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New industry program offered free of charge to capitalise on energy productivity opportunity

Productivity is the current catch phrase for the mining industry, and energy productivity has a large role to play. A declared policy priority for leading governments, improving energy productivity is about increasing the economic value added per unit of energy used and dollar of energy purchased. In a period of rapidly increasing energy prices around the globe, a holistic approach to the way energy is managed and measured can make a major contribution to the mining industry's overall productivity and competitiveness.

Making energy more productive offers a pathway to improved competitiveness

Mineral resources are critical to future global development; as well as to the performance of the global economies and the living standards of all people. Mining remains a major employer and a large energy user. The response of the sector to improving productivity, including energy productivity, will shape its future competitiveness and, to a large extent, that of all mining nations.

Economic productivity in many sectors of the world's economy, including mining, has been flat or declining in recent years. The long-term decline in base and precious metal ore grade is one of the key drivers of this trend in mining. This also has a direct impact on the energy intensity of production and is therefore the energy productivity of the mining sector.

Energy costs represents between 10–50% of operating costs on most mine sites (Energetics, 2014). Sites where the ore is comminuted (crushed and ground in order to extract the mineral) are high energy users; with much of the consumed energy lost in the highly inefficient process. However, energy is a manageable cost, with demonstrable savings of 5–30% in energy use across core processes such as comminution and haulage.

A new benchmarking tool for assessing a mine's energy productivity potential

To address this opportunity, **CEEC International Ltd** has launched the **CEEC Energy Curve Program**, a tool for mining operators to assess their current comminution (crushing and grinding) operating efficiency, with a view to improving their productivity.



The **CEEC Energy Curve** displays the potential energy savings and cost benefits (productivity gains) of moving down a cost curve into more cost-efficient operating regimes. This approach allows flexibility in the way comminution energy intensity is displayed (e.g. energy per mass of rock milled or mass of metal produced) thus providing a more direct comparison between sites.

Confidential data management in the **CEEC Energy Curve Program** ensures each unique operating profile is known only to its owner, while the raw data is consolidated to provide an illustration of the spread of operating practice around the globe. The **CEEC Energy Curve** is an effective tool for illustrating energy productivity gains against a baseline, allowing operators to visualise their energy efficiency improvements.

Participation in the **CEEC Energy Curve Program** will assist each operating site to establish a base line assessment of its operating efficiency. Modelling data in the curve will support a strategy to a more productive processing regime. To date, the **CEEC Energy Curve Program** includes over 40% of the world's copper production in volume, 20% of global gold production plus 6 other ores types: in total over 1.3 billion tonnes of rock throughput has been entered into the **CEEC Energy Curve Program** since its recent launch.

The **CEEC Energy Curve Program** is provided as an industry service, with the support of CEEC's sponsoring partners. These industry leaders fund CEEC's activities, allowing the CEEC Energy Curve Program to be offered without any participation fee. CEEC, a global not-for-profit company, is funded wholly by sponsorship from the mineral industry - Anglo American, Barrick Gold, Beacon Events, CITIC-HIC, Antofagasta Minerals, Schneider Electric, Gekko Systems, Ausenco, XT, Outotec, Orica, New Gold Inc, Derrick Corporation, Metso, AMIRA International, Mirabela Nickel, MMG, Weir Minerals, Multotec Ltd, Antofagasta Minerals, and Russell Mineral Equipment.

To review the **CEEC Energy Curve Program** and the most recent global industry results, visit CEEC's web site.

For further information and an interview, please contact Sarah Boucaut, Executive Officer, CEEC International Ltd at admin@ceecthefuture.org

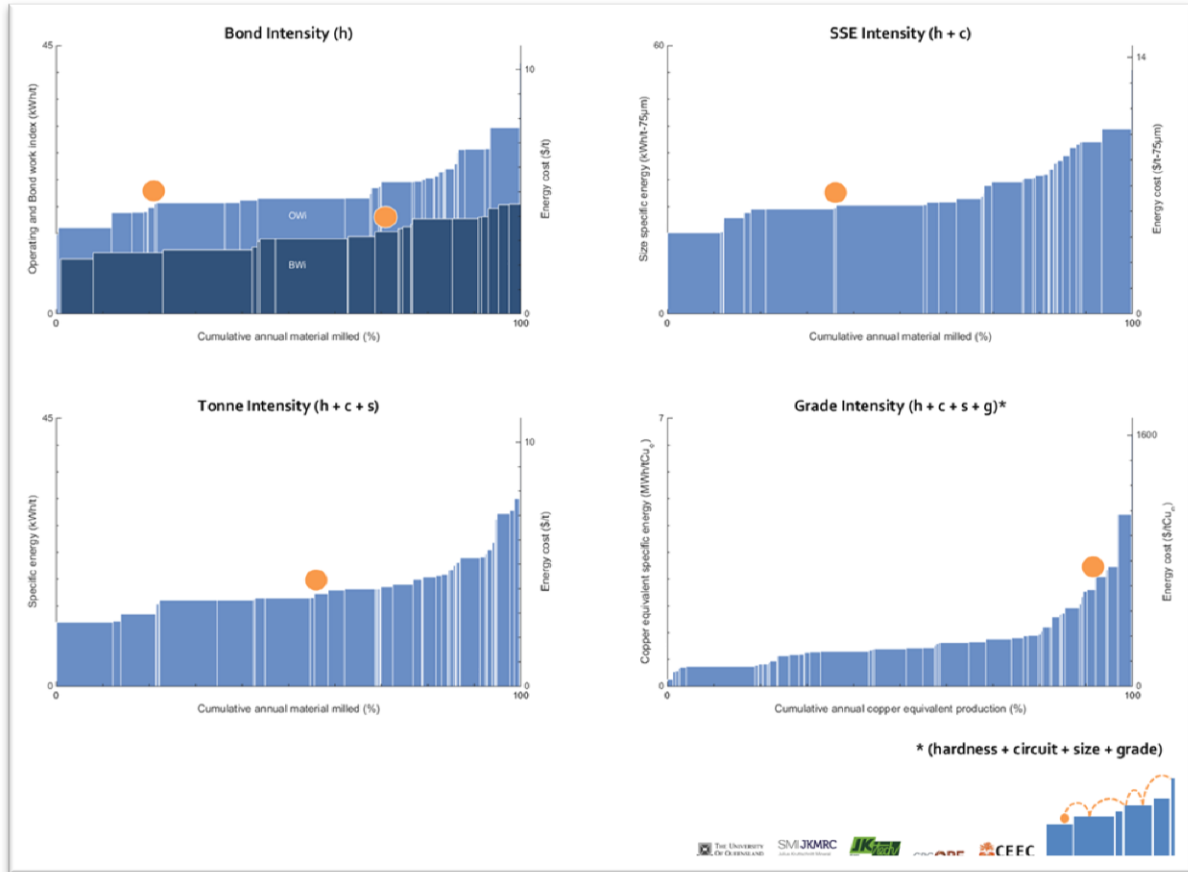


Figure 1: Sample of energy curves produced by CEEC Energy program.

