

## ASX ANNOUNCEMENT/MEDIA RELEASE

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### ***CACATA HIGH GRADE PROJECT: SCOPING STUDY PRODUCES POSITIVE RESULTS***

***Emerging phosphate developer Minbos Resources Limited (Minbos) (ASX:MNB), is pleased to announce the results for the scoping study completed on the Company's Cacata High Grade Project located in the Cabinda Province in Angola, West Africa.***

The study has produced positive results, demonstrating the potential of Cacata as a viable project with forecast pre tax cash flows of US\$746m over a 10 year mine life.

#### **OVERVIEW**

The objective of the scoping study was to evaluate the technical and economic viability of establishing a high grade operation at Cacata to produce 0.8mtpa of phosphate rock concentrate over a 10 year life of mine (LOM).

#### **The scoping study has delivered the following positive results<sup>1</sup>:**

- operating costs of US\$57.23 per tonne of phosphate rock (FOB);
- capital cost estimate of US\$157m, based on owner operated mining, road haulage and ship loading;
- strong opportunity to further reduce capital and operating costs during the bankable feasibility study (BFS);
- IRR of 40.2 % (pre tax); and
- NPV of US\$311m (pre-tax) at a 10% discount rate.

The scoping study clearly demonstrates the robust nature of the Cacata High Grade Project and as a result the joint venture partners are planning to immediately commence with the BFS.

The development of Cacata will put Minbos in the position to take advantage of strong phosphate rock prices to secure early cash flows as the company pursues development of its other exciting potential projects, including its Western Limb

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<sup>1</sup> Amounts quoted are for 100% of the Project. Minbos currently owns 50% of the project, with the remaining 50% held by Petril Projects Ltd.





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phosphate rock deposits in Cabinda, the Kanzi Project in the DRC and the Dingo Potash Project in Cabinda.

Minbos Executive Chairman, Mr Peter Richards, said:

*“The discovery of high grade ore at Cacata was always going to have a major impact on the future of Minbos. The scoping study has surpassed our expectations, forecasting a pre-tax NPV attributable to Minbos which is in excess of 10 times our current market capitalisation.*

*The very real benefit of the Cacata Project is the relatively low capital requirement to commence production, combined with a healthy operating margin, both of which can be attributed to the high grade nature of the Cacata ore body, the close location of the ore body to the coast and excellent logistics infrastructure in Cabinda.*

*The next step for Cacata is commencement of the BFS, during which we expect to further optimise and reduce the capital estimate by using a contract mining, contract road haulage model, and further reduce the operating cost estimate by using grid power versus the current model of diesel generated power. This has the potential of placing Minbos within reach of achieving its goal of being in the lowercost quartile of global phosphate rock export producers.”*



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## INTRODUCTION

The Cacata Project is located on the eastern boundary of the Cabinda exploration permit held by the joint venture company Mongo Tando Lda (“**MTL**”). MTL is owned (via local subsidiaries) 50% by Minbos and 50% by Petril Projects Ltd.

The Cabinda exploration permit contains five advanced exploration projects: Mongo Tando, Chibuetete, Ueca, Cacata and Chivovo. All of these projects lie within 50km of the coast and within 5km of established logistics infrastructure, as shown in figure 1 below.

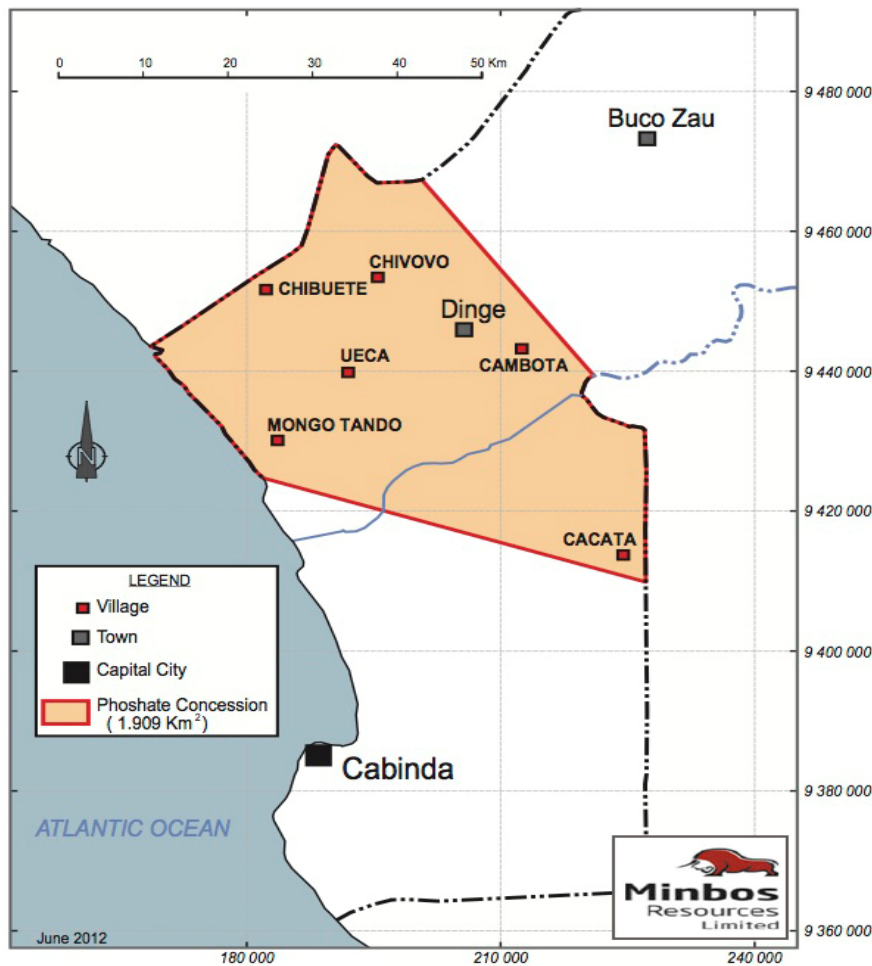


Figure 1: Map of Cabinda Exploration Permit



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### *Western Limb*

Mongo Tando, Chibueite and Ueca make up the Western Limb deposits. These deposits are characterized by being large tonnage and make up the bulk of the current overall resource estimate of 304.1mt @ 11.5% P<sub>2</sub>O<sub>5</sub>, including a higher grade portion of 253.8mt @ 12.6% P<sub>2</sub>O<sub>5</sub>.

### *Eastern Limb*

Cacata and Chivovo make up the Eastern Limb deposits. These deposits are smaller than those of the Western Limb but are in the main significantly higher grade at +20% P<sub>2</sub>O<sub>5</sub>. Initial drilling at Cambota suggests that this area will also form part of the Eastern deposits on completion of further drilling.

### **CACATA PROJECT SCOPING STUDY**

#### **General**

The scoping study is based on the JORC high grade indicated resource of the Central and Southern sections of the Cacata ore body. Minbos anticipate the release of an upgraded resource for Cacata by the end of H2 2012, including a JORC measured resource over a portion of the ore body, which will provide the basis for the BFS.

#### **Mining**

Coffey Mining (“**Coffey**”) was commissioned to conduct an evaluation of the viability of mining the high grade portion of the Cacata ore body. The Coffey report concluded that using a truck and shovel approach, the high grade portion of the Cacata ore body could be mined at a 1.2mtpa of Run of Mine (ROM) at a strip ratio of 1.74:1 (waste to ROM) and a ROM bench height of 3.7m.

The economic evaluation was based on the mining equipment being purchased and operated by the Owner and a conservative allowance for availability and utilization. Coffey have also made allowances for replacement capital during the 10 year LOM.

Coffey have derived mining costs from first principles and their experience in West Africa mining projects have indicated that:





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- the initial Capex would be US\$9.5m and
- the average mining cost would be US\$5.72/t phosphate rock produced.

### **Processing**

DRA Minerals Projects (“DRA”) was commissioned to conduct a technical and financial evaluation of the viability of processing the high grade portion of the Cacata ore body. The basis for the evaluation was a metallurgical test work campaign carried out by Mintek Laboratories on a sample supplied by MTL from the recent diamond drilling campaign.

DRA concluded that the preferred processing route for the high grade portion of the Cacata ore body is a basic washing and selective screening operation which by its nature is a low energy consumer and operator friendly. The processing route as shown in figure 2 is as follows:

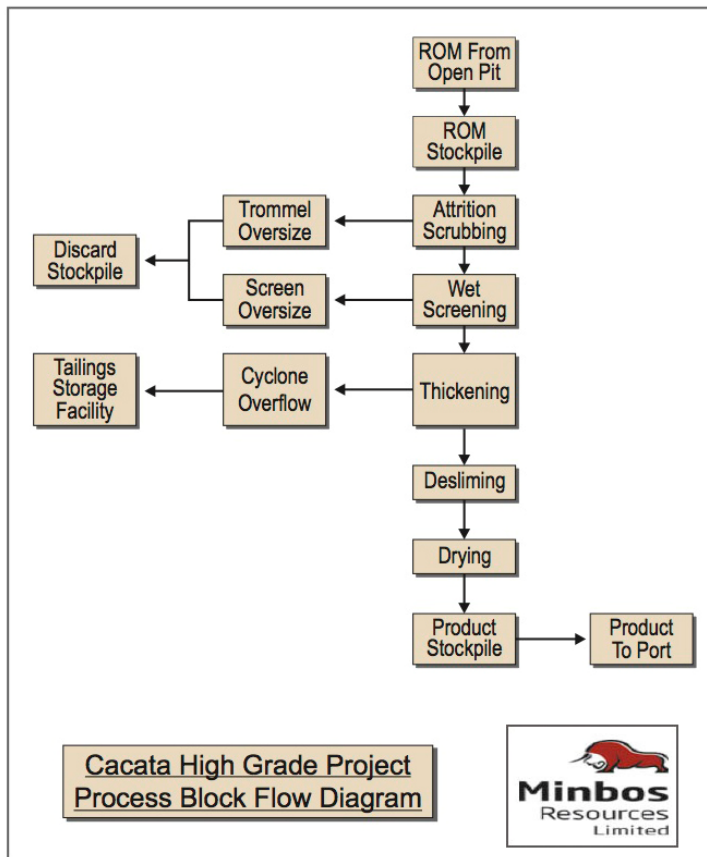
- the ROM is attrition scrubbed to remove lumps and clay agglomerates;
- the attrition scrubber discharges over a desliming screen;
- the screen undersize (-2.36mm) is further deslimed and the oversize (+2.36mm) is discarded;
- the – 2.36mm + 106 micron phosphate rock is de-watered in a vacuum belt filter and then passed through a rotary drier to produce a 2 - 3% moisture content phosphate rock, and
- the concentrate grade is expected, based on the Mintek test work, to be relatively high grade i.e. above the Moroccan benchmark grade of 32 - 33% P<sub>2</sub>O<sub>5</sub>.





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**Figure 2: Process Flow Diagram**

DRA have derived costs based on their internal data base and experience in West Africa mining projects and have estimated that for a plant producing 0.8 mtpa:

- the capex would be US\$54.8m, and
- the operating cost would be US\$25.12/t of phosphate rock recovered.

### ***Tailings Storage Facility***

SRK Consulting (“**SRK**”) was commissioned to conduct a technical and financial evaluation of establishing a Tailings Storage Facility (“**TSF**”) at Cacata. SRK have derived costs based on their internal data base and experience in West Africa mining projects and concluded that:

- the capex would be US\$6.8m , and
- operating costs would be US\$0.50/t of phosphate rock recovered.



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## Phosphate Rock Transport and Ship Loading

Ports of Africa (“POA”) was commissioned to conduct a technical and economic evaluation of the viability of the logistics of transport by road and ship loading of 1.0mtpa of phosphate rock from the Cacata processing plant to a new ship loading site located 7km from the town of Cacongo. The additional 0.2mtpa capacity is being built in to allow for potential production from Chivovo.

As part of the Scoping Study, POA carried out a data collection exercise, made a site visit to review potential port sites and assessed existing infrastructure. Based on this and their experience in Africa POA identified that:

- a 20kt phosphate rock covered bulk storage and truck loading facility will be required at the processing plant site, as shown in figure 3;

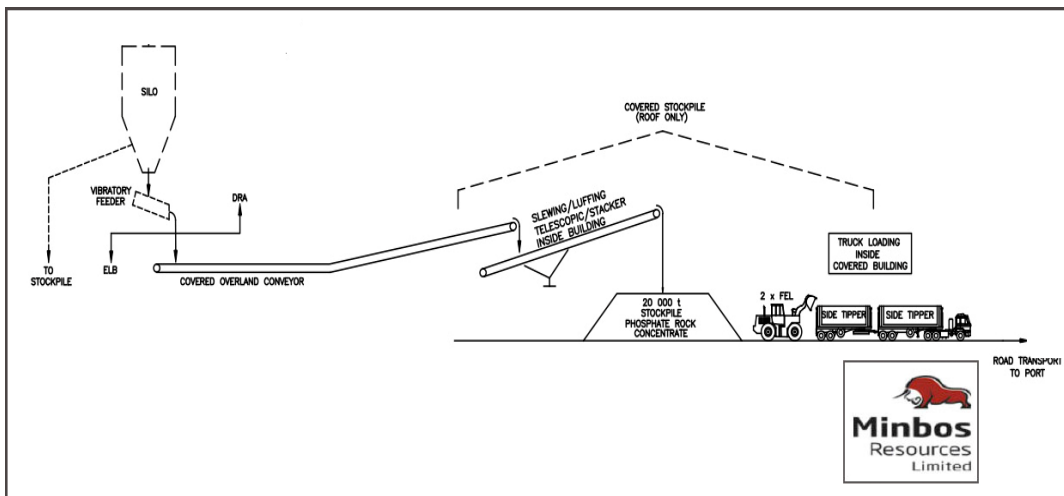


Figure 3: Bulk Storage & Bulk Loading Facility

- the phosphate rock product will be transported on existing tarred roads to a new port site just north of the coastal port town of Cacongo, 90km from the Cacata deposit, as shown in figure 4; and





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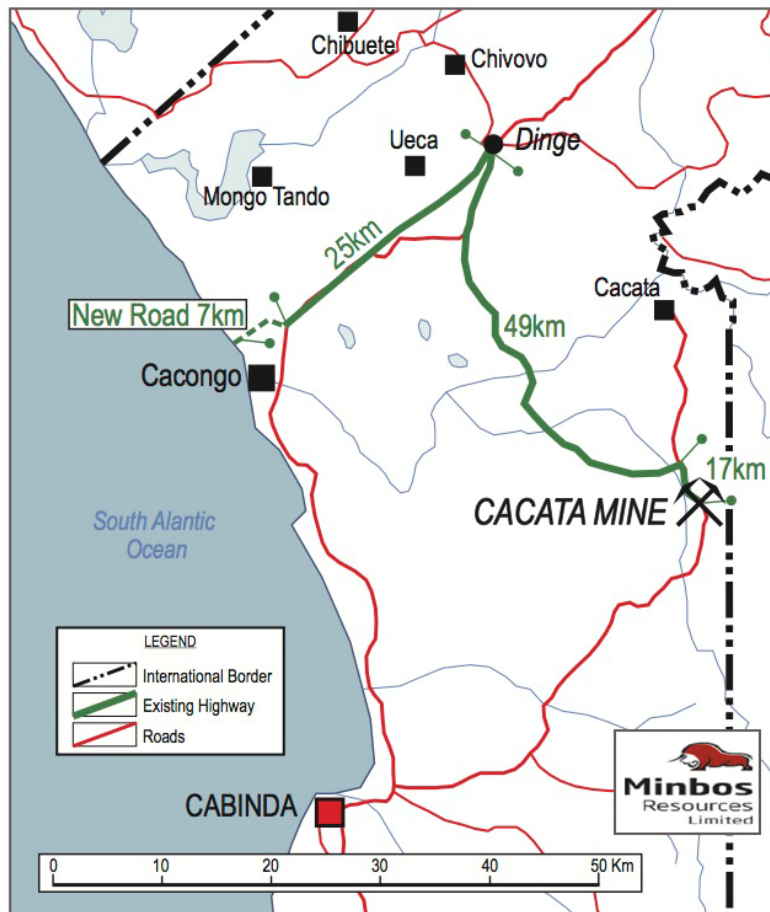


Figure 4: Transport Route from Cacata High Grade Project to New Loading Site

- at the new port site a 50kt covered bulk storage and loading facility to load low draught 5,000t barges will be required and these barges will load bulk vessels (e.g. Panamax) anchored offshore, as shown in figure 5.





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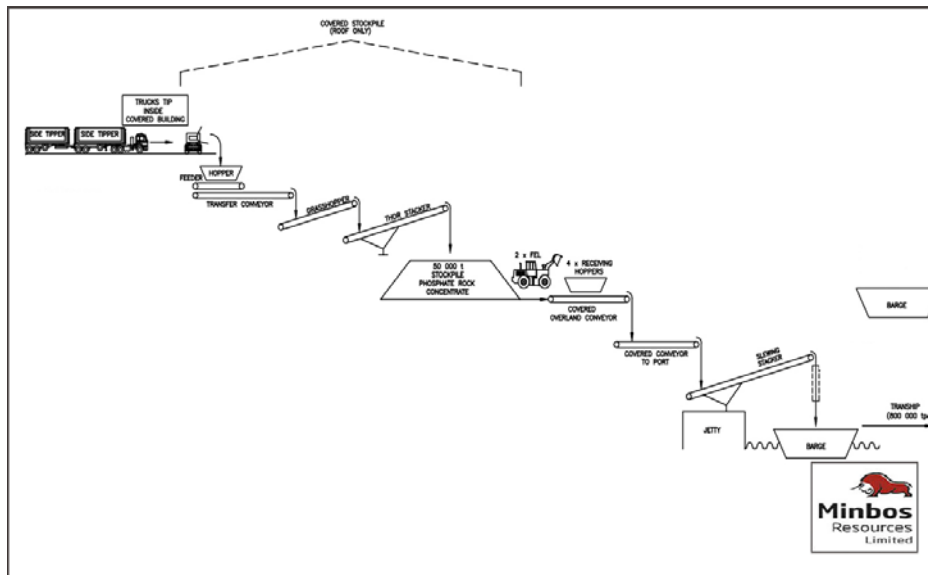


Figure 5: Bulk Storage and Barge Loading PFD

POA has derived costs from their internal data base of projects and experience in Africa mining projects and have indicated that:

- the capex would be US\$22.5m for the construction of the product handling, storage and loading equipment at the Cacata mine site and the purchase of road trucks,
- capex would be US\$57.5m for the construction of the new port area, loading equipment and the purchase of marine fleet,
- the operating cost would be US\$13.63/t for road transport of phosphate rock from Cacata mine site to new port area, and
- the operating cost would be US\$3.25/t for ship loading of phosphate rock.

### **Infrastructure**

The following infrastructure has been provided for in the capex:

- offices;
- power generation (5 mw) by diesel generators;
- 7km of new tarred road and internal haul roads
- water reticulation;





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- housing recreation and messing facilities;
- workshops for mining, processing, phosphate rock, transport and ship loading;
- security and fencing;
- fire fighting;
- change houses;
- sewerage disposal;
- communications and IT; and
- fuel storage.

### **Capital Cost**

The total capital cost has been estimated at US\$157m (including EPCM and contingency) as detailed below:

Description	Cost US\$ (million)
Mining	9.5
Processing Plant	54.8
TSF	6.8
Product Storage & Transport (Land)	22.5
Product Storage & Loading (Sea)	57.5
Owners Costs	6.0
<b>Total</b>	<b>157.0</b>

The capital cost estimate includes the purchase of the mining fleet and the road haulage fleet; this could potentially be reduced by approximately US\$18m utilising a contract mining and road haulage fleet approach. A further possible capital cost saving could be achieved by outsourcing the Marine operation; this will be investigated in the BFS.





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### *Operating Costs*

The direct cash operating cost has been estimated at US\$57.23/t FOB Cabinda of phosphate rock as follows:

Description	Cost US\$/t
Mining	5.72
Processing Plant	25.12
TSF	0.50
Product Transport (Land)	13.63
Product Loading (Sea)	3.25
General and Administration	9.00
<b>Total</b>	<b>57.23</b>

The operating cost is based on owner operator road transport derived from first principles. Based on an initial estimate from a transport contractor, a saving is expected in utilising the contractor approach and this will be investigated during the BFS.

The operating cost is based on diesel site power generation. A 35Mw power station is currently being constructed in Cabinda; during the BFS this option will be investigated and could also provide an operating cost saving.

### *Marketing and Product Pricing*

At the target production rate of 0.8mtpa of phosphate rock product, the Cacata Project currently has a 10 year a life of mine. Current market analysis shows that this product will be in demand and readily absorbed by the market. Our base case analysis has assumed a selling price of US\$180/t<sup>2</sup> FOB Cabinda as follows:

<sup>2</sup> Source: CRU Strategies. Cacata Scoping Study, date Jan 2012





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- CRU has developed a model for estimating the likely pricing of new phosphate rock product entering the market which has taken into consideration the phosphate rock grade, chemical characteristics, as well as CRU's knowledge of actual phosphate rock contract provisions; and
- This analysis has determined that the Cacata rock phosphate is likely to trade at an approximately 9% premium to the Moroccan benchmark price which has had an average price in 2012 of US\$193.90 (US\$211.35 with 9% premium) compared to the revenue per ton used of US\$180 in the cash flow model.

### *Financial Model*

The results of cash flow model developed from the scoping study are as follows:

- the cash flow model is a base case scenario and does not take into account the potential upside as a result of contracting out all or part of operations,
- the cash flow model has been prepared on a pre-debt funding and before tax and duties basis.

	Per Ton (US\$)	Total (US\$ 000)
<b>Revenue</b>	\$ 180.00 t	\$ 1,358,460
<b>Direct Mining Costs</b>		
Mining	\$ 5.72 t	\$ 54,018
Processing	\$ 25.12 t	\$ 188,575
TSF	\$ 0.50 t	\$ 3,754
Product Transport (Land)	\$ 13.63 t	\$ 102,364
Product Transport (Sea)	\$ 3.25 t	\$ 24,411
<b>Direct Mine Costs</b>	\$ 48.23 t	\$ 373,122
<b>General and Admin</b>	\$ 9.00 t	\$ 67,923
<b>Total Operating Costs</b>	\$ 57.23 t	\$ 431 879
<b>Total Cash Produced</b>	\$ 122.77 t	\$ 926 581





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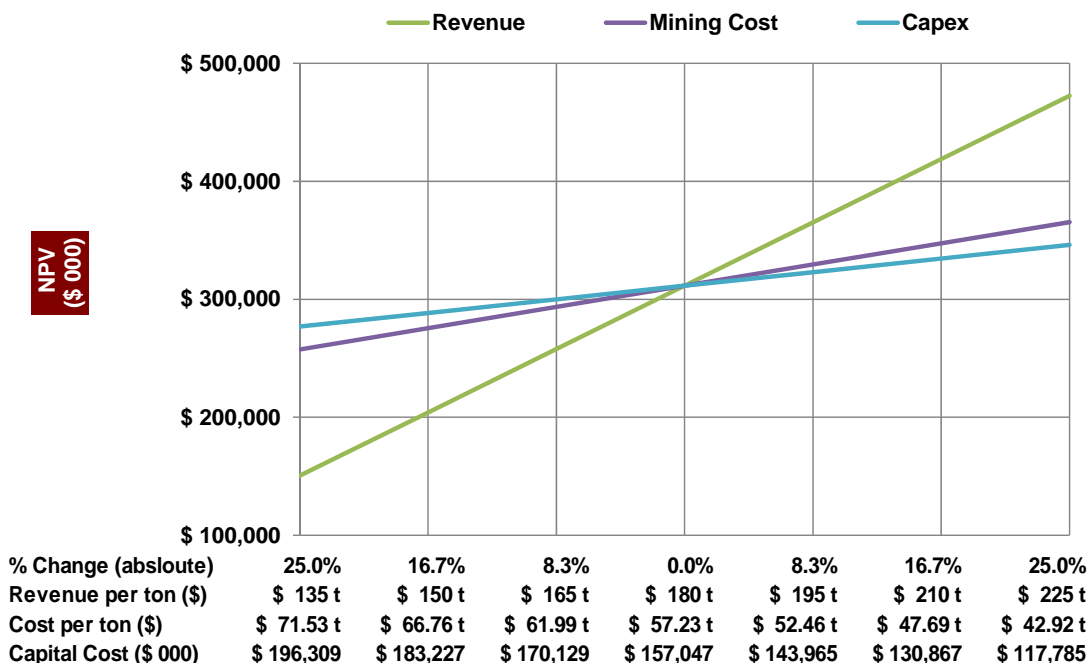
### BASE CASE INVESTMENT BENCHMARKS

Capital Cost	\$ 157 mill
Sustaining Capital	\$ 23 mill
Payback Period	2.1 Years.
IRR	40.2%
Net Present Value discounted at 10%	\$ 311 mill

When compared to the previously published CRU report that investigated a cost curve positioning, the projects have the following characteristics:

- an operating cost of US\$57.23/t will place the project in the lower half of the cost curve; and
- the capex cost of US\$158m places the project in the lower half of the capital intensity cost curve (capital/production per annum) with an enhanced possibility of reducing this to a bottom quartile capital intensity project during the BFS.

### Net Present Value Sensitivity





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### Competent Persons Statement

*The information in this report has been reviewed and approved for release by Mr Tom Evers, MSc, Pr.Sci.Nat, who has over 20 years' experience in mineral exploration, and who is the company's Chief Geologist and full-time employee and has sufficient experience in relation to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined by the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (The JORC Code 2004 Edition). Mr Evers has consented to inclusion of this information in the form and context in which it appears.*

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### About Minbos

Minbos Resources Limited is an exploration and development company on phosphate and potash bearing ore within the Cabinda Province of Angola and the adjoining areas of the far western DRC. Through its subsidiaries and joint ventures, the Company is exploring over 400,000ha of highly prospective ground hosting phosphate and potash bearing ore. Minbos is focussing on the development of the High Grade Cacata project in Cabinda which is moving toward Bankable Feasibility Study stage whilst growing its current Resource base in incremental stages on the remaining deposits in Cabinda and the DRC.

The Company's strategy is to specifically target the exploration and development of low cost fertiliser-based commodities in order to tap into the growing global demand for fertilisers. Phosphate and potash are an essential component in certain agricultural fertilisers, with the market supported by the increasing global demand for food and bio-fuel products. For more information, visit [www.minbos.com](http://www.minbos.com)

