

**ASX / MEDIA ANNOUNCEMENT** 

28 January 2015

# LANDMARK OFFTAKE AGREEMENT FOR PYRITE PRODUCTION FROM MOUNT MORGAN

# Highlights

- Conditional Principal Offtake Agreement signed for pyrite sales
- Mine gate offtake targeting 200,000 to 300,000tpa of pyrite at ~US\$100/t CFR
- Validates projected life-of-mine All-in Sustaining Costs of US\$393/t
- Large global market for pyrite use in sulphuric acid production (>20Mtpa)
- Advanced discussions for copper offtake & discount raw material supplies

**Carbine Resources Limited (ASX: CRB)** is pleased to announce the execution of a conditional Principal Offtake Agreement (POA) with global industrial mineral distributor Talana Limited for the sales of pyrite produced at the Mount Morgan Gold & Copper Project.

The POA, which follows extensive negotiations, due diligence and a site visit by Talana, represents a significant milestone in the redevelopment of the historic Mount Morgan Mine. The agreement allows for the sales of a third product from the proposed operations (in addition to gold and copper), which further improves the project value proposition and also facilitates the removal of the source of acid mine drainage from the site.

Under the terms of the POA, Carbine and Talana have agreed:

- Talana to pre-market pyrite and metallurgical slag products from Mount Morgan to existing and potential customers in its network;
- Talana to act as principal for pyrite and metallurgical slag sales from at Mount Morgan; and
- Non-exclusive arrangement (Carbine free to engage other offtake partners).

The offtake obligations will become binding after the following conditions have been satisfied:

- Talana completes a logistics and marketing study, and Talana and Carbine are both satisfied with the results of that study;
- Carbine completes a pre-feasibility study, and Talana and Carbine are both satisfied with the results of that study; and
- Talana and Carbine agree the definitive terms of the POA.

These conditions must be satisfied by 31 December 2015. Until the conditions are satisfied, Carbine may negotiate and enter into an offtake agreement with a third party and terminate the POA with Talana.

ABN 81 122 976 818 Suite 23, 513 Hay Street Subiaco WA 6008 PO Box 1311 Subiaco WA 6904 phone +61 8 6142 0986 fax +61 8 9388 8824





The terms still to be finalised include, amongst other things, pricing, product and quantity. These terms are to be based on the following:

- Mine gate sales with open book to end user prices and logistics costs;
- Pyrite: 200,000 300,000tpa, +/- 50% S concentrate, +/- US\$100/t CFR price (to be confirmed following completion of logistics/marketing study and PFS); and
- Metallurgical Slag: Tonnage and prices to be confirmed following pre-marketing exercise.

In parallel with the POA negotiations, the parties are also advancing negotiations for the:

- inclusion of copper products produced from the site into the POA;
- potential for Talana to supply discounted raw materials for the proposed operations; and
- development for a closer commercial relationship, including project financing options.

#### **Talana Limited Overview**

Talana Limited is a significant diversified global distributor, marketer and stockist of bulk industrial minerals, chemicals and raw materials. The company physically sources, finances, transports, stocks and distributes essential commodities to a range of industrial consumers globally.

Talana focus on securing long term off-take agreements with producers and encourages technical interaction between all parties. The Company also targets establishment and on-going improvement of supply lines to customers in order to maintain long term cost competitive operations.

Talana has close relationships with existing pyrite end users in Asia, as well as strong contacts into Europe and Africa. Talana also actively invest in the projects which produce the products it trades.

Key materials of import and export by Talana are:

Industrial Chemicals:	Industrial Minerals:	<b>Raw Materials:</b>
Sodium Cyanide (NaCN)	Pyrite	Coal
Sulphuric Acid (H <sub>2</sub> SO <sub>4</sub> )	Quicklime	Limestone
Copper Sulphate (CuSO <sub>4</sub> )	Hydrated Lime	
Sodium Hydrosulfide (NaHS)	Magnesium Oxide (MgO)	
Sodium Metabisulphite (SMBS)		





# **Pyrite Overview**

Pyrite is used as a source of sulfur in manufacture of sulphuric acid. Demand for pyrite/sulphuric acid is principally a function of fertilizer production, where the acid is used to digest and process rock phosphate into a form where it can be applied as a fertilizer.

### Production & Consumption:

In 2013, pyrite consumption in China alone totaled 20.3 million tonnes. China sources pyrite from both low grade domestic supply balanced with typically higher grade imports.

Pyrite consumption is most prevalent in the South, Central and South Western provinces of the China, with the location being a function of end-use sulphuric acid demand and pyrite ore availability.

The grade of domestic Chinese pyrite ore is typically low and is reported as a standardised 35% S product. The pyrite produced at Mount Morgan (~50% S) is consider a premium high grade product which attracts strong demand as a blending product to improve domestic ore grades.

The majority of the pyrite ore consumed within China originates from domestic mines but there has also been a consistent import of higher grade (50% S) material into the country.

For example, in 2013 First Quantum Minerals Limited produced 825,000tpa of 50% S pyrite from the Pyhäsalmi mine in Finland, with the majority ending up in China (Source: http://www.first-quantum.com/).

Imports of pyrite ore are typically delivered into ports of Zhanjiang in Guangdong province and Nanning in Guangxi province. Any pyrite imported to China from Mount Morgan will have obvious competitive advantages in shipping distances of the bulk commodity compared to Finland.

It is also important to note the Pyhäsalmi operation has a projected mine life of 2019, implying a significant shortfall in the supply of 50% S into China in the near future.

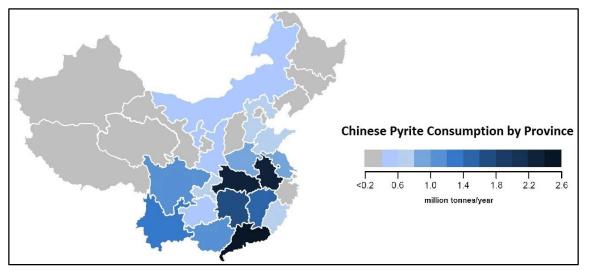


Figure 1: Chinese pyrite consumption in 2013 (Source: CRU Group)





# Pricing:

Pyrite pricing is dependent on the Chinese sulfur price, which is turn is a function of fertilizer demand for agriculture and food production. In addition, further value is placed on pyrite as a source of iron (40 - 45% Fe), with pyrite residue typically on-sold to steel manufacturers following the removal of sulfur for sulphuric acid production.

The price of imported pyrite into China has been relatively consistent over the last four years, with the weighted volume price averaging at US\$102/t CFR China (Source: CRU Group).

It should be noted Carbine's recently completed Scoping Study was based on a conservative long term pyrite price estimate of US\$86/t CFR.

# Logistics:

Pyrite is anticipated to be shipped in bulk to end users in Asia, with potential for shipments to Europe and domestic supply opportunities also under assessment.

The product will be delivered to the port of Gladstone by truck or truck/rail in half height concentrate shipping containers. The container system provides a duel benefit of mitigation of any environmental concerns over spillage during transport and also an adequate storage mechanism at the port without need to obtain warehouse space.

The pyrite containers will be loaded into ships at the port of Gladstone by a container tipper, providing suitable bulk or break bulk transport options to overseas end users.

# **Environmental Benefits**

The historical environmental legacy of Mount Morgan is 100% owned by the Queensland Government through the Department of Natural Resources & Mines (DNRM), with the mining lease holder not responsible for existing environmental problems or the impact of past mining activities.

Despite this, Carbine has been active in assisting the DNRM with the development of mechanisms for remediation of the site during proposed future mining operations.

The ability to concentrate and sell pyrite from Mount Morgan provides a significant benefit to overall site remediation activities. The pyrites themselves are the source material for acid mine drainage at the historic mine and have been largely responsible for the current legacy issues.

This POA therefore provides a credible mechanism for removal of these acid forming pyrites, which will ultimately result in a substantial improvement to environmental conditions at the mine.



# **Further Opportunities**

Carbine is encouraged by the interest in its pyrite product following an initial marketing exercise. The Company sees a strong opportunity for additional agreements to be developed with other offtake partners during the feasibility study process.

In addition, Carbine is assessing the potential for development of an acid plant on-site which would be able to supply up to 500,000tpa of 98% sulphuric acid for domestic mining operations and agriculture projects in Queensland.

The Company plans to initiate marketing discussions with key potential offtake partners for this sulphuric acid product in the coming months.

The Company is not aware of any reason why the ASX would not allow trading to recommence immediately.

#### For further information, please contact:

Patrick Walta - Executive Director (08) 6142 0986

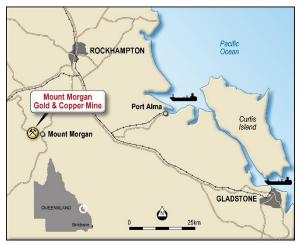
#### About Carbine Resources

Carbine Resources (ASX: CRB) is an Australian resource company targeting the near term production from its Mount Morgan Gold & Copper Project in Queensland.

The Project is located on 677.5 hectares of mining leases on outskirts of the historic mining town of Mount Morgan.

Regional centres of Rockhampton and Gladstone are also in close proximity, providing access to all required infrastructure, services and utilities.

Carbine has recently completed a Scoping Study over proposed operations at the Project, defining a minimum 8 year mine life at a processing capacity of 1Mtpa, producing



36,000oz/yr of gold at All-in Sustaining Costs of US\$393/oz. The operations are also projected to deliver 850tpa of copper and 230,000tpa of high grade pyrite as by-products.

A substantial Exploration Target of 32 - 40Mt grading 0.67 - 0.79 g/t Au and 0.11 - 0.19% Cu exists at the site, providing potential for a significant increase in mine life, processing capacity and project value. This Exploration Target is not a mineral resource and is conceptual in nature. There has been insufficient exploration to define a mineral resource and it is uncertain if further exploration will result in the determination of a mineral resource.





# **Appendix: Mineral Resources & Exploration Target**

Table 1: Current JORC Resources and Exploration Target for the Mount Morgan Project								
JORC Resou (Tailing		Tonnes (000s)	Au (g/t)	Cu (%)	Au (oz)	Cu (t)		
Indicate	d	2,487	1.59	0.16%	127,000	3,900		
Inferred		5,861	1.07	0.14%	202,000	8,400		
TOTAL JORC		8,348	1.23	0.15%	329,000	12,300		
<b>Exploration Target</b> <sup>[2]</sup> (Exclusive of JORC Resources)		Tonnes (000s)	Au (g/t)	Cu (%)	Au (oz)	Cu (t)		
Tailings								
	(low range)	2,900	1.45	0.13%	135,000	4,000		
	(high range)	3,280	1.66	0.18%	175,000	6,000		
Mullock Dumps								
	(low range)	1,750	1.69	0.11%	95,000	2,000		
	(high range)	2,500	2.00	0.15%	162,000	4,000		
Metallurgical Slag								
	(low range)	1,850	0.60	0.43%	36,000	8,000		
	(high range)	6,000	1.00	0.69%	193,000	41,000		
Open Pit Tails								
	(low range)	25,300	0.52	0.09%	423,000	23,000		

Note: Rounding errors occur

TOTAL EXPLORATION TARGET

#### <sup>[1]</sup> Mineral Resources

The Indicated and Inferred Resources referred to above were presented by Norton Gold Fields Limited at the Mining 2009 Resource Convention (Brisbane). The presentation was released to the ASX on 28 October 2009 and is available for viewing on the Norton Gold Fields website (www.nortongoldfields.com.au). The resources were stated to have been prepared in accordance with the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ("JORC Code") by Competent Person Troy Lowien, Resource Geologist, of consultants Coffey Mining Pty Ltd. A competent person statement in relation to these Indicated and Inferred resources is included on the final page of this Announcement.

0.54

0.67

0.79

0.09%

0.11%

0.19%

486,000

690,000

1,015,000

25,000

36,500

76,500

28,000

31,800

39,800

(high range)

(low range)

(high range)

#### <sup>[2]</sup> Exploration Target

Carbine has identified an Exploration Target at the site comprising low grade mullock dumps, slag dumps and retreated tailings from previous operations. In the Table above a range of approximate tonnage and grade has been compiled from extensive review of historic reports and studies by previous owners. Carbine has not yet completed any exploration activity on the Exploration Target. The potential quantity and grade of the Exploration Target is conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource, and it is uncertain if further exploration will result in the estimation of a Mineral Resource. The basis for the estimates of tonnage and grade include historic production records, various topographic and volume surveys, drilling by various methods, grab and channel sampling and small scale bulk sampling. Carbine proposes to further evaluate the Exploration Target during the next year by drilling and possible bulk testing to provide material for additional metallurgical test work and to verify tonnage and grade. A competent person statement in relation to this Exploration Target is included on the final page of this Announcement.



#### Competent Person Statement – Exploration Target:

The information in this report that relates to the Exploration Target is based on information compiled by Lance Govey, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Lance Govey is an independent geological consultant and has no association with Carbine Resources Limited other than being engaged for services in relation to the preparation of parts of this report. Lance Govey has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Lance Govey consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. This was initially release to the ASX on 13 November 2014 and has not materially changed since it was last reported.

#### Competent Person Statement – JORC Resources:

The information in this report that relates to the Mineral Resources of the Mount Morgan Mine project was prepared in accordance with the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ("JORC Code") by Troy Lowien, Resource Geologist, of consultants Coffey Mining Pty Ltd, who is a Member of The Australasian Institute of Mining and Metallurgy ("AusIMM") and has a minimum of five years of experience in the estimation, assessment and evaluation of Mineral Resources of this style and is the Competent Person as defined in the JORC Code. Troy Lowien conducted the geological modelling, statistical analysis, variography, grade estimation, and report preparation. This report accurately summarises and fairly reports his estimations and he has consented to the resource report in the form and context in which it appears. This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

