

3<sup>rd</sup> February 2021

# Acid Iron Metals ("AIM") Project Preliminary Feasibility Study Results

# **EXECUTIVE SUMMARY**

JAKARTA, INDONESIA – PT Merdeka Copper Gold ("MDKA.JK") Chief Executive Officer Simon Milroy is pleased to announce preliminary results from a Class 3 Feasibility Study ("FS") for the development of the first AIM Project processing facility. The FS report will be finalised in March 2021.

The first AIM processing facility is targeted to produce 1Mtpa of commercial grade sulphuric acid, with further potential to increase the acid production as new high-pressure acid leach ("HPAL") plants in Indonesia Morowali Industrial Park ("IMIP") create further demand for acid which is an input to their production processes.

Preliminary results of the FS indicate that the AIM Project is highly feasible. Based on a near final total capex estimate of US\$300m, the AIM Project has compelling preliminary economics. The project will deliver over US\$3.8b of revenue and US\$1.1b of after tax cashflow over the life of the project. This results in an internal rate of return ("IRR") of 31.5% and a net present value (NPV) of US\$414m at an 8% discount rate.

Discussions with banks to raise project finance are ongoing. Detailed engineering, design and procurement of long lead items will start in February 2021 and construction is forecast to commence in Q2 2021. First acid is targeted to deliver in H2 2022.

A Joint Venture ("JV") agreement between Merdeka and Tsingshan is close to being finalized. Merdeka will be an 80% shareholder of the JV, and Tsingshan will be a 20% shareholder.

The AIM Project will buy high grade pyrite feedstock from Merdeka's Wetar Copper mine. The feedstock will be shipped to IMIP in Sulawesi for further processing. The AIM processing plant will process the feedstock to produce sulphuric acid, steam, iron pellets as well as precious metals, such as copper, gold, and silver.

#### BACKGROUND

The AIM Project was first discussed between Merdeka and Tsingshan in 2018.

By mid-2019 both parties committed to a detailed metallurgical test work program, which was completed in December 2019.

Merdeka and Tsingshan signed a memorandum of understanding to develop the AIM Project in February 2020.

A concept study was concluded in April 2020 and in August 2020 the JV parties appointed DRA Pacific in Australia and BGRIMM in Beijing to undertake a FS.



## **METALLURGY**

In H2 2019, metallurgical and processing tests on pyrite samples were conducted by BGRIMM in Beijing and by ALS in Perth. The test work included beneficiation, flotation, roasting, chlorinated roasting and leaching.

Results indicated that roasting of the flotation concentrate could extract over 99% of the sulphur, which is used to generate sulphuric acid.

Chlorinated roasting proved to be the most effective method for extracting various metals from the calcine residue, with 98% copper extraction, 91% gold extraction and 70% silver extraction. The remaining iron ore pellets were deemed suitable for sale as blast furnace feed, with a grade of over >65% Fe, with low impurities.

The process flow diagram below in figure 1 summarizes the overall process plant.

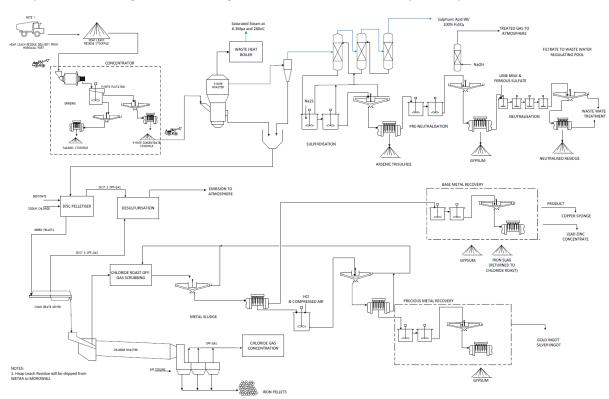


Figure 1: High Level Flow Diagram

## FEEDSTOCK AND SHIPPING

The JV will source high grade pyrite feedstock from Merdeka's Wetar mine. Roughly 900,000 tpa of pyrite feed will be sold by Merdeka to the JV, to support initial acid production of 1 Mtpa.

Once loaded at Wetar, the pyrite feedstock will be transported by barge to IMIP, a distance of approximately 700 kilometres (see figure 1).

The pyrite feedstock will be discharged at IMIP's port and trucked approximately 4km to a stockpile near the pyrite concentrator.





Figure 2: Shipping from Wetar to IMIP

## **CONSTRUCTION AND PROCESSING**

The AIM Project will begin construction in Q2 2021 and is targeted to deliver first acid in H2 2022. Detailed engineering, design and procurement of long lead items will begin in February 2021.

The AIM processing plant will be located adjacent to the acid and steam off-takers. The FS layout has been optimized to ensure capital and operational savings over the life of the project.

The processing facilities are shown in the figure below and they will:

- Process pyrite feedstock to produce 1Mtpa of commercial grade sulphuric acid. The acid will be sold to an HPAL customer at IMIP;
- Produce approximately 1.2Mtpa of high-pressure steam as a by-product from acid production, also to be sold to the HPAL customer or used to generate electricity;
- Recover the copper, gold and silver contained in the pyrite feedstock; and
- Produce iron ore pellets for sale to other customers within IMIP, or for sales to third parties.



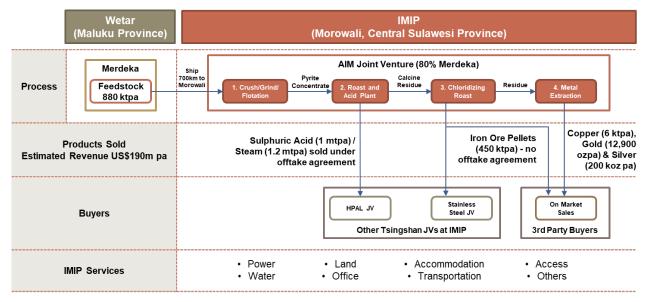


Figure 3: Processing Facilities at IMIP

## **IMIP INFRASTRUCTURE**

IMIP is a facility that commenced in late 2013 and which is controlled by Tsingshan. IMIP has established industry-leading infrastructure and operational facilities, including the below:

- 3Mtpa stainless steel capacity;
- 500ktpa carbon steel capacity (currently expanding to 3.5Mtpa);
- 600ktpa high carbon ferrochrome;
- 1.95Mtpa NPI capacity;
- 2GW coal-fired power plant (currently expanding to 2.9GW);
- Lime plant, coke plant, acid plant;
- Port facilities; and
- Executive guest quarters and an executive visitor's hotel.



Figure 4: Aerial view of IMIP



## **PROJECT ECONOMICS**

Most of the AIM Project's revenue is attributable to the sale of acid, iron ore pellets and sponge copper, whilst sale of gold and steam is also material.

Preliminary capital costs are shown in the table below. Even assuming capex at the top of the estimated range (~US\$300m), the AIM Project still delivers a compelling NPV of US\$414m at a discount rate of 8% with an IRR of 31.5%.

The JV has identified cost saving initiatives that could potentially lower the expected capital cost to the bottom of pre-indicated range, thereby further improving the project's returns.

Project Statistics	Unit	Value
Project Life	Years	20
Total Revenue (20 years)	US\$m	3,815
Average Annual Project Revenue	US\$m	190
Total After Tax Cashflow (20 years)	US\$m	1,083
Financial Results @ US\$300m Capex		
NPV @ 8%	US\$m	414
IRR	%	31.5%
Payback From First Production	Years	2.75
Pre-Production Funding Requirements		
Concentrator	US\$m	25 – 33
Refinery	US\$m	228 – 240
Sub-Total	US\$m	253 – 273
Contingency	US\$m	27
Total	US\$m	280 - 300

Table 1: Preliminary Project Economics

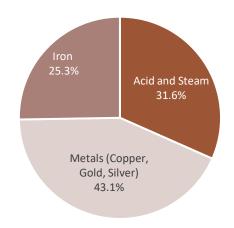


Figure 5: Breakdown of Project Revenue



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### About Merdeka Copper & Gold Tbk.

PT Merdeka Copper Gold Tbk ("Merdeka"), a holding company with operating subsidiaries engaging in mining business activities, encompassing: (i) exploration; (ii) production of gold, silver, copper (and other related minerals); and (iii) mining services. The subsidiaries are: (i) PT Bumi Suksesindo ("BSI") as the holder of the operation production mining business license for the Tujuh Bukit mine; (ii) PT Damai Suksesindo ("DSI") which holds the adjacent exploration permit; (iii) PT Batutua Tembaga Raya ("BTR") as the holder of operation production mining business license specifically for processing and refining; (iv) PT Batutua Kharisma Permai ("BKP") as the holder of the operation production mining business license for the Wetar Copper mine; (v) PT Merdeka Mining Servis ("MMS") as the holder of mining services business license; vi) PT Pani Bersama Tambang ("PBT"), as the holder of an operation production mining business license specifically for processing and refining; and (vii) PT Puncak Emas Tani Sejahtera ("PETS"), as the holder of an operation production mining business license for Pani Gold Project.

The company's major assets, in order of management's assessment of future value, are the: (i) Tujuh Bukit Copper Project; (ii) Pani Joint Venture; (iii) Wetar / Morowali Acid Iron Metal Project; (iv) Tujuh Bukit Gold Mine and; (v) Wetar Copper Mine.

The Tujuh Bukit Copper Project deposit is one of the world's top ranked undeveloped copper and gold mineral resources, containing approximately 8.7 million tonnes of copper and 28 million ounces of gold.

As a world-class Indonesian mining company, Merdeka is owned by prominent Indonesian shareholders including: PT Saratoga Investama Sedaya Tbk., PT Provident Capital Indonesia and Mr. Garibaldi Thohir. Merdeka's three major shareholders have exceptional track records in successfully identifying, building and operating multiple publicly listed companies in Indonesia.

Refer to the Annual Statements of Mineral Resources and Ore Reserves on www.merdekacoppergold.com