GHANA METS Webinar

11 April 2019
WEBINAR AGENDA AND SPEAKERS

Welcome

**Ghana METS Market:** Brendan Coyne, Trade Commissioner – Austrade Accra

**Guest Speaker:** Christopher Opoku Nyarko, Senior Research Officer, Ghana Chamber of Mines

**Guest Speaker:** Alexander Oduro, Technical Services Manager, Perseus Mining Ghana Ltd

**Question and Answer Session**

**Q & A Participant:** Ismail Muslim, Business Development Manager, Austrade Accra
• Population estimate
  › 30.10 million  (2019 World Population Review)

• Recent GDP
  › USD 47.33 billion  (https://tradingeconomics.com/ghana/gdp)

• Major commodities
  › Gold, Cocoa, Crude Oil, Timber, Diamonds, Bauxite and Manganese Ore.

• Major Miners
  › AngloGold Ashanti, Newmont, Perseus, Golden Star and Gold Fields.
TRENDS ACROSS MINING IN GHANA

› **Extension of mine life**
  - Mining is getting more advance and technical as operators look to extend mine life, control cost and overcome lower grades.

› **Open cut vs Underground mining**
  - Most mines is open cut however underground mining is gaining attention.

› **Owner mining vs contract mining**
  - Mines are transitioning from owner operated to contract mining with Gold Fields been the latest to join Newmont and AngloGold in using contractors.

› **Mining regulations and local content**
  - Mining regulations getting stricter with a heavy push for local content and local participation.
• Mining companies are under pressure to cut-cost, increase efficiency, be more environmentally friendly and improve safety.

• Australian companies can focus on the provision of equipment, technology and technical services that address the above need across the entire mining process.

• **Examples of key areas includes:**
  
  › **Core Mining**
  
  – Drill and Blast, Grade Control, Load and Haul (Circle Times optimization)

  › **Processing**
  
  – Crushing, Milling (Liners and Grading media), Trash screening
  
  – Pumps, Water treatment, Elution, Electrowinning

  › **Energy Management**
  
  – Electricity reduction (Energy savings)
  
  – Fuel burn rate reduction (Diesel, and Gas optimisation)
**KEY AUSTRADE EVENTS**

- **PERIODIC METS WEBINARS**
  - To address specific industry challenges and showcase Australia’s capability. Example – fatigue management system, mine safety, underground mine ventilation, lightening and communication.

- **2020 MINING INDABA – AUSTRALIA LOUNGE**

- **AUSTRADE FEE FOR SERVICES**
  - Advice on market entry
  - Visit program – introduction to potential customers
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THANK YOU FOR YOUR ATTENTION
GHANA’S MINERALS SECTOR

Christopher Opoku Nyarko
Senior Research Officer
Ghana Chamber of Mines
About the Ghana Chamber of Mines

- Incorporated in 1928, the Chamber is a private non-governmental and voluntary organization representing the collective interest of its member-companies in Ghana.

- The Chamber’s members include the following:
  - Producing mines
  - Mining companies about to start production
  - Contract mining companies
  - Exploration companies
  - Mining support services companies
  - Regulatory and Not-for-Profit mining oriented institutions
Overview of Ghana’s Mining Sector

Gold Produced

- Large-Scale Producers
- Small-Scale Producers
- Total

Gold production from the small-scale sector averaged 35%

In 2018, diamonds were produced exclusively by small-scale miners
Overview of Ghana’s Mining Sector - Cont’d

Development Minerals

- Most of the country’s development minerals have not been fully exploited
  - Salt
  - Clay
  - Marble
  - Mica
  - Limestone
  - Iron ore
  - Kaolin

- There are known occurrence of other minerals
  - Jasper
  - Feldspar
  - Lithium

Source: Minerals Commission
Structure of Ghana’s Mining Industry

- The main types of gold mining in the large-scale sector are open cast and underground mining
  - Underground mines are either designed as a decline or equipped with a shaft
  - There are 8 open pit mines, 3 underground mines and 2 firms operate both open cast and underground mines

- Large-scale mines are mostly foreign owned with only one mine owned by a Ghanaian
  - The mines undertake owner or contract mining

- Small-scale mining is mostly surface or alluvial mining and it is a preserve of Ghanaians
  - Mining support service companies are allowed to provide services to small-scale mining companies
<table>
<thead>
<tr>
<th>Company</th>
<th>Mineral Produced</th>
<th>Mining Method</th>
</tr>
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<tbody>
<tr>
<td>Adamus Resources</td>
<td>Gold</td>
<td>Open Cast</td>
</tr>
<tr>
<td>AngloGold Ashanti-Obuasi</td>
<td>Gold</td>
<td>Underground</td>
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<tr>
<td>AngloGold Ashanti-Iduapriem</td>
<td>Gold</td>
<td>Open Cast</td>
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<tr>
<td>Asanko Gold Mining</td>
<td>Gold</td>
<td>Open Cast</td>
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<tr>
<td>Chirano Gold Mines</td>
<td>Gold</td>
<td>Underground</td>
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<tr>
<td>Ghana Manganese Company</td>
<td>Manganese</td>
<td>Open Cast</td>
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<tr>
<td>Gold Fields- Tarkwa</td>
<td>Gold</td>
<td>Open Cast</td>
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<td>Abosso Goldfields</td>
<td>Gold</td>
<td>Open Cast</td>
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<tr>
<td>Golden Star Bogoso/Prestea</td>
<td>Gold</td>
<td>Underground</td>
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<tr>
<td>Golden Star Wassa Ltd.</td>
<td>Gold</td>
<td>Underground and Open Cast</td>
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<tr>
<td>Newmont Ghana Gold</td>
<td>Gold</td>
<td>Underground and Open Cast</td>
</tr>
<tr>
<td>Newmont Golden Ridge</td>
<td>Gold</td>
<td>Open Cast</td>
</tr>
<tr>
<td>Perseus Mining</td>
<td>Gold</td>
<td>Open Cast</td>
</tr>
</tbody>
</table>

* Valid as at 31st March, 2019
Regulation of the Minerals Industry

- The Ministry of Lands and Natural Resources is responsible for the overall regulation of the minerals sector.

- However, the technical regulation of the mining sector is done by the Minerals Commission.
  - Several other state agencies are also involved in the regulation of the mining sector.

- The main statute for regulating the minerals and mining sector is the Minerals and Mining Act, 2006 (Act 703).
  - There are six other Legislative Instruments that gives effect to Act 703.
  - Legislative Instrument 2174, Minerals and Mining (Support Services) Regulations, 2012, provides the framework for registration and operation as a mining support services provider.
  - Prospective mining support services providers must be mindful of local content provisions.
Local Content

- Minerals and Mining (General) Regulations, 2012 (LI 2173) provides the overarching framework for local content in the mining sector
  - Procurement of goods and services as well as labour

- The production and supply of goods and services on the List (29 items) are classified based on the ownership of the firm
  - Wholly owned Ghanaian firms
  - Foreign firms incorporated in Ghana

- There is a general push for enhanced local participation in the mining sector
  - To create more employment opportunities
  - Retain a greater share of the mineral revenue in country to support national development
# Local Procurement List

## Exclusive Ghanaian Shareholders and Directors

1. Haulage Services  
2. Catering Services  
3. Security Services  
4. Legal Services  
5. Fuel

## Strictly Incorporated in Ghana

1. Insurance Services  
2. Financial Services  
3. Contract Mining

## Both Ghanaians and Non-Citizens

1. Grinding Media  
2. Explosives  
3. Cement and Cement Products/Grout  
4. Quick and Hydrated Lime  
5. Electric Cables  
6. HDPE/PVC Pipes  
7. General Lubricants  
8. Re-treading of tyres  
9. Bolts and Nuts  
10. Crucibles  
11. Plastic Sample bags  
12. Calico Bags  
13. Bullion Boxes  
14. Chain Link Fencing/Wire Netting  
15. Conveyor Rollers  
16. Metal/PVC Core Trays  
17. Overalls and work clothes  
18. Activated Carbon  
19. Cable Bolt and accessories, split setts, rebars, mining mesh  
20. Water resistant plates  
21. Cupels
Opportunities in the Mining Sector

- Geotechnical Services
  - Slope wall design and rock competency analysis

- Training of Technical Personnel for Underground Operations
  - Ventilation Officers, Hydrogeologist, Mechanical Operators

- Fatigue Management and Predictive Technologies

- Data Management and Analysis Tools

- Waste Water Treatment

- Land Reclamation
THANK YOU

The Ghana Chamber of Mines
Promoting socially and environmentally responsible mining in Ghana

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Perseus Mining (Ghana) Limited
Edikan Mine, Ayanfuri, Ghana

Overview of Mining Projects in Ghana

Presented by
Alexander Oduro Kofi
(Technical Services Manager)
Current Operational Model

- Perseus Mining begun its mining operation in the Edikan Mine in 2011 with the first gold pour in August 2011, using the contract mining model with the African Mining Services (AMS) as the mining contractor.

- The company in 2015 reviewed its mining operations and strategy and brought on board a local mining company, RocksSure Mining Contractor to undertake one of its push back pits (in addition to AMS).

- In an attempt to improve on its cashflow fortunes, the company through the 2018 LOM, revised its operational strategy to have only one mining contractor for the entire operation.

- This competitive process finally led to the selection of the local mining contractor, RocksSure International to do the mining. This decision has further strengthened our Local content approach to the business.
Current Operational Model

• The current Annual Average production level
  ➢ Total material 19.4MT.
  ➢ Strip ratio 2.9
  ➢ Process Milling Capacity 6.5MT @ 0.98g/t.
  ➢ Recovered Ounces 181KOz.
  ➢ Processing Recovery 87.5%.
  ➢ AISC of $950/oz.
  ➢ 5 years Life of Mine ending in June 2024.
  ➢ Rigorous Exploration Activities ongoing to expand the Life of Mine.

• The company currently employs about 339 personnel under different contract terms in addition to about 352 personnel employed by the mining contractor; and chunk of the employment is derived from the local community.
Procurement Process Principles in PMGL

- Procurement remains a critical success factor for every mining operations. In PMGL procurement decisions are built on the premise of efficiencies and maximizing savings.

- Procurement decisions are also aligned and guided by regulatory requirements i.e. Section 2 of the L.I. 2173 which requires some goods and services be procured locally (Currently 25 goods and services under this requirement), of which high speed diesel is one.

- PMGLs procurement team believes that Local procurement of goods and services by the company has tremendous development potential for the country through job creation, skill promotion, technological transfers, and integrates local companies into global value chains.

- Although above directs the procurement decisions, the quality of goods and logistical considerations for both local and offshore goods are also key.
Procurement Process and decisions in PMGL

• The procurement process starts with the identification of an operational need which leads to the request for quotations or proposals from selected vendor in the registered vendor database.

• Received quotes are evaluated based on quality, availability and landed cost.

• Items of some special engineering characteristics may require consultation with the engineering team or other user departments for advice during the evaluation.
Procurement Process and decisions in PMGL

- After evaluation a decision may be reached and **an order is raised** by the purchasing team for approval or further consultation with the vendor may be required.

- When the **PO** is approved by the respective authority per financial threshold and PO to order, the PO is transmitted to the vendor.
Areas for future procurement considerations

• The look forward for PMGLs procurement is to further engage its external partners both local and offshore on opportunities for further cost advantage and improve operational efficiency by;

✓ Establishing fixed price agreement (FPA) to ensure product availability and enhance process visibility.

✓ Evaluating new technologies with existing and new partners that can drive efficiencies and cost reduction within our operations
Areas for future procurement considerations

✓ Establishing vendor managed inventory and consignment stock for OEMs spares in country to encourage local content and also cut down long lead times and offshore freight cost.

✓ Review supplier relationships to take advantage of the dynamism in the market. PMGL seeks partners that share and buy into its procurement objectives of quality and cost efficiency.

✓ To share our expertise with prospective suppliers in areas of continuous improvement for mutual benefit.
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