



CASSINI
RESOURCES LIMITED



Cassini Resources Limited (ASX:CZI, FSE: ICR) **Nebo-Babel Scoping Study**

November 2017

Richard Bevan, Managing Director | Greg Miles, Technical Director

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Competent Persons Statement

The information in this statement which relates to the Mineral Resource data, including tenement information, drilling, sampling, and analytical results, geology interpretation, and selection of cut-off grade has been overseen by Mr Greg Miles who is a full-time employee of Cassini Resources Ltd and a Member of the Australasian Institute of Geoscientists. Mr Miles has sufficient relevant experience to the style of mineralisation and type of deposit under consideration and to the activity for which he is undertaking to qualify as a Competent Person as defined in the JORC Code, 2012 Edition.

The information in this report which relates to the Nebo-Babel Mineral Resource estimation and classification has been prepared by Mr Andrew Weeks who is a full-time employee of Golder Associates Pty Ltd and a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Weeks has sufficient relevant experience to the style of mineralisation and type of deposit under consideration and to the activity for which he is undertaking to qualify as a Competent Person as defined in the JORC Code, 2012 Edition. Both Mr Miles and Mr Weeks consent to the inclusion in this report of the matters based on information in the form and context in which it appears.

Please refer to Cassini's ASX announcement of 7 December 2015 for the Competent Person Statement and JORC disclosure tables relating to the Succoth Mineral Resource Estimate.

Cassini is not aware of any new information or data, other than that disclosed in this report, that materially affects the information included in this report and that all material assumptions and parameters underpinning Exploration Results, Mineral Resource Estimates and Production Targets continue to apply and have not materially changed.

The nickel equivalent (NiEq) and copper equivalent (CuEq) calculations take into account resources, reserves, and grades as stated in latest ASX releases and assumes 100% payability for all metals recovered generating a commodity equivalent value for Ni, Cu, Co, Zn, Au, Ag, Pb and Mo. Only projects with JORC 2012 resources and reserves have been used. Nickel equivalent grade = $\text{Ni}\% + \text{Cu}\% \times 0.56$. Copper equivalent grade = $\text{Cu}\% + \text{Ni}\% \times 1.97$. Based on assumed recoveries of 73% for Cu and 59% for Ni and commodity prices shown below. It is the Cassini's opinion that all the elements included in the metal equivalents calculation have a reasonable potential to be recovered and sold.. NiEq grades have been published to enable a comparison to similar sized nickel sulphide assets. CuEq grades have been published to enable a comparison to similar sized copper assets.

Forward Looking Statements

Some statements in this report regarding estimates or future events are forward-looking statements. They include indications of, and guidance on, future earnings, cash flow, costs and financial performance. Forward-looking statements include, but are not limited to, statements preceded by words such as "planned", "expected", "projected", "estimated", "may", "scheduled", "intends", "anticipates", "believes", "potential", "could", "nominal", "conceptual" and similar expressions. Forward-looking statements, opinions and estimates included in this announcement are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward-looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. Forward-looking statements may be affected by a range of variables that could cause actual results to differ from estimated results, and may cause the Company's actual performance and financial results in future periods to materially differ from any projections of future performance or results expressed or implied by such forward-looking statements. These risks and uncertainties include but are not limited to liabilities inherent in mine development and production, geological, mining and processing technical problems, the inability to obtain mine licenses, permits and other regulatory approvals required in connection with mining and processing operations, competition for among other things, capital, acquisitions of reserves, undeveloped lands and skilled personnel; incorrect assessments of the value of acquisitions; changes in commodity prices and exchange rates; currency and interest rate fluctuations; various events which could disrupt operations and/or the transportation of mineral products, including labour stoppages and severe weather conditions; the demand for and availability of transportation services; the ability to secure adequate financing and management's ability to anticipate and manage the foregoing factors and risks. There can be no assurance that forward-looking statements will prove to be correct.

The production targets referred to in this announcement are based on 74% In-pit Indicated Resources and 26% Inferred Mineral Resources. The Inferred Resources do not determine the economic viability of the project, and approximately 80% of resources within the optimisation pit shells are in the Indicated Category during the pay-back period. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production targets themselves will be realised.

The Scoping Study was prepared at a $\pm 35\%$ level of accuracy.

Statements regarding plans with respect to the Company's mineral properties may contain forward looking statements. Statements in relation to future matters can only be made where the Company has a reasonable basis for making those statements.

Corporate Snapshot



Developing Australia's largest nickel & copper sulphide project

Trading information

Share price (close 7-Nov-17)	A\$0.097
52 week low / high	A\$0.044 / A\$0.105
Shares outstanding ¹	276.5m
Market capitalisation	~A\$26.8m
Cash (30-Sept-17)	A\$1.3m
Debt	Nil
Enterprise value	A\$25.5m

Major shareholders

MACA (ASX: MLD) – ASX-listed mining contractor	10.8%
GR Engineering (ASX: GNG) – ASX-listed engineering consultant	5.4%
Directors and Management	4.6%

Share price performance

12 month CZI v S&P/ASX Small Resources – Price & Volume



Source: miracle – Orient Capital

Company Highlights

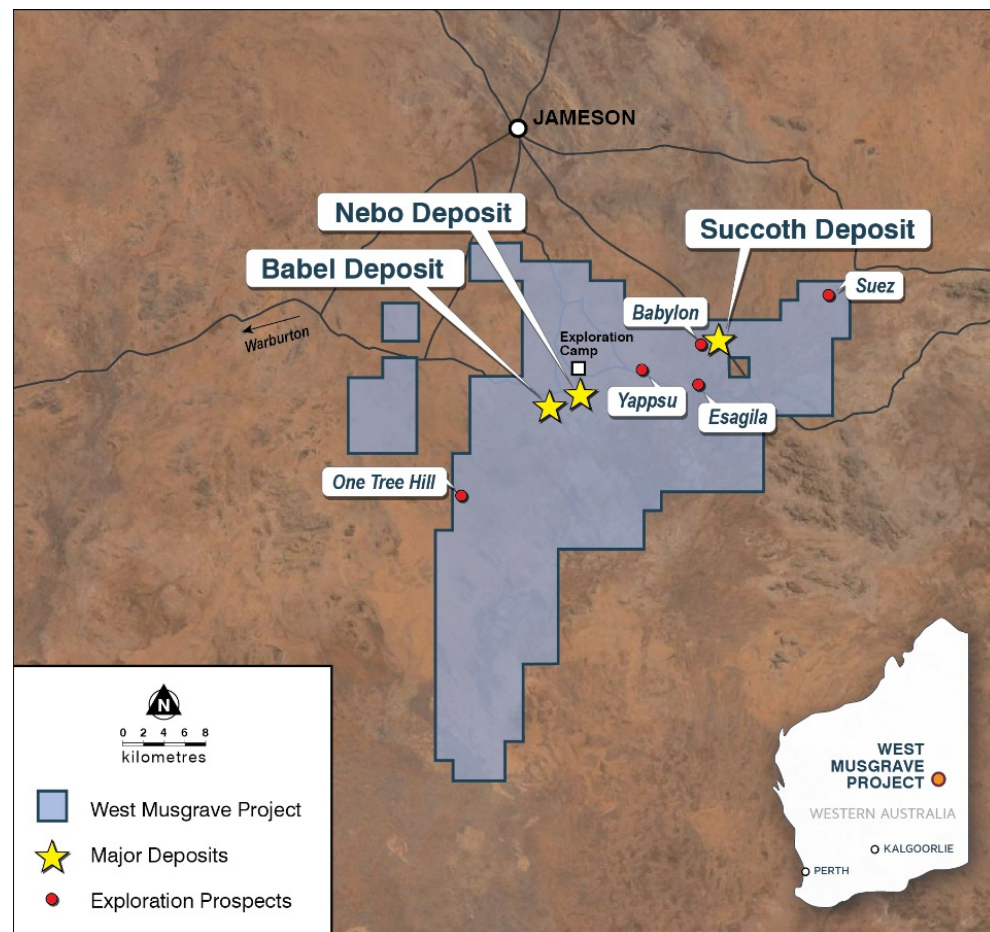
- Commencing PFS on Australia's largest undeveloped **nickel and copper sulphide** project
- OZ Minerals Board approves proceeding to next stage of Earnin – OZL can earn 51% interest in West Musgrave Project by spending \$19M over next 18 months
- Study outcomes show long mine life, low cost, large scale open pit operation
- Further upside in development and exploration opportunities
- Cassini to receive \$1.9M at commencement of PFS, OZL to manage PFS study
- Well positioned to meet **growing Ni + Cu demand from EV and battery market**

AN EXCELLENT TIME TO BE A FUNDED NI + CU DEVELOPER

West Musgrave Project Scoping Study Highlights

Scoping Study shows positive economics

- Low operating costs
 - Ni C1 lower 1/3rd
 - Cu C1 bottom quartile
- Significant levels of nickel and copper production
- Initial mine life 8 yrs with opportunity to extend by conversion of Inferred to Indicated Resources
- 10⁺Mtpa case provides best economic returns
- Pay back < 4 years
- Further development and exploration upside to be evaluated



Key Financial and Production Estimates

Key Financial and Production Metrics	
Processing capacity	10+ Mtpa
Initial Mine life	8 years
Average Nickel Metal production (Yrs1-8)	20-25ktpa
Average Copper Metal production (Yrs1-8)	25-30ktpa
Average Cobalt Metal production (Yrs1-8)	700–1,000tpa
C1 cost Ni in Con	US\$/lb 1.30-1.60
C1 cost payable Cu main ^{**}	USc/lb 20-40
Pre-production capital ^{***}	A\$730-800m

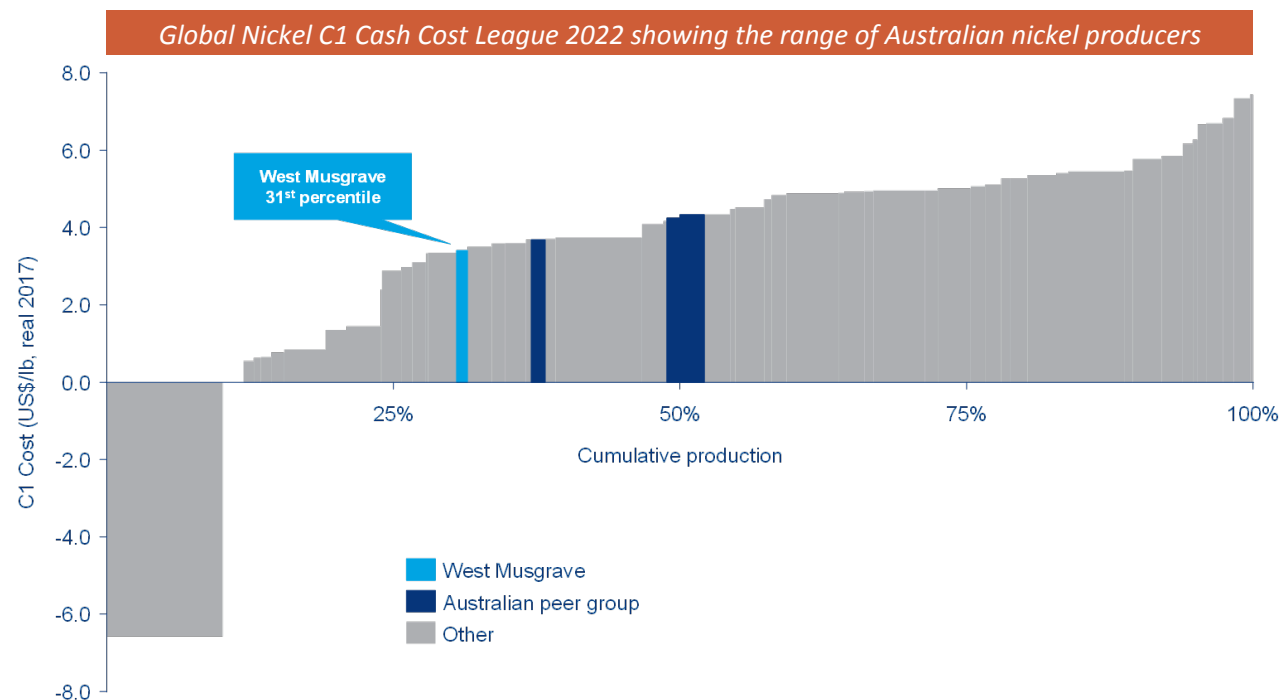
(AUD\$)	Post-tax	Pre-tax
LOM average net cash flow	\$120-150m	\$150-200m
Internal Rate of Return ^{****}	20-25%	25-30%
Project Payback	3-4yrs	2-3yrs

Note: For assumptions refer to CZI ASX announcement 14th November 2017, or refer to Appendices, Slide 21.

Global Nickel C1 cost curve

Positioned on bottom 1/3rd of the cost curve

- C1 Cash cost
 - » US\$1.30 – 1.60/lb Ni in con.
 - » US\$2.00 – 2.30/lb Payable Ni
- First production forecast for FY2022
- Estimates are at the low end of the range of nickel assets held by ASX listed peers

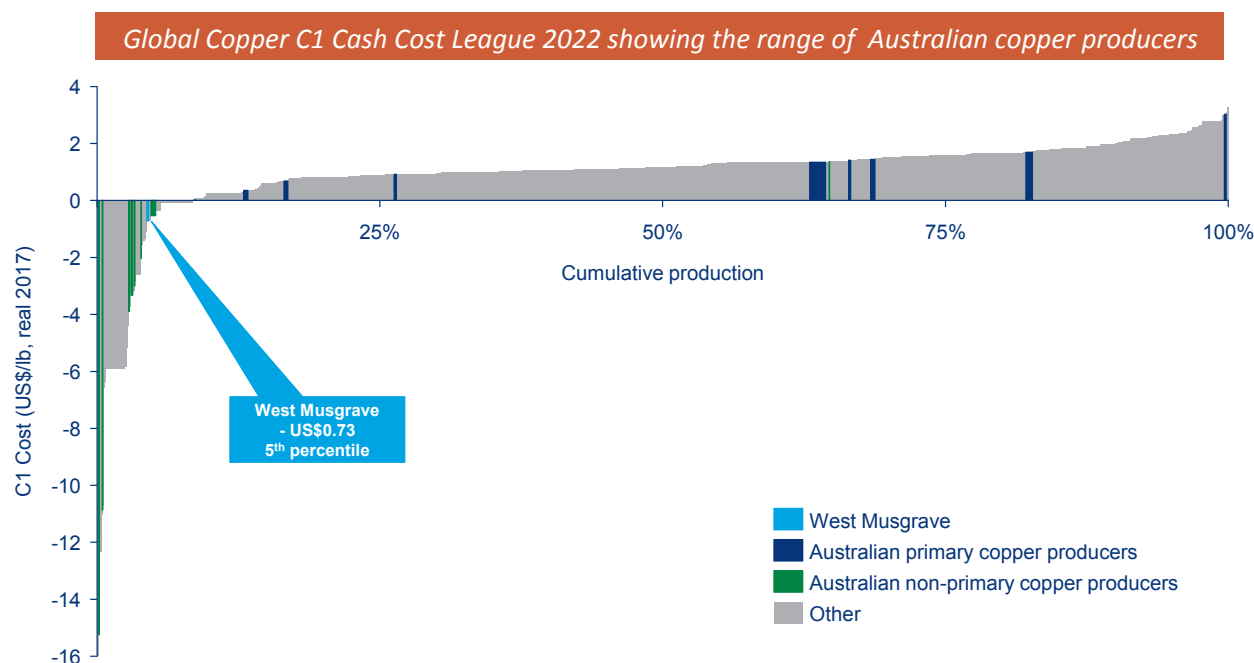


* Note: West Musgrave costs and production are the life-of-mine average. Cassini's costs for West Musgrave have been aligned with Wood Mackenzie's assumptions related to prices for by-products, and Wood Mackenzie's definition and methodology of C1 costs. The cost estimates are on a paid nickel basis. Source: Cost curve from Wood Mackenzie data, West Musgrave Project costs provided by Cassini Resources Limited)

Global Copper C1 cost curve

Highly competitive on a copper equivalent basis

- C1 Cash cost
 - » US\$0.20-0.40lb/ Payable Cu
- First production forecast for FY2022
- Cost estimates are at the low end of the range of copper assets held by ASX listed peers



* Note: West Musgrave costs and production are the life-of-mine average. Primary copper producers are those that receive more than 65% of net revenue from copper sales on average. Cassini's costs for West Musgrave have been aligned with Wood Mackenzie's assumptions related to prices for by-products, and Wood Mackenzie's definition and methodology of C1 costs. The cost estimates are on a paid copper basis. Source: Cost curve from Wood Mackenzie data, West Musgrave Project costs provided by Cassini Resources Limited

Capital Cost Estimates

- The capital cost of the 10Mtpa Case is highly competitive relative to peer projects
- Includes 100% of pre-strip, though 50% likely to occur during 1st year of production (i.e. \$80-90M)
- Capital intensity compares well to similar projects on a Cueq basis
 - » West Musgrave US\$7,800/t Cueq
 - » Average greenfield US\$14,900/t Cueq*

* Wood Mackenzie September 2017

Capital Cost Estimates (A\$m)	10Mtpa Low	10Mtpa High
Mining pre-strip	160	175
Process Plant	350	370
Site Infrastructure	45	55
Tailings Storage Facility	20	25
Water Supply	55	60
Road Upgrades	5	10
Owners' Costs	45	50
Contingency	50	55
Total	730	800

Significantly de-risking the project

- Designed for a larger scale mining operation
- Aim to increase confidence in recoveries at lower head grades across all ore types
- Substantial program: 200 float tests, 17 variability composites, 2 “locked cycle” tests on master composites
- Low impurities – no arsenic; smelter friendly - high Fe:MgO ratio
- Potential for improvement in recovery and grades

Mineralisation Type	Nickel Concentrate		Copper Concentrate	
	Recovery (%)	Grade (%)	Recovery (%)	Grade (%)
Master Composite A	45	10	78	21
Master Composite B	70	10	78	25

NOTE:

Master Composite A includes 90% of the shallow weathered mineralisation which would be mined first. With only 10% primary ore, it is likely to represent a worst-case processing scenario. An objective of future study phases is to find the optimum blend of the weathered and primary ore before the operation returns to steady-state production on 100% primary ore in later years.

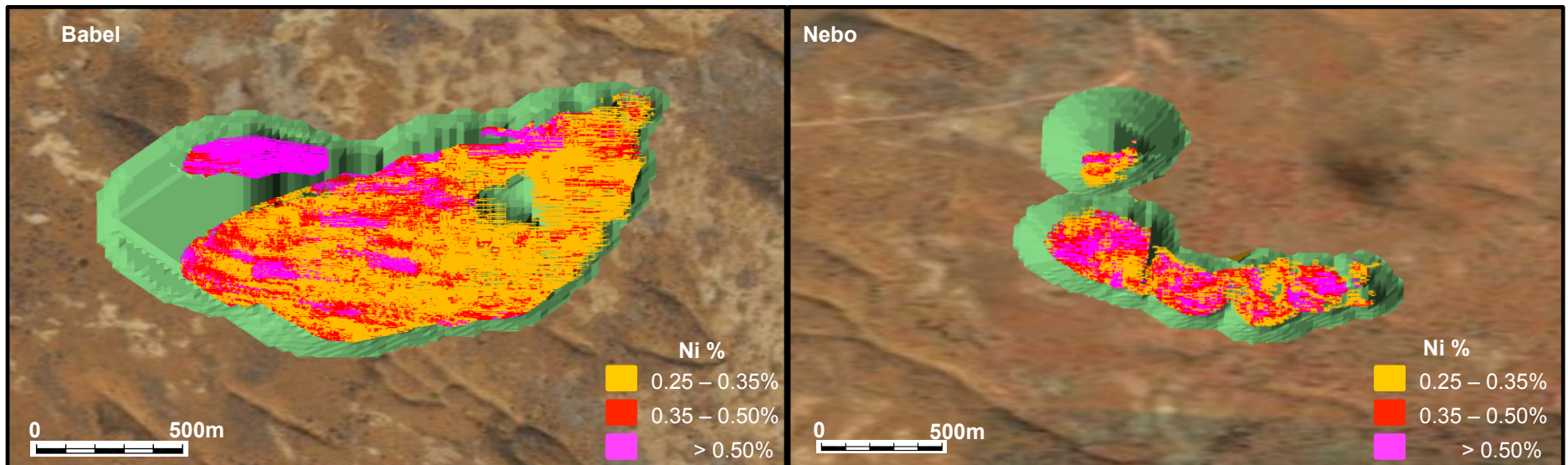
Master Composite B comprises 50% Nebo primary massive and breccia mineralisation, 48% Babel primary disseminated mineralisation and 2% Babel disseminated transition zone. This master composite approximates potential processing streams in the later years of operation.



Mining and Processing

Low costs driven by open pit mining and flat, thick mineralisation

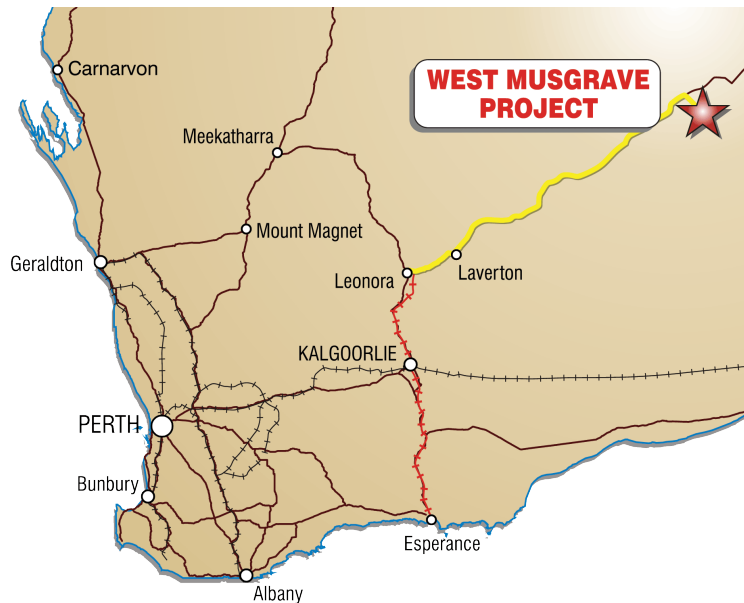
- Evaluation of throughput at 6 to 12Mtpa
- Viable at all throughput rates, with 10⁺Mtpa close to optimal
- Ability to extend mine life to 15 years through conversion of Inferred to Indicated Resources
- Conventional crushing, milling and classification followed by flotation with cleaning and re-cleaning, producing separate Ni and Cu concentrates
- Average 20-25ktpa Ni, 25-30ktpa Cu and 700-1000tpa Co in concentrate



Transport and Logistics

Established route to market

- Study confirms preferred route of exporting concentrates via Esperance port, but other options exist
- Road transport to Leonora, followed by rail transport to Esperance.
- Synergies identified for back-loading supplies to site help to reduce overall transport.
- Costs lower than previous study primarily due to lower diesel price, rail and port charges





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Site Infrastructure

Significant advancements made on power and water



- Solar-diesel hybrid power solution with potential for addition of wind power generation following base line studies in PFS
- Water exploration successfully identifies sufficient water on tenement to likely support 10mtpa plant
- Sealed airstrip, 300-person camp and road construction fully costed
- Additional tenements acquired for water exploration and site infrastructure

Value Enhancement Opportunities

Numerous opportunities to be evaluated during PFS

- Evaluation of wind generated power to be combined with diesel-solar energy systems to reduce power costs
- Metallurgical recovery improvement through continued testwork and alternative flowsheets, such as applying magnetic separation to tailings
- Improved mine scheduling and stockpile management
- Potential for high-value exploration discoveries such as One Tree Hill to be brought into development
- The addition of the Succoth deposit, which is not included in Project valuation, provides significant leverage to future copper prices



Next Steps – Pre Feasibility Stage

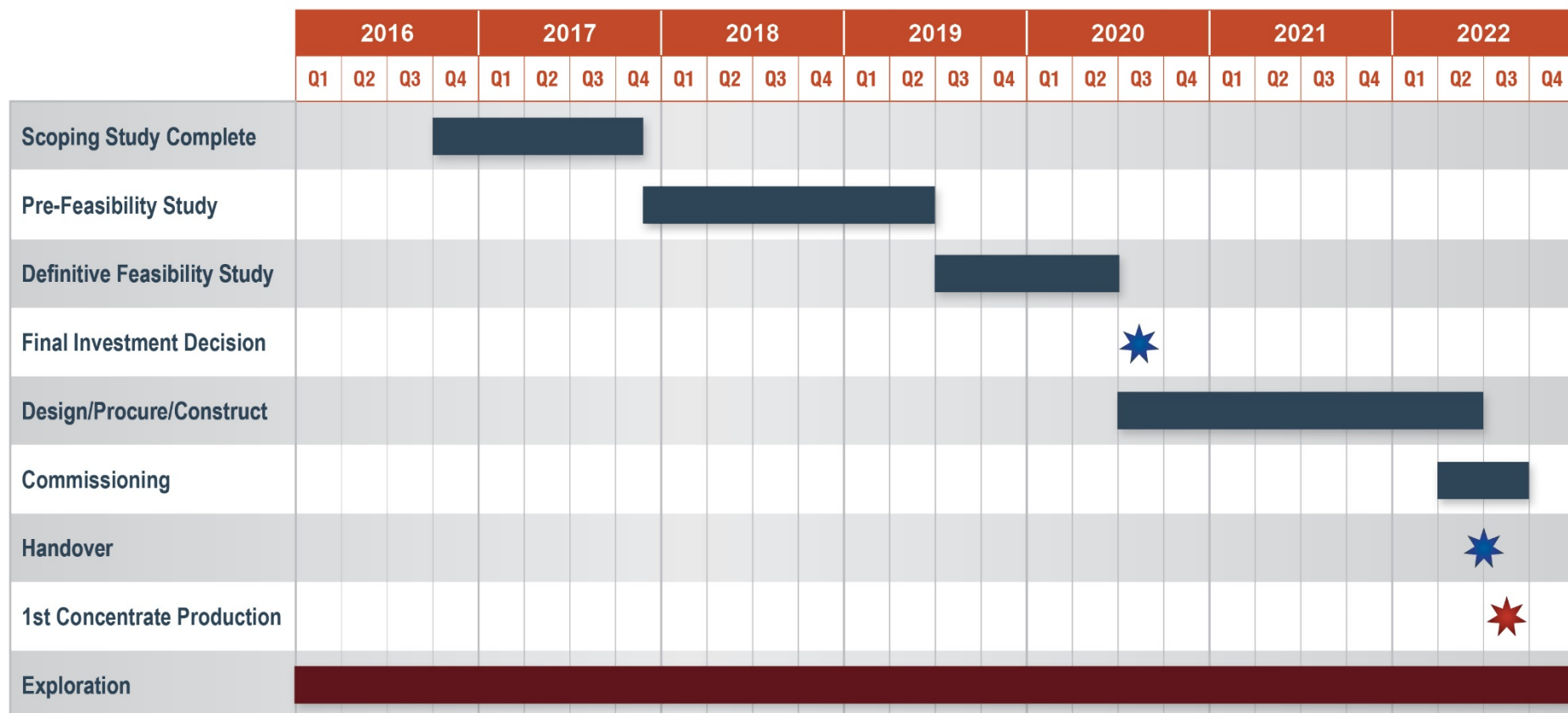


PFS to commence immediately with a focus on technical threats and project enhancement opportunities

Work programs during this stage will include:

- Infill drilling of the resource particularly within the estimated payback period
- Advance metallurgical test work with a focus on material from the estimated payback period
- Explore alternative processing flowsheets to identify opportunities
- Confirm groundwater resources through exploration and pump tests
- Commence renewable energy baseline data collection
- Environmental surveys for mine permitting; and
- Consultation with key stakeholder groups

Indicative Project Development Timetable



Cassini Investment Highlights

- ✓ Clear pathway to becoming a **Ni-Cu sulphide producer**
- ✓ **Free carried** to a “decision to mine”
- ✓ **Strong partner** in ASX100 OZ Minerals
- ✓ **Excellent time** to develop project during low point of commodity cycle
- ✓ West Musgrave will be able to supply new **EV and renewable demand**
- ✓ Significant **upside opportunities** through project optimisation and exploration
- ✓ Opportunity to develop **multi-decade mining operation**





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ASSOCIATION OF MINING
AND EXPLORATION COMPANIES

2017 MEMBER



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APPENDICES



Appendix A: Updated Mineral Resource



West Musgrave Project Indicated and Inferred Mineral Resources^{1,2,3}

Mineral Resource estimates provided by independent resource consultants CSA Global Pty Ltd

Prospect	Classification	Tonnes (Mt)	Ni (%)	Cu (%)	Co (ppm)	Au (ppm)	Pd (ppm)	Pt (ppm)
Nebo	Indicated	37.8	0.49	0.44	211	0.04	0.08	0.07
	Inferred	1.9	0.37	0.34	149	0.04	0.08	0.07
	Total	39.7	0.48	0.43	208	0.04	0.08	0.07
Babel	Indicated	73.9	0.36	0.41	132	0.06	0.10	0.09
	Inferred	169.4	0.33	0.37	123	0.06	0.10	0.09
	Total	243.3	0.34	0.38	126	0.06	0.10	0.09
Nebo + Babel	Total	283.0	0.36	0.39	137	0.06	0.10	0.09
Succoth	Inferred	156	0.06	0.60	-	0.02	0.11	0.04

Notes:

1. Nebo-Babel Indicated and Inferred Mineral Resource (0.25% Ni cut-off), 8 November 2017
2. Succoth Deposit Inferred Mineral Resource estimate (0.3% Cu cut-off), 7 December 2015
3. The Mineral Resource estimates have been completed in accordance with the guidelines of the JORC Code (2012 edition) - Refer to the company website page: <http://www.cassiniresources.com.au/jorc-compliance>

Key Financial and Production Estimates

Key Financial and Production Metrics

Processing capacity	10 ⁺ Mtpa
Initial Mine life	8 years
Average Nickel Metal production (Yrs1-8)	20-25ktpa
Average Copper Metal production (Yrs1-8)	25-30ktpa
Average Cobalt Metal production (Yrs1-8)	700–1,000tpa
Nickel equivalent grade*	0.5–0.6%
Copper equivalent grade*	1.0–1.2%
Nickel grade	0.30–0.40%
Copper grade	0.35–0.45%
C1 cost payable Ni main**	200-230US\$/lb
All-in sustaining cost Ni main	290-330US\$/lb
C1 cost payable Cu main**	20-40US\$/lb
All-in sustaining cost Cu main	60-90US\$/lb
Pre-production capital***	\$730-800m

Ranges are representative of sensitivities and improvement opportunities for metallurgical recoveries, power and pre-production capital. Excludes OZ Minerals earn-in/study costs and discounting is applied from 1 January 2020.

*Nickel equivalent grade = Ni% + Cu% x 0.56. Copper equivalent grade = Cu% + Ni% x 1.97. Based on assumed recoveries of 73% for Cu and 59% for Ni and commodity prices shown below. It is the Cassini's opinion that all the elements included in the metal equivalents calculation have a reasonable potential to be recovered and sold.

**Financial valuation has used long term consensus forecasts of Ni: US\$7.13/lb, Cu: US\$2.95/lb, Co: US\$14.20/lb, Au: US\$1,292/oz, Pt: US\$1,128/oz, Pd: US\$769/oz and AUD:USD of \$0.74.

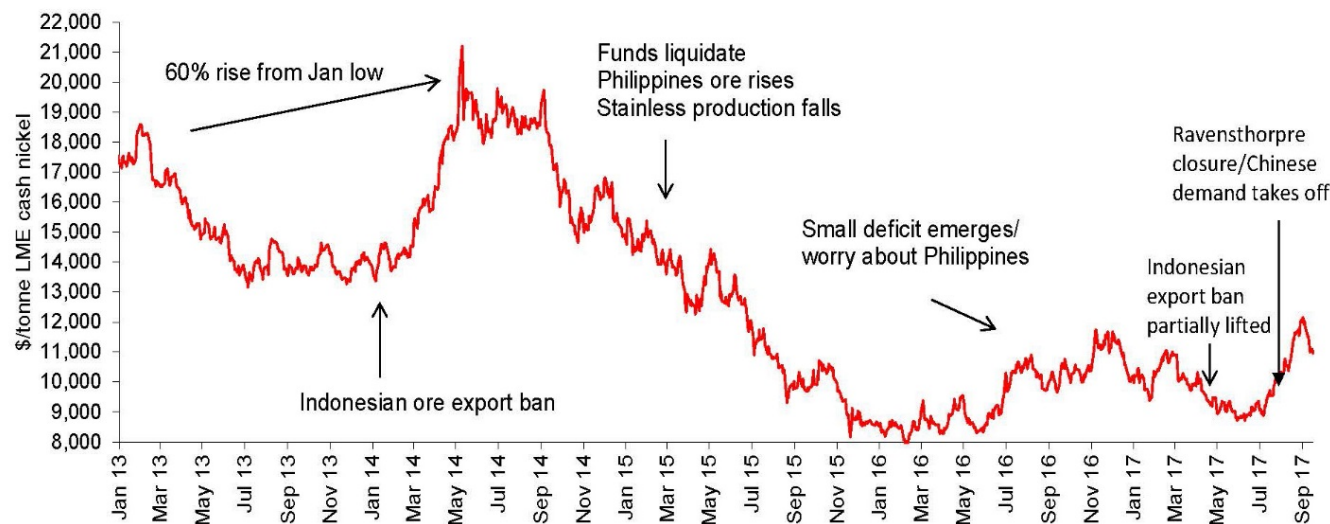
*** Pre-production capital includes capitalised pre-strip of up to \$175m, although it is expected that approximately 50% of this cost will be incurred during the first year of production.

****The production targets referred to in this announcement are based on the first 7 years of production which includes 74% Indicated Mineral Resources and 26% Inferred Mineral Resources. The Inferred Resources do not determine the economic viability of the project as approximately 80% of resources within the optimisation pit shells are in the Indicated Category during the pay-back period. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production targets themselves will be realised.

The Scoping Study was prepared at a ±35% level of accuracy.

	Post-tax	Pre-tax
LOM average net cash flow	\$120-150m	\$150-200m
Internal Rate of Return****	20-25%	25-30%
Project Payback	3-4yrs	2-3yrs

Nickel Market – Not all Nickel is equal



Source: LME, Macquarie Research, October 2017

- Nickel market now firmly in deficit
- New supply needed after 2022
- Chinese stainless steel production volatility driving market
- New demand from EV and renewable market 2022 and beyond
- Global stockpiles reducing (LME, SHFE and Off LME Stocks)

Copper Market– the metal of the future



5 Year Copper Price Performance

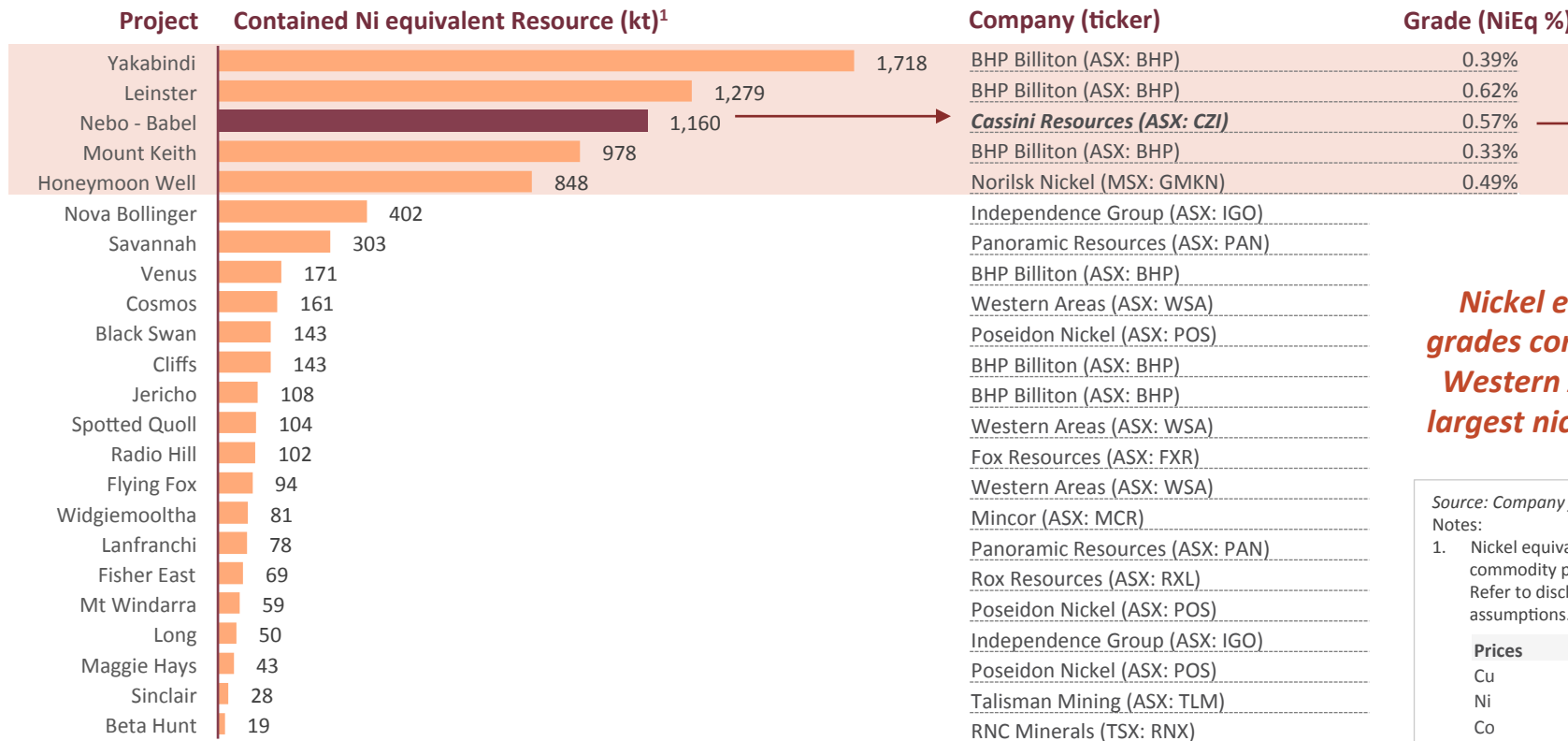


Source: Bloomberg, October 2017

- Long viewed as an indicator of economic health “Dr Copper”
- Manufacturing activity (PMI) in US, Eurozone and China expanding at pace
- EV’s require 3-4x more copper than traditional vehicles (~90kg)
- Significant copper required for charging infrastructure
- Supply side growth remains an ongoing concern

Nebo-Babel Deposits: Nickel-sulphide project benchmarking

One of the largest nickel sulphide development projects in Australia and comparable in scale to the tier one nickel assets of BHP Billiton and Norilsk Nickel



Nickel equivalent grades comparable to Western Australia's largest nickel projects

Source: Company filings

Notes:

1. Nickel equivalent based on spot commodity prices as at 25 October 2017. Refer to disclaimer for detailed pricing assumptions.

Prices	US\$/t
Cu	7009
Ni	11946
Co	55000

OZ Minerals Earnin

3 stage, A\$36m funding to significantly de-risk pathway to production

- ASX100 copper producer OZ Minerals (c. A\$2.5bn market cap, c. A\$639m cash, nil debt)
- OZ Minerals forecasts production of circa 110ktpa of copper and 120,000 ounces of gold from the Prominent Hill mine and is developing the Carrapateena copper mine (expected production Q4 2019)
- OZ Minerals has significant remote mine operating expertise to complement Cassini's strong geological and exploration capability
- Cassini will have a 30% free carry through to decision to mine at Nebo-Babel

Stages and Terms of JV agreement

Stage	Earn in requirement	OZL interest at end of Stage	Timeframe	Operator	Status
Minimum Commitment	<ul style="list-style-type: none"> • A\$3m further scoping study • 2 full time OZ Minerals technical staff 	0%	Up to 12 months	CZI	Complete ✓
Stage 1	<ul style="list-style-type: none"> • A\$15m expenditure towards PFS/DFS • A\$4m regional exploration 	51%	Up to 18 months	OZL CZI	Commenced
Stage 2	<ul style="list-style-type: none"> • A\$10m expenditure towards DFS • A\$4m regional expenditure 	70%	Up to 12 months	OZL CZI	