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# CONSTRUCTION COSTS FEATURE

## By Jonathan Hosie

The risk of over running construction costs has taken centre stage in the mining sector. Why is this, and is there a solution?

As to why centre stage, the answer is that we have a 'perfect storm': falling commodity prices and rising production costs. The strength of that storm in the mining sector is increased by ambitious investment plans for large and complex projects which are made at a stage when forecast sale values are increasing but where the investment programme will take a number of years to come to fruition. When that climate of expectation meets the oncoming cold front of decreasing commodity values some years later, the reaction can often be dramatic.

This helps explain why we have the perfect storm. Continuing with the climatic metaphors, the mining sector has also seen a number of high profile and sometimes fatal lightening strikes.

Mining Journal reported (15 February 2013) that Rio Tinto's chief executive, Sam Walsh, confirmed that he had ordered a review of all of the groups projects as the company reported a $3 billion loss in 2012. Whilst Walsh said that Rio Tinto's strategy of long-life low-cost assets would continue under his leadership, he also said there would be greater emphasis on the focus and discipline of the organisation and more accountability. Of course, Rio Tinto is not alone. Rio has cut its capital investment budget for 2013 to $13 billion after spending about $17 billion in 2012.

Another well published casualty of the perfect storm was Anglo American. With its earnings falling significantly from $6.1 billion in 2011 to $2.8 billion in 2012, something had to give. Cynthia Carol, chief executive, took the bullet for this one. Anglo's issues were down to remarkably weaker commodity prices and ongoing costs pressures, exasperated by an operating loss in its platinum business.

So why is the issue of construction cost taking centre stage in this scenario? The answer is complex but some of its essential components can be identified. First and as alluded to earlier, in a rising commodities market the priority tends to be focused on schedule and specification. Miners are an optimistic bunch. If they have an asset and the market puts a healthy value on the product, their focus shifts to getting the beneficiation process working and converting minerals into a commodity that the market is hungry for. Remember the Super-Cycle, anyone?

Second, mining projects are often large and complex. Whilst increased commodity prices tend to drive investment decisions, the period of time from initial feasibility study through to full production spans several years. The investment horizon is a long one. Inevitably, investment decisions with commitments for capital and operational expenditure are fixed at an early stage but are only tested when the base assumptions as to production values are fixed. This causes the focus to shift; whereas previously the priority for project planning will have been on schedule and specification quality, cost has now taken over in the face of rampant cost inflation and falling commodity prices.

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Is there a solution? It has been said that investment decisions are made or broken on the back of estimated costs and benefits. Making the right sort of investment decision is a good start but what does 'right' look like? One area of focus will be the project execution plan. What are the risks in relation to contractor delivery, scope-growth and what project controls can be put in place to monitor and control cost overruns? Is the project fully designed at the point at which the construction contracts are to be awarded or will the project be designed incrementally in stages? What is more important – schedule or capital cost? Are there long lead times for specific elements of kit and are there process improvements that can be made in order to reduce operational costs, perhaps by spending more up front?

All these factors (and others) need to be considered at the outset when planning each mining project. The importance of doing so helps to avoid the now all too familiar risk of cost blow outs which can have a serious and adverse impact on mining companies. A number of commentators have picked up on this theme. Deloittes' *Tracking the Trends 2013 report asserts "For the second year in a row, mounting costs top the list of the key issues affecting the mining industry. This is expected to worsen in the short term as commodity prices continue to dip, workers demand higher wages and regulatory costs rise"*. In a similar vein, PwC's *Annual review of global trends in the mining industry* for 2013 reports on the global mining sector: *"Net profit was down 49% to $68 billion. Decreased commodity prices, and escalating cost base, and $45 billion in impairment charges hit the bottom line"*.

One important risk mitigant when considering escalating cost overruns is selecting the right procurement and execution strategy for the project. Should this be through a single EPC[1] contract, with all risks allocated to a single contracting entity responsible for the engineering construction and completion of the project? Or, is an EPCM[2] route to be preferred with careful management around interface risks and areas of likely cost increase but with the main cost risks allocated to a series of vertical packages (perhaps for different parts of the process)? A large part of the answer depends on how advanced the design is when letting the contracts. As a simple rule of thumb, the more developed the design when contracts are let for the capital investment, the less likely there will be scope growth and cost overruns. This is sometime achieved through a dedicated design or FEED[3] phase, the purpose of which is to stress test and verify the base assumptions in the DFS as to costs and schedule to complete.

Over the last few years, the mining sector has witnessed a number of serious cost overruns. In the current climate, mining companies are taking steps to reduce that risk. Tight controls and clear risk allocation will be an important feature of that process.

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[1] Engineer, Procure and Construct or 'Turnkey contracting', through an engineering contractor.
[2] Engineer, Procure and Construction Management through an engineering consultancy.
[3] Front End Engineering and Design.

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