



Australian Government
Australian Trade and Investment Commission



MASAN RESOURCES NUI PHAO MINING

CUSTOMER PROFILE – VIETNAM

April 2018

COMPANY BACKGROUND

The Nui Phao Mining Company Limited (Nui Phao Mining) is a subsidiary of Masan Resources, a publicly listed company trading on the Vietnam Stock Exchange.

Masan Resources is looking to become Vietnam's private sector resources champion by acquiring, exploring and developing resource assets of scale. Vietnam has significant resources across a variety of metals and minerals. Masan Resources believes its experienced management team, local access, strong execution capabilities, international partners and capital raising abilities, provides a strong platform for consolidation and expansion.

Nui Phao Mine is located in the Dai Tu District of the Thai Nguyen Province in Vietnam, approximately 80km northwest of Hanoi by road. The mine site is spread over an area of 9.21km², accessible by road and adjacent to a narrow-gauge railway that connects to the Vinarail railway system. The Hai Phong port and the new Cai Lan port in the Quang Ninh Province, located 180km and 240km, respectively, from the mine, provide convenient shipping access.

Nui Phao is a unique tungsten-polymetallic mine with significant deposits of tungsten, fluor spar, bismuth and copper. It is one of world's largest identified tungsten deposits outside China, with mining reserves of 66 million tonnes of ore with an average WO₃ (tungsten trioxide) grade of 0.21 per cent.

The mine is one of the world's lowest-cost producers of tungsten, and among the largest producers of acid-grade fluor spar and bismuth in the world.

www.masangroup.com/masanresources/

MINING ACTIVITIES

Nui Phao is a conventional open pit mine, moving a total of 6.5 million cubic meters of material with 3.7 million tonnes of ore in 2017. Of this, 3.5 million cubic meters required blasting. The complex polymetallic ore is delivered directly to the adjacent processing plant.

Grade control drilling (full core) and assaying is performed to determine ore zones, grades and characteristics as well as waste classification. Depending on the waste rock characteristics, it is stored in waste dumps, inside the tailings storage facility or used in the construction of tailings storage facility embankments.

Local contractors perform all mining, drilling, blasting and construction work. An international provider is used to supply some explosive products and services. Grade control assay analysis is performed on site by a fully accredited international provider.

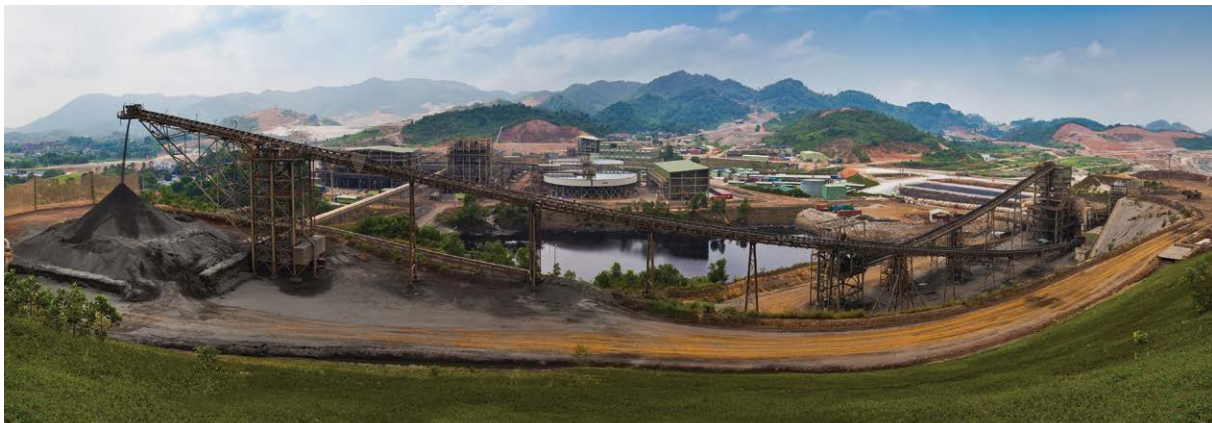
PROCUREMENT PRIORITIES

Key drivers

Nui Phao Mining's primary goal is to maximise production while maintaining its position as a low-cost producer. At an operational level, the company's key drivers are health and safety, machine utilization, community development and environmental compliance.

Operational Imperatives

Productivity	Increase production through greater asset utilisation
Safety	Ensure each worker at Nui Phao returns home safe and well
Quality	Establish a fully integrated processing plant with modern machinery and automated processing control system to produce quality products
Environmental compliance	Set up a state-of-the-art online waste water and gas monitoring system
Land acquisition and rehabilitation	Ensure quality of life, satisfaction and economic stability of the community. Resettlement activities to be conducted in line with World Bank guidance on involuntary resettlement
Community development	Ensure economic restoration and sustainable development



PROCUREMENT OPPORTUNITIES

Opportunities exist for Australian METS suppliers in the following areas:

Engineering and consultancy

- Engage in technical test works and engineering support to study the gold recovery process
- Provide pilot plant and monitor gold recovery process

Ore sorting equipment

- Provide equipment to improve tungsten recovery prior to ore processing
- Provide equipment packages, including vibrating feeders, crushers, screens, conveyors, magnetic separators

Gold recovery plant

- Complete construction of gold concentrate plant
- Provide equipment packages, including electrowinning, filtration, electrical and instrumentation and mechanical items such as tanks, piping and valves

Gravity tungsten recovery

- Improve tungsten recovery through gravity circuit and proprietary equipment such as Low Intensity Magnetic Separator and Wet High Intensity Magnetic Separator
- Provide mechanical items such as pumps, agitators, tanks, piping and valves

Procurement process

Procurement is primarily through a tendering process. Some equipment and services, however, may be single-sourced to maintain the consistency of equipment and standardisation of spare parts, particularly in terms of unique technologies or challenging project scenarios.

All procurement activities are controlled through a SAP ERP (enterprise resource planning) system which drives transparency and provides visibility to management.

Please note that due to Austrade's ongoing involvement with Nui Phao Mining, we seek to maintain a unified 'Australia METS' brand approach in dealing with this company. As such we ask that you do not contact Nui Phao Mining directly.

We encourage companies with relevant products and services to contact Austrade's METS Adviser directly for further information. Contact details below.



Critical success factors

Local presence

Establishing a local presence by partnering with established Vietnamese companies or engaging dedicated representation in-market is advantageous in the procurement decision making process as it delivers the option of easy regular contact and ongoing follow-up. Where service and/or training are critical aspects of the supply, a local presence is considered essential. The ability to service, repair and maintain non-standard and sophisticated plant and equipment is mandatory.

CURRENT AUSTRALIAN SUPPLIER ENGAGEMENT

Australian METS suppliers have successfully engaged previously with Nui Phao Mining to provide products and services across a broad range of areas, including crushing equipment, grinding mills, critical pumps, valves and other mechanical items, safety and PPE products, machinery, ore test works, mine consulting, mine planning and software.

AUSTRADE

The Australian Trade and Investment Commission – Austrade – contributes to Australia’s economic prosperity by helping Australian businesses, education institutions, tourism operators, governments and citizens as they:

- develop international markets
- win productive foreign direct investment
- promote international education
- strengthen Australia’s tourism industry
- seek consular and passport services.

Austrade provides information and advice that can help Australian companies reduce the time, cost and risk of exporting. We also provide a range of services to Australian exporters looking to expand their business in growth and emerging markets, including:

- information and advice on doing business in international markets
- help with overseas market selection

- identification of relevant overseas contacts
- assistance with market entry and expansion
- identification and follow-up of specific international business opportunities.

We also administer the Export Market Development Grants scheme – the Australian Government’s financial assistance program for aspiring and current exporters.

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Disclaimer

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