Companies
Diamond Industry
Series

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Rio Tinto Diamonds

2013 Review

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Overview

Rio Tinto Diamonds is a 100 percent owned subsidiary of Rio Tinto Group.

Rio Tinto Diamonds was originally established in 2002 to provide a sales and marketing service to all diamond businesses in the Rio Tinto Group.

Rio Tinto Diamonds was transformed in 2012 into a fully integrated diamonds business from exploration, production, through to sales and marketing.

Rio Tinto Diamonds is one of the world's major diamond producers through its 100 percent control of the Argyle mine in Australia, 60 percent of the Diavik mine in Canada, a 78 percent interest in the Murowa mine in Zimbabwe and 100 percent interest in the Bunder diamond project in India.

Figure 1: Rio Tinto Diamonds

Rio Tinto Diamonds

Main Office

Melbourne, Australia

Mining Operations

North West Territories, Canada
Western Australia, Australia
Midlands, Zimbabwe

Development Projects

Madhya Pradesh, India

Explorations Projects

India
Canada
DRC

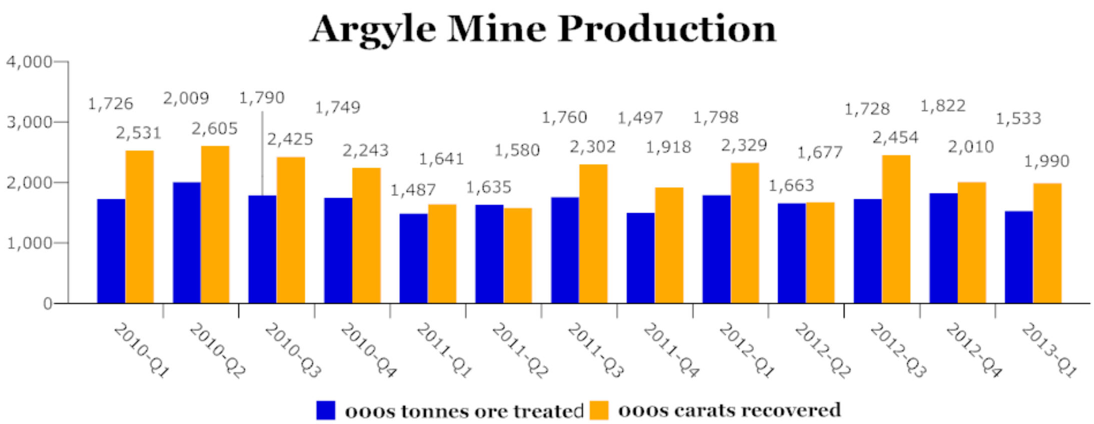
Sales and Marketing

Antwerp, Belgium
Hong Kong, China
New York, USA
Mumbai, India
Perth, Australia

Mine Portfolio

1. Argyle Mine

Figure 2: Argyle Mine Production



Source: Rio Tinto, Equity Communications

In 1983, the Argyle mine was established as the first major diamond mining operation in Australia. Almost immediately, it became the world's largest source of diamonds by volume of carats produced. The discovery, development, and operation of this mine challenged conventional beliefs about diamond geology, mineral processing, and the marketing of gem diamonds. In its peak year, 1994, the mine produced over 42.8 million carats of rough diamonds, which represented 40 percent of the world's production.

A large proportion of Argyle's output consists of inexpensive small brown-to-yellow as well as some near-colourless and colourless rough diamonds. The Argyle mine is also the dominant producer of rare pink diamonds.

In a way, production from the Argyle mine built the diamond cutting industry in India. Argyle has produced more than 800 million carats since 1983, most of which can only be viably cut and polished in India, creating jobs for more than half a million Indians at peak.

Where are we now...

In 2012, the Argyle mine produced 8.4 million carats of diamonds from 7 million tonnes of ore processed. This was the second lowest volume of carats produced since 1986 when full-scale mining of the AK1 pipe began. The recent gradual decline in production is a result of the Argyle mine winding down open pit operations.

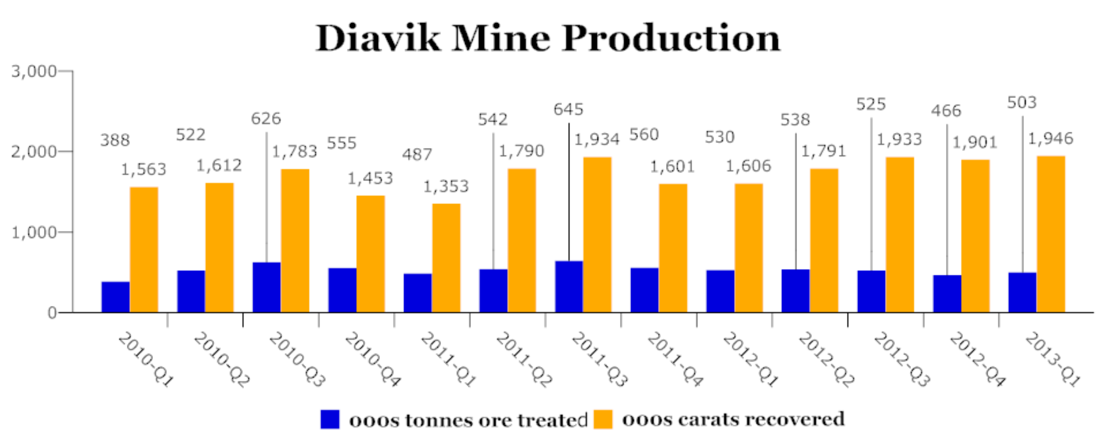
Construction of the Argyle underground mine was completed in the first half of 2013.

Underground operations, that is 40km of underground tunnels, will generate around 9 million tonnes of ore per annum, and on average approximately 20 million carats per year over the life of the block cave - to 2020. Production commenced in the first half of 2013 with ramp up to full capacity by 2015. Once the mine has ramped up to full production, the ore will be crushed underground and transported 3km by conveyor to the surface.

The Argyle underground mine is one of the most technologically advanced mines in the world, built at a cost of US$2.2 billion. It was constructed using a block caving technique which is especially effective for a large low-grade ore body like Argyle because it is a high–volume mining method. This production rate, similar to the former open-pit operation, is necessary to keep unit costs down and maintain high levels of mining efficiency.

2. Diavik Mine

Figure 3: Diavik Mine Production



Source: Rio Tinto, Equity Communications

The Diavik Mine is an unincorporated joint-venture between Rio Tinto Diamonds (60 percent ownership) and Dominion Diamond Corporation (40 percent ownership). Rio Tinto is the operator of the mine. Diamonds recovered are split and marketed separately.

Over its first decade, Diavik produced more than 75 million carats of rough diamonds.

Where are we now...

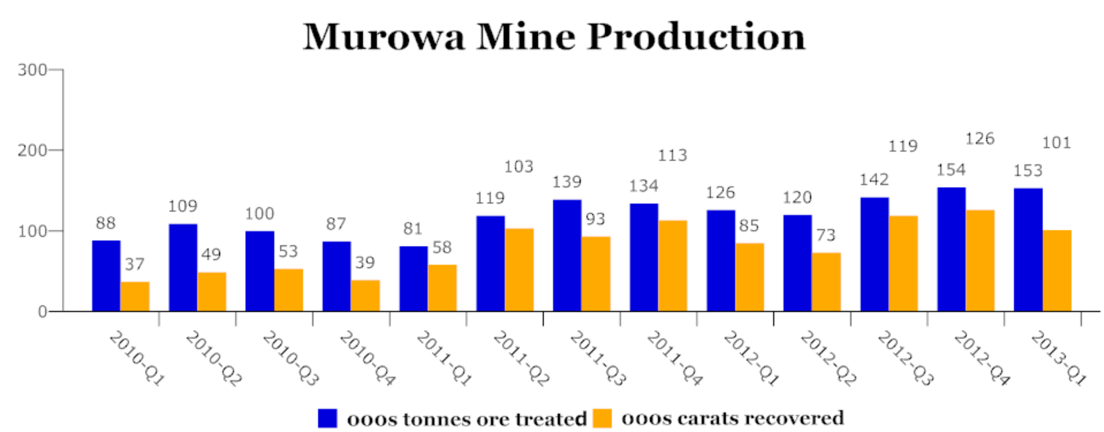
Rough diamond production for the calendar year 2012 increased 8 percent to 7.2 million carats compared to 6.7 million carats in the prior calendar year (on a 100 per cent basis). The increase was due primarily to improved grades in each of the kimberlite pipes.

Full year production forecasts for Diavik is 6.6 million carats in 2013 as full underground mining starts.

The open pit was depleted in 2012 but underground operations are expected to produce diamonds possibly until 2023. Three of the four remaining pipes are being mined, with all major capital expenditure completed.

3. Murowa Mine

Figure 4: Murowa Mine Production



Source: Rio Tinto, Equity Communications

Murowa Diamonds is located near Zvishavane in South Central Zimbabwe. Murowa Diamonds Private Limited (MDPL) is owned by Rio Tinto Group (78 percent) and Rio Tinto Zimbabwe (22 percent), a Zimbabwe Stock Exchange-listed company. The Murowa operation is managed by Rio Tinto.

After three kimberlite pipes were discovered in 1997, feasibility studies and mine planning were conducted from 1998 to 2000. The two larger pipes comprised mining reserves of 19 million tonnes with a grade of approximately 0.9 carats per tonne.

In 2006 a decision was taken to study the possible expansion of the Murowa diamond mine operation. A detailed feasibility study was completed and environmental approval obtained in 2007 for an expansion from 250,000 tonnes to 2 million tonnes per annum of ore.

Murowa has produced more than two million carats of diamonds since mining began in late 2004.

Where are we now…

In 2012, The Murowa mine produced 403,000 carats (100 percent basis) of diamonds from 542 000 tonnes of ore processed. This was a record for the small mine.

Murowa's reserves were reduced in 2012 following a pit redesign and reclassification of material.

Development Projects

1. Bunder Development Project

Figure 5: Bunder Development Project

Rio Tinto Diamonds Bunder Project		
Inferred Resource:	37 million tonnes	27.4 million carats
Estimated mine life:		25 years
Estimated total investment to develop mine:	US$500 million capacity - 5 million tonnes ore processed annually	

Source: Rio Tinto Diamonds

Please note this section on the Bunder project has large portions lifted from a Rio Tinto publication.

Project history and scope

The Bunder project is Rio Tinto's first and most advanced diamond mining venture in India. It is operated by *Rio Tinto Exploration Private Limited (RTEIPL)**, a wholly owned subsidiary of the Rio Tinto Group.

Rio Tinto began exploration for diamonds in the central Indian state of Madhya Pradesh in late 2001. Diamond-bearing lamproite was discovered in the Bundelkhand region in May 2004. The deposit – the first diamond discovery in India for over 50 years – consists of a cluster of eight diamondiferous lamproites (volcanic rock), the largest of which measures 18 hectares.

Incidentally, the Argyle AK1 pipe represented the first major deposit of diamonds found in lamproite (a kind of volcanic rock similar to kimberlite), the discovery of which called into question prevailing theories of diamond occurrence.

An initial prospecting licence was granted to Rio Tinto in 2006 (with a further licence granted the following year) to allow exploration activities to continue. The company installed a US$7 million state-of-the-art bulk sample processing plant in 2009 to evaluate the value and grade of the Bunder deposit. This testing has revealed that the deposit is suitable for conventional open pit mining and diamond processing.

The Bunder resource has been identified as being seven times richer than the Panna diamond mine, the only operating diamond mine in India, with a likely production rate at least 20 times greater than Panna. This would rank Madhya Pradesh amongst the top 10 diamond producing regions in the world in terms of volume and value.

A mining lease application was recommended by the State Government of Madhya Pradesh to the Government of India in October 2009. Final approval for Rio Tinto to develop a world-class mine at Bunder was granted by the Indian government in 2011 and, in early 2012, the State Government of Madhya Pradesh issued the 'Letter of Intent' that allows Rio Tinto to begin development. In 2010, a pre-feasibility study commenced to enable a detailed blueprint for all aspects of the mine to be developed, including mine design, operations and supporting infrastructure and services. This evaluation work, expected to take up to three years to complete, requires significant data gathering and analysis across technical, economic, social and environmental issues associated with the potential mine.

Construction is scheduled for 2014 and 2015, with the mine expected to be operational by 2016.

**The Bunder project is no longer under the supervision of Rio Tinto Exploration since September 2012 when all diamond explorations were transferred to Rio Tinto Diamonds.*

Exploration Program

Rio Tinto Group's global diamond exploration portfolio was transferred to Rio Tinto Diamonds in the second half of 2012.

When last we managed to look inside, this is what Rio Tinto Diamonds was working on:

An individual would come in to manage the global exploration portfolio.

- Three regional exploration projects have been approved in India, North America, and the Democratic Republic of Congo
- The Belmont laboratory in Perth, Western Australia would be closed reflecting the focus of the exploration programme on emerging projects in other regions
- Until a global exploration leader was recruited, responsibility for the Thunder Bay (Canada) diamond laboratory would be transferred to Diavik, along with support for the exploration projects and project execution
- Operation of the diamonds laboratory based in Bangalore (India), together with support for the exploration projects and project execution would be transferred to the Bunder project

The global exploration leader would take responsibility for project generation and execution whilst Diavik and Bunder would continue to provide full support to all exploration activities.

Sales and Marketing

The purpose of the sales office is to sell rough diamonds to the wholesale diamond market, and to promote the profile of Rio Tinto’s diamonds. With the exception of pink diamonds, the company does not undertake downstream processing activities.

Rio Tinto's diamonds are sold through its sales and marketing headquarters in Antwerp, with representative offices in New York, Mumbai and Hong Kong and a stand-alone pink diamond business in Perth, Western Australia.

Each mine's production is kept separate in order to maintain the national identity of each mine. This allows Rio Tinto to specify the country and mine of origin when selling to their customers. Developed diamond markets are quite particular about this. Some would rather not deal diamonds from Africa because the region traditionally carries a higher reputational risk.

The largest quantity of diamonds is produced from the Argyle Mine. These diamonds are often smaller and rated cheaper than diamonds from most mines in the world. The market for these diamonds is mainly concentrated in Asia where there are ideally suited to creating fashion jewellery - affordable, daily wear diamond jewellery.

For this reason, Rio Tinto concentrates most of its downstream marketing in India and China.

Rio Tinto established its sales and marketing representative office in Hong Kong in March 2010 in recognition of the growing importance of the Chinese diamond jewellery market.

Since then, it has successfully partnered with Greater China largest jewellery retailer, Chow Tai Fook, to develop a new market for diamond fashion jewellery that is complementary to the existing bridal market.

In 2011 Rio Tinto also initiated the "Nazraana" concept in India, designed to boost popularity of affordable diamond jewellery as wedding gifts. The Nazraana collections are manufactured by Rio Tinto Select Diamantaires in India. The affordable range of diamond jewellery is designed as the ideal gift to be given as tokens of love to family and friends during weddings. It offers retailers the opportunity to add to existing bridal sales by introducing their customers to this new concept. Every Nazraana product is a fine piece of jewellery made with genuine natural diamonds and hallmarked 18 karat gold or sterling silver.

Weddings are the fourth largest contributor to the Indian economy. It's a huge but extremely competitive industry ruled by gold jewellery.

Select Diamantaires

Rio Tinto Diamonds established a long-term contract system (sightholders) in 2006 whereby selected companies are invited to participate in ten core sales events, held in line with the diamond industry's market cycle.

The number of sightholders was increased to 17 for the 2013 contract period, suggesting Rio Tinto anticipates higher production in the year from its three mines.

Figure 6: Select Diamantaires

2013 Distribution of Select Diamantaires by Region		
	2012	2013
Belgium	6	6
India	4	6
Israel	1	1
Hong Kong	0	1
USA	1	2
Canada	1	1
Total		
2013 Distribution of Select Diamantaires by Mine		
	2012	2013
Argyle	5	9
Murowa	4	5
Diavik	12	16

Source: Rio Tinto Diamonds, Equity Communications

Natural Colour Diamonds

For every coloured diamond, there are at least 10,000 colourless ones because the physical conditions needed to colour a diamond naturally occur very scarcely. Rio Tinto Diamonds is the world's leading provider of natural colour diamonds. The Argyle diamond mine in Australia is the world's largest source of natural colour diamonds, producing a variety of colours from champagne and cognac to the famous Argyle pink diamonds.

Natural colour diamonds are in vogue in developed diamond markets. Rio Tinto has entered into an agreement with Sterling Jewelers, the largest specialty jeweller in USA, for the distribution of natural colour diamonds in the USA in a marketing initiative called Shades of Wonder. Shades of Wonder features rare and beautiful natural colour diamonds from Argyle, featuring the tag line "…as unique as the landscape itself." Sterling has more than 1,300 stores in 50 states in the US, including the nationally recognised Kay Jewelers and Jared the Galleria of Jewelry. The Shades of Wonder initiative will be rolled out to all locations, supported by fully integrated in-store training programs. It is projected to use more than 16,000 carats of Argyle diamonds in 2013.

Argyle Pink Diamonds

Figure 7: Argyle Pink Diamonds Tender

Argyle Pink Diamonds Tender				
	2009	2010	2011	2012
Total	43	55	55	56
Number of stones sold at annual tender				

Source: Argyle Pink Diamonds

The Argyle Diamond mine produces more than 90 percent of the world's pink diamonds but accounting for less than 0.01 percent of the mine's output. Argyle's pink diamonds are retained for cutting and polishing in Perth then sold in a broad range of colours and sizes to an international customer base. The Argyle Pinks have an average size of 0.9 carats. Around 60 carats in total are sold at the Pink Diamond Tender each year. Prices achieved are typically in excess of US$300,000 per carat.

Special comment...

The world will lose more than 90% of the annual production of pink diamonds when the Argyle Mine is put to sleep for good in less than ten years. These babies will probably explode in value in the coming years...unless a new source is found...which is very unlikely.

Put somewhat differently...

Exceptionally rare precious stones, whether diamonds or emeralds, traditionally cannot have a fixed price and each transaction becomes a matter of negotiation between buyer and seller. Historically, the demand for them has relatively always been steady and sales are governed by the purchasing power of the world.

As you are reading this, the collective purchasing power of 2.5 billion people is growing - 2.5 billion people that historically have always exhibited a taste for the finer things in life. Thing is, when these rare pink gems become even more rare, their value will likely explode.

Commentary

Background

In March 2012, Rio Tinto announced a strategic review of its diamond business that includes exploring a range of options for the potential divestment of its diamonds interests.

Rio Tinto Group subsequently pushed out its former Chief Executive Officer, Tom Albanese, over a US$14 billion write down of its assets following bad deals, stating that accountability for the hit rested with him. The group has announced US$5 billion in cost-cutting moves to 2015.

Priority now is to deliver greater shareholder value, through the disciplined allocation of capital. To that end, the company will only invest in new projects that generate returns considerably higher than cost of capital. Existing projects that do not meet the new criteria are being reviewed and may either be sold, discontinued or slowed down.

Rio Tinto Diamonds

Rio Tinto Diamonds produced 13.1 million carats of rough diamonds in 2012, a 12 per cent increase from 2011 that reflected increased grades, higher ore throughput and the absence of adverse weather interruptions which impacted 2011. Revenue in 2012 was two per cent higher than in 2011, as the effect of higher volumes was largely offset by lower prices. Rio Tinto Diamonds reported a loss of US$43 million in 2012, compared to earnings of US$10 million in 2011, reflecting lower prices and higher depreciation at the Argyle Mine.

Rio Tinto's diamond business contributed less than 1.5 per cent of group revenue in 2012. It is no longer considered a core asset and the Argyle underground project is among those that have been targeted for cost-cutting.

Rio Tinto management has deferred mine work that is not required to bring first production on stream. 350 construction workers working on the Argyle Mine underground expansion were laid-off in early February after executives decided to delay the availability of a second crushing machine. Most of the workers laid-off were employed by subcontractors and none of the 750 mining workers working directly for the mine were dismissed.

The Argyle underground expansion project was approved in 2005 as a $US760 million project but blowouts took it to $US2.2 billion. Rio Tinto also shaved $460 million from the value of Argyle in February, citing changes to the date of the underground ramp-up after a review of the project.

Figure 8: Rio Tinto Diamond Production

Rio Tinto Diamond Production

000s (cts)	2008	2009	2010	2011	2012	2012-Q1	2013-Q1
Murowa	205	97	139	285	313	79	66
Argyle	15076	10591	9804	7441	8471	2329	1990
Diavik	9225	3339	3900	4006	4338	963	1176
Total	20816	14026	13843	11733	13122	3371	3224

Source: Rio Tinto

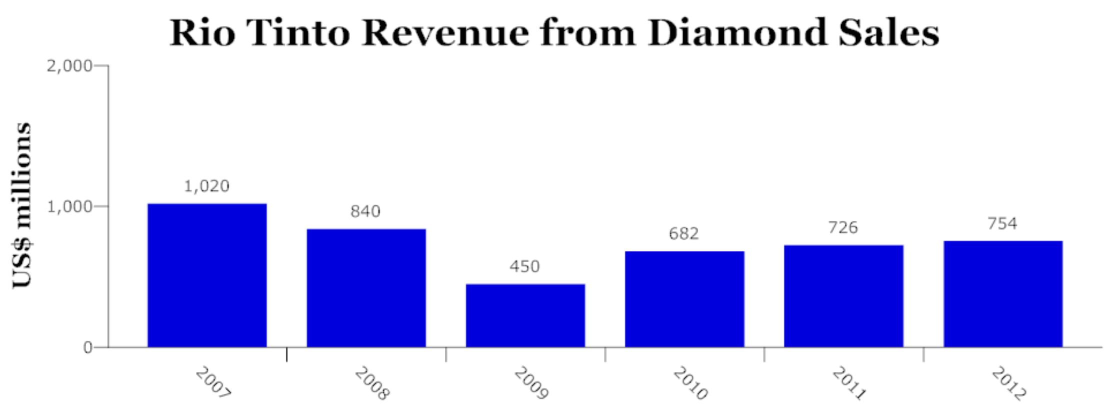
Figure 9: Rio Tinto Probable Ore Reserves

Rio Tinto Diamonds Ore Reserves

Probable Ore Reserves December 2012	Tonnes (millions)	Grade (cpt)	Carats (millions)
Murowa	5.4	0.9	4.86
Argyle	63	2.2	138.6
Diavik	7.7	2.6	20.02
Total	76.1	2.14	163.48

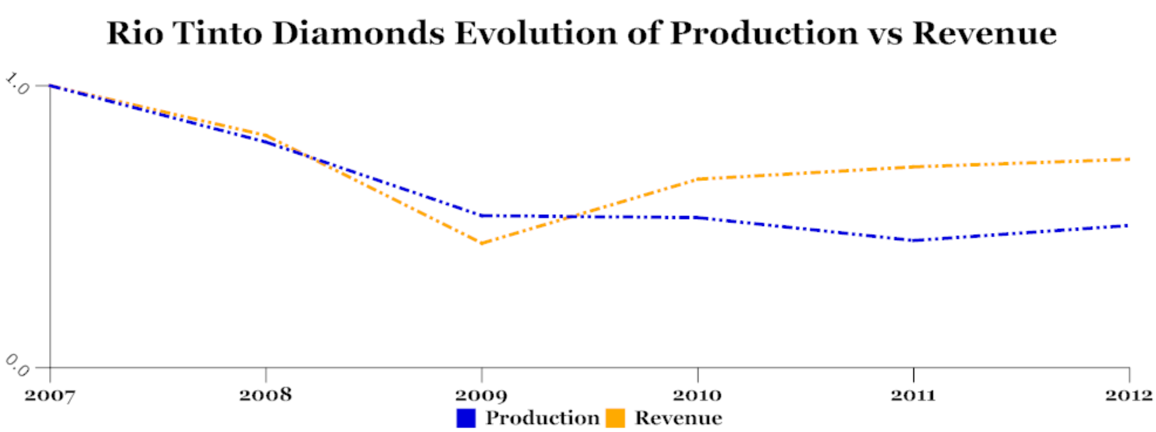
Reserves at Murowa decreased following a pit redesign and reclassification of material.

Figure 10: Rio Tinto Diamond Revenue



Source: Rio Tinto Diamonds, Equity Communications

Figure 11: Evolution of Production and Sales since 2007



Source: Rio Tinto Diamonds, Equity Communications

What's next for Rio Tinto Diamonds?

Rio Tinto's diamond division has four mines spread out across four continents. Diavik in Canada, Murowa in Zimbabwe, Argyle in Australia, and the Bunder project in India.

Realistically, if another business is to buy the whole diamond division in a trade sale, then it has to be a company that already has a similar operating structure, with experience in managing diamond mines. Anglo American's De Beers is the only other company with a similar operating structure. We know for sure that they do not have the capacity to absorb Rio Tinto's diamond division even if they wanted.

If Rio Tinto decides to sell its diamond assets individually, some will attract buyers while others will not.

The Bunder project consists of a cluster of eight diamondiferous lamproites. Lamproite is a kind of volcanic rock similar to kimberlite of which the Argyle AK1 pipe represented the first major deposit of diamonds found in lamproite and the only one to be mined successfully until Marange in Zimbabwe.

Rio Tinto is the only company that has a long and successful record of recovering diamonds from lamproites. It can call on its knowledge of the Argyle Pipe in the continuing development of the Bunder resource. New project owners would not have such an advantage in the complex $500 million dollars Bunder project.

Murowa Diamonds has not followed its original development plan because of complex policy problems in Zimbabwe. A detailed feasibility study was completed and environmental approval obtained in 2007 for an expansion from 250,000 tonnes to 2 million tonnes per annum of ore. Rio Tinto did not proceed to make the $200 million capital investment required to expand the Murowa operation because there is no security of tenure in Zimbabwe. In any case, according to Zimbabwe laws, Rio Tinto is supposed to reduce its shareholding in Murowa to below 50 percent. We suspect this has not happened because a forced exit of Rio Tinto would have mothballed the Murowa operation.

Rio Tinto Zimbabwe, minority partner in the Murowa operation and former Rio Tinto subsidiary, has indicated it would be interested in acquiring the Rio Tinto Group's 78 percent equity-holding in Murowa. However, the company has struggled operationally since it left the Rio Tinto group and is currently drowning in bank debt. Significant overseas financing would be required to sustain and grow the Murowas operation without Rio Tinto Diamonds. RioZim has previously failed to access finance for other projects in its portfolio such as gold mining.

It's been reported that there's interest from other groups that would like to purchase Rio Tinto's stake in Murowa. Let it be known that Zimbabwe’s government has indicated a maximum 49 percent foreign-ownership would be mandatory in the event of a sale, reducing the asset's appeal to outsiders.

Nevertheless, the Murowa operation is a profitable small scale diamond mining operation which has avoided controversies that follow Zimbabwe's other diamond mines.

Rio Tinto's Argyle operation is one of the most technically advanced underground mining operations in the world. More importantly, it is a critical cog in East Kimberley's economy, where it is located. The iconic status of the Argyle Mine in the Western Australia region complicates the disposal process. Our thinking is that, if no Australi-based group comes forward to purchase Rio Tinto's diamond assets, a separate listing of the Argyle operation is the inevitable option.

In the event of a sale, Domininion Diamond Corporation stands ready to purchase Rio Tinto's 60 percent stake in the Diavik operation. There will be no other buyer. In the meantime, development of the A-21 pipe has been delayed for a few years to allow Rio Tinto to complete a review of its diamond business. Eventually upwards of US$500million would be required to develop the last pipe of the Diavik Mine.

Conclusion

Rio Tinto has made significant socio-economic commitments to the people of Western Australia and Madhya Pradesh in India. It will be very difficult for Rio Tinto to walk away from these commitments unless excellent new owners are found for the Argyle Mine and Bunder Project. Unfortunately, there is an extreme shortage of suitable suitors.

Therefore, we feel a separate listing of Rio Tinto Diamonds is the most solid option and the most likely outcome of the review process. Rio Tinto has gradually weaned its diamond division, making certain that it is able to stand alone. To us, that is quite telling.

Progression of the Diamond Market

Our expectations for the diamond market in the short-to-medium term are quite conservative. In the next three years, we believe annual world production of rough diamonds will receive a boost of 10 to 15 million carats in mainly lower quality diamonds as the Argyle underground mine also expands to full production. We already anticipate increased production from Zimbabwe after four new companies were awarded mining licences for different areas of the Marange concession, doubling the number of companies mining diamonds in Chiadzwa.

What this means is that diamond prices will likely rise at a slower pace than had been anticipated just two years ago. Add to this the fact that emerging diamond markets are not growing quickly enough to replace diminishing demand in developed diamond markets.

This publication is part of the Diamond Industry Series, a series of diamond industry reports produced by Equity Communications ahead of the 2013 Diamond Report. Equity Communication's Diamond Report provides detailed analysis of trends in the diamond industry value chain in 2012-2013, from the production end to the retail end. It is in its third edition.

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