Transcript

BHP Billiton

Investor and analyst presentation

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Well, good morning to everybody here in Sydney, and hello to those on the webcam. But first let me point you to the disclaimer and remind you of its importance to today's presentation. Now, you're going to be familiar with quite a lot of the material from our presentation in London, but we do want to reiterate the key points and provide you with the opportunity to ask questions on those topics. But as I did in London, I'll start my providing an overview of our performance in the 2014 financial year to show you what we achieved, and I'll then share more detail on how we expect further simplification via our proposed demerger to unlock even more value for our shareholders. And I'll provide a brief update on the new company.

Following this I'll reiterate our definitive targets, both production and costs, for each of our major businesses so that you can continue to track us. We must be accountable to you, our owners. I'll then conclude with our capital management framework and explain how it will enable us to consistently deliver superior performance and more cash to our shareholders. Mike Henry, our president of HSE, marketing and technology, will then share our unchanged views on commodity markets. A few weeks ago in London we drilled into two of our major businesses, iron ore and petroleum, and today Dean Dalla Valle will present on coal and Peter Bevan, our new chief financial officer, will provide an update on copper, given that until very recently he was our president of copper. And you will have also seen today our announcement that from 1 January Dean and Mike will swap roles, and this is consistent with our strategic approach to leadership development.

The company is in great shape. We have a clear strategy and we will deliver on our commitments by doing what we say we will do. Keeping our people and operations safe matters more to me and the team than anything else because we view safety performance as a critical indicator of a business in control. And in the 2014 financial year we delivered our best ever safety performance. Sustainability, our first charter value, is also a key consideration for all of our investment decisions. In the 2014 financial year we exceeded production guidance for a number of our core commodities and for the 2015 financial year we're well positioned to achieve record production again. We remain focused on generating value through productivity. We delivered nearly $3 billion in productivity-like gains in the 2014 financial year and today have committed to a new minimum target of $4 billion of annualised efficiencies from our core portfolio by the end of the 2017 financial year.

Finally, the combination of our high quality assets, optimal diversification and a disciplined approach to capital management, including our unbroken progressive dividend and strong balance sheet, enable us to generate superior shareholder returns. This is our distinctive investor proposition. If you look at our scorecard for the 2014 financial year you'll see that we achieved strong results, and there's more to come. Over the last two years our simplification process, including well-timed asset sales, created more than $6.5 billion of proceeds. Our outstanding operating performance delivered annual production records at 12 of our operations across four commodities, and we embedded an additional $2.9 billion of productivity-led gains, more than $1 billion above our guidance with about $1 billion coming from volumes and nearly $2 billion from cost efficiencies. For the 2014 financial year we reduced our capital and exploration expenditure by almost a third to $15.2 billion so that in a period of falling commodity prices this resulted in an $8 billion increase in free cash flow.

The strong cash generating capacity of business underpins our commitment to a progressive based dividend, the minimum expectations that our shareholders should have. We increased our dividend by another four per cent in the 2014 financial year to 121 US cents per share for a payout ratio of 48 per cent. All of this delivers valuable growth and yield to our shareholders. So why do we focus on simplifying our portfolio? Well, we believe by simplifying our organisation, we can sharpen our focus and improve productivity. Large companies often become more complex as they push for growth. Additional layers of management and new processes are required to manage such an organisation. In time, the cost of complexity outweighs economies of scale and erodes the benefits of retaining too many options for growth. I've worked in many complex organisations throughout my career and I've seen how important it is to avoid this.

At BHP Billiton we've already addressed this challenge over many years to make sure we maximise the value of our assets. As the company has grown, we've increased our focus on our largest and most profitable assets and we've put in place standard systems and processes to make sure decisions are made as close to the business as possible. We've also sold several assets in a disciplined manner to maximise value for shareholders and simplify our organisation. In the last two years we've sold, as I've said, $6.5 billion dollars' worth of assets, all at attractive valuations.

For example, the $1.9 billion sale of our interest in Richards Bay Minerals, timed at the top of the titanium dioxide market; the $430 million sale of our wholly-owned Yeelirrie project, a development project not typically included in analyst valuations; the $1.6 billion sale of Browse, another development project that was not normally included in analyst valuations and in which we had only invested $300 million; then the $650 million sale of Pinto Valley, an asset that didn't fit with our long-life, low-cost strategy, but was sold at an attractive premium to the average analyst valuation at the time. We are clear about which assets best fit our strategy. There is no rush to sell. Our financial position is strong and we will not agree to terms that do not meet our value or returns criteria. For example, as you know, we sought to divest our nickel asset in Western Australia and announced earlier this month that we were unable to find a buyer willing to offer terms acceptable to us. So we will retain the asset for now and run it for maximum value.

Equally, we recently announced our intention to test the market's interest in our Fayetteville shale assets but, consistent with our commitment to shareholders, we will only complete a sale if a buyer is willing to pay full value that reflects both the quality of our acreage and the positive outlook for US gas prices. Again, achieving value for shareholders is our priority and determines all the decisions we make about the portfolio. In this ongoing process of portfolio simplification, the proposed demerger is the logical next step. We believe it will deliver more value than the alternative, like maintaining today's portfolio or selling our non-core assets through trade sales, and by concentrating our focus on our largest and most profitable assets, this will deliver a stepped change improvement in BHP Billiton's performance.

Our existing organisation has worked well. It has enabled us to develop and operate a complex diversified portfolio of substantial scale and geographical spread, and it has been supported by our standard systems and processes which have all made sure that decisions are made at the operations, assets or even business level, wherever it is best to maximise value. But it was designed for a more complex asset portfolio and operating environment. The demerger creates the opportunity for us to redesign the business. Put simply, we can organise a company that operates just 12 large core assets quite differently to what with 30 operated assets of varying size across a broader range of commodities.

In the 2014 financial year our core assets generated 96 per cent of underlying EBIT, so we can cut complexity and its associated costs without losing any of the benefits of scale and diversity. Let's take costs not directly linked with the production process first, which we'll call functional costs. A simpler portfolio will enable us to reduce the range in volume of the functional work we need to manage as well as to aggregate this level at a high level. It will also allow us to further delayer and streamline our organisational structure and handle a greater proportion of our high volume routine work through shared service centres located in lower cost locations. We spent more than $3 billion on this functional support a year, so it will only take a modest reduction to create substantial additional value.

A simpler portfolio also caused us to focus even more on improving operational performance. In recent years, we've cut complexity by increasing standardisation across the group, so assets have more common equipment systems and ways of working. And this has established a solid platform from which we can continue to share and improve operational performance faster. Following the demerger, our portfolio, as you've heard, will include fewer assets – a lot fewer assets – but these will have a much greater proportion of common characteristics. Everyone will be large – very large, upstream focused, with a long life that supports what we call an advanced manufacturing approach to operations. So this will allow us to increase the depth of our benchmarking, standardise the way we complete more common tasks, and eliminate duplications of effort to an even greater extent.

This opportunity is significant. Small but carefully targeted changes to critical work, spread right across the company quickly, can create very large benefits. Achieving our own current best practice in truck utilisation, for example, across our entire fleet, even if we assumed that this just allowed us to park up the trucks and add nothing to production, would add $300 million per year to operating cash flow, and every one per cent added to the throughput on our system bottlenecks would add another $230 million per year. Changes such as these won't be easy, and they won't be achieved immediately, but this is an illustration of the size of the prize on offer, and we strongly believe that we can get there more rapidly when senior management have a greater focus on our core safety and operational opportunities, and best practice only has to be created and shared quickly between just 12 core assets. We believe a simpler portfolio would, therefore, enable our teams to improve our productivity further, faster, and with greater certainty.

Now that our demerger plans are public, we've been able to begin to define the areas of improvement in more detail, because clearly we need to consult very widely, and we've become in the recent months increasingly confident that our focus on improvements right across our core assets, which the demerger facilitates, can generate further productivity gains beyond those already announced. And so I'm pleased to tell you that we are now targeting annualised productivity gains in the core portfolio of at least $4 billion by the end of the 2017 financial year, and this, as you're aware, is a $500 million increase on previous guidance of three and a half billion dollars. This target is on top of the $6.6 billion of productivity-led gain embedded during the last two years.

Critically, we believe our improvements will last and be a point of differentiation. The demerger and enhanced operational efficiency are not the only tools, though, that we have to create value for shareholders. We're also focused on capital productivity, and our priority has been to identify how we can reduce the cost of bringing on new production so that we can lower an investment without slowing production growth. While I'll cover this in more detail towards the end of the presentation, I am pleased to confirm that in the 2015 financial year, we will reduce projected capital expenditure from $14.8 to $14.2 billion, and in the 2016 financial year we expect to invest $13 billion. Simplification through our proposed demerger is, without a doubt, the right strategy for the company.

As you all know, the new company we are creating will be a global metal and mining company, with high-quality assets, but not of the scale of those that remain in our core businesses. It will, however, pursue its own bespoke strategy that matches this quite different type of assets to unlock an analogous set of productivity gains to those I described for the core. Its selected portfolio includes 11 operated assets, primarily in Australia and Southern Africa, and, in the 2014 financial year, generated almost $1.8 billion EBITDA. The portfolio remains cash flow positive, despite recent market volatility, and this underscores the relative strength of their assets in their industry. An improvement in oil recovery and an increase in plant availability resulted in record quarterly production in Hotazel, and, overall, manganese oil production increased by 10 per cent in the September 2014 quarter to a record 2.3 million tonnes. And as smelter reliability improves, manganese alloy production increased by 25 per cent last quarter. Further, at Illawarra Coal, a series of productivity initiatives drove the mine to achieve record run-of-mine volumes, and production increased by 64 per cent in the September 2014 quarter to 2.3 million tonnes.

As I said, with its own bespoke strategy, systems, and processes, specifically tailored for a business of its scale and geographies, the new company will now be very well placed to see its assets realise their full potential and, of course, deliver a lot more productivity as well. The new company will be lean and flat, and they've chosen – we've chosen a regional operating model. We'll have an experienced team led by Graham Kerr as CEO and chaired by David Crawford, who retired from the BHP Billiton board just last week. The new company set up is proceeding to plan, with Ricus Grimbeek now appointed as chief operating officer for Australia, and Mike Fraser as chief operating officer for Africa. Both bring a wealth of experience in the metals and mining industry and have extensive operational credentials, having spent time as asset presidents for BHP Billiton during their careers. The appointments of Mike and Ricus to these leadership roles in the new company demonstrate the strength of our strategic approach to management development. In addition to Mike's departure from BHP Billiton's Group Management Committee, as I said, I've also announced today other changes to our GMC as we continue to develop our people and our company for future success, and these appointments illustrate the strength of the team that we're creating.

As expected, there's been a lot of interest in the new company, and I'm pleased to confirm that the proposed demerger remains on track for completion in the first half of the 2015 calendar year. Most of you know that the new company will be an Australian-incorporated entity and will apply for an ASX primary listing, a JSE inward secondary listing, and a standard listing in London. We've already received a number of significant regulatory approvals, including Australia's Foreign Investment Review Board, and from the Australian Tax Office, and we're progressing well on those that remain outstanding. In March we expected to release all shareholder documentation, with full details of the proposed demerger, and this will include our BHP Billiton Shareholder Circular and an information memorandum for the demerged company. It's around this time that we plan to host tours of the new company's major operations and showcase the quality of these assets. We also plan to hold an extraordinary general meeting in May 2015, for both BHP – those in limited and PLC shareholders to vote on the demerger. Based on our current timetable, the new company is expected to trade in the first half of the 2015 calendar year.

Back to the business. We continued to improve our safety performance in the 2014 financial year, and we've improved it to our lowest ever total recordable injury frequency rates of 4.2 for every million hours worked. Importantly, we also suffered no fatalities, and while we were encouraged by this result, recent events again demonstrated that we can never rest on past performance. We were all deeply saddened by the fatal injury of one of our colleagues at our Worsley refinery in Western Australia in September. Extensive investigations are underway to understand how this incident occurred and ensure we learn all the lessons quickly across BHP Billiton both companies, because the safety of our people will always come first.

Given the scale of our operations and resources, we will continue to be an important member and contribute to our communities for decades. We do set ourselves very high environmental standards and believe that there must be a significant acceleration in the development and deployment of low-emissions technologies, and we will champion this change. Since the 2007 financial year, we've invested nearly half a billion dollars to support emissions reduction and energy efficiency projects, and we will continue to make more of these investments and to take opportunities to partner with governments, industry, and researchers to invest in the technology that could lead to a reduction in greenhouse gas emissions from the use of fossil fuels. We've improved, of course, our own performance there and reduced our greenhouse gas emissions by 1.7 million tonnes in the 2014 financial year. Despite producing significantly more volumes since then, our greenhouse gas emissions are now below our 2006 financial year baseline. We've also achieved a 22 per cent reduction in potential occupational exposures, compared to our 2012 financial year baseline.

We also seek to be a valued partner in host communities, and recognise that their support is central to our success, and we work with these host communities all around the world to understand their issues and identify the opportunities. From helping Brazilian Coffee farmers improve their productivity sustainable, to signing an opportunities agreement with three first nations in Saskatchewan, to humanitarian assistance for typhoons in the Philippines, bushfires in Australia, and Ebola in West Africa. Alongside the over $240 million invested in the company last year in community and conservation programs, with lasting benefits, our own people also make a real difference to the communities where they live and work. They volunteer their time and donate money, which we match doubling their contribution. And in the 2014 financial year this amounted to $12.1 million. For the year we also paid $9.9 billion in company taxes, royalties and certain indirect taxes. In the 2014 financial year we delivered record volumes with a nine per cent increase in group production through investment and productivity, and our core portfolio was the foundation of this success with growth in copper equivalent terms of 15 per cent.

During the period we also successfully completed six major projects with two of those delivered under budget and ahead of schedule. Looking ahead, the ramp up of these projects, combined with our productivity agenda, will deliver another year of record production, and our previously stated guidance for each of our core commodities remains intact. And over the two years to the end of the 2014 financial year we're also on track to deliver growth of 23 per cent from our core portfolio.

Alongside this productivity-led growth, sits almost $2 billion of real cost savings embedded last year and we remain confident there is much more to come. Western Australia iron ore, we reduced unit costs to under $26 per tonne in the second half of the 2014 financial year. But we've only just scratched the surface and we see a clear pathway to FOB cash costs of less than $20 per tonne in the medium term. There's no reason why we shouldn't be the lowest all-in cost supplier to China. Dean will walk you through our core business later, but I would like to just take a moment to highlight the outstanding progress that Dean and his team have made. In the 2014 financial year our Queensland Coal operation reduced operating costs by 24 per cent to $99 per tonne. This has re-established this business as a leader in this industry. We are, of course, no longer investing for growth in our coal business. All volume increases from now on will come from productivity, and we expect this focus to yield another 10 per cent reduction in unit costs at Queensland Coal this year.

In our Onshore US business we continue to forecast that in the 2015 financial year unit costs will decline by approximately 10 per cent. The business will be free cash flow positive in the 2016 financial year, and by the end of the decade will approach $3 billion per annum. And just to highlight this point, this is an annualised $5 billion increase over the period representing growth of more than $800 million in each and every year between now and then. Lastly in Copper, like elsewhere in the business, we have an unrelenting focus on productivity and costs. Escondida unit costs have fallen by 22 per cent in the last two years, and in the 2015 financial year we forecast a further decline of more than five per cent.

Let me now describe how we convert our continued improvement in operational performance into superior growth in shareholder returns. Our long standing capital management framework defines four priorities for cash flow. One, our commitment to maintain a strong balance sheet and solid A credit rating throughout the cycle. Two, a commitment to at least maintain or grow a progressive based dividend in every reporting period. Three, a commitment to invest selectively in high return diversified opportunities again through the cycle. And, four, a commitment to return excess capital to shareholders in the most efficient way. We see a solid A balance sheet as a precondition to consistently maximise shareholder value and returns. We test forward projections for cash flow to make sure that in a low case scenario we can be sure of maintaining an A or A2 credit rating. Should this test indicate that we have excess capital once we've paid a progressive based dividend and selectively invested in our high return projects, we will consider buy back for special dividends. But given the underlying volatility, we will only return excess cash once it's accumulated on a balance sheet so that any program has a high degree of certainty of being completed. This is a consistent and enduring capital management framework.

By maintaining our solid A we achieve three objectives at all points in the cycle: a lower cost of funding, access to markets and sufficiently liquidity. And history has proven that this is not true for other companies in our industry that flirt with higher levels of debt. We also enjoy access to diverse sources of funding and a well-balanced maturity profile that currently averages 10 years. All of this combined equates to an efficient capital structure for BHP Billiton. It's while sitting within the envelope of solid A that we've been able to maintain a progressive based dividend and we're the only company in our peer group to have achieved this over the last decade, and our base dividend has grown at a compound annual rate of 17 per cent, again superior to the peer group. Our dividend is a firm commitment. We will not rebase or lower the dividend should the shareholders approve the demerger and this implies, all other things being equal, a higher payout ratio than the 48 per cent I talked about earlier. Our opportunity rich portfolio and a solid A balance sheet allows us to invest selectively through the cycle for value. The capacity to complete major projects and invest in new high return opportunities, even in periods of extreme volatility, is an important differentiator in an industry characterised by boom and bust cycles. And this requires resilience and discipline.

Our capital allocation framework makes sure we consider all alternatives – all alternatives for capital as we seek to optimise for net present value, IRR, return on capital employed and margin, and this rigorous process creates active competition against all possible uses of cash. All businesses and their projects compete for capital against one another, and the ever present option of buying our own shares. So to our plans. As I mentioned earlier, we are focused on capital productivity and as we've reduced spending we've increased the competition for capital. Our teams have been pushed to lower the capital intensity of our planned growth. And we reduced capital and exploration expenditure in the 2014 financial year by 32 per cent to $15.2 billion. Our expenditure will decline again in the 2015 financial year to $14.2 billion. That's $600 million below our prior guidance. And in the 2016 financial year capital expenditure will again decline to $13 billion in nominal terms. And this includes roughly $2 billion for maintenance capital, $1 billion for exploration, less than $500 million at Jansen, less than $4 billion for onshore US and around $1.5 billion to maintain steady production in our existing conventional petroleum business. The remainder is available for our mineral projects and execution, and our diversified portfolio for development options.

We have been able to achieve this as a result of capital productivity. So, importantly, this reduced expenditure will not impact growth. And as we continue to lower our spend, internal competition for capital and the quality of our projects will continue to rise. And this process will drive capital productivity to a new level and further differentiate our investor proposition. Given the capital intensity of our industry, the importance of this process should not be underestimated. And we continue to project an average rate of return in excess of 20 per cent for our portfolio of high quality development options. So as we further improve capital productivity, we can choose either to maintain our rate of investment and create more value, or to invest less. So our track record over the last decade is impressive. Our progressive dividend remains unbroken, and increased at a compound annual growth rate of 17 per cent. We returned a total of $64 billion to shareholders, including $23 billion in the form of buy-backs at less than US$25 per share, and this generated total shareholder return of 394 per cent against an ASX 200 total shareholder return of 221 per cent. It's clear that our strategy and strong balance sheet have worked well for our shareholders. And we intend to extend our distinctive track record even in the face of low prices.

BHP Billiton is in great shape. We have many of the best ore bodies in the world. We operate sustainably, look after our people and our communities, and we are successful, increasing volume and lowering costs. We are confident that our productivity drive will be accelerated by the demerger and expect cash flow will be brought forward and enhanced to increase value and secure yield for you, our shareholders.

So, to summarise the key numbers – 23 per cent: the projected two year growth rate of our core portfolio. $4 billion: our new minimum target for productivity. 2.6 billion: our minimum cost out target. And 20 per cent: the return that we can exceed by investing in our best projects. These are hard targets, and they cause us to inspire the right behaviours and drive the right culture for delivery throughout the organisation, and they also allow you to confidently track our performance and hold us to account. So that's all I have to say, but Mike is now going to present our views on the commodity market, and then we will have some questions and answers and then a break before the second half. Over to you, Mike.

Mike Henry

Thank you, Andrew. And, once again, welcome, everyone. It's a pleasure to be here today to talk about the external factors relevant to our business. Now, in London, I also spoke about our approach to continuous improvement, but in the interests of time this morning, I'm not going to speak to that same topic. You're going to see more than enough by way of similar themes and the same framework coming through in the presentations that both Dean and Peter will give a little bit later on. So just before I get started, let me point you to our usual disclaimer slide.

Now, in my presentation, I'm going to focus on three things. I'll talk about global economic development and growth, what this means for our commodities and then, finally, why we are uniquely placed to resource the future and, in doing so, create long-term value for our shareholders. Now, our diverse portfolio of commodities and our centralised marketing model support our ability to conduct deep analysis into how the world is likely to evolve. It's important to note, though, that while we use that ability to develop a well-researched and thought through mid-case outlook, we also recognise that the world is inherently uncertain.

And, therefore, we test our portfolio and our investment decisions not just against that mid case outlook but against different potential outcomes. We develop a range of scenarios that take into account key uncertainties: macroeconomic factors, technology evolution, political developments and governance trends. As an example, we recognise the uncertainty in the way that countries address climate change. We consider a scenario in which a growing global acceptance of the science in which climate change related events drive stronger responses, drive increased energy efficiency and an accelerated deployment of low emissions technology resulting in a more diverse global energy supply base with greater inclusion of nuclear and renewables.

And even in that severely carbon-constrained world, our modelling indicates that our uniquely diversified portfolio remains resilient, with potential upsides for uranium, our high quality iron ore and metallurgical coal, potash and, likely, copper. Now, our central view is consistent with what we've discussed previously. It assumes a degree of volatility in the global economy in the near term and strong global growth over the longer term as the developing economies further integrate on investment and trade. We see the US maintaining its relative position in global growth. China continues to successfully pursue the reforms required to support their ongoing shift towards increased reliance on consumer demand. And India pursues a stronger reform agenda, resulting in improved growth and increasing prominence.

Now, this scenario yields very healthy global growth in the long term in the order of four per cent, solid commodity demand but also ready access to resources. So we see low cost supply keeping up with demand. Now, against that backdrop, the outlook for our products and our portfolio remains strong, notwithstanding the short-term volatility that we're seeing in commodity markets. As the industrialisation and urbanisation of the developing world continues, not only will ongoing investment in infrastructure be required to support that process but the accompanying productivity gains will translate into higher incomes, which will drive even greater relative growth in consumer demand. And this will drive resilient demand for things like copper, energy and food even as demand for steel and steel-making raw materials begins to slow.

Now, although this evolution is not a given and some countries will likely not make the full transition, our view is that in key jurisdictions, there are sufficient signs of progress taking place in educational, legal, labour and market reforms to give us a measure of confidence in our outlook. For example, in China there are clear steps being taken to rebalance the economy towards consumption, a critical shift for sustainable growth and employment, and the authorities have been adopting a really encouraging degree of resolve in pursuing the same. In the face of the recent slowing in the property market, the efforts to stimulate growth have been measured, certainly more measured they have been historically. We've also seen resilience in consumer spending despite a slow-down in the broader economy.

Now, the UN forecasts that the urbanised population of middle-income economies will include another 1.7 billion people by 2050, supporting a larger variety of markets and goods, as low productivity work in rural areas shifts to more productive and better-paying jobs in the manufacturing and services sectors. Now, the impact of this growth in the middle class can be illustrated by what's been seen historically in other economies, and we've called out one example in the slide here. The bottom right-hand chart shows the increasing penetration of light vehicles as incomes rise. Global light-duty vehicle penetration is forecast to increase by 30 per cent per capita to 2030, led by developing countries like China.

Now, the additional vehicles in China alone will require another 20 million tonnes of steel, 350,000 tonnes of copper and so on and so forth, not to mention the energy required to power them. And it's not just vehicles. As air-conditioner penetration in India grows from 10 per cent to 40 per cent to 2030, we expect to see a sixfold increase in household energy consumption for this use. And over the longer term, agricultural demand will also increase strongly, and this could play a growing role in our portfolio by way of potash, as I'll speak to later in the presentation.

Now, we have confidence that this transition towards a consumer and services sector-oriented economy will continue and that our portfolio is well suited to meet the commodity demand that will accompany it. I will now turn to a few of the individual commodities, and I'm going to start with iron ore, and let me start with where we've been. As everyone in this room knows, over the past decade or decade and a half, we've seen a sharp acceleration in growth in demand for iron ore. Supply initially struggled to keep pace with that growth in demand, and we saw a resultant run-up in prices. But iron ore is fundamentally not a scarce resource, so not surprisingly, the high prices incentivised fresh capital into the industry, and as a result, supply of relatively low-cost, high-quality iron ore has been able to catch up with demand and then some. And as that has happened, we've seen a displacement of high-cost supply off the top end of the cost curve and a drop in prices, and this is something that we've experienced or seen certainly in the past few months. So in other words, markets have worked the way markets can be expected to work.

So what do we see ahead of us? Well, Chinese steel demand growth is slowing as the economy transitions from investment to consumption, and we've spoken previously about our forecast for steel production to peak at between one and 1.1 billion tonnes in the early to mid-2020s. And an increasing proportion of that steel will be for replacement steel, as much of the infrastructure and equipment that's been added to the economy over the past decade begins to reach the end of its useful life, and as the steel in it gets released, more of the steel production will be met by way of scrap rather than by way of pig iron, which is what requires iron ore.

And it's this combination of slowing steel growth and more of that steel being met by scrap that can be expected to lead to a decline in the demand for seaborne iron ore from the peak that it will reach in the early to mid-2020s. And this is consistent with the outline that we've spoken about for the past few years, and that outlook has been integral to our commitment to maximise returns from our already installed infrastructure and resources. Now, our margins over the long run will be supported by the structural advantage that we enjoy in terms of our proximity to tidewater, our low strip ratio and our position relative to north Asia, where most of the steel demand will continue to be.

Now, our metallurgical coal operations have been focused on recapturing our competitive position, and Dean and the team there have achieved much by way of embedding cost and volume efficiencies, as Dean will speak to later. At the same time, other suppliers have also rapidly improved their productivity to reduce unit costs, and there's been an overall compression in the cost curve, and we're seeing displacement of some high-cost production from that market. However, as margins have compressed, high-cost supply has initially been stickier in this market than it's been in iron ore. We have seen marginal producers announce capacity curtailments of over 20 million tonnes per annum this calendar year, some of which are yet to fully take effect. Now it's likely that it's going to take some time for more high-cost production to work its way out of this market and some of the less sustainable steps taken to reduce costs begin to unwind, whereas those under greater financial pressure elect to step back.

Now, over the longer term, we expect demand to be supported by steel growth in developing economies outside of China. For example, the Indian growth story is really starting to gain traction, with the election of a new government there that's committed to improving infrastructure and to supporting the private sector in achieving and sustaining growth. An investment in steel capacity in India is gaining momentum, with an additional 17 million tonnes of annual steel capacity committed and to be commissioned by 2016 alone. And unlike in iron ore, India does not have indigenous resources of high-quality hard coking coal, and therefore they're going to need to meet their needs via imports, and we are well positioned to supply this growth in metallurgical coal demand. Our Queensland coal assets are characterised by the quality of their premium hard coking coal and a resource base that can support production for decades. These assets have access to well-established infrastructure and are in close proximity to both traditional and growth markets. The outstanding work that Dean and the team have done there to become more productive now returns us to the low end of the cost group, as Andrew mentioned, securing our competitive advantage in this commodity.

Now, turning to copper, the copper story remains very strong. Demand for copper is expected to increase from 27 to 40 million tonnes by 2030 and this will be driven by electrical and building construction, which together comprise around half of all world copper demand, as well as production of consumer goods, including household appliances and automobiles. And whilst China will remain the single most important driver of demand, we do expect to see consistent growth in other regions. Now on the supply side, while scrap will grow by 30 per cent to 2030, significant fresh, primary supply of copper will still be required to meet demand growth. And compounding the increased requirement for supply to meet outright growth and demand is the grade decline, which is going to impact the current supply base, and that's expected to take about 5 million tonnes off of the current installed capacity to 2030. The cost base in South America, which is the largest exporter of copper, will be further impacted by the increased need for desalinated water and increased ore hardness, which will lead to higher power consumption And this combination of the need for greenfield capacity and a structurally challenged cost base bode well for copper prices longer term.

So on to energy. The outlook for energy is also robust. As the world's economies and population continue to grow, more people will gain access to electricity and living standards will rise, increasing energy demand. We expect primary energy demand to grow by around 40 per cent to 2030. Energy demand growth will be strongest in Asia, which is forecast to comprise 46 per cent of global primary energy demand in 2030, and China and India alone will make up almost half of the growth between now and then. Demand for all of the fossil fuels is expected to continue to grow over that period, and this is directionally consistent with the views of other globally recognised forecasting bodies. Even in the more conservative new policy scenario of the International Energy Agency, demand for thermal coal falls as a percent of the energy mix, but continues to grow strongly in absolute terms. Absolute demand for natural gas in that scenario grows by 40 per cent, and demand for oil grows by 12 per cent.

Now, that figure for oil might sound like a low number, but we need to keep in mind that the decline curves in oil are such that a lot of new production will need to be brought to market just to stand still. So the apparent demand or the need for new capacity will be much higher. Continued global development depends on access to reliable and affordable energy, and connecting new users and improving quality of electricity supply will support strong global energy demands.

Now, the chart on the right here gives you a different lens on how we expect energy supply and demand to evolve. It illustrates our mid-case outlook, but more importantly, it helps to illustrate one of the factors that gives rise to higher than usual uncertainty when trying to call exactly how countries will meet their energy demands and what the exact mix will look like. Energy mix will be determined not only by the usual underlying, direct economics, but also by how countries shape their response to climate change and by their security of supply considerations, and these factors are going to be particularly important in Asia, given the region's continued development and its strongly increasing reliance on imported energy, as can be seen in the chart.

Now, just to be clear, we accept there's uncertainty. Just like we test our aggregate portfolio against a range of different scenarios, we do the same with our energy portfolio. Our unique diversity of energy commodities both de-risks our portfolio and provides us with attractive growth options under multiple different scenarios. And finally on to agricultural demand and fertiliser, or potash. As I mentioned earlier, population growth and greater economic prosperity in the developing world will increase the demand for agriculture, and plants need potassium to grow. As crops are harvested, potassium is removed from the land and it ultimately needs to be replenished, and potash is the primary means for doing so. At a global level, major grain demand is expected to increase by 20 to 30 per cent by 2030, and this will require the development of additional productive land or increasing the productivity in yield from existing farmland. And we believe arable land availability will become an increasing challenge going forward, as suitable arable land is already constrained and environmental sustainability must be taken into account. Therefore, increasing yield or intensity of crop production is also going to be required and potash demand will not only benefit from the base increase in agricultural activity, it will also be critical to deliver this required increase in crop yield. So in the long term, we are confident in the demand for potash which we expect to grow by between two and three per cent per annum to 2030, with major crop-producing regions such as China, India, southeast Asia, Brazil and the US making up around three-quarters of that growth in demand.

Global potash demand saw a seven per cent rebound in 2013 and is expected to grow by around nine per cent this year to 58 million tonnes. Now on the supply side, the market is in oversupply and we can expect it to remain so for the foreseeable future as announced brownfield expansions and the first phase of three greenfield projects are completed. However, the current suite of brownfield expansions really represents the last of the low-hanging fruit for incumbent producers. Many of these mines have reached the limits of their shaft or ventilation capacity and we forecast that new capacity is going to be required by the end of this decade. Greenfield projects, like Jansen, will be very well placed to compete given that even where future brownfield expansions are technically feasible, they will be more akin to greenfield projects requiring new shafts and associated infrastructure.

So with our broad exposure to iron ore, metallurgical coal, copper, the full range of energy commodities and potentially potash, and with a long-life resource endowment in these commodities, we are well placed to respond to changes in demand across a range of scenarios. Our core portfolio provides us with decades and in some instances, over a century of inventory across these multiple commodities, allowing us to choose when and where to expand our operations to maximise value. Our concentrated, largely OECD footprint lends itself well to low-cost, low-risk expansion as demand grows, and to driving world class productivity in our operations, with resultant higher relative margins. This is an unrivalled position. So in conclusion, while we remain positive and confident about our outlook, our testing against multiple divergent scenarios makes us equally confident that our strategy and portfolio are resilient to the uncertainty inherent in trying to call the future. In a continuously evolving external environment, we remain well positioned to continue resourcing the future and to delivering long-term value for shareholders. And on that note, I'd like to pause and hand it back to Andrew for Q and A.

Andrew Mackenzie

Thanks, Mike. So what I would like to do now is just take questions either from the phones or from here in Sydney, and Peter will probably wear his CFO hat during this Q and A phase and between the three of ourselves – myself, Mike, and Peter – we will handle everything you might ask, including iron ore and petroleum. If possible, it would be good if you held your copper and coal questions until after you've heard from Peter and from Dean. So who would like to ask the first question? Paul.

Paul Young

Thanks, Andrew. A question on the reductions in capex and your comments about those will not impact future growth. Looking at most of the capex reduction, it's driven by one reduction in the Australia dollar, contractors coming off obviously completing projects. But I'm looking at a few of your good projects that have looked like they're being deferred or delayed a touch, and I highlight that Spence PFS, couldn't help but flick through and it's stuck in the PFS stage. You're bullish copper. Jansen is slowing, you're pretty bullish on potash come 2020, and I also note the recent decision to walk away from Stampede in the Gulf of Mexico which has been sanctioned by some pretty big operators there. So a couple of questions. First of all, Andrew, do you think future projects are being compromised and, secondly, what actually is ready to go to the board in FY15 and FY16?

Andrew Mackenzie

Okay. Well, I'm going to defer a little bit because I think, Paul, on the question around Spence, you need to hear the totality of what we have planned for copper and some of the interplay we have with other opportunities to bring certain things forward, push certain things back. And so I'd rather wait until you hear from Peter on that one. I mean, obviously we'll talk about projects as they come forward, but I would reinforce the message that I did give that the majority of what we're doing is coming from making things more productive, small projects as well as large projects, sustaining capital, as well as what we're able to do in terms of growth. You know, just as an example, which we talked a bit about in London – we haven't got Tim here with us – but we have had substantial reductions in drilling times in the Black Hawk and we have been also able to reduce our capital going into other parts of the Onshore US business without affecting growth. So a lot of it is productivity, a lot more, and therefore that's why we're not changing any of our growth targets.

And Stampede, I would say that Stampede is an example of our very rigorous capital allocation and prioritisation process. You know, we looked at the development project. It really didn't stack up as having an attractive return and it wasn't successful in competing for capital against all the other better options in our portfolio. We, as a result, chose to stay disciplined and not to invest in that project. One of the strengths, I think, of our company is that, probably relative to many other companies in the resources sector, we have an abundance of choice in order to get this average of 20 per cent IRRs. I'm not sure that some of our competitors enjoy that. We're not driven by volume. We're driven by value, and under all criteria Stampede failed, and that's why we chose to walk away from that project. Next one. Adrian?

Adrian Wood

Thanks, Andrew. Just a couple of follow-up questions, I guess, on capital management. You presented a very consistent view with balance sheet number 1; base dividend, number 2; selective investments through the cycle, number 3; and returning excess cash, number 4. It's a very clear hierarchy, but as commodity prices have fallen, you're assumingly now willing to perhaps drop a credit rating. You are obviously lowering your capex and there's rising talk of buy-backs, despite the payout ratio already tracking above 50 per cent. So I just wonder how consistent you are – you're following those very clear capital management hierarchies in a lower commodity price environment, and maybe we can just talk through some of the actions that seem to sit against that hierarchy.

And then, just second, I wonder if you could just touch on the $4 billion in the US onshore. Why is that the right number? What's the science behind that number? It seems to be creating some tension between milking the end of the Black Hawk wells whilst deferring the ramp up in the Permian and, at the same time, starving the Fayetteville of capital. Why is $4 billion the right number for that opportunity?

Andrew Mackenzie

Okay. Look, let me handle the second one first, Adrian, and then I'll ask Peter, as CFO, to deal with your first question. We have changed the words slightly. We're investing less than $4 billion so the benefits of capital productivity that I just rehearsed some of the examples which were in our London presentation by Tim, are flowing through so that we can get the growth in volume that we require to deliver against the financial targets that I went through in my talk with less capital. So we are pulling that back and we're finding that we can optimise growth with less capital than $4 billion. The exact number will become clear as we continue to drive drilling costs down and we continue to find, and drill, fracking costs down, but also we increase the reserves per well. And you've seen some of the numbers that we are getting more reserves per well. We're having better rates out two or three years than almost any of the other operators in those regions.

So, our number as to what we think is optimum is probably a bit lower than the $4 billion going forward and we continue to work that. We've always said that our strong preference, because the curve is still – and we've seen that in liquids and it's changed a little bit – in backwardation is to fast forward the development of liquids and to wait for the development of dry gas where we have a choice because the curve there is in contango. And we still stick with that, which is why we're not putting a lot of capital than we need to in the Hawkville, the Haynesville and certainly not the Fayetteville, and concentrating instead in the Black Hawk. And that all fits very much with what we're thinking. And as we stay in this very liquid sort of predominated area, we're more likely to move drilling capacity into the Permian, as we know it, more than at this stage and move it into things like the Hawkville, the Haynesville and certainly not the Fayetteville. And Fayetteville is so long at the end of the queue, which is why we're seeking to monetise it for shareholders through a sale, rather than waiting for us to develop it many years in the future.

But I mean, maybe Peter can talk to your capital management point and some of the details, but I would just say upfront our credit rating is not at risk in the current environment. I mean, following our results, both Moody's and Standard & Poor's have reaffirmed our A-plus rating. And in more recent correspondence, and I've just got something here from S & P, they said while lower iron ore prices would cause our credit metrics to be weaker in FY15, we have strong flexibility to mitigate further falls in prices and I would echo that statement. And, of course, we maintain regular dialogue with the agencies to back up what I've just said. But, Peter, maybe you can build on some of the other issues and answer them.

Peter Beaven

Yes. I think, the question is have we changed anything. I mean, absolutely not. The framework is exactly the same framework as has been discussed for many years, in fact. And I just repeat again, strong balance sheet, solid A credit rating, no change at all whatsoever on that, the progressive dividends and the absolute commitment to continue to invest selectively, ie, in high growth projects through the cycle. And so, we are able to, through productivity, reduce the amount of capital that we were expecting to spend on those projects, but that isn't a reduction in the actual number of projects or a backing away from the value that we would create from those things. It's not that at all.

And then finally, obviously, the question about returning excess capital to shareholders. Once again, there is a framework in place. Andrew was very clear and very explicit on how we think about when we have excess capital. In the event that we get there and we have it on the balance sheet and we've got a solid A through the cycle looking forward in a low case, then we will immediately consider giving that back to the shareholders. So, no change whatsoever on our capital management. We're rock solid on this.

Andrew Mackenzie

So let me just take a question from the phone. There's some waiting.

Operator

Your next question comes from a line of Menno Sanderse. Please ask your question.

Andrew Mackenzie

Hi, Menno. Late for you.

Menno Sanderse

Yes, a little bit. Good morning, everyone. Just a quick question, Andrew, with respect to your slide 22. And Peter just referred to it where you said, "We're looking to manage towards A and A-plus, looking at a low case scenario." Can you give us any more detail on what you would consider as a low case commodity price scenario? How much lower would be it than from, for instance, where we are today?

Andrew Mackenzie

Okay. I'll ask Peter to handle that one, if you might, Peter.

Peter Beaven

Yes. I mean, I don't think there's very much to say to be honest with you. We don't disclose our low cases or our high cases and so on. I mean, I think, Menno, it's just safe to say that, we do use probabilities because we have a range of exposures through our commodities and through our exchange rate and so on, the non-controllable factors. Certainly we run exhaustive cases on that using our corporate model. It is a very thorough process and we have a great deal of confidence in our ability to ensure that our analysis is as good as it can be.

Andrew Mackenzie

Okay. Maybe another question from here in Sydney.

Menno Sanderse

Thank you.

Andrew Mackenzie

Maybe another question from here in Sydney.

Lyndon Fagan

Thanks. It's Lydon Fagan of JP Morgan. Firstly, just looking at the dividend and, I guess, the dividend cover at spot prices, it does look a little challenged at the moment, and just in the backdrop of that – just wondering what level net debt would get to before you start to feel uncomfortable regarding the credit ratings. And, I guess, looking at the FY16 capex budget, you've got $10 billion approved, yet the guidance is $13, so I'm just wondering what that $3 billion is and at what point you might look at cutting that. Thanks.

Andrew Mackenzie

Okay. Look, there's a lot of questions in there. I mean, I was trying to hold them in my head, so I'll get Peter to help me with some of them. I think, just on the issue of dividend cover, we are delivering very strongly on capital productivity. On operational productivity. We are being able to pull back capital investment for capital productivity without affecting our ability to generate volume. So I would just say, looking at all of that, then we feel confident about our ability to cover the dividend.

On the $13 versus the $10, we're not able to give up on very high-value opportunities for growth. We believe that our company will prosper through the short term and the long term, by absolutely looking after the progressive dividend but by continuing to invest in what we think are some of the best development projects in the whole resources sector, judiciously and with a high level of capital productivity. And we think we've got that balance right, particularly given the cash flow that we believe we're going to generate through tighter management of working capital but, much more importantly, the way we're driving productivity. So, I mean, Peter, you might want to add to some of the other points.

Peter Beaven

No. Just one, I think, in particular. I mean, you asked about what level of debt would we feel uncomfortable with. Now, clearly we're not going to give a debt number that we feel uncomfortable at. All I would say is to repeat what Andrew said. First of all, we're very, very comfortable. We're very confident that the dividend is locked in. There's no problem at all in meeting that. Yes there has been volatility in prices, but a couple of things I would say on that: firstly, that we do have a range of exposures. Clearly, iron ore and oil are two of our biggest, but there are others. The assets we have, have a very low cost basis so the operational gearing on those is very good, and they are getting better. Those productivity savings really are coming through. Those gains are coming through very nicely.

And then, finally, who knows how low anything can go, right? So to your final point, we do have, a strong balance sheet. We are currently at A plus, and, of course, we have got a large suite of very good capital projects. So I think under almost any circumstances we can see, we're very comfortable and very confident in our ability to continue to meet that basic commitment we have to our shareholders, which is, run a strong balance sheet, make sure that we selectively invest for growth and, importantly, keep that progressive dividend intact.

Andrew Mackenzie

Maybe another question from the phones?

Operator

Your next question comes from the line of Myles Allsop. Please ask your question.

Andrew Mackenzie

Hi Myles.

Myles Allsop

Hi there. Yes, just a couple of questions. In terms of capex, you've been talking about the $14 billion ceiling beforehand. Should we assume that that still stands even though now you're guiding to – FY16 inclusive – to $13 billion, but beyond FY16, is it $14 billion that we should be thinking of? And, also, it would be good just to help us understand what sort of growth survey $13, $14 billion capex spend will deliver, medium term. Clearly, you've given guidance this year and in FY15, but it would be helpful just to get a sense of what sort of growth we can expect beyond that.

Andrew Mackenzie

I'm not going to be too specific, Myles, in my answer because we're very much in the middle of our long-range planning exercise to see what's appropriate. So all we're doing is thinking about the years that we budget for: this year and next year. At this stage, until we say otherwise, then we leave the $14 billion in place as the optimal level of investment to balance growth and cash returns to the shareholder as we model our company, and we will continue that. And clearly, we have to input our capability and our confidence in capital productivity and, indeed, our forward-looking prices, which we do through our annual planning process. It's very much well under way. I'm fitting these meetings in between doing our big annual appraisals of all the businesses. I'm off over to Perth tomorrow to do the iron ore one.

So I'm not ready, really, to do that at this stage, and that will come later, probably at full-year results at the earliest stage. In terms of the amount of growth we get from that, I think we've said in the past – but, again, we have to do that and redo that – historically, if we invest at that level, then we can deliver. I mean, pick your metrics, but, I mean, growth of the order of three to five per cent. But I'll look to Peter to just say if he wants to add any more precision than I'm prepared to at this stage.

Peter Beaven

No. I don't want to add any more precision to that. All I would say is that, Myles, this is really the point of the capital market day. By the end of today, we'll have taken everybody through, in some detail, what all the plans are for each of the businesses, what the opportunities are, and I think as you go through that – and I know it's a lot of work. Sorry about that. But as you go through that, you will be able to see for yourself, the various, you know, the strength of the projects and, therefore, what they will produce. And the only thing I would just remind everybody is the inherent strength of the portfolio that we have going forward. Again, we're saying on average this is a 20 per cent IRR, so this is a very powerful set of opportunities that we have currently under way and in the medium term and, indeed, in the longer term.

Andrew Mackenzie

More questions from the floor? Glyn.

Glyn Lawcock

Thanks, Andrew. You talked about uses of cash and the priority. What I want to understand is – it sort of follows on from everyone else – if cash becomes tight, what goes first? Do you give up on the credit rating, or do you give up on progressive? How do you rank it going the other way, when cash becomes tight?

Andrew Mackenzie

I'd rather wait until we find ourselves in that situation, but you did hear myself saying very strongly that this is a company that is strongly committed to the progressive dividend, and that is something that we are saying today. We're absolutely maximising productivity in the first instance, to preserve the yield of this company. Credit ratings and so on are things that we discuss with the credit rating agents, but we want to stay at the level of solid A, and I gave some examples of how we will do that. Peter, anything to add?

Peter Beaven

No. I think that's right. I mean, just again, this importance of reiterating our commitment to the progressive dividend. The other thing I would just say – look, again, who knows how low things can get? We're not in the business of predicting that in public, but in the event that you ever do slow down a capital program, what we have seen, but not for projects that are in execution because that's really difficult if you stop a project halfway through – but for projects that are in planning stage, quite oftentimes – and Andrew certainly said this when he came in as the CEO. Slowing down a project can really actually add quite a lot of value because you're taking more time to think it through and create a more productive project. So I necessarily don't think it's always this race that we had in the past to get the first tonnes into the market. It also had some downsides, so let's just not forget that.

Andrew Mackenzie

I think what we're saying is we believe that with the management flexibility we've won for ourselves, particularly through our accent on productivity, our understanding of the value of delay, that we can look after the progressive dividend and maintain a solid A credit rating.

Clarke Wilkins

Thanks. Clarke Wilkins from Citi. You mentioned at the start sort of maintaining or retaining Nickel West rather than selling it and sort of maximising value. Now, there's been a huge amount written about Nickel West over the last few months when a sale has been on the table, but – interested to see what can you do with that asset you haven't done already to really maximise that value if it does stay in the portfolio for longer than expected.

Andrew Mackenzie

Well, we can do a lot more, not just with Nickel West but with all our assets, to maximise value going forward. The journey towards higher productivity never ends and as you've seen today, we continue to improve what we can do through productivity. And Nickel West, absolutely, will be part of that agenda. I think there's a number of things that we can do to be very clear that this is an asset we we're not going to invest in, we're not going to explore. We're going to run the existing assets as hard as we can, safely and at lowest possible cost, and we'll see. Clearly, there is a limited life to that, and, therefore, we have to think about some of the other costs that come at the end of that life and work them hard as well, but we're open to any kind of creative ideas that other parties might bring, but certainly not the ones that we saw first time around, which really were inadequate relative to what we think is the value of that asset to our shareholders, and we will get that value through running it ourselves. Any more from the phone?

Operator

Your next question comes from the line of Peter Harris. Please ask your question.

Andrew Mackenzie

Hi Peter.

Peter Harris

Thank you for the presentation. Maybe a question for Mike, if you want to throw it to him. China just released its energy development strategy last week and it looks like it has basically capped coal consumption at about 4 billion tonnes which is a pretty limited growth between here and 2020. You've got the two Russian pipelines that are going to deliver gas to the north of China. Just have you changed the way you're thinking about the energy that China might demand from either coal imports or LNG imports over the next few years as a result of the announcements they've made in the last few weeks?

Andrew Mackenzie

Over to you, Mike.

Mike Henry

And, Peter, the answer would be no change in view. So the improving energy intensity of a cap on both emissions and coal in China is something that we've been expecting. The other point I would note is that within – and it comes back to the presentation I gave - we don't just look at one scenario. We look at multiple scenarios to make sure that if something unexpected does happen, that we actually understand what the ramifications for that would have been. But directionally, everything that we've seen come out of China right now is aligned with what we were expecting, including the climate change announcement last week between the US and China.

Peter Harris

Thank you.

Andrew Mackenzie

Any more questions from the phone?

Operator

There are currently no telephone questions. Thank you.

Mike Taylor

Thank you. Mike Taylor from Morningstar. You've spoken a bit about portfolio simplification and it's never a zero sum game. You do lose something in diversification and that sort of leads into a question on aluminium. With potash you seem to be showing that you're fairly forward looking, willing to sort of bide your time on something that might evolve. With the big themes of light weighting, mandated fuel efficiencies and battery technology and all that sort of thing, I'm just wondering what your view is on the long term outlook for aluminium, and if you see a role – a longer term role there for BHP and what it might be.

Andrew Mackenzie

Okay. Well, what I would like to do is share the answers with Mike. I mean, he can maybe talk a bit more about the light weighting. I would just make a couple of points. Mike's second last slide looked at diversification through a number of lenses, not just commodities, but also through end use, for example, and the geography of markets. And what you saw in that is even with the portfolio we're now heading towards, we're selling to all four corners in reasonable volumes and we're selling into a wide range of market segments. So, for example, the benefits or the drive for increased energy efficiency which might be felt in aluminium can also be felt in things like copper where generally the more efficient way of using energy is in electrical form and more efficient engines and so on, you know, normally in copper – in more copper. So we can benefit from some of those trends in a way that we think is possible.

The other thing I would point out is that part of our selection of assets that stay and assets that go, is that we want to be primarily an upstream business. One that's involved in taking things out of the earth and getting them to the point where we can. The quickest point where we can sell things into the world markets, and that's that similarity that allows more best practice sharing and where the bulk of the rent is in the hard geology, the hard mining, the hard oil and gas production. The aluminium industry is much more weighted to processing and, therefore, in this simpler model it is actually less attractive to us. And that's an example. And if I may, I mean it's easy in diversification to think more and more is better and better, but I kind of like to think a bit like, we're a high class restaurant where we have four or five great dishes that we prepare ourselves every night, and we actually get cordon bleu status, rather than having a whole bunch of stuff that we can actually slap into the microwave and get a bit distracted. And we think we've actually found the right optimal level of diversification and that's what we're doing. But, Mike, maybe you want to add something on the aluminium market.

Mike Henry

First, I would add just three things. I mean, one, just continuing on from what Andrew was saying. This isn't a call on the commodity. So we still actually see there being strong growth out there for aluminium. Just like the ones over the past decade, we expect aluminium demand to continue to grow strongly going forward for all the reasons that you've outlined. The sole reason behind the separation was, as Andrew outlined, which is how we see it fitting in to BHP Billiton's core strategy.

Brendan Fitzpatrick

Thanks. Good morning. Brendan Fitzpatrick from Morgan Stanley. It's great to see the additional cost out coming on the Opex line, specifically referring to the core portfolio. Is it possible at this point to say there's any similar pro rata levels coming through on NewCo or do we need to wait for the NewCo to be established and then look at what the opportunities could be coming through at the operating cost line?

Andrew Mackenzie

Essentially you do, and they will start talking to you, really from now on in. We will clear the airwaves for them and probably until the first half results. But I would just repeat what I said in the presentation. We do believe the separation of different classes of assets into two more similar looking companies will actually allow them to do all the things that we're doing but in a different way, and things that would take longer will be harder to do if we remain joined up. And they're going to say a lot more about that as they get going. And, the management team have just finally formed today with this announcement and I'm sure they're going to have lots to tell you over the coming months. Anything more from the floor?

Michael Evans

Andrew, Michael Evans from the CIMB. Just a simple one. If spot prices prevail, your FY16 capital guidance, should we assume that's a ceiling or a 50/50 chance of being higher and lower?

Andrew Mackenzie

You should assume that that's a ceiling, and it's certainly not a spend up to number. But at this stage we believe, we're pretty close to that year, that this is the right level for us to continue with our strategy, and it captures the benefit for capital productivity. Time for a break? Anything more on the phone?

Operator

There are no questions from the telephone line.

Andrew Mackenzie

Okay. So I think we should wrap up now. Now, I don't have my running order here. When are we going to get back? So 10.45 back, and then first from Dean, and then from Peter.

Dean Dalla Valle

Well, good morning, and welcome to the second part of our briefing today. My name is Dean Dalla Valle, and I'm the coal business president. It's great to be here today to provide an overview of the work that we have been doing to deliver against our strategy, as I outlined to many of you in May last year. Broadly, our strategy involves continuing to improve our safety performance, engaging our employees, driving productivity at the bottom leg of our operations to global benchmarks, and reducing our absolute costs. As a result of that, I'm pleased to report that we have delivered $2.4 billion of embedded costs and volume efficiencies since 2012, and all of our operations are cash-positive today. As with the earlier presentations, I'd draw your attention to our disclaimer, and equally important is a statement of our resources, which is used throughout this presentation and noted for your reference.

As Mike explained earlier, we remain confident about the outlook for both metallurgical and energy coal. However, as you all know, the current market conditions are challenging. It has been essential that we focus on the things that we control to re-establish our cost-competitive position. With the compression of the costs curve and reducing margins, our volume and cost-saving initiatives have been essential to ensure all our operations are cash-positive. Today I will highlight the key focus areas for the coal business, achievements to date, and some of the initiatives underway to deliver even more. Continuous improvement in a health, safety, environmental, and community performance is critical to the success of our business. While we are aggressively pursuing productivity improvements, our work is predicated on continuing to improve HSEC performance. Our priorities are to continue improving safety by rapidly improving our ability to manage material risk. For example, one of our priority material risks is the interaction between light and heavy vehicles at our mines, and no doubt many of you close to the industry have seen some of the tragic events of late, where operations get this wrong. Multiple fatalities can happen very quickly. We have implemented detailed plans which are lowering the risk across all of our sites. These are site-based; they're routinely measured and tested all the way up to Andrew.

Equally important is the work that we are doing within our communities. The picture you see here captures one of our community projects at our Mount Arthur mine in New South Wales. It was actually a finalist in our global HSEC awards just last week, which Andrew presided over. And this is the Warrae Wanni Pathways to School Program. This partnership is a local public school in the Hunter Valley supports preschool aged children to attend an early learning program to help them transition successfully to school. It is particularly focused on local Aboriginal and disadvantaged children. And this is just one of the many health, safety, environment and community projects that we have developed. Our teams are so proud to do this. No doubt we've seen mining and coal mining in particular come under lots of pressure and scrutiny, and the ability for people to work in these businesses to actually do these projects and bring great benefits for people inside the operation, but also around the operation to have lasting impacts, is just a wonderful thing for people to be able to do, and it really fits well with the charter of our organisation.

Coal is a key pillar of BHP Billiton. It has accounted for 17 per cent of our production over the last five years. And we have made a material contribution to the group through both EBIT and cash flow. However, as shown on the bottom chart, the last two years have been particularly challenging. Given market circumstances, we have been running incredibly hard to re-establish our cost-competitive advantage, and we're making great progress, as you will see. The success of the coal business is underpinned by a high-quality resource base that can support decades of production. Note the legend size, the bubble which represents a billion tonnes resource, down the bottom left-hand side. Specifically, three-quarters of the production forecast in our Queensland Coal operations is premium quality hard coking coal. Along with well-established infrastructure and proximity to traditional and growth markets, this gives us the competitive advantage against the merging coal basins. Following the proposed demerger, the BHP Billiton coal business will be predominantly focused on the major resource basins in New South Wales and Central Queensland, as shown as the large orange bubbles on the east coast of Australia. And again, note the size of those bubbles compared to a one billion tonne resource on the legend.

For those of you who attended the Queensland Coal tour in May 2013, you will recall that we set out a very simple, clear strategy: to maximise productivity through the utilisation of installed capacity and to sustainably lower our cost base. I'm pleased to be able to report today that this has resulted in a reduction in met coal unit costs by 37 per cent and energy coal costs by 21 per cent over the last two years. We have done this by identifying bottlenecks and value drivers at each operation across the value chain, and we are focusing on benchmarking productivity, renegotiating supply agreements, eliminating waste, and engaging our people to improve productivity. This is how we achieved cost and volume efficiencies of $2.4 billion since fiscal year '12, representing over a third of the company's savings, with the majority coming from sustainable cost efficiencies. And we're not done yet, as we'll show you today.

In conjunction with Mike's team we're also leveraging our marketing expertise to maximise margins. Our marketing team is a major contributor to coal's productivity agenda. Transparent pricing and promoting the technical properties of our high-quality coal ensures full recognition of their value and use. If we look at the chart, it shows the prices for premium, low-volatile coal we realised, compared with the index. The orange dots represent our sales and the grey dots the sales of our peers. On average, we out-performed our competitors and received above-index pricing. We also optimised the end-to-end supply chain, leading to lower rail and port costs, higher throughput, and reduced demurrage.

Driving labour productivity is one of the major elements in our strategy. As you can see, labour is around fifty per cent of our cost base. Two data points I would like to emphasise in this slide. We have lowered our labour costs by 23 per cent last year and achieved a 29 per cent increase in material moved per employee. Our high-performance culture has been key to achieving these reductions. We are engaging with employees at all levels to ensure that every person every day starts with a sense of purpose and a target, is involved in the process of identifying improvement and elimination of waste, and receive regular feedback on how they and their teams are performing - no different to how you would coach an elite sporting team, and that's what our teams are. They're people who are competing on a global basis every day. Achieving diversity in our workforce has also been key to enhancing our labour productivity. This includes diversity by location, by source, and by gender, and we are very proud of the 25 per cent female workforce at Daunia and the Caval Ridge mines, achieving the aspiration that we set out for ourselves. All of the improvements are facilitated by our systems and processes which enable internal benchmarking across our operations, and this creates a very healthy competition.

So let me get a little bit more specific and detailed about our work. The two charts here show that we have achieved material increases in both our truck fleet and wash plant utilisation, which are our bottom legs, and this is over the last 12 months. However, our aspirations are higher. We're aiming to meet or exceed global benchmark performance for our key equipment over the coming years. Specifically for trucks, we are targeting global benchmark performance of 6000 hours per annum, excluding queue time. That is, not recognising the time that a truck is waiting around for a shovel to load it. In our wash plants, we are targeting benchmark performance of 8000 hours per annum. And I'm sure I don't need to remind the highly productive people in the audience here today that there are only 8760 hours in a year, so 8000 hours is truly a high benchmark. With our common systems and processes in a simplified business, rapid replication of best practice will also be a significant source of advantage for coal.

Let's dive a little deeper into productivity. We have lots of great examples of productivity improvement across our business, but I will talk about three today. Let me start at the Peak Downs Mine in the Bowen Basin. The team there has delivered an outstanding performance, with an eight per cent improvement in production to 9.8 million tonnes last year, a record for that mine. And that's been running for quite a while. And annual operating costs have been reduced by 18 per cent in the same year. Today, the coal preparation plant, which is the site bottom leg, is currently operating at over seven and a half thousand hours production per year, so it's approaching 8000, our target. So how did we achieve this? It was done by detailed, bottom-up analysis of critical paths, identifying areas of loss or opportunities for improvement, engagement of the workforce and use of measurement and visualisation of the process, so everybody was engaged and involved.

The second case study is about optimising the mine plan at the Poitrel Mine, also in the Bowen Basin. So what you are seeing here in the picture is how we've redesigned our mining process to optimise the amount of coal we extract from the Poitrel seam. So in the picture, you can see the direction of the mining from top to bottom. You can see we started strip 11, this process. We got up to strip 14. The chart shows the improvements we've made as mining progressed. The red area shows where suboptimal blasting practices have previously impacted up to two metres of minable coal. The green area is where we have implemented more accurate blasting, resulting in no more than 20 centimetres of coal being impacted. This is a great improvement, which equates to less washing, less waste and significant cost savings. This was achieved by improved mine planning, more accurate geological models and, of course, being well communicated and engaged so everyone knew the plan and everyone acted on the plan every day.

The final example I'd like to share is the significant improvements in productivity at Mount Arthur in New South Wales. A cross-functional team with representatives from production, mine planning and dispatch, underpinned by benchmarking critical path analysis, identified opportunities to improve utilisation and increase productivity. This included improvements in truck dispatching, faster driver changes by having drive-through bays, improved mine planning and focus on payload. Through these measures, we will be able to reduce loading fleets from 12 to 10 and reduce the trucking fleet from 88 to 64 over the next year.

All these case studies highlight the sustainable productivity improvements our coal business is implementing and embedding where it can in all the other operations rapidly. So hopefully these three examples plus the previous one gives you a sense of the great works going on right throughout the business, and each of the mines, if you visited, would have two or three examples of equal gravity that they would be extremely proud of. So after a long period of significant cost inflation driven by a heated market for labour, consumables and accommodation, we have had to work tirelessly to rebase our costs. We have banked almost 400 million in supply savings over two years and are targeting a similar result this year. This means a combined saving of about $750 million since fiscal year '12 will be achieved.

So how do we do this? Obviously, it's a mix of traditional reviews and looking at some more innovative ways of doing it. Rapid tendering is a good example of more innovative ways. This involves an electronic auctioning process where we have proven results we have seen a 50 per cent lowering in input price for some of our consumables, and it's something we're now starting to institutionalise across all of our businesses as one of the new approaches. There are many, but it's a good example of what we're actually doing today and its realising results. And being in the great town of Sydney, we all know how the Sydney Harbour Bridge was painted. Our supply process is the same. You start at one end. You paint it. When you've finished that, you basically start again. So we just continually do this, we continually de-layer our costs.

So, so far I've told you about productivity, people, equipment, supply, marketing, costs. So what's next? Despite having already embedded significant productivity-led gains and cost efficiencies over the last two years, there is more to come. At Queensland Coal, we are targeting a further 10 per cent reduction this fiscal year, bringing costs to below $90 per tonne. I remember in May last year when some of you – in Queensland, there were questions and challenges, could we get below a hundred? Some were bullish, some were bearish, but we're now at $90. We're forecasting to be. And at New South Wales Energy Coal, we are forecasting a further 15 per cent reduction in unit costs over the next two fiscal years, bringing costs below $45 a tonne. And you will note in the footnote there that that's an exchange rate of 91 cents, and so we know we've moved on so there's actually further upside but we've held at 91 cents, so it's consistent with our other presentations.

And, again, our plans will be achieved through targeting global benchmarks on our productivity, crystallising further cost reductions and leveraging our common systems and processes right across all of our businesses. For fiscal year '15, we expect to achieve record metallurgical coal production of 47 million tonnes. Our increase in volume is from maximising the utilisation of existing capacity, including our newly completed Caval Ridge and Daunia mines operating at full capacity. Energy Coal volumes are expected to remain steady, while we're seeing strong operational performance at Mount Arthur. There will be lower volumes at Navajo Coal due to reduced power plant demand. Cerrejon is producing at guidance, with upside with the right conditions. As you can see, we have successfully delivered projects in our pipeline. Most recently, Caval Ridge was delivered three months ahead of schedule and $160 million below budget. The port expansion associated with Cerrejon P40 delivered first coal on schedule. However, as previously communicated, we will remain constrained at 35 million tonnes in the medium term. Hay Point expansion is nearing completion to its 55 million tonne capacity.

So with our growth pipeline behind us, going forward, our capital expenditure will largely be minor and sustaining capital, as Andrew has articulated many times publicly and to me privately many times. Our productivity and costs work will also directly impact the efficiency of our capital spend going forward. So productivity, obviously, while largely operationally focused, will have massive spinoffs onto our capital spend as well, and you're seeing some of that flow through in major capital and minor capital projects. So I've given you an overview of how we're delivering against our strategy. As Andrew outlined this morning, there is also significant opportunity for simplification in BHP Billiton as a result of the demerger. With fewer assets, we will be able to focus on our core capabilities and we can leverage our common systems and processes to deliver continuous improvement and accelerate productivity gains.

The demerger will result in a reduction of core operations for coal from 19 to 12, and as a result, we are focusing on understanding how we can further simplify our business and the way we operate. We intend on extracting synergies from the commonality of our fleet and the concentration of operations, including centralisation of maintenance, analysis and improvement. We will also review functional activities to further streamline for the simplified portfolio. So you can see from these results that our strategy is delivering. We are driving ongoing improvements in HSEC performance while we are aggressively pursuing productivity. We have a large, high-quality resource base, and our early decisions to close high-cost capacity and our extensive productivity and efficiency work have re-established our competitive advantage.

Volume growth will come from a successful ramp-up of our completed projects but mainly from our focused approach to productivity. Even in this tough environment, all our assets are cash-positive, which leverages us for margin growth and positions us well for the future. We're not stopping here. We can further simplify post-demerger and pursue even more efficiency across the coal portfolio. That's the exciting part of the story. With that, I will hand over to another exciting story. Peter Beaven, to talk about copper. Thank you.

Peter Beaven

Thanks, Dean. My name is Peter Beaven. As many of you know, prior to my appointment as CFO, I was the president of Copper in Australia in that context that I'm here to present to you today. But before we begin, we have the usual disclaimer, all three pages of them. Okay. So what I'm going to do is I'm going to start with an overview of the copper industry and outline some of the structural challenges that we all face. Mike mentioned a few of them. I'll try and bring out a few more details in that regard. Those challenges, of course, at the same time, make the long-term market fundamentals for copper very attractive. Importantly, I'll detail some of the solutions that we're implementing to overcome those challenges and how we plan to create significant shareholder value from, really, essentially two things: maintaining our low-cost operations, driving what we have today as hard as we can, and then, secondly, growing our business, firstly, from debottlenecking, low capital intensity, super high returns, great projects and then, finally, larger, more material growth projects.

Our productivity efforts alone are delivering substantial unit cost savings. There's more to come, as you heard from Dean. And beyond the enormous effort that's required simply to stand still in this industry, we also have a differentiated growth story: near term, several exceptionally low capital intensive growth options that will generate returns significantly exceeding 20 per cent. And, longer term, we really have a world-class resource base that will provide us with a compelling suite of growth projects. As Andrew mentioned earlier, operating in a safe and sustainable manner is what matters most to us. We've got a strong safety track record in copper. Our TRIF is consistently below three. That's a very good number in the mining world. Escondida, the world's largest copper mine, has a number of very large, complex projects under way, a huge amount of contractors, therefore, on site, along with our own operation employees. It's TRIF at the moment is 1.7. So I think this is indicative of a business that's in control. The safety performance is underpinned by a material risk management process. That focuses on establishing critical controls, those controls being owned by the line people on the ground and then on a daily basis, in the field, verifying their effectiveness using simple and effective tablet based systems.

Sustainability is also a key consideration on all of our decisions. As many of you will know, two of the biggest challenges that face the mining industry – in fact, Chile in total, are really power and water. And our communities in Chile, and in fact all across our operations, like all the communities in the world, are demanding and expecting different solutions to the problems that we faced in the past. So our stance is to react positively, give them the front foot. We fundamentally believe that we need to be aligned with our communities. We need to be aligned with our community because we need a licence to operate and we need that licence to operate to run on a multiple decade basis. I don't believe that as society changes, then we should sit and hang back and wait and be pulled in the direction of that society. So our new desalination plant at Escondida will substantially reduce non-renewable water usage. It will enhance obviously the sustainable use of the aquifer that we currently draw the majority of our water.

We need more power to operate and expand at Escondida and Spence in fact, to pump that water up to Escondida. So we have Korean partners. They're building a 500 megawatts gas fired plant in Mejillones, close to Antofagasta. That will help us to move from a hundred per cent reliance on coal to a 50/50 split between coal and gas. In so doing we can reduce our emissions, our carbon emissions by one and a half million tonnes per annum which is obviously very, very significant. In the last five years we contributed over $200 million to social programs in our communities. In Australia, Olympic Dam and supporting programs to improve employment prospects, enterprise development in local indigenous communities. In Chile we established the Creole Antofagasta organisation. Creole means to believe, so to believe in Antofagasta. So what we did is we put together with civic society, with regional government, with federal government, and with the other private companies in the region an organisation that will create a comprehensive, long term plan to make Antofagasta one of the most liveable cities in Chile by 2035. And for those who have been to Antofagasta you know that's quite a challenge.

And this year, I was very proud. I was very proud that we were given by Ecare, which is a think tank which is essentially set up by the business community of Chile. Ecare gave us the company of the year. I hear of many of these organisations these days. But in 50 years this organisation has been in existence in giving out this award. This is only the second time that a foreign company has ever been given it, and they gave it to us because of obviously how we run our business and how we have developed and have contributed to the development of Chile. I mean, that's really significant when you get your peers in another country to recognise how we do things, as well as what we do. So given the scale of our operations and our resources, we will continue to be an important contributor to our communities for decades to come. So this foundation of safe, sustainable operations has underpinned exceptional operating and financial performance. Very quickly, let me just remind you of some of these numbers. The last five years copper contributed 21 per cent of the BHP Billiton's production. Underlying EBIT margin, 42 per cent. We invested $13 billion in our business and that achieved a net operating return on net operating assets of 34 per cent. Money well spent. So copper truly is one of BHPs key pillars.

Let me just step back and look more closely at what are success factors that we need to achieve in this business, in copper in particular; maybe actually just in any commodity. So do you have the best ore bodies? Are you low cost? Do you operate in stable countries? Do you have a suite of attractive, high return growth prospects? I think if you tick one or two of those boxes you, you've got a shot at it. But, honestly, we can say that we tick all four of those boxes. We have a simple portfolio. World class ore bodies concentrated in stable countries. All of our – with the exception of Peru, in fact, all of our countries are OECD interested. They underpin our low cost position. They contain many of the industry's best development options. I will tell you more about those in a second. And with our productivity agenda, they continue to improve every day. Our four assets in Australia, Chile and Peru contributed 1.2 million tonnes of attributable copper production in FY14. That makes us the fourth largest copper producer in the world currently.

I think these assets also form the largest copper resource base in the industry, and in many cases with potential mine lives in excess of a hundred years. We have a competitive cost position. Antamina, Escondida firmly placed in the first quartile, Spence in the second, Olympic Dam – well, it continues to move down the cost curve with significantly more productivity gains to come. And again I will speak about that in a moment. A steep tail in the industry cost curve is interesting. It does support attractive margins for our low cost assets. We've seen other commodities with a steep tail and so what I think is important is we actually believe this one is sustainable. Mike has already outlined the existing copper supply base will be unable to meet increased primary demands. So grade decline in the big four porphyries that account for much of the world's copper production and continues demand growth will require additional mined tonnes to balance the market. Those additional tonnes to balance the market have to come from higher cost resources.

The industry faces considerable head wind in addition to this, in meeting the market demands for these additional tonnes because the grade decline means that we will have to move more tonnes simply to stay the same. And productivity in moving those tonnes is very variable. What we see in Chile and in Peru, it's about the same numbers, is a productivity per person in terms of tonnes moved per person per year is about 50 per cent of that of comparable operations in the United States and Canada. These are Wood Mac's numbers. Actually we did our own study, pretty much the same. This lack of productivity is exacerbated these days by the labour cost inflation. Other input costs, important input costs also rises. The cost base in South America will be affected by the increasing need for desalinated water, higher power consumption required to pump this water to mines located at high altitudes. And power costs per megawatt hour in Chile are already significantly higher than other major copper producing countries such as Peru and the United States and, in fact, here in Australia. Permitting – getting harder all the time. We have to give more commitment, this takes longer.

So within this context we believe that we are performing very well. We believe we will continue to do so. And we have a portfolio of assets of unrivalled quality. We have a differentiated approach to productivity that's producing great results. And capital efficient growth options to go with that. So we believe we're very well positioned to outperform. Let's have a look at some of these aspects in more detail. The first things we've got to do is make sure you get the most out of the assets you currently have. Right. The capital that you and our shareholders have given us. So the first aim, get the most out of every piece of installed capacity that gives most production. So ensure maximum through-put at the bottle neck. Like you heard from Dean, we're on exactly the same journey. Leveraging common systems, processes central to our operating model, to underpin continuous improvement – performance improvements. We focus on the amount of time our infrastructure and equipment is available. How much of the time is utilised, the rates, the variability. These are very basic things but they require day in and day out focus. Maximising bottle neck utilisation has a potential to add more value than anything else we do. Essentially it doesn't come with a huge investment in capital and it produces a tonne that carries a margin with it.

Our focus on the basics over the past three years has allowed us to increase bottleneck throughput to record or near record level at all the assets in FY14; record material mined at Olympic Dam, the shaft lifting capacity is essentially the bottleneck there. 22 per cent increase in mill throughput at Escondida, the SAGs, the mills are the bottleneck, and it's stacking at Spence – it's processing and stacking, that's the bottleneck. We've seen a 13 per cent increase in that in FY14 to the second highest ever, just a smidgen off the record. And at Antamina, actually the primary crusher is the bottleneck, interestingly enough. And that is absolutely going at record rates. At Escondida, we systematically moved – it takes time. Andrew said it. These changes, they may seem small but they take time. We systematically move the bottleneck there from crushing conveying to the concentrators and now we've hit the next bottleneck, which is water.

But we also have to look beyond the bottleneck, obviously. There's a whole lot of efficiency gains that we really need to look after. So here we benchmark the performance of our equipment, internally and externally. Transparency, of the results, enables the pursuit of best in class performance, and our productivity programs have identified several initiatives to further improve performance across the business. Example: Escondida optimised meal breaks, shift changeover practices, combined with increased training development resulted in an 11 per cent increase in truck utilisation over the last 15 months. At Escondida we run more than 150 trucks. We move about 1.3 million tonnes of dirt a day, so you can imagine that sort of – those changes, 11 per cent increase in utilisation, it has a bit impact on your bottom line.

Our focus on productivity will support our ability to achieve FY15 copper production guidance of 1.5 million tonnes, and that is notwithstanding the recent two-day strike and the significant water and power availability issues – challenges that have constrained production so far this year. Sometimes, you get lots of numbers of productivity and there's big billions here and billions there but, hey, does it actually hit the bottom line. And so here we're going to say the productivity initiatives that we're talking about, they're directly translating into lower unit costs. In order to offset grade decline, we're not only moving more tonnes but we're doing so at a lower cost. Over the three years to the end of FY15 we anticipate a 25 per cent reduction in unit costs across the total copper business. This is despite an expected 13 per cent increase in material moved over the same timeframe.

We're achieving a substantial reduction through supply savings, strategic in-sourcing of contractor activity, improved labour productivity, reducing consumable expenditure, simplifying our functional support structure, the same as what you heard from all of my colleagues. Escondida alone, we expect FY15 unit costs to decline by 30 per cent compared to FY12.

So, as I mentioned earlier, industry is characterised by big copper porphyries. They have variable grades. That's how God created them, and where he put them was where right now we have water and power constraints. So Escondida is no exception. Following several years of strong grades from FY12, we're again faced with significant near term declining grades, with the resultant reduction in volumes. However, we have been preparing for this for some time, so we expect FY16 to represent the low point in production for the remainder of the decade. And I'll tell you how we're going to get over this grade decline. First of all, our productivity initiatives will offset some of the impact of lower grades. The evidence in the top right chart on the slide shows FY16 production well above FY12 in spite of that low grade, and the bottom right-hand chart shows that we expect to hold FY16 unit costs approximately 20 per cent below FY12.

But we still need to do more. So following the commissioning of OGP1 in 2015, we now have created for ourselves the option to extend the life of the Los Colorados concentrator – that was the original concentrator as Escondida and, if you recall, OGP1 – the premise of OGP1, the new concentrator we're building, was that we would build OGP1 and then we would demolish Los Colorados and get the ore that sat underneath it. So we've created the option to extend the life of Los Colorados, enabling us to run three concentrators with a resultant 70 per cent uplift in throughput compared to the 220,000 tonne per day we achieved in FY14. The improved mine design will still enable us to access high grade ore as we had originally envisaged. It's from those push backs directly adjacent to Los Colorados and the truck shop that sits next to it, and we'll reach that in the early 2020s.

That will return our mill head grade to one per cent from the early 2020s again, I want to stress, in line with our original projections. The Escondida water supply project, or EWS, is a critical component of our three concentrator strategy. We need water to run that additional concentrator. So we balance our increasing water requirements with our commitment to ensure a sustainable use of aquifers, and against that backdrop, following the commissioning of EWS in calendar year 17, with three concentrators installed, Escondida can maintain production for a decade without the need for any major capital investment.

Let me give you a few more details on the Los Colorados extension. We think we have the opportunity to extend the life up to financial year 30, and this option has been created by mine plant optimisation, a super job by our mining planners in Escondida. So the changes – we're executing a series of smaller push backs with steeper pit gradient. In so doing – so we're going to cut that pit wall right up against the existing infrastructure. But we can do that safety and we can access, therefore, the high grade order that is adjacent to the concentrator without needing to demolish it. We can process ore from the high grade zone adjacent to Los Colorados in the early 2020s, consistent with the original mine plan, and we can potentially achieve combined mill-throughput capacity of 375,000 tonnes per day. That's a huge operation.

LCE will require only modest, low-risk investment, essentially just to construct a new crusher. The current crushing and conveying system will continue to feed Laguna Seca and, of course, it will be diverted to feed OGP1, so we will have to build a new crusher. Water supply will be largely met through desalination, as well as from existing resources, and as a result we're planning full ramp-up of Los Colorados, or a re-ramp-up, if you like, to coincide with EWS commissioning. Ore from LCE will be the highest grade material that is currently feeding sulphide leach. Okay. It does make sense. So we're diverting it from sulphide leach. It makes sense. Why? Because if you put that ore to sulphide leach you get 35 per cent recovery – around about 35. Of course, if you put it into a concentrator you're going to get more than 80 per cent.

Sulphide leach will continue post-LCE, albeit obviously at a marginally lower grade because, essentially, we just bring the average grade down of the material we feed to sulphide leach. And, in addition, it will probably have some lower tonnes in a few years – some of the years in the future because we'll be using trucks to continue to feed the concentrators at full capacity. Look, we still have to optimise our material-handling approach between the concentrators and sulphide leach and we continue to study that, but that's our current view at the moment. Three concentrator strategy: incredibly low capital intensity option providing exceptional returns. I mean, essentially you get a new contractor for the price of a crusher. Ain't too many projects like that in the world of copper.

It also postpones the requirement to invest in a new concentrator. If we ever wanted to build OGP2, we can keep pushing that out, and it also happens to save $100 million in previously planned demolition costs of Los Colorados and will avoid the need to replace the truck shop because the truck shop was also going to go because it sits next to– and in an operation the size of Escondida, when you're running 150 trucks, truck shops are not cheap. So, again, following the commission of EWS, three concentrators installed, we'll be able to maintain production for a decade without the need for any major capital investment. Currently in concept study, expected to move to pre-feasibility first half of the FY15, subject to internal approval. Commissioning can be achieved by FY18, simultaneously with the availability of water from EWS. So the timing works.

Just a few more words on water and power. You know, water supply is a bottleneck at Escondida. FY16 is the most impacted year. We are addressing this in the short term. We are constructing a new water pipeline to replace the existing one that carries water from the 500 litre second desal plant in Coloso, and that will allow us to run that at full capacity. It's not quite running at full capacity at the moment, and then, as I say, EWS 2500 litres per second desal facility on schedule for commissioning in calendar year 17. And once we get EWS we will basically, with LCE in operation, we will be getting over 80 per cent of our water from non-freshwater sources. There is going to be higher costs associated with that, and because it's desal water, obviously, it's more expensive than taking it from the [indistinct], but that is going to be much, much more than mitigated by the increased throughput that it enables, and essentially this is just to maintain the sustainability of that site.

Look, we have to get more power, and we've got to get that at a competitive cost. We have caused the development of a 517 megawatt gas-fired plant. I did mention that. The Korean Consortium, Kospo Samsung. It's under a long-term contract with us. We put actually the gas in, and we take the power out, and it will help us to achieve full security of supply for power for Escondida's existing operations, and its committed projects and, in fact, it also has power expansion options which would be good for LCE for Spence or anything else that we've got going in the region, so we're very happy with that. That project is underway at the moment. It's on time, under budget. Olympic Dam, the next bottlenecking story. We're currently executing a low capital intensity program of projects. They're designed to increase the copper production at Olympic Dam by approximately 50,000. So we're hitting, the 230, 235,000 tonne a year rate.

We're doing this two ways. One, we need to get better grade. We've suffered a 20 per cent grade decline over the last 10 years, because we've been sitting in the northern part of the ore body, and as you get to the edge of it – Dean knows better than I – then the grade starts to fall away. We need to get back into the southern area where those originally high grades are. So that's where we're going to develop. The second thing, we've just got to spend probably about a couple of hundred million dollars on incremental debottling investment on the surface, essentially around the smelter, in particular; a little bit on the concentrator. But that would then match the 235,000 that sits as capacity in the refinery and that's currently underway. Again, a very, very high grade, high quality, and low cost expansion opportunity.

Spence. The Spence bottleneck is the tank house 200,000 tonne a year. We have a recovery optimisation project. This has been underway. We've been studying leaching in our research facility for a decade or so, and finally we – you know, this is a culmination, and we have lots good work coming out of here, but here's a culmination of something really good, I think, which is that we have now got the potential to offset the grade decline at Spence. It follows like everything else. We will be able to increase recoveries by 14 per cent from FY16. We will achieve that by the acceleration of heap leach kinetics, increased utilisation of the leach pads. Those things together. We should be able to reach the tank house capacity of 200,000 tonne per annum for two years post-commissioning. Thereafter grade decline will get us again, and we expect the grade to average about 0.7 per cent during the remaining life of the reserve. The reserve, if you will recall, is the supergene only that sits on the top part of that resource.

This SRO project is expected to deliver exceptional returns, again with very low capital expenditure required, currently in pre-feasibility. So in addition to these low cost fast payback debottling projects, we do have a couple of other really interesting major projects. The first one is on Spence, let me talk to you about that. We're studying the development of the 2.3 billion tonne hypogene resource at Spence. If we get this into production it will increase the mine life by more than 50 years. It will access the hypogene ore that sits below the current supergene ore that we exploit. So, like many porphyries it has a supergene that sits on the enriched portion, and then a very large hypogene that sits below. Tends to be harder, tends to be lower grade. What we then – because the accesses are below, we eliminate the need for pre-stripping and new mining equipment. We will have to build a 95,000 tonne per day concentrator, and the related infrastructure. It will rely, as always, in Chile on desal water. But leaching will continue in parallel using the existing infrastructure and when the supergene reserves is depleted, as expected in the mid-2020s, the SRO projects will enable the ongoing leaching of hypogene ore.

So hypogene has traditionally been very difficult to leach in a heap context. But, again, with the technology that we have developed we are really confident in fact we will be able to leach this, and we will be able to achieve recovery of up to 60 per cent, which is going to be really, really helpful and to ensure that we have economies of scale on that site. It has got good moly, and those by-product credits are expected to support at least a second quartile C1 cost performance, and obviously we have ongoing optimisation to further drive down the costs. The approach will substantially reduce the capital intensity. With attractive copper and moly grades, and an expected average copper recovery in the concentrator of close to 90 per cent over the life of the resource, we think the project is well positioned to compete for capital. Currently in prefeasibility.

I was asked a question, or we were asked a question just a moment ago about why is it still in prefeasibility. Just a moment on that. Look, we have taken our time to study this thing, but we think it is really value-added because we managed to reduce the capital intensity versus the original project that we had in mind. We think that that small delay is really, really worth it to shareholders. So, in this regard, we see further potential lowering of the upfront capital required via the outsourcing of required infrastructure, such as the desal plant, and the project has the potential to deliver first production FY20.

Olympic Dam. The world's fifth-largest copper deposit. We're evaluating a low risk modular capital efficient underground expansion. Expanded underground design, supported by our current stope mining method. No changes there. Significantly smaller footprint obviously than the previous open cut design. What we intend is that it would increase ore hoisted capacity to 21 million tonnes per annum. Currently, as I said, we are running about ten and a half. So, roughly a doubling. But on the surface a change. We would go with a heap leach operating in parallel with the current concentrator cathode process. There's no reason to change what we've got at the moment. But this approach will substantially reduce – the combination of this approach staying underground and the heap leach will substantially reduce the capital intensity of the mine expansion project and surface infrastructure.

Again, technology remains a key enabler of this lower capital intensity growth path, and happy to say, lots of testing over many years, but that heap leach test program is delivering very promising results. Projects of potential to enable OD to produce over 450,000 tonnes per annum of copper, with associated uranium, gold, silver by-products by the middle of the next decade. On a copper equivalent basis that's 750,000 tonnes of copper per annum. That is – if you put this mine into Chile where we had limited – that would certainly make it, probably the second-biggest copper mine in the world. Costs will be low given the economies of scale, and the low cost nature of heap leaching. This will cement our planned first quarter C1 cost position. But, importantly, the project doesn't inhibit the ability in the future to go – if the economics change and so on, and circumstances change, we can still go with the open pit. It won't obviate the optionality in that regard. Project is expected to progress to pre-feasibility in calendar year 15.

So beyond these attractive major growth projects, the unique quality of our resource provides deep optionality across all of our assets. Escondida, we have the ability to put another concentrator. There is high grade at depth. We could build an underground mine, sweeten the ore as we, in the long-term, start to get into more of a chalcopyrite and you get into the reserve grade. That could support high margin production for over a century. It's huge. Cerro Colorado. I haven't said much about Cerro but we can leverage the successful leaching technology deployed at Spence. We don't see any problem with that, and, in fact, there is more ore there. It also has a hypogene. So we can, in fact, pursue multi-decade low capital intensity life extension projects, or even replicate an SGO-type concept.

Antamina, we are working with our partners. First thing we've got to do, extend the life of the reserve. It's currently constrained by the tailings dam. That project is underway. We need to build another tailings dam, and then we have got excess SAG capacity. I mentioned a moment ago that the crusher is a bottleneck. In fact, we've got good SAG capacity there. We need to make sure that we just close that gap, and enable that mine to increase its throughput. There is also high grade at the depth and, again, in the future Antamina undoubtedly, I think, is going to have an underground mine alongside that open pit. Resolution. Let's not forget resolution. We do own 45 per cent. It is one of the largest and the highest grade undeveloped copper assets in the world. Clearly, the permitting is challenging, but that is eventually going to become one of the largest copper producers in North America; in fact, one of the biggest copper producers in the world. So notwithstanding our world-class resource base, we do continue to target tier-one discoveries in the Americas via a focused exploration program, but we only pursue opportunities that have the potential to compete with our organic development options, and, as you've just seen, that really is a very high bar indeed.

In summary, we're maximising the potential of our world-class copper portfolio to create sustainable, long-term value for our owners; we're focused on very few large, long-life, low-cost assets in stable producing regions; we have a structured approach to productivity that allows us to proactively address the ongoing challenge of grade decline; we've got unique and sustainable solutions for the industry-wide constraints of power and water availability; and our resource position can support a suite of compelling, longer-term growth options that will deliver a substantial increase in production, while at the same time further lowering unit cost. So all in all, we think we're very well positioned to benefit from the very attractive copper market fundamentals. With that, I will hand back to Andrew, who will facilitate further Q and A.

Andrew Mackenzie

Okay. Thanks, Peter. Just one point before I open the Q and A. I was speaking to a couple of people during the break, and to be unequivocal about things, the $4 billion of productivity savings we're talking about are only from the core portfolio, and that's going forward, if you like, from FY14. So the additional productivity savings that we can get from the NewCo portfolio, while it still sits in that, and I'm not counting, and certainly we don't take anything that will be delivered, and we think they will be substantial, and you'll hear more from them through the separate listing and them having their own bespoke strategy. So that would come in addition, anything from FY14 onwards, to what we've already spoken about. Okay. Questions, either from the phone or from the floor. Okay, Paul.

Paul Young

Thank you. Three questions to Peter and on Escondida, good story with the three-plant strategy, Peter. You've been working on that I know, for a while. But the first question is just on the drop in grade. Is this a bit like back in 1998, when we're looking to rebalance the copper market conveniently, you know, that the market on the back – as we probably move into deficit, on the back of the lower grade at Escondida. The second question is just on the plant throughput with the three-plant strategy. So theoretical throughput is 400,000 tonnes a day. Water and power can get you well beyond that. Your target is 375. Just curious about that number. Is that limited by diesel and ore hardness? And last question is actually just the capex on Spence, and you mentioned about outsourcing the desal plant. We saw a $400 million increase in capex on OGP1. How do you prevent that from happening on Spence?

Peter Beaven

Look, I think you know, if only we were able to predict exactly where the market would fall, four years ago. I just wanted to, you know – for those of you who are maybe not quite so familiar with copper porphyries and so on. When you start a pushback it takes four years, up to eight years - we have eight-year push backs in Antamina, so unfortunately, we can't exactly four years ago, decide you know, we couldn't predict the copper market would be where it is, so I would love to tell you that it was all part of the strategy, but it isn't. But nevertheless there's no doubt that if you're going to have a fall in your grade, as you say, Paul, this is not a bad time to do it.

The second thing I'd say on the plant throughput, look, it is variable depending on grades, and it also depends on where we want to optimise our grade recovery continuum. I think basically you've got 150 in OGP1, you've got 130-odd in Laguna Seca and the rest in Los Colorados, and it is somewhat dependent on exactly how we want to run the optimisation. I think 375 is a good number at this moment in time. I don't have any particular issues there with giving that as a capacity for the site.

On Spence, I mean, that is a good question. Look, it's been a challenged environment to build anything and it's interesting. In the last say, five years, projects that have been built – Casarones, Sierra Gorda, Ministro Hales, of course, Pascua-Lama, Antequera, and so on – those collectively in that region have had an average increase on their announced target of 45 per cent. Actually, if you include Pascua-Lama, which is kind of – is in abeyance at the moment, it's something like 60-odd per cent. So yes, we have seen some of the same pressures in OGP1, and we have increased our forecast for the costs marginally, I think, in the scheme of these sort of things. So I think we are basically under control on OGP1. How will we do this differently on Spence? I think we have to think a little bit more about how we do the contracting strategy. OGP1 was set up when the market was very hot and you couldn't get a lot of things and right now the market is going to be different from Spence, and I think that's a very important part of it. And I also think that, so we've worked with our contractors now. We have a new set of contractors when we started OGP1. We've been living next to each other, cheek by jowl, for the last three years. Lots of lessons learned. We're going to take that same set of folks, essentially, in some – at least in the core of what we intend to do at Spence, and we'll put them from OGP1 and we'll put them to work at Spence. So I think it's really important – this is one of those program of projects which we can get the benefits. Big challenge, of course. Honestly, it is.

Andrew Mackenzie

I just wondered, Mike, if you would – because Mike, I mean, currently looks after the kind of you like, the sort of creation of excellence in major project executions. Is there anything you'd like to add?

Mike Henry

Well, look, I would just add that in addition to all of the very specific circumstances in Chile that Peter has just outlined, we feel the same challenges right across the business, and we've been on the front foot in terms of trying to address them, so in terms of the softer dynamic around projects internally, you guys are all aware of the impact that setting that ceiling on capital has had, in terms of driving a sharper focus in terms of the way that people think about projects, the way that they go about, really driving things in the design phase, and we're seeing the benefits in terms of productivity. But it doesn't stop there. We've changed our internal processes by which projects get reviewed and ultimately approved, so change composition of what's known as our investment committee, and we're doing a lot more by way of benchmarking to ensure that when we're learning something in one part of the business – I mean, Peter and Dean spoke about benchmarking and replication of best practice on the operating side of the business – we're doing exactly the same thing in project space as well, to make sure that when we learn a lesson, we learn it once, and that gets deployed quickly across the rest of the organisation. So, you know, combination of all those things together, I think, should give us a greater degree of confidence, and certainly over the past five to 10 years we've seen improving predictability around both cost and schedule for our projects over time. Notwithstanding the fact that sometimes you're a little bit over, sometimes a little bit under, the general trend has been a strong improvement.

Andrew Mackenzie

Okay. Thanks, Mike, and, Paul, thanks for the question that suggests we're sort of – you know, have a sixth sense about how we manage grade decline in relation to the market. Maybe we do. But another question from the floor?

Chris Drew

Thanks. Chris Drew from the Royal Bank of Canada. A couple of questions on coal for Dean. The Queensland Coal business looks well on track to deliver that 66 million tonnes of capacity that you targeted. Is that the right number that we should think about for the more medium term, or, given all the, I guess, productivity gains and things, should we be thinking that's probably a little bit too conservative now? And secondly, I guess in light of the enterprise bargaining agreement I think expiring next year, any comments on the relationships with the unions? Obviously, the last round of negotiations was quite disruptive. Has that improved since then? Thanks.

Dean Dalla Valle

Certainly the questions are ones that fascinate me. On the first one, we said 66 million tonnes by – I think by '15. We said that a number of years ago, and that about equates to where we are at 47 million tonnes. So that's our guidance. We've put that out. We're working towards that. And, obviously, if anyone asks is there more to come out of productivity, absolutely. When I look across all my operations, every general manager knows exactly where they sit on a league table. That league table is public. They know where their trucks hours are, where their wash plant hours are, where their productivity hours are. Nobody has hit the ceiling. We're seeing spikes here and there, trends, so there's more to come in that area just on productivity alone, with no growth.

On industrial relations, well, we've probably – an hour would be too long in the day – would be too short to talk about this, but certainly, look, first and foremost, we really have lifted up the engagement with our workforce. We've driven significant change throughout the business in consultation with the workforce, so that part is working okay. We have a number of agreements which are either in term, expired or just closed out, and we're working through those. I think people get that there is no ability to pay for pay rises where there's not some direct productivity drive. People understand that, but it certainly is a risk we watch. It's something that gets my attention on a regular basis, my team's attention, and we wouldn't want to see a repeat down the road of what happened in 2012.

I think the business is structurally somewhat different since then as well, and I think it then raises the bigger issue for Australia about, are we competitive and do we have an industrial framework which really ensures that agreements are only about the matter of employment, that don't prohibit you from running your equipment 8760 hours a year and that really make sure that projected industrial action is a two-way event, not just a highly leveraged one-way event. And certainly, I think, Australia needs to see that happen, otherwise we are going to slip backwards. So coming back to your question, yes, there is a risk. Yes, we are closely managing it. And two things if you spoke to anyone in coal, they get that the world sets our price. Australia sets out costs. And the only job security I can offer anyone is to be part of a profitable business, and people know if their business is profitable or not.

Andrew Mackenzie

Okay. Thanks, Dean. Maybe take a question from the phone.

Operator

Your next question is from the line of Mike Harrowell. Please ask your question.

Andrew Mackenzie

Hi, Mike.

Mike Harrowell

Morning. Just two questions. One is the debottlenecking of Olympic Dam. Slide 15, it shows a small initial starter pit, and I'm just wondering if there's – you've just sort of talked a little bit about the – you know, is there going to be an open-cut option here, and how does that work? And the other question is just on coal. Looking at the cost curve for metallurgical coal, it looks like around about 100 million tonnes of mines that are still operating are losing cash, and just an observation on what is causing such a sticky response to the price. Is the cost curve wrong, or is there something happening, for example, the degradation of existing mine capital, amongst others, that might cause a sudden capacity adjustment in the not-too-distant future?

Andrew Mackenzie

Okay. Well, let's deal with the Olympic Dam question first, and then maybe Dean and Mike may both want to talk about the coal market.

Peter Beaven

Just a point of clarification. We just put on the map not where a pit would go as part of this debottlenecking. There's no intention to dig a pit yet. It's simply showing that when we had the concept of the pit, that was the location that the pit would have gone in, just for interest's sake. Nothing more than that.

Andrew Mackenzie

Okay. And the coal market, maybe.

Dean Dalla Valle

Yes. Look, obviously, we track this very, very closely. We've probably seen, on a kind of combination of met coal and energy coal, about 50 million tonnes of announced cutbacks. Not all of them have come through. A lot of them are still actually to filter through. There's a whole range of reasons. Obviously, it's a big decision to actually either stop or pull your mine up. I think everyone also has a long-term view of these commodities, as we do, so we're not alone there. And so everyone thinks that we're just going to scrape through. There's no doubt people probably made some decisions they regret today, in contracts they've signed up, or the famous take-or-pay story, and there's no doubt that that is causing some people to stay in, and also you're seeing in America, where we've seen a few organisations now where they basically collapse, reform and start back up again. So there is a range of reasons, but if you look on the whole – and, Mike, you actually mentioned before those numbers – you are slowly seeing supply come out obviously, our strategy has been to run our mines that are making margin and to run them to capacity.

Mike Henry

Look, I would just add one point. I've spent most of my career in the coal industry, and the classic case in the coal industry when people are trying to drive costs down is to do it top down in the business. And when that happens, coal is right for the high grading of the resource. So often times you see short term cost reduction only to then bounce back again. Then it's a high grading which I think is what you were alluding to, starts to come to the fore in terms of problems elsewhere in the business. That's why I think it's so important that when you hear our story on productivity, you do understand that for us it's the bottom up. It's being driven in a very systematic fashion to ensure that the way we're driving it doesn't lead us in the same space. But I think in the coal industry we will see a bit of the come through in the coming 12 to 24 months.

Andrew Mackenzie

Okay. Another question from the phone?

Operator

Your next questioner is on the line, Peter Harris. Please ask your question.

Andrew Mackenzie

Go ahead, Peter. Peter? It's not that far to Melbourne. But let's – we will come back here then.

Mark Taylor

Mark Taylor from Morningstar. Just a question on Olympic Dam. Under the previous open cut plan, I'm presuming that was largely driven by trying to get unit capital costs down. And just with the new plan, I'm interested in – I'm assuming that the gross capital cost is going to come down a lot. But in terms of the capital intensity of production under the new plan where the differences are, so what are the main drivers for taking this new approach? And also whether handling uranium stocks features in that plan as well.

Peter Beaven

So what are the drivers of Capex? I mean, we're not going to give a Capex number at the moment. As you know, we wouldn't do it this early but basically, I mean, is it the idea to have a lower capital intensity project than the open pit – absolutely it is. And that is the reason why if we stay underground, clearly we don't need to have that very large pre-strip which was going to take a lot of years as well. Because it's not just, I mean, there's an NPV, it's years and costs. And so, if we can carry on with the underground, that will obviously make a much cheaper option there. And on the surface, again, replicating a whole smelter, a cathode uranium leach is more expensive than going the heap leach. Heap leach technology was created, in fact, back in the seventies I guess in order to create an ability to process lower grade copper resources and match that lower grade with lower capital. And that's really the basic fundamental behind heap leach. I mean, we simply duplicate that here. It's exactly the same thinking. I think the other thing which is important is that if you have a smaller footprint and everything, again for those of you who have built these things, anything that has lower throughput, i.e., with higher grade, needs less stuff and all the infrastructure that associates, whatever that is. And if you can make that smaller good. It also reduces the capital. So the three areas – mine, surface and what we call non-process infrastructure – are all going to be positively impacted by this approach.

Andrew Mackenzie

I mean, just a couple of things I would add. I mean, first of all, Peter mentioned quite a bit about technology in his presentation and we do have, you know, I'm not speaking about it today, we do have a new technology strategy to some extent match the philosophy of the company as it drives in productivity. Much of the gains that you're hearing about we achieve simply by moving our average performance to the best performance that we can see, usually in our own company, certainly within the sector and sometimes we go beyond sectors when we break down the tasks enough. But, I mean, at the margins, it's probably a little bit underselling it but there is another phase of technology enhancement. We've been working with heap leach for a long time now since the nineties and we've built up a huge expertise in this area, its sits in Santiago and we are learning a lot, practicing a lot of things as we actually continue to advance what can be achieved and some of that, of course, is a direct benefit of Olympic Dam. I spoke a bit more about at the AGM last week.

I think the other thing – another piece of homespun philosophy, Peter – or maybe it was Dean – mentioned earlier that we often see this value in delay, that by delaying we actually get a chance to substantially improve the economics of a project, far more so than the loss we might attribute to the time value of money, and so taking our time is very important. But the other thing I think that's critical to us – and you will see this right across our businesses – is that sometimes the tendency is when you've got a big oil field or a big ore body is to say, "Let's optimally develop it in a way that actually takes the ore bore body from the get-go," and that's when you end up with these mega projects which last many, many years. They often require a baking in of technology, assuming that technology will not advance, in order to get that.

Our philosophy increasingly is, "Let's not do that. Let's use the whole ore body but not necessarily develop it all to create a smaller number of sequential projects that, in themselves, are optimised, get into this 20 per cent return category," you know – a bite-sized and so handle – there needs to be flexibility with all the things that we talked about with capital management and give it sort of a decent payback so in time so that we are responsive – not quite as responsive as Paul would like us to be to changes in markets and so on. And you'll see a lot more of that and that's effectively what we're dealing with at Olympic Dam. We're developing the next phase of Olympic Dam not necessarily with the thought of that it's going to be open pit later on. It doesn't preclude it but the next phase of development of Olympic Dam can go at any part of the accessible ore body that gives you access to high-grade ore and allows you to create a number of very attractive corporate projects and I think you'll see more of that from us as well and the oil and gas business too and a little bit of what happens in shale very much follows that philosophy. Okay. I think Peter might now be back on the phone.

Peter Harris

Yeah. You've got me?

Andrew Mackenzie

Go ahead, Peter.

Peter Harris

Sorry about that. I know fund managers like us have been telling you to give capital back to us as opposed to spending it yourselves but if you've got a really, really positive outlook for copper and the copper deficit doesn't really ramp up till 2018. Is now not the right time to be having a look at copper assets? And just to use a made up example, if Rio had a much lower long-run copper than you're more optimistic outlook – and I don't know if that's the truth or not – wouldn't now be a good time to, say, maybe have a look at a cheeky bid for Escondida or look at some of those other really big BHP sort of quality assets globally?

Andrew Mackenzie

Okay. Well, of course, we're not ignorant of these things going on but I think our knowledge of these – when we look at that, compared to all of the projects that Peter has spoken about – you heard more about that from us in London – is that we have so many of these 20-plus return, on average, projects. It's very hard to think of the sort of M&A activity that would ever compete with those sorts of returns, and so we are very reluctant to get involved in that. I think the other thing that I would say is when you look at this company today, I like to say 95 per cent of what we want to do over the next 10, 20, 30 years – we actually have all the best ore bodies to do that. And, as Peter said, a lot of them, the majority of them actually have good postcodes. They're in good, stable political regimes. You take our five pillars, we have all the coal that we want to grow. We have all the iron ore that we want to grow. What we're showing today in copper, which was not always the case, is we have all the copper we want to grow, and in all those three cases, to drive things down to a position at the bottom of the cost curve. We certainly have that if we choose to do that in potash, and then you come to oil and gas.

On the unconventional side, we have everything we want in terms of gas and liquids-rich prospects in there, and then we go to the more conventional ones. We would say, well, we certainly have that in gas. There may be some question marks, as Tim talked about is a long-term possibility in liquids, and that's where our target is, perhaps in the first instance, Mexico. Now, you know, we do have a bit of exploration. We probably would like it more in the case of conventional liquids for oil than we do for copper, but we're good at copper exploration. But we're only actually spending about 80 million a year on that. And so what I say to you, Peter, is that, really, from what we know of the earth we have our arms around, some of the best ore bodies in the world, we think. We have 20 per cent return projects. We are very reluctant to think about going after anything more as we look at things. And ultimately, we would like that success principally to come through exploration or through some kind of access activity like in Mexico. And it's almost exclusively in that conventional liquids. The rest, I think, we're all but done, but we will keep our eyes open in case we're missing something.

Peter Harris

Thank you.

Andrew Mackenzie

Yes.

Lawrence Grech

Thank you. Lawrence Grech from PhillipCapital. With the separation of BHP into core and NewCo, it seems to me that the ring-fencing of what you're really trying to concentrate on becomes even more upstream, which is good. But I'm just wondering, with respect to some of the other activities of getting your products to market, about what are the strategies that you've got on board to try and get the competencies, the productivity gains, those things that you're driving through within that ring-fence quite assiduously. I'm just wondering what you can do. I'm thinking about, like, Vale, looking at shipping to solve some of their distance problems into the Asian market, working with coal and transport, some of the take or pay issues, is now not the time to start looking at those long-term solutions outside of maybe that ring-fence? Perhaps my thinking on that is too narrow.

Andrew Mackenzie

No, not at all. I'm going to get Mike to speak about this. I mean, as many of you know, Mike has been coordinating our push in productivity and we handle it in five categories. So you've heard a lot today, about our people productivity, our equipment productivity, our supply productivity and our capital productivity. But a very important fifth area is everything you've just spoken about in the marketing area, which also reports to Mike until he swaps jobs with Dean. So we've been doing a lot in that area. I'm not sure we would agree with you that the Vale approach to trans-shipment is a good one, but maybe Mike can comment on that and some of the other things you raised.

Mike Henry

Look, I'd start with the fundamental strategy which hasn't changed. So, you've heard every speaker today talk about the fact that everything that we're doing currently is aligned with the strategy we've had in place for a number of years now, and a fundamental tenet of the strategy is that we want to remain floating on prices, on forex and so on. And that applies equally to things like shipping. So we've had a philosophy in place that says: do we want to be deploying capital to a relatively low return, low capital return business like shipping? Or are we happy to take market rates for shipping and deploy our capital into the 20 per cent-plus return projects that everybody has spoken about today, and that choice is pretty clear for us.

Now, in terms of the interplay between the marketing effort and what's happening in businesses, that came through a little bit in today's presentation, but it's actually really, really important. So, Dean talked about how marketing is integral to the coal effort. He used the example of us going out, understanding the value of our products, ensuring that we're placing them correctly and getting better than average prices for our products. It doesn't stop there. There's a lot of effort to ensure that the marketing team understands the upstream options in the business, so what would we need to change in the marketplace to ensure the upstream is able to operate in as productive a manner as possible, and we invest a lot of effort in that space. Which is why we've got a marketing effort that's focused solely on a small set of activities, one of the primary activities ensuring that they're integrated with the upstream, to liberate maximum value, and we don't get distracted by investing capital in places that's not our core area and where you see low returns on capital. We don't get distracted by other things like trading either.

Andrew Mackenzie

Okay. I'm going to call it for today now. We're sort of around the time we said we would do for that and I think we've have a good discussion. We've provided you today with an update on our business and so this completes the comprehensive review that began in London last month. So, in addition today to our deep dives into coal and copper, we've now provided you with further detail as to how we expect simplification via our proposed demerger to unlock even more value for our shareholders. And we believe that by simplifying our organisation, we can sharpen our focus, and that helps us improve productivity even further and even more quickly. So as a result, we're now targeting $4 billion of annualised productivity gains by the end of the 2017 financial year – that's for the core portfolio only – which is an increase of $500 million on previous guidance.

And additionally, our focus on capital productivity has allowed us to reduce our planned capital expenditure by $600 million to $14.2 billion in this 2015 financial year, and we plan to reduce our spend again to $13 billion next financial year, 2016, without slowing volume growth. So the company is in great shape. We are delivering on our commitments, and we will continue to do what we say we'll do. So thank you for your time today. We've enjoyed it. I hope you have too.