Manufacturing capability to underpin SA’s reindustrialisation

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Mining capital goods industrial cluster, the Mining Equipment Manufacturers of South Africa (MEMSA), funded by its members and the Department of Trade and Industry (the DTI), aims to harness the collective capability of South African capital equipment manufacturers for the development of a world-class local mining equipment manufacturing sector.

MEMSA will officially be launched on May 4, together with the Mandela Mining Precinct, and aims to catalyse the reindustrialisation of South Africa, as well as the Southern African region.

South Africa’s gold and platinum mines are characterised by predominantly narrow vein deposits, when compared with the rest of the world. Therefore, it is imperative that there be local development of local solutions to address the local problems first and foremost. International operations will eventually also need to extract their narrow-vein deposits. As South African equipment manufacturers develop and position themselves as global leaders and innovators, this will create export potential.

MEMSA chairperson Freddy Mugeri explains that, “the Mandela Mining Precinct initiative and the fruits of this multistakeholder collaboration will see the creation of decent high technology jobs and a highly skilled workforce; quality local suppliers supporting the mining industry . . . by providing for local needs and exporting world-class goods; and an increase in the longevity of our mines”.

He adds that South Africa will benefit from a sophisticated economy, where the manufacture of high-end technological goods can support multiple economic sectors.

Mugeri says the knock-on effect of the success of the efforts through the South African Mining, Extraction, Research, Development and Innovation (SAMERDI) strategy being coordinated at the Mandela Mining Precinct will see more effective and successful mines and local manufacturers, which would stimulate job creation within the mines and in surrounding communities, in addition to contributing to the fiscus.

Moreover, the development of a strong mining manufacturing base will improve export revenue, while assisting the mining sector to support and procure local products and equipment. A productive and successful local manufacturing industry could most likely absorb some of the workforce displaced as a result of mine closures or mechanisation, he adds.

He notes that there are “low hanging fruits to be harvested” in the areas of job creations, skills development, local manufacture and growth of the mining sector, given the country’s and the African continent’s remaining mineral reserves, the fact that the precinct has the necessary resources to achieve this vision, as well as the support from the export councils and research institutions outside the Mandela Mining Precinct.

A key focus of the precinct is to develop products and technologies that will serve the future needs of the mining industry. Mugeri notes that “ultimately, given the realities of digitalisation (Industry 4.0, the ‘Internet of Things’ and the ‘Internet of Mines’), it has become a technology game . . . one that MEMSA’s members are actively embracing . . . and one that, through collaboration with the precinct, will allow us to win on the technology front”.

MEMSA deputy chair Ulrich Kienle adds that the mining industry is “so often
described as a sunset industry . . . but as the country’s new leadership has emphasised, this could and must become a sunrise industry once more”. He notes that the changes within the mining sector globally create a range of opportunities for local manufacturers, and that MEMSA together with the precinct, will try to exploit these opportunities where possible.

Kienle says that the establishment of the Mandela Mining Precinct has resulted in a level of interaction, “that we haven’t seen for decades . . . our focus – through this dialogue – is the creation of a better future for all stakeholders”.

Mugeri notes that the board had started conversations pertaining to potentially expanding MEMSA into a regional cluster, or alternatively assisting and supporting the establishments of similar mining manufacturer organisations in neighbouring countries and regions of Africa.

Precinct Projects
Mugeri tells Mining Weekly that all its members are extremely aware of the unique challenges facing the industry and, specifically, the mines. He notes that the Mandela Mining Precinct has identified the highest priority items and has concluded that problems relating to the “drill-blast-clean and support cycle” should be addressed locally.

The aim is to shorten the cycle and improve the quality and effectiveness of the products used in this cycle – all of which affect the life-of-mine and, as a result, employment and profitability.

“Members that cater to the drill-blast cycle have been challenged by the precinct to produce the next generation of drilling technology – one that will actually have a positive impact on the entire mining cycle. The outcomes our members are striving for are: a reduction in drilling times, the enabling of precision drilling, a reduction in the overall weight of the drilling machines, as well as improved safety and reduced noise – from a health and safety aspect,” explains Mugeri.

Kienle says that MEMSA, being embedded within the structures of the Mandela Mining Precinct, and with an office located within the facility, is very much involved in addressing and understanding the challenges facing the industry. He states that MEMSA members are excited and actively involved in all development efforts, and that they have already engaged and, in some cases, created programmes and goods that leverage digital technologies.

He adds that MEMSA’s “proximity to the research and development initiatives at the Mandela Mining Precinct ensures that it is tapping into becoming cutting edge”.

Mugeri credits the engagement with the Mandela Mining Precinct’s main partners, namely the Council for Scientific and Industrial Research, the Chamber of Mines, the Department of Science and Technology and the DTI, as the reason for this greater understanding of industry and the available opportunities.

“Right now we have identified one project . . . which could result in the development of certain products that can be used by multiple members, as well as exported,” Mugeri explains.

He adds that the philosophy of the Mandela Mining Precinct and the MEMSA board is that, “technology and Intellectual Property are global, but manufacturing should be local”. As such, while MEMSA and the precinct actively support development and commercialisation of local ideas and inventions, local consumption and export, they also want to localise technology and inventions that are conceived abroad, and improve them.

MEMSA recently workshopped technology readiness levels (TRL) with its members, and also requested them to align their product development with the initiatives under SAMERDI.

To assist this process, a Technology Availability and Readiness Atlas (TARA) has been developed that maps technologies that have already been developed or are under development. As this database gets populated, it will become a quick and easy way for mine management to identify technologies that, if implemented, could assist in making mining safer, more efficient and at a lower cost.

Mugeri also points to additional research projects regarding import displacement through targeted local manufacturing.

These projects, set for completion within the next two years, will specifically look at areas where members can localise spares, equipment and capital goods, without compromising quality.

“Many of the things we currently import can be manufactured locally if we focus our strategies . . . the research strives to achieve a better understanding of what it is that industry uses and if it could be replaced with local products . . . we believe that into 2019, we will see members offering import replacement alternatives that will absolutely match imports with respect to cost levels, lead times and quality. Indeed, the expectation is that local alternatives will, in many cases, be superior, deliver more value and underpin scorecard requirements,” concludes Kienle.