Thematic discussions

Mining

Wednesday 5 May, 2010

Viewpoint of the Scientific & Technological Communities on Mining

Thank you Mr. Chairman for giving the floor to the Scientific & Technological Communities

Mining, the primary production of metallic and non-metallic minerals, has an important role to play in sustainable development, as a source of essential raw materials, and as an engine of economic development and wealth creation. Minerals and metals are essential to every sector of every nation's economy and will play a determining role in the feasibility of the emerging technologies that sustainability will require. Thus, mining is inextricably linked to the other four thematic areas being addressed during CSD 18. For example, progress toward meeting sustainable development goals in the area of transport will require infrastructure built of aggregates, cement, and various metals. Minerals are also integral to sustainability in other areas, such as the MDG of food security, which will require fertilizers made of nitrogen, phosphorus, and potash.

We recognize that no single ore deposit or mine is sustainable. However, the ability of the minerals industry to make positive contributions to society, and to set the stage for empowering sustainable communities, increasingly depends on the sector's willingness to adopt sustainable mining practices. Many of these practices are in turn based on sound science and the application of appropriate technology. For mining technologies of the present and future to be compatible with sustainable development, they must be economically feasible, contribute to positive community development, fairly share risks and benefits within and across generations, and have low environmental footprints. Specific attention to the entire life cycle of a mine, from exploration, to project development, operations, closure and post-closure must become the frame of reference for any assessment of a mine project's contributions to sustainable development.

Specific examples of engineering-based technical improvements realized in mining over the past decade (and for which wider implementation is required) include:

- Reduction of the water footprints of mining and minerals processing (e.g., increased water recycling) and the use of environmentally benign dust-suppression chemicals that reduce road-watering intensity;

- Waste-heat recovery and co-generation projects resulting in significant efficiencies and reduction in carbon emissions;
- Use of renewable energy (such as solar, wind, geothermal) on mine-sites;
- Use of robotics, particularly in sub-surface environments that may pose unacceptable risk to human life such as excessive temperatures at depth or radioactivity;
- Re-processing of mineral wastes to recover lower grade remnants left behind by previous generations, as well as the rare earth elements essential for green technologies; and
- Proper management of waste stockpiles, including accounting for segregation of material types for leaching and/or future aggregate potential.

The Scientific and Technological Communities recognize that the advancement, sharing and application of knowledge, science, engineering and technology must be central to efforts of addressing the sustainable development challenges associated with mining. Mining, mineral processing and metallurgical engineers, and those in each of the supporting earth science fields, who have been trained in the principles of sustainability will be needed to implement scientific and engineering advances in the field. Supporting education and research in these fields will be essential and must be expanded, particularly in developing nations.

Thank you Mr. Chairman.

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