

# The update of the South African Mineral Asset Valuation Code (SAMVAL)

The Institute has reconvened the SAMVAL Working Group in order to conduct a review and update of the SAMVAL Code.

This work has been initiated owing to certain inconsistencies in the current Code, but also as a result of a number of external activities and events that have created the need for the update.

Mineral asset valuation codes also exist in Canada (CIMVAL Code) and Australia (VALMIN Code), as well as the International Valuation Standards (IVS), promulgated by the International Valuations Standards Board in London. Both the VALMIN Code and the IVS Extractive Industries section are currently under review, and it is intended that CIMVAL will also be reviewed. A number of developments and discussions have also been undertaken by the Society of Mining Engineers (SME) in the United States, in consultation with the Securities Exchange Commission (SEC) and the Financial Accounting Standards Board (FASB). Furthermore, assistance has been given by the CIMVAL Committee to develop a similar Code for the Chinese authorities, for possible use by the Hong Kong Stock Exchange.

The SAMVAL Committee has taken cognisance of all of these developments, and is actively participating in some of them, through engagement with the VALMIN Committee and its conferences, and through representation on the IVSB Committee in particular.

The SAMVAL Committee has convened a working group that is liaising with all international bodies that have an interest in mineral asset valuation, to establish a common forum where harmonization of definitions and principles of mineral asset valuation can be established, similar to the CRIRSCO process for mineral resource and mineral reserve definitions. Such harmonization is particularly relevant at this time, given the review processes that are under way.

Considerable discussion is taking place in Australia with regard not only to VALMIN, but also with regard to JORC and the ASX, both of whom have released Issues Papers for comments on matters that are under discussion there with regard to mineral resource and mineral reserve reporting.

In particular, discussion around the recognition, disclosure, use, and valuation of inferred resources, and the disclosure of production forecasts, have relevance to valuation. Both the SSC (SAMREC/SAMVAL Committee) and the SAMVAL Working Group are making submission on these various issues, as well as interrogating them from a southern African perspective, for inclusion in the SAMVAL review.

The SAMVAL Working Group also recently held a mineral asset valuation event, where wide participation was invited, in order to raise and prioritize issues relevant to mineral asset valuation both locally and internationally, for inclusion in the SAMVAL review process. This event was an outstanding success, especially in terms of the level of participation and the materiality of the issues raised.

The SAMVAL Committee will continue to develop and participate in these processes, and to keep the members of the Institute informed, through the membership of the Working Group, the Council, and the Journal.

Any comments and suggestions are always welcomed, and should be addressed through the Working Group or the Secretariat.

**Alastair Macfarlane**  
*Chairman*  
SAMVAL Working Group

## Mine Planning and Design qualifications

For several years now, the Institute has supported the development of qualifications in the mine planning and design area, through the establishment of a Mine Planning and Design Industry Forum.

This Forum was convened with membership invited from the major mining companies and technical software suppliers, as well as the providers of learning.

The need to develop these qualifications arose from the realization that, apart from undergraduate mining engineering qualifications, no such qualifications exist. Furthermore, mine planning was seen as an area of 'scarce skills', particularly in the tabular mining environment, and that the creation of a legitimate and attractive career path was essential to attract and retain competent planners.

External developments, such as the need within SAMREC (2008) to have a Life of Mine Plan for an operational mine, in order to declare mineral reserves (and at least a prefeasibility study for a project), as well as a number of developments in the mineral asset valuation field, emphasized the need to develop competency, leading to possible professional registration in the higher levels of mine planning and design.

A great deal of work has been done to date on the development of a learning pathway for mine planning and design, aligned to the National Qualifications Framework (NQF) from level 2 through to level 8 and beyond. This work has been done through extensive engagement with the Mining Qualifications Authority (MQA) and the Engineering Council of South Africa (ECSA), through the SAIMM.

Recently, the MQA as the quality development partner established a community of expert practitioners (CEP) for mine planning and design, facilitated by an appointed occupational development facilitator to develop an occupational qualification at level 4 (the Mine Planner). This process has been very successful thus far, and the occupational qualification will be ready for submission to the Quality Council for Trades and Occupations (QCTO) in the second quarter of 2012. This occupational qualification will include the foundational requirements as well. Thus, in addition to allowing a matriculant to enter a career in mine planning and design, it also continues to allow lateral entry for suitably qualified persons from within industry who wish to make a career change based on recognition of prior learning and experience.

# 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 MQA, 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.ceethefuture.org](http://www.ceethefuture.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.

