Botswana Diamonds plc (BOD.L)* 5 Oct 2022

First Equity

Thorny River nearing commercialisation?

Following the acquisition completion by Botswana Diamonds plc (BOD.L) of outstanding third-party interests in the holding company for the Thorny River project and recent exploration success to expand the mineable diamond deposit, in this research note we take a closer look at Thorny River to estimate a risked valuation and at the same time update our numbers for other Group project assets.

- **Thorny River** is edging nearer towards an important commercialisation point, with a mine plan being finalised and a mining permit application being prepared, which could be awarded in Q2 '23.
- The discovery of two recent new blows (4 Aug '22 RNS) at Thorny River should increase the project's mineable kimberlite which is based upon the single '**River Blow'** as outlined in the open-pit mining evaluation (25 Apr '22).
- The objective at Thorny River is to develop a similar deposit to the high margin, low cost, **Marsfontein** mine, which achieved a remarkable payback for its JV partners De Beers and SouthernEra in only three and a half days.
- Botswana Diamonds was recently (5 Sept '22) awarded the **Reivilo** licence, which contains a cluster of three known kimberlite pipes. An exploration programme is being planned over this interesting and potentially highly prospective area.
- At **Ghaghoo**, although the long stop date on the shares sales agreement with Gem Diamonds has lapsed for a mine re-start, potential still exists for a deal to be reached with a mining/investment partner on similar terms under a new agreement.

Recommendation & Value – A risked valuation approach is used to value BOD's two most advanced projects of Thorny River and **KX36**, along with a value for Ghaghoo. Other projects such as the interesting new Reivilo licence are for the moment left unvalued until we understand more about its potential that enables a quantifiable value to be determined. The asset valuation of $44.5m (prev. $nil) for Thorny River is composed of $35.6m for the 'River Blow' based on a risked NPV of the open pit evaluation study, which accounts for resource, development and finance risks, along with $8.9m attributable for exploration expansion upside potential.

Ghaghoo's estimated value has dropped to $7.2m, just 20% of our previous risked value of $36.1m and represents a 'project opportunity value', given that the shares sales agreement has lapsed but nevertheless with a tangible potential for the deal to be re-engaged. Therefore, the development risk at the nearby KX36 discovery has increased, thereby lowering its estimated risked value to $23.5m (prev. $29.5m) due to the shared processing and infrastructure of any future mining operation.

Our final Group enterprise valuation comes to **$76.3m** (prev. $66.3m), representing a share and target price of **6.8p** per share (prev. 6.1p). This offers considerable upside potential to the current equity price of around 1.0p, leading to our '**Buy'** recommendation.

Project / Asset	Value Oct 22	Value Oct 21	Valuation Method / Notes– Oct 22.
Thorny River	$44.5m	nil	Risked NPV + Exploration Upside
KX36	$23.5m	$29.5m	Risked Resource
Ghaghoo	$7.2m	$36.1m	Project Opportunity Value
Reivilo	TBD	n/a	
Other Projects	$0.8m	$0.5m	Notional Cost
Cash	$0.3m	$0.2m	Estimate 30/09/22
US$ Total	$76.3m	$66.3m	
Ex Rate	(£/US$1.14)	(£/US$1.36)	
GBP£ Total	£67.0m	£48.7m	
Shares In Issue	956.2m	792.7m	
+28.5m shares	984.7m		+ 2nd tranche Vutomi acquisition consideration shares to be issued Dec '22.
Price per Share	6.8p	6.1p	

Fig 1: Enterprise Value Summary (Source FEQ).

BUY

TP 6.8p

MARKET DATA:

Name:	**Botswana Diamonds**
Ticker:	**BOD.L**
Price:	**0.90p**
SII:	**956.2m**
Market Cap:	**£8.6m**
Sector:	**Resources**
Listing:	**AIM – London & Botswana SE**

FINANCIALS:

Y/E:	30 June
Last Finc Results:	Interims- 31/3/22
Cash:	est. $330K- (30/09/22)
Last Placing:	£550K – Oct '21 at 1.0p.
Warrant Exercises	£470K since '21 Y/E.

ACTIVITIES:

Exploration & development of diamond projects in Botswana, South Africa and Zimbabwe.

KEY PROJECTS / ASSETS:

Thorny River (76%)
KX36 (100%)
Maibwe (36%)
Reivilo (100%)

DIRECTORS & MANAGEMENT:

John Teeling (Exec Chairman)
James Campbell (MD)
Jim Finn (FD)
David Horgan (Dir)
Robert Bouquet (Dir)

SHAREHOLDINGS: (>3%)

Pershing Intl' Nominee	13.9%
Interactive Investor SN Ltd	7.3%
John Teeling	5.6%
HSBC Global Cust Nom Ltd	5.0%
Hargreaves Lansdown Nominee	3.6%
Jim Finn	3.6%

Total Director Holdings 108.9m (11.3%)

First Equity Limited acts as Broker to Botswana Diamonds Plc.

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Thorny River

The blueprint for economic success and motive for optimism at Thorny River can be easily understood when looking at what was achieved at Marsfontein by its JV partners over 20 years ago. The kimberlite from this mine was treated between 1998 and 2000, reaching an economic limit at a depth of 150 metres, producing 1.8 million carats, at an average recovered grade of 188 cpht and value of $128.7 per carat. This profitable mine generated revenues of $246m, with 90% margins and an astonishing payback period of just three and half days on ZAR29m CAPEX ($5m at '98 forex rates).

The conceptual open pit mine optimisation evaluation (RNS: 25 Apr 22) provides the basis for our risked valuation calculation for Thorny River. We use a mid-case scenario, with the mining of open-pit ore of 1.7m tonnes, open pit waste of 4.5m tonnes, a strip ratio of 2.68, average grade of 40 cpht and diamond value $170 per carat.

The CAPEX depends on the mining approach used. The Company could do the mining and processing itself with its own mining and technical personnel or outsource the mining via a contract mining arrangement but do the processing itself. Alternatively, a lower risk/reward royalty mining arrangement could be reached with a third party. We have estimated a CAPEX of ZAR40m ($2.3m) based on a contract mining and own processing method. This sum being required to finance a processing plant and associated infrastructure.

To derive a risked valuation, a high resource risk of 35% is deducted, as the resource at Thorny River is not at a SAMREC or JORC defined stage, along with a relatively low development/finance risk of 20%, given the open-pit nature of the deposit and modest capital development costs. A risked value of $35.6m is derived.

BOD's current conceptual analysis is based upon just the River Blow and does not factor in potential for any nearby discovery blows being mined on the property. We have estimated a current exploration value of $8.9m, calculated at one quarter the risked NPV of the main River Blow deposit. A final risked value of $44.5m is computed for the project.

Thorny River Est. **Est Value**		**Notes**
$97.1m		Pre-tax discounted cashflow NPV10, before CAPEX, based on $170 per carat, average grade of 40 cpht and open pit ore of 1.7m tonnes. (100% project level).
$94.8m	($2.3m)	Less CAPEX, est. ZAR40m.
$90.1m	($4.7m)	Less 5% est. govt royalty (could be between 0.5% and 7%).
$58.6m	($31.5m)	Less 35% resource risk.
$46.9m	($11.7m)	Less 20% development/finance risk.
$35.6m		76% net project Interest to BOD.
	$8.9m	Exploration value for additional resources (25% of above value).
$44.5m		TOTAL est. PROJECT VALUE net to BOD

Fig 2: Thorny River estimated valuation (Source FEQ).

Ghaghoo

Although the long stop date on the shares sales agreement with Gem Diamonds has now lapsed over the Ghaghoo mine re-start, there is still potential that Botswana Diamonds could reach an agreement with a partner and re-engage with Gem Diamonds on similar terms (11 May '22 RNS).

We have now estimated Ghaghoo on a 'project opportunity value' approach by applying a large 80% deal execution risk on our previous estimated project sum of $36.1m from the 5 Oct '21 research broker note. If BOD re-engage with Gem Diamonds and secure a JV partner, then this risk factor would be reduced or removed.

Initial production from a restart operation would likely come from processing dump material. Before any underground operations can commence, the mine would require dewatering, a process taking around 4 months to complete. Mill and replacement technology will be required to be put into place prior to full scale underground mining. Operating efficiencies could be achieved, for example from the installation of solar power to replace expensive diesel generation.

Ghaghoo est. **Indicated**	**Inferred**	**Notes**
79.3mt	28.7mt	2014 SAMREC resource.
15.5m carats at 19.5 cpht	5.1m carats at 17.5 cpht	Contained carats, less 150,000 carats mined from indicated resource.
$3.7bn value at $242/carat	$1.2bn value at $239/carat	In the ground value at 100% ownership level.
$370.6m	$120.5m	10% BOD Interest.
$29.6m (8% est.)	$1.8m (1.5% est.)	Est. value attributable for indicated and inferred carats, net to BOD.
$26.7m	$1.6m	Less 10% government royalty.
$22.7m	$1.4m	Less 15% est. production restart risk.
$24.1m		BOD's 10% risked project value.
$12.0m		Value of 20% option = 25% of 10% free carry.
$36.1m		Total est. project value net to BOD.
($28.9m)		Deduct 80% deal execution risk.
$7.2m		Project Opportunity Value.

Fig 3: Ghaghoo Valuation (Source FEQ).

KX36

The development and commercialisation of KX36 is largely dependent on the re-start of the nearby Ghaghoo mine, as substantial cost synergies can be achieved from shared infrastructure and management if both are operational in tandem. The valuation of KX36 follows a similar approach to our Ghaghoo estimates, using the historic SAMREC defined resource.

As the long stop date on the agreement over the Ghaghoo mine has lapsed and given KX36's dependence on a re-start at Ghaghoo, we have increased our development risk factor from 25% to 40%, thus reducing the estimated project value to $23.5m (prev. $29.5m).

KX36 est. **Indicated**	**Inferred**	**Notes**
17.9mt	6.7mt	Historic SAMREC resource.
6.3m carats at 35 cpht	2.4m carats at 36 cpht	Contained carats.
$539m value at $86/carat	$207m value at $86/carat	In the ground value, at 50% of modelled upside to $107/ct.
$43.1m (8% est.)	$3.1m (1.5% est.)	Est. Value attributable for Indicated and Inferred carats.
$36.6m	$2.6m	Less 5% Petra royalty & 10% govt royalty.
$22.0m	$1.5m	Less 40% est. development risk.
$23.5m		TOTAL est. PROJECT VALUE net to BOD

Fig 4: KX36 Valuation (Source FEQ).

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