

Mine Planning and Design qualifications (continued)

Also in 2012, a programme at level 6 (Technician level), has been developed at the Wits Mining School, which was launched in 2011, developed in consultation with the Forum, and born out of the Mineral Resource Management Certificate Programme.

At higher levels, it is the intention of the Forum to enter discussions with the tertiary institutes, in order to assess whether current undergraduate programmes adequately address industry needs in terms of mine planning and design, and whether these programmes adequately provide for possible professional registration.

The Forum will then work towards promoting support for research work to be undertaken in the mine planning and design area at universities at the postgraduate level.

A workshop to finalize the qualification development, and also to agree on an Assessment Quality Partner, and their roles

and responsibilities was held on 30 and 31 January 2012. The next stage of the work will be towards registration of the qualification with the QCTO, learnership development and registration, and development of learning materials, followed by implementation.

Thanks are due to the members of the Forum, the mining companies who have actively participated, the MOA, the QCTO facilitator (Mr. Ben van As), the Council of the SAIMM, the CEP members, and MineRP in particular, who continue to actively support this work.

Alastair Macfarlane
Chairman
MP&D Industry Forum

CEEC the Future

**This paper was presented at the SAIMM Johannesburg Branch meeting
held on 9 February 2012, at the South African National Museum of Military History**

The Johannesburg Branch of the SAIMM was recently privileged to host a presentation by Ms Elizabeth Lewis-Gray on the subject of the Coalition for Eco-Efficient Comminution (CEEC), a not-for-profit organization founded by Ms Lewis-Gray in collaboration with several academic luminaries in the field of particle size reduction. CEEC aims to accelerate the transfer of knowledge in the field of eco-efficient comminution by building awareness of the benefits of eco-efficient comminution, such as improved earnings and greater processing throughput to name a few, and to encourage change in the industry.

Ms Lewis-Gray began her talk by sharing the vision and primary activities of the CEEC since its inception in mid-2011. The list of sponsors the Coalition has already attracted is extremely impressive from a South African perspective, including Gold Fields and Xstrata, while internationally AMIRA, Newcrest, and Metso to name but a few, have sponsored the initiative.

Ms Lewis-Gray shocked the room into a stunned silence when she presented a slide which indicated that a massive 4% of total world electrical energy and 30-40% of mine electrical energy globally is consumed by comminution processes. She went on to reveal that only 5% of the energy input into ball milling actually goes into particle size reduction!

Ms Lewis-Gray then went on to discuss some very impressive industry-specific data, primarily from Barrick, who are actively pursuing energy efficiency, and have to date reduced comminution energy on three mine sites by a total of 5.3%, which equates to an annual saving of \$5.2 million. The areas on which Barrick have focused include liner profiles, drive methods and mechanisms, and feed size optimization in crushing and grinding circuits. Barrick has set a strategic goal to achieve an overall 8% reduction in mine energy consumption for 2012.

The CEEC is advocating industry investigation and adoption of new technologies to improve comminution energy efficiencies. These include:

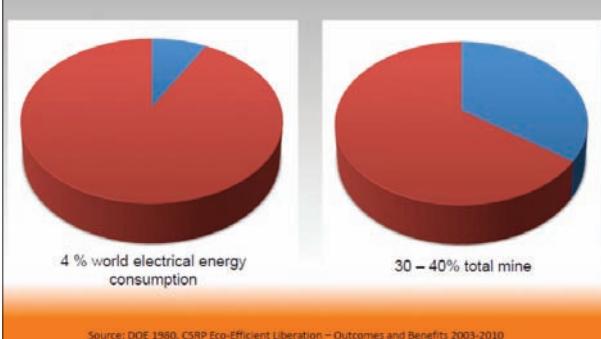
- The use of crushing to reduce particle size further than has been the historic norm, utilizing the mineralogical matrix of the material to liberate valuable minerals. Equipment such as high pressure grinding rolls and vertical shaft impact crusher technologies have been known for many years, but are only now starting to find mining industry acceptance
- Gangue rejection at as coarse a particle size as possible, using sorting or gravity technology.

Optimized feed size distribution by modifying blast patterns.

In closing a fascinating and slightly disturbing presentation, Ms Lewis-Gray urged local industry and individuals to become actively involved in the drive for awareness and debate of eco-efficient comminution and energy efficiency. Precedents have been set by some forward-thinking members of our industry and the onus is on the rest of us to catch up.

The full presentation can be accessed on the SAIMM website, and further details on the CEEC can be found at www.ceeethefuture.org, or via the CEEC LinkedIn page. Members of the Institute are encouraged to join CEEC's LinkedIn group to stay informed on current and future developments.

The opportunity: Comminution Energy Consumption



Source: DOE 1980, CSRP Eco-Efficient Liberation – Outcomes and Benefits 2003-2010