Developing a Brazilian Iron Ore Business

# **∂Explorers**Conference





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The information in this presentation that relates to Exploration Results and Mineral Resources is based on information compiled by Roger Fitzhardinge who is a Member of the Australasia Institute of Mining and Metallurgy and Volodymyr Myadzel who is a Member of Australian Institute of Geoscientists. Roger Fitzhardinge is a permanent employee of Centaurus Metals Limited and Volodymyr Myadzel is the Senior Resource Geologist of BNA Consultoria e Sistemas Limited, independent resource consultants engaged by Centaurus Metals. Roger Fitzhardinge and Volodymyr Myadzel have sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which they are undertaking 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 Reserve'. Roger Fitzhardinge and Volodymyr Myadzel consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.

## **Brazilian Iron Ore Business**



#### Centaurus Metals' focus is to:

- Develop & Operate a number of Low Capex mines
- Be known for high grade & consistent quality products
- Be a long term supply partner to domestic steel mills in Brazil
- Secure projects for an export capacity

#### By 2013 Centaurus Metals expects to:

- Achieve annualised production rate of at least 3mt of high grade hematite
- Be a preferred supplier to the Brazilian domestic steel industry
- □ Acquire or identify a project capable of producing :
  - 12-15mtpa for a minimum 10 yr life
  - Consistent quality 64-69% Fe product



#### \* Ex prices from 3.125 cents to 28.5 cents (weighted average ex price 8.23 cents)

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#### ASX CODE : CTM



### **Company Structure**



#### **Centaurus Metals Board & Key Personnel**





#### **DIDIER MURCIA**

Chairman

**25** years corporate and resource industry experience. Specialises in strategic, corporate and commercial advice. Extensive iron ore experience as Director of Gindalbie Metals



#### DARREN GORDON

#### Managing Director

□ Over 15 years resource industry experience with particular emphasis on resource funding and structuring. 9 years experience as CFO of Gindalbie Metals



#### PETER FREUND

#### **Operations** Director

40 years engineering experience with BHP, MIM, Thiess and Gindalbie. Has extensive experience in South American operations (built Alumbrera) as well as beneficiated iron ore



#### GEOFF CLIFFORD

#### Non-executive Director

Over 30 years experience in senior finance and administration roles. Extensive iron ore experience as Chairman of Atlas Iron and former roles with Aztec Resources & Portman Limited



#### **KEITH MCKAY**

#### Non-executive Director

Geologist with 40 years technical and corporate experience. Previously Chairman of Gindalbie Metals and MD of Gallery Gold Ltd and Battle Mountain (Aust) Inc



#### RICHARD HILL

#### Non-executive Director

Strategic Consultant

□ 16 years resource industry experience as both a solicitor and a geologist. Founding director of Centaurus Resources. Extensive network into Asian markets



#### **GEORGE JONES**

□ More than 35 years experience in the mining, banking and finance industries. Previously executive Chairman of Portman Mining Ltd and currently Chairman of two iron ore businesses, Gindalbie Metals and Sundance Resources.

High calibre team with experience in the financing, development and operation of iron ore projects

## Brazil



- Latin America's largest economy
- Rapidly growing population (currently ~200 million)
- Predicted growth of +7% in 2011
- US\$830b committed to infrastructure spend
- Hosting FIFA World Cup in 2014 and the Olympic Games in 2016
- Top 10 global steel producer (~ 35Mt)
- Brazil is the world's largest Merchant Pig Iron producer
- Brazil exports > 300Mt per annum of iron ore

Centaurus Metals is one of the few ASX listed companies providing direct exposure to the rapid development of Brazil



### **Brazilian Iron Ore Market**

- Unlike Australia, a large market for the consumption of iron ore is located alongside iron ore projects
- Major steel companies, with steel mills within a 150km radius of Centaurus Metals' projects have significant domestic production

Company	Brazilian Steel Production
Gerdau	6.5Mt
Arcelor Mittal	6.5Mt
Usiminas	8.0Mt
Companhia Siderúrgica Nacional ("CSN")	5.6Mt

### **Centaurus Metals' Projects**



# Project Map







# Domestic Iron Ore Business "Supplying Iron Ore to Brazil's Steel Mills"





### **Domestic Iron Ore Business**

- Targeting production from a number of low OpEx, low CapEx mines, in close proximity to established infrastructure
- Centaurus Metals is working towards:
  - production at a rate of 3mtpa by the end of 2013, to be sold into Brazil's domestic steel mills for anticipated operating cashflows of between \$120 and \$150 million per annum.
  - becoming a supplier of choice to domestic steel mills.
  - differentiating itself from the local competition through quality and consistency of product supply.
- Current domestic project portfolio includes:
  - Jambreiro Project
  - Passabem Project
  - Itambé Project



### Itabirite Ore....



#### A major source of iron ore production in Brazil...

- Metamorphosed iron formation composed of iron oxides with abundant quartz
- Iron Quadrangle itabirites typically comprise hematite
- Lower ROM grade than other sources of hematite (averaging 30-50% Fe)
- Extremely well suited to low cost beneficiation
- Can be upgraded to 63-68% Fe via simple and inexpensive beneficiation processes
- Final product a high quality hematite sinter (predominantly) product with low contaminants



# Itabirite Ore





## **Domestic Production - Jambreiro**



Brazil

Project

Locations

# Project Map





### Jambreiro Iron Ore Project



Initial Inferred resource of 77mt @ 29.5% Fe

- Resource remains open to the South
- Projected to be a 2Mtpa producer of high grade iron ore
- Early stage beneficiation tests show friable mineralisation cost effectively upgrades to a high grade product
- Project dynamics will facilitate rapid resource definition and potential project development:
  - Only one land owner Cenibra
  - □ Land already disturbed Eucalyptus plantation.
  - Land owner operating 70 tonne road trains from site to Steel Valley.

Based on initial mass recovery, current resources will provide over 35Mt of high grade hematite product for a potential +15 year mine life







### Jambreiro Iron Ore Project



#### Current Resource Summary:

Mineralisation Type	Million Tonnes	Fe %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	P %	LOI %
Friable Itabirite	17.6	31.4	48.4	3.6	0.04	1.57
Compact Itabirite	59.5	28.9	52.1	2.9	0.04	0.86
TOTAL	77.1	29.5	51.3	3.1	0.04	1.02

 Early stage gravity beneficiation tests show friable mineralisation cost effectively upgrades to a high grade product:

	Fe %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Р%	Mass Recovery
Head Grade	32.6	51.1	1.67	0.02	
Beneficiated Sample	63.0	8.2	0.68	0.01	48%

- Next stage beneficiation test results pending
  - Desired product:

+63.5% Fe, <4% SiO<sub>2</sub>



## Jambreiro – Work Program

#### 5,000 metre drill program underway

- 3 drill rigs currently on site. One more to arrive
- Resource upgrade & exploration drilling
- 1,500 metre trenching program completed, assays due end Feb.
- Ongoing beneficiation test work
- Pre Feasibility study planned pending results of above work.
- Environmental & licencing studies underway.





## **Domestic Production - Passabem**



# Project Map







### **Passabem Iron Ore Project**



- Projected to be a 1Mtpa producer of high grade iron ore.
- 39 Mt JORC Resource.

	Tonnes (Mt)	Fe%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	<b>P</b> %	Mn%	LOI%
Indicated	2.8	33.0	48.8	1.90	0.03	0.10	0.64
Inferred	36.2	30.9	54.0	0.74	0.07	0.06	0.09
TOTAL	39.0	31.0	53.6	0.82	0.07	0.06	0.13

Note: Estimate calculated using Inverse Distance Squared technique with a cut off of 27% Fe applied.

- Ore body extends over a strike length of 5 kilometres.
- Future work programs:
  - Commencement of pre-feasibility activities and associated studies;
  - Infill Drilling.
- Beneficiation testwork produces high-grade
  (67.4%Fe) product using magnetite separation process.



## **Domestic Production - Itambé**



# Project Map







## Itambé Iron Ore Project



- Projected to be a minimum 500kpta producer of high grade iron ore.
- New indicated and Inferred Resource of 10Mt @ 36.6% Fe beneficiates cost effectively to highgrade product.

Resource Category	Million Tonnes	Fe %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Р%	LOI%
Indicated	4.69	37.1	37.0	4.52	0.06	2.67
Inferred	5.33	36.2	40.9	3.51	0.04	2.13
TOTAL	10.02	36.6	39.1	3.98	0.05	2.38

- Initial studies from 2009 indicate total operating cost of US\$13/t with capex expected to be US\$15m at 500ktpa.
- Future work Program:
  - Complete further beneficiation testwork;
  - Update Scoping Study & commence
    Pre-Feasibility activities



# Resource Summary – Domestic Projects 🖏 🗋

 Centaurus has assembled a strong Project and resource base in Brazil of Itabirite mineralisation that upgrades to a high grade hematite product.

Project	Million Tonnes	Fe %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Р%	LOI %
Jambreiro <sup>*</sup>	77.1	29.5	51.3	3.10	0.04	1.02
Passabém <sup>**</sup>	39.0	31.0	53.6	0.82	0.07	0.13
ltambé <sup>**</sup>	10.0	36.6	39.1	3.98	0.05	2.38
TOTAL	126.1	30.5	51.0	2.46	0.05	0.85

<sup>\*</sup>25% Fe cut-off grade applied <sup>\*\*</sup> 27% Fe cut-off grade applied

- At a Mass Recovery of 40%, using a low cost gravity or magnetic separation process, In Situ Resources generate over 50Mt of high grade hematite product (+63% Fe).
- Detailed beneficiation work underway on all Domestic projects.
- Resource base underpins the Company's Domestic Iron Business
- Development Capex to be low by international standards as little to no infrastructure costs.

# Iron Ore Export Business "Supplying Iron Ore to the World Market"





### Iron Ore Export Business - 2011



- Centaurus Metals aims to acquire or identify a project capable of producing 12-15mtpa of 64-69% Fe product for a minimum project life of 10 years, to export to world markets
- Commencing exploration on recently granted 100% Centaurus Metals tenure in the state of Minas Gerais:
  - Rio Pardo Project
  - Itamarandiba Project
  - Guanhães Project
  - Serra do Bicho Project
- Continue assessment of new project opportunities to assist in meeting export business targets



### **Export Projects**





### Centaurus- 2011 Activities

#### In 2011 Centaurus Metals main areas of focus will be:

- Resource infill drilling at Jambreiro converting resources to reserves
- Feasibility studies at the Jambreiro Project
- □ LOI's from domestic iron ore consumers
- Progressing Environmental & Department of Mines approvals for all domestic Projects
- Further drilling at established targets such as Candonga
- Seeking further near production assets
- Exploration drilling at existing export prospects
- Seeking to add further export projects to portfolio.







- Strong domestic **project resource base** with low Cap Ex requirements.
- Building a business to supply domestic steel mills, and in time also world markets.
- At least 3mpta to be sold domestically by the end of 2013.
- Continuously assessing other opportunities to grow the Brazilian iron ore business.
- Centaurus Metals is one of the few ASX listed companies providing direct exposure to the rapid development of Brazil.





## Developing a Brazilian Iron Ore Business

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