

Emerging Company

Ironbark Zinc

Citronen – FID anticipated 2021

SPECULATIVE BUY

| | |
|-------------------------|------------|
| Current price: | A\$0.017 |
| Target price: | A\$0.088 |
| Previous target: | A\$ |
| Up/downside: | 415.4% |
| Reuters: | IBG.AX |
| Bloomberg: | IBG AU |
| Market cap: | US\$11.33m |
| | A\$15.65m |
| Average daily turnover: | US\$0.06m |
| | A\$0.09m |
| Current shares o/s | 920.4m |
| Free float: | 68.0% |



| Price performance | 1M | 3M | 12M |
|-------------------|------|------|------|
| Absolute (%) | 41.7 | 41.7 | 30.8 |
| Relative (%) | 38.4 | 39.4 | 39.1 |

Chris BROWN

T (61) 7 3334 4885

E chris.brown@morgans.com.au

Analyst(s) own shares in the following stock(s) mentioned in this report:

- Ironbark Zinc

- Ironbark Zinc is evaluating the Citronen zinc-lead project in Greenland. Citronen (IBG 100%) hosts a resource to JORC Code (2012) standards of 70.8Mt @ 5.1% zinc and 0.5% lead, with a maiden Ore Reserve (to JORC Code (2012) of 21.3Mt @ 6.0% zinc and 0.5% lead, hosting 1.3Mt of zinc and 0.1Mt of lead.
- The mine plan optimisation and production schedule are updated from the 2017 Feasibility Study. The metallurgical review confirms previous work and is refining the potential for improved performance using more recent technology.
- Our expectation is that what was shown to be a robust +US\$500m development will be even more robust, as project design, financing, logistics and operations are optimised.
- The decision of the US export credit agency EXIM to finance up to US\$216m is expected to underpin access to US capital markets and to other strategic partners with the Final Investment Decision (FID) for Citronen projected for Calendar 2021.
- Project financing is IBG's major current risk. We initiate coverage with a Speculative Buy and \$0.09 target based on risked resource multiple methodology.

US government EXIM facility

Under the Letter of Intent (LOI), EXIM will finance up to US\$216.1m of US content for Citronen, over a loan life of 8.5 years at the official US Commercial Interest Reference Rate (CIRR), currently 1.46%. With a renewable period of 6 months, Ironbark will look to other financiers, export credit agencies (ECAs) and strategic partners for debt funding.

Citronen - developing a world class zinc mine

The capital cost of the 2017 FS of US\$515m will be revised with the optimisation of mining, potentially higher metallurgical recoveries and improved logistics, specifically arctic shipping options. In the '17 FS a mining and processing rate of 3.3Mtpy of ore produced 200,000tpy of zinc in concentrate at a cash cost of US\$.52/lb (plus US\$0.14/lb estimated smelter charges), compared with the current US\$1.15/lb zinc price, a margin above 40%.

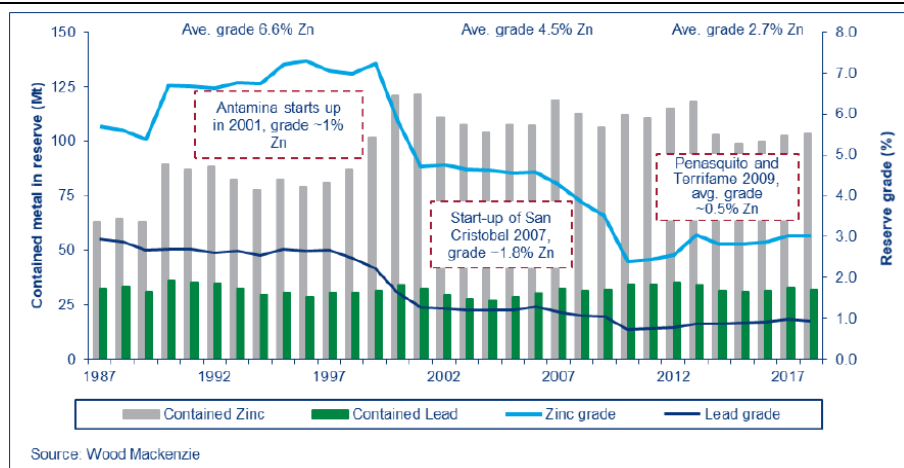
Funding risk – share price +ve or -ve?

The EXIM facility sets in train the search for the balance of debt and equity funding with the FID anticipated in 2021. In our view, failure to fund the development is the major risk.

Risk and valuation

Located in the Arctic, base metal mines have been developed and operated successfully, including with arctic shipping conditions. Citronen construction and development will be subject to capital and timing risk, and commissioning and ramp-up risk. Operations will carry the usual risks, with profit subject to commodity price and exchange rate risk. At US3c/lb contained zinc our unrisks valuation of Citronen is A\$0.29ps. Our risked valuation equating to our target price is A\$0.09ps.

Figure 1: Citronen – a good grade among its peers



SOURCE: Ironbark Zinc – ASX Release September 2020

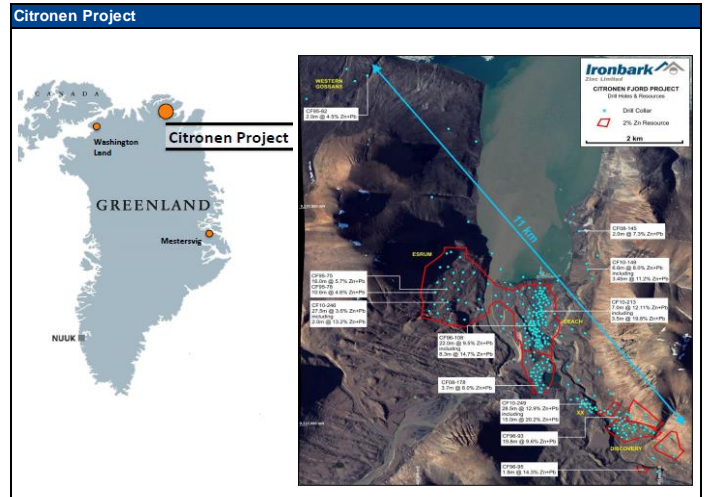
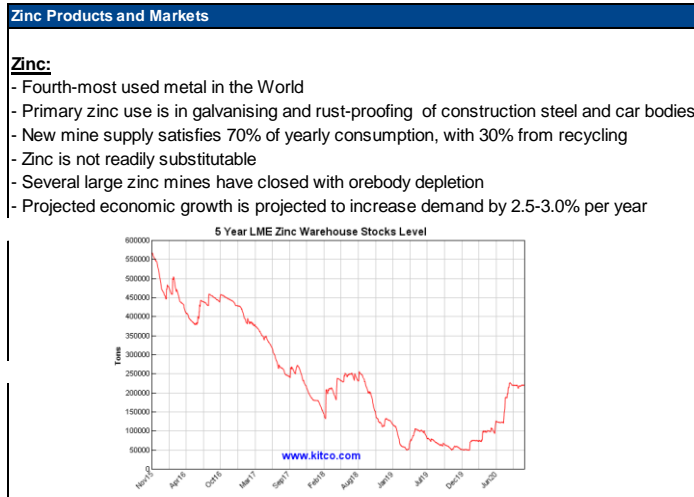
Ironbark Zinc

as at November 6, 2020

| | | | |
|-------------------------|-----------------|--------------------------------------|-----------------|
| Market cap (A\$m): | 15.65 | Rating: | SPECULATIVE BUY |
| Shares outstanding (m): | 920.4 | Price (A\$): | 0.017 |
| Free float (%): | 68.0 | Target price (A\$): | 0.088 |
| Website: | www.ironbark.gl | Upside/downside to target price (%): | 415.4 |

Company description

Ironbark Zinc is evaluating the 100% owned Citronen zinc-lead project in Greenland. Citronen is projected to mine 3.3Mtpy from open pit and underground ore at an average head grade of 5.3% Zn and 0.55% Pb. An optimisation study evaluates a capital cost of US\$525m plus an estimated US\$50m for First Fills and Working Capital. All primary approvals are in place, and major shareholders Nyrstar NV (10.6%) and Glencore AG (4.8%) hold offtake agreements for 70% of mine product.



Resources & Reserves

To JORC Code (2012) standards

70.8 million tonnes at 5.7% Zn + Pb

| Category | Mt | Zn% | Pb% | Zn+Pb% |
|-----------|------|-----|-----|--------|
| Measured | 25.0 | 5.0 | 0.5 | 5.5 |
| Indicated | 26.5 | 5.5 | 0.5 | 6.0 |
| Inferred | 19.3 | 4.9 | 0.4 | 5.3 |

Using Ordinary Kriging interpolation and reported at a 3.5% Zn cut-off

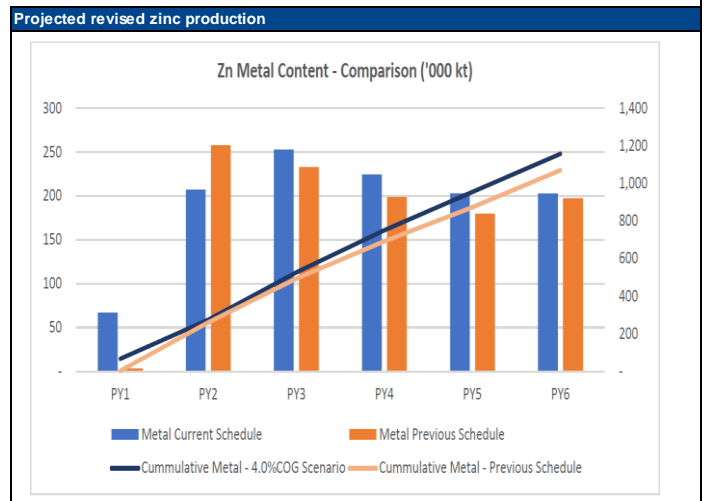
Including a higher grade resource of:

29.9 million tonnes at 7.1% Zn + Pb

| Category | Mt | Zn% | Pb% | Zn+Pb% |
|-----------|------|-----|-----|--------|
| Measured | 8.9 | 6.6 | 0.6 | 7.2 |
| Indicated | 13.7 | 6.8 | 0.5 | 7.3 |
| Inferred | 7.3 | 6.2 | 0.5 | 6.6 |

Using Ordinary Kriging interpolation and reported at a 5.0% Zn cut-off

Source: Ironbark Zinc - Feasibility Study September 2017



Citronen projected operating costs

The Year 1-5 average cash costs are US\$ 0.48/lb Zn (payable, net of by-product credits, smelter fees additional US\$ 0.14/ lb Zn payable). The LOM average costs are US\$ 0.52/lb (payable, net of by-product credits, smelter fees an additional US\$ 0.14/lb Zn payable)

| Description | Annual Cost (US\$ x 1,000) | Unit Costs (US\$/t Ore) | Unit Costs (US\$/t Zn Concentrate) |
|--------------------------------|----------------------------|-------------------------|------------------------------------|
| Underground Mining | 81,723 | 20.00 | 240.36 |
| Open Pit Mining | 14,834 | 1.32 | 15.87 |
| Process | 35,467 | 11.05 | 132.76 |
| Shipping & Logistics | 31,003 | 9.66 | 116.05 |
| General & Administration (G&A) | 24,593 | 7.66 | 92.06 |
| Total Operating Costs | 159,512 | 49.69 | 597.10 |

Note: large first fill (Year 1 consumables) have been capitalised and that costs per tonne for both underground and open pit are lower than actual as they have been averaged over total LOM not just operating period.

Source: Ironbark Zinc - Feasibility Study September 2017

Key drivers & drivers

Industry Drivers

- World economic growth
- Demand for zinc leading to strength in the zinc price

Key Risks

- Securing Project funding
- Potential for construction cost and time over-runs
- Citronen commissioning and production ramp-up
- Operating risks in the Arctic environment
- Commodity price and exchange rate risks

Upcoming Catalysts

- Finalising debt funding package
- Announcement of potential strategic partnerships
- Completion of any equity raising
- Final investment decision on Citronen Development

Source: MORGANS

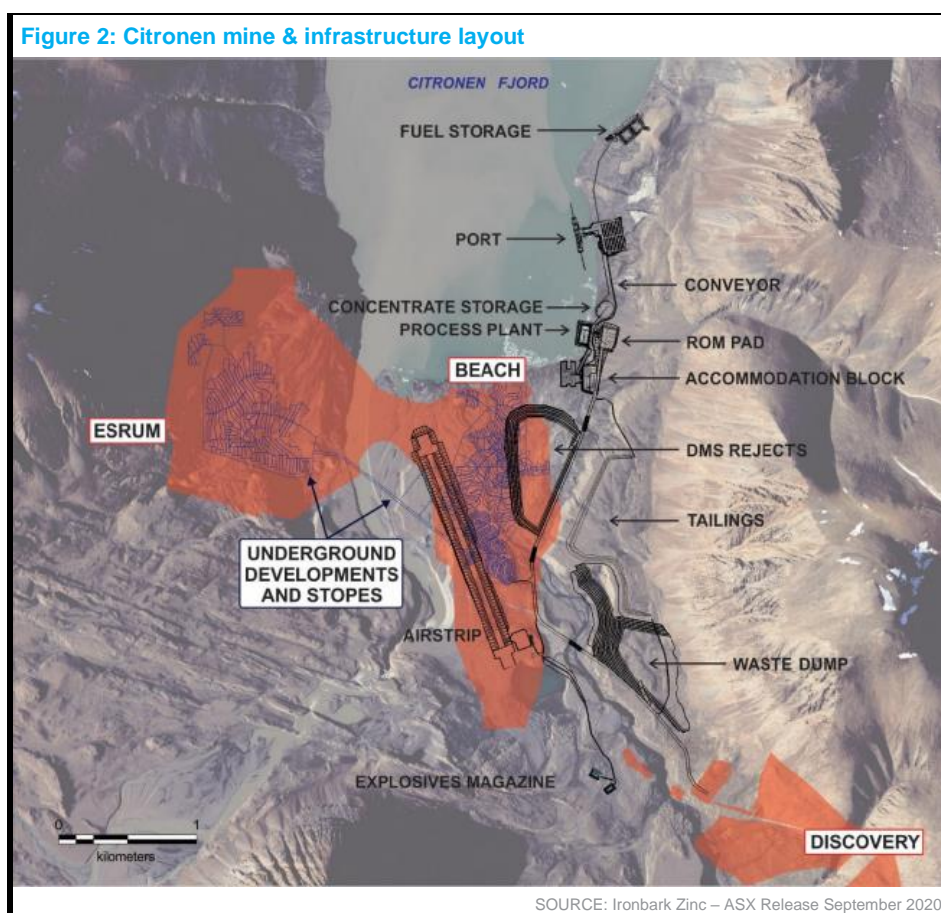
Citronen Zinc, Greenland

Overview

Ironbark Zinc has a 100% interest in Exploitation Licence 2016/30 with a 30-year term granted by the Greenland Government in December 2016. This was granted subsequent to Ironbark successfully completing a positive Feasibility Study, a satisfactory Environmental Impact Statement and a Social Impact Assessment, including an Impact Benefit Agreement negotiated with the four municipalities.

The Citronen resource, to JORC Code (2012) standards is 70.8Mt @ 5.1% zinc & 0.5% lead, at a 3.5% Zn cut-off. A maiden Ore Reserve is reported to JORC Code (2012) standards, of 21.3Mt @ 6.0% zinc and 0.5% lead, which contains 1.3Mt of zinc and 0.1Mt of lead.

Figure 2: Citronen mine & infrastructure layout



Current optimisation studies

The current optimisations are to improve operating performance and minimise capital and operating costs.

Since Ironbark reported a refreshed Feasibility Study for Citronen in 2017 the company has reported (September 2020) a maiden Ore Reserve to JORC Code (2012) standards of 21.3Mt @ 6.0% zinc and 0.5% lead, containing 1.3Mt of zinc and 0.1Mt of lead. This reserve forms the basis for the mine optimisation study re-evaluating the production schedule, based on a revised zinc price of US\$1.20/lb (US\$2,645/t).

This optimisation has resulted in the projected delivery of an additional 60,000t of zinc in concentrate over the first 6 years, compared with the 2017 FS, and provides increased flexibility in operations should the zinc price strengthen.

The process route for Citronen is also being reviewed. This work is focussed on the primary comminution circuits and on the concentrate regrind, with the objective of further improving zinc metal recovery while maintaining a good zinc grade in the zinc concentrate.

Ironbark has also commissioned a report by a Canadian polar shipping specialist to review proposed shipping solutions and refine the various cost options. Ice is present on the Citronen shipping route all year, as with Red Dog, and the recently exhausted Polaris and Nanisivik Zinc-Lead mines. Options include ice-breaking bulk carriers and ice-strengthened carriers with close-coupled towing units. At this stage Ironbark will likely focus on a chartered fleet of Polar Class vessels with the focus on reliability. No decision on shipping options is expected prior to FID.

The Citronen FS (2017)

The Citronen Project is a relatively simple, predominantly underground room-and-pillar mining operation. Underground mining for the first 11 years will be followed by open pit mining extending for a further 4 years, based on the 2017 FS. The majority of the resource is contained within the Esrum L3N, Beach L2N and Beach L3N domains. The life-of-mine (LOM) average operating cost for the underground mine was estimated at US\$ 25.13/t ore mined (US\$ 24.85/t mined – ore and waste development). Over the life of the open pit mine, operating costs were calculated to be US\$6.47/t ore (US\$ 2.16/t mined – ore and waste).

Metallurgical testwork has evaluated the performance of the various domains. Two-stage crushing will be followed by Dense Media Separation (DMS), with 97% of the contained zinc and lead recovered. Grinding is by a primary ball mill, followed by a Vertical Stirred Mill to provide a product with P80 passing 45µm. This is then subject to conventional flotation and regrind to produce separate zinc and lead concentrates which are then de-watered. The Life-of-Mine (LOM) average process operating cost was calculated as US\$11.05/t ore crushed based on a yearly average throughput of 3.3 million tonnes of ore to the DMS.

Figure 3: Fundamentals of the 2017 FS – being updated

| | |
|--------------------------------|---|
| • Capital Cost | US \$514 Million** |
| • Large Scale Production | 3.3Mtpa Mine Rate/Production up to 200,000tpa zinc metal |
| • Site Cost | US\$0.52/lb Zn (Payable, Net of by-product credits)*** |
| • Mine Life | 14 years (open ended and with further inferred resources that could potentially be converted to reserves) |
| • Life of Mine Revenue | US\$6,364 Million |
| • Life of Mine Operating Costs | US\$3,025 Million |
| • Life of Mine NPAT | US\$1,836 Million* |

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 target itself will be realised.

PROJECT HIGHLIGHTS

- 100% Owned Exploitation Licence 2016/30 (Mining Permit) Granted by the Greenland Government – 30 year term
- Open-Ended, Simple, Consistent Resource
- Simple Mining, Simple Processing using Standard Technology
- Ironbark is Working with China Nonferrous under a MOU to Deliver an EPC Fixed Price Contract and Assist in Project Financing
- Major Industry Shareholders – Glencore International AG & Nyrstar NV

* Excluding dividend withholding tax (Corporate tax rate of 30%, dividend withholding tax 37%). All costs and prices indexed at a CPI rate of 2.5% pa

** Compared against the last Western Calculation dated 2011 is a 2.4% increase. NFC are currently working on a Chinese Feasibility study which is expected to have a lower Capital Cost

*** Smelter fees an additional US\$0.14/lb Zn payable

SOURCE: Ironbark Zinc – Feasibility Study September 2017

Six generators with a nominal 7MW capacity will provide the 23MW load, with 4 generators running and two on stand-by. Fuel storage will be for 25,000m³ of arctic diesel and 250m³ of jet fuel.

While mine re-supply will be by ship, an airstrip will enable medical evacuation, scheduled staff transport, supply of fresh produce and any urgent spares.

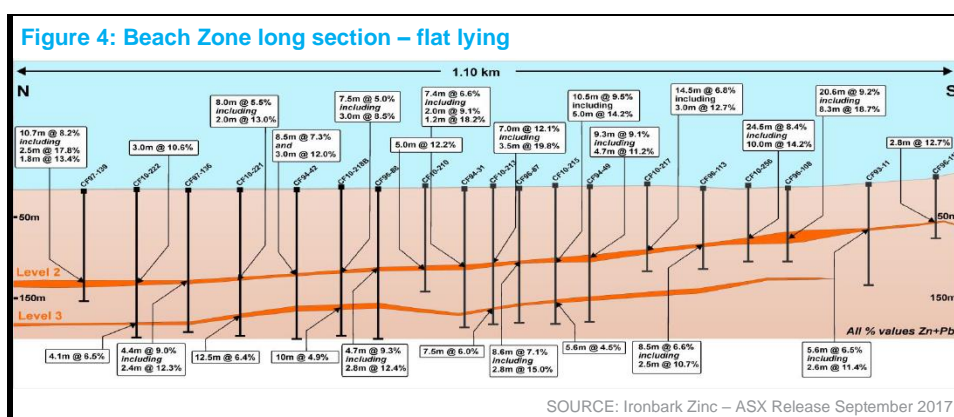
Saleable concentrates are to be shipped to market from marine facilities located in the south-eastern corner of the Citronen Fjord, behind a small cape with adequate land areas for container and winter storage yards. The average shipping window for access to the Citronen Fjord is approximately six weeks per year and

shipping requires assistance from icebreakers. During this period, loading of concentrate and unloading of supplies will take place on a 24 hour per day basis. The LOM average cost for shipping and logistics was US\$109.24/t of concentrate (zinc plus lead) in the 2017FS.

Concentrate quality

Citronen is interpreted as a sedimentary exhalative (SEDEX) deposit, forming syn- to diagenetically with sedimentation. The geology of northern Greenland is contemporaneous to that of parts of the Canadian arctic islands, which also host several large base metal deposits of SEDEX and Mississippi Valley Type (MVT).

Typically SEDEX style deposits yield zinc flotation recoveries of approximately 80%, and with a low-iron sphalerite a good-quality concentrate could be anticipated. The metallurgical factors and assumptions used in the Reserve statement, sourced from the 2017 Citronen Feasibility study, used a zinc recovery of 85.3% and a lead recovery of 69.7%. Nyrstar and Glencore, both major participants in the production and marketing of zinc, hold a combined 15% equity interest in IBG. They have options to take 70% of the zinc concentrate on commercial terms for the life of the mine.



Valuation and target price

Ironbark Zinc is moving to develop the Citronen zinc project, Greenland. With a Feasibility Study completed, IBG is looking to finance the US\$500m development. The US government’s EXIM has signed a letter of intent to fund up to US\$216m of US content. Nyrstar and Glencore, both IBG shareholders, hold offtake agreements for 70% of the annual zinc concentrate production.

Prior to the FID we value Citronen on the basis of US\$81/t of contained zinc, the mean for undeveloped zinc projects in Canada, Australia, Peru and Mexico, with 67Mt of contained zinc. The values range from a maximum of US\$180/t (Canada) to a low of US\$41/t (Mexico). On this basis IBG is worth A\$0.35ps. We apply a development risk factor to derive a risked valuation of A\$0.09ps.

Key risks

The major risk to IBG value is the Citronen development. Funding the balance of the development cost will likely be required ahead of the Final Investment Decision. Although a conventional zinc-lead development, it is located in the Arctic, with the usual logistics, supply and operational issues associated with that geography, which may affect the cost and timing of construction. Commissioning, ramp-up and production will be exposed to those conditions. Polar shipping conditions will add to costs, but a number of established options are available.

Metallurgical recovery to the relevant concentrate and concentrate quality is a risk, but the deposit type and processing routes are established, although this may extend the ramp-up period. Once in production, profit will be dependent on the zinc price. The FS indicates that Citronen will be below the median in terms of cash costs.

Queensland

| | |
|---|-----------------|
| Brisbane | +61 7 3334 4888 |
| Stockbroking, Corporate Advice, Wealth Management | |
| Brisbane: Edward St | +61 7 3121 5677 |
| Brisbane: Tynan | +61 7 3152 0600 |
| Partners | |
| Brisbane: North Quay | +61 7 3245 5466 |
| Bundaberg | +61 7 4153 1050 |
| Cairns | +61 7 4222 0555 |
| Caloundra | +61 7 5491 5422 |
| Gladstone | +61 7 4972 8000 |
| Gold Coast | +61 7 5581 5777 |
| Holland Park | +61 7 3151 8300 |
| Ipswich/Springfield | +61 7 3202 3995 |
| Kedron | +61 7 3350 9000 |
| Mackay | +61 7 4957 3033 |
| Milton | +61 7 3114 8600 |
| Newstead | +61 7 3151 4151 |
| Noosa | +61 7 5449 9511 |
| Redcliffe | +61 7 3897 3999 |
| Rockhampton | +61 7 4922 5855 |
| Spring Hill | +61 7 3833 9333 |
| Sunshine Coast | +61 7 5479 2757 |
| Toowoomba | +61 7 4639 1277 |
| Townsville | +61 7 4725 5787 |

New South Wales

| | |
|---|-----------------|
| Sydney | +61 2 9043 7900 |
| Stockbroking, Corporate Advice, Wealth Management | |
| Sydney: Grosvenor | +61 2 8215 5000 |
| Place | |
| Sydney: Reynolds | +61 2 9373 4452 |
| Securities | |
| Sydney: Currency | +61 2 8216 5111 |
| House | |
| Armidale | +61 2 6770 3300 |
| Ballina | +61 2 6686 4144 |
| Balmain | +61 2 8755 3333 |
| Bowral | +61 2 4851 5555 |
| Chatswood | +61 2 8116 1700 |
| Coffs Harbour | +61 2 6651 5700 |
| Gosford | +61 2 4325 0884 |
| Hurstville | +61 2 8215 5079 |
| Merimbula | +61 2 6495 2869 |
| Mona Vale | +61 2 9998 4200 |
| Neutral Bay | +61 2 8969 7500 |
| Newcastle | +61 2 4926 4044 |
| Orange | +61 2 6361 9166 |
| Port Macquarie | +61 2 6583 1735 |
| Scone | +61 2 6544 3144 |
| Wollongong | +61 2 4227 3022 |

Victoria

| | |
|---|-----------------|
| Melbourne | +61 3 9947 4111 |
| Stockbroking, Corporate Advice, Wealth Management | |
| Brighton | +61 3 9519 3555 |
| Camberwell | +61 3 9813 2945 |
| Domain | +61 3 9066 3200 |
| Geelong | +61 3 5222 5128 |
| Richmond | +61 3 9916 4000 |
| South Yarra | +61 3 8762 1400 |
| Southbank | +61 3 9037 9444 |
| Traralgon | +61 3 5176 6055 |
| Warmambool | +61 3 5559 1500 |

Australian Capital Territory

| | |
|----------|-----------------|
| Canberra | +61 2 6232 4999 |
|----------|-----------------|

Northern Territory

| | |
|--------|-----------------|
| Darwin | +61 8 8981 9555 |
|--------|-----------------|

Tasmania

| | |
|--------|-----------------|
| Hobart | +61 3 6236 9000 |
|--------|-----------------|

Western Australia

| | |
|---|-----------------|
| West Perth | +61 8 6160 8700 |
| Stockbroking, Corporate Advice, Wealth Management | |
| Perth | +61 8 6462 1999 |

South Australia

| | |
|----------------|-----------------|
| Adelaide | +61 8 8464 5000 |
| Exchange Place | +61 8 7325 9200 |
| Norwood | +61 8 8461 2800 |
| Unley | +61 8 8155 4300 |

Disclaimer

The information contained in this report is provided to you by Morgans Financial Limited as general advice only, and is made without consideration of an individual's relevant personal circumstances. Morgans Financial Limited ABN 49 010 669 726, its related bodies corporate, directors and officers, employees, authorised representatives and agents ("Morgans") do not accept any liability for any loss or damage arising from or in connection with any action taken or not taken on the basis of information contained in this report, or for any errors or omissions contained within. It is recommended that any persons who wish to act upon this report consult with their Morgans investment adviser before doing so. Those acting upon such information without advice do so entirely at their own risk.

This report was prepared as private communication to clients of Morgans and is not intended for public circulation, publication or for use by any third party. The contents of this report may not be reproduced in whole or in part without the prior written consent of Morgans. While this report is based on information from sources which Morgans believes are reliable, its accuracy and completeness cannot be guaranteed. Any opinions expressed reflect Morgans judgement at this date and are subject to change. Morgans is under no obligation to provide revised assessments in the event of changed circumstances. This report does not constitute an offer or invitation to purchase any securities and should not be relied upon in connection with any contract or commitment whatsoever.

Disclosure of interest

Morgans may from time to time hold an interest in any security referred to in this report and may, as principal or agent, sell such interests. Morgans may previously have acted as manager or co-manager of a public offering of any such securities. Morgans affiliates may provide or have provided banking services or corporate finance to the companies referred to in the report. The knowledge of affiliates concerning such services may not be reflected in this report. Morgans advises that it may earn brokerage, commissions, fees or other benefits and advantages, direct or indirect, in connection with the making of a recommendation or a dealing by a client in these securities. Some or all of Morgans Authorised Representatives may be remunerated wholly or partly by way of commission.

Regulatory disclosures

Analyst owns shares in the following mentioned company(ies): Ironbark Zinc

Recommendation structure

For a full explanation of the recommendation structure, refer to our website at morgans.com.au/research_disclaimer

Research team

For analyst qualifications and experience, refer to our website at morgans.com.au/research-and-markets/our-research-team

Research coverage policy

For an overview on the stock selection process, refer to our website at morgans.com.au/research-and-markets/company-analysis/Research-Coverage-Policy

Research independence statement

morgans.com.au/Research-Independence-Statement

Stocks under coverage

For a full list of stocks under coverage, refer to our website at morgans.com.au/research-and-markets/company-analysis/ASX100-Companies-under-coverage and morgans.com.au/research-and-markets/company-analysis/EX-100-Companies-under-coverage

If you no longer wish to receive Morgans publications please contact your local Morgans branch or write to GPO Box 202 Brisbane QLD 4001 and include your account details.

morgans.com.au