

# SANGAREDI REFINERY PROJECT

## BRIEFING PAPER

### BACKGROUND

The Sangaredi Refinery Project (Sangaredi) is a joint venture between Global Alumina, BHP Billiton, Dubai Aluminium Company Limited and Mubadala Development Company PJSC, to develop and operate a 3 million tonnes per annum (Mtpa) alumina refinery, 9Mtpa bauxite mine and associated infrastructure in Guinea, West Africa.

Sangaredi is one of the most advanced new projects in Guinea with the refinery already in feasibility stage and critical path infrastructure and site work already underway. This offers significant first mover advantage over other projects in the region, including BHP Billiton's own exploration leases in Guinea.



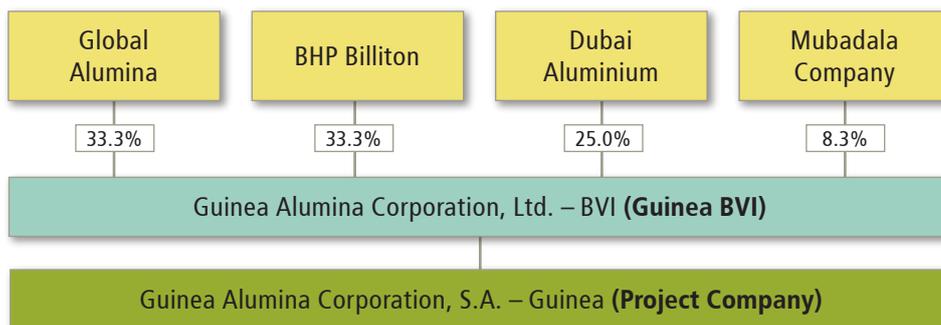
LOCATION OF THE  
SANGAREDI REFINERY  
PROJECT

### PROJECT DETAILS

The Sangaredi Project consists of:

- 3Mtpa alumina refinery with potential for significant expansion;
- Mining concession covering 690km<sup>2</sup> with total mineral resource of 233 million tonnes;
- 9Mtpa bauxite mine in close proximity to the refinery, supplying high quality low cost bauxite;
- Access to existing rail infrastructure linking the refinery with Kamsar port, approximately 100km away;
- A new jetty and terminal facility at Kamsar port – construction under way;
- Dedicated coal/heavy fuel oil fired power station to supply steam and power; and
- A local township to house employees

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BHP Billiton will appoint the Chief Executive Officer and Chief Financial Officer of the Joint Venture Company (JV) and will hold a Services Agreement with the JV for the development, construction and management of the project, which will be operated in accordance with BHP Billiton standards.

A preliminary estimate of total capital cost is approximately US\$3 billion (BHP Billiton share 33.3 per cent) with first production in 2010. The feasibility study which is currently underway will refine this estimate over the course of 2007.

## RESOURCE

Global Alumina has completed an extensive programme of exploration, primarily focusing on three bauxite-bearing plateaux in close proximity to the proposed refinery site. Consultants retained to complete a technical study reported a total mineral resource (measured, indicated and inferred) of 233 million tonnes. This implies a resource life of over 20 years with potential for further expansion.

### REPORTABLE MINERAL RESOURCE AS OF 25 NOVEMBER 2005

Resources	Dry Mt	Overburden m	Bauxite Depth m	Fe <sub>2</sub> O <sub>3</sub> %	Al <sub>2</sub> O <sub>3</sub> %	AA <sub>150</sub> %	SiO <sub>2</sub> %	RSiO <sub>2</sub> %	Grid Size m x m
Measured	122	0.9	8.6	25.1	45.2	38.9	2.0	1.0	150 x 150
Indicated	108	1.0	6.1	25.0	44.9	39.1	2.1	1.1	300 x 300
Inferred	3	1.5	4.9	25.7	44.6	38.8	1.9	0.9	up to 600 x 600

Note that:

1. Dry density of 2.0 t/m<sup>3</sup> and cut-off grade 38% Total Alumina and 10% Total Silica.
2. The resources sterilised by the railway line and Refinery zones are not included in the estimate reported above.
3. Measured and Indicated Mineral Resources are inclusive of those Mineral Resources modified to produce the Ore Reserves.

## STRATEGIC FIT AND VALUE DRIVERS

Guinea holds around one third of the world's bauxite reserves as well as substantial iron ore resources, making it a business development priority for BHP Billiton. This Sangaredi project provides an excellent entry point into Guinea and reinforces the company's strategy of developing low cost, long life, world class assets.

It also provides an opportunity for BHP Billiton to gain operational experience in Guinea which can be applied to the company's other potential projects in the country.

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## ALUMINA MARKET OUTLOOK

Growing urbanisation and rising incomes in developing economies such as China and India has been a key driver for aluminium demand. As intensity of use in these economies is still below levels in the developed parts of the world, there is significant potential upside for demand. This demand will increasingly be met by metal production from energy-rich regions such as the Middle East and Russia.

A significant ramp-up in refining capacity in China following a prolonged period of high market prices has resulted in a sharp fall in the alumina spot price. In the near-term, supply growth is expected to outpace increases in demand, resulting in falling industry utilisation rates from the highs seen in 2005. Nevertheless, with demand out to 2025 for both Smelter Grade Alumina (SGA) and Chemical Grade Alumina (CGA) expected to grow by 4.5 per cent per annum, the industry will need significant Brownfield and Greenfield alumina capacity from about 2012.

## IMPACT ON BHP BILLITON'S ALUMINA PRODUCTION

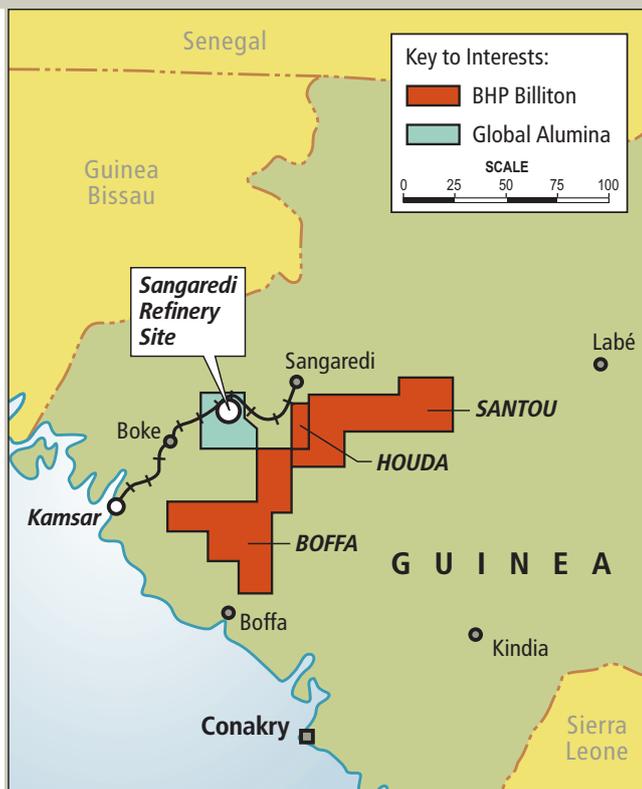
Shareholders in the Sangaredi project will receive alumina production equal to their equity holding. The additional alumina production offers BHP Billiton an alternative source of alumina from existing production in Australia, Brazil and Suriname, which may be used in the company's own smelters or marketed to third parties.

## COMMUNITY

The alumina refinery and related operations will greatly enhance the quality of life of local citizens, creating education, training and employment opportunities. New infrastructure will be needed to include housing, utility, social and recreational facilities to accommodate this new workforce.

The JV is committed to improving the overall well-being of the Guinean people, and recognises this unique opportunity to improve both working and living conditions on a long term, sustainable basis. In addition to direct employment, we aim to strengthen our community relationships by promoting economic and social development, encouraging the development of local businesses, supporting community projects and implementing environmentally responsible practices.

I, Dominique Louis Butty, a director of Butty Herinckx & Partners geological and mining consultants, am a member of the European Federation of Geologists and have sufficient experience which is relevant to the Sangaredi Refinery Project style of mineralisation and type of deposit and to the estimation of Mineral Resources and Ore Reserves to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. I, Dominique Louis Butty consent to the inclusion of the Sangaredi Refinery Project Mineral Resources in the BHP Billiton Global Alumina press release, in the form and context in which it appears.



LOCATION OF BHP BILLITON INTERESTS

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