Aussie Mine 2016
The next act

www.pwc.com.au/aussiemine2016

Foreword

Welcome to the 10th edition of Aussie Mine: The next act.

We've chosen this theme because, despite gruelling market conditions and industry-wide poor performance in 2016, confidence is on the rise. We believe an exciting 'next act' is about to begin for our mid-tier miners.

Aussie Mine provides industry and financial analysis on the Australian mid-tier mining sector as represented by the Mid-Tier 50 ("MT50", the 50 largest mining companies listed on the Australian Securities Exchange with a market capitalisation of less than $5bn at 30 June 2016).

Contents

Plot summary

The curtain comes up

The mining industry has been in decline over the last few years and this has continued with another weak performance in 2016, with the MT50 recording an aggregated net loss after tax of $1bn.

But as gold continues to develop a strong and dominant lead in the mid-tier sector, and with lithium's debut as a budding star, we believe we have seen the bottom. Rises in market capitalisation, dividend payments, cash flow from operations, and capital expenditure payments all point to an uplift in both management and investor confidence.

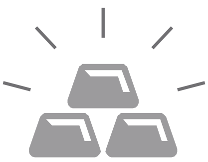
When you match these rises with falls in impairment charges and net debt (excluding one outlier), we think the drama of the past few years has passed, and the curtain has come up. Now is the time for the MT50's next act.

Gold steals the show

The first half of 2016 presented the ideal environment for Australian gold stocks to flourish. The AUD gold price soared above $1,800/oz in mid-2016 as global confidence faltered. Extraordinarily low interest rates combined with uncertainty surrounding the US presidential election, the aftermath of Brexit, and terrorism have driven gold upwards.

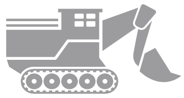
Gold companies now make up 46% of the total market capitalisation of the 2016 MT50. Never before in the history of this publication has a single commodity hogged the limelight this much. The average market cap increase for gold companies was 158% – higher than every other commodity aside from lithium.

In dollar terms, the market cap increase for the MT50 gold miners was $12.6bn – more than all other commodities combined. We explore what created this success, and take a look at the internal and external factors behind the recent recognition of value in the gold sector.



Movers and shakers

While the MT50 overall has shown a steadying level of market performance in 2016, the actions and performances of 11 companies have stood out amongst the crowd. We put the spotlight on who these movers and shakers are, and how their main critic, their investors, have rewarded them.



The next act

It seems the Australian mining industry is at a crossroads. On the one hand, it faces sharper price volatility, hard to predict demand, and a whole host of regulatory, competitor and fundamental geological issues. On the other, critics are never too far away and the public's trust in the industry is wounded. Stakeholder activism is growing and becoming more tactical and invasive.

Choices are there to be made by miners and non-miners, and big questions are being asked:

- How does the industry develop and deploy technology to minimise environmental impacts?
- What needs to be done to repair the brand of mining and restore the public trust?
- Is there an opportunity to engage with end-user customers first hand, offering niche specialised production and output?
- Is there an opportunity in traceable "green mining products" at a premium to market prices?
- Will non-miners see opportunity and enter the sector with different ways of doing business, new ways of mining and a new pool of talent?

Where are they now?

In 2007, the first edition of Aussie Mine was published, and the notion of an Australian MT50 (Mid-Tier 50) group of mining companies first hit the stage. After a ten year run, Aussie Mine has become a staple part of the industry's annual calendar, and the MT50 is recognised as a critical part of the Australian mining industry's DNA.

But of the original MT50 2007 cast, only eleven veteran players remain. We ask "where are they now?" and take a retrospective look at what became of the other 39 companies. Between successes, failures and takeovers it's been a hell of a show.

The three performances of the last 10 years

The last ten years have proven one thing: mid-tier Australian miners are mortal. Without a strong balance sheet mid-tier miners only survive at the whims of demand and supply turbulence. But equally, the mid-tiers are strategic risk-takers, poised for growth and hungry for opportunity. To understand where we're heading in 2017 we take a look back at history and consider the three major cycles over the past ten years.

Aggregated market capitalisation of the MT50 Index 2007-2016

An economic giant awakened to fuel a super cycle

The 2000s commodities boom saw the rise, and fall, of many physical commodities. Resource-hungry BRIC economies, in particular the rise of China, emerged to fuel a global commodity super-cycle. But when the global financial crisis hit commodity prices dropped, liquidity tightened, valuations plummeted and investors reduced their risk. At the same time China's industrialisation heralded an irrepressible demand for Australian resources. As demand surged in 2009 to 2011, supply couldn't keep up and commodity prices soared. After the brief interruption, the boom times were back.

Global growth slowed and uncertainty and volatility prevailed

At a time of peak demand, steadfast miners and new market entrants accelerated expansion efforts and invested heavily to reap the rewards of the boom. But as China's growth slowed, supply outstripped demand and commodity prices started to fall. As the cycle turned, investors lost confidence and prolonged uncertainty and volatility prevailed.

The curtain comes up on the next act

The curtain is starting to rise on a new scene for Australian mining. Gold, coal, aluminium, nickel, copper and iron ore prices have all risen in 2016. The downturn has stabilised and investments made are showing rewards for miners who controlled costs and strengthened their capital position. This is the bottom of the cycle and the MT50 are about to write a new story.

The curtain comes up on the next act

The performance of mining companies has been dismal in the last few years, falling hard from the glory of the boom days. Some miners have dug their heels in and come out strong, new players have entered the scene, and others have disappeared altogether.

Last year the MT50 recorded its first ever EBITDA loss in the ten year history of Aussie Mine and this year followed up with a net loss after tax of $1bn, so it hasn't been pretty. But that's not the whole story. We are now seeing signs that the MT50 has hit bottom, survived the worst, and are on the comeback.

Signs of a turnaround

A return to positive EBITDA

EBITDA for 2016 was $3.3bn, up from -$800m for last year's MT50

Ordinary dividends increased by 21%

Many MT50 gold companies dusted off their dividend policies following strong 2016 results as the mid-tiers cautiously returns cash to investors. Despite the increase dividends remain substantially below the indulgent days of the mining boom.

Net loss of $1bn recognised

Performance may be improving but the industry is still in the red at the bottom line.

Capital expenditure increased by 37%

Management's confidence in existing projects and the pursuit of sustainable growth is rising.

23% increase

in the market capitalisation of the MT50, driven mainly by investor confidence in gold and lithium.

Impairments of $2bn in 2016, but down by 36%

Following a record impairment for the MT50 of $5.5bn in 2015 and a cumulative total of $12.7bn between 2012-2015 during the downturn, impairments have now dropped. **It seems the slate has been cleared.**

Net cash position increased by 5*%

Following successful equity raisings and debt pay-downs, the MT50 (*excluding one outlier) has improved its capital position and is better prepared to meet the challenges and opportunities ahead.

Premium of market capitalisation over net assets has increased from 3% to 47%

Recognition of an improvement in market outlook and investor confidence.

$44.5bn

Aggregate market capitalisation of the MT50 at 30 June 2016

The cast: 2016 MT50

The 50 largest mining companies listed on the Australian Securities Exchange with a market capitalisation of less than $5bn at 30 June 2016.

2016 Rank	2015 Rank	Ticker	Company	Primary Commodity	Market capitalisation at 30 June 16	Market capitalisation change 2015 to 2016	Market capitalisation at 31 Dec 07	2007 Rank	Market capitalisation change 2007 to 2016
1	2	ASX:AWC	Alumina Limited	Aluminium	3,729	(13%)			
2	10	ASX:EVN	Evolution Mining Limited	Gold	3,421	200%			
3	11	ASX:OGC	OceanaGold Corporation	Gold	3,093	217%			
4	7	ASX:NST	Northern Star Resources Limited	Gold	2,966	126%			
5	3	ASX:ILU	Iluka Resources Limited	Mineral Sands	2,710	(16%)	1,114	21	143%
6	na	ASX:MMG	MMG Limited	Diversified	1,758	(28%)			
7	20	ASX:RRL	Regis Resources Limited	Gold	1,710	217%			
8	9	ASX:OZL	OZ Minerals Limited	Copper	1,707	41%			
9	12	ASX:IGO	Independence Group NL	Diversified	1,677	76%	1,028	23	63%
10	18	ASX:SYR	Syrah Resources Limited	Graphite	1,575	155%			
11	8	ASX:MIN	Mineral Resources Limited	Iron Ore	1,553	25%			
12	29	ASX:SBM	St Barbara Ltd.	Gold	1,461	418%	775	34	89%
13	4	ASX:NHC	New Hope Corporation Limited	Coal	1,180	(25%)	1,860	8	(37%)
14	25	ASX:SAR	Saracen Mineral Holdings Limited	Gold	1,153	238%			
15	6	ASX:WHC	Whitehaven Coal Limited	Coal	1,066	(18%)			
16	27	ASX:ORE	Orocobre Limited	Lithium	1,001	214%			
17	14	ASX:AQG	Alacer Gold Corp.	Gold	930	5%			
18	39	ASX:RSG	Resolute Mining Limited	Gold	842	331%	487	49	73%
19	13	ASX:SFR	Sandfire Resources NL	Copper	823	(9%)			
20	89	ASX:PLS	Pilbara Minerals Limited	Lithium	706	921%			
21	19	ASX:MLX	Metals X Limited	Gold	669	15%			
22	na	ASX:GXY	Galaxy Resources Limited	Lithium	641	1498%			
23	16	ASX:WSA	Western Areas Limited	Nickel	582	(23%)	908	27	(36%)
24	28	ASX:GOR	Gold Road Resources Limited	Gold	569	96%			
25	31	ASX:TGZ	Teranga Gold Corporation	Gold	466	79%			
26	32	ASX:PRU	Perseus Mining Limited	Gold	422	97%			
27	81	ASX:MNS	Magnis Resources Limited	Graphite	418	454%			
28	49	ASX:BDR	Beadell Resources Ltd	Gold	401	171%			
29	15	ASX:ZIM	Zimplats Holdings Ltd.	Diversified	387	(49%)	1,502	14	(74%)
30	na	ASX:DCN	Dacian Gold Limited	Gold	387	649%			
31	37	ASX:TBR	Tribune Resources Limited	Gold	376	88%			
32	58	ASX:DRM	Doray Minerals Limited	Gold	329	189%			
33	22	ASX:PDN	Paladin Energy Ltd	Uranium	317	(22%)	4,162	1	(92%)
34	33	ASX:MGX	Mount Gibson Iron Limited	Iron Ore	284	30%	2,229	6	(87%)
35	54	ASX:CII	CI Resources Limited	Phosphate	269	112%			
36	88	ASX:SLR	Silver Lake Resources Limited	Gold	259	268%			
37	na	ASX:GMM	General Mining Corporation Limited	Gold	253	3513%			
38	na	ASX:NMT	Neometals Limited	Lithium	252	451%			
39	na	ASX:AJM	Altura Mining Limited	Lithium	232	1106%			
40	40	ASX:TZN	Terramin Australia Limited	Zinc	216	18%			

*Lynas Corporation is also a returned entrant in 2016.

Page 32

What happened to the 2007 MT50: Where are they now?

2016 Rank	2015 Rank	Ticker	Company	Primary Commodity	Market capitalisation at 30 June 16	Market capitalisation change 2015 to 2016	Market capitalisation at 31 Dec 07	2007 Rank	Market capitalisation change 2007 to 2016
41	na	ASX:EGS	Eastern Goldfields Limited	Gold	210	na			
42	105	ASX:RMS	Ramelius Resources Limited	Gold	207	283%			
43	56	ASX:LYC*	Lynas Corporation Limited*	Rare Earths	185	61%	559	40	(67%)
44	60	ASX:TRY	Troy Resources Limited	Gold	184	71%			
45	36	ASX:ERA	Energy Resources of Australia Ltd.	Uranium	181	(10%)	3,719	2	(95%)
46	21	ASX:CDU	CuDeco Ltd.	Copper	178	(63%)			
47	na	ASX:BLK	Blackham Resources Limited	Gold	172	460%			
48	42	ASX:AVB	Avanco Resources Limited	Copper	143	(17%)			
49	41	ASX:MML	Medusa Mining Limited	Gold	133	(23%)			
50	na	ASX:BKY	Berkeley Energia Limited	Uranium	133	146%			

Survivors (since 2007) New entrants Returned entrant Survivors (from last year)

Exiting stage left

Company	Market capitalisation as at 30-Jun-16	Market capitalisation as at 30-Jun-15	Primary Commodity	Rationale for exit
Moving up and onto new things				
AngloGold Ashanti Limited	9,940	4,747	Gold	Market capitalisation has doubled, exceeding the $5bn cut-off.
Sirius Resources NL	na	1,360	Nickel	Acquired by Independence Group on 22 Sep 2015
Sphere Minerals Limited	na	676	Iron Ore	Compulsory acquisition by Glencore subsidiary
Endeavour Mining Corporation	1,935	267	Gold	Delisted from ASX, but remains listed on TSX
Aquarius Platinum Limited	na	207	Platinum	Acquired by Sibanye Gold Limited (JSE:SGL)
Getting the hook				
Atrum Coal NL	100	206	Coal	Market capitalisation dropped below minimum threshold
OM Holdings Limited	59	198	Manganese	Market capitalisation dropped below minimum threshold
Newfield Resources Limited	89	164	Gold	Market capitalisation dropped below minimum threshold
Kingsgate Consolidated Limited	0.4	159.8	Gold	Thai government reviewed licencing of primary producing mine
Peninsula Energy Limited	86	152	Uranium	Market capitalisation dropped below minimum threshold
Panoramic Resources Limited	58	149	Nickel	Market capitalisation dropped below minimum threshold
Yancoal Australia Limited	85	149	Coal	Market capitalisation dropped below minimum threshold
Brockman Mining Limited	129	365	Iron Ore	Market capitalisation dropped below minimum threshold
Wolf Minerals Limited	125	340	Tungsten and iron	Market capitalisation dropped below minimum threshold
Coal of Africa Limited	112	148	Coal	Market capitalisation dropped below minimum threshold
Grange Resources Limited	106	139	Iron Ore	Market capitalisation dropped below minimum threshold
The flop				
Arrium Limited	na	396	Iron Ore	Trading suspended and entered into voluntary administration
Total	**12,824**	**9,823**		

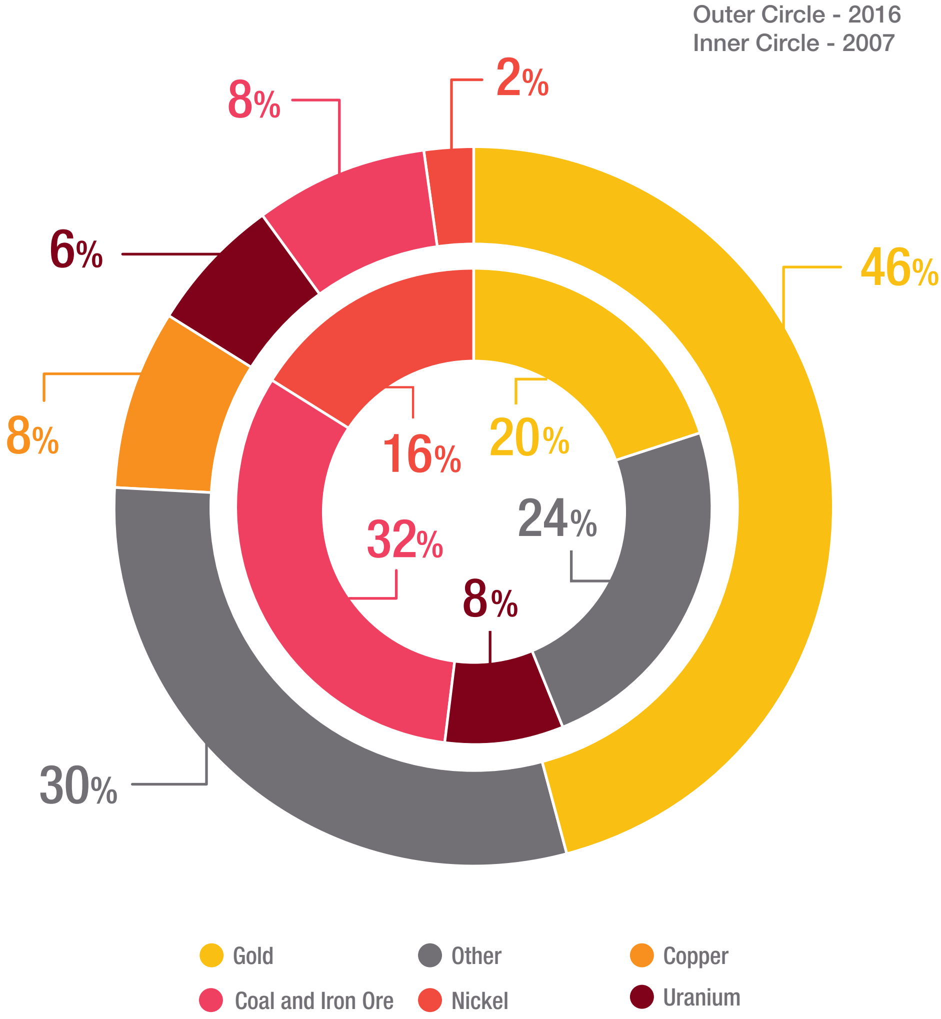
Gold steals the show

MT50 gold companies have **more than doubled** since 2007

Average AUD gold price increased by **9%** in 2016

The dominance of gold has continued in 2016, and the sector now accounts for 23 companies – almost half of the MT50. With an aggregated market capitalisation of $20.6bn as at 30 June 2016, the MT50 gold miners have experienced an unparalleled 158% uplift in value (or $12.6bn) since 2015.

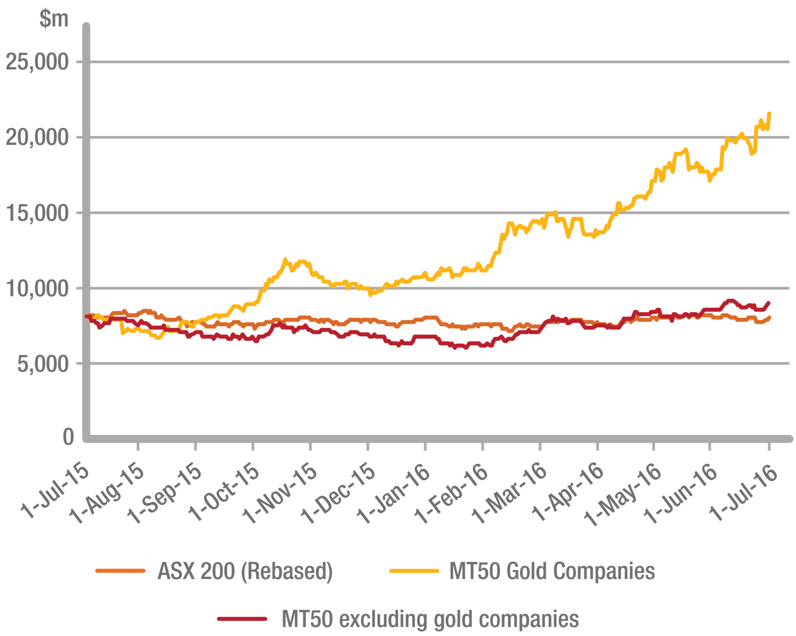
MT50 composition by market capitalisation



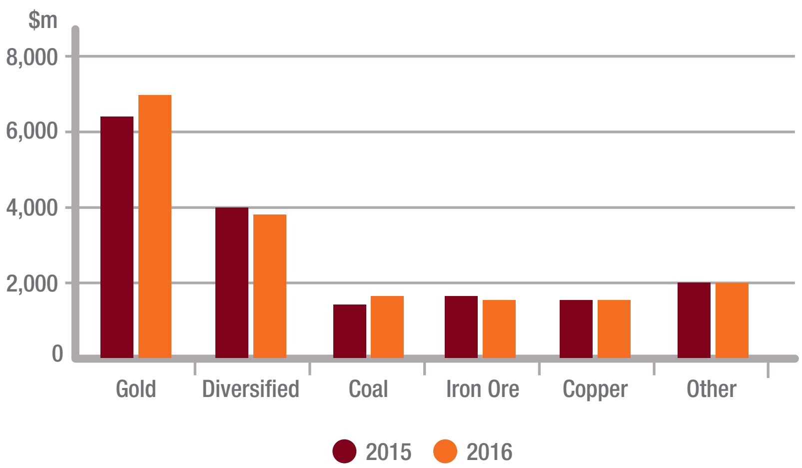
Market capitalisation premium **over net assets** for **mid-tier gold companies** has soared from **$1.03bn** in 2015 to **$11.28bn** this year

So why is gold the lead performer in 2016?

MT50 gold companies market capitalisation vs ASX 200



MT50 revenue year-on-year



Diminishing global confidence

In times of uncertainty gold is a refuge for investors, and 2016 has been no exception. Wavering investor confidence in the current macroeconomic environment has been a boon for gold miners. 2016 has proven to be tumultuous year on the global stage, with:

- the unpredicted vote for Brexit, heralding unclear economic repercussions for Great Britain and Europe;
- the choice of Donald Trump as the Republican US presidential candidate and his subsequent election;
- continuation of South China Sea territorial disputes;
- a relative drop in the growth of resources demand in China;
- ever-present social and religious unrest in the Middle East; and
- criticisms of Europe's ability to ensure the security of its people and economies; both from terrorist attacks and politically fuelled violence, in combination with ever increasing immigration levels.

Operating revenue bolstered by the Australian dollar and production increases

Gold miners increased their share of the MT50 revenue from 38% to 41% ($6.2bn to $7.0bn). This rise was despite a 4% decrease in the underlying average USD gold price from 2015. Favourable USD/AUD FX rates shielded the decline in prices with the average AUD gold price increasing by 9%. The FX tailwind allowed Australian producers to thrive by providing a competitive cost advantage in the global market.

Never before in the history of this publication has a single commodity hogged the limelight this much

Only two commodities increased aggregated revenue in 2016: **gold and coal**

Movers and shakers

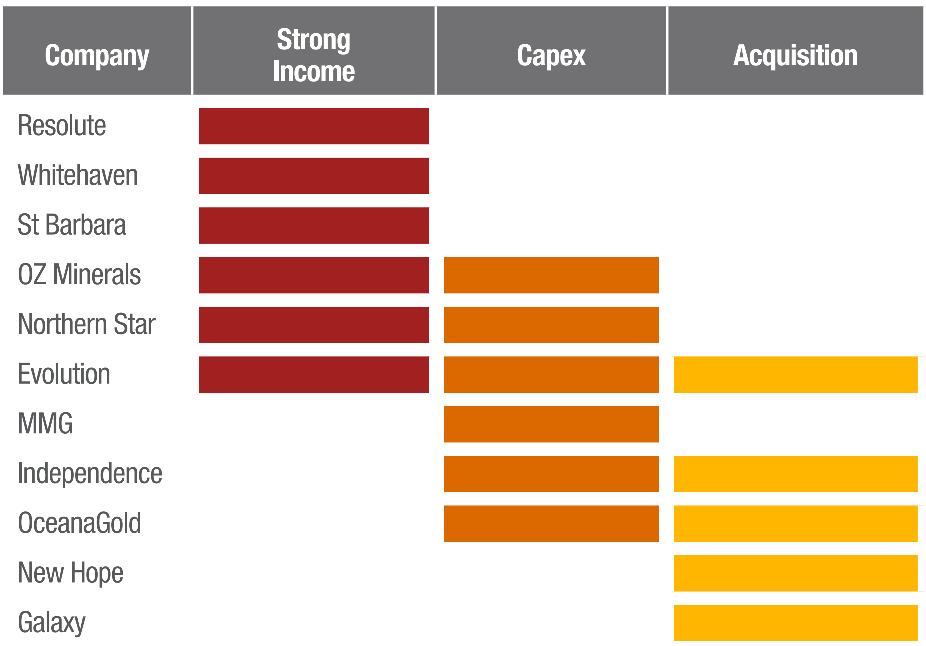
The critique: Performance stand-outs

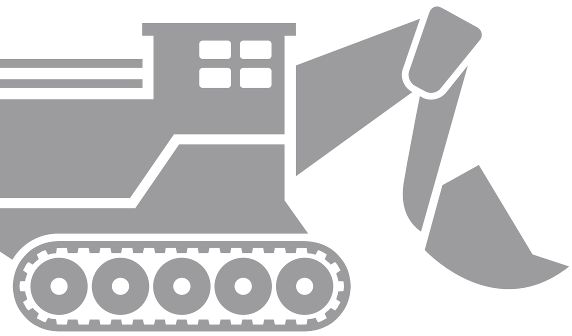
Eleven companies in the 2016 MT50 stood out this year as the real movers and shakers:

- Through a mix of production increases and tight cost control six companies were able to drive a very strong earnings performance
- Six companies executed significant capital expenditure programmes to underpin their asset portfolio and ready themselves for future production increases
- Five companies made acquisitions of assets that added production volumes or near production assets to their portfolio

Let's take a look at what these stars did and how their performance was rated by their most obvious critic, their investors:

The big moves of the MT50





Only one company made a move across each of earnings growth, capex and acquisitions

So let's start with taking a closer look at Evolution Mining.

Evolution Mining (EVL) – Gold: 54% increase in operating income, $235m spent on capex and $769m spent on acquisitions. During 2016, EVL completed the acquisition of the Cowal mine (from Barrick) and was able to successfully integrate the Cowal and Mungari (acquired in 2015) mines into its portfolio. Together, the two new mines performed strongly post-acquisition to contribute 50% of EVL's 2016 operating cash flows, and the doubling of annual production volumes and revenues to more than 800,000 ounces and $1.3bn respectively year on year. Effective cost control across all operations meant that, with a small decrease in all-in sustaining costs (AISC), EVL also took maximum benefit from the rising A$ gold price across the year. The capital spend was well-spread across EVL's entire asset portfolio. Investors rewarded this strong all-round performance with a 200% lift in market capitalisation.

There were five other companies that delivered robust earnings growth

Resolute Mining (RSG) – Gold: 380% increase in operating income. A 9% increase in gold sold to 341,000 ounces coupled with only a 9% increase in AISC allowed RSG to take full advantage of an 11% increase it its realised A$ gold price. Together these delivered approximately $70 million to the bottom line. Another key earnings contributor was a c.$60 million decrease in Depreciation & Amortisation expense, the direct benefit of taking significant impairments to Mine Properties and Plant & Equipment in 2015. While the market didn't quite match the increase in earnings, a healthy 331% increase in market cap was very positive recognition.

Whitehaven Coal (WHC) – Coal: 237% increase in operating income. The first full year of operations at the Maules Creek mine delivered an increase in production of 4.2Mt. This, together with small increased levels of production from the Narrabri mine (despite 2 longwall moves), meant that total sale tonnes rose by 42% to more than 15Mtpa. An 8% decrease in cash costs meant that WHC was also able to outperform a 5% decrease in realised coal prices. Despite this very commendable outcome for WHC, it suffered from the market malaise that has hit coal stocks globally and took an 18% hit to its market cap year on year. The good news is that recent rises in coal prices have seen a big shift in that market sentiment with WHC's market cap rising almost 200% since 30 June 2016.

St Barbara (SBM) – Gold: 125% increase in operating income. SBM continued its portfolio optimisation and unit cost reduction strategy of the past two years to match a 7% decrease in AISC with an 11% increase in realised gold prices. Combined with a stable production level of almost 400,000 ounces, the market rewarded SBM with a massive 418% increase in capitalisation.

OZ Minerals (OZL) – Copper: 496% increase in operating income and $251m spent on capex. OZL is benefitting from falling strip ratios at its flagship Prominent Hill mine. Year on year this delivered a cost saving of more than 20%. These cost savings and a 40% increase in copper sales tonnes (offset by a 25% decrease in gold sales tonnes and higher treatment charges and refining costs) drove the massive increase in income. OZL also announced the acceleration of planning on the Carrapateena project. So despite a lacklustre copper market generally, OZL's income and development outcomes were recognised with a 41% increase in market cap.

Northern Star (NST) – Gold: 45% increase in operating income and $190m spent on capex. Despite a modest fall in sales volumes to c.560,000 ounces, NST was able to benefit from a 9% lift in realised A$ gold prices and its ability to tightly manage its all-in sustaining cost base. The capex spend reflects an extensive development and exploration programme across its asset portfolio. This diligent performance saw market cap increase by 126%.

Three other companies undertook significant capital expenditure programmes in 2016

MMG Limited (MMG) – Diversified: $2.7bn spent on capex. By far and away the biggest spender in the 2016 MT50, MMG has made a big bet on the Las Bambas mine it acquired from Glencore in 2014. With a total project cost of US$9.7bn, Las Bambas achieved commercial production on 1 July 2016 and is now moving towards steady state operations. At full production, Las Bambas ranks as one of the world's most significant copper mines. A new entrant to the MT50 after its secondary listing on the ASX in December 2015, MMG has seen a 28% fall in its market cap (as measured by SEHK market capitalisation in 2015).

Independence Group (IGO) – Diversified: $237m spent on capex and $1.1bn spent on acquisitions. In 2016, IGO completed the acquisition of Sirius Resources for $1.1bn in cash and scrip, $250m and $860m respectively. The majority of IGO's capex spend has gone on pushing ahead hard in developing the Nova nickel project in Western Australia (a Sirius asset), with production expected to commence late in 2016. With a strategic acquisition and a committed development programme on a near production asset, IGO has been rewarded with a 76% increase in its market cap.

OceanaGold (OGC) – Gold: $195m spent on capex and $520m spent on acquisitions. OGC's capital spend has been spread across several of the assets in its portfolio, namely Dipidio, Macraes/Reefton and Haile. The Haile mine was acquired as part of the all scrip Romarco acquisition, which was completed on 1 October 2015. OGC also acquired the Waihi mine from Newmont on 30 October 2015 for c.$100m in cash. The market raised OGC's capitalisation by 217% in recognition of its commitment to growth through development and acquisition.

Two other companies made acquisitions

New Hope Group (NHC) – Coal: $850m spent on acquisitions. On 1 March 2016, NHC acquired Rio Tinto's 40% interest in the low-cost Bengalla thermal coal mine in the Hunter Valley for cash. While the market lowered NHC's capitalisation by 25% year on year it has sought to reward the company in recent times for what has turned out to be a timely expansion of its production base to almost 9mtpa. With the recent coal price increases and improvement in market sentiment, NHC's market capitalisation has risen by c.30% since 30 June 2016.

Galaxy Resources (GXY) – Lithium: $228m spent on acquisitions. In May 2016, Galaxy announced an all scrip bid for General Mining. This deal was successfully closed on 9 August and has allowed GXY to commence the reopening of the Mt Cattlin mine in Western Australia, with commissioning expected before the end of 2016. This deal, along with the very significant surge in market support for lithium, lifted GXY's market capitalisation a staggering 1498% year on year.

Spotlight on Lithium

Lithium was a rising star in 2016 with a 477% increase in market capitalisation and four new entrants in the MT50, joining Orocobre.

Investors reacted to:

- unequalled growth in demand, which reportedly will continue to surge;
- the willingness of China to pay whatever price to guarantee supply; and
- the infiltration of portable and mobile devices and eagerly anticipated shift to “green” electric vehicles, all of which are powered by lithium-ion rechargeable batteries.

Is lithium a one hit wonder?

Will the future demand for lithium be sufficient to support the influx of supply that is currently in the pipeline. If global lithium demand doesn’t continue to trend as aggressively as expected, the consequences of failing to win the race-to-market will be magnified.

Have we have seen this show before?

In many ways, what we are seeing in lithium today is reminiscent of the iron ore supercycle:

- ***three major producers*** dominate supply and have large untapped reserves;
- a sharp price rise has prompted immense ***investor support for yet to be proven junior miners;***
- ***a wave of new projects*** in Australia and South America are rushing to capitalise on high prices;
- ***China is the largest consumer*** in the world; and
- ***new economic forces*** are driving unprecedented expectations of global demand.

We anticipate two scenarios that could play out:

1. major lithium producers will slash costs and crowd out junior and mid-tier producers; or
2. junior and mid-tier producers will secure off-take agreements with end-users attracted to controllable prices and a reliable source of supply.

The next act

Today management teams in the MT50 are trying their best to manage their businesses and deliver value to shareholders in the face of volatile prices, hard to predict demand and a whole host of regulatory, competitor and fundamental geological issues. On top of all of this, the public's trust in the industry is wounded with stakeholder activism growing and becoming more invasive. Despite the importance of mining to Australia's economy, the public is being told to find other more promising sources of growth.

It seems that mining as a whole is at a crossroads. How will the public's trust in the industry evolve? Can miners restore trust or will the public demand greater and greater levels of scrutiny and regulation? Will today's miners continue to be the miners of the future or will new entrants wade into the sector to disrupt value chains with radically new methods of mining, new ideas on end-user engagement and new ways to brand themselves or their products?

Setting the scene: The overburden of mining

It's becoming increasingly hard for miners to get on with the job of mining. Anti-mining activism has intensified, and conservation groups are more tactical and litigious than ever before. Investors have lost confidence in mining, disappointed with poor management decisions and the lack of capital discipline, and ethical investment funds are on the rise.

Bankers have yielded to pressure from public interest groups by steering clear of funding controversial mining projects, as we have seen with the Carmichael coal mine in the Galilee Basin. Governments are also playing a balancing act - standing between lobbyists demanding intervention and regulation, workers demanding job security, and taxpayers demanding a share in the wealth of the country's resources.

A playbook for change

In a world hungry for innovation and change, new technology and disruptive forces are on the rise. The setting for mining is ripe for change.

So what can miners, or indeed non-miners, do? What new business opportunities might present themselves to today's MT50 or future members of the mid-tier?

What needs to change for the mining industry to benefit from technological advances and other disruptive influences rather than fall victim to them?

Many mining companies have a highly focused conventional view of their business and the environment in which they operate. But while it's served them well in the past, it's less likely to work in the future. And that's because mining can't ignore the role it plays – in a much larger ecosystem, an ecosystem that is growing and becoming more complex every day.

Clean-up act

Mine rehabilitation has continued to be a hot topic with widespread accusations that mining companies are shirking their responsibilities. It's a significant problem when you realise that there are over 50,000 abandoned mines in Australia.

In the MT50 alone, there are over 100 producing mines. How will these be managed in the future? Will we see a move towards rehabilitating more progressively to responsibly deal with the problem when there is cash during production.

Industry and environmental experts have raised concerns recently that rehabilitation securities held by state governments are not enough. Bargain sales of mines, for example, Blair Athol, Isaac Plains, and Callide, has prompted criticism that the majors are offloading rehabilitation responsibility to junior miners that have less cash available to spend on clean-ups.

The issue came to a head earlier this year with the collapse of the Queensland Nickel refinery in Townsville, which reignited community sentiment that taxpayers shouldn't be footing the clean-up bill. In response to this and other mine failures over the past, the "Chain of Responsibility" bill was passed in Queensland to force key stakeholders to meet their rehabilitation responsibilities.

We don't think the answer lies in increased regulation. Many miners in the MT50 rehabilitate progressively. But with the brand of mining this damaged there can be no exceptions. In our view, all companies should accept their social burden and proactively self-regulate on rehabilitation. Only then will the industry take a step towards winning back the public's trust.

Thinking through the future, today

Have mining companies really thought openly and honestly enough about what the future might hold for their businesses and what they should be doing now to make sure they profit from it?

To help you think about what the next ten years might look like, we took a trip into the future. We brought together experts from across the global PwC network and industry to explore how the sector will be affected by the powerful dynamics reshaping not only mining but also the global economy and ecosystem that the MT50 operate in. Here's a sneak preview of the possible future scenarios that might play out:

Competing in the era of new entrants

New entrants come into the sector. They can come from anywhere, are cashed-up and technology and brand savvy. They appear at a time when traditional players are struggling for the capital, skills and capacity to innovate and when barriers to entry - as a result of depressed asset values - are low.

Technological change opens up opportunity

Tools like blockchain mean it's now feasible to trace the source of copper in the electrics of an individual car to the mine that produced the original copper concentrate. Is it possible that an Australian mid-tier copper producer, boasting an environmental 5-star rating on its flagship mine, will sell the output from that small, low-cost mine directly to Toyota at a 20% price premium for use in the "really green" 2025 model Prius?

Engaging a divided and sceptical public

The mid-tier sector often argues that the major miners dominate the social licence debate and it has no voice with the public. Yet, the MT50 has 120 mining projects in Australia and elsewhere, more than Rio Tinto and BHP Billiton combined. Maybe it is time for mid-tier miners to take up the fight and show the Australian public that they are safe, responsible and sustainable, and they can be trusted to do the right thing without endless layers of regulation and oversight.

The backdrop for mining has never been this challenging.

With the brand of mining this damaged, there can be no exceptions. In our view, all companies should accept their social burden and proactively self-regulate on rehabilitation.

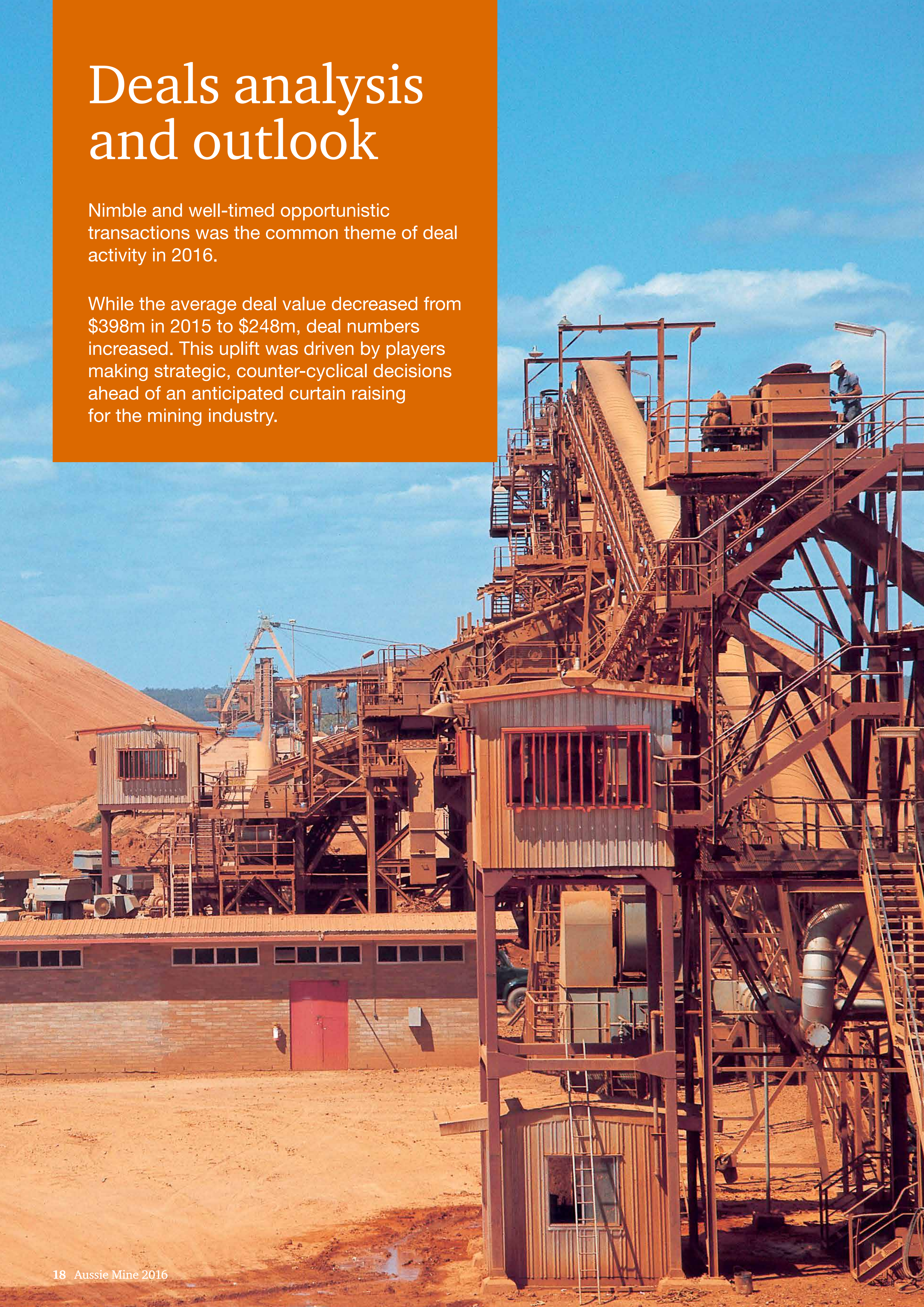
In a world hungry for innovation and change, new technology and disruptive forces are on the rise. The setting for mining is ripe for change. Have mining companies really thought openly about what the future might hold for their business?

Look out for PwC's insights about the transformation of mining, to be released soon.

Deals analysis and outlook

Nimble and well-timed opportunistic transactions was the common theme of deal activity in 2016.

While the average deal value decreased from $398m in 2015 to $248m, deal numbers increased. This uplift was driven by players making strategic, counter-cyclical decisions ahead of an anticipated curtain raising for the mining industry.



Lithium debuts and gold returns for another notable performance

Gold was once again a major performer, accounting for seven of the 16 completed deals in 2016. Australian gold miners took advantage of highly-geared majors seeking to consolidate their balance sheets by disposing of assets for seemingly reasonable prices. Buyer preference was for assets in late-stage development or currently producing. One of the key triggers that incentivised bold players was the ability to realise operating synergies and draw positive cash-flows.

Gold was the standout performer, but lithium was in the limelight. With seven transactions at an average deal value of $405m, Australian lithium producers hotly contested the race to first production and market share. With a fragmented market, analysis has shown a strong transaction focus by the MT50 lithium miners to pursue joint-venture or majority stake options. This rationale underpinned Galaxy Resources 100% acquisition of its JV partner General Mining in the once mothballed Mt Cattlin project. The merged entity has resumed operations with first supply expected in December 2016.

Upcoming episodes: Outlook for 2017 deal activity

- A low volume of gold transactions due to cyclically high valuations now deterring cashed-up buyers. Of the gold transactions, we may see mid-tiers opportunistically divest high-cost mines or smaller assets for strategic reasons; for example, Evolution's recent divestment of the Pajingo mine.
- We expect high valuations to limit transactional activity by MT50 lithium companies to scrip-based deals.
- Other MT50 lithium deal activity is likely to be dominated by Chinese lithium processors seeking vertical integration and offshore end users looking to guarantee supply.
- Bulk commodity transactions will continue to be rare amongst the mid-tier sector. We expect those deals to occur outside the MT50 and likely involve Private Equity firms or other investor groups pursuing a short-term return of value.
- We think the next arbitrage opportunity for cashed up mid-tiers will be in quality producing, or near producing copper assets. As the majors continue to consolidate their balance sheets and concentrate on their core commodity assets, it's likely some quality assets either producing or in near term development will be divested at reasonable prices.
- Vendors of Queensland-based assets may find their potential buyer pool limited by bidder concerns over the new Chain of Responsibility Legislation in that State.

Under the spotlight

67% of total deal value came from 3 transactions:

1. New Hope's $846m 40% acquisition of Bengalla Coal Project, the only bulk commodity deal in 2016

2. Independence Group's acquisition of Sirius Resources for $1.1bn, the only mega deal since 2014

1.1bn

3. Evolution Mining's cash acquisition of Cowal gold mine from Barrick for $703m

The majority of deals were scrip funded

14/16

Star performers were lithium and gold with 14/16 of completed deals

M&A transaction listings:

Completed M&A Transactions greater than $15 million

(June 2015 to September 2016)

Target	Acquirer	Sector	Target country	Ownership interest (%)	Approximate deal value $AUDm	Announcement date	MT50 Connection	MT50 Role
Cowal Gold Mine*	Evolution Mining Limited	Gold	Australia	100	703	May-15	Evolution Mining Limited	Acquirer
Sirius Resources NL*	Independence Group NL	Nickel	Australia	100	1111	May-15	Independence Limited	Acquirer
Reed Industrial Minerals Pty Limited	GFL International Co., Limited	Lithium	Australia	25	26	Jul-15	Neometals Limited	Seller
Romarco Minerals Incorporated.	OceanaGold	Gold	Canada	100	571	Jul-15	OceanaGold	Acquirer
Mt. Henry Gold Project	Metals X Limited	Gold	Australia	100	25	Jul-15	Metals X Limited	Acquirer
RNI NL, Gold Assets in Bryah Basin	Metals X Limited	Gold	Australia	100	20	Jul-15	Metals X Limited	Acquirer
Phoenix Gold Limited	Evolution Mining Limited	Gold	Australia	80	56	Aug-15	Evolution Mining Limited	Acquirer
Bengalla Coal Project	New Hope Corporation Limited	Coal	Australia	40	846	Sep-15	New Hope	Acquirer
Aditya Birla Minerals Limited	Metals X Limited	Copper	Australia	100	103	Oct-15	Metals X Limited	Acquirer
Reed Industrial Minerals Pty Ltd	Jiangxi Ganfeng Lithium Co., Limited	Lithium	Australia	18	38	Feb-16	Neometals Limited	Seller
Amara Mining plc	Perseus Mining Limited	Gold	United Kingdom	100	106	Feb-16	Perseus Mining Limited	Acquirer
General Mining Corporation Limited	Galaxy Resources Limited	Lithium	Australia	98	228	May-16	Galaxy and General Mining	Merger
Reed Industrial Minerals Pty Limited	Process Minerals International Pty Limited	Lithium	Australia	13	27	Jun-16	Neometals Limited	Seller
Pajingo Gold Mine Pty. Limited	Minjar Gold Pty Limited	Gold	Australia	100	45	Aug-16	Evolution Mining Limited	Seller
Total					**3,905**			

*Deal was pending in Aussie Mine 2015, with transactions completed in 2016.

Pending M&A Transactions greater than $15 million

(June 2015 to September 2016)

Target	Acquirer	Sector	Target country	Ownership interest (%)	Approximate deal value $AUDm	Announcement date	MT50 Connection	MT50 Role
Gryphon Minerals Limited**	Teranga Gold Corporation	Gold	Australia	100	84	Jun-16	Teranga Gold Corporation	Acquirer
Langer Heinrich Uranium (Pty) Limited	CNNC Overseas Uranium Holding Limited	Uranium	Namibia	24	233	Jul-16	Paladin Energy Limited	Seller
Plutonic Gold Mine (Northern Star Resources Limited)**	Billabong Gold Pty Limited	Gold	Australia	100	48	Aug-16	Northern Star Resources Limited	Target
Sierra Rutile Limited	Iluka Resources Limited	Mineral Sands	Sierra Leone	100	449	Aug-16	Iluka Resources Limited	Acquirer
70% Interest in Bellas Gate Licences & 100% Interest in Five Licences Covering 276 Sq Km	Carube Copper Corp.	Copper	Jamaica	100	14	Sep-16	Oz Minerals	Target
Total					**828**			

**Subsequent to 30 September two pending deals have closed. These include: Teranga Gold's scrip takeover of Gryphon Minerals (including a 90% interest in the Banfora open-pit gold project in Burkina Faso) and Northern Star's cash and scrip divestment of Plutonic Gold Mine to Billabong Gold.

Source: Capital IQ, Public company releases.

Financial analysis

a. Aggregated income statement

Income statement ($m)	2016	2015	$ change	% change
Revenue from ordinary activities				
Operating revenue	17,354	16,697	657	4%
Non-operating revenue	20	1	19	n/m
Total revenue	**17,374**	**16,698**	676	4%
Less expenses from ordinary activities	(9,431)	(9,163)	(269)	3%
Gross profit	**7,943**	**7,536**	407	5%
Selling general and adminitrative expenses	(1,967)	(1,956)	(10)	1%
Exploration expenses	(230)	(276)	46	(17%)
Provision for bad debts	(5)	(14)	9	(61%)
Stock based compensation	(64)	(21)	(43)	202%
Other income/expenses	(355)	(405)	50	(12%)
Adjusted EBITDA	**5,322**	**4,864**	458	9%
Depreciation and amortisation	(3,958)	(3,325)	(634)	19%
Adjusted EBIT	**1,364**	**1,539**	(176)	(11%)
Impairments and writedowns	(1,967)	(3,088)	1,121	(36%)
Other non-recurring items	(97)	(15)	(82)	529%
EBITDA	**3,258**	**1,760**	1,497	85%
EBIT	**(701)**	**(1,564)**	863	(55%)
Interest income	47	51	(4)	(9%)
Interest expense	(358)	(387)	29	(8%)
Other non-operating items	110	(81)	191	(236%)
Profit from ordinary activities before tax	**(902)**	**(1,981)**	1,079	(54%)
Income tax (expense)/benefit	(168)	(237)	69	(29%)
Net profit/(loss) from continuing operations	**(1,070)**	**(2,219)**	1,148	(52%)
Earnings of discontinued ops	27	(57)	84	(147%)
Minority interest in earnings	10	79	(69)	(87%)
Net profit/(loss) to parent	**(1,033)**	**(2,196)**	1,163	(53%)
Adjusted NPAT	**934**	**891**	43	5%

Key movements

Net loss >$1bn

Underlying EBITDA increased 9%

Impairment charges declined 36%

Another year, another $1bn+ net loss

Just like the previous four years, 2016 proved to be a challenging one for the MT50, which recorded a net loss of more than $1bn.

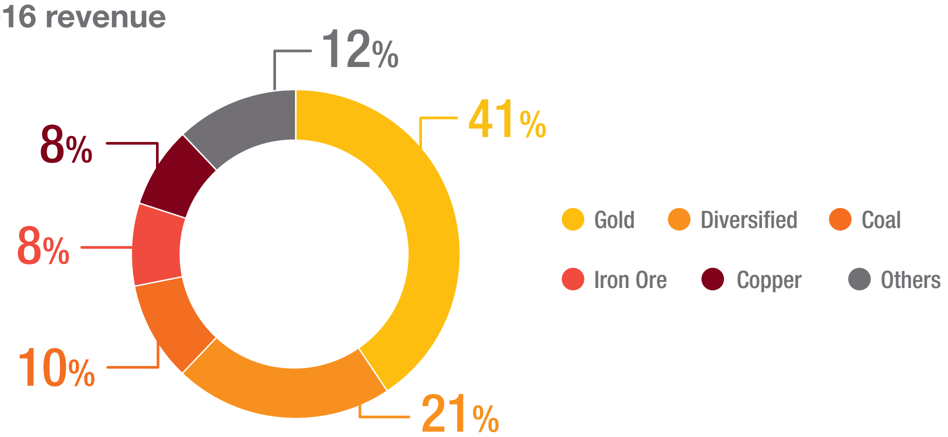
Operating revenues up

Notwithstanding the losses, if we look at operating revenues a different story starts to emerge. Operating revenues increased by 3% to $17.4bn, largely driven by gold and coal companies. Gold continued to strengthen its position within the MT50, recording a 10% increase in operating revenues and lifting their share of total operating revenues across the mid-tiers from 38% to 41%.

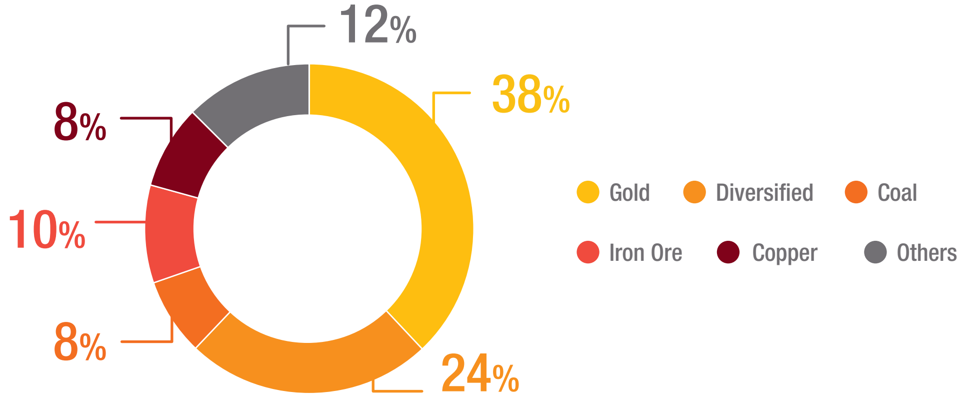
Against tough market conditions, savvy coal miners also recorded strong top-line growth of 34% year-on-year. Improved production and sales volumes more than offset the lower average selling price realised for coal prior to 30 June 2016. This 2016 growth was due predominantly to Whitehaven's 34% increase in saleable coal production (to 15mt), driven by the opening of Maules Creek and productivity improvements at Narrabri. New Hope also recorded a strong revenue result, driven by 16% production growth (to 6.6mt).

Top 5 by operating revenue ($m)	Commodity	2016	2015
MMG Limited	Diversified	2,679	3,030
Evolution Mining Limited	Gold	1,329	666
Mineral Resources Limited	Iron Ore	1,178	1,299
Whitehaven Coal Limited	Coal	1,164	763
Iluka Resources Limited	Mineral Sands	882	792

2016 revenue



2015 revenue



Margins sustained, and improved

Mid-tier miners have walked the talk when it comes to cost control. The higher revenues booked in 2016 have not been accompanied by increased production costs. This is no more evident than year-on-year improvements in the gross margin, Adjusted EBITDA margin and Adjusted NPAT margin. The adjusted EBITDA margin (adjusted for impairments), for instance, increased from 28.9% to 30.7%.

The mid-tier sector is clearly benefiting from the pain of other industry stakeholders. The commodity rout since 2012 has spared no one. Contractor costs, mining services costs, fuel costs, and labour competition are all at their lowest levels for years. Companies under pressure to become lean, mean, mining machines have taken advantage of this new bargaining power and have diligently focussed on cost improvements. However, the sustainability of the improved margins is yet to be proven, particularly if the broader industry recovers.

2016 has seen a recovery in oil prices from USD prices in the high 20s per barrel in the early months of the year to current levels in the low 50s at the time of writing. All else being equal, a continued rise in oil prices will threaten the sustainability of margins for the MT50 into 2017 given the significance of fuel to the overall cost base.

How does this impact the bottom line?

The benefits of the cost control measures and a lower Australian dollar appear to have been realised, with revenue growth flowing through to higher earnings. Underlying EBITDA of the 2016 MT50 increased by 7%. Of those companies generating operating revenues, four of the top five with increases in underlying EBITDA are in gold, a sector that has capitalised on a higher AUD gold price and stronger margins amidst a reduced cost base relative to the boom years.

Top 5 by % increase to underlying EBITDA	
Whitehaven Coal Limited	176%
Evolution Mining Limited	90%
Tribune Resources Limited	63%
St Barbara Limited	63%
Ramelius Resources Limited	63%

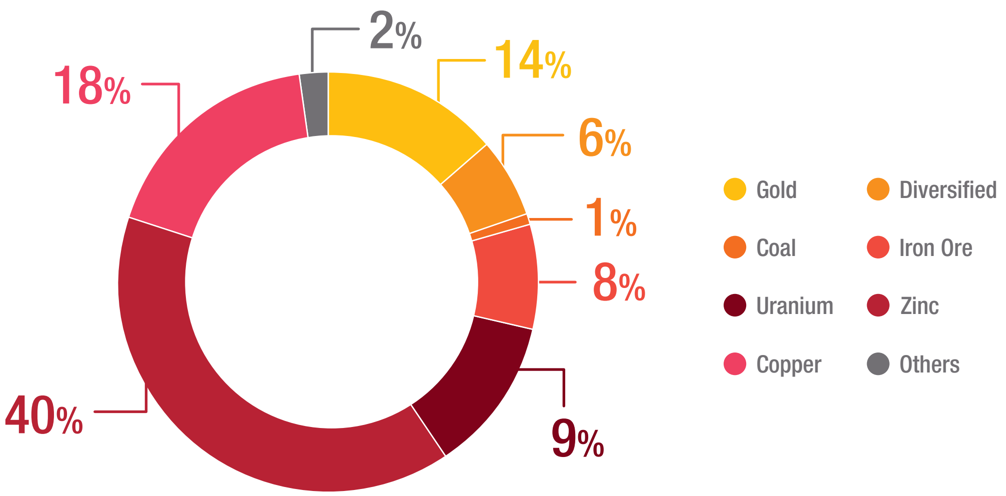
Impairments fall off the stage

Impairment charges have retreated from the record highs experienced in 2015 to $1.97bn, representing the lowest annual writedown by the mid-tiers since 2012. In proportion to the MT50 asset base, 2016 represents the lowest impairment charge since 2011, and the third lowest in the last ten years.

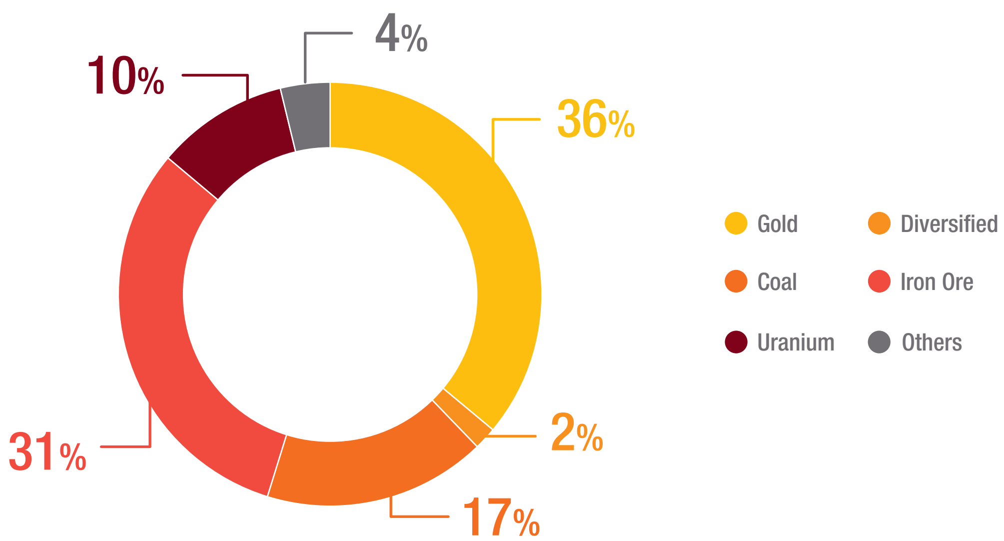
Top 5 by Impairment ($m)	Commodity	2016	2015
MMG Limited	Diversified	(1,224)	-
Paladin Energy Limited	Uranium	(228)	(312)
Mineral Resources Limited	Iron Ore	(130)	(31)
Teranga Gold Corporation	Gold	(124)	-
Evolution Mining Limited	Gold	(122)	(7)

MMG's charge of $1.22bn (7% of the company's $17.5bn asset base) was taken in response to persevering low prices in base metals and represented 62% of the total MT50 impairments recognised during the period.

Impairment by commodity 2016



Impairment by commodity 2015

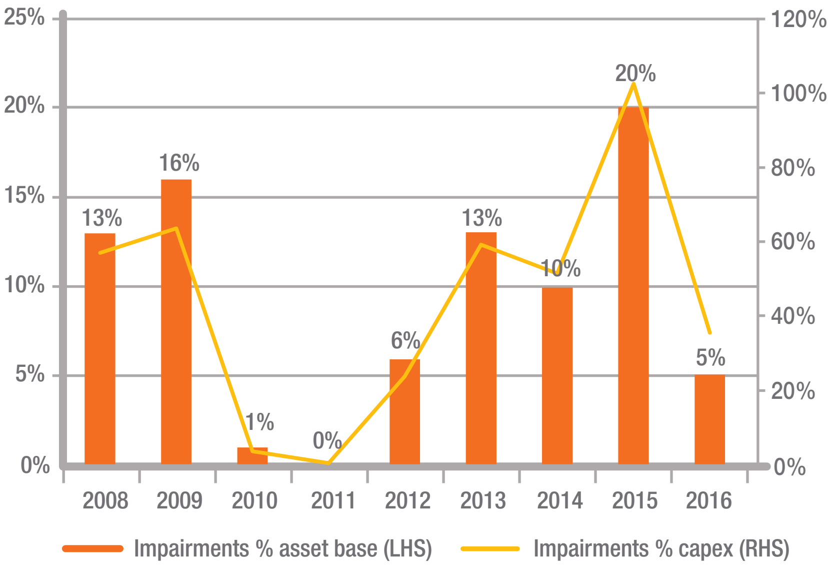


Picking up the pieces after capital destruction

While the drop off in year-on-year impairment charges may indicate that the worst is over, with adjusted price assumptions now the reality and operating costs slashed, a longer term perspective highlights the damage inflicted on the industry in recent times.

In the period from 2013 - 2015, the MT50 spent \$16.3bn on capital expenditure. In the same period, impairment write-downs totalled \$11.5bn, equivalent to an astounding 71% of capex spent. In 2016 a turning point appears to have been reached. Impairment expenses as a percentage of capex has substantially fallen to 35%, which is well below the capital destruction of the last four years.

Impairments as percentage of capex and asset base



*Asset base = Closing NPV + Impairment expense

All else being equal, a continued rise in oil prices will threaten the sustainability of margins for the MT50 into 2017 given the significance of fuel to the overall cost base.

b. Aggregated cash flow statement

Cash flow statement ($m)	2016	2015	$ change	% change
Cash flows generated from operations				
Net income	(1,033)	(2,196)	1,163	(53%)
Change in accounts receivable	(133)	54	(187)	(347%)
Change in inventories	180	(88)	268	(305%)
Change in accounts payable	82	(151)	233	(155%)
Change in unearned revenue	1	(4)	5	(129%)
Change in deferred taxes	(259)	(328)	68	(21%)
Change in other net operating assets	(180)	(161)	(19)	12%
Income taxes (paid)/refunded	78	28	51	184%
Other	5,752	6,989	(1,236)	(18%)
Cash generated from operations	**4,489**	**4,142**	347	8%
Cash flows related to investing activities				
Capital expenditure	(5,648)	(4,119)	(1,530)	37%
Proceeds from sale of property, plant and equipment	112	49	63	130%
Cash acquisitions	(1,790)	(3,834)	2,043	(53%)
Divestitures	(8)	4	(12)	(323%)
Net proceeds/(purchase) of investments and intangible	1,061	496	565	114%
Other investing activities	112	54	57	106%
Net investing cash flows	**(6,162)**	**(7,350)**	1,188	(16%)
Cash flows related to financing activities				
Debt issued	4,660	10,712	(6,052)	(56%)
Debt repaid	(2,058)	(8,309)	6,251	(75%)
Proceeds from share issues	1,257	813	445	55%
Stock repurchases	(18)	(7)	(11)	173%
Ordinary dividends paid	(537)	(445)	(92)	21%
Special dividends paid	(43)	(29)	(14)	48%
Other financing activities	(4)	1,255	(1,259)	(100%)
Net financing cash flows	**3,262**	**4,024**	(762)	(19%)
Net increase/ (decrease) in cash	**1,589**	**816**	773	95%

Key movements

Operating cash flows **increased 8%**

Capital expenditure **increased 37%**

Equity raisings **increased by 55%**

Overall cash position **improved by 11%**

Dividends **increased 21%**

A net increase in the overall cash position of the MT50 is a signal that the sector is returning to a more robust platform. The improved cash position has come amidst a tight capital market, strict cost control regimes and counter-cyclical investment decisions.

Higher operating cash flows

Aggregated operating cash flows increased by 8% from 2015 to 2016 on the back of strong the Adjusted EBITDA performance, which was up 9%. The majority of the cash flow increase (63%) can be attributed to the five companies listed below. These companies focused on gold, copper and iron ore.

In particular, Evolution Mining recorded an exceptional $574m in positive operating cash flows, doubling its FY15 result of $285m. A significant majority of the increase came from the first year inclusion of the Cowal and Mungari producing operations.

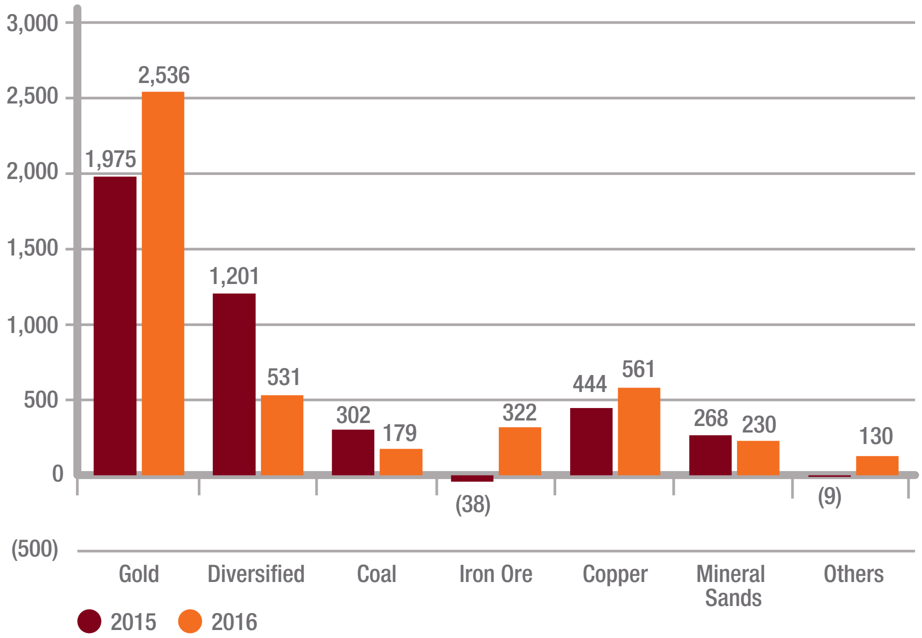
OZ Minerals also nearly doubled its operating cash flows, mainly due to increased production volumes from Prominent Hill and the cessation of exploration drilling at Carrapateena.

Aggregated operating cash flows also benefited from continued cost reduction strategies and efficiency programs (refer P&L analysis). Declining costs and a lower Australian dollar enabled MT50 companies - particularly gold miners - to generate stronger cash margins.

Cranking up capital expenditure

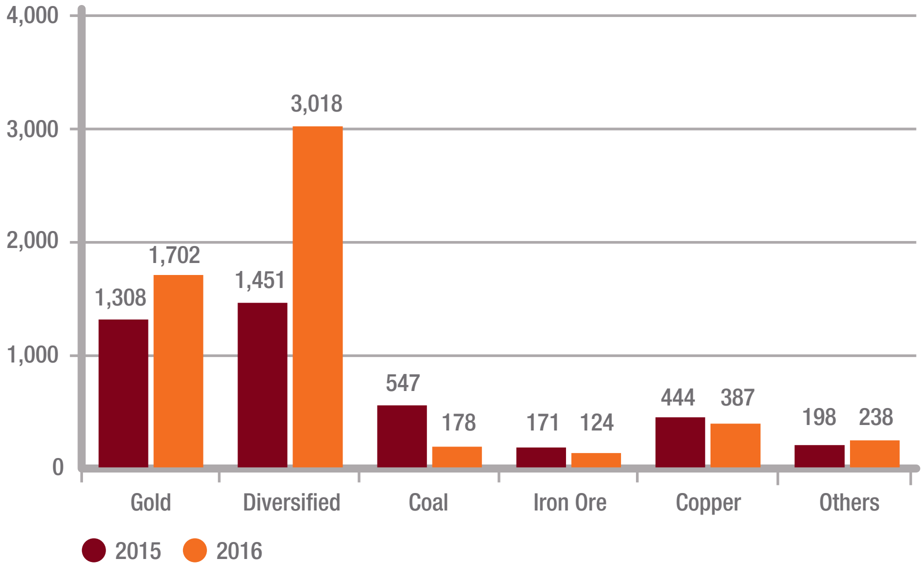
In a positive sign for the mid-tier sector, capital expenditure increased by 37% year-on-year. The capex growth predominately relates to gold, copper and zinc projects owned by MMG. In particular, the company spent $2.7bn (up 112%) on capex for the Las Bambas copper mine and Dugald River zinc deposit. This major investment - despite challenging base metal prices, a heavily geared balance sheet, and significant impairments - demonstrates MMG's commitment to its long-term strategy and the commitment of its major Chinese shareholder. While many gold and coal miners have reaped the rewards of a bold, counter-cyclical strategy, it remains to be seen if this success can be replicated across other commodities, such as base metals.

Cash flow from operations ($m)

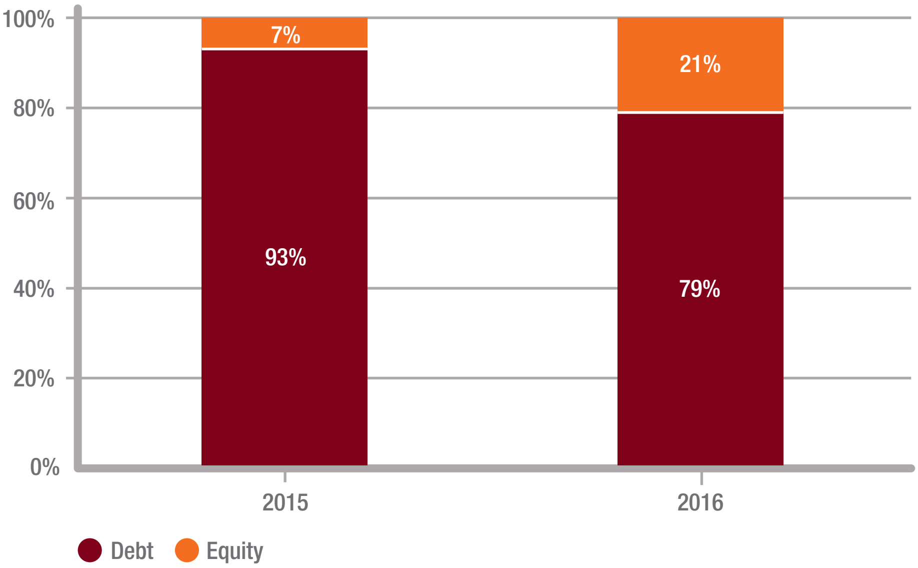


Top 5 movements in operating cash flow				
Cash flow	**Commodity**	**2016**	**2015**	**Change (A$m)**
Evolution Mining Limited	Gold	574	285	289
Mineral Resources Limited	Iron Ore	316	52	264
OZ Minerals Limited	Copper	430	222	208
Resolute Mining Limited	Gold	193	62	131
St Barbara Limited	Gold	243	113	130

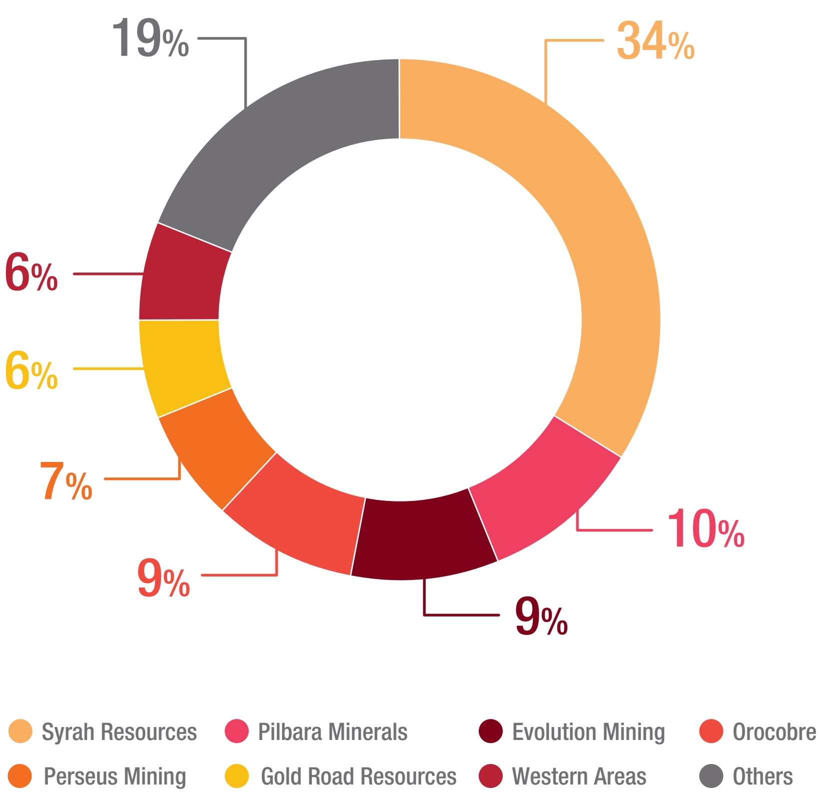
Capital expenditure by commodity ($m)



Capital sources



Total equity raisings in 2016



Share issues greater than $100m ($m)		2016
Syrah Resources Limited	Graphite	422
Pilbbara Minerals Limited	Lithium	123
Evolution Mining Limited	Gold	112
Orocobre Limited	Lithium	111

Capital markets - a confidence crisis

The mining sector is feeling the effects of a tough capital market with banks less willing to loan on environmental grounds and broader investor sentiment remaining historically low. With the exception of MMG raising cash from debt sources for the expansion of their Las Bambas operations, the MT50 paid down debt in 2016. This highlights the difficulty of raising debt despite record low interest rates and a management preference to minimise financial risk.

While equity market activity increased in 2016, from $0.8bn to $1.2bn, the majority of the movement has been fuelled by investor appetite for exposure to commodities needed for emerging technologies. Graphite and lithium capital raisings, for instance, represented over 50% of the cash received from share issues, up from 12% in 2015. On a broader level, the equity market was reluctant to provide capital: out of the 27 equity raisings occurring between 1 July 2015 – 11 October 2016, six experienced shortfalls and one offer was withdrawn.

MT50 only tapped the market for

3%

of their opening capital base

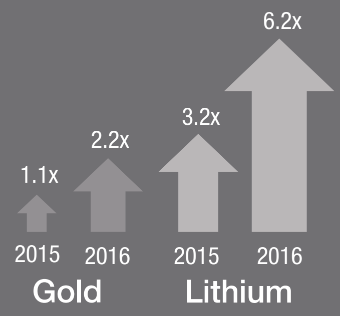
c. Aggregated balance sheet

Balance sheet ($m)	2016	2015	$ change	% change
Current assets				
Cash and cash equivalents	5,787	5,205	582	11%
Inventories	2,939	2,785	154	6%
Receivables	2,071	1,803	268	15%
Other current assets	459	525	(66)	(13%)
Total current assets	**11,256**	**10,318**	938	9%
Non-current assets				
Long-term investments	3,171	3,509	(338)	(10%)
Property, plant and equipment	39,551	32,940	6,611	20%
Capitalised exploration expenditure	-	-	-	-
Accounts receivable	36	68	(32)	(47%)
Loans receivable	103	50	53	107%
Deferred tax asset	1,048	789	259	33%
Other intangibles	512	469	43	9%
Goodwill	761	1,007	(246)	(24%)
Other non-current assets	1,560	1,550	10	1%
Total non-current assets	**46,743**	**40,382**	6,361	16%
Total assets	**57,999**	**50,701**	7,298	14%
Current liabilities				
Accounts payable & accrued liabilities	2,231	2,036	195	10%
Interest bearing liabilities (short term borrowings)	1,156	1,167	(11)	(1%)
Income tax payable, current	221	244	(23)	(10%)
Unearned revenue, current	140	85	54	64%
Deferred tax liability, current	-	-	-	-
Other current liabilities	1,001	1,022	(22)	(2%)
Total current liabilities	**4,748**	**4,555**	193	4%
Non-current liabilities				
Long-term debt	16,983	12,804	4,180	33%
Capital leases	185	199	(14)	(7%)
Unearned revenue, non-current	373	378	(4)	(1%)
Deferred tax liability, non current	1,825	1,742	83	5%
Other non-current liabilities	3,699	3,158	541	17%
Total non-current liabilities	**23,066**	**18,280**	4,786	26%
Total liabilities	**27,814**	**22,835**	4,979	22%
Net assets	**30,185**	**27,866**	2,319	8%
Equity				
Share capital and premium	34,716	30,218	4,498	15%
Retained earnings (accumulated loss)	(2,819)	(1,355)	(1,464)	108%
Other equity	(1,711)	(997)	(714)	72%
Total equity	**30,185**	**27,866**	2,318	8%

Key movements

Cash is king: **Net cash** (excluding one outlier) **increased 5%**

The market is willing to pay **2.2x** the net assets of gold stocks – more than **double** last year's premium of 1.1x net assets.



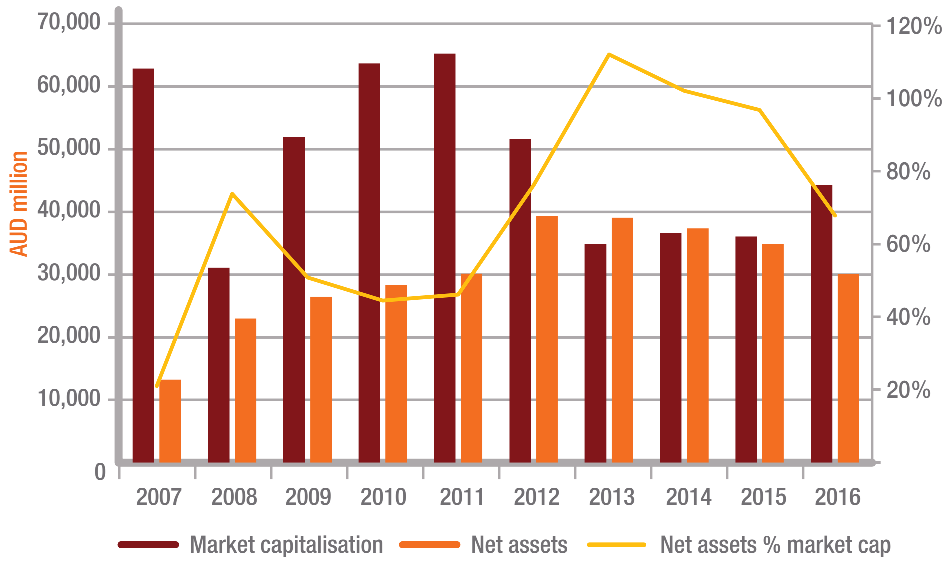
Lithium and graphite valuations skyrocketed to **6.2x** net assets – compared to last year's premium of 3.2x net assets.

A sentiment change

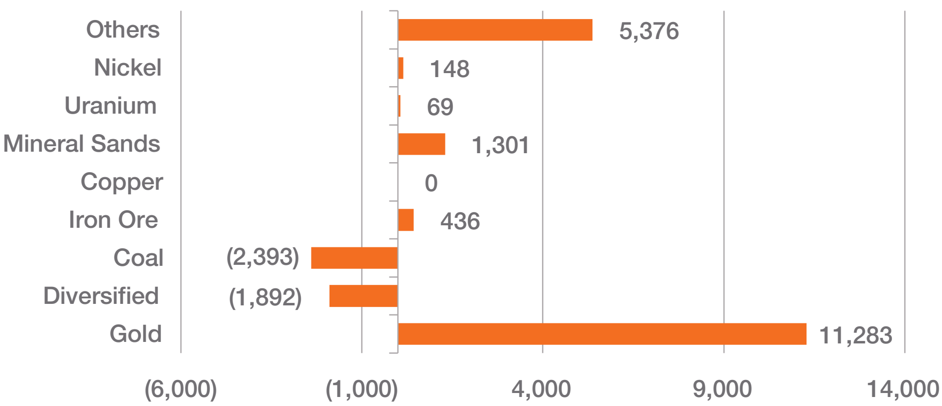
The combined market capitalisation for the MT50 exceeds book value by $14.3bn or 32% compared to 12 months earlier when that gap was just $1.3bn or 5%. From these figures it would appear that investors are again putting a value on the assets that lie in the ground compared to on the balance sheet. We have not witnessed this level of headroom since 2012. Unfortunately this is not a general trend across all commodities.

The market is willing to pay a $11.2bn premium between the accounting value and market value of gold stocks, which is up from a $1bn premium in 2015. Does this mean gold companies were undervalued in 2015, or is there genuine support for the 2016 market value? Going forward gold companies will need to demonstrate to investors that they have not lost their lustre.

Market capitalisation vs net assets ($m)



Market capitalisation less net assets ($m)



Top 5 by net debt ($m)	2016
MMG Limited	13,251
Whitehaven Coal Limited	791
Lynas Corporation Limited	519
Paladin Energy Limited	497
Evolution Mining Limited	278

Top 5 by net cash ($m)	2016
OZ Minerals Limited	553
Alacer Gold Corporation	495
Mount Gibson Iron Limited	400
Energy Resources of Australia Limited	365
Northern Star Resources Limited	306

Where are they now?

As Aussie Mine reaches its ten year milestone, we take a retrospective look at what became of the original MT50 cast of Aussie Mine 2007: Reaping the Rewards.

Stage Veterans

11 Survivors

The 2007 cast members who remain in the MT50 in 2016 (refer to The cast: 2016 MT50, page 8) have stayed in the game by continuing exploration activities and good management whereby efficient production was realised. They have also taken risks by participating in deals activity, provided a reliable supply of commodities, and have an experienced team. As we look to the next ten years, we know that the future of the MT50 depends on the ability of the sector to not just survive, but revive and thrive.

A Collaborative Affair

2 Merged

In 2011 Avoca Resources merged with Anatolia Minerals to form Alacer Gold. In 2013, Alacer then sold its Australian gold operations to Metals X. Interestingly, both Alacer and Metals X are in the MT50 in 2016, ranked 17 and 21 respectively. The second merger occurred in 2014 between Murchison Metals and Mercantile Investment. Mercantile acquired 100% of Murchison and is still trading on the ASX but no longer fits the criteria of a mining company.

Sold Out

22 Acquired

The majority of the original 2007 cast have been taken over. Of these acquisitions:

- two remain in the MT50 as part of another organisation
- another two remain Australian owned but are not included in the MT50
- three have been acquired by Glencore
- seven have been acquired by Chinese investors, and the remaining eight are now owned by other foreign investors.

Previous Patrons

10 Fallen out of MT50

The ten companies from 2007 that have exited the MT50 in this way represent the slice of the sector most affected by the commodities price volatility. These are companies that are high-cost operators or have a primary focus on exploration.

Closing Night

2 Delisted

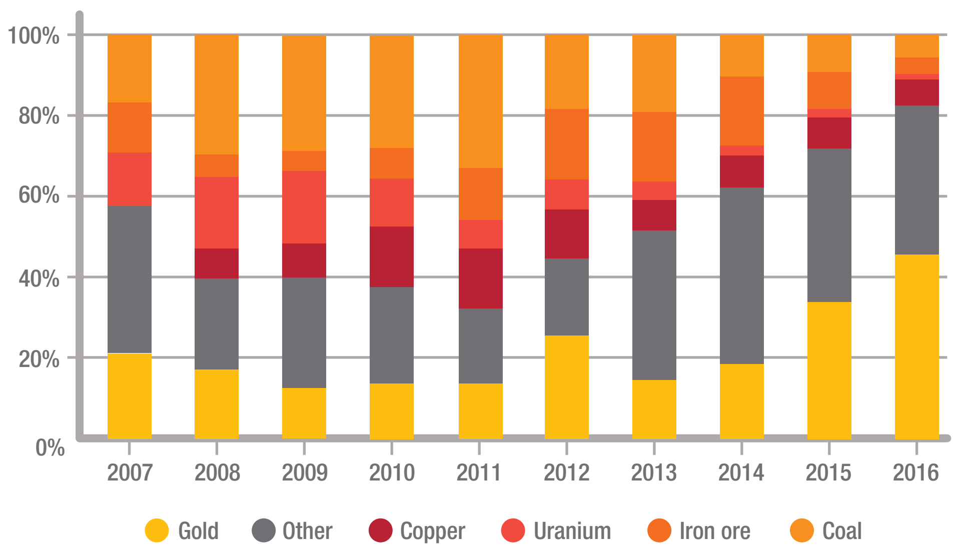
Sylvania Resources delisted from the ASX and relisted as Sylvania Platinum in 2011. Sylvania Platinum moved from Australia to Bermuda in the same year and was again delisted in 2012. Centamin delisted from the ASX in 2010 citing reasons such as low levels of liquidity and the fact only 15% of their total shares were listed on the ASX.

Box Office Flops

3 External Administration

Three companies from the 2007 cast, Kagara, Platinum Australia and Mirabela Nickel, exited the MT50 and entered external administration; they were delisted in 2014, 2015 and 2016 respectively. The timing of these administrations is linked to the mining bust, which followed commodity price falls and unsustainable capital expenditure during the boom.

10 Year Trend of Commodity by Market Capitalisation



The show must go on

From diversification to concentration: going forward without a broad-based sector

It's interesting how the MT50 has changed in terms of commodity makeup over the previous decade. The stacked bar graph displaying the ten year historical data of commodity composition of the MT50 by market capitalisation reveals the following emerging trends:

- The mid-tiers have lost the iron ore battle to large-scale majors. Between 2014 and 2016, the market capitalisation of mid-tier iron ore companies decreased by 71%, from $6.3bn to $1.8bn. As prices collapsed, the operational efficiencies and financial strength of large-scale majors exerted significant pressure on the mid-tiers and forced smaller players to retreat.
- Mid-tier coal miners have experienced tremendous consolidation over the past ten years. Of the eight original coal companies in 2007, New Hope is the only survivor. Six of the other seven coal companies were acquired before coal prices collapsed, with the remaining company falling below the MT50 market capitalisation threshold after the coal price collapse.
- The impact of emerging technologies on commodities; for example, in 2007 there were zero lithium or graphite miners, whereas there are now five lithium and a further two graphite companies in 2016.

The mid-tiers have lost the iron ore battle to large-scale majors

Looking back 10 years: 2007 MT50

Rank	Company	Market capitalisation as at 31/12/07 (A$m)	Commodity	Where are they now?
1	Paladin Resources Limited	4,162	Uranium	Survivor (MT50)
2	Energy Resources Of Australia Limited	3,719	Uranium	Survivor (MT50)
3	Aquarius Platinum Limited	3,327	Platinum	Acquired
4	Jubilee Mines NL	2,968	Nickel	Acquired
5	Minara Resources Limited	2,897	Nickel	Acquired
6	Mount Gibson Iron Limited	2,229	Iron Ore	Survivor (MT50)
7	Aquila Resources Limited	1,946	Iron Ore	Acquired
8	New Hope Corporation Limited	1,860	Coal	Survivor (MT50)
9	Portman Limited	1,845	Iron Ore	Acquired
10	Macarthur Coal Limited	1,840	Coal	Acquired
11	Riversdale Mining Limited	1,785	Coal	Acquired
12	Felix Resources Limited	1,580	Coal	Acquired
13	Sino Gold Mining Limited	1,553	Gold	Acquired
14	Zimplats Holdings Limited	1,502	Diversified	Survivor (MT50)
15	Centennial Coal Company Limited	1,492	Coal	Acquired
16	Straits Resources Limited	1,491	Diversified	Fallen out of MT50
17	Pan Australian Resources Limited	1,407	Gold	Acquired
18	Murchison Metals Limited	1,394	Iron Ore	Merged
19	Kagara Zinc Limited	1,339	Zinc	External Administration
20	Consolidated Minerals Limited	1,245	Manganese Ore	Acquired
21	Iluka Resources Limited	1,114	Mineral Sands	Survivor (MT50)
22	Centamin Egypt Limited	1,072	Gold	Delisted
23	Independence Group NL	1,028	Diversified	Survivor (MT50)
24	Midwest Corporation Limited	1,020	Iron Ore	Acquired
25	Sally Malay Mining Limited	1,014	Nickel	Fallen out of MT50
26	Resource Pacific Holdings Limited	1,003	Coal	Acquired
27	Western Areas NL	908	Nickel	Survivor (MT50)
28	Mirabela Nickel Limited	901	Nickel	External Administration
29	Equigold NL	843	Gold	Acquired
30	Mincor Resources NL	833	Nickel	Fallen out of MT50
31	Andean Resources Limited	825	Gold	Acquired
32	Sundance Resources Limited	805	Iron Ore	Fallen out of MT50
33	Allegiance Mining NL	784	Nickel	Acquired
34	St Barbara Limited	775	Gold	Survivor (MT50)
35	Summit Resources Limited	625	Uranium	Fallen out of MT50
36	Gindalbie Metals Limited	614	Iron Ore	Fallen out of MT50
37	Dominion Mining Limited	569	Gold	Acquired
38	Mineral Deposits Limited	568	Mineral Sands	Fallen out of MT50
39	Jabiru Metals Limited	560	Gold	Acquired
40	Lynas Corporation Limited	559	Rare Earths	Survivor (MT50)
41	Coal of Africa Limited	538	Coal	Fallen out of MT50
42	Gloucester Coal Limited	538	Coal	Acquired
43	Platinum Australia Limited	531	Platinum	External Administration
44	Avoca Resources Limited	528	Gold	Merged
45	Perilya Limited	519	Zinc	Acquired
46	Atlas Iron Limited	510	Iron Ore	Fallen out of MT50
47	Sylvania Resources Limited	494	Platinum	Delisted
48	Albidon Limited	488	Nickel	Acquired
49	Resolute Mining Limited	487	Gold	Survivor (MT50)
50	Bannerman Resources Limited	480	Uranium	Fallen out of MT50

Explanatory notes

We have analysed the largest 50 mining companies listed on the ASX with a market capitalisation of less than $5 billion on 30 June 2016. The results aggregated in this report have been sourced from publicly available information, primarily annual reports and financial reports available to shareholders. Companies have different year-ends and report under different accounting regimes. Information has been aggregated for the financial years of individual companies, and no adjustments have been made to take into account different reporting requirements and year-ends. As such, the financial information shown for 2016 covers periods between and 1 January 2015 and 30 June 2016, with each company's results included for the 12-month financial reporting period that falls into this timeframe.

All figures in this publication are reported in Australian dollars, except where specifically stated. The results of companies that report in currencies other than the Australian dollar have been translated at the average Australian dollar exchange rate for the financial year, with balance sheet items translated at the closing Australian dollar exchange rate. Some diversified companies undertake part of their activities outside of the mining industry. Unless specifically stated, no adjustments have been made to exclude such non-mining activities from the aggregated financial information.

Key contributors

Left to right:
Chris Land, Senior Consultant - Financial Advisory, Brisbane
Jenny Van, Senior Manager - Assurance, Brisbane
Mark Darcy, Manager - Assurance, Melbourne
Avi Kaye, Consultant - Financial Advisory, Brisbane
AJ McDonald, Manager - Assurance, Perth
Rachel Craven, Senior Consultant - Financial Advisory, Brisbane
Wim Blom, Partner - Financial Advisory, Brisbane
Laura Stroppiana, Consultant - Assurance, Brisbane

With special thanks to:
Josh Raabe, Director - Assurance, Brisbane
Susan Howarth, Senior Marketing Manager, Sydney
Catriona McNee, Senior Marketing Campaigner

www.pwc.com.au/aussiemine2016

Contacting PwC

Energy, Utilities & Mining Leader

Mark Coughlin
Melbourne, Consulting
T: +61 (3) 8603 0009
E: mark.coughlin@pwc.com

National Mining Leader

Chris Dodd
Melbourne, Assurance
T: +61 (3) 8603 3130
E: chris.dodd@pwc.com

State Leaders

Wim Blom
Brisbane, Financial Advisory
T: +61 (7) 3257 5236
E: wim.blom@pwc.com

Stephen Loadsman
Brisbane, Consulting
T: +61 (7) 3257 8304
E: stephen.loadsman@pwc.com

Justin Eve
Perth, Assurance
T: +61 (8) 9238 3554
E: justin.eve@pwc.com

John O'Donoghue
Melbourne, Assurance
T: +61 (3) 8603 3067
E: john.odonoghue@pwc.com

James Strong
Melbourne,Financial Advisory
T: +61 (3) 8603 6599
E: james.r.strong@pwc.com

Andrew Forman
Adelaide, Assurance
T: +61 (8) 8218 7401
E: andrew.forman@pwc.com

Brett Entwistle
Sydney, Assurance
T: +61 (2) 8266 4516
E: brett.entwistle@pwc.com

127043745