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INPUT SECTOR REVIEW: PUMPS 2015

A review of South Africa's pumps industry

This report has been compiled by Creamer Media research associate Shona Kohler. Creamer Media's Research Unit is based in Johannesburg, South Africa. This report forms part of a collection on South Africa's economic input environment. The information has been drawn from sources believed to be reliable, but no warranty is made as to the accuracy of such information.

Cover picture by Duane Daws.

Picture by Duane Daws

PUMPS 2015

Table of contents

List of abbreviations

AMD	acid mine drainage
BEE	black economic empowerment
CPD	continuous professional development
DRC	Democratic Republic of Congo
ECL	environmental critical level
ISO	International Organisation for Standardisation
KBI	Kirloskar Brothers International
Merseta	Manufacturing, Engineering and Related Services Sector Education and Training Authority
OHSAS	Occupational Health and Safety Management Systems
R&D	research and development
Sapma	South African Pump Manufacturers Association
Sapsda	Southern African Pump Systems Development Association

Pump manufacture and supply

South Africa has an established pumps industry that is considered to be well equipped and highly professional.

The quality of pumps produced locally is of a high standard, with several local manufacturers producing pumps in accordance with international standards. Further, it is believed that South Africa can manufacture pumps economically.

There are more than 100 companies active in the market. About half of these companies manufacture locally, although many of the companies that manufacture locally specialise in a certain range of products, while importing others for cost-saving reasons. The balance of the companies in the sector engage entirely in the supply of imported products.

Some of the local pump manufacturers are private entities, producing pumps from their own design.

For example, Centurion-based Hazleton Pumps is the sole manufacturer of a proprietary range of Hippo pumps, which it has designed and developed.

Some local companies produce from their own design, and manufacture locally and elsewhere. For example, Pump & Abrasion Technologies produces a self-developed range of Battlemax and Battlestream pumps, for the mining and industrial markets. The company manufactures in Centurion, South Africa, and in China. Its factories comprise 20 000 m^2 of foundry, machine, repair and assembly workshops, as well as warehousing facilities.

Other local pump manufacturers manufacture locally, but under licence to international operators.

The South African pump market is dominated, however, by the local subsidiaries of foreign multinational companies, several of which have established manufacturing facilities in South Africa.

One such company is Weir Minerals Africa, a division of Scotland-headquartered engineering solutions provider Weir Group, which operates in more than 70 countries and employs more than

14 000 people. The Weir Group has a worldwide network of about 200 manufacturing and service facilities. Weir Minerals Africa offers a range of slurry and dewatering pumps, high-pressure grinding rolls, hydrocyclones, slurry valves and mill liners. The company's local manufacturing site, in Alrode, is 59 500 m^2, and houses pump assembly, screen assembly, rubber lining and manufacturing, hose manufacturing, warehouse and distribution facilities and pump test-bay facilities.

Weir Minerals Africa manufactures most of the products it supplies to local companies, in South Africa, and has noted that doing so gives it a major advantage, as it can ensure that products and parts are manufactured to specification to meet customer requirements.

Another multinational with local facilities is the Grundfos group, which employs more than 16 000 people around the world and has an production of more than 16-million pump units a year. Grundfos Africa has noted that the local assembly of certain pump ranges allows for a faster route to market, and the ability to supply customers with components more timeously. The company also contends that local manufacture and assembly allows it to offer better service levels, and increased flexibility of product supply. It has, however, noted that it will continue to import certain components.

Sulzer Pump South Africa is part of the global Sulzer group, which has a global manufacturing footprint that encompasses more than 20 sites.

The South African manufacturing site specialises in engineered and pre-engineered pumps and is the sole supplier, within the Sulzer group, of large vertical pumps, as well as being the largest pump testing facility in Africa. The company has a turnover of more than R500-million and a staff complement of over 350. In September, Sulzer launched an innovative SNS end-suction single-stage process pumps range.

KSB Pumps South Africa is part of the global KSB group, which is one of the world's leading producers of pumps, valves and related service offerings.

KSB's sales revenue is almost €2.2-billion a year, and the group has more than 16 000 employees worldwide. KSB has been represented in South Africa since the early 1900s through agents. KSB (SA) was established in 1959.

Global market

The global pumps industry is highly fragmented, despite consolidation in recent years. In 2006 it was estimated that there were more than 5 000 pump manufacturers worldwide. Some companies in the sector are publicly traded and more are subsidiaries of public companies, but most are private small- and medium-sized firms, which are often family owned.

Market analyst Frost & Sullivan forecasts that the global pumps industry will earn revenues of $40.09-billion in 2015. The company, in a 2015 analysis of the global pumps industry, expects that the effect of the turbulent global economic environment on sales and prices will be mitigated by the sale of easy-to-install centrifugal pumps, which will offset any fall in overall uptake.

Frost & Sullivan expects that the Asia-Pacific region will be the focus of upcoming greenfield and brownfield investments in the pumps industry, with the improving manufacturing competitiveness of Asian countries spurring replacement opportunities for advanced pumps. Meanwhile, rising investments in the oil and gas, petrochemical, and food and beverage sectors are strengthening market prospects in emerging Latin American countries. Opportunities are also abundant in Africa.

A major influence on technology in the pumps industry in coming years is likely to be remote monitoring, while the strategies of pumps companies are likely to be shaped by a shift from transactional relationships to partnerships, with pump suppliers likely to pursue business models that frame the supply of pumps as a service and offer analytics as a service.

Source: Frost & Sullivan; World Pumps

In addition to multinational pumps companies that have established operations in South Africa, there are also those that have sought a foothold in the local industry by acquiring local pumps companies. For example, local companies APE Pumps and Mather+Platt were acquired by India-based pumps manufacturer WPIL in 2012. In 2014, APE and Mather+Platt acquired factory space alongside their existing pumps factory to expand their portfolio.

The South Africa-based pumps companies that do not undertake local manufacturing import their products, with a number of South African pump importers acting as official distributors for well-known international pump brands. For example, Boksburg-based pumps supplier Integrated Pump Technology was named, in June 2014, as the exclusive Southern Africa distributor for the world's third-largest submersible pumps manufacturer Grindex AB, which is based in Sweden.

The weakening of the rand has given local pumps manufacturers a price advantage, while pumps importers are being hard hit by increased import tariffs. It is believed that locally produced solutions are going to become more competitive, but that the potential of the industry could be constrained by a lack of capacity and skills.

Aftermarket services

In addition to the supply of pumps, a major aspect of the local pumps industry is the provision of aftermarket services. The aftermarket – which includes the servicing of pumps, the supply of spare parts, and technical support in the field including installation, commissioning and inspection – has been identified as a potential area of growth for pump companies.

Many companies have significant aftermarket offerings. For example, KSB Pumps South Africa has a dedicated service division to offer customers a comprehensive aftersales service, including installation and commissioning, inspection, repair and maintenance, either at the company's own main service workshop in Johannesburg, in one of the company's six regional service centres, or by its field service organisation.

KSB contends that, no matter the age, make or model of the pump, as long as it bears the KSB name, the company will ensure spares and services are available on short notice throughout the continent for the duration of the pump's life.

Aftermarket services can comprise a significant portion of pumps companies' business. For example, Pump & Abrasion Technologies noted in 2014 that about 30% of its business is generated from pump reconditioning and repairs. The company's aftermarket offering includes speedy access to replacement parts, additional equipment and a full warranty.

A number of companies have noted the cost savings available through appropriate aftermarket support. For example, local developer and manufacturer of mining pumps and generic spares Unique Engineering, which in 2014 reported that it was experiencing a rapid increase in demand for replacement parts, has noted that customers can save as much as 40%.

Further, South Africa has been identified as a cost effective location for service and repairs for international pump customers. For example, Hazleton Pumps reported in 2014 that, after being in operation for several years, two of its Hippo pumps at an oil sands project in Canada had been returned to South Africa for repairs. The client decided that, owing to the high cost of artisan labour in Canada, as well as the exchange rate with the South African rand, it would be more economically viable to send the pumps to South Africa for repairs.

Marketing strategies

Companies in the pumps industry use a variety of tools to market themselves and distinguish themselves from their competitors.

One such tool is the provision of pump system assessments to provide independent analysis of pumping systems and identify areas where operational cost savings can be made.

Another tool being used in the marketing of pump products is pump selection software, with several companies having such software available. SAM Engineering, for example, offers specialised third-party software to aid companies in their centrifugal pump selection.

The software takes into consideration a multitude of criteria that will affect the pump required such as flow rate, frequency, suction pressure, driver sizing specification, fluid density and viscosity. KSB also has pump selection software, with a new version of the software having an online update facility.

A number of South African companies are also using a pump marketing tool called PumpScout.

The website delivers leads to pump manufacturers and aims to assist users to select the correct pumps for their applications.

Some companies market themselves by serving niche markets, or by having products targeting niche markets. For example, Weir Minerals' WBH range is aimed specifically at applications in the commodities sector such as gold, platinum, copper, chrome and iron-ore.

Other companies seek out new markets through the provision of rental services. For example, water handling and treatment solutions provider ITT Water & Wastewater noted in 2011 that it was experiencing steady growth in its pumping equipment and rental division. Another company involved in the rental market is Integrated Pump Rental, a division of Integrated Pump Technology.

The benefits of renting pumping equipment include no capital outlay, immediate availability, minimal downtime due to maintenance, low running costs, unit flexibility, labour-savings and logistical efficiencies.

Local demand

Market analyst Frost & Sullivan has forecast that the South African market for the main pump types – centrifugal and positive displacement – could be valued at $323.6-million in 2015, up from $175.4-million six years ago.

Activity in the pumps industry is directly linked to general economic activity and investment levels in key demand sectors such as power, water, mining, pulp and paper, food and beverage processing, building and construction, chemicals and petrochemicals, and oil and gas.

While growth in the South African economy is currently sluggish, the country continues to be a market in which demand for imported and local pumps is growing, on the back of ongoing infrastructure projects. In the 2015/16 budget, announced in February 2015, it was indicated that government would be spending R813-billion on infrastructure in the coming three years, including R166-billion on energy and R117-billion on water and sanitation. The energy and water and sanitation sectors are major sources of demand for pumps.

In the energy sector, State-owned electricity utility Eskom's investment in power infrastructure has a substantial benefit for the pumps industry, with Eskom procuring new pumps, spare parts and pump maintenance services for new and existing plants. New pumps are procured by Eskom for its new-build programmes as part of procured packages and turnkey solutions. Pumps utilised in power plants include water feed pumps, condensate extraction pumps and water circulation pumps.

With regard to the water and sanitation sectors, pumps are essential to ensuring the delivery of such services. Planned expenditure on water and sanitation in South Africa will have a significant pump component.

The supply of clean water to communities in South Africa has been the subject of many service delivery protests, and pump manufacturers contend that a lack of maintenance at existing pumping stations could be responsible for the shortage of clean water supply.

Further, many local municipalities have reportedly imported pumps that are not properly specified. Such pumps risk failure. Another key area of demand for pumps in the South African market is the mining industry, which relies on pump availability and accessibility to parts.

Recognising that the mining industry is currently under financial pressure, certain pumps companies have introduced product enhancements to improve plant efficiency and optimise operations, thereby sustaining demand from one of the industry's key demand sectors.

Further, pump companies have noted that, in periods of downturn for the mining industry, demand increases for pump reconditioning and rebuilding.

Demand for pumps from the mining industry is also supported by the need for dewatering services, with certain companies in South Africa's mining industry facing major challenges pertaining to acid mine drainage (AMD). The Department of Water and Sanitation has allocated an estimated R10-billion to mitigate AMD in the Witwatersrand goldfields through short-term, long-term and emergency solutions. A key aspect of these solutions is the use of pumps to remove the problematic water.

Pumping requirements of different industries

Pumps are used in a range of industries, with different industries having different pumping requirements.

The **mining industry** requires pumps able to handle acidic and abrasive media, flocculants, electrolytes, light and heavy slurries, and corrosive materials.

The **sugar industry** has media with fibrous and erosive qualities that require a stable, versatile conveyance solution.

The **petrochemical industry** may require pumping solutions to ensure the transfer of volatile and highly flammable liquids. The industry also requires the pumping of fuels, oils, wax and other aggressive fluids at high temperatures.

The **chemical processing industry** requires the transfer of highly corrosive, high-temperature chemicals, requiring advanced material technology to satisfy stringent safety demands.

The **fertiliser industry** requires pumps that can transfer corrosive, erosive and explosive media.

The **food and beverage industry** requires pumps that can handle viscous, corrosive and temperature-sensitive ingredients in noncontaminated food processing environments.

The **pulp and paper industry** requires pumps that can handle pulpy, corrosive and erosive media of varying consistencies, as well as white, green and black liquors and chlorine bleaches.

The **water and wastewater** industries require pumps to pump various media, including sludge, raw sewage, potable water, and abrasive and solids-containing fluids.

The **automotive industry** requires pumps that can handle delicate and often expensive coating media, such as paint, and that can convey these media in a sterile environment.

Source: SAM Engineering

It was reported in June 2015 that industrial automation provider Rockwell Automation and mine dewatering company Ritz Pumps South Africa were partnering to address the AMD challenge.

The two companies are providing variable-speed drivers and pumps for the first phase of government's AMD mitigation strategy for Gauteng's Central basin, to reduce the AMD in the basin before environmental critical level (ECL) is reached and to keep the water below ECL in future. In the Central basin, rising water levels and flooded underground pumpstations have negated any possibility of using conventional pumping solutions, thus requiring a specialised submerged pumping solution.

Further, the enforcement of environmental legislation, such as the National Environmental Management Act, is prompting mining industry stakeholders to investigate the impact of their mining processes on the environment, with the result that increasing numbers of mining companies are seeking out appropriate recycling and water treatment processes before reintroducing used water to the environment, spurring demand for pumps.

A number of pumps companies are continuing to report new contracts from the mining industry. For example, in September 2014, local pumps manufacturer Cemo Pumps delivered the first set of pumps to gold miner Gold One's Modder East mine, in Gauteng.

In January 2015, local pumps and pump components manufacturer, servicer and supplier APE Pumps reported that it had replaced a return water pump that had been operating continuously for 25 years at a gold mine in Johannesburg. Also in January 2015, slurry pumps supplier and pumps solutions specialist Pump & Abrasion Technologies reported that it was set to start commissioning 23 pumps supplied to a Gauteng-based gold mine.

However, it must also be noted that, challenges in the mining industry have also prompted some pumps companies to diversify away from the mining industry or to focus on growing their nonmining business. For example, in 2012, the Watson-Marlow Pumps Group noted that, owing to extensive wage-related labour action in the mining industry, it was shifting its focus to nonmining activities. Previously, about 60% of the company's business related to mining.

Export demand

Several South African pumps companies are involved in exports. Most of this export activity is directed into Africa, with African exports having been identified as a potential area of growth for local pumps companies. Many South African pumps companies have experience in, and products capable of, operating in challenging African environments. Some local pumps companies also export beyond the African continent to the rest of the world.

Much of the export activity of South African pumps companies is facilitated by the South African companies having formed partnership or distributorship arrangements with companies in the export markets. Some local companies also offer after-sales services in export countries.

For example, Integrated Pump Technology has a strong presence in Africa, with Zambian distributor EC Mining representing the company in Zambia and the Democratic Republic of Congo (DRC). EC Mining also has service and repair facilities to offer aftermarket services. Integrated Pump Technology has noted, "We are definitely looking at investing more time and resources into entering Africa, which is where the growth is. We do not want to lose our focus on South Africa, but are looking at adapting our business model to take into account opportunities elsewhere".

Integrated Pump Technology has indicated that sales to Southern African Development Community countries account for about 40% of the company's turnover. The group reported in early 2015 that it had recently supplied 20 Bravo 900 submersible slurry pumps and 20 M20 control panels to copper miner Kamoto Copper Company, a subsidiary of Katanga Mining, in the DRC. The company's products are being deployed at three different areas of Katanga Mining's operations in the country – the Luili metallurgical plant, the Kamoto concentrator and the KOV openpit mine.

Meanwhile, Pump & Abrasion Technologies entered into several strategic agreements in 2014, such as a partnership with African pumps company TriPump, which will represent Pump & Abrasion Technologies' Battlemax range in Zambia, the DRC, Tanzania and Ghana. This partnership provides Pump & Abrasion Technologies with a local presence in these countries and enables the company to offer support to customers in these countries. Pump & Abrasion Technologies has also strengthened existing relationships with distributors in neighbouring countries, such as Zimbabwe and Botswana, where it is experiencing substantial growth. The company is also active in Mozambique, Namibia, Swaziland and Lesotho. Some of the company's international clients are serviced from its head office in Centurion, South Africa.

Hazleton Pumps is another South African pump company that recognises the potential of export activities. The company registered an increase in export sales of more than 250% in 2013/14, and expected its international sales to grow by another 75% in 2015. Hazleton's Hippo medium-voltage slurry submersible pump range contributed to a major portion of its export growth. The company has exported pumps to a number of African countries, as well as Russia, Canada, Chile and Australia, and has indicated an intention to enter deeper into the South American market, which it regards as an untapped opportunity.

Further, in January 2015, the company indicated that it was involved in the manufacture and supply of medium-voltage slurry pumps for the Kearl oil sands expansion project, in Canada, with the contract expected to be concluded by 2016. The value of the pumps required for the project is about R100-million, of which R30-million will be for the supply of medium-voltage submersible slurry pumps. Other recent export projects completed by Hazleton include the supply of Hippo vertical spindle slurry pumps to Namibian uranium mine, Rossing Uranium, and the supply of the same pumps to Canadian diversified resource company Sherritt International's Ambatovy mine, in Madagascar.

South African mixing equipment and peristaltic pumps manufacturer Afromix established a sales and aftermarket service division in Vancouver, Canada, in February 2014.

The company contends that the Canadian division, which trades as AFX Mixing & Pumping Technologies, will enable it to better serve the North American market, which it previously served through distributors.

The company contends that establishing a permanent presence in North America will also better position it to service clients in the South

American market. Afromix has indicated that it has plans to establish a manufacturing facility either in the US or Canada in the next few years.

Meanwhile, Afromix has indicated that Africa is an increasingly important market for its pumps, with the company selling pumps to African countries that include Zimbabwe, Namibia, Botswana, the DRC and Zambia.

The company has agreements with several dealerships to supply its products to African projects, and provides technical and logistical support to its distribution agents, who not only sell its products but are also responsible for aftermarket servicing of clients, including maintenance and stocking spare parts.

APE Pumps exports its pump products through mines and contractors, and design and construction companies, in South Africa, into Africa.

The company currently supplies pumps and refurbishment services to industries in Zambia, the DRC and Zimbabwe, while associated company Mather+Platt has received enquiries and orders from Angola and Ghana.

Grundfos Africa, which is headquartered in South Africa, is responsible for sales in South Africa, Ghana, Kenya, Mauritius, Nigeria, Tanzania, Zambia and Zimbabwe.

Weir Minerals Africa, which is focused on the African continent, has also supplied pumps to Australia, South America and Europe through its regional companies for projects in those territories.

The company also operates several service and support centres in strategic areas of Africa to ensure that end-users have immediate access to aftermarket support teams.

In addition, maintenance contractors are on site to ensure that the pumps are working optimally.

Imports

Many South African pumps companies are involved in the importation of pumps and related equipment into the South African market. While this gives South African customers access to pumps produced by some of the world's biggest and best manufacturers, it has a notably negative impact on the South African pumps manufacturing industry.

There has been a decline in the output of locally manufactured pumps. In 2012, the then South African Pump Manufacturers Association (Sapma) noted that, about 20 years ago, South Africa was one of the biggest manufacturers of all pump types, but that this had changed, with the country only retaining significant manufacturing market share in the production of pumps for the mining industry.

This loss of market share has reduced the amount of research and development (R&D) of pump technology taking place in South Africa and, without R&D, new and improved products will not come to market, which will constrain the growth of the industry.

In part, local pump manufacturers have struggled as a result of the pricing of input materials. South African raw materials are frequently beneficiated overseas, and then imported back into the country with a resultant cost implication for manufacturers requiring these materials.

In addition to the general risks that imports represent to the pumps industry, pumps companies have noted the specific challenge represented by low-quality, cheap pump imports, many of which are manufactured in East Asia and may be pirated versions of products produced by reputable companies.

South Africa-based submersible pumps supplier Tsurumi Pumps has highlighted that many of these pumps do not stand up to the conditions they are expected to operate under and do not last as long as the high-quality products manufactured by original equipment manufacturers that have been developing and manufacturing pumps for many years.

The limitations of cheap imports are often only recognised once the pumps have been imported and have been operating for some time.

Weir Minerals Africa has also noted the challenge of cheap pump imports in Africa as a serious one for South African manufacturers, but highlights that local companies have the advantage of being

able to ensure that their products and parts are manufactured to specification to meet customer requirements.

Sector support

The South African pumps industry is supported by the Southern African Pump Systems Development Association (Sapsda), which aims to tackle issues that collectively affect the industry, such as skills development, job creation and knowledge transfer. Previously known as Sapma, the industry body underwent a process of restructuring, initiated in 2008, and was officially relaunched as Sapsda in 2014.

The key motivation behind the restructuring was to change the association from an employers' organisation to a development association, with Sapsda modelling itself on the structure of the Southern African Stainless Steel Development Association. Sapsda membership is open to local and international pumps companies, consultants, individuals and students who are involved in, or related to, the Southern African pumps industry. However, local manufacturing companies comprise the majority of the association.

Recognising that the survival of locally manufactured pumps is greatly influenced by their use of castings manufactured by the local foundry industry, Sapsda has prioritised the formation of strong working relationships with members of the South African foundry industry.

The local pumps industry is also supported by the South African Pump Cluster, which operates independently from Sapsda, but complements the objectives of the association. The pumps cluster was established to promote local manufacturing by tapping into the capital expenditure of State-owned enterprises. The cluster consists of companies that manufacture locally and have the common intent of servicing and revitalising the South African pumps, seals, motors and couplings industries.

The pump cluster operates on the expectation that the industry can be revitalised through strategic capital investments and world-class manufacturing; achieving economies of scale to become globally competitive on cost, thereby increasing export potential; and improving supply chain localisation through the development and upliftment of downstream suppliers. It also aims to facilitate transformation by promoting local manufacturing, which will result in job creation and the support of black-owned business.

Further, it aims to develop the skills that will be required to expand the local manufacture of pumps, seals, motors and couplings; to develop new markets; and to ensure designation by the Department of Trade and Industry of approved products. Members of the South African Pump Cluster include Actom Electrical Machines, Rapid Allweiler, KSB Pumps, Weir Minerals Africa, Sulzer Pumps South Africa, Brehnor Pumps and John Crane.

Investment

A number of companies in the pumps industry have invested in their local facilities in recent years.

For example, in 2013, pump manufacturing company Grundfos opened a new 9 000 m^2 facility, in Meadowbrook, Gauteng. The facility, which cost about R150-million to construct, serves as the company's assembly and distribution centre for Africa. It incorporates the functions previously based at facilities in Pretoria, Spartan and Bedfordview, Gauteng, and the company has explained that, by consolidating these facilities, it can service the African continent from a single location, reducing the time and cost of logistics.

Weir Minerals Africa reported in 2014 that, over the past five years, the company had invested in building its manufacturing capacity and sales and service infrastructure in close proximity to clients' operations. Some of the investments made in the company's manufacturing capacity include the acquisition of a new spray booth and the installation of a fifth fettling booth at its Isando facility, in Gauteng. With a focus on supplying environment-friendly solutions, the company also mixes a range of wear-resistant materials and alloys in-house. In line with the company's focus on safety, it has acquired a hanger blast machine that does not require an operator, reducing the risk of personal injury.

The company also acquired a state-of-the-art spectrometer, which it uses to analyse chemical compositions. Further, the company

has introduced an automated furnace loading system, which uses a vibratory feeder, removing the operator from the deck and increasing safety and efficiency. Weir Minerals Africa has also transformed through various acquisitions, including the recent acquisition of Weir Heavy Bay Foundry, in Port Elizabeth, in the Eastern Cape, which can manufacture castings of up to 18 nett tons in weight.

KSB Pumps and Valves South Africa notes on its website that it is continuing to invest in service equipment and facilities to meet growing demands for workmanship that is able to adhere to strict local regulations and satisfy international quality standards.

Pumps supplier Integrated Pump Technology reported in October 2014 that it had spent more than R20-million to build, stock and equip its new facility in the Touchdown Industrial Park, near OR Tambo International Airport, in Gauteng. The 1 200 m^2 facility has been equipped with new spray booths, wash bays, test tanks and cranes, as well as tooling. A 90 kW full-service repair and test-tank unit is also available on the warehouse premises.

Hazleton Pumps, which is expecting further growth in export demand for its products, has increased its manufacturing capability to match the expected growth, and reported in January 2015 that it was building a new test facility which would allow vertical spindle pumps with a shaft length of up to 20 m to be tested.

Pumps manufacturers APE Pumps and Mather+Platt, owned by India-based multinational pumps manufacturer WPIL, reported in September 2014 that they had acquired factory space alongside their existing pumps factory as part of efforts to expand their portfolio as pumps suppliers. The expansion plan will allow for increased production.

Corporate activity

Some of the corporate activity in South Africa's pumps industry has involved local companies being acquired by international operators.

For example, in 2010, Kirloskar Brothers Limited, through its wholly owned Netherlands-based subsidiary company Kirloskar Brothers International (KBI), acquired 90% of the shares in South Africa's Braybar Pumps in a deal valued at R110-million. Kirloskar also acquired pumps manufacturer SPP Pumps. It has been noted that these aquisitions, and the incorporation of Braybar and SPP under KBI, have enabled the two companies to provide services at a national level and to export into neighbouring countries.

In 2012, Gormann-Rupp Africa Proprietary acquired South African pumps distributor Pumptron, a South African company that had been a Gormann-Rupp distributor for more than 25 years.

Pumptron provides water-related pumping solutions, mainly for the construction, mining, agricultural and municipal markets in South Africa and other sub-Saharan African countries. Also in 2012, India-based pumps manufacturer WPIL acquired the pump business of PSV South Africa, comprising a 100% shareholding in APE Pumps, Mather+Platt SA, PSV Services SA and PSV Zambia. APE Pumps, which was formed in 1952 under the name Sangus, had been taken over by PSV Holdings in 2007. WPIL has benefited from the acquisition by gaining access to the African market, and the company has noted its intention to leverage the strong market presence of these brands to increase its exports of products and services into the region. Further, APE and Mather+Platt are expected to gain global exposure through WPIL's international network.

Some of the other corporate activity in the pumps industry relates to black economic-empowerment (BEE) transactions. For example, in 2014, Pump & Abrasion Technologies concluded a 30% black ownership deal. In 2006, Sulzer initiated an equity programme for its South African subsidiary, with Sulzer being 25% owned by Sakhumnotho Pumps, a company controlled by historically disadvantaged South Africans. KSB Pumps and Valves has a BEE partner called Medu Capital Holdings which, since 2007, has had a share of 25% plus 1 in the company.

Regulatory requirements

There is no South African Bureau of Standards mark for the pumps industry, with the result that some companies contend that challenges exist with regard to standardisation in the industry.

However, foundry group specialist Steloy Castings has noted that the exposure of South African pumps manufacturers to international contractors has inspired many of the local companies to supply products that comply with international specifications and criteria. Several pumps companies note the compliance of their management and quality systems with the standards set by the International Organisation for Standardisation (ISO). Certain companies also comply with the British standard for Occupational Health and Safety Management Systems (OHSAS). For example, Sulzer Pumps South Africa, KSB Pumps and Valves and Weir Minerals Africa indicate that they are ISO 9001, ISO 14001 and OHSAS 18001 compliant.

Some companies in the sector also comply with internal standards set by their international parent companies. For example, KSB South Africa has achieved the Made by KSB certification for certain product ranges. It is one of only five KSB companies outside Europe to have achieved this standard. Weir Minerals, meanwhile, ensures that its products are standardised and globalised by testing the pumps in different facilities and comparing the results.

Availability of materials

Castings are a key input in the manufacturing of pumps, as they comprise the bulk of the cost and material of pumps, and pumps companies have noted that good quality castings are essential to produce high-quality pumps.

Sapsda is committed to maintaining a positive working relationship between its members and the foundry industry, but pumps manufacturers have indicated that the local foundry industry struggles to produce the quantities and quality of castings required.

A factor in this is the depleting number of skilled patternmakers and moulders in the foundry industry.

Further, South Africa appears to be lagging behind in terms of new technologies available to the foundry industry, with foundries not investing in the technology because they do not get a return on investment, as the perceived volumes are not high enough.

To tackle this challenge, some pumps companies are investing in their own foundry facilities. Rapid Allweiler, for example, started production at its own foundry in April 2013, with the stainless steel foundry intended to produce high-quality castings for the company's pump manufacturing plant. The foundry was expanded in October 2014, when a second 350 kg furnace was commissioned to produce grey iron and stainless steel castings.

The company has noted that having its own foundry has significantly decreased lead times – for stainless steel from eight to ten weeks down to three weeks, and from six to eight weeks down to three weeks for cast iron.

Availability of skills

A major challenge facing the pumps industry is the availability of skills. Companies in the sector experience challenges in attracting and retaining staff with the skills necessary to sustain and grow the industry. Further it has been noted that there has been a shift in the skills required, with value-added engineering advisory services increasingly being needed alongside traditional artisanal skills. In part, this shift is a result of reduced engineering capabilities in smaller municipalities and companies, which has meant that pump manufacturers and suppliers are having to do more than simply deliver equipment. Many pump users are also focusing on servicing and repair, rather than replacement, and the correct operation and installation of equipment owing to budget constraints. This requires pump suppliers to have a greater focus on the service they provide to their customers.

With regard to attracting skilled staff, companies contend there is a lack of knowledge about the industry, and that not enough is being done to encourage younger generations to become artisans. Regarding the retention of skilled staff, companies report that opportunities in other countries are drawing marketable young professionals out of South Africa.

To boost the level of skills in the industry, Sapsda provides training courses for the industry. The association's training courses include pumps installation, pumps testing and the pumping of liquids containing solids and acids. Sapsda is seeking course accreditation with the

Manufacturing, Engineering and Related Services Sector Education and Training Authority (Merseta). The accreditation will assist registered members, mechanical engineers and artisans in boosting their continuous professional development (CPD) points obtained from the Sapsda courses. Sapsda's introductory course for newcomers to the industry focuses on teaching learners about the basic principles of pumps, specifically from a practical point of view, while the advanced course comprehensively covers all aspects of the pumps industry, including topics such as hydraulics application and affinity laws.

In addition to the efforts being made by Sapsda to boost the availability of skills in the pumps industry, a number of pumps companies are also involved in training initiatives. For example, Grundfos has a training academy that endeavours to provide its staff and customers with the required product, technology and application knowledge.

Pumps manufacturer and supplier AESPUMP, meanwhile, is continuously training its service technicians, with rotational training programmes equipping them with the skills needed for on-site problem diagnosis.

The company is registered as a skills development facilitator with Merseta, and also has an ongoing apprenticeship training programme.

SAM Engineering provides educational support to the industry through training courses, designed to improve the operation of pumps, and enhance capabilities and competencies at all skills levels. The company is recognised by the Engineering Council of South Africa as an approved provider of CPD training, and its pump courses are presented by a qualified centrifugal pumping engineer with extensive experience in the industry and specialist knowledge in the design, installation and commissioning of centrifugal and vacuum pumps, specifically in the sugar, paper and chemical process industries.

Electricity and environmental considerations

According to pumps company Grundfos, about 10% of the world's electricity is consumed by pumps, and two-thirds of the world's pumps could save up to 60% of the energy used with the correct technology in place. In South Africa, which is experiencing major electricity shortages, it makes sense that the energy saving potential of pumps is harnessed.

There are three areas in a pump system where energy consumption can be reduced. The first is the type of motor selected to drive the pump. Energy savings are also possible at the wet end of the pump, which comprises casings, covers, stuffing boxes or seal chambers, impellers and associated fasteners and gaskets, by ensuring that a pump operates near its full capacity. The third area of potential energy saving relates to variable-frequency drives, which enable pumps to operate at varying speeds, depending on the demanded volumes of liquid that need to be pumped.

The United Nations Industrial Development Organisation has reported that South Africa's energy-intensive industrial stakeholders are becoming increasingly aware of the potential for pump-system optimisation to reduce energy consumption. This awareness is partially a result of the Industrial Energy Efficiency improvement project, aimed at improving the capacity of South African industries to use available energy resources more efficiently and productively.

Meanwhile, the pumps industry is developing products and services to reduce energy consumption. Grundfos, for example, reported in 2012 that it had added two energy efficient products to its heavy-duty dewatering pumps range for the mining industry.

Engineering software company TAS Online, meanwhile, has developed software for the analysis of pumping systems, which provides users with the information required to increase the efficiency of their systems for substantial cost savings, improved reliability and better throughput.

SAM Engineering is one of several pumps companies offering on-site pump efficiency audits. The company indicates that such an audit involves the inspection and testing of a company's current pumping system to determine the condition of the pumps, the setup of motors and related components, and whether the right valves and controls are being used for the system. Following an initial system analysis and on-site walkthrough, SAM then performs a comprehensive system

inspection to help pinpoint areas that are causing problems or that require optimisation.

In addition to the energy savings possible through the use of more efficient pumping systems, the use of less energy makes such systems more environment friendly. Other efforts have also been made by the pumps industry to reduce the impact of their products on the environment, with a trend towards more environment-friendly designs being evident in the industry. Further, some pump companies have sought to reduce the impact of their own operations on the environment. Grundfos, for example, has ensured that its newly constructed head office in South Africa is particularly environment friendly. The building has a solar-powered rainwater harvesting and water treatment plant.

All stormwater – in line with regulatory requirements – and rainwater on the site is harvested into an underground tank. From there it is pumped using solar-powered Grundfos pumps into the building, where it is filtered into potable water for the building. The rainwater is recycled and reused in the building's internal and external water features, and is used to flush toilets and irrigate the landscape. The building's solar panels generate enough electricity to run the water filtration system for the building. The building also uses three wind turbines that generate electricity directly into the building's grid to power the pumps and lighting when solar power is not available.

News and innovations

It was reported in June 2015 that interest in slurry equipment solutions provider Weir Minerals' Warman slurry pumps had peaked over the past 12 months, with sales of these pumps having increased. Launched in August 2014, Weir Minerals' new WBH slurry pump range includes many enhancements and material improvements to meet the productivity and cost demands of all types of customers and operating environments. Development of this range was a global effort across Weir Minerals' operations to incorporate customers' specific needs and requirements.

Key design features that have proven successful in previous ranges of pumps have been incorporated into the design of the new range.

Pump rental company Integrated Pump Rental introduced the SlurrySucker dredge unit into its rental fleet at the end of May 2015. This pumping solution, which makes it easier to remove silt and built-up sediments from process water ponds, return water ponds and other water storage areas, is available on long- and short-term hire. Manufactured using locally produced components, the SlurrySucker dredge units incorporate pumps from the Grindex slurry and dewatering range. This means that lead times are significantly reduced in terms of complete units and the requisite parts, as the need to import components has been eliminated. Integrated Pump Rental has also introduced pump flotation devices into its rental equipment line-up. These are also available for sale.

Further, the company has introduced hose flotation devices, which are used to suspend hoses during pumping applications where either pontoons or barges are used and the hose needs to be suspended above water, or where hosing is laid across the water instead of around the perimeter of the water.

Ventilation, occupational health and environmental solutions provider and the exclusive distributor of Chasm Consulting software in South Africa, Terramin, in May 2015 released its new Pumpsim pumping simulation software package. The software is designed to model and simulate many different types of data from a three-dimensional network of pumps and pipes. Pumpsim can be used to simulate pump and pipe systems across many different industries, including mining, agriculture, construction, processing and manufacturing.

Diversified engineering group Metso launched a range of MDM and MDR hard metal mill discharge slurry pumps in April 2015 designed specifically for mill circuit applications. The company states that the pumps, which are locally manufactured, enhance its offering of pumps, many of which have been on the market for decades.

The series offers sustained performance with maximum time between mill shutdowns, with each pump being developed with consistent hydraulics, limiting inlet velocity at design best efficiency point, which ensures impact damage from coarse heavy solids is kept to a minimum. The pumps' large-diameter, high-aspect ratio impellers further provide for significant hydraulic efficiency with

minimum turbulence at minimum rotational speed, which reduces rate of wear.

The MDM range features a conventional single-stage, end-suction overhung centrifugal design, extra-thick casing, a high-efficiency solids handling impeller, an adjustable suction side liner and gland side liner. The MDR range, in turn, has a double casing with gland side rubber liners housed in stiff cast iron outer casing halves.

Swedish industrial tools and equipment manufacturer Atlas Copco introduced its new range of portable diesel-engine-driven pumps, PAS, to the South African market in March 2015.

The PAS range was officially launched in Belgium in June 2014, with production having started in August 2014 in the same country. The product was developed in Spain at Atlas Copco's generated competency centre, which packages the diesel pumps.

The PAS range delivers fast watering solutions to sites where a power source is not available, with its dry prime units offering high performance and efficiency to ensure predictable and timely job completion with minimal operating expenses.

Atlas Copco plans to expand the range to enable it to handle higher volumes of water, while also adding high-head bearings to the pumps.

Pumps manufacturer Grundfos, which in early 2015 launched an extended range of high-efficiency medium-sized submersible groundwater pumps boast increased efficiency and improved wear resistance, and further enhances the reputation of Grundfos's current submersible pumps range has for reliability, system integration and efficiency.

Alongside Verder Pumps South Africa's existing range of industrial pumps, the company exhibited its new Verderflex Dura 55 peristaltic pump for optimum performance and easy maintenance in heavy-duty applications at the 2014 Electra Mining Africa show.

The new pump is designed to deliver more than 20% more flow than its predecessor, the Dura 45, thereby increasing the overall Dura hose pump family's flow range. The Dura 55 complies with the growing market demand for a pump that can reduce life-cycle costs, significantly improve plant uptime and incorporate special design features for arduous heavy-duty applications. It was reported in March 2014 that local components manufacturer Carlmach Engineering had introduced a new wear- and impact-resistant coating, specifically designed to be used in abrasive and slurry applications for pump components. The new coating can triple or quadruple a pump's life.

The coatings are applied onto pump shaft sleeves and wear rings used in the pumps and mining industries, as the life cycles of these products can be problematic in these industries. The coating will compete against the vanacarb, stelite, tungsten, hard chrome and ceramic coatings that are currently available on the market.

In September 2015, the Zulu pumpstation, in the Tsakane township on the East Rand, was handed over to the Ekurhuleni municipality, following the commissioning of three Kirloskar end-suction pumps. The completed pump sets were supplied by Braybar Pumps.

The company is also supplying four Kirloskar end-suction pumps to be used at the Xhosa reservoir pumpstation, which forms part of the Tsakane township water-upgrade scheme.

Pumping solutions manufacturer Franklin Electric South Africa has launched a new range of cost-saving Mono EZstrip progressive cavity pumps into the Southern African market.

The new Mono EZstrip transfer pump is easy to install and drastically reduces downtime, as pump maintenance, cleaning and repairs can be carried out on site.

Grundfos has launched an online Pumping Station Creator, which provides a quick access point to the full range of Grundfos prefabricated pumpstations.

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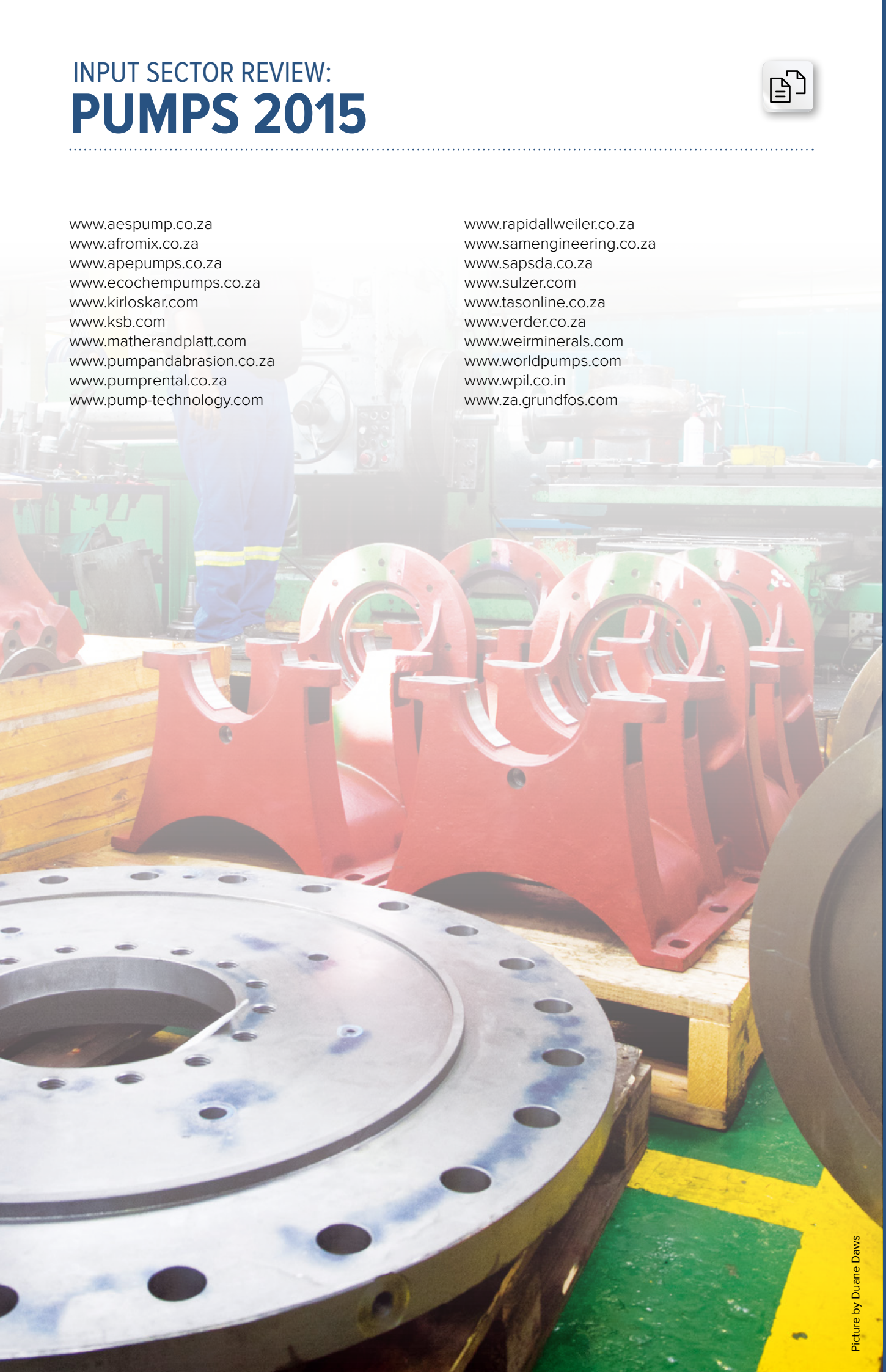

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