

INVESTMENT CASE

The economic growth trends of the past few years have shown a clear shift away from the west to the fast-growing Asian economies of India and China. The more recent slowdown in growth in the eastern economies has resulted in a renewed global focus on Africa which is considered to be the last frontier in terms of its market and growth potential.

According to the UN Economic Commission for Africa, the continent has achieved an average growth of 5% per annum over the past decade, with some countries growing by more than 7% per annum. Underpinning this growth were relatively high commodity prices, higher domestic demand due to increased infrastructure investment and improved economic management. Africa is home to a third of the planet's mineral reserves, a tenth of the oil reserves and produces two-thirds of its diamonds. African economies are also heavily dependent on agriculture with the industry employing 65% of Africa's labour force and accounting for 32% of the continent's overall gross domestic product.

There is little doubt that as millions of people cross the poverty line in the next few decades, there will be tremendous opportunity in the areas of energy, food and infrastructure. Coincidentally, these are three industries in which Omnia excels. Not only is Omnia a leading provider of high-value and specialised solutions to businesses that mine metal and mineral resources, grow agricultural products and operate in the industrial sector, it is also at home in Africa.

Omnia has a physical presence in 16 African countries, including South Africa, and is involved in trade with several other African and international countries. Omnia's Mining division has the most extensive African presence in the Group and is particularly well represented in southern, central and West Africa. The Agriculture and Chemicals divisions have a strong presence in southern Africa. Beyond its continental reach, Omnia's products and services directly address pressing global priorities: food security, water preservation and smart mining.

FOOD SECURITY

Having enough to eat is a basic human need, one that drives individual and market behaviour in predictable ways. History suggests that government policies which ensure food security can speed up economic growth in countries where a substantial portion of the population lives below the breadline.

Africa's population is skyrocketing. For the period from 2000 to 2050, eight of the ten countries with the highest expected average annual population growth rate in the world are African. Until 2055, 18 of the 20 countries with the highest expected total fertility rate are located in sub-Saharan Africa. This supports UNICEF's prediction that Africa's population will increase by 1.8 billion newborns over the next 35 years, and that the total African population will nearly quadruple to approximately 4.2 billion by the end of the century. Put another way, one in three people will live in Africa by the end of this century.

The pressure on resources is immense. Ensuring sufficient food supplies necessitates the adoption of modern agriculture, which promotes the use of chemical fertilizers, irrigation systems, farm machinery and large-scale monoculture farms for increased efficiency and yields. Modern agriculture, in turn, is faced with its own challenges, including a heavy dependence on water, fossil fuels and nutrients.

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The science of **GROWTH**

Fertilizers replace the chemical compounds/ constituents that are taken from the soil by growing plants. They are designed to ensure a high soil fertility to enable maximum crop yields utilising the least arable land. Fertilizers can also be tailored to suit the type of crop that is being grown, but primarily contain nitrogen, phosphorus and potassium compounds.

The nutrients in fertilizers are vital for plant growth. Plants use nitrogen in the synthesis of proteins, nucleic acids and hormones. When plants are nitrogen deficient, they are marked by reduced growth and yellowing leaves. Plants also need phosphorus, a component of nucleic acids, phospholipids and several proteins. It is also necessary to provide the energy to drive metabolic chemical reactions. Without enough phosphorus, plant growth is reduced. Potassium is another major substance that plants get from the soil. It is used in protein synthesis and other key plant processes. Yellowing, spots of dead tissue and weak stems and roots are all indicative of plants that lack potassium.

Calcium, magnesium and sulphur, commonly grouped as the secondary nutrients, are only included in fertilizers in small amounts since most soils naturally contain enough of these components. Micronutrients such as iron, copper, manganese, zinc, molybdenum and boron, are also present in small amounts. These compounds are no less important to growth and without them plants will not grow or can become stunted.

Source:  <http://www.madehow.com/Volume-3/Fertilizer.html#ixzz3a0IGqG00>

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OMNIA'S NITRIC ACID 2 COMPLEX (SASOLBURG)

In 2012, in response to the market shortage of nitric acid and ammonium nitrate, Omnia commissioned the construction of a second nitric acid complex in Sasolburg. The nitric acid 2 complex produces the key feedstock materials for the production of mining explosives and fertilizers.

The R1.4 billion plant and related infrastructure has not only resolved the decade-long shortage of nitric acid and related products in the South African market, it has put Omnia in a leading position in the fertilizer and mining explosives industry in southern Africa. Besides significantly improving security of supply to the agricultural and mining market, the investment has reduced Omnia's input costs and allowed the Group to broaden its product range and expand further into African markets.

A major challenge with starting such capital intensive, high-volume plants is the ability to initially operate the plant at an acceptable capacity and to then ramp up to nameplate capacity as fast as possible. The nitric acid 2 complex operated at 81% of its design capacity during the current financial year, improving from 75% in the prior year. It was also proven that the plant can safely and consistently operate at 15% above its nameplate design capacity. This adds additional flexibility during the peak fertilizer season and ultimately to increase our total throughput volumes with no major additional capital expenditure.

At the heart of our product and service offerings lies the chemical compound granulation plants. Due to the additional upstream nitric acid and ammonium nitrate production capacity, these downstream plants are now capable of producing at their design capacities and have allowed the Agriculture division to deliver excellent agronomic value to the current and expanding customer base. The impact of the new nitric acid complex is most evident in the reduced requirement for imported fertilizer. This is due to the improved availability of raw material for the downstream granulation plants. The imported fertilizer component has reduced by 60% year-on-year, from 105 000 tons in the previous year to 42 000 tons in the current year.

The expansion of the current nitrophos production facility is currently under consideration with the potential to significantly reduce the raw material cost of granulation. It also has the added benefit of reducing the dependency on high-value raw materials like phosphoric acid.

We currently generate almost half of the electrical energy we require at Sasolburg by using excess steam from the exothermic reaction of the new nitric acid complex, combined with an electrical generation unit. Through the variety of plants and processes, our engineers continue to identify opportunities to reduce, re-use or generate additional energy in the manufacturing process in order to reduce our dependence on the supply of electricity from the state utility company, Eskom. In turn, this improves our ability to run all 12 plants at Sasolburg on a continuous basis and reduce our total cost of electricity consumed. The annual cost of energy per kilowatt hour supplied by Eskom is increasing at double digit rates – far in excess of the inflation rate – and the need to mitigate this input cost remains a key priority for management. The continuous operation of these cogeneration plants improves efficiencies and reduces the unit cost of production.

We are in the process of experimenting with solar panels and heat pumps. Solar panels provide a source of energy to various applications that are less energy intensive. Heat pumps are seen to be an area of significant potential in reducing the energy requirements on site. However, this remains to be proven on an industrial scale. We implemented a programme to replace old motors with high-efficiency motors and we have also installed several variable speed drives on big motors, which reduces peak energy requirements during the start-up phase. Conventional lighting units are steadily being replaced with low-energy and LED fittings. An energy efficiency survey conducted on the first nitric acid plant has also resulted in achieving savings on steam consumption. This together with

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the increased capacity of the nitric acid 2 complex, has resulted in a 10.7% reduction in purchased steam consumption by the Sasolburg factory.

We also removed up to 98% of the nitrous oxide (N₂O) gases generated by our production process and, in so doing, earn carbon credits which we can sell or potentially offset against the new carbon tax to be introduced in South Africa. The investment in technology allows Omnia to remain well within the stringent requirements of the new limits imposed during 2015 as well as the limits to be imposed in 2020 under the new legislation.

The use of water continues to be a key focus area for the Sasolburg site. Similar to the consumption of electricity, the use and re-use of water remains a top priority for management. The re-use of captured rain water is a key focus area, with significant improvements having been made in the past year after modifications to the granulation plants. This has allowed a significant quantity of captured rainwater to be re-used in the granulation process. As a result, this has reduced the amount of water obtained from the municipal system for granulation production by 93% or approximately 16 000 cubic meters per annum. Further projects currently underway in other areas of the factory, aim to reduce the water consumption from municipal sources by a similar amount in the following year.

SPECIALISED AGRICULTURAL SERVICES (SAS)

Our technology is a competitive advantage, as is our intellectual capital. With SAS, we take our technology onto the farm. As a key component of our agricultural business, SAS has become intricately involved in the business of farming. This is achieved by working with farmers to mitigate risks and promote sustainable farming practices, such as efficient planting practices, the use of nutrients, soil conditioning and irrigation practices. SAS augments our fertilizer offering – it puts a face on the product and skills in the hands of the farmer. Together with our production facilities, Omnia is strategically positioned as a leading supplier of fertilizer and agronomic expertise to create value for our customers.

Backed by a team of more than one hundred agronomists in South Africa, the SAS business unit partners with local government and farmers to create long-term mutual benefits to farming operations. Among the technologies deployed are extensive soil sampling (with the analysis conducted by our in-house laboratory at Sasolburg), yield mapping and zone management systems, which graphically demonstrate historical yields, identify non-productive zones for best use of land and the most efficient use of water and fertilizer. This in turn allows us to assist our customers to plan their farming activities on a more scientific basis, improve yields and minimize the impact on the environment. The correct planting programme, application of fertilizers and watering schedules, all contribute to a successful crop under assumed conditions, thereby improving the financial returns for farmers.

Our holistic and specialist offerings intensify agricultural yields in an environmentally-sound manner which helps reduce rural poverty and puts more food on tables. Africa, with its vast tracts of underutilised yet fertile land, could easily feed its own populations and still be a major food exporter to the rest of the world.

The year finished on a high note with the SAS team winning first prize in the internal business project initiative that was carried out in conjunction with the Gordon Institute of Business Science (GIBS) at the University of Pretoria, for their project on the future role of SAS in farming. In addition, our employee, Dr Louis Ehlers, was awarded the President's Prize for the best verbal paper presented at the Combined Agricultural Societies Congress in George in January 2015. The paper was on his PhD work relating to water use efficiency.

SMART MINING – TURNING TOXIC WASTE INTO VALUABLE PRODUCTS

Africa is home to metals and minerals that are in demand across the globe. Unlocking Africa's mineral wealth is vital to the continued prosperity of developed countries and emerging economic giants such as China, India, Brazil and Malaysia.

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Global demand for energy boosts demand for coal and uranium, while South Africa's coal-fired power stations – both existing and proposed – will require increased quantities of thermal coal. Iron ore, copper, platinum and "rare earth" minerals are also in demand, although demand has subsided in the past year with the global economy struggling to recover from the current economic downturn.

Declining commodity prices have, however, forced mineral and metal producers to look at more efficient methods of extraction. Omnia is recognised for its expertise in developing quality and cost-effective solutions that enhance safety and productivity in recovering and processing essential mining commodities. These technologies are backed by advanced services, knowledge and products offered by BME. With the mining industry under pressure to produce profits in a high-cost, low-price environment, the need for BME's modern technology in blasting and explosives has become imperative for increased mine profitability and yield.

Effective mining is also green mining. It is widely publicised that one litre of used oil can contaminate a million litres of water. Around 270 million litres of lubricants are sold annually in South Africa and of this, half is lost through use. That leaves 135 million litres of used oil generated every year of which some 80 million litres is accounted for through the tracking provided by hazardous-waste regulations. This implies that approximately 55 million litres is being disposed of irresponsibly.

BME is a leader in used oil technology and was the first company in South Africa to successfully and consistently apply used oil in the fuel phase of our emulsion explosives, starting more than three decades ago. BME remains at the forefront in emulsion technology with stable formulations that allow 80% of the fuel phase in our emulsion to comprise of used oil. This stability has multiple benefits beyond the application of used oil. Our emulsions can either be transported thousands of kilometres by road or seafreight, as far as Zambia, St Helena or Eritrea, without deterioration. On-site storage for long periods is also



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possible, allowing for assured supply in remote areas and consistent quality. This stability also ensures consistently reliable and well-fragmented blasts.

To secure the high volume of used oil required for our operations, BME has developed its own used-oil collection network and processing facility in South Africa. The facility can safely process up to 50 000 litres of potentially environment-damaging used oil per day, and is situated adjacent to BME's bulk emulsion plant in Dryden where the oil is processed for use in BME emulsions.

The success of the used oil process is, in part, due to the thorough procedures used at our collection points to ensure the 'purity' of the used oil product. The system begins with an audit of the servicing facilities at the operations we collect from, ranging from the brand of new oil that is used to the analysis of the compounds in the used oil. Full checks are also performed on the on-site storage facilities for used oil. The storage system is a sealed system starting from the pumping of used oil from engine sumps to the final stage into storage. Checks are performed for spillages and leaks. A sample of the used oil is then sent to our R&D laboratories for testing. If the results comply with the strict set of requirements and the used oil is 'clean', the oil will be collected.

Quarantine tanks are used at our facilities at Losberg and Dryden to allow for further screening of the collected oil prior to processing. In the company's process, 90% of oil collected is useable and the remainder is disposed of as per the requirements and regulations of the National Oil Recycling Association of South Africa (NORA-SA). Water and volatiles are removed during the processing and the final emulsion product in which the used oil is applied is a black, Vaseline-like emulsion, which is used as the primary component in our heavy explosives fuel (HEF) products.

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