

SCIENTEC NEWSLETTER

May – June 2015

First and foremost, we would like to apologise for the inconvenience caused by our temporary work closure due to student protest. We are now back in business and all our classes have resumed.

IN THIS ISSUE

- Free short skills programs
- African chemical Industry
- Oil-free compressors ideal for chemicals, Petrochemicals sectors
- Hazardous Waste
- Arctic Oil Drilling

We'll show you a number of ways to benefit from the smart deals on offer that won't affect your training budget.

I hope you enjoy your read. And please feel free to give us some feedback

**Go well,
Sana Hanif**

SCIENTEC IS OFFERING

ACCREDITED SHORT SKILLS PROGRAMS

FUNDED BY THE CHIETA

QUALITY MODULE - Three Unit Standards

- 1) APPLY SAMPLING THEORY
- 2) MAINTAINING QUALITY OF PRODUCTS
- 3) STANDARDS OPERATING PROCEDURES

Batch 1: 6 July 2015 to 10 July 2015 – 8 am to 4 pm

Batch 2: 13th July 2015 to 17th July 2015 – 8 am to 4 pm

SAFETY MODULE - Four Unit Standards

- 1) UNDERSTANDING OF WORK PERMITS
- 2) RESPONDING TO EMERGENCIES
- 3) APPLY ENVIRONMENTAL PROTECTION PROCEDURES
- 4) RECEIVE, HANDLE AND STORE HAZARDOUS CHEMICALS

Batch 1: 20 July 2015 to 24 July 2015 – 8 am to 4 pm

Batch 2: 27 July 2015 to 31 July 2015 – 8 am to 4 pm

Batch 3: 3 August 2015 to 7 Aug 2015 – 8 am to 4 pm

- *18,1 EMPLOYED PEOPLE ONLY*

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AFRICAN CHEMICAL INDUSTRY: A HIDDEN OPPORTUNITY?

The economic potential for the African chemical industry is clear enough, with low costs of labour and materials, a relatively young and rapidly growing population, an expanding middle class and a rising demand for products. In the same light, Africa shares problems of many emerging markets, such as social volatility, unreliable electric power and a weak infrastructure hampering the movement of feedstock and products. Investors who believe in taking long view are realistic about the challenges, but they also see enormous opportunities in a continent with vast natural resources and one of the fastest growing economies in the world.

Major Economic Opportunities

For the chemical industry and its investors, opportunities in Africa center around three factors:

1. High growth,
2. Major oil and gas reserves and
3. Demand in certain market sectors such as agriculture, consumer products, infrastructure development and construction.

Growth

The African economy was expected to grow over 5 percent in 2014, driven by the world's fastest population growth, increased urbanization and a rapidly expanding middle class. Approximately 50 percent of Africans are expected to be living in cities by 2030. The rapidly urbanizing populace is an indication of opportunities for investors seeking to invest in Africa. Growth at the lower end of the middle-class pyramid also presents significant investment opportunities.

Oil Reserves

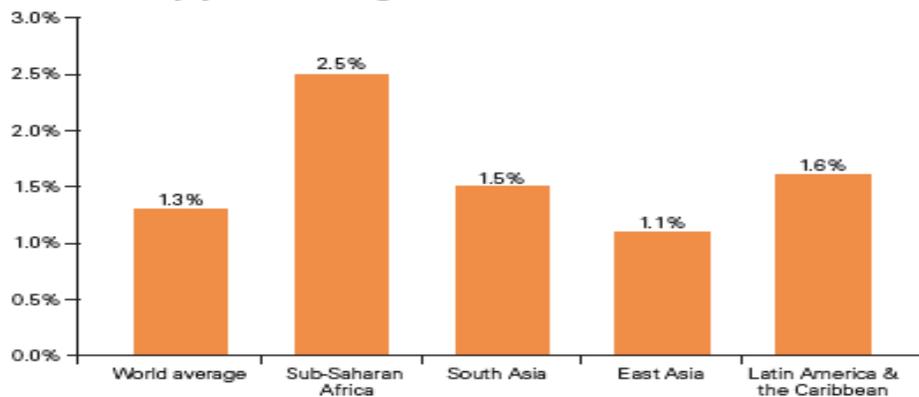
Along with a wealth of gold, copper, diamonds, chromium and platinum, Africa contains 10 percent of the world's oil reserves. Proven reserves for Africa have grown by nearly 120 percent in the past 30 years and this growth is expected to continue. African countries now make up 11 out of the top 50 countries in terms of proven oil reserves. Nigeria and Angola are among the top 20 oil producers in the world.

Demand In Chemical Subsectors

Despite some of these impressive figures, the industrial base in much of Africa remains undeveloped and economic growth is coming from a very low base. As a result, opportunities in the chemical sector are likely to be focused within a small number of subsectors.

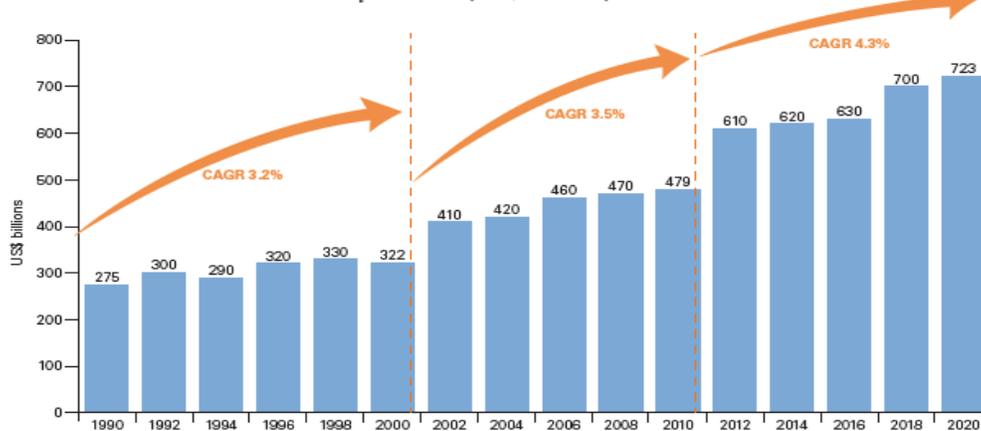
Demand for chemicals in the agriculture subsector will continue to grow based on several factors. Africa has 25 percent of the world's arable land and 60 percent of the world's uncultivated arable land. Africa's current low crop yields per hectare represent significant growth opportunities and even with existing cultivated land, a doubling of cereal yields would turn Africa into a major food surplus region. In addition, the agribusiness value chain including storage, logistics, packaging and processing will add more opportunities for investors.

Annual crop production growth (2015–30)



Source: Economist Intelligence Unit, 2012

Sub-Saharan Africa consumer expenditure (US\$ billions)



Source: Euromonitor 2011

Current developments

In 2012, there was over US\$50 billion of foreign direct investment (FDI) in Africa. While energy and natural resource investment was the main area of focus, investment is increasingly being spread across a broader number of sectors than at any time in the past. For the African chemical industry in particular, however, investment remains small scale and generally focused on a small number of segments in a small number of countries. Overall, South Africa remains the most developed economy and, accordingly, has the most developed chemical industry.

South Africa's chemical industry

South Africa has long been the leader in chemical production for the continent. The chemical industry accounts for about 25 percent of the nation's manufacturing sales, with synthetic coal and natural gas-based liquid fuels and petrochemicals dominating the sector. South African chemical producers are currently facing poor domestic demand and a volatile exchange rate that hampers exports. The country's plastic and basic chemicals output declined throughout 2013. Chronic problems include ongoing uncertainty about the outcome of wage negotiations, potential electricity supply shortages and slower growth in consumer spending that is undermining confidence within the petrochemicals sector. Nevertheless, domestic producers have benefitted from both a weak rand, which has sustained competitiveness, and relatively cheaper costs when factoring in transportation of imports, which has helped maintain current production levels.

Source: Engineering News

OIL-FREE COMPRESSORS IDEAL FOR CHEMICAL & PETROCHEMICAL SECTORS

South Africa's chemicals and petrochemicals industries contribute substantially to the country's economy, hence the importance of petrochemicals companies maintaining proactive maintenance and good-quality equipment to ensure sustainability and productivity, says compressor and generator rental company Rand-Air.

According to the sales manager, Rand-Air, Kim Coetzee, outsourcing equipment from a company with a thorough understanding of the distinct needs of the petrochemicals and refinery industries is key to ensuring that a refinery operates successfully.

"Appointing an esteemed company with a good reputation to supply rental equipment at petrochemical sites is, therefore, strongly recommended."

She adds that outsourcing rental equipment enables a petrochemicals producer to focus on its core business while machine maintenance is the concern of the outsourced company.

Coetzee explains that, in the petrochemicals and refinery industries – where compressed air is critical – hiring an oil-free compressor ensures clean, reliable and cost-effective air supply at all times.

Meanwhile, Rand-Air supplied the oil-free compressors during several major petrochemicals refinery shutdowns in 2014.

"Formulating effective solutions determines the success of a project. "It is, therefore, important to create innovative solutions. Petrochemicals industries depend on the expert advice offered to them by their service provider," notes Coetzee.

She adds that minimising downtime and maximising production are crucial for the refinery industry. "Using an oil-free compressor assists in achieving these goals by ensuring that there is no risk of contamination, fewer pressure drops because of build-up and guaranteed air supply.

Refineries should not be losing out on production time because their equipment performs poorly," she concludes.

Source: Engineering News



HAZARDOUS WASTE

Waste is defined in the Environment Conservation Act No. 73 of 1989 as all undesirable or superfluous by-products, emissions, residues or remainders of any process or activity, whether gaseous, liquid or solid, or a combination of these. Waste can be divided into two categories, general waste and hazardous waste.

There has always been an issue with hazardous waste in terms of disposal for many industrial companies. Many industrial companies currently manage their hazardous waste by dumping in general waste dumps or even in open ground. This practice is an environmental issue globally as well as in South Africa. Legislation introduced in 2009, is aimed at stopping the incorrect and illegal hazardous waste disposal methods that are currently being used, as well as to build up a database of which waste streams come from where and how big they are. Regulations and legislature have been adopted and employed to manage industrial waste. For example, the National Environmental Management Waste Act, 2008 (Act No. 59, 2008) has legislated that all industrial companies must use certified waste disposal companies to dispose of their hazardous waste. Certificates and audits proving how the hazardous waste was disposed is a requirement to ensure that you do not fall foul of the act. If you do not comply with the new Act you could face imprisonment and/or fines of up to R10 million!

ARCTIC OIL DRILLING

In recent developments, Royal Dutch Shell is planning to park two massive Arctic oil drilling rigs in Seattle's waterfront before they head north to Alaska — but the petrochemical giant will first have to get around protesters in kayaks and others who want to thwart the new frontier in oil exploration and spark a national debate about fossil fuels and climate change.

In brief, the Arctic offshore reserves are estimated by the U.S. Geological Survey to have 26 billion barrels of recoverable oil and 130 million cubic feet of natural gas. This amount according to Shell officials is said to increase domestic supply by over 1 million new barrels of oil per day. The reason for the opposition from conservation groups is that there is major concern about global warming and the impending impact from the additional fossil fuel development Shell is about to embark on. They worry that industrial development and a catastrophic spill would ruin a fragile region far from emergency responders.

Shell received a positive feedback by state officials as they have welcomed the proposed exploratory drilling. Alaska hopes the federal government will share revenue and that Shell and other companies will transport crude through a pipeline system connected to the trans-Alaska pipeline. The company cleared a major hurdle recently when the U.S. Bureau of Ocean Energy Management approved the company's multiyear drilling plan. However, it still needs several approvals from state and federal agencies before it can drill. Shell also is awaiting a drilling permit from the federal Bureau of Safety and Environmental Enforcement and authorizations related to wastewater discharge from the U.S. Environmental Protection Agency, among others.

Let's keep a keen eye out for development in this area.