PROJECT RISK & RETURNS

Philip Galloway - Chief Development Officer, BHP Billiton Aluminium
CRU Conference 14 – 15 June 2004, New York

Introduction

Ladies and Gentlemen,

In my address today, I would like to cover three areas. These are:

- Project decision making in BHP Billiton
- Project risks, specifically the need to secure a resource and properly develop the project concept
- Project return requirements

BHP Billiton's credentials

Firstly I would like to establish BHP Billiton's credentials to give some context for how the company looks at the risks and return of projects.

BHP Billiton is the world's largest mining company with a market capitalization of US$53 Bn.

Our size and diversity makes us very constant partners for governments that wish to develop their resources. Our cash flow is robust against changes in any particular commodity, currency or market. We are also able to make investments that would be a gamble for smaller companies with disastrous consequence if things go wrong.

Since BHP Billiton was created we have successfully completed 15 major projects totalling over $ 3.8 Bn in capex. All these projects have been delivered on time and on budget – or better.

That is $3.8 Bn of projects in some very difficult environments that were delivered without delay or additional cost.

What is the secret?

Project Decision Making in BHP Billiton

We follow a very strict process:

- Concept study: establish the business case for the project
- Pre-feasibility: optimise the scope and have a single project plan. It is here that the critical front-end loading is done on the design.
- Feasibility study is then about getting final cost estimates and locking-in all major contracts.

At Pre-feas and Feas a detailed peer review is done by a team lead by a senior executive from outside the business. This ensures that fresh eyes look at every aspect of the project before a decision is made to progress.

At feasibility study we look for a project director that will carry the project through commissioning. It is critical that we keep the team together through this phase and through construction.

During Feasibility and Pre-Feasibility the critical "Front End Loading" or FEL is done to optimise the project. At BHP Billiton this involves a series of specific studies and optimisation processes. If short cuts are taken here, the project will never recover. Even outstanding project execution will not save a poorly conceived and optimised project.

However, even if FEL is good, poor project execution will still destroy a significant amount of value.

During execution, project monitoring is independent and robust. A project list is circulated each month. Any project director who is on the watch list will get calls from the President to discuss how it can be brought back on track and what internal resources need to be applied to fix the problem.

It is straightforward stuff: people and process. But it is expensive and time consuming. A full study costs at least $30m to complete the process and that is without drilling and appraisal of a resource. It will take three years (at least) from start of concept study. For example our recently announced Ravensthorpe Nickel project study cost $82 million and took many years.

There are of course still risks and we do have projects go wrong. No doubt talking about our success at a CRU conference will be hubris enough to ensure that our next project is a dud! However, we will know early that it is going wrong and we have great internal resources to fix problems.

The expense of these studies can only be justified if we are focussed on the right projects from the start. This brings me to my next points: how do we assess project risk and how do we assess project returns.

Risk

As I mentioned, BHP Billiton operates and delivers good projects in some challenging environments: Mozambique, Algeria, Colombia, South Africa. So we have demonstrated that we can assess and manage risk.

We develop and maintain risk registers at the concept study phase that evolve as the project develops. These cover all aspects of personnel risk, safety, natural disasters and political disasters. But I would like to focus on two areas that deserve particular attention: price risk and country risk.

Price risk

To bring the discussion back to specifics of the aluminium industry, where does BHP Billiton think alumina and aluminium prices are going? Well I can't tell you. However I can make some observations on what we are seeing in this price cycle.

Spot Alumina prices are attracting headlines but this is not representative of the market fundamentals. We have sold spot cargoes at close to $500/t but sadly these are rare events.

The Australian alumina export price series is happily trending up, having increased to more than $200/t in December 2003. However, in the last 10 years it has been at that level only twice before: in April 2000 and, the time before that, in May 1996.

Prior to this, one has to go back to the early 1990's and the aftermath of the late 80's alumina price boom to find the Australian price series above $200/t.

The Australian export price series reflects historical contracts and pricing arrangements, in turn reflecting different market circumstances than those prevailing today, and only a small component of spot sales. With this important caveat, the Australian export price series is probably the most representative alumina price series for the overall global smelter grade alumina market.

Price scenarios

We are in almost a perfect situation at the moment for aluminium and alumina producers. China is pulling-in alumina and consuming all the aluminium it produces. Whether or not you believe this will continue, it is prudent to test projects against two downside scenarios

China Scenario 1 – Domestic metal demand slows:

Aluminium consumption growth in China slows resulting in metal exports. This slowing in consumption could flow from substitution or just a slow-down of the extraordinary rates of Chinese demand growth. In this scenario, aluminium smelters in the rest of the world are put under pressure as LME prices fall. Smelters can no longer afford to pay for the alumina. We test our project therefore against the price that smelters can afford to pay in the long run. Because of rising power costs, that price is generally falling over the long term

China Scenario 2 – Domestic metal supply slows: Alumina demand in China slows because of problems among the Chinese smelters. These could be power shortages, regulation or financial hick-ups. In this scenario, alumina supply quickly exceeds demand as new projects come-on that were promoted on the basis of growing Chinese demand. In this scenario, the alumina price may well return to the marginal cost of alumina production. Note that this is not necessarily a bet against the Chinese economy, infact the opposite is true: If China booms, power prices will continue to rise, Chinese smelters will be put under pressure and demand for alumina in China could fall.

Of course neither scenario may play out. Or perhaps we will see both scenarios for short periods at different times.

Most importantly, we think it prudent to test all projects against these two worlds. The first where prices trend to what smelters can actually afford to pay for alumina, the second where the market returns cash cost to alumina produces but fails to allow them to pay back capital.

Country Risk

The second risk area covers those factors that we bundle together to describe "country risk". This is not limited of course to developing countries. First world governments are inclined to raise tax and even legislate to cancel mining leases. However given that the world's bauxite seems to often occur in developing countries, I will limit my comments to those places. And again to mention our credentials: BHP Billiton has operations everywhere from the shores of Mozambique to the high altitude desert of Chile and from the Algerian Sahara to 7000 feet below the Gulf of Mexico.

Title

Of critical concern in every alumina development is the pedigree of the underlying bauxite license.

Mining title tainted by corruption is of little value since corruption can almost certainly be used to take it away. The taint will also become a stench when new governments come to power.

Similarly, if a special act of parliament is required to unseat an existing titleholder why would not some future Government do it again to you?

The mining law must ensure that the explorer is able to develop what he finds, subject of course to environmental approvals and community sensitivities. It is hard to justify the +$30 million to appraise and study a project unless there is a very specific right to develop the subsequent project.

In the world of smelting, the power contract is the equivalent of bauxite title. A long term contract is of little value if the power system is unable to support a smelter or if the country is basically power short. It does not matter how good the contract is or the nature of the guarantees, once a smelter is built –and the capital sunk- voters will always be the most attractive consumers.

Project return requirements

I have talked so far about BHP Billiton's project process and how we look at price and country risk. I would like to finish-up with a comment on the returns we are chasing for new projects.

This chart shows the years to payback for a typical alumina project. It is a very rough and ready measure but useful to illustrate a point. It is also a remarkable predictor of what combinations of capex, opex and price will deliver a viable project.

The x-axis shows the different capital costs per annual ton. . The first line shows a refinery operating at the middle point of the cost curve. The next line is for a plant in the bottom quartile

I have used an Australian based contract price of $200/t for alumina price.

Sadly, even at "world's best" capex and bottom quartile opex the payback for a refinery is 7years. These are very large capital-intensive projects that are unable to deliver a quick buck.

The competition

It is our starting point that BHP Billiton wants to have the lowest cost aluminium system in the world. Even in these boom times it does not make sense for us to slide up the cost curve.

Unfortunately we have to run flat-out just to stand still.

This slide shows the return on investment of a "best in class" Chinese refinery and smelter system versus the return on investment of BHP Billiton's low cost Indian Ocean system of producing bauxite at Boddington, refining at Worsley and smelting at Mozal.

So, the very best Chinese smelter pays about the same for power as we do at Mozal. China has a much higher alumina cost, but that is off set by lower labour, logistics and raw material costs. So our EBITDA margin is about the same as the best Chinese system.

When China's lower capital cost is included the Chinese return on investment is very close to ours. That includes the capital for the power station, smelter and refinery.

That configuration is representative of about ¼ of smelters in China. The refinery is a low cost Chinese operation, but it processes diaspore ore requiring much higher temperatures of digestion and additional processing steps.

As you can see that while the thermodynamics are in favour of our system, the Chinese advantage in capital cost and, to a lesser extent, labour cost brings them close to us.

So while we are very proud of what we have built and acquired we know that we cannot rest on those laurels.

We are fully aware that only innovative projects in challenging environments will be required for us to remain competitive. The price cycle will swing against us and the competition will get tougher.

However we are confident that BHP Billiton has the people and processes in place to deliver excellent projects with predictable outcomes.

Thank-you.