

## Negotiating Cyclone project buy-in

Cape Bedford : High quality silica sand

### Recommendation

**Strong BUY, High Risk**

### Price

**0.7c**

### Valuation

**6.5c**

### Products :

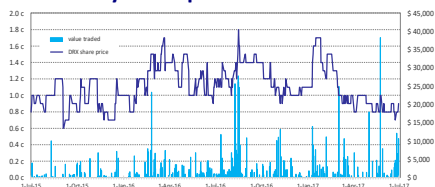
**Mineral Sands (Zircon rich)  
Silica sand**

- On 27 June 2017, DRX announced that it was in discussions with 6 different companies to participate in the development of the Cyclone project now that it has been de-risked.
- Zircon prices have risen to \$1100/t, and it is expected that prices will rise further, generating interest in becoming part of the Cyclone project.
- On 30 June 2017, DRX announced that it was to start drilling at Cape Bedford, which has high quality silica sand and valuable heavy minerals.
- Beer & Co expect that DRX will conclude an agreement with a party that has access to finance as well as dry plant capacity, by the end of CY 2017.

### Snapshot

Market Cap \$7.3m  
Cash : fully drawn \$3m Convertible Note  
Shares on Issue 809.96m  
52 Week High 1.8c  
52 Week Low 0.7c  
1 month / 6 month VWAP 0.80c / 0.99c

### DRX : daily share price v. value traded



DRX has 204 Mt in Measured + Indicated Resources at its Cyclone Heavy Mineral Sands deposit, which is in the east of WA, near the SA border.

Reserves total 138Mt, for nearly 1.0Mt of contained zircon.

DRX's enhancement study, which was announced in June 2016, showed a pay-back period of 2.8years.

DRX has proven water supply, a Mining Licence, Native Title clearance and Environmental Approval.

DRX also has an EL at Cape Bedford which has high grade silica sands and Heavy Mineral Sands, as well as 50% of the Tick Hill Gold project.

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### Cyclone project has the required approvals

On 10 January 2017, DRX announced it has been granted Environmental Approval for the development of the Cyclone project. DRX was granted a Mining Licence in November 2014, after it had reached agreements with the Traditional Owners.

DRX has proven adequate water resources within its tenement area.

### PFS updated; DFS requires development agreement

On 15 June 2016, DRX announced the results of its updated PFS.

Since securing all pre-conditions for a development, together with an updated feasibility study, DRX has been in active discussion with potential development partners. On 27 June, DRX advised that it now has 6 potential partners.

Beer & Co expects that DRX will name its preferred partner(s) later in 2017, considering finance, dry plant capacity and product need.

The DFS will be completed in conjunction with the preferred partner to optimise the value from sale of Cyclone's Heavy Mineral Concentrate.

### Cape Bedford

Beer & Co believes that DRX's Cape Bedford silica and HM sands is an exciting prospect. DRX will execute its maiden drill programme later this month.

### Beer & Co.'s valuation 6.5c/share

Beer & Co.'s previous research on DRX, in August 2016, outlined the basis for our valuation.

Beer & Co is confident in the development of Cyclone given the tightening market for zircon and the number of parties interested.

### Beer & Co conclusion : Strong BUY, High Risk

While there is significant uncertainty in our valuation, Beer & Co is confident that the firming zircon market will ensure a development agreement is concluded.

Beer & Co.'s valuation is a multiple of risked valuation.

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## DRX's Cyclone project progressing

### Cyclone : 4 Key Assurances done

DRX's Cyclone project has

- Assured water supply;
- Native Title agreement;
- A granted Mining Lease; and
- Environmental Approval,

DRX announced the results of a PFS on its Cyclone project in March 2012. To proceed to development, DRX needed 4 key assurances :

- Adequate water, which was shown in DRX's announcement of 11 November 2013, and subsequent work as part of the updated PFS;
- Native Title agreement, which was shown in DRX's announcement of 15 November 2014;
- Grant of Mining Licence, which required Native Title agreement, and the grant of which was shown in DRX's announcement of 18 November 2014; and
- Environmental Approval, which, after a very long period, was announced by DRX on 10 January 2017.

### Development Concept

DRX's Cyclone project also has an updated PFS, that can be quickly upgraded to a DFS after agreement is reached with an off-take party on dry plant processing

DRX announced the results on an updated and enhanced PFS on 15 June 2016. The key is to produce a Heavy Mineral Concentrate (HMC) at Cyclone and have this HMC processed into zircon, rutile and other titaniferous products using spare dry plant capacity in China.

Beer & Co.'s update note of DRX (see [DRX\\_2016July06.pdf](#)) published in July 2016 provided the detail of our risk valuation :

- DRX sells a stake of about 45% in the project to a development partner at a discount of about 20% to the project NPV (leaving DRX with 49%);
- Commodity prices of US\$ 1250/t for zircon, US\$ 1,000/t for rutile and proportionately for lower value titaniferous products; and
- AUD-USD 0.750.

Beer & Co.'s valuation is based on :

- Commodity prices about 10% higher than current; and
- Sales of a project stake to an off-take / development partner

Beer & Co now assumes that :

- development agreement is reached later in 2017;
- the DFS is completed about March 2018, as the key to the DFS is the Dry Plant, which will be assessed as part of the agreement with the development partner;
- Project financing concluded by June 2018, with construction proceeding and first product in the September quarter of 2019.

### Development Partner progressing

Given the tightening zircon market, Beer & Co has confidence in our base case assumptions

On 27 June 2017, DRX announced that is in discussion with 6 different parties to become DRX's development partner for Cyclone. Beer & Co expects that the keys in the choice of development partner will be :

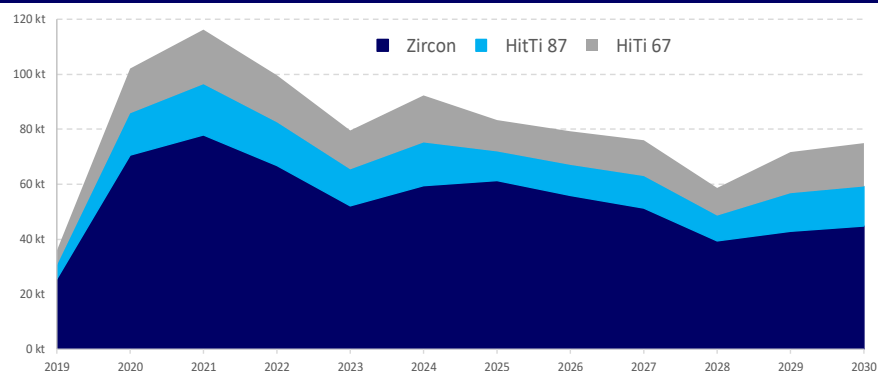
- Dry Plant capacity and capability to effectively treat the HMC produced at Cyclone;
- Requirement for Cyclone HMC and product; and
- Access to debt and equity finance to ensure project development.

## Zircon pricing

Cyclone will be an important source of zircon, as shown in Figure 1.

Cyclone is a zircon project

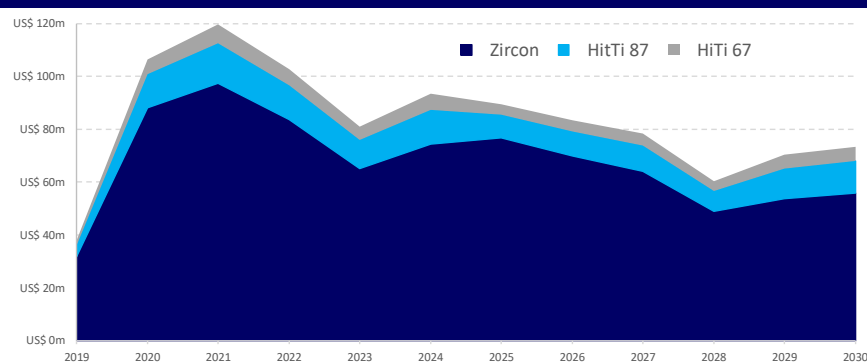
**Figure 1 : Cyclone's Sales by end product**



Source : Beer & Co estimates, based on June 2016 PFS

Figure 1 shows that most of the sales from DRX's Cyclone project will be zircon. However, zircon is also the most valuable of the products to be sold and Figure 2 shows how the revenue of the Cyclone project is dominated by zircon, which is projected to be more than 80% of the project revenue.

**Figure 2 : Cyclone's Sales revenue, by product**



Source : Beer & Co estimates, based on June 2016 PFS

## Outlook for Zircon

**TZMI (Industry analysts) and Iluka (the largest mineral sands company) expect the zircon market to tighten, with supply slipping and demand rising**

Zircon prices have been subdued, but have recovered during 2017, so that Iluka (ILU.ASX, the world's largest producer of zircon) increased its reference price for premium zircon, to US\$ 1100/t from 1 July 2017, up from \$970/t from 15 February and \$900/t at the end on 2016.

ILU's price increases are in response to stronger demand and a run-down in inventories.

Beer & Co.'s base case price for zircon is still about 13.5% higher, but less than the increase seen over the last 6 months.

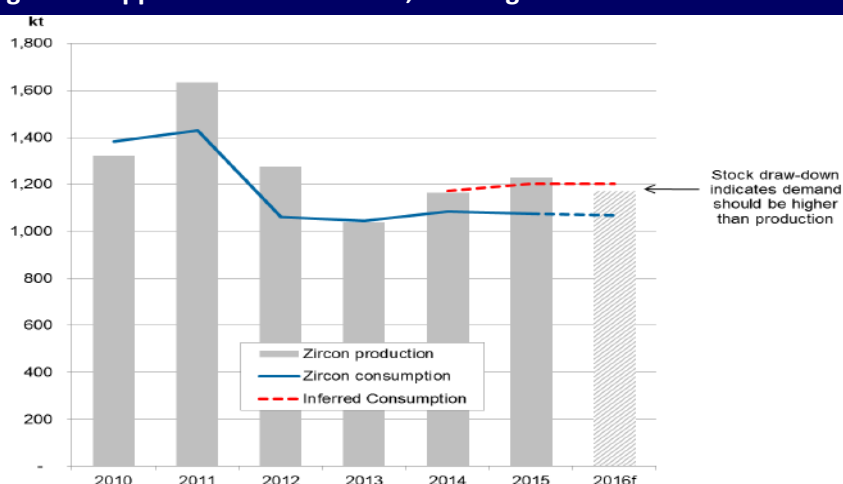
Also, rutile prices have increased to US\$ 900/t, which is within 10% of Beer & Co.'s projected price.

Figure 3 shows ILU's interpretation of zircon demand, showing that physical demand has been much stronger than apparent demand due to the run down in inventories.

Figure 4 shows that ILU expects supply to be challenged by declining grades (Figure 1 shows how the Cyclone project focusses on high grade areas in the early years to boost capital return and pay-back of invested capital).

**Figure 3 : Apparent zircon demand, drawing down inventories**

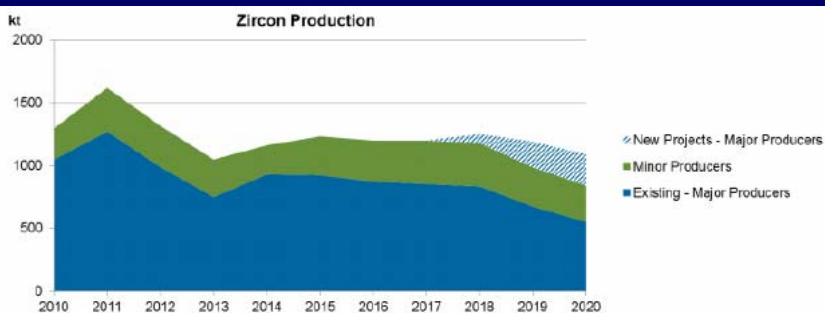
Iluka believes that inventories have been drawn down so that actual demand is stronger than demand apparent from production



Source ILU presentation, March 2017

**Figure 4 : Projected zircon supply**

Supply is expected to struggle



Source: Iluka

\* Zircon production from 2016 onwards excludes any finished goods inventory held at 31 December 2015, but includes zircon processed from concentrate stockpiles held by Iluka at the end of 2015.

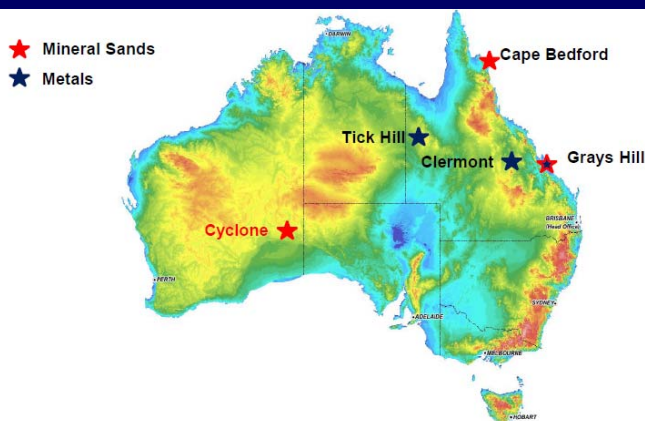
Source ILU presentation, February 2016

## Cape Bedford

While DRX's valuation is dominated by Cyclone, DRX also has 3 other projects, as shown in Figure 5.

**Figure 5 : DRX's projects**

DRX is about to start drilling at Cape Bedford



Source ILU presentation, March 2017



**DRX's Cape Bedford project surrounds the Cape Flattery silica mine, operated by Mitsubishi**

On 30 June 2017, DRX announced that it would be running a drill programme at Cape Bedford.

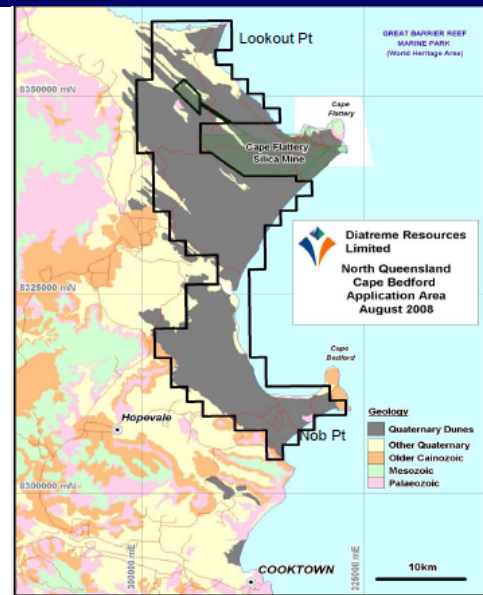
The consent of the Traditional Owners was announced in January.

Figure 6 shows that DRX's Cape Bedford tenement surrounds the Cape Flattery Silica Mine, which was initially developed in the late 1960s and is now owned and operated by Mitsubishi.

As shown in Figure 7, the sands at Cape Bedford appear to be high purity silica sand, as can be seen from the whiteness.

Figure 8 shows the Heavy Mineral potential from beach shedding at Cape Bedford.

**Figure 6 : Cape Bedford, FNQ**



Source : DRX ASX announcement, 30 June 2017

**Figure 7a : High purity silica sands, with some HM**



Source : DRX Presentation, August 2016

**Figure 7b : Silica sands**



Source : DRX

**Cape Bedford appears to have high grade silica sand, with very low impurities**

**And valuable heavy minerals**

**Figure 8 : Heavy Mineral potential, from beach shedding**



Source : DRX Presentation, August 2016

In their announcement of 18 January, DRX reported

- 2 samples showing visible Heavy Minerals mineralisation assayed 3.3% HM and 1.6% HM;
- XFR analysis of the remainder gave at least 99.8% SiO<sub>2</sub>, with low Fe<sub>2</sub>O<sub>3</sub> (0.014%) and Al<sub>2</sub>O<sub>3</sub> (0.043%).

The HM assays are very good, especially when the expected low processing costs are taken into account as the sand is very free flowing, while the silica grades are also very good.

## Valuation

### Cyclone

Figure 9 shows Beer & Co.'s projected operational and financial outcomes for the Cyclone project, consistent with the timing on p.1 of this note and Figures 1 and 2.

**Figure 9 : Beer & Co.'s projected operational and financial outcomes for Cyclone**

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
AUD/USD	0.752	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750
Zircon USD /t	1,113	1,225	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250
HiTi 87 USD/t	682	752	824	824	824	824	824	824	824	824	824	824	824	824	824	824	824
HiTi 67 USD/t	292	322	353	353	353	353	353	353	353	353	353	353	353	353	353	353	353
Final Product Volume																	
Zircon	0 kt	0 kt	25 kt	71 kt	78 kt	67 kt	52 kt	59 kt	61 kt	56 kt	51 kt	39 kt	43 kt	45 kt	45 kt	37 kt	6 kt
HiTi 87	0 kt	0 kt	5 kt	15 kt	18 kt	16 kt	13 kt	16 kt	11 kt	11 kt	12 kt	9 kt	14 kt	14 kt	12 kt	11 kt	1 kt
HiTi 67	0 kt	0 kt	5 kt	16 kt	20 kt	17 kt	14 kt	17 kt	11 kt	12 kt	13 kt	10 kt	15 kt	16 kt	13 kt	11 kt	1 kt
Revenue, AUD m	0	0	62	174	196	168	133	154	145	136	128	99	117	122	116	98	0
Cash Costs	0	0	(23)	(60)	(67)	(63)	(63)	(68)	(63)	(63)	(61)	(53)	(55)	(60)	(40)	(15)	(2)
<b>EBITDA</b>	<b>0</b>	<b>0</b>	<b>39</b>	<b>114</b>	<b>129</b>	<b>105</b>	<b>70</b>	<b>86</b>	<b>82</b>	<b>72</b>	<b>67</b>	<b>46</b>	<b>62</b>	<b>62</b>	<b>76</b>	<b>83</b>	<b>(2)</b>
Dep'n & Amort'n	0	0	(5)	(12)	(12)	(12)	(12)	(12)	(12)	(12)	(12)	(12)	(12)	(12)	(12)	(12)	0
Interest Expense	0	0	(3)	(5)	(4)	(2)	(1)	(0)	0	0	0	0	0	0	0	0	0
Tax Expense	0	0	(5)	(17)	(20)	(15)	(7)	(11)	(11)	(8)	(7)	(3)	(6)	(6)	(4)	(0)	0
<b>NPAT</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>80</b>	<b>93</b>	<b>76</b>	<b>49</b>	<b>63</b>	<b>59</b>	<b>52</b>	<b>48</b>	<b>31</b>	<b>44</b>	<b>60</b>	<b>70</b>	<b>70</b>	<b>(2)</b>
Project Cap. Ex	(5)	(63)	(63)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sus. Cap. Ex	0	0	(1)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(1)	0

Source : Beer & Co estimates

### Diatreme Resources

Figure 10 shows the detail of Beer & Co.'s risked valuation of DRX.

**Figure 10 : Beer & Co.'s risked valuation of DRX**

discount rate = 12.0 %		31-Dec-16		3-Jul-17	
	risk :	100%	Product	per share	
Cyclone	80 %	\$ 56m	\$ 45m	4.4 c	4.8 c
franking credits	50 %	\$ 12m	\$ 6m	0.6 c	0.6 c
Cape Bedford	nom	\$ 5m	\$ 5m	0.5 c	0.5 c
Tick Hill	nom	\$ 4m	\$ 4m	0.4 c	0.4 c
Corporate	100 %	(\$23m)	(\$23m)	(2.3c)	(2.4c)
Exploration	80 %	\$ 0m	\$ 0m	0.0 c	0.0 c
Asset Sales	80 %	\$ 31m	\$ 25m	2.4 c	1.2 c
Cash to be raised	100 %	\$ 1m	\$ 1m	0.1 c	0.1 c
Cash	100 %	(\$2m)	(\$2m)	(0.2c)	1.3 c
<b>TOTAL</b>		<b>\$ 85m</b>	<b>\$ 62m</b>	<b>5.9 c</b>	<b>6.5 c</b>
Shares on issue		876.7m	FPO shares	8.0m	options
		134m	Issued later	0.0m	ex'd

Source : Beer & Co estimates

Beer & Co.'s risked, base case valuation of DRX is 6.5c, which is many times the current share price

## Conclusions

### Review

Beer & Co.'s valuation of DRX is very sensitive to the zircon price

Due to the impact the zircon price has on the value of a project stake to be sold to a development / off-take partner.

However, DRX is in discussions with SIX parties, giving us confidence in a good outcome

Figure 9 details the commodity price assumptions used in Beer & Co.'s valuation of the Cyclone project.

Figure 10 shows that Beer & Co.'s valuation is heavily risk weighted and that the sale of a project stake is critical to the financing of the development of Cyclone.

DRX is highly leveraged to the zircon price, as shown in Figure 11, which might understate the leverage due to the impact of commodity price on the value at which at development and off-take partner will place on Cyclone and hence the price paid for what size of project stake and the impact this has on further equity raisings by DRX.

**Figure 11 : Value Sensitivity**

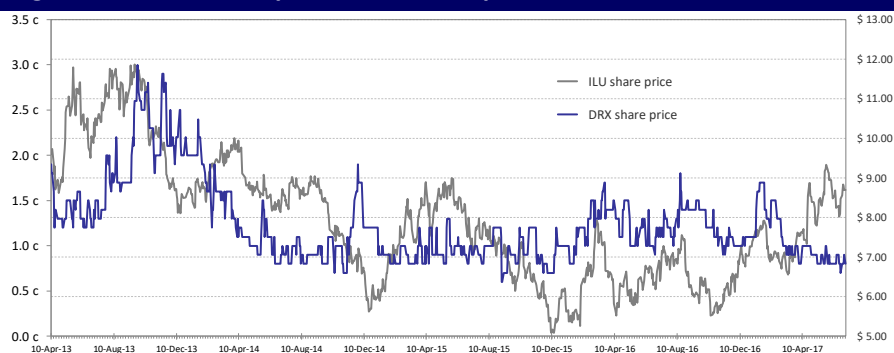
	Zircon	
	\$ 1,100/t	\$ 1,250/t
Rutile	\$ 900/t	2.6 c
	\$ 1,000/t	3.2 c
		5.9 c
		6.5 c

Source : Beer & Co estimates

While progress has been slower than investors would like, DRX is making progress and to have 6 parties interested in taking a project stake is consistent with the medium views of commodity analysts that the zircon market is expected to tighten.

As shown in Figure 12, the DRX share price has tended to follow the ILU share price, with a lag, and the trend of the LIU share price since late in 2016 has generally been up.

**Figure 12 : DRX share price v ILU share price**



Source : IRESS, Beer & Co

### Recommendation

Beer & Co affirms our Strong BUY, High Risk, recommendation

The zircon market is expected to firm which will assist in concluding a development agreement, which is the most critical factor is Beer & Co.'s riskd valuation.

Beer & Co.'s base case valuation is a significant multiple of the current share price.

While there is significant risk in Beer & Co.'s base case valuation, we believe that we have allowed for these risks and still have a sufficient margin to warrant a Strong BUY.

## Beer &amp; Co Research

Diatreme Minerals (DRX.ASX)

July 2017

Year ended December		2016	2017	2018	2019	2020	2021
<b>Section 1 - P&amp;L</b>							
Sales revenue	\$A m	0	0	0	23	66	74
Interest revenue	\$A m	0	0	1	0	0	1
Other revenue	\$A m	0	0	0	0	0	0
<b>Total Revenue</b>	<b>\$A m</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>23</b>	<b>66</b>	<b>74</b>
Cost of Goods Sold	\$A m	0	0	0	(10)	(26)	(29)
Royalties	\$A m	0	0	0	(1)	(4)	(4)
Exploration Expense	\$A m	(0)	0	0	0	0	0
Corporate Costs	\$A m	(1)	(1)	(2)	(3)	(4)	(4)
<b>Total Operating Expenses</b>	<b>\$A m</b>	<b>(2)</b>	<b>(1)</b>	<b>(2)</b>	<b>(14)</b>	<b>(34)</b>	<b>(37)</b>
<b>EBITDA</b>	<b>\$A m</b>	<b>(2)</b>	<b>(1)</b>	<b>(1)</b>	<b>9</b>	<b>32</b>	<b>37</b>
Dep'n & Amort'sn	\$A m	(0)	0	0	(2)	(6)	(6)
<b>EBIT</b>	<b>\$A m</b>	<b>(2)</b>	<b>(1)</b>	<b>(1)</b>	<b>7</b>	<b>26</b>	<b>31</b>
Interest Expense	\$A m	(0)	0	0	(2)	(2)	(2)
Other	\$A m						
<b>Pre-Tax Profit</b>	<b>\$A m</b>	<b>(2)</b>	<b>(1)</b>	<b>(1)</b>	<b>5</b>	<b>23</b>	<b>29</b>
Tax Expense	\$A m	0	0	0	(1)	(7)	(9)
<b>NPAT</b>	<b>\$A m</b>	<b>(1)</b>	<b>(1)</b>	<b>(1)</b>	<b>3</b>	<b>16</b>	<b>20</b>

**Section 2 - Key Data**

Ordinary shares - year end	m	877	936	936	936	1,011	1,011
Fully diluted shares on issue	m	877	936	936	936	1,011	1,011
Weighted # shares	m	842	906	936	936	1,011	1,011
Earnings per Share	(0.2c)	(0.1c)	(0.1c)	0.4 c	1.6 c	2.0 c	
Dividends Per Share	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c	

**Section 3 - Balance Sheet**

Cash	\$A m	0	32	(1)	1	16	33
Receivables	\$A m	0	0	0	7	10	11
Other	\$A m	0	0	0	0	0	0
<b>CURRENT ASSETS</b>	<b>\$A m</b>	<b>0</b>	<b>32</b>	<b>(1)</b>	<b>8</b>	<b>25</b>	<b>44</b>
Receivables	\$A m	0	0	0	0	0	0
P, P & E	\$A m	0	0	31	61	56	51
Mining Properties / Exploration	\$A m	13	16	16	15	15	14
Other	\$A m	0	0	0	0	0	0
<b>NON-CURRENT ASSETS</b>	<b>\$A m</b>	<b>14</b>	<b>16</b>	<b>47</b>	<b>76</b>	<b>71</b>	<b>65</b>
<b>TOTAL ASSETS</b>	<b>\$A m</b>	<b>14</b>	<b>48</b>	<b>46</b>	<b>84</b>	<b>97</b>	<b>110</b>
Payables	\$A m	0	0	0	2	3	3
Debt	\$A m	2	0	0	6	7	7
Other	\$A m	0	0	0	0	0	0
<b>CURRENT LIABILITIES</b>	<b>\$A m</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>7</b>	<b>7</b>
Long Term Debt	\$A m	3	0	0	22	15	8
Deferred Tax Liability	\$A m	0	0	0	0	0	0
Other	\$A m	0	0	0	0	0	0
Provisions	\$A m	0	0	0	0	0	0
<b>NON-CURRENT LIABILITIES</b>	<b>\$A m</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>15</b>	<b>8</b>
<b>TOTAL LIABILITIES</b>	<b>\$A m</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>22</b>	<b>15</b>
<b>NET ASSETS</b>	<b>\$A m</b>	<b>10</b>	<b>48</b>	<b>46</b>	<b>56</b>	<b>75</b>	<b>94</b>
Accumulated Profit (Loss)	\$A m	(38)	(39)	(40)	(36)	(20)	0
Reserves	\$A m	0	37	37	41	41	40
Contributed Equity	\$A m	49	49	49	49	51	51
<b>Total Equity</b>	<b>\$A m</b>	<b>11</b>	<b>47</b>	<b>46</b>	<b>54</b>	<b>72</b>	<b>92</b>

**Section 4 - Cashflow**

Net Cashflow from operations	\$A m	(1)	(1)	(2)	9	32	36
Net Interest Paid	\$A m	0	0	0	(2)	(2)	(2)
Taxes Paid	\$A m	0	0	0	0	0	0
Change in Working Capital	\$A m	(0)	(0)	0	(5)	(2)	(1)
<b>OPERATING CASHFLOW</b>	<b>\$A m</b>	<b>(1)</b>	<b>(1)</b>	<b>(2)</b>	<b>2</b>	<b>27</b>	<b>34</b>
Exploration Expenditures	\$A m	(1)	(2)	0	0	0	0
Maintenance Capex	\$A m	0	0	0	(0)	(1)	(1)
Expansion Capex	\$A m	0	0	(31)	(31)	0	0
<b>PPE Acquisitions (Total Capex)</b>	<b>\$A m</b>	<b>(1)</b>	<b>(2)</b>	<b>(31)</b>	<b>(31)</b>	<b>(1)</b>	<b>(1)</b>
PPE Divestments	\$A m	0	34	0	0	0	0
<b>INVESTING CASHFLOW</b>	<b>\$A m</b>	<b>(1)</b>	<b>32</b>	<b>(31)</b>	<b>(31)</b>	<b>(1)</b>	<b>(1)</b>
Change in Equity	\$A m	1	0	0	0	1	0
Dividends Paid	\$A m	0	0	0	0	0	0
Change in Debt	\$A m	3	(4)	0	28	(6)	(7)
<b>FINANCING CASHFLOW</b>	<b>\$A m</b>	<b>4</b>	<b>(4)</b>	<b>0</b>	<b>28</b>	<b>(5)</b>	<b>(7)</b>
<b>Free Cashflow</b>	<b>\$A m</b>	<b>(3)</b>	<b>31</b>	<b>(33)</b>	<b>(29)</b>	<b>26</b>	<b>32</b>
<b>Net Cashflow</b>	<b>\$A m</b>	<b>1</b>	<b>27</b>	<b>(33)</b>	<b>(1)</b>	<b>21</b>	<b>26</b>

Year ended December		2017	2018	2019	2020	2021	2022
<b>Commodity price assumptions</b>							
AUD/USD		0.752	0.750	0.750	0.750	0.750	0.750
Zircon	USD / t	1,113	1,225	1,250	1,250	1,250	1,250
Rutile	USD / t	828	913	1,000	1,000	1,000	1,000
HiTi 87	USD/t	682	752	824	824	824	824
HiTi 67	USD/t	292	322	353	353	353	353

**Mine Production, 100% basis**

Mine production	'000t	0	0	3,875	10,000	10,000	10,000
Zircon in HMC,	'000t	0	0	30	82	91	78
HiTi 87 in HMC,	'000t	0	0	8	23	28	24
HiTi 67 in HMC,	'000t	0	0	8	23	28	24
<b>TOTAL HMC</b>	<b>'000t</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>134</b>	<b>153</b>	<b>131</b>

**Attributable production (DRX share)**

Heavy Mineral Conc.	'000t	0	0	23	65	75	64
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**Resources**

Cyclone	1.0% cut-off	H M	Zircon	70% - 95%	<70%	SiTiOx
Measured	156 Mt	2.4 %	0.69 %	0.77 %	0.32 %	0.53 %
Indicated	55 Mt	1.8 %	0.36 %	0.61 %	0.37 %	0.31 %
<b>TOTAL</b>	<b>211 Mt</b>	<b>2.2 %</b>	<b>0.60 %</b>	<b>0.73 %</b>	<b>0.33 %</b>	<b>0.47 %</b>

Cyclone	1.5% cut-off	H M	Zircon	70% - 95%	<70%	SiTiOx
Measured	102 Mt	3.1 %	0.87 %	0.96 %	0.40 %	0.67 %
Indicated	24 Mt	2.5 %	0.50 %	0.82 %	0.55 %	0.45 %
<b>TOTAL</b>	<b>127 Mt</b>	<b>3.0 %</b>	<b>0.80 %</b>	<b>0.93 %</b>	<b>0.43 %</b>	<b>0.63 %</b>

**Assumed mining inventory**

	H M	Zircon	HiTi 87	HiTi 67	
TOTAL	138 Mt	2.54 %	0.72 %	0.25 %	0.91 %

**Asset based Valuation**

discount rate = 12.0 %	risking	31-Dec-16		03-Jul-17	
		100%	Product	per share	
Cyclone	80 %	\$ 56m	\$ 45m	4.4 c	4.8 c
franking credits	50 %	\$ 12m	\$ 6m	0.6 c	0.6 c
Cape Bedford	nom	\$ 5m	\$ 5m	0.5 c	0.5 c
Tick Hill	nom	\$ 4m	\$ 4m	0.4 c	0.4 c
Corporate	100 %	(\$23m)	(\$23m)	(2.3c)	(2.4c)
Exploration	80 %	\$ 0m	\$ 0m	0.0 c	0.0 c
Asset Sales	80 %	\$ 31m	\$ 25m	2.4 c	1.2 c
Cash to be raised	100 %	\$ 1m	\$ 1m	0.1 c	0.1 c
Cash	100 %	(\$2m)	(\$2m)	(0.2c)	1.3 c
<b>TOTAL</b>		<b>\$ 85m</b>	<b>\$ 62m</b>	<b>5.9 c</b>	<b>6.5 c</b>
Shares on issue		876.7m	FPO shares	8.0m	options
		133.9m	Issued later	0.0m	ex'd

**per US \$ / t of HMC**

	LoM	2018	2019	2020	2021	2022
<b>Estimated Revenue</b>	<b>959</b>	<b>0</b>	<b>987</b>	<b>976</b>	<b>963</b>	<b>962</b>
<b>Estimated Cash Costs</b>						
Overburden	98	0	51	47	56	66
Ore Mining	63	0	56	50	43	51
Mine Planning	16	0	18	13	11	13
Wet Concentrator	82	0	67	65	57	66
Site Admin & Sales	33	0	34	25	22	26
Transport of HMC	101	0	101	101	101	101
MSP Fee	228	0	226	223	223	224
Royalties	44	0	46	45	44	44
<b>TOTAL</b>	<b>664</b>	<b>0</b>	<b>599</b>	<b>569</b>	<b>558</b>	<b>591</b>

**Financial Ratios**

Year ended December		2016	2017	2018	2019	2020	2021
Revenue	\$A m	0	0	1	23	66	74
EBITDA	\$A m	(2)	(1)	(1)	9	32	37
EBIT	\$A m	(2)	(1)	(1)	7	26	31
Adjusted EPS (cps)	(0.2c)	(0.1c)	(0.1c)	0.4 c	1.6 c	2.0 c	
EPS Growth (%)	60 %	61 %	(28%)	469 %	347 %	24 %	
DPS (c)	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c	0.0 c	
Dividend Yield (%)	0 %	0 %	0 %	0 %	0 %	0 %	
PE adj. (x)	(6)	(16)	(9)	2	1	0	
EV / EBITDA (x)	(7)	(14)	18	1	1	0	
EV / EBIT (x)	(7)	(14)	18	1	1	1	
Gearing (%)	30 %	0 %	0 %	33 %	23 %	14 %	
Return on Assets	(11%)	(2%)	(3%)	8 %	27 %	28 %	
Return on Equity	(15%)	(1%)	(2%)	6 %	22 %	22 %	
EBITDA Margin (%)	n/a	n/a	n/a	38 %	48 %	50 %	
Interest Cover (x)	x	(6.4)	n/a	n/a	3.8	11.2	17.8



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The analyst responsible for this research report certifies that all of the views expressed reflect his personal views about the securities and the issuer.

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