



The Global Metals & Mining Specialist

**AUSTRALIA**

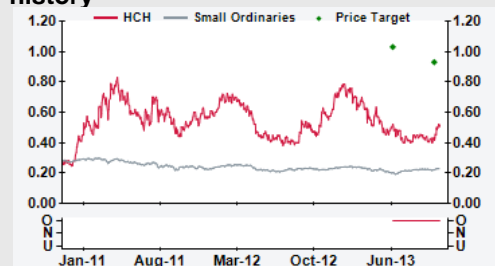
**HCH AU** Outperform  
Price (at 03:59, 31 Oct 2013 GMT) **A\$0.51**

<b>Valuation</b>	<b>A\$</b>	<b>1.04</b>
- DCF (WACC 12.0%)		
<b>12-month target</b>	<b>A\$</b>	<b>0.93</b>
<b>12-month TSR</b>	<b>%</b>	<b>+82.4</b>
<b>Volatility Index</b>		<b>High</b>
<b>GICS sector</b>		<b>Materials</b>
<b>Market cap</b>	<b>A\$m</b>	<b>170</b>
<b>30-day avg turnover</b>	<b>A\$m</b>	<b>0.2</b>
<b>Number shares on issue</b>	<b>m</b>	<b>333.1</b>

**Investment fundamentals**

Year end 30 Jun		2013A	2014E	2015E	2016E
Revenue	m	0.0	0.0	0.0	0.0
EBIT	m	-4.5	-17.7	-14.1	-17.1
Reported profit	m	-4.3	-17.7	-32.8	-52.7
Adjusted profit	m	-4.3	-17.7	-32.8	-52.7
Gross cashflow	m	-4.3	-4.1	-24.8	-44.7
CFPS	¢	-1.5	-1.2	-4.4	-6.9
CFPS growth	%	-63.5	20.9	-277.4	-55.0
EPS adj	¢	-1.5	-5.2	-5.9	-8.1
EPS adj growth	%	-30.1	-249.2	-13.9	-37.5
Total DPS	¢	0.0	0.0	0.0	0.0
Total div yield	%	0.0	0.0	0.0	0.0
ROA	%	-8.4	-20.5	-5.3	-2.5
ROE	%	-8.3	-21.4	-23.9	-24.5
EV/EBITDA	x	-32.6	-10.9	-20.9	-22.5
Net debt/equity	%	-15.8	-22.2	27.4	112.4
P/BV	x	2.3	2.2	1.7	1.6

**HCH AU vs Small Ordinaries, & rec history**



Note: Recommendation timeline - if not a continuous line, then there was no Macquarie coverage at the time or there was an embargo period.

Source: FactSet, Macquarie Research, November 2013 (all figures in AUD unless noted)

**Analyst(s)**

**Ben Crowley**  
+61 8 9224 0839 ben.crowley@macquarie.com

1 November 2013  
Macquarie Securities (Australia) Limited

# Hot Chili

## Strong catalysts to come

### Event

- Hot Chili has reported for the September Quarter and provided an update on exploration at the Company's Productora and Frontera projects.

### Impact

- Productora drill-out on track.** HCH has been working its way through a 100,000m drill-out of the Productora deposit. This has included testing previously undrilled areas such as the Eastern Flank and Habanero Zones, both of which have delivered a higher grade than seen elsewhere in the deposit. These zones should also bring additional tonnes to the resource and have the potential to reduce the LoM strip ratio. Recent infill drilling has also delivered strong results increasing the confidence in the deposit's continuity. A revised resource estimate has been scheduled for the end of the year but drilling is ongoing and we expect a slight delay to Q1 14 to allow for all new drilling data to be included. HCH recently indicated that the revised estimate will include a maiden reserve. Our focus with the revised resource will be the level of confidence in the first 10 year of mine life.
- Closing in on an infrastructure deal.** In our view completing a deal on infrastructure is critical to the success of the Productora Project. Negotiations have been ongoing for some time and the relationship between HCH and CAP, the owner of the infrastructure, has strengthened. CAP increased its position on HCH's share register through a recent placement, gaining a board seat at the same time. HCH has targeted year end for the conclusion of an infrastructure agreement and we expect it to meet this deadline.
- Frontera maiden resource estimate underway.** 12,000m of drilling was also completed at the Company's Frontera project located 70km south of Productora. HCH released some impressive first hits from the Project earlier in the quarter including 348m at 0.4% Cu and 0.3g/t Au. With the completion of the drilling we would expect a maiden resource to be announced before year end.

### Earnings and target price revision

- No change to our TP of \$0.93 however, HCH's cash of \$12.7m is \$2m less than we modelled and we have adjusted our model accordingly.

### Price catalyst

- 12-month price target: A\$0.93 based on a DCF methodology.
- Catalyst: Maiden resource at Frontera, infrastructure agreement and maiden reserve at Productora.

### Action and recommendation

- Maintain Outperform.** We expect some major share price catalysts over the coming weeks. Frontera has the potential to develop into a substantial project expanding HCH's development options. An agreement on infrastructure will substantially de-risk Productora and could offer significant capex savings. We also expect the re-estimation of the Productora resource to further de-risk the project with a maiden reserve.

**Hot Chili Limited**

ASX: HCH Price: (A\$ps) 0.52 Year end: Jun Rating: Outperform  
 Mkt cap: (A\$m) 168 Diluted shares (m) 325.6 Target: A\$0.93

ASSUMPTIONS		FY12	FY13	FY14e	FY15e	FY16e	FY17e
Exchange Rate	A\$/US\$	1.03	1.03	0.87	0.82	0.84	0.84
Spot Copper Price	US\$/lb	3.70	3.48	3.16	2.90	3.16	3.50

RATIO ANALYSIS		FY12	FY13	FY14e	FY15e	FY16e	FY17e
Diluted share capital	m	223.9	325.6	399.3	599.3	778.4	778.4
EPS (diluted and pre sig. items)	A¢	-1.1	-1.5	-5.2	-5.9	-8.1	-4.9
P/E	x	-42.8x	-32.9x	-9.4x	-8.3x	-6.0x	-10.0x
CFPS	A¢	(1.0)	(1.0)	(1.0)	(4.1)	(5.7)	(2.9)
P/CF	x	-46.8x	-47.3x	-47.8x	-11.8x	-8.5x	-17.0x
DPS	A¢	0.0	0.0	0.0	0.0	0.0	0.0
Dividend yield	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Franking Level	%	0%	0%	0%	0%	0%	0%
Book value per share	x	0.15	0.22	0.24	0.30	0.32	0.27
P/Book value	x	3.4x	2.2x	2.1x	1.6x	1.5x	1.8x
R.O.E. (pre sig items)	%	-6%	-6%	-19%	-18%	-21%	-18%
R.O.A. (pre sig items)	%	-9%	-6%	-18%	-3%	-2%	3%
Interest Cover	x	3.5x	21.7x	0.0x	-0.8x	-0.5x	0.4x
EBITDA per share	A\$ps	-0.01	-0.01	-0.04	-0.02	-0.02	0.04
EV/EBITDA	x	-49.0x	-32.7x	-7.8x	-14.8x	-25.6x	20.2x

EARNINGS		FY12	FY13	FY14e	FY15e	FY16e	FY17e
Sales Revenue	A\$m	0	0	0	0	0	118
Other Revenue	A\$m	0	0	0	0	0	0
<b>Total Revenue</b>	<b>A\$m</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>118</b>
Operating Costs	A\$m	0	0	0	0	0	(66)
<b>Operational EBITDA</b>	<b>A\$m</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>52</b>
Exploration Expense/Write-offs	A\$m	(0)	0	(14)	(8)	(8)	(6)
Corporate & Other Costs	A\$m	(2)	(5)	(4)	(6)	(9)	(12)
<b>EBITDA</b>	<b>A\$m</b>	<b>(3)</b>	<b>(5)</b>	<b>(18)</b>	<b>(14)</b>	<b>(17)</b>	<b>35</b>
D&A	A\$m	0	0	0	0	0	(8)
<b>EBIT</b>	<b>A\$m</b>	<b>(3)</b>	<b>(5)</b>	<b>(18)</b>	<b>(14)</b>	<b>(17)</b>	<b>27</b>
Net Interest	A\$m	1	0	0	(19)	(36)	(63)
<b>Profit Before Tax</b>	<b>A\$m</b>	<b>(2)</b>	<b>(4)</b>	<b>(18)</b>	<b>(33)</b>	<b>(53)</b>	<b>(36)</b>
Tax Expense	A\$m	0	0	0	0	0	(2)
Minorities	A\$m	0	0	0	0	0	0
<b>Net Profit After Tax</b>	<b>A\$m</b>	<b>(2)</b>	<b>(4)</b>	<b>(18)</b>	<b>(33)</b>	<b>(53)</b>	<b>(38)</b>
Significant Items (post tax)	A\$m	0	0	0	0	0	0
<b>Reported NPAT</b>	<b>A\$m</b>	<b>(2)</b>	<b>(4)</b>	<b>(18)</b>	<b>(33)</b>	<b>(53)</b>	<b>(38)</b>

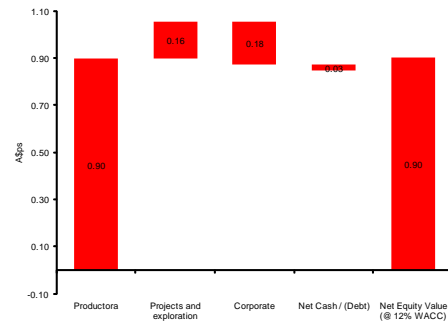
CASHFLOW		FY12	FY13	FY14e	FY15e	FY16e	FY17e
<b>Operational Cash Flow</b>	<b>A\$m</b>	<b>-2</b>	<b>-4</b>	<b>-4</b>	<b>-6</b>	<b>-9</b>	<b>40</b>
Net Interest	A\$m	0	0	0	(19)	(36)	(63)
Tax Paid and Other	A\$m	(1)	4	0	0	0	0
<b>Net Operating Cashflow</b>	<b>A\$m</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(25)</b>	<b>(45)</b>	<b>(22)</b>
Exploration	A\$m	(15)	(44)	(17)	(10)	(10)	(7)
Capital Expenditure	A\$m	(0)	(0)	(10)	(156)	(295)	(231)
Investments	A\$m	0	0	0	0	0	0
Sale of PPE and Other	A\$m	0	(0)	0	0	0	0
<b>Net Investing Cashflow</b>	<b>A\$m</b>	<b>(15)</b>	<b>(44)</b>	<b>(27)</b>	<b>(166)</b>	<b>(305)</b>	<b>(238)</b>
Dividends Paid	A\$m	0	0	0	0	0	0
Debt	A\$m	0	0	0	250	425	(100)
Equity Issuance	A\$m	30	45	41	120	120	0
Other	A\$m	(1)	(2)	0	0	0	0
<b>Net Financing Cashflow</b>	<b>A\$m</b>	<b>29</b>	<b>42</b>	<b>41</b>	<b>370</b>	<b>545</b>	<b>(100)</b>
<b>Net change in cash</b>	<b>A\$m</b>	<b>12</b>	<b>(5)</b>	<b>10</b>	<b>180</b>	<b>195</b>	<b>(360)</b>

BALANCE SHEET		FY12	FY13	FY14e	FY15e	FY16e	FY17e
Cash	A\$m	17	11	21	200	396	36
PP&E & Mine Development	A\$m	0	1	11	166	461	684
Exploration	A\$m	16	63	66	68	70	72
<b>Total Assets</b>	<b>A\$m</b>	<b>33</b>	<b>75</b>	<b>98</b>	<b>435</b>	<b>927</b>	<b>792</b>
Debt	A\$m	0	0	0	250	675	575
<b>Total Liabilities</b>	<b>A\$m</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>254</b>	<b>679</b>	<b>581</b>
<b>Total Net Assets / Equity</b>	<b>A\$m</b>	<b>33</b>	<b>71</b>	<b>94</b>	<b>181</b>	<b>248</b>	<b>211</b>
Net Debt / (Cash)	A\$m	(17)	(11)	(21)	50	279	539
Gearing (net debt/(nd + equity))	%	(107%)	(19%)	(28%)	21%	53%	72%
Gearing (net debt/equity)	%	(52%)	(16%)	(22%)	27%	112%	256%

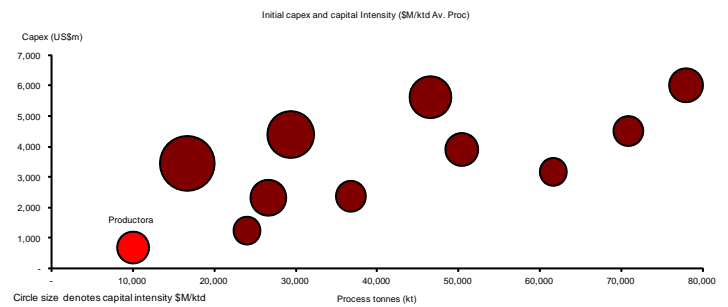
ATTRIBUTABLE MINE OUTPUT		FY12	FY13	FY14e	FY15e	FY16e	CY17e
<b>Copper Production (equity)</b>							
Productora	kt	0.0	0.0	0.0	0.0	0.0	13.3
<b>Copper in Concentrate</b>	<b>kt</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>13.3</b>
Payable Copper Production	mlb	0.0	0.0	0.0	0.0	0.0	79.1
Cash Copper Price Realised	US\$/lb	0.00	0.00	0.00	0.00	0.00	3.59
<b>Net Cash Costs (per payable lb)</b>	<b>US\$/lb</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.46</b>
Notional Cash Margin	US\$/lb	0.00	0.00	0.00	0.00	0.00	2.13

Operational EBIT Contribution (pre hedging)		FY12	FY13	FY14e	FY15e	FY16e	FY17e
Productora	US\$m	0	0	0	0	0	37

**HCH valuation at A\$ spot**



**Capital intensity US\$m to ktpd**



**RESERVES AND RESOURCES**

Reserves	Mt	% Cu	g/t Au	g/t Mo	Cu (kt)	Au (koz)	Mo (kt)
Proven	0.0	0.0%	0.0	0.0	0	0	0
Probable	0.0	0.0%	0.0	0.0	0	0	0
<b>Total reserves (kt)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Resources	Mt	% Cu	g/t Au	g/t Mo	Cu (kt)	Au (koz)	Mo (kt)
Measured	0.0	0.0%	0.0	0	0	0	0
Indicated	70.6	0.6%	0.1	140	420	260	10
Inferred	94.6	0.5%	0.1	126	500	310	12
<b>Total resources (kt)</b>	<b>165.2</b>	<b>0.6%</b>	<b>0.1</b>	<b>132</b>	<b>921</b>	<b>569</b>	<b>22</b>

**EQUITY DCF VALUATION**

Projects	US\$m	US\$ps	A\$ps	A\$ps @ spot
Productora	284	0.85	1.04	0.90
Projects and exploration	50	0.15	0.18	0.16
Corporate	-57	-0.17	-0.21	-0.18
Net Cash / (Debt)	9	0.03	0.03	0.03
<b>Net Equity Value (@ 12% WACC)</b>	<b>286</b>	<b>0.85</b>	<b>1.04</b>	<b>0.90</b>

Source: Company Reports, Macquarie Research, November 2013

## Important disclosures:

## Recommendation definitions

**Macquarie - Australia/New Zealand**

Outperform – return >3% in excess of benchmark return  
 Neutral – return within 3% of benchmark return  
 Underperform – return >3% below benchmark return

Benchmark return is determined by long term nominal GDP growth plus 12 month forward market dividend yield

**Macquarie – Asia/Europe**

Outperform – expected return >+10%  
 Neutral – expected return from -10% to +10%  
 Underperform – expected return <-10%

**Macquarie First South - South Africa**

Outperform – expected return >+10%  
 Neutral – expected return from -10% to +10%  
 Underperform – expected return <-10%

**Macquarie - Canada**

Outperform – return >5% in excess of benchmark return  
 Neutral – return within 5% of benchmark return  
 Underperform – return >5% below benchmark return

**Macquarie - USA**

Outperform (Buy) – return >5% in excess of Russell 3000 index return  
 Neutral (Hold) – return within 5% of Russell 3000 index return  
 Underperform (Sell) – return >5% below Russell 3000 index return

## Volatility index definition\*

This is calculated from the volatility of historical price movements.

**Very high-highest risk** – Stock should be expected to move up or down 60–100% in a year – investors should be aware this stock is highly speculative.

**High** – stock should be expected to move up or down at least 40–60% in a year – investors should be aware this stock could be speculative.

**Medium** – stock should be expected to move up or down at least 30–40% in a year.

**Low-medium** – stock should be expected to move up or down at least 25–30% in a year.

**Low** – stock should be expected to move up or down at least 15–25% in a year.

\* Applicable to Asia/Australian/NZ/Canada stocks only

**Recommendations** – 12 months

**Note:** Quant recommendations may differ from Fundamental Analyst recommendations

## Financial definitions

All "Adjusted" data items have had the following adjustments made:

Added back: goodwill amortisation, provision for catastrophe reserves, IFRS derivatives & hedging, IFRS impairments & IFRS interest expense  
 Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends & minority interests

**EPS** = adjusted net profit / epowa\*

**ROA** = adjusted ebit / average total assets

**ROA Banks/Insurance** = adjusted net profit / average total assets

**ROE** = adjusted net profit / average shareholders funds

**Gross cashflow** = adjusted net profit + depreciation

\*equivalent fully paid ordinary weighted average number of shares

All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).

## Recommendation proportions – For quarter ending 30 September 2013

	AU/NZ	Asia	RSA	USA	CA	EUR	
Outperform	50.56%	56.87%	48.78%	41.00%	61.75%	47.10%	(for US coverage by MCUSA, 5.85% of stocks followed are investment banking clients)
Neutral	38.95%	25.18%	42.68%	54.40%	34.43%	30.89%	(for US coverage by MCUSA, 3.90% of stocks followed are investment banking clients)
Underperform	10.49%	17.94%	8.54%	4.60%	3.83%	22.01%	(for US coverage by MCUSA, 0.00% of stocks followed are investment banking clients)

## Company Specific Disclosures:

Important disclosure information regarding the subject companies covered in this report is available at [www.macquarie.com/disclosures](http://www.macquarie.com/disclosures).

## Analyst Certification:

The views expressed in this research accurately reflect the personal views of the analyst(s) about the subject securities or issuers and no part of the compensation of the analyst(s) was, is, or will be directly or indirectly related to the inclusion of specific recommendations or views in this research. The analyst principally responsible for the preparation of this research receives compensation based on overall revenues of Macquarie Group Ltd ABN 94 122 169 279 (AFSL No. 318062) (MGL) and its related entities (the Macquarie Group) and has taken reasonable care to achieve and maintain independence and objectivity in making any recommendations.

## General Disclaimers:

Macquarie Securities (Australia) Ltd; Macquarie Capital (Europe) Ltd; Macquarie Capital Markets Canada Ltd; Macquarie Capital Markets North America Ltd; Macquarie Capital (USA) Inc; Macquarie Capital Securities Ltd and its Taiwan branch; Macquarie Capital Securities (Singapore) Pte Ltd; Macquarie Securities (NZ) Ltd; Macquarie First South Securities (Pty) Limited; Macquarie Capital Securities (India) Pvt Ltd; Macquarie Capital Securities (Malaysia) Sdn Bhd; Macquarie Securities Korea Limited and Macquarie Securities (Thailand) Ltd are not authorized deposit-taking institutions for the purposes of the Banking Act 1959 (Commonwealth of Australia), and their obligations do not represent deposits or other liabilities of Macquarie Bank Limited ABN 46 008 583 542 (MBL) or MGL. MBL does not guarantee or otherwise provide assurance in respect of the obligations of any of the above mentioned entities. MGL provides a guarantee to the Monetary Authority of Singapore in respect of the obligations and liabilities of Macquarie Capital Securities (Singapore) Pte Ltd for up to SGD 35 million. This research has been prepared for the general use of the wholesale clients of the Macquarie Group and must not be copied, either in whole or in part, or distributed to any other person. If you are not the intended recipient you must not use or disclose the information in this research in any way. If you received it in error, please tell us immediately by return e-mail and delete the document. We do not guarantee the integrity of any e-mails or attached files and are not responsible for any changes made to them by any other person. MGL has established and implemented a conflicts policy at group level (which may be revised and updated from time to time) (the "Conflicts Policy") pursuant to regulatory requirements (including the FSA Rules) which sets out how we must seek to identify and manage all material conflicts of interest. Nothing in this research shall be construed as a solicitation to buy or sell any security or product, or to engage in or refrain from engaging in any transaction. In preparing this research, we did not take into account your investment objectives, financial situation or particular needs. Macquarie salespeople, traders and other professionals may provide oral or written market commentary or trading strategies to our clients that reflect opinions which are contrary to the opinions expressed in this research. Macquarie Research produces a variety of research products including, but not limited to, fundamental analysis, macro-economic analysis, quantitative analysis, and trade ideas. Recommendations contained in one type of research product may differ from recommendations contained in other types of research, whether as a result of differing time horizons, methodologies, or otherwise. Before making an investment decision on the basis of this research, you need to consider, with or without the assistance of an adviser, whether the advice is appropriate in light of your particular investment needs, objectives and financial circumstances. There are risks involved in securities trading. The price of securities can and does fluctuate, and an individual security may even become valueless. International investors are reminded of the additional risks inherent in international investments, such as currency fluctuations and international stock market or economic conditions, which may adversely affect the value of the investment. This research is based on information obtained from sources believed to be reliable but we do not make any representation or warranty that it is accurate, complete or up to date. We accept no obligation to correct or update the information or opinions in it. Opinions expressed are subject to change without notice. No member of the Macquarie Group accepts any liability whatsoever for any direct, indirect, consequential or other loss arising from any use of this research and/or further communication in relation to this research. Clients should contact analysts at, and execute transactions through, a Macquarie Group entity in their home jurisdiction unless governing law permits otherwise. The date and timestamp for above share price and market cap is the closed price of the price date. #CLOSE is the final price at which the security is traded in the relevant exchange on the date indicated.

## Country-Specific Disclaimers:

**Australia:** In Australia, research is issued and distributed by Macquarie Securities (Australia) Ltd (AFSL No. 238947), a participating organisation of the Australian Securities Exchange. **New Zealand:** In New Zealand, research is issued and distributed by Macquarie Securities (NZ) Ltd, a NZX Firm.

**Canada:** In Canada, research is prepared, approved and distributed by Macquarie Capital Markets Canada Ltd, a participating organisation of the Toronto Stock Exchange, TSX Venture Exchange & Montréal Exchange. Macquarie Capital Markets North America Ltd., which is a registered broker-dealer and member of FINRA, accepts responsibility for the contents of reports issued by Macquarie Capital Markets Canada Ltd in the United States and sent to US persons. Any person wishing to effect transactions in the securities described in the reports issued by Macquarie Capital Markets Canada Ltd should do so with Macquarie Capital Markets North America Ltd. The Research Distribution Policy of Macquarie Capital Markets Canada Ltd is to allow all clients that are entitled to have equal access to our research. **United Kingdom:** In the United Kingdom, research is issued and

distributed by Macquarie Capital (Europe) Ltd, which is authorised and regulated by the Financial Conduct Authority (No. 193905). **Germany:** In Germany, this research is issued and/or distributed by Macquarie Capital (Europe) Limited, Niederlassung Deutschland, which is authorised and regulated by the UK Financial Conduct Authority (No. 193905). and in Germany by BaFin. **France:** In France, research is issued and distributed by Macquarie Capital (Europe) Ltd, which is authorised and regulated in the United Kingdom by the Financial Conduct Authority (No. 193905). **Hong Kong & Mainland China:** In Hong Kong, research is issued and distributed by Macquarie Capital Securities Ltd, which is licensed and regulated by the Securities and Futures Commission. In Mainland China, Macquarie Securities (Australia) Limited Shanghai Representative Office only engages in non-business operational activities excluding issuing and distributing research. Only non-A share research is distributed into Mainland China by Macquarie Capital Securities Ltd. **Japan:** In Japan, research is issued and distributed by Macquarie Capital Securities (Japan) Limited, a member of the Tokyo Stock Exchange, Inc. and Osaka Securities Exchange Co. Ltd (Financial Instruments Firm, Kanto Financial Bureau (kin-sho) No. 231, a member of Japan Securities Dealers Association and The Financial Futures Association of Japan and Japan Investment Advisers Association). **India:** In India, research is issued and distributed by Macquarie Capital Securities (India) Pvt Ltd., 92, Level 9, 2 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra (East), Mumbai – 400 051, India, which is a SEBI registered Stock Broker having membership with National Stock Exchange of India Limited (INB231246738) and Bombay Stock Exchange Limited (INB011246734). **Malaysia:** In Malaysia, research is issued and distributed by Macquarie Capital Securities (Malaysia) Sdn. Bhd. (Company registration number: 463469-W) which is a Participating Organisation of Bursa Malaysia Berhad and a holder of Capital Markets Services License issued by the Securities Commission. **Taiwan:** In Taiwan, research is issued and distributed by Macquarie Capital Securities Ltd, Taiwan Branch, which is licensed and regulated by the Financial Supervisory Commission. No portion of the report may be reproduced or quoted by the press or any other person without authorisation from Macquarie. Nothing in this research shall be construed as a solicitation to buy or sell any security or product. Research Associate(s) in this report who are registered as Clerks only assist in the preparation of research and are not engaged in writing the research. **Thailand:** In Thailand, research is produced with the contribution of Kasikorn Securities Public Company Limited, issued and distributed by Macquarie Securities (Thailand) Ltd. Macquarie Securities (Thailand) Ltd. is a licensed securities company that is authorized by the Ministry of Finance, regulated by the Securities and Exchange Commission of Thailand and is an exchange member of the Stock Exchange of Thailand. Macquarie Securities (Thailand) Limited and Kasikorn Securities Public Company Limited have entered into an exclusive strategic alliance agreement to broaden and deepen the scope of services provided to each parties respective clients. The strategic alliance does not constitute a joint venture. The Thai Institute of Directors Association has disclosed the Corporate Governance Report of Thai Listed Companies made pursuant to the policy of the Securities and Exchange Commission of Thailand. Macquarie Securities (Thailand) Ltd does not endorse the result of the Corporate Governance Report of Thai Listed Companies but this Report can be accessed at: <http://www.thai-iod.com/en/publications.asp?type=4>. **South Korea:** In South Korea, unless otherwise stated, research is prepared, issued and distributed by Macquarie Securities Korea Limited, which is regulated by the Financial Supervisory Services. Information on analysts in MSKL is disclosed at <http://dis.kofia.or.kr/fs/dis2/fundMgr/DISFundMgrAnalystPop.jsp?companyCd2=A03053&pageDiv=02>. **South Africa:** In South Africa, research is issued and distributed by Macquarie First South Securities (Pty) Limited, a member of the JSE Limited. **Singapore:** In Singapore, research is issued and distributed by Macquarie Capital Securities (Singapore) Pte Ltd (Company Registration Number: 198702912C), a Capital Markets Services license holder under the Securities and Futures Act to deal in securities and provide custodial services in Singapore. Pursuant to the Financial Advisers (Amendment) Regulations 2005, Macquarie Capital Securities (Singapore) Pte Ltd is exempt from complying with sections 25, 27 and 36 of the Financial Advisers Act. All Singapore-based recipients of research produced by Macquarie Capital (Europe) Limited, Macquarie Capital Markets Canada Ltd, Macquarie First South Securities (Pty) Limited and Macquarie Capital (USA) Inc. represent and warrant that they are institutional investors as defined in the Securities and Futures Act. **United States:** In the United States, research is issued and distributed by Macquarie Capital (USA) Inc., which is a registered broker-dealer and member of FINRA. Macquarie Capital (USA) Inc. accepts responsibility for the content of each research report prepared by one of its non-US affiliates when the research report is distributed in the United States by Macquarie Capital (USA) Inc. Macquarie Capital (USA) Inc.'s affiliate's analysts are not registered as research analysts with FINRA, may not be associated persons of Macquarie Capital (USA) Inc., and therefore may not be subject to FINRA rule restrictions on communications with a subject company, public appearances, and trading securities held by a research analyst account. Information regarding futures is provided for reference purposes only and is not a solicitation for purchases or sales of futures. Any persons receiving this report directly from Macquarie Capital (USA) Inc. and wishing to effect a transaction in any security described herein should do so with Macquarie Capital (USA) Inc. Important disclosure information regarding the subject companies covered in this report is available at [www.macquarie.com/research/disclosures](http://www.macquarie.com/research/disclosures), or contact your registered representative at 1-888-MAC-STOCK, or write to the Supervisory Analysts, Research Department, Macquarie Securities, 125 W.55th Street, New York, NY 10019.

© Macquarie Group

<b>Auckland</b> Tel: (649) 377 6433	<b>Bangkok</b> Tel: (662) 694 7999	<b>Calgary</b> Tel: (1 403) 218 6650	<b>Denver</b> Tel: (303) 952 2800	<b>Frankfurt</b> Tel: (069) 509 578 000	<b>Geneva</b> Tel: (41) 22 818 7777	<b>Hong Kong</b> Tel: (852) 2823 3588
<b>Jakarta</b> Tel: (62 21) 515 1818	<b>Johannesburg</b> Tel: (2711) 583 2000	<b>Kuala Lumpur</b> Tel: (60 3) 2059 8833	<b>London</b> Tel: (44 20) 3037 2000	<b>Manila</b> Tel: (63 2) 857 0888	<b>Melbourne</b> Tel: (613) 9635 8139	<b>Montreal</b> Tel: (1 514) 925 2850
<b>Mumbai</b> Tel: (91 22) 6653 3000	<b>Munich</b> Tel: (089) 2444 31800	<b>New York</b> Tel: (1 212) 231 2500	<b>Paris</b> Tel: (33 1) 7842 3823	<b>Perth</b> Tel: (618) 9224 0888	<b>Seoul</b> Tel: (82 2) 3705 8500	<b>Shanghai</b> Tel: (86 21) 6841 3355
<b>Singapore</b> Tel: (65) 6601 1111	<b>Sydney</b> Tel: (612) 8232 9555	<b>Taipei</b> Tel: (886 2) 2734 7500	<b>Tokyo</b> Tel: (81 3) 3512 7900	<b>Toronto</b> Tel: (1 416) 848 3500		

Available to clients on the world wide web at [www.macquarieresearch.com](http://www.macquarieresearch.com) and through Thomson Financial, FactSet, Reuters, Bloomberg, and CapitalIQ.



## Research

### Head of Equity Research

John O'Connell (Global)	(612) 8232 7544
Matt Nacard (Australia)	(612) 8232 4017

### Retail/Consumer

Callum Bramah	(852) 9440 0883
---------------	-----------------

### Energy

Adrian Wood	(612) 8232 8531
-------------	-----------------

### ESG

Deana Mitchell	(612) 8232 4576
----------------	-----------------

### Financials

#### Banks

Michael Wiblin	(612) 8232 6089
----------------	-----------------

#### Insurance & Diversified Financials

Tim Lawson	(612) 8237 7332
Bryan Raymond	(612) 8232 2740

#### Healthcare

Dr Craig Collie	(612) 8232 4130
-----------------	-----------------

#### Industrials

#### Capital Goods

John Purtell	(612) 8232 8633
--------------	-----------------

#### Transportation / Food & Beverages

Russell Shaw	(612) 8232 7124
--------------	-----------------

#### Infrastructure

Ian Myles	(612) 8232 4157
-----------	-----------------

### Chemicals, D&C, Packaging, Builders, Steel

John Purtell	(612) 8232 8633
Liam Farlow	(612) 8237 2313

### Resources Leaders

Adrian Wood	(612) 8232 8531
Andrew Sullivan	(612) 8237 6271

### Emerging Resources

Hayden Bairstow	(618) 9224 0838
-----------------	-----------------

### Real Estate

Paul Checchin	(612) 8232 4197
---------------	-----------------

### Telcos / Media / Tourism & Leisure

Andrew Levy	(612) 8232 5165
-------------	-----------------

### Utilities

Ian Myles	(612) 8232 4157
-----------	-----------------

### Commodities & Precious Metals

Colin Hamilton (Global)	(44 20) 3037 4061
Jim Lennon (London)	(44 20) 3037 4271
Kona Haque (London)	(44 20) 3037 4334
Graeme Train (Shanghai)	(8621) 2412 9035

### New Zealand

Stephen Hudson	(649) 363 1414
Warren Doak	(649) 363 1416
Andrew Levy (Telecommunications)	(612) 8232 5165

### Emerging Leaders – Industrials

Adam Simpson	(612) 8232 4439
Andrew Wackett	(618) 9224 0867
Jodie Bannan	(612) 8232 2999

### Quantitative

Gurvinder Brar (Global)	(44 20) 3037 4036
John Conomos (Australia)	(612) 8232 5157
Burke Lau (Hong Kong)	(852) 3922 5494

### Data Services

Sheridan Duffy	(612) 8232 9786
----------------	-----------------

### Economics and Strategy

Tanya Branwhite (Strategy)	(612) 8232 7628
Richard Gibbs (Head of Economics)	(612) 8232 3935
Brian Redican (Aus Economics)	(612) 8232 7016
Matthew Brooks (Global)	(612) 8237 0645

### Find our research at

Macquarie:	<a href="http://www.macquarie.com.au/research">www.macquarie.com.au/research</a>
Thomson:	<a href="http://www.thomson.com/financial">www.thomson.com/financial</a>
Reuters:	<a href="http://www.knowledge.reuters.com">www.knowledge.reuters.com</a>
Bloomberg:	MAC GO
Factset:	<a href="http://www.factset.com/home.aspx">http://www.factset.com/home.aspx</a>
CapitalIQ	<a href="http://www.capitaliq.com">www.capitaliq.com</a>
Contact Gareth Warfield for access	(612) 8232 3207

### See and hear our analysts at

[www.macquarie.com.au/macquariedigital](http://www.macquarie.com.au/macquariedigital)

### Toll free from overseas

Canada	1800 989 8159
Hong Kong	800 96 2049
Japan	0053 161 6437
New York	1888 622 7862
Singapore	800 616 1037

### Email addresses

[FirstName.Surname@macquarie.com](mailto:FirstName.Surname@macquarie.com)

eg. [john.oconnell@macquarie.com](mailto:john.oconnell@macquarie.com)

## Sales

### Equities

Dan Ritchie (Australia)	(612) 8232 3124
Dave Robertson (New Zealand)	(649) 363 1498

### Sales

Scott Dolling (Hong Kong)	(852) 2823 3705
Brett Dimon (London)	(44 20) 3037 4831
Brendan Waller (Melbourne)	(613) 9635 8177
Daniel Pittorino (New York)	(1 212) 231 2552
Adam Millhouse (Singapore)	(65) 6231 2888
Mike Johnson (Sydney)	(612) 8232 8518

### Sales Trading

Tim Shaw (Sydney)	(612) 8232 4386
Jon Holland (Auckland)	(649) 363 1471
Mike Keen (London)	(44 20) 3037 4905
Andrew Donald (Melbourne)	(613) 9635 8270
Chris Reale (New York)	(1 212) 231 2555

### Specialist Sales

Julia Thomas (Property)	(613) 9635 9323
Phil Zammit (Emerging Leaders)	(612) 8232 3122
Ben Cleary (Emerging Resources)	(612) 8232 8822

### Alternative Strategies

Ben Clifford (Hedge)	(612) 8232 8822
Cameron Duncan (Converts)	(612) 8232 7405
Phil Cornet (Derivatives)	(612) 8237 2811
Kurt Dalton (Derivatives)	(612) 8232 5943
Greg Mann (Equity finance)	(612) 8232 1820
Shannon Donohoe (Stock borrow & loan)	(612) 8232 6997

### Syndication

Paul Staines	(612) 8232 7781
Angus Firth	(612) 8232 4039

### Fixed Income, Currencies & Commodities

Gavin Bradley (Metals & Energy)	(612) 8232 3089
Will Richardson (Currencies)	(612) 8232 3666
Sarah Milne (Fixed Income)	(44 20) 3037 4625
David Castle (Fixed Income)	(612) 8232 8300
Ian Miller (Futures)	(612) 8232 3555
Robert Gallivan (US Credit)	(1 212) 231 2356