PDAC 2023: Critical Minerals, Battery Metals, ESG, and Financing in Focus at the Convention

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The Prospectors & Developers Association of Canada (PDAC) held its annual convention in Toronto and, according to convention organizers, returned to pre-pandemic levels with nearly 24,000 attendees, one of the largest crowds since it started in 1932. Critical minerals, battery metals, financing, and the zero-carbon economy, were at the forefront of company booths and conference presentations.

Overall, the convention showcased over 1,100 exhibitors from around the world and provided business, investment, and networking opportunities for attendees, and offered programs for professional development, including capital markets, sustainability, and technical programs.

Critical Minerals – a Popular Topic

Critical minerals seemed to be a popular topic of the conference and comparing the various “critical minerals” lists of different countries seemed a regular occurrence at presentations as well as discussions around how to move mineral exploration projects from resource definition to active mine under the current financing and regulatory frameworks.

With the world’s focus shifting towards low-carbon technologies, there is a growing need for critical minerals which serve as vital components for renewable energy and clean technologies

such as solar panels, wind turbines, small modular reactors (SMRs), and electric batteries. As a result, demand for these minerals is expected to rise.

Various speakers commented on the need for commodities such as cobalt, copper, nickel, palladium, platinum, scandium, vanadium, and rare earths (including neodymium and praseodymium) that are key minerals for the green transition.

Governments also used the event to make important announcements, such as Canadian Natural Resources Minister Jonathan Wilkinson's announcement of a $344 million investment to help advance the critical minerals sector.

Critical mineral companies with booths at PDAC 2023 included Appia Rare Earths & Uranium Corp. (CSE: API | OTCQX: APAAF), Avalon Advanced Materials Inc. (TSX: AVL | OTCQB: AVLNF), Energy Fuels Inc. (NYSE American: UUUU | TSX: EFR), Geophysx Jamaica Ltd. (Private), Ucore Rare Metals Inc. (TSXV: UCU | OTCQX: UURAF), and Western Uranium & Vanadium Corp. (CSE: WUC | OTCQX: WSTRF).

Battery and EV Metals

In any given year, certain commodities seem to grab the spotlight and lithium was a good example as soaring lithium prices, up 222% year-over-year, led to more companies highlighting their lithium projects to attract attention.

With new government initiatives, including the Inflation Reduction Act by the U.S. that makes the single largest investment in climate and energy in U.S. history, there was a focus was on North American lithium projects.

However, a resurging North American lithium sector might face challenges such as cost inflation, remote locations with poor

infrastructure, the lack of domestic secondary processing and refining capabilities, and the concern that the lithium price might not be able to maintain its current level.

Currently, the only operating mines in North America are the Silver Peak mine in Nevada, operated by Albemarle Corporation (NYSE: ALB), the Tanco Mine in Manitoba, operated by Sinomine Resource Group (SZSE: 002738), a major Chinese mining company, and the recently re-opened North American Lithium project, operated by Sayona Quebec, a joint venture between Piedmont Lithium (Nasdaq: PLL | ASX: PLL) and Sayona Mining (ASX: SYA).

In various presentations, Copper was also highlighted as a major component in electric vehicles (EVs) as it is used in the electric motors, batteries, inverters, wiring, and in charging stations. However, the price of copper was down 14% in 2022 from 2021 even though inventories of copper are at multi-year lows.

It was pointed out that with relatively few new copper mines coming into production, a decline in ore grade that results in higher operating costs, and potential supply shortfalls as early as 2030, all of these factors could put upward pressure on the copper price.

Battery metals companies with booths at PDAC 2023 included Clean Air Metals Inc. (TSXV: AIR | OTC: CLRMF | FRA: CKU) and Murchison Minerals Ltd. (TSXV: MUR | OTCQB: MURMF).

Financing is Often an Impediment

Except for the commodities boom in the first dozen years of this century, junior mining companies often struggle to raise capital and 2022 was no exception. Last year, mineral exploration and mining companies faced greater difficulties in obtaining equity or debt capital, which could indicate a potential decrease in exploration activities both in Canada and internationally this

year.

According to various presentations, global financing (equity and debt) for the mineral sector decreased by approximately 35% in 2022 from 2021. Although Canadian markets also experienced some impact, they were more resilient than other marketplaces in 2022 which lead to Canada’s market share of overall financings increasing to 29%, above its 10-year average of 22%.

Heightened tensions over geopolitical risks in a variety of countries, including social unrest in Latin America, conflicts in Ukraine and Africa, and tensions between the USA and China, bodes well for North American projects and financing options.

However, various speakers stressed the minerals required for a low-carbon future would require substantial investment in mining companies that dwarf current mining financing. Financiers stressed that there must be new ways to connect the mineral industry with capital to ensure that domestic economies have access to minerals required to support the decarbonization agenda.

Another notable trend in the critical minerals and battery metals sectors was the recent rise of direct investments from end users, especially from the electric vehicle industry. The desire for dependable supplies of these essential minerals is a major driving force behind these investments, underscoring the projected demand for these minerals and the intensifying rivalry among automakers as they shift towards electric vehicles.

ESG – Low Carbon or No Carbon Mining

Businesses, government, investors, and the general public’s interest in Environmental, Social, and Governance (“ESG”) issues and the rising demand for energy transition, continue to play in boardrooms, corporate and government policies, and investor

activism.

In Sinead Kaufman's, Chief Executive of Rio Tinto Minerals (NYSE: RIO | LSE: RIO), keynote speech, she talked about the challenges and opportunities for the mining industry as it shifts to a low-carbon economy.

Rio plans to reduce greenhouse gas emissions by 50% between now and 2035 by switching to electric trucks, and using biofuels, solar panels, and wind turbines as energy sources. They will also offset carbon emissions by finding land for conservation, restoration, or sustainable management to reach net zero by 2050.

Various presenters focused on "clean, green, or low carbon" options when it came to powering mining projects with a focus on hydroelectric and nuclear power. The province of Quebec touts that its mines emit fewer greenhouse gases than elsewhere in the world due to the use of 99% renewable hydroelectrical power and stringent environmental regulations. Nuclear and uranium discussions inevitably mentioned its classification as a zero-emission energy source and the potential use of SMRs, a category of nuclear reactor designs that are smaller in power output and physical size, which could be used in remote locations.

Companies that could benefit from hydroelectric power to produce low-carbon minerals include companies with projects in Quebec such as Murchison Minerals Ltd. (TSXV: MUR | OTCQB: MURMF) and Power Nickel Inc. (TSXV: PNPN | OTCQB: PNPNF).

Uranium companies with booths at PDAC 2023 included Energy Fuels Inc. (NYSE American: UUUU | TSX: EFR), F3 Uranium Corp. (TSXV: FUU | OTCQB: FUUFF), and Western Uranium & Vanadium Corp. (CSE: WUC | OTCQX: WSTRF).

Final Thoughts

Even with the various global crises, there was a sense of optimism at the conference as the attendance was back to pre-pandemic levels and the zero-carbon economy was at the forefront and the world cannot get to a net zero carbon world without a lot of mineral exploration and mine production.