



# COBALT INDUSTRY OUTLOOK AND MT THIRSTY PROJECT UPDATE

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Global Critical Minerals – Energy Minerals Summit

Presented by Sean Gregory  
Managing Director | CEO

Perth  
21<sup>st</sup> November 2019



# KEY MESSAGES



## Cobalt Market Dynamics

- Most leveraged battery mineral
- Supply disruption underway in DRC
- Price appreciation expected

## Mt Thirsty Cobalt-Nickel Project

- Advanced, high grade, low capex, undervalued cobalt-nickel project
- PFS to be completed in Q1 2020
- Strategic interest from tier-one firms seeking to secure supply

## Dual commodity strategy in play with Coolgardie gold projects

- RC gold assays pending from Burbanks

Projects all located in WA's stable goldfields.



# COMMODITY PRICE SET TO RISE

- Cobalt prices hit historical low in July 2019
- Price rebounds 38% in Q3 2019
- Demand growth and supply constraints ahead

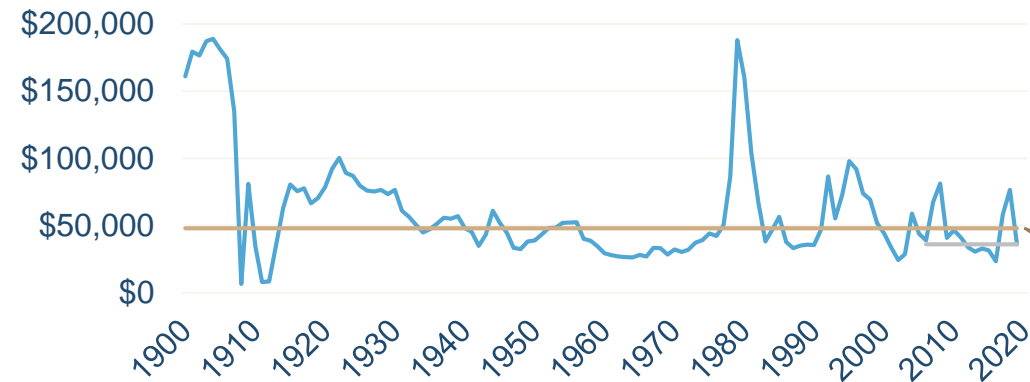
SOURCE:

<sup>1</sup> US Geological Survey; escalated by US CPI

<sup>2</sup> Trading Economics 19/11/19



Long Term Cobalt Price <sup>1</sup>  
(2019 US\$/t real)



Long Term  
Median Price  
US\$48,000/t

Recent Cobalt Price <sup>2</sup>  
(US\$/t nominal)



Today's  
Spot Price  
US\$36,000/t

# COBALT DEMAND

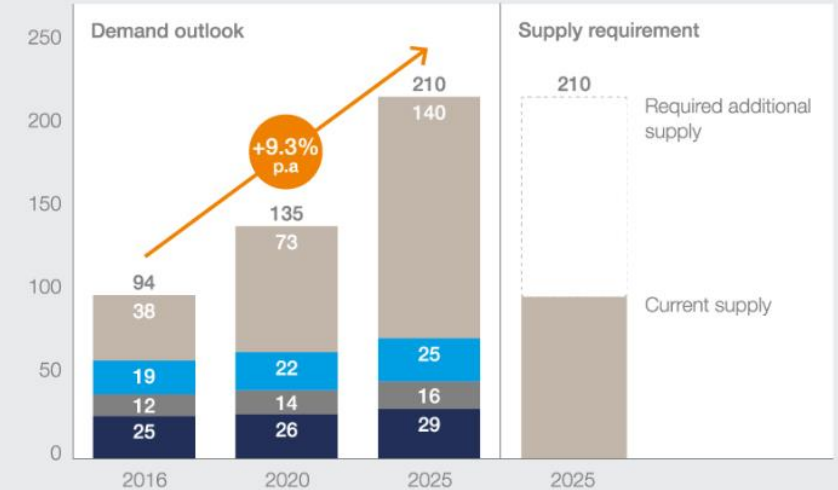
- Batteries now more than half of cobalt demand
- Cobalt uses driven by superior thermal stability
- Substitution towards nickel only partial



**Exhibit 3**  
**Cobalt supply-demand balance**  
Kt refined metal

■ Battery demand  
■ Superalloys  
■ Cermet tools and hard materials  
■ Other

Source: McKinsey Basic Material Institute

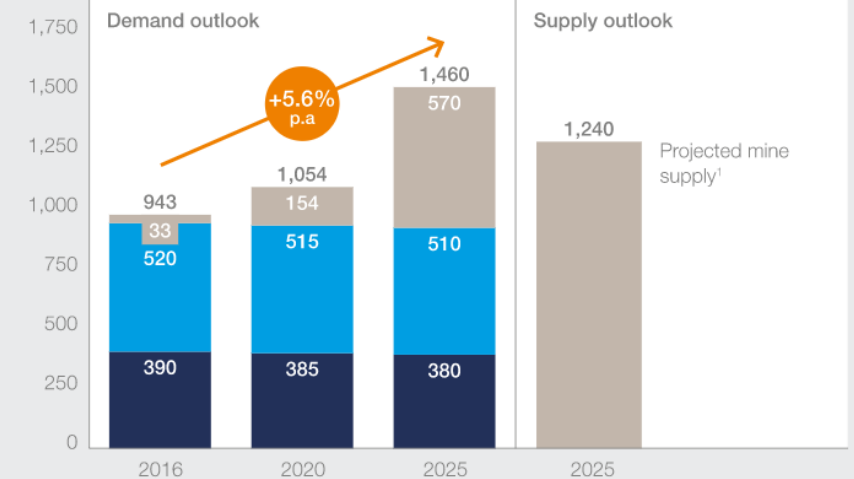


**Exhibit 4**  
**Class 1 nickel supply-demand balance**  
Kt

■ Battery demand  
■ Class 1 non-stainless steel  
■ Class 1 stainless steel

<sup>1</sup> Based on McKinsey nickel mine supply model, includes existing projects, brownfield and greenfield expansions in certain, probable, possible and unlikely projects.

Source: McKinsey Basic Material Institute



# ELECTRIC VEHICLE POLICY STATEMENTS



- Government bans on sales of new vehicles with internal combustion engines is accelerating change<sup>1</sup>

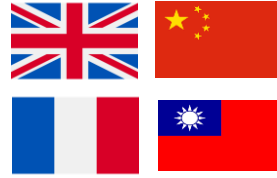
2025



2030



2040



- Major automakers respond<sup>2</sup>**
  - Tesla – delivered 97,000 units in Q3 2019
  - BMW – 142,000 EVs sold in 2018
  - Renault Nissan – 400,000 LEAFs sold to 2019
  - Ford – investing US\$4.5 Bn in 2019-20
  - Volvo – 50% EVs by 2025
  - GM – 1,000,000 EV sales by 2026
  - Toyota – 5.5 M EV sales by 2030
  - Volkswagen – 22 M EV sales by 2030



SOURCE:

<sup>1</sup> Government websites

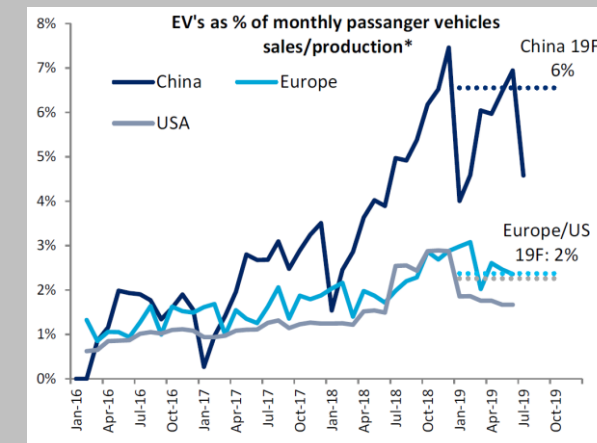
<sup>2</sup> Auto company announcements

<sup>3</sup> BHP 21/5/19

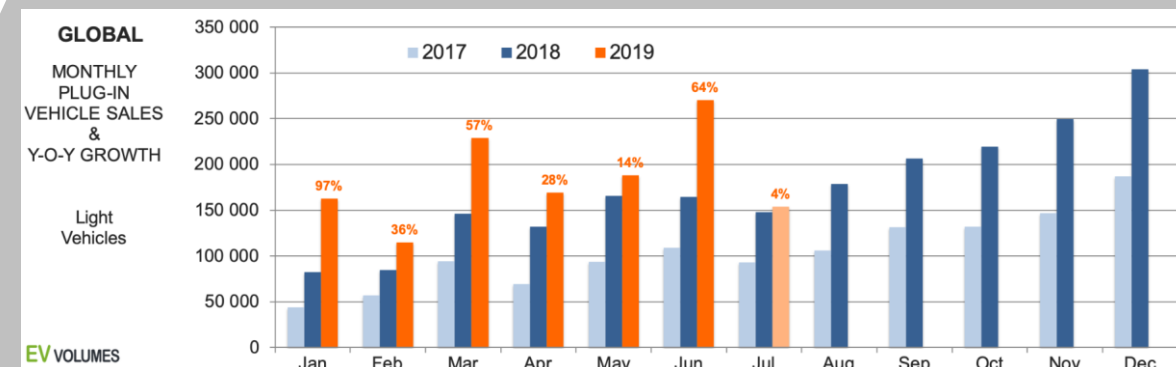


# ELECTRIC VEHICLE ACTUAL SALES

- Pent up demand for the Tesla Model 3 saw strong growth in Q3-Q4 2018 in the US
- Planned pull back of Chinese EV subsidies brings sales forward from Q3 to Q2 2019
- 20 new models from traditional OEMs in 2020 expected to spark demand



SOURCE: Citi Research Electric Vehicles Market Outlook 8/9/19



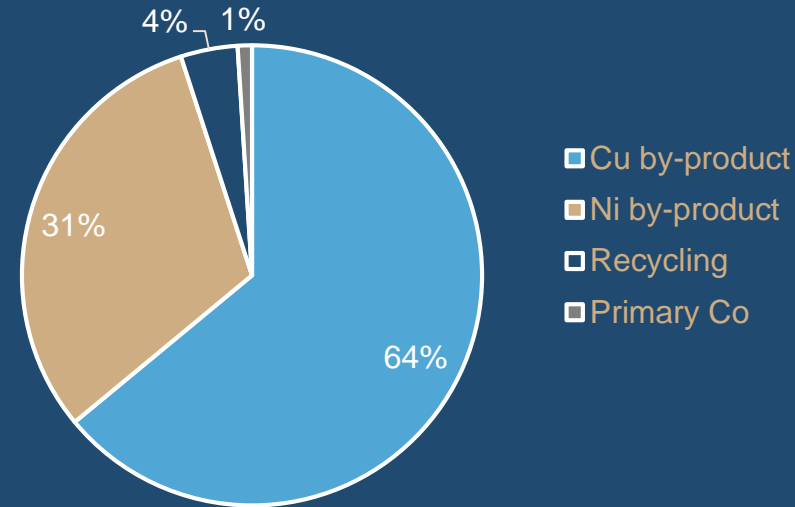
SOURCE: ev-volumes.com



# COBALT SUPPLY SCARCE

- 99% of cobalt is mined as a by-product
- HPAL capital cost is a barrier to entry for others
- Sustainability and security concerns from Democratic Republic of Congo

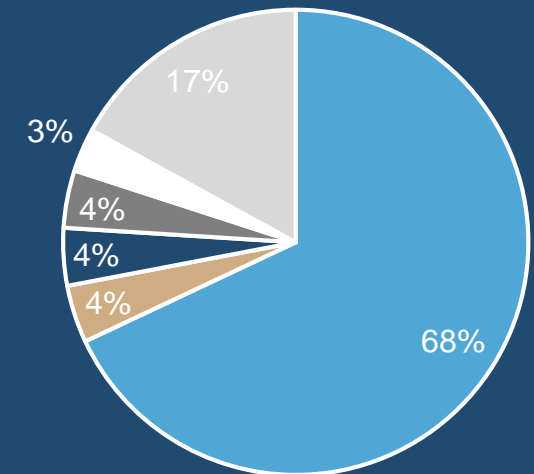
2017 Global Mined Cobalt



- Cu by-product
- Ni by-product
- Recycling
- Primary Co

- DRC
- Cuba
- Russia
- Philippines
- Australia
- Other

Global Cobalt Mine Production  
2018 Total: 136 kt





# DRC SUPPLY DISRUPTIONS

- World's 3 largest cobalt mines all struggling at current prices...

## Mutanda, Glencore, DRC

20% of 2018 world supply 27.3kt

Closing December 2019 due to low prices and oxide ore depletion

## Tenke Fungurume, China Moly, DRC

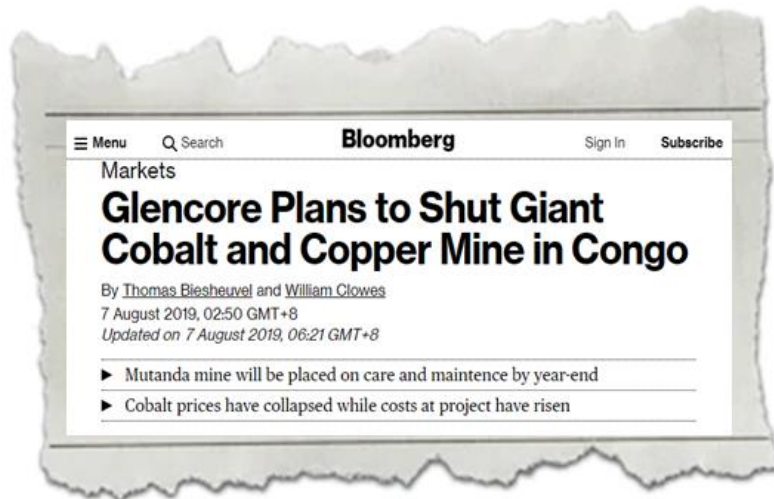
14% of 2018 world supply 18.5kt

Struggling with low prices and new DRC royalty regime

## Kamoto, Katanga Mining, DRC

8% of 2018 world supply 11.1kt

Requires ion exchange plant to deal with uranium in the ore







# MT THIRSTY PROJECT

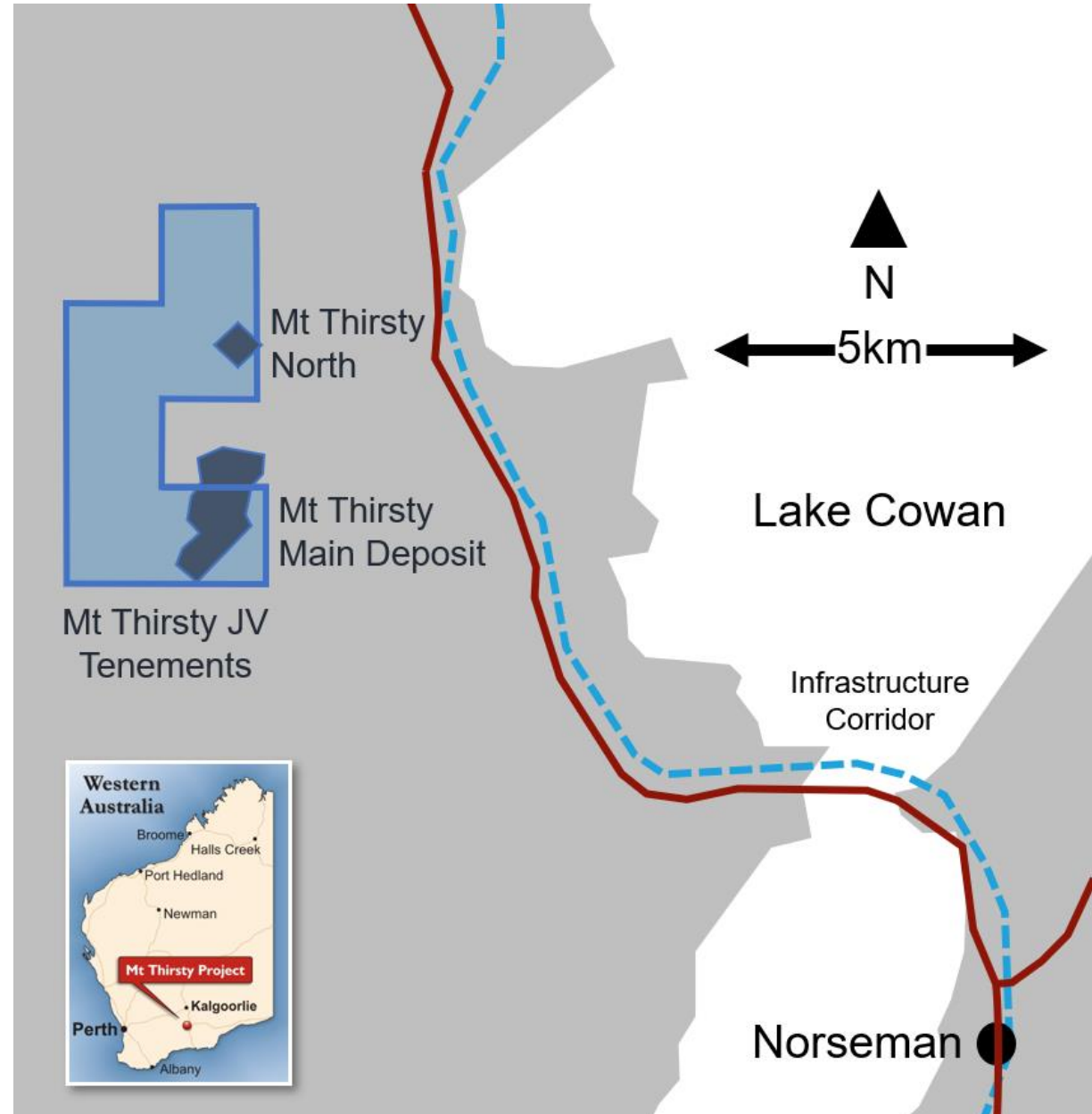
## COBALT-NICKEL





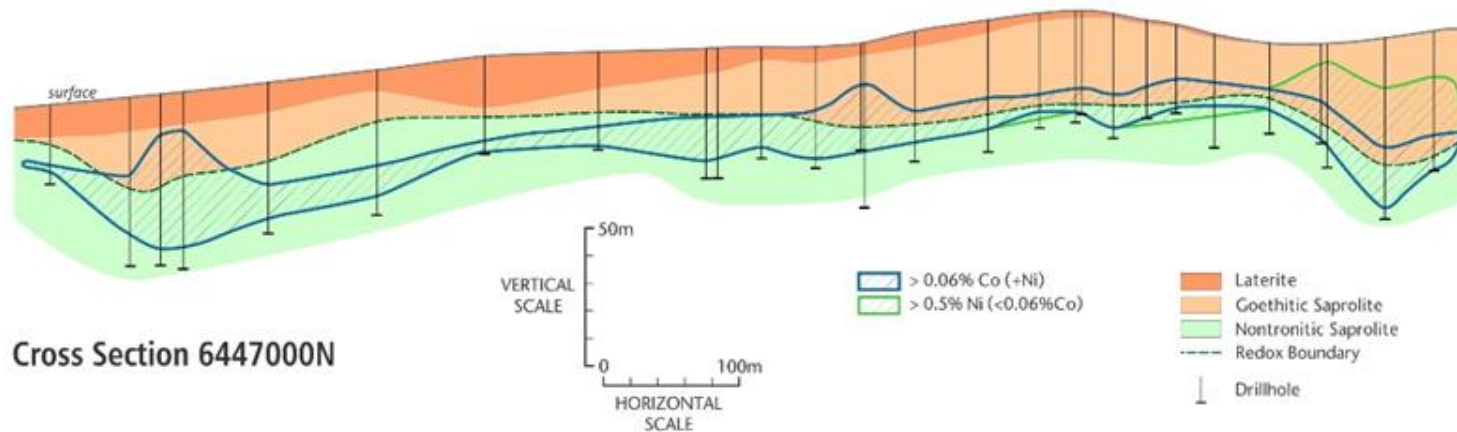
# MT THIRSTY COBALT-NICKEL PROJECT

- Location: 16km northwest of Norseman, WA
- Infrastructure in place: rail, road, power, gas, water, townsite, fibre optic and port
- Joint Venture: 50/50 Barra and Conico Ltd





# MT THIRSTY MINERAL RESOURCE UPGRADE



| 0.06% Co Cut-off | Mineral Resource | Dry Tonnes (Mdt) | Co (%) | Ni (%) |
|------------------|------------------|------------------|--------|--------|
| Mt Thirsty Main  | Indicated        | 22.8             | 0.121  | 0.53   |
|                  | Inferred         | 2.5              | 0.103  | 0.45   |
| Mt Thirsty North | Inferred         | 1.5              | 0.092  | 0.55   |
| Total            | Ind. & Inf.      | 26.9             | 0.117  | 0.52   |

- Indicated classification eligible for a JORC 2012 Ore Reserve
- Cobalt grade is double that of most nickel laterites
- Flat lying and low strip ratio with best grades at surface

Refer to ASX Announcement 9/9/19 for full details

# MT THIRSTY ATMOSPHERIC LEACHING



Extractions achieved using dilute  $\text{SO}_2$  without adding expensive acid



Remarkably consistent leaches give confidence in the process



Low capex flowsheet (A\$212M)<sup>2</sup>

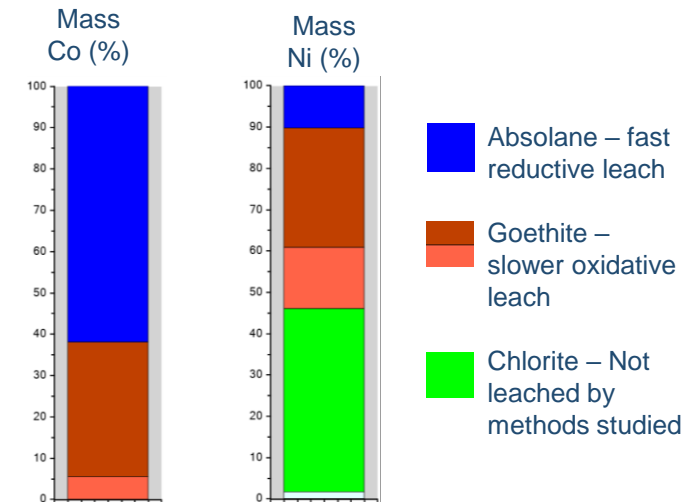


Results demonstrated at the semi-continuous bulk scale

Master Comp. Leach Extractions

|                       | Co (%) | Ni(%) |
|-----------------------|--------|-------|
| 2019 PFS <sup>1</sup> | 84%    | 31%   |
| 2017 SS <sup>2</sup>  | 79%    | 26%   |

QEMSCAN Mineral Department



<sup>1</sup> Refer to ASX Quarterly 30/10/19 for full details

<sup>2</sup> As reported in 2017 Scoping Study 5/10/17



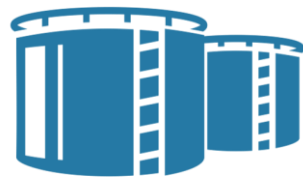
# PRODUCT VALUE CHAIN

- MSP suitable for metal, chemical and battery markets
- Product of strategic interest to many multinationals
- Product is 100% reserved for 'big brother' equity partner

## MT THIRSTY OPERATIONS



Mining



Atmospheric  
Leaching



Mixed Sulphide Product



Chemical Refining & Metal  
Production



Products Via  
Precursors



# CRITICAL MINERALS POLICIES

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- ✓ Cobalt listed as a *Critical Mineral* as mining and processing is geo-politically concentrated
- ✓ September 2019 – US-Australia action plan for *Critical Minerals* cooperation
- ✓ November 2019 – Export Finance Australia loans now available to *Critical Mineral* projects

Mt Thirsty development enhanced by nations and corporations seeking to secure supply.







## SUMMARY

# MT THIRSTY PROJECT MILESTONES



Advanced, high grade, low capex,  
undervalued cobalt nickel project



Mineral resource and metallurgy upgraded



Environmental surveys complete



Q1 2020 completion of pre-feasibility study  
to align with rising commodity prices



Permitting and strategic partnering to follow





# COOLGARDIE GOLD PROJECTS

- Phillips Find Gold Project
  - Available for farm-in
- Burbanks Gold Project
  - Historical production 420 kOz Au
  - Mineral resources 145 kOz Au <sup>1</sup>
  - Positive 2019 scoping study
  - RC drilling assays pending

<sup>1</sup> Refer to appendix for mineral resource tables





# THANK YOU

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ASX: BAR

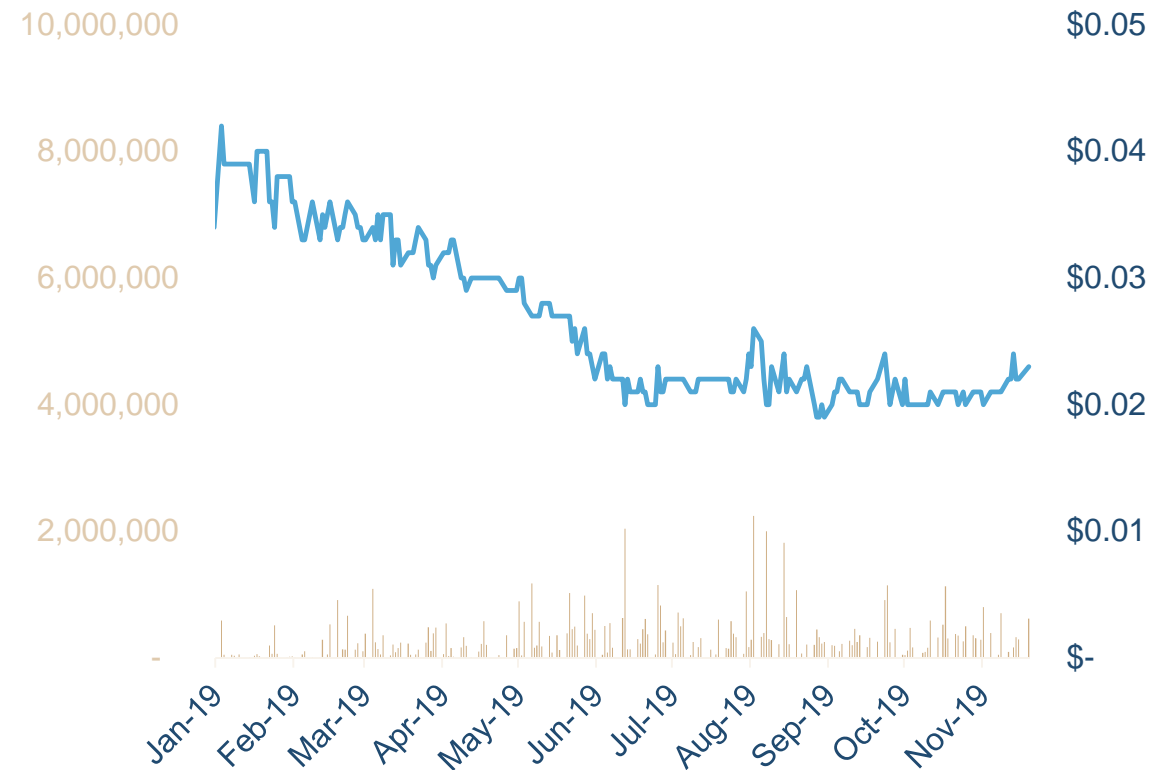




# APPENDIX: CORPORATE OVERVIEW

- 596.5M shares outstanding
- Market cap \$13.7m @ 2.3c
- Cash
  - \$928,000 30 September 2019
  - \$103,205 R&D refund received
  - \$1,152,500 capital raising complete
- Shareholders
  - FMR Investments Pty Ltd 14.7%
  - Mineral Resources Ltd 9.6%
  - >3000 other shareholders
- Up to \$500k loan to Conico Ltd agreed to fund their 50% share of PFS completion costs
- Experienced board and management
  - Sean Gregory, MD & CEO
  - Gary Berrell, Chairman
  - Grant Mooney, NED & Co Sec
  - Jon Young, NED
  - Gary Harvey, Exploration Manager

## ASX:BAR





# APPENDIX:

## BURBANKS MINERAL RESOURCES TABLE

| Deposit                           | Cut-Off<br>g/t Au | Indicated  |                 |               | Inferred   |                 |                | Total       |                 |                | Refer<br>ASX Ann. |
|-----------------------------------|-------------------|------------|-----------------|---------------|------------|-----------------|----------------|-------------|-----------------|----------------|-------------------|
|                                   |                   | kt         | Grade<br>g/t Au | Ounces        | kt         | Grade<br>g/t Au | Ounces         | kt          | Grade<br>g/t Au | Ounces         |                   |
| Christmas Open Pit                | 1.0               | 5.7        | 6.2             | 1,100         | 4.0        | 7.8             | 1,050          | 9.7         | 6.9             | 2,150          | 23/9/19           |
| Birthday Gift<br>Underground Mine | 2.5               | 180        | 6.0             | 34,750        | 325        | 5.6             | 58,500         | 505         | 5.7             | 93,250         | 23/9/19           |
| Main Lode Deposit                 | 1.0               | 106        | 2.8             | 9,700         | 254        | 2.5             | 20,200         | 360         | 2.6             | 29,900         | 30/10/18          |
| Burbanks North                    | 1.0               |            |                 |               | 360        | 1.8             | 20,400         | 360         | 1.8             | 20,400         | 2/08/19           |
| <b>Total</b>                      | <b>1.0/2.5</b>    | <b>291</b> | <b>4.9</b>      | <b>45,550</b> | <b>943</b> | <b>3.3</b>      | <b>100,150</b> | <b>1235</b> | <b>3.7</b>      | <b>145,700</b> |                   |

All tonnages reported are dry metric tonnes. Minor discrepancies may occur due to rounding to appropriate figures.

# APPENDIX: COMPETENT PERSONS' STATEMENTS & DISCLAIMER



## COMPETENT PERSONS' STATEMENT

The information in this report which relates to Exploration Results and Exploration Targets at Phillips Find and Burbanks is based on, and fairly represents, information compiled by Mr Gary Harvey who is a Member of the Australian Institute of Geoscientists and a full-time employee of Barra Resources Limited.

The information in this report which relates to Mineral Resources at Main Lode, Burbanks is based on, and fairly represents, information compiled by Mr Andrew Bewsher who is a full-time employee of BM Geological Services Pty Ltd and a Member of the Australian Institute of Geoscientists.

The information in this report which relates to Mineral Resources at Birthday Gift and Christmas Pit is based on information compiled by Mr Richard Buerger, a full-time employee of Mining Plus Pty Ltd who is a Member of the Australian Institute of Geoscientists.

The information in this report that relates to Exploration Results for the Mt Thirsty Cobalt-Nickel Project is based on and fairly represents information compiled by Michael J Glasson, a Competent Person who is a member of the Australian Institute of Geoscientists. Mr Glasson is an employee of Tasman Resources Ltd and in this capacity acts as part time consultant to Conico Ltd and the Mt Thirsty JV.

The information in this report which relates to the metallurgical test-work for Exploration Results for the Mt Thirsty Cobalt-Nickel Project is based on and fairly represents information compiled by Mr Dean David who is a Member of the Australian Institute of Mining and Metallurgy and a full-time employee of Wood.

The information in this report which relates to Mineral Resources at Mt Thirsty is based on, and fairly represents, information compiled by Mr David Reid, who is a full-time employee of Golder Associates Pty Ltd, and a Member of the Australasian Institute of Mining and Metallurgy.

Messers Harvey, Bewsher, Buerger, Glasson, David and Reid have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code).

The company is not aware of any new information or data that materially affects the information presented and that the material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcements.

## FORWARD LOOKING STATEMENTS DISCLAIMER

This report contains forward-looking statements that involve a number of risks and uncertainties. These forward-looking statements are expressed in good faith and believed to have a reasonable basis. These statements reflect current expectations, intentions or strategies regarding the future and assumptions based on currently available information. Should one or more of the risks or uncertainties materialise, or should underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this report. No obligation is assumed to update forward-looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.