

Z. Supporting Ontario to Become a Leader in Global Mining Innovation

Authored by the Greater Sudbury Chamber of Commerce, Co-Sponsored by the Timmins Chamber of Commerce, the North Bay & District Chamber of Commerce, and the Sault Ste. Marie Chamber of Commerce

Issue

The current commodity downturn is impacting the competitiveness of Ontario's mining sector. Strategic government investments in areas such as mining research and innovation is needed to stimulate this sector in a challenging economic time and to position the province for success when global mining fortunes begin to turn for the better.

Background

Mining is a competitive advantage for the province. In 2014, mining and quarrying activities generated over \$8.3 billion in real GDP in the province. The Ontario Mining Association estimates that each additional \$1 billion of mineral production in Ontario contributes \$858 million to the province's GDP and creates nearly 4,500 jobs. Ontario's expertise in mineral production, mining supply and services, finance and innovation are in global demand.

With the current commodities downturn however, it is essential that the government take active steps, such as investing in innovation, to ensure the mining sector's continued role as an economic driver in the province. In face of a difficult economic environment, innovation and creative ideas are needed more than ever to reduce costs and increase production. Mining innovation allows for the development of new technologies, products, and business processes necessary for Ontario firms to stay competitive. With mines becoming deeper and more remote, research and innovation is increasingly essential to developing new tools and techniques to address these challenges.

Ontario is home to a number of nation-leading mining research and innovation groups and initiatives, including the Centre for Excellence in Mining Innovation (CEMI), the Mining Innovation Rehabilitation and Applied Research Corporation (MIRARCO), the Northern Centre for Advanced Technology (NORCAT), and important mining programs at postsecondary institutions including those offered at the recently established Goodman School of Mines. The Northern Ontario Mining Supply and Services Association (SAMSSA) also represents the largest concentration of expertise in mining supply/products and services including innovation.

Despite the importance of research and innovation, Ontario mining firms have been scaling back on investments in these areas in recent years and focusing on core operating priorities due to the difficult economic environment they are facing. Direct government investment is needed to fill this gap. Although we are encouraged by the 2015 Ontario Mineral Development Strategy which includes innovation objectives, we believe specific and measurable action items are needed to bring this vision to reality. Improved funding flows and ratios as well as a

broader vision of innovation will both contribute to sustaining mining innovation throughout the downturn and enhancing Ontario's mining innovation expertise on the global stage.

The success of mining innovation is impacted by the time it takes for funding to flow and the government to industry ratio of funding. In some jurisdictions proposals can take over a year to be processed and it can take another year before approved funding begins to flow. The time required impacts the momentum of the project as a whole, available talent and resources, as well as the delay in the potential economic impact and adoption. It also impacts the willingness of management within industry to commit to funds. Most managers and business heads are willing to commit to funds for projects that accrue benefits within their "lifetime" within a particular position, generally between 1-3 years. This incents shorter term thinking, unless the commitments are approved at the highest levels.

Generally, Ontario mining companies and government contribute research and innovation funds on a 1:1 ratio. Matching investments are provided regardless of the type of project. With fewer resources available from industry, this skews investments towards cheaper and lower-risk research projects, and away from the innovation and commercialization projects that are necessary to realize productivity gains in the sector. In order to attract funds and partnership from global mining companies, the Government of Ontario needs to consider adjusting its funding ratios and consider options such as increasing ratios to 4:1 or 5:1 to provide incentives to support larger-scale, longer-term, visionary provincial mining innovation projects given that the projects have a strong business case and a high return on investment. Increasing the relative-government-to-industry ratio for innovation and commercialization projects will incentivize greater industry investment in higher risk projects and boost productivity enhancing activity in Ontario during this downturn in the mining cycle. The chamber network encourages the province to work with the federal government to enhance funding ratios in mining innovation to better leverage private sector funds.

Further, for innovation to work, it must be adopted. Mining innovations need to be demonstrated and implemented as workable beyond the theoretical, but also show commercial viability. The lack of commercialization is one of the reasons why so little of the funding for mining research has impacted mine operations. The majority of funding in the province is targeted at research in academia that may not necessarily translate into industry-relevant innovation or commercialization. While university-based research is essential, research in operating mines and with suppliers is equally important. The Research, Demonstration and Implementation (RD +I) approach to focus on practical applications, distinct from academic research was developed by the Centre for Excellence in Mining Innovation (CEMI) in 2011 and is aimed at addressing this very important issue. Mining service and supply firms also make significant contributions to the commercialization process and their efforts

should be supported in an integrated manner. Funding and programming in such areas will further encourage commercialization and industry adoption of important mining innovations.

In face of the current economic environment and competition from jurisdictions with lower wages, operating costs, and less stringent environmental regulations, Ontario has little choice but to innovate. Given the relative strength and coherence of the mining industry, research and innovation organizations and our mining service and supply sector in Ontario, we have a tremendous opportunity to become a global powerhouse in this field – so long as all the factors for success are in place in which mining innovators can thrive. Conventional approaches are failing to deliver new mines at greater depths and in more remote locations; innovation is essential if we are to sustain our strength in mining. With the downturn in the global mining sector fueling the development of fewer projects, there is an opportunity for the industry to focus efforts towards innovation and developing the technologies that will increase the productivity of mining operations.

Recommendations

The Ontario Chamber of Commerce urges the Government of Ontario to:

1. Increase the relative government-to-industry funding ratio for innovation and commercialization projects, and manage funding flows as appropriate based on the size and timeframe of such projects.
2. Provide funding for mining innovation projects that go beyond academic research and incorporate the mining industry, the supply and service industry, and other cross-sector industries to support implementation and commercialization requirements.

Effective Date: April 30, 2016

Sunset Date: April 30, 2019