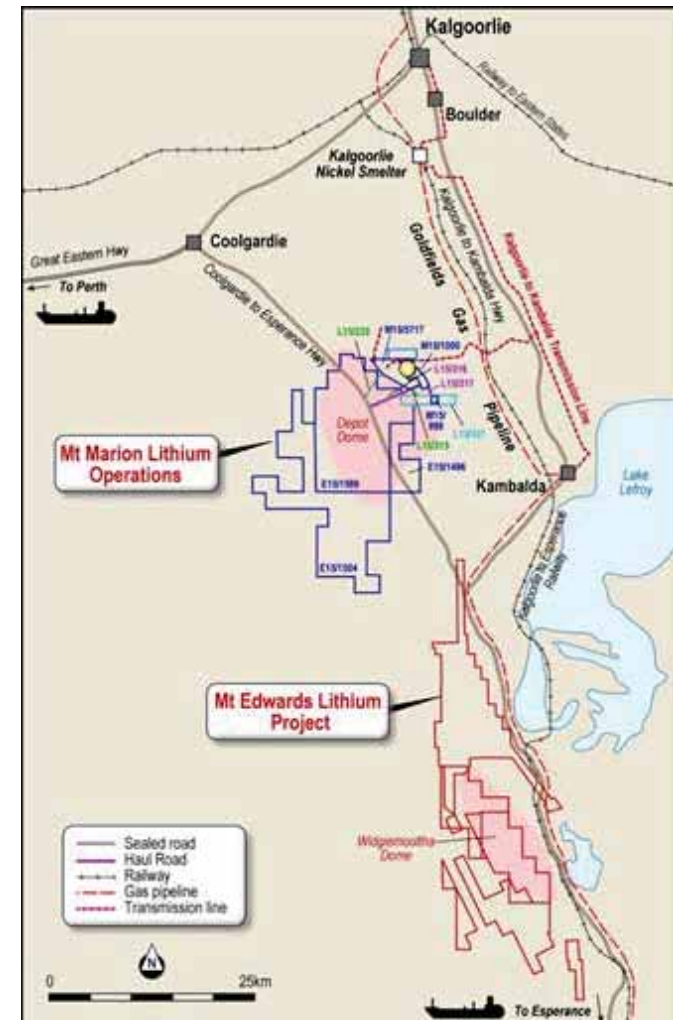
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Mt Edwards Lithium Project



- Brownfields lithium exploration project
- Located 80km south of Kalgoorlie, and 40km south of the Mt Marion lithium mine
- Tenements cover area of 240km² across the highly prospective Widgiemooltha Dome
- Neometals exploration confirms the presence of multiple fertile lithium-caesium-tantalum pegmatites
- Project has access to sealed roads and developed rail and energy infrastructure
- Tenements also prospective for nickel - current Indicated and Inferred Mineral Resource of 7.39Mt @ 1.7% Ni for ~123.3kt contained Ni
- Comprehensive geochemical sampling and structural data acquisition to refine future drill targets



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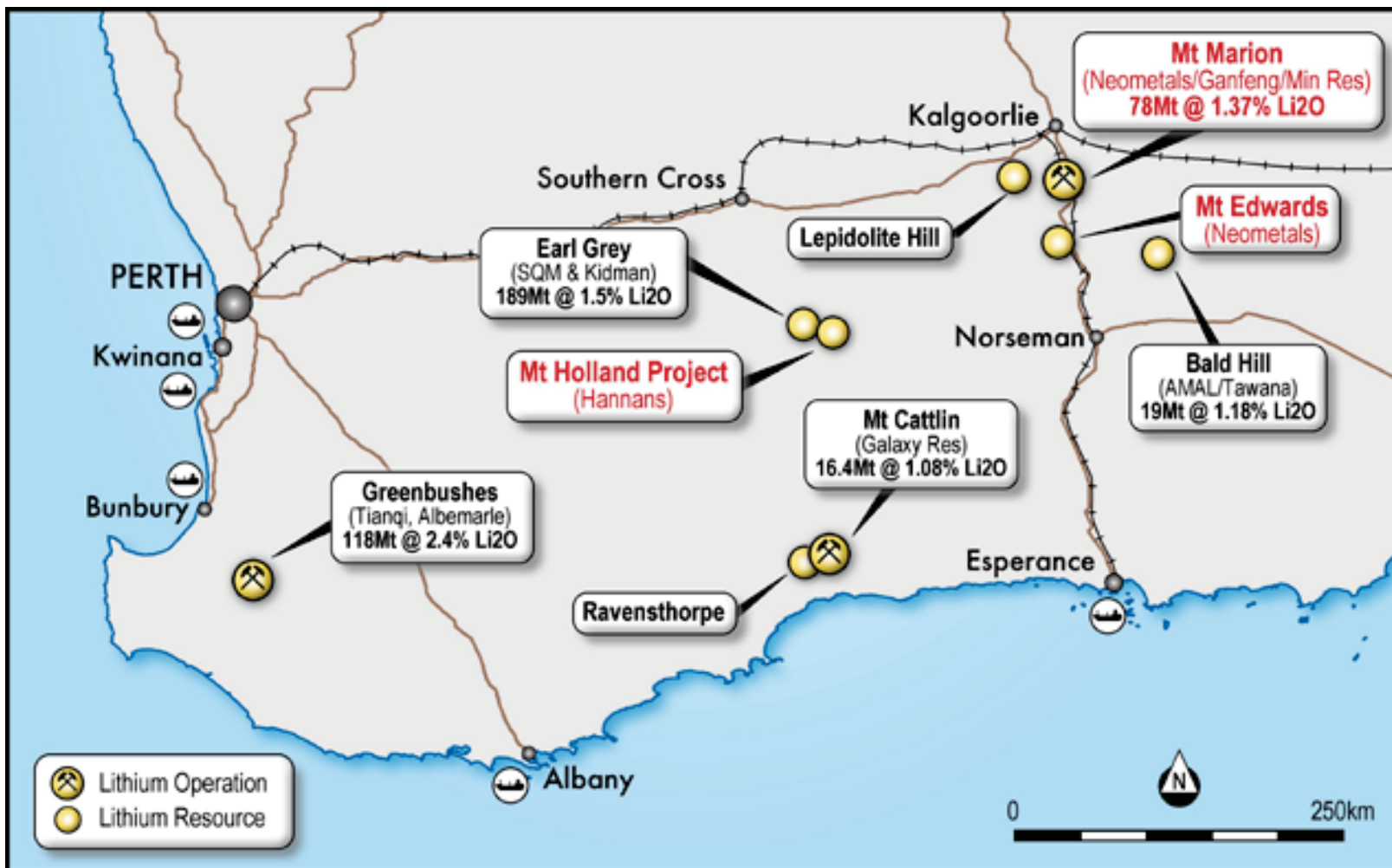


Exploration

Mt Holland Lithium Project

Neometals owns 36.5% of Hannans Limited

Mt Holland (via 36% Hannans Ltd – ASX:HNR)

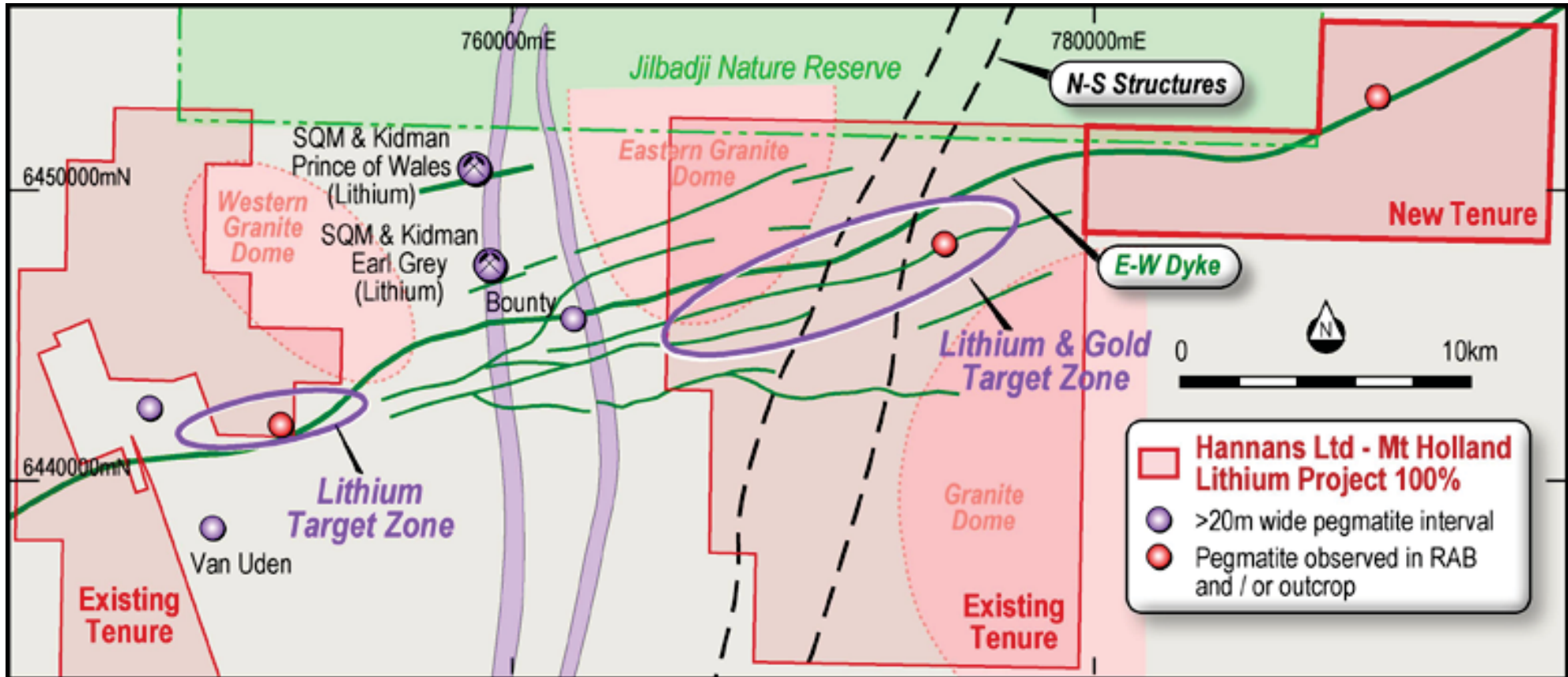


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Location map showing Western Australian producing mines and exploration projects (sourced from publicly available information)



Mt Holland West and East Targets



Strategic ground holding adjacent to one of the worlds largest lithium deposits
Awaiting assay results of Aircore (AC) drill program completed in Dec 2018

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$$\text{Li} + \text{Ti/V} = \text{Nm}$$

All the right elements



Lithium Tactical Plan – CY19



Grow market cap from maximising returns from existing operations, increasing margins via higher value [downstream] products and developing growth options.



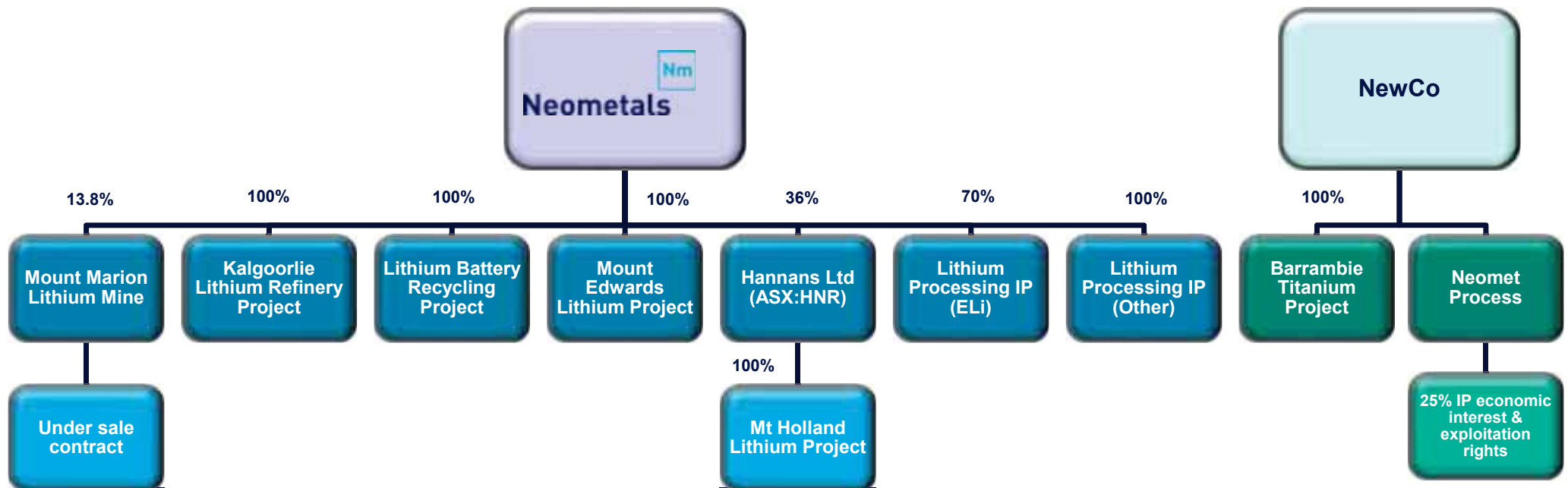
- Finalise LiOH FEED, advance Offtake/Partner and Approvals processes
- Fast-track Commercialisation of Zeolite to align with LiOH project
- Accelerate Partner/Feedstock and Approvals processes for LiB Recycling to align with Pilot/FEED program
- Exploration for additional lithium resources

Demerger Update



Neometals is still considering the demerger of its Barrambie Titanium-Vanadium Project (“Barrambie”) and associated technology assets into a new ASX-listed company.

- No change to proposed demerger structure, timing is however under review
- Mt Marion equity sale will reset some approvals processes (ASX, ATO)
- Guidance on timing will be given once the Mt Marion equity sale is settled, which is expected to be completed in February 2019



Neometals

$$\boxed{\text{Li}} + \boxed{\text{Ti/V}} = \boxed{\text{Nm}}$$



Company Highlights

- Secure supply of globally relevant commodity feedstocks from Tier-one assets
- Clear path to growth via vertical integration and innovative cost reduction strategy
- Strong balance sheet to pursue growth – no change in strategy with sale of Mt Marion
- History of de-risking development with strong operating and offtake partners
- Team with exploration, development and production experience to deliver
- Building long term businesses - methodical, stepwise approach that leverages on proven track record
- Enabler of products for sustainable future

Thank you

www.neometals.com.au