# AMANGO IN-DEPTH ANALYSIS REPORT

March 2017

The CFO 2016 Case Study Competition


**Prepared by:**

**Michael Mustopo**
**Cindy Tandiani**
**Felicia Nasseri**
**Vinson Budiman**

***(Universitas Prasetiya Mulya)***

FIS CONSULTING

# Executive Summary

**Terms of reference** AMANGO GROUP MINING PLC (AMANGO) is a publicly listed multinational Mining and Metal company which used to be based in South Africa, but currently Headquartered in London (UK). AMANGO's CFO has engaged FIS Consulting to evaluate, prioritize and recommend a course of action for a number of urgent issues faced by AMANGO.

**Prioritization of Issues** FIS Consulting has prioritized the issues faced by AMANGO based on the date a decision needs to be made, the financial impact of the issue, and ethical/stakeholder implications.

| | | Decision/Action Date | Urgency | Financial | Ethical/stakeholder implications |
|---|---|---|---|---|---|
| 1 | Corporate reconstruction | 8-Mar-17 | | | |
| 2 | Australia Operational Risk | 8-Mar-17 | | | |
| 3 | Brazil Strategic Disposal | 8-Mar-17 | | | |
| 4 | De-leverage or buy back | 30-Apr-17 | | | |
| 5 | JV in Canada | 15-May-17 | | | |
| 6 | Divisional Performance | 15-May-17 | | | |

**Key recommendations**

| | Recommended course of action | Impact | Pillars of value | Risk Profile | Mitigation |
|---|---|---|---|---|---|
| Corporate reconstruction and re-organization | Focus on diamond, PGM and copper segments; divest nickel and niobium phosphates segments; delay divestiture in coal and iron ore segments | Some employees may lose their jobs as a consequence of divesting; increase productivity; improve stock performance; maintain good relations with South African government | C, E, F, G | At the limit of the Board's risk appetite | Careful deliberation of sale transactions to ensure AMANGO receive the best value.<br><br>Establish advantageous partnerships in JV, with the community, government.<br><br>Regular evaluation of strategies every 3 years. |
| Operational risk and industrial action in Australia | Construct new mine shaft due to complete in 2 years; address problems in current mine shaft and resume production for the time being | Workers remain employed; new mine shaft is safer and will increase efficiency | A,C,D,E,F,G | At the limit of the Board's risk appetite | Careful evaluation of new design construction<br><br>Improve maintenance measures for current shaft |
| Strategic disposal in Brazil | Accept offer from CMOC for acquiring AMA-NP | Segment divested; intragroup debt from subsidiary settled; obtain cash for other purposes | C, F, G | Within the Board's risk appetite | Careful deliberation of sale transaction with CMOC and its government |
| Balance sheet de-leverage or share buy-back | De-leverage balance sheet; comply to empowerment policy to a certain extent; community development | Credit rating may be upgraded; credit spread lowered; public image improved; maintain good relations with public and government | C,D,G | At the limit of the Board's risk appetite | Maintain good relations with South African government to minimize political risks |
| Joint venture in Canada | Develop effective sustainability reporting; enhance JV agreements; build long wall with medium size and depth | Improve relations with locals; long wall construction increases safety and efficiency; effective cost recording | A,B,C,D,E,C,G | At the limit of the Board's risk appetite | Careful evaluation of new design construction<br><br>Establish advantageous partnerships with JV and locals |
| Divisional Performance | ESOP; changing to variable costing method for managerial accounting purposes; shutdown of refinery and outsource | Improve workers' morale and productivity; improve cost recording; reduce cost | A,C,D,E,F,G | Within the Board's risk appetite | Increase employees' motivation by conducting regular training, and effective communication<br><br>Ensure advantageous partnership with supplier |

# Background

**External Factors Analysis** AMANGO encounters some external environmental conditions which covers:

- Political : Uncertainty in obtaining mining rights or the license to operate due to regulations regarding socio-economic impacts or tax rates.
- Economic : Continued pressure on commodity prices due to slowdown in key buyers' economic growth.
- Social : Under scrutiny from community on issues related to social empowerment and the radical restructuring of the group.
- Technological : Lack of innovation in mining technology puts Company under pressure to optimize operations and minimize negative environmental impact. Technological progress of renewable energy threatens the company's core segments.
- Legal : Regulations regarding environmental maintenance, safety & health policies and labor laws.
- Environmental : Company is responsible for minimizing negative environmental impact, and risks losing mining rights if do not comply with regulations.

**SWOT Analysis**

| Strengths | Weaknesses |
|---|---|
| ▪ World's leading producer or platinum and diamonds<br>▪ Diversified portfolio<br>▪ Operates in 45 countries<br>▪ One of the world's leading mining groups | ▪ Low credit rating<br>▪ Significant debt amount<br>▪ Shrinking market value |
| **Opportunities** | **Threats** |
| ▪ Potential growth of demand size from countries keen to develop infr<br>▪ Strategic synergies<br>▪ Developments in certain industries i.e autocatalyst<br>▪ Rich mineral & metal reserves<br>▪ Depreciation of the South African rand | ▪ Uncertainty in commodity prices<br>▪ Elevtricity blackouts<br>▪ Socio-political pressure to minimize divestments or risk losing license<br>▪ Volatile labor market<br>▪ Single largest investor holds significant control<br>▪ Renewable energy developments |

# 1. Corporate reconstruction and reorganization

**Situation** Debate among the board directors regarding which long-term direction AMANGO should head to, that revolves around the decision on which business segments to keep and which ones to divest.

**Recommendation and implementation**

FIS Consulting recommends AMANGO to divest its Nickel and Niobium & Phosphates segments, delay its divestiture in Coal and Iron Ore, and focus on developing its Diamond, PGM and Copper segments, in an attempt to fulfill AMANGO's KPI to streamline the group's business units. *(Based on analysis of Ashridge Matrix, BCG Matrix, and Financial Performance as in Appendix 2)*

***Step 1 : Evaluate segments' worth***

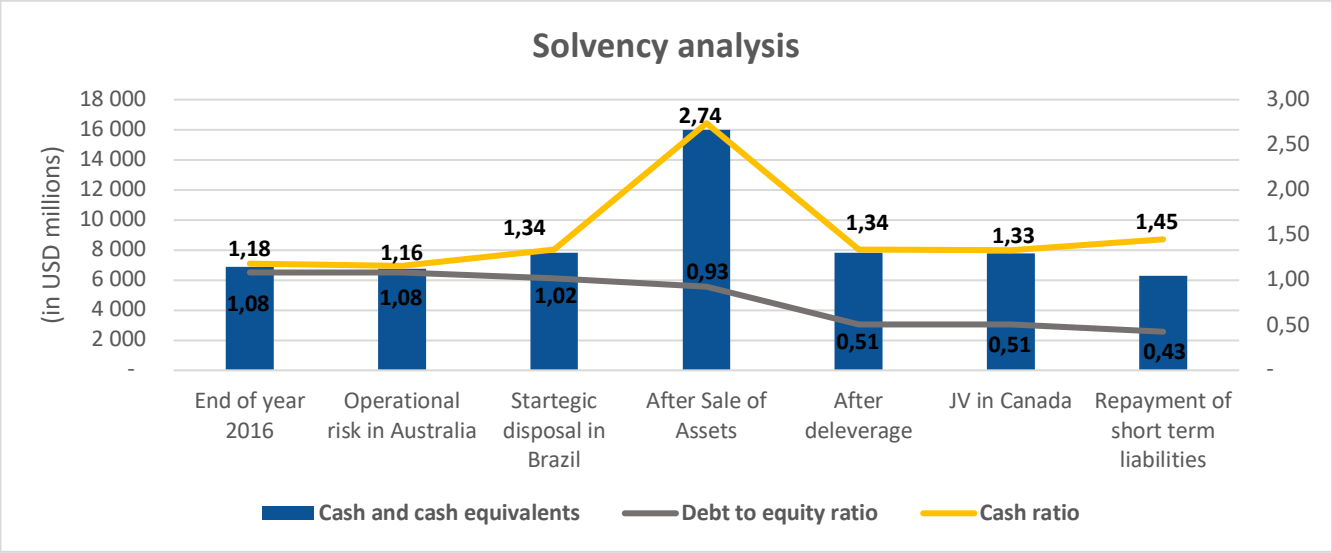
Before divestiture, AMANGO should first evaluate the value of its nickel business unit, which is the only other segment other than AMA-NP (sold to CMOC) that is to be divested.

***Step 2 : Find potential buyers while focusing on current segments***

After evaluating its value, AMANGO should search for potential buyers and settle on the most beneficial synergy. On the other hand, focus should be narrowed into current segments, especially in gaining more market share for its two largest segments (coal and iron ore) and strengthening its most promising segments (diamond, PGM, copper).

***Step 3 : Re-evaluate decisions every 3 years, in line with 3-year-viability statement evaluation***

Decisions should be evaluated timely, especially regarding streamlining its business units, to ensure AMANGO stays competitive in present trends and conditions.




# 2. Operational risk and industrial action in Australia

**Situation** AMANGO effected a controlled shut down after safety hazards resulted in the loss of 6 lives and 80 trapped in underground mines. This incident invited strikes from the workers. The management has to decide whether to continue operations with existing mine shaft or construct a new one.

**Evaluation of strategic options**

| Option | Financial Impact | Operational Impact | Risks |
|---|---|---|---|
| **Strategy 1:** Continue use the current mine shaft | No further cost incurred | Safety hazards and accidents may continue to happen | Business license revoked; bad publicity; Employees resist to resume operations |
| **Strategy 2:** Construct a new mine shaft nearby | Incur cost of $135 million in 2017, however NPV of the strategy is $48.73 million | Increase safety and efficiency | Faulty design and continued presence of safety hazards |

### Operational Safety & Health Management

Aside from training, company needs to assure that employee comply with the safety regulation to reduce the probability of risks occurring by having control measures such as operational controls and procedures and traffic management. Information system developments are required to enable faster online group-wide communication regarding hazard recognition. Furthermore, company must ensure emergency preparedness as to effective response toward incidents.

**Recommendation and implementation**

FIS Consulting recommends Strategy 2 - Construct a new mine shaft nearby. Although this strategy requires AMANGO to incur initial expenses of US$135 million, AMANGO can expect beneficial cash flow resulting in a Net Present Value of US$48.73 million. It is imperative for the company to restore trust from investors, redeem its reputation in the eyes of the public, settle civil unrest, and adhere to ethical standards to maintain good relationship with regulators.

***Step 1 : Conduct extensive research***

Recent experience with faulty design should be taken under scrutiny. AMANGO needs to conduct extensive research regarding potential contractors to prevent recurrence of incident.

***Step 2 : Communicate with involved parties***

Investors need to be informed about the added value from the new shaft to the company's performance and how it helps to revive AMANGO's stock performance; AMANGO has to reassure its workforce, regulators, and communities that safety and health of its employees remains a top priority, to prevent future strikes and production stoppage.

| Public Relations | Human Resource Management |
|---|---|
| **Investors :** Inform investors that the construction of the new shaft revives the AMANGO's public image, and therefore can boost trading performance<br>**Communities :** Inform the communities that AMANGO is stepping up its safety & healthy standards, to prevent strikes and production stoppage<br>**Regulators :** Inform regulators that AMANGO is improving its standards, to prevent getting into a legal predicament | **Training :** Employees need to be equipped with skills and knowledge regarding the importance of stringent health and safety regulations. Technical and safety training initiatives in order to improve efficiency and effectiveness of both individuals and teams.<br>**Labor relations:** Instead of cutting wages and basic conditions, AMANGO should participate in collective bargaining with EBA to settle upon wage increase agreements. |

***Step 3 : Address problem with current mine shaft, and resume production for the moment***

FIS Consulting suggest AMANGO to fully detect and address the problem of the current shaft, then continue production in the old shaft for the time being while waiting for the completion of the new shaft's construction

| Option | Considerations |
|---|---|
| **Option 1:**<br>Resume production with current shaft but with higher operational safety standard | - AMANGO must first fully detect and address the issue before continuing production<br>- Generate revenue to company and maintain market share<br>- Ensure job for workers |
| **Option 2:**<br>Stop production and lose market share | - No revenue to company<br>- Might result in employee strike due to loss of job<br>- Secure company's safety stance |
| **Option 3:**<br>Create partnership with local mining company to meet demand | - Generate revenue for company and maintain market share<br>- Might result in employee strike due to loss of job |

***Step 4 : Improve evaluation policies & engage in frequent maintenance routine***

AMANGO needs to enhance its evaluation policies to ensure no dysfunctional behavior is present - such as corners being cut to meet production target. The new shaft needs to undergo routine maintenance to ensure safety.

## 3. Strategic Disposal in Brazil

**Situation** AMANGO has received an offer of US$1,500 million from China Molybdenum Co. Ltd (CMOC) to buy and integrate as a going concern its Niobium and Phosphates segment, AMA-NP. AMANGO has 7 days to decide on the offer.

**Risks to be considered**

*Political risk* : The Brazilian government has just been reshuffled, and there is uncertainty regarding the potential stringent regulations. The new government may not be as welcoming as the previous one.

*Economic risk* : The market for commodities is still contracted, and distressed price levels may still continue.

*Legal risk* : AMANGO is vulnerable towards the potential conditions imposed by the government of the People's Republic of China if it goes through with the transaction.

**Evaluation of strategic options**

| Option | Financial Impact | Risks |
|---|---|---|
| **Strategy 1:** Forgo the offer from CMOC | Debt level remains high. Requires working capital to maintain current level of operations. | Stringent regulations may limit operational efficiency, segment may continue to underperform due to depressed commodity prices |
| **Strategy 2:** Accept the offer from CMOC | Settle intra-group debt of AMA-NP US$ 450.12 million to achieve KPI. Boost credit rating upwards. Avaliable cash to settle main company's long term debt | Miss out on opportunities of rising niobium demand. Puts Company under scrutiny from shareholders/ plants doubt. |

| Value of the Company (USD) | 1,080.93 |
|---|---|
| **Offer from CMOC** | **1,500.00** |
| Settle AMA-NP intra-group debt | 450.12 |
| **Excess Cash** | **1,049.88** |
| Value of AMA-NP | 1,080.93 |
| **Proceeds from sale of AMA-NP** | **(31.05)** |

*(Figures are expressed in USD millions)*

**Breakdown of calculation is provided in Appendix 3*

**Recommendations and implementation**

FIS recommends AMANGO to sell AMA-NP to CMOC based on financial impact and also corporate strategy of the company about divesting Niobium and Phosphates despite being offered US$ 31.05 million lower than AMA-NP's expected market value.

***Step 1 : Conduct due diligence***

Due to the customary conditional transaction with CMOC and the People's Republic of China regulators, due diligence must be done regarding the synergy to settle upon a beneficial transaction for both parties.

***Step 2 : Accept offer from CMOC***

AMANGO should go through with the transaction after sufficient due diligence.

***Step 3 : Communicate with all stakeholders***

It is necessary inform the public and all stakeholders regarding the benefits of the strategic option. AMANGO should emphasize on the fact that stringent regulations may limit operations and the firm is better off utilizing the funds obtained.

## 4. Balance sheet de-leverage or share buy-back

**Situation** AMANGO is considering to dispose part of its residential property portfolio rather than divest its iron ore and coal segments due to political pressure. With the proceeds of this sale, AMANGO has to decide whether to pay off a huge chunk of its debt or to boost up its share price with a repurchase program. Furthermore, Mining law and charter is being mooted that requires all mining company to surrender 10% of sales as royalty and be at least 26% black-owned, failure to meet the condition could result in mining permits being revoked.

| (in US$ Millions) | Land and Buildings | Fixtures, Fittings and Equipment | Assets Under Construction | Total |
|---|---|---|---|---|
| At Revaluation | 16,780.00 | 29,510.00 | 1,250.00 | 47,540.00 |
| Accumulated Depreciation | | (17,919.00) | | (17,919.00) |
| **Net Book Value** | **16,780.00** | **11,591.00** | **1,250.00** | **29,621.00** |

| | |
|---|---|
| Residential Property for Sale | 6,400.65 |

| | Assumptions | Nominal Return | Source |
|---|---|---|---|
| Return Stage 1 | First 10 year return | 14.00% | Case Study Pack |
| Return Stage 2 | Terminal Value | 1.93% | 5yr avg South Africa GDP growth rate |

| | |
|---|---|
| **WACC** | **6.76%** |
| Value of the Asset | 8,184.60 |

*Calculation Assumptions:* We believe a nominal return of 14% for a property asset seems unlikely in the long run. Therefore as a measure to forecast the return of the property asset in the long-term run (above 10 years in the foreseeable future), we use 5yr South Africa GDP growth rate.

**Recommendations and implementation**

FIS recommends to de-lever the balance sheet for the following reasons:

- De-levering the balance sheet reduces total Net Debt which is in line with AMANGO's KPI. *(Appendix 5)*
- It is expected to raise AMANGO's credit rating that will result in current credit spread reduction of 30 basis points.
- Reduce overall company's cost of fund or financial expense through debt cuts and declining cost of debt.

***Comply with the 26% black-owned policy***

AMANGO should comply in order to maintain good relations with the government and local workforce, because it showcases AMANGO's commitment in empowering the black community. However, AMANGO needs to inform the current stakeholders that this action is one of the means to have good governmental relations, which in turn supports operational activities.

***Negotiate with the South African government regarding the black economic empowerment program***

AMANGO needs to communicate with the government regarding its active participation in the empowerment program, in hopes to negotiate on the issue of returning all mining permits and 10% royalties, and potential share sales by the PIC.

***Design and implement community development programs***

In an attempt to offset the negative impact of laying off 100,000 employees, AMANGO needs to invest in developing the community, also by implementing more social activities.

## 5. Joint Venture in Canada

**Situation** After deciding to continue coal mining in Canada with its JV partners, Cephas, AMANGO and Cephas are about to commence their 1st coal mining project with a 'standalone long wall mining' method that is costly and require 2 years of construction. Management is faced with 3 construction design choices of different size and depth.

### Long wall mining construction

**Timing**

FIS has made several assumptions related to the calculations for expected values of each designs:

1. Supply of coal at the location equals demand of coal which is 7.5 million tonnes
2. 7.5 million tonnes of coal can be all sold in 2 years, by 2021

**Evaluation of design options**

| Coal demand | Small demand *5 million tons* | Medium demand *7.5 million tons* | Large demand *10 million tons* | Expected Demand | Fixed Cost | Expected Income |
|---|---|---|---|---|---|---|
| Design 1 | 85% | 10% | 5% | **131,230,000** | 75,000,000 | **56,230,000** |
| Design 2 | 25% | 50% | 25% | **178,950,000** | 87,500,000 | **91,450,000** |
| Design 3 | 20% | 50% | 30% | **184,915,000** | 100,000,000 | **84,915,000** |

| | WACC | NPV | Assumptions |
|---|---|---|---|
| Design 1 | | 32,009,676.37 | Construction of mine would take 2 years until 2019. |
| **Design 2** | **8.54%** | **58,422,285.97** | Depletion of the mine would take 2 years |
| Design 3 | | 50,786,362.16 | (production capacity of 3 - 5 million tons per year) |

*(Figures are expressed in USD millions)*

**Justification**

Although a small panel is a safer alternative because the roof is less likely to collapse, a shallow mining level increases the risk of subsidence. On the other hand, a large panel means a higher ability to recover coal, however it puts the workforce under riskier circumstances in case the roof collapses, and at the same time also increases the risk of subsidence. Hence, a medium size and depth is the safest option.

**Recommendations and implementation**

Firstly, FIS Consulting recommends the development and implementation of sustainability reporting. Secondly, even though calculations are based on current prices, FIS Consulting believes that with restricted supplies from big players like China due to stringent regulations, and the surging demand from Southeast Asia, along with other developing countries, AMANGO and Cephas would benefit from the construction of the longwall. Considering the risk, operational safety, and value of the chosen option, FIS consulting recommends management to choose Design 2: Medium size and depth.

- ***Design, develop and implement effective sustainability reporting***

  Sustainability Report

  FIS Consulting recommends AMANGO publish sustainability reports annually and include the targets for each section, such as the target for carbon dioxide emission, water savings, and energy savings. These targets are necessary in building a more sustainable business, increase efficiency and reduce environmental costs. AMANGO should also account for environmental costs as they can be quite hefty. It should note that in its non-financial data statement, in 2016, AMANGO's water usage has increased 13.26% from 2015.

  These environmental costs include:

1. *Prevention costs* : Costs incurred to prevent waste production, such as pollution prevention, global warming prevention (related to energy saving), the acquiring of ISO14001, the development of environmental management system (EMS)
2. *Environmental detection costs*: Costs incurred for auditing environmental activities, developing evaluation measures, measuring contamination levels.
3. *Environmental internal failure costs* : Costs incurred by operating pollution control equipment, obtaining license to produce contaminants, recycling waste
4. *Environmental external failure costs*: Costs incurred from restoring surrounding area, greening to make up for water usage as well as other corporate social investments, the cost of losing license if AMANGO does not comply with regulations, employee health expenses.

By keeping track of contaminant emissions, AMANGO can relate this information to its revenues, and help set a boundary to its production capacity to prevent detrimental effects on the environment. This accounting method can also assist internal decision making. FIS recommends the life cycle costing system, which is to take into account all costs from the commodity acquiring process to future costs related to environmental restoring.

- ***Joint venture with Cephas :***

***Step 1 : Reevaluate legal agreements of JV***

AMANGO and Cephas need to ensure that legal agreements are clear and the JV will be beneficial for both parties.

Joint Venture with Cephas

In order for the JV to benefit both parties, AMANGO and Cephas need to establish an agreement on each of the following issues:

- *Designate responsibilities:* A 50-50 joint venture is prone to the risk of encountering a deadlock. FIS Consulting recommends AMANGO and Cephas further split ownership to 51:49. This is due to 2 reasons: 1) AMANGO has more field experience; 2) AMANGO is already exposed to bad publicity and needs to redeem itself by ensuring quality decisions are being made on behalf of its venture.
- *Designate exit strategy clauses:* Develop a possible exit strategy that is not disadvantageous to any one party. FIS Consulting recommends both parties to agree upon a 'first right of refusal', in the case that coal prices show further decline and one party decides to exit without considering the other party.

***Step 2 : Conduct extensive research on location to minimize negative impact***

Research needs to be conducted to evaluate the conditions of potential locations, to maximize safety & health measures of workforce, minimize subsidence effects, and other negative environmental impacts. Construction design should also be processed carefully to prevent faulty designs.

***Step 3 : Proceed with construction of Design 2***

Quinta should proceed with construction.

***Step 4 : Ensure safety standards are being held during construction and operation***

Communicate with workers regarding the importance of safety standards.

***Step 5 : Design and implement corporate social responsibility activities***

Quinta should promote environmental and community recovery with corporate social responsibility activities.

## 6. Managing divisional performance group-wide

**Situation** AMANGO uncovers dysfunctional behaviors from employees to depict a pretty picture of the operational activities during the evaluation the current system of rewarding workforce.

**Evaluation of management's concerns**

| Situation | Incentive for Situation | Impact on Company | Risks |
|---|---|---|---|
| Divsions are cutting expenditure on training and postponing standard service schedules for safety critical equipment | Increase Underlying EBIT and ROCE (short-term performance indicators) to obtain higher bonus | Cost saving | Increase the presence of safety hazards, therefore putting workforce at risk. Mining license may be revoked due to lack of safety measures. |
| Production is ramped up to build closing stock towards year-end | Increase profitability of the company in order to get more bonus by producing more to decrease unit cost | Skews management's perception regarding efficiency and profitability; Leads to excess inventory and Company has to incur related costs | Decrease future profitability since it conceals excess capacity cost in the balance sheet in the short run |
| Some Divisions resort to using the refineries of outside competitors due to excessive internal charges | Increase profitability of the company in order to get more bonus by producing more to decrease unit cost | Increases cost-efficiency, but leaves equipment unused | Machinery turns obsolete in time |

## Recommendation and implementation

| Solution | Impact | Risks | Mitigation of Risk |
|---|---|---|---|
| ESOP to replace current employee incentive program | **Employee:** Shifts focus from short-term performance indicators, such as underlying EBIT and ROCE, to long-term company value<br>**Company:** Higher dedication of workforce as their incentive relies upon their performance that directly impacts the company's stock value. Aside from that, Company enjoys tax benefit as payments made to ESOP are tax-deductible | If the Company's share price does not perform well, employees' morale and retention may be affected, as they are exposed to the issue of declining investment value. | To minimze the risk of these employees losing their investments due to underperforming share price, Company may put a limit to the amount of shares the employees are allowed to own. |
| Change accounting method from absorption costing to variable costing for managerial accounting purposes only | **Company:** More accurate accounting method to depict cost & provide management with insights as to decision making but Company has to incur additional expenses for the maintenance of two accounting methods simultaneously | Increase the probability of human errors to occur | Timely evaluation |
| Shutdown of refinery division and outsource refining needs | **Employees:** Workforce reduction<br>**Company:** Narrowed divisions, thus reduces supervising cost and increases efficiency; Reduced fixed cost, thus minimizing the risk of negative profit margin during low demand periods; and higher operational flexibility. | Getting into an unfavorable relationship with vendor in obtaining suitable contract fee and therefore might negatively affect unit cost; Employees might response with a strike in display of resistance. | Enter into a binding contract; reallocate refinery division employees to other divisions |


| Solution | Impact | Risks | Mitigation of Risk |
|---|---|---|---|
| ESOP to replace current employee incentive program | **Employee:** Shifts focus from short-term performance indicators, such as underlying EBIT and ROCE, to long-term company value<br>**Company:** Higher dedication of workforce as their incentive relies upon their performance that directly impacts the company's stock value. Aside from that, Company enjoys tax benefit as payments made to ESOP are tax-deductible | If the Company's share price does not perform well, employees' morale and retention may be affected, as they are exposed to the issue of declining investment value. | To minimze the risk of these employees losing their investments due to underperforming share price, Company may put a limit to the amount of shares the employees are allowed to own. |
| Change accounting method from absorption costing to variable costing for managerial accounting purposes only | **Company:** More accurate accounting method to depict cost & provide management with insights as to decision making but Company has to incur additional expenses for the maintenance of two accounting methods simultaneously | Increase the probability of human errors to occur | Timely evaluation |
| Shutdown of refinery division and outsource refining needs | **Employees:** Workforce reduction<br>**Company:** Narrowed divisions, thus reduces supervising cost and increases efficiency; Reduced fixed cost, thus minimizing the risk of negative profit margin during low demand periods; and higher operational flexibility. | Getting into an unfavorable relationship with vendor in obtaining suitable contract fee and therefore might negatively affect unit cost; Employees might response with a strike in display of resistance. | Enter into a binding contract; reallocate refinery division employees to other divisions |

# Ethical, Socio-political, and Environmental Issues

### Increasing Operational Safety & Health Standard Procedure

| Factors | Analysis | Recommended Action |
|---|---|---|
| Operational Safety in Australia | Inadequate traffic management system, which cause the recent accident, may induce future casualty | ▪ Integrate safety and sustainable development into company's Operating Model to quicken hazard recognition and disaster management.<br>▪ Create Traffic Management Plan with procedures and guidelines. Ensure conformity with training and auditing for compliance. |
| Investor returns | Bad publicity inflict losses on share price | ▪ Publicly expose AMANGO's stance regarding the safety issue in response to the bad publicity.<br>▪ Provide updates about improvements or developments made to address safety issue. |

### New technology to minimize energy and water consumed

| Factors | Analysis | Recommended Action |
|---|---|---|
| Natural resources consumed | Increasing water consumed in the past 5 years | ▪ Water conservation by limiting the use of fresh water and start utilitizing recycled water.<br>▪ Adopt new technology that enables company to use renewable fuel/energy as their energy resources. |

### Balance Sheet De-leverage Issue

| Factors | Analysis | Recommended Action |
|---|---|---|
| South African Government's concern | Dismissal would result in the increase of unemployment level in South Africa | ▪ Explain to the government that company will give reallocation opportunity for current employees |
| Dismissals of group employee | Employee needs other sources of income | ▪ Offer relocation of job to other AMANGO's site |

# Appendix 1: Industry Outlook

**Coal**

Coal prices made an impressive rebound in 2016, as a consequence of shrinking supply size from significant producers such as China, Indonesia and India. Oil price resurgence also adds to the mix in driving coal prices up. However, there is little evidence that this is a sustainable recovery because of the preference for global de-carbonization. Prices are expected to be more muted in 2017 in response to a more stabilized supply.

*Coal Price Recovery Offers a Glimpse of Hope to the Global Coal Mining Industry: But the Effect is Unlikely to Last Long, Euro monitor, and January 2017*

**Nickel**

Low demand for nickel (primarily in China) has dragged the commodity price down, losing 40% of its value in 2015 and prices hit a 12-year low in early 2016. This lackluster of demand is primarily caused by slow infrastructure growth in China. However, in 2016, the Philippines, which exports around 25% of global mined nickel supply, suspended eight nickel mines and put another 14 on notice. The disruptions on one of the world's biggest nickel exporter could drive nickel prices up in the mere future.

**PGMs**

South Africa holds the world's largest PGM reserve. PGM price level has shown sluggish progress in the past few years and production remains constrained due to challenging labor relations and the growing input costs. The PGM market is expected to continue its growth due to the growing amount used in the auto catalyst industry.

*Johnson Matthey, PGM Market Report November 2016*

**Diamonds**

Diamond has always shown endurance as shown by its past performances. It had gone through a period of growth from 2012-2014, followed by a less attractive phase in 2015 due to lethargic demand levels, and sales had yet managed to rebound once again in 2016, although prices remained static. Nevertheless, there is a positive outlook surrounding this market which largely relies on demands from the US, and also the growing middle-class group in emerging countries such as China and India.

*Bain & Company, The Global Diamond Industry 2016: Enduring Allure of Timeless Gems*

**Copper**

Copper prices has had a horrid time in the past few years due to sluggish demand from the Chinese market. However copper prices has felt a moderate increase at the end of 2016 with its price rising from $4,853 in 31st October 2016 to $5,837 in 31st March 2017. Copper price trend is forecasted to continue to increase due to two underlying reasons; (1) two of the world's biggest mines in Chile and Indonesia has halted productions due to labor strikes and problems in renewing their mining permit. (2) Increasing infrastructure plans in China, U.S. and South East Asia to take place.

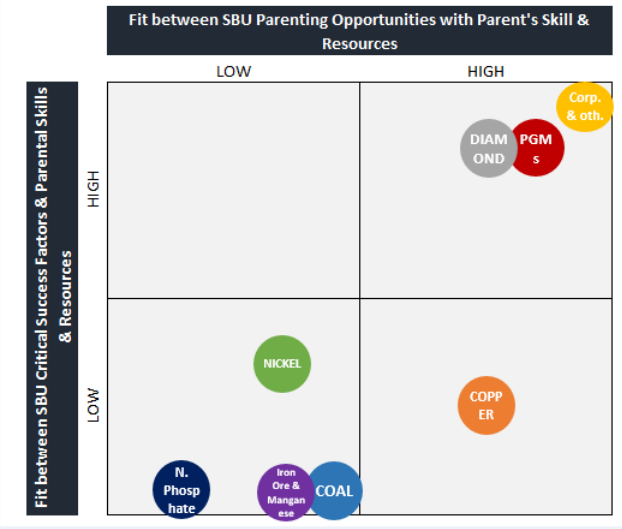
**Iron Ore**

Similar with Copper, iron ore's main demand comes from infrastructure needs. The huge infrastructure plans from U.S., China and numerous countries in South East Asia region will be a primary driver for iron ore demands in the foreseeable future.

## Appendix 2: Ashridge Matrix, BCG Matrix, and Financial Performance Analysis

| Recommended Action | Segments | Reasoning |
|---|---|---|
| Keep | Diamonds | **Financial reasoning:** AMANGO's second largest EBIT contributor; despite fluctuative demand in 2015 and 2016, industry is believed to be an enduring one, as past performance has proven<br>**Ashridge Matrix:** Fits well with AMANGO's resources and skill<br>**BCG Matrix:** It is the only star in the BCG Matrix- the diamond segment has the largest market growth rate and largest market share compared to the other segments |
| | PGMs | **Financial reasoning:** Although this segment has a low ROCE and EBIT Margin, the industry outlook remains positive due to the growing demand from the autocatalyst industry<br>**Ashridge Matrix:** Fits well with AMANGO's resources and skill<br>**BCG Matrix:** Despite the segment's low financial performance, PGMs have high market share |
| | Copper | **Financial reasoning:** In favorable market conditions, copper has a high ROCE and EBIT Margin; attractive industry outlook is correlated with expected high infrastructure expenditure.<br>**Ashridge Matrix:** Fits well with AMANGO's resources and skill<br>**BCG Matrix:** Despite its current position in the question mark quadrant, Copper has a decent market share with a relatively high market growth rate. |
| Wait | Coal | **Financial reasoning** : Third largest earnings contributor to AMANGO; industry outlook appears to be positive in light of demands by some countries.<br>**Socio-political reasoning:** PIC has been vocal about the consequences AMANGO will receive if it decides to deivest its largest segments, due to the negative effect the decision has on socio-economic development. Currently, there are around 24,600 employees in this segment, of which 58% of the workforce is located in South Africa<br>**Ashridge matrix** : Although this segment does not fit well with AMANGO's resources and skills, there is enough financial & socio-political reasoning to support the recommended action<br>**BCG matrix** : Although this segment is not a big player in its market and the industry growth is slowing, there is enough financial & socio-political reasoning to support the recommended action |
| | Iron Ore & Maganese | **Financial reasoning** : Highest EBIT margin and ROCE of all AMANGO's segments; Adequate earnings contribution<br>**Socio-political reasoning:** PIC has been vocal about the consequences AMANGO will receive if it decides to deivest its largest segments, due to the negative effect the decision has on socio-economic development. Currently, there are around 40,000 employees in this segment.<br>**Ashridge matrix** : Although this segment does not fit well with AMANGO's resources and skills, there is enough financial & socio-political reasoning to support the recommended action<br>**BCG matrix** : Although this segment is not a big player in its market and the industry growth is slowing, there is enough financial & socio-political reasoning to support the recommended action |
| Divest | Nickel | **Financial reasoning** : Earnings contribution is insignificant relative to other segments; fluctuative demand as seen in the previous two years' revenues<br>**Ashridge matrix** : Does not fit well with AMANGO's resources and skills |
| | Niobium and Phosphates | **Financial reasoning** : Earnings contribution is insignificant relative to other segments; AMANGO has received a favorable offer from CMOC to purchase this segment<br>**Ashridge matrix** : Does not fit well with AMANGO's resources and skills |

## Ashridge Matrix




## BCG Matrix


| | ROCE | Contribution to EBIT | EBIT Margin |
|---|---|---|---|
| Diamond | 10.08% | 25.72% | 15.69% |
| PGMs | 3.22% | 6.06% | 2.98% |
| Copper | 10.25% | 16.57% | 15.58% |
| Coal | 9.71% | 14.44% | 8.62% |
| Iron Ore & Manganese | 14.98% | 33.68% | 28.80% |
| Nickel | -0.02% | -0.28% | -0.14% |
| Niobium & Phosphates | 14.05% | 3.91% | 20.25% |

| Legend |
|---|
| Keep Business Segment |
| Hold Business Segment |
| Dispose Business Segment |

## Appendix 3: Strategic Disposal in Brazil – Company Valuation

| CMOC | |
|---|---|
| **CAPM** | |
| Risk-free rate | 3% |
| Beta of AMANGO | 1.824 |
| Market Risk Premium | 5% |
| Cost of equity | 12.12% |

| **WACC** | |
|---|---|
| Weight of debt | 0.32 |
| Weight of equity | 0.68 |
| Cost of debt (aftertax) | 4.34% |
| Cost of equity | 12.12% |
| **Cost of capital** | **9.62%** |

| AMA NP | |
|---|---|
| **CAPM** | |
| Risk-free rate | 3% |
| Beta of AMANGO | 1.824 |
| Market Risk Premium | 5% |
| Cost of equity | 12.12% |

| **WACC** | |
|---|---|
| Weight of debt | - |
| Weight of equity | 1.00 |
| Cost of debt (aftertax) | 4.34% |
| Cost of equity | 12.12% |
| **Cost of capital** | **12.12%** |

| **Free Cash Flow** | |
|---|---|
| Earnings | 106.28 |
| Depre | 3.95 |
| Change in NWC | -103.23 |
| Change in FA | 0 |
| FCFE | 7 |

| Combined Firm Valuations | | | |
|---|---|---|---|
| | Acquiring firm | Target firm | Value of firm with synergy |
| Cost of equity | 12.12% | 12.12% | |
| Cost of debt | 4.34% | 4.34% | |
| Weight of equity | 0.68 | 1.00 | |
| Weight of debt | 0.32 | - | |
| **Cost of capital** | **9.62%** | **12.12%** | **10.87%** |
| Expected Growth Rate | | 6% | 6% |
| FCFE | | 7 | 28.16 |
| **Value of the firm** | | **121.24** | **292.64** |
| **Value of the firm (USD)** | | **37.58** | **90.72** |
| **Book Value** | | | **3,073.00** |
| **Book Value (USD)** | | | **952.63** |

| **Value of the Company** | **1,080.93** |
|---|---|
| Offer from CMOC | 1,500.00 |
| - Settle AMA-NP intra-group debt | 450.12 |
| **= Excess Cash** | **1,049.88** |
| **Value of the Company** | **1,080.93** |
| Profit from selling AMA-NP | 31.05 |

*(Figures are expressed in USD millions)*

## Appendix 4: Balance sheet de-leverage – Asset Valuation

| US$ Millions | Land and Buildings | Fixtures, Fittings and Equipment | Assets Under Construction | Total |
|---|---|---|---|---|
| At Revaluation | 16,780.00 | 29,510.00 | 1,250.00 | 47,540.00 |
| Accumulated Depreciation | | (17,919.00) | | (17,919.00) |
| Net Book Value | 16,780.00 | 11,591.00 | 1,250.00 | 29,621.00 |
| **Residential Property for Sale** | **6,400.65** | | | |

| | Description | Nominal Return | Source |
|---|---|---|---|
| Return Stage 1 | First 10 year return | 14.00% | Given |
| Return Stage 2 | Terminal Value | 1.93% | 5yr Average South Africa GDP Growth Rate |

| **CAPM** | |
|---|---|
| Risk-free rate | 3% |
| Beta of BEEP | 1.25 |
| Market Risk Premium | 5% |
| **Cost of equity** | **9.25%** |

| **WACC** | |
|---|---|
| Weight of Debt | 0.50 |
| Weight of equity | 0.50 |
| Cost of Debt | 4.28% |
| Cost of Equity | 9.25% |
| Tax | 31% |
| **WACC** | **6.76%** |

| Year | *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* | *9* | *10* | *Terminal Value* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Income | 896.09 | 896.09 | 896.09 | 896.09 | 896.09 | 896.09 | 896.09 | 896.09 | 896.09 | 896.09 | 123.21 |
| Discount Rate | 1.07 | 1.14 | 1.22 | 1.30 | 1.39 | 1.48 | 1.58 | 1.69 | 1.80 | 1.92 | |
| Income | 839.32 | 786.14 | 736.34 | 689.69 | 645.99 | 605.07 | 566.73 | 530.83 | 497.20 | 465.70 | 1821.59 |
| **Value of the Asset** | **8,184.60** | | | | | | | | | | |

# Appendix 5: Statement of Financial Position Forecast

| Statement of Financial Positions *(Figures are expressed in USD millions)* | 2015 | 2016 | Operational risk in Australia | Strategic disposal in Brazil | Balance Sheet deleverage | | Strategic JV in Canada | Repayment of short term liabilities |
|---|---|---|---|---|---|---|---|---|
| | | | | | After Sale of Assets | After de-leverage | | |
| **ASSETS** | | | | | | | | |
| **Current assets** | | | | | | | | |
| Cash and cash equivalents | 6,748 | 6,895 | 6,760 | 7,810 | 15,994 | 7,835 | 7,792 | 6,292 |
| Derivative financial assets | 147 | 689 | 689 | 689 | 689 | 689 | 689 | 689 |
| Trade and other receivables | 2,568 | 1,983 | 1,983 | 1983 | 1,983 | 1,983 | 1,983 | 1,983 |
| Inventories | 4,720 | 4,051 | 4,051 | 4051 | 4,051 | 4,051 | 4,051 | 4,051 |
| Current tax assets | 125 | 152 | 152 | 152 | 152 | 152 | 152 | 152 |
| **Total current assets** | **14,308** | **13,770** | **13,635** | **14,685** | **22,869** | **14,710** | **14,667** | **13,167** |
| **Non-current assets** | | | | | | | | |
| Financial assets investments | 1,266 | 846 | 846 | 846 | 846 | 846 | 846 | 846 |
| Trade and other receivables | 745 | 539 | 539 | 539 | 539 | 539 | 539 | 539 |
| Investments in JV | 4,376 | 1,817 | 1,817 | 1,817 | 1,817 | 1,817 | 1,817 | 1,817 |
| Property, plant and equipment | 38,475 | 29,621 | 29,756 | 29,756 | 23,355 | 23,355 | 23,399 | 23,399 |
| Intangible assets | 3,912 | 3,394 | 3,394 | 3,394 | 3,394 | 3,394 | 3,394 | 3,394 |
| Other current assets | 2,928 | 1,999 | 1,999 | 1,999 | 1,999 | 1,999 | 1,999 | 1,999 |
| **Total non-current assets** | **51,702** | **38,216** | **38,351** | **38,351** | **31,950** | **31,950** | **31,994** | **31,994** |
| Assets classified as held for sale | 0 | 27 | 27 | 27 | 27 | 27 | 27 | 27 |
| **TOTAL ASSETS** | **66,010** | **52,013** | **52,013** | **53,063** | **54,846** | **46,687** | **46,687** | **45,187** |
| **LIABILITIES** | | | | | | | | |
| **Current liabilities** | | | | | | | | |
| Trade and other payables | 3,515 | 2,753 | 2,753 | 2,753 | 2,753 | 2,753 | 2,753 | 2,753 |
| Short term borrowings | 1,618 | 1,649 | 1,649 | 1,649 | 1,649 | 1,649 | 1,649 | 149 |
| Provisions for liabilities and charges | 680 | 620 | 620 | 620 | 620 | 620 | 620 | 620 |
| Current tax liabilities | 375 | 340 | 340 | 340 | 340 | 340 | 340 | 340 |
| Derivative financial liabilities | 539 | 477 | 477 | 477 | 477 | 477 | 477 | 477 |
| **Total non-current assets** | **6,727** | **5,839** | **5,839** | **5,839** | **5,839** | **5,839** | **5,839** | **4,339** |
| **Non-current liabilities** | | | | | | | | |
| Trade and other payables | 25 | 26 | 26 | 26 | 26 | 26 | 26 | 26 |
| Medium and long term borrowings | 16,917 | 16,318 | 16,318 | 16,318 | 16,318 | 8,159 | 8,159 | 8,159 |
| Retirement benefit obligations | 1,073 | 667 | 667 | 667 | 667 | 667 | 667 | 667 |
| Other non-current financial liabilities | 9091 | 7804 | 7804 | 7804 | 7804 | 7804 | 7804 | 7804 |
| **Total non-current liabilities** | **27,106** | **24,815** | **24,815** | **24,815** | **24,815** | **16,656** | **16,656** | **16,656** |
| Liabilities associated with assets classifies as held for sale | 0 | 17 | 17 | 17 | 17 | 17 | 17 | 17 |
| **Total liabilities** | **33,833** | **30,671** | **30,671** | **30,671** | **30,671** | **22,512** | **22,512** | **21,012** |
| **EQUITY** | | | | | | | | |
| Share Ordinary capital | 772 | 772 | 772 | 772 | 772 | 772 | 772 | 772 |
| Share premium account | 4,358 | 4,358 | 4,358 | 4,358 | 4,358 | 4,358 | 4,358 | 4,358 |
| Own shares | -6,359 | -6,051 | -6,051 | -6,051 | -6,051 | -6,051 | -6,051 | -6,051 |
| Other reserves | -7,205 | -10,811 | -10,811 | -10,811 | -10,811 | -10,811 | -10,811 | -10,811 |
| Retained Earnings | 34,851 | 28,301 | 28,301 | 29,351 | 31,134 | 31,134 | 31,134 | 31,134 |
| **Equity attributable to the shareholders** | **26,417** | **16,569** | **16,569** | **17,619** | **19,402** | **19,402** | **19,402** | **19,402** |
| Non-controlling interests | 5,760 | 4,773 | 4,773 | 4,773 | 4,773 | 4,773 | 4,773 | 4,773 |
| **Total equity** | **32,177** | **21,342** | **21,342** | **22,392** | **24,175** | **24,175** | **24,175** | **24,175** |
| **Total LIABILITIES & EQUITY** | **66,010** | **52,013** | **52,013** | **53,063** | **54,846** | **46,687** | **46,687** | **45,187** |

[This page is intentionally left blank]