

WEBINAR EXECUTIVE SUMMARY

Fuelling Our Future

Talent and technology in Canada's mining and oil and gas industries

September 8, 2026

The opportunity

Canada can strengthen its competitive position by pairing technology adoption with the talent needed to implement, operate, and scale it. The sectors' future depends on both.

At a glance

Canada's mining and oil and gas sectors are central to the economy and to the country's response to shifting trade, energy, and geopolitical conditions. Yet both sectors face a widening talent gap. An aging workforce, fewer young entrants, remote operations, and intense competition for technical skills are putting future growth at risk.

At the same time, these industries are adopting advanced technologies faster than the economy-wide average. The challenge is no longer whether technology will change the work. It is whether organizations can build and retain the workforce required to turn that technology into results.

What the evidence shows

The talent gap is growing

- Retirements are outpacing the arrival of younger workers.
- Employers struggle to recruit for remote and northern operations.
- Mining engineers, metallurgists, industrial trades, equipment operators, and general labour are in short supply.
- Workers with AI, automation, and digital skills are difficult to recruit and easy to lose to other sectors.

Technology adoption is already reshaping work

Mining and oil and gas organizations report above-average adoption of advanced technology. Mining has especially high exposure to automation, with about 40 per cent of employment concentrated in occupations described as highly exposed.

- Environmental monitoring and advanced mapping
- Digital twins, simulation, and AR/VR training
- Battery-electric vehicles and advanced material handling
- Data analytics, AI-enabled decision support, and digital operations

Technology and talent must advance together

New tools only create value when people can deploy them with discipline. Employers need practical reskilling pathways for existing workers, stronger technical career paths, and closer relationships with the colleges, universities, applied research centres, and technology vendors that help move innovation from pilot to scale.

What is holding the sectors back

Outdated perceptions

Many young people still see mining and oil and gas as declining, low-technology industries. They may not see the innovation, creativity, or range of careers within them. They also may not recognize that the same engineering, trades, data, and operational skills support emerging fields such as carbon capture, direct air capture, hydrogen, advanced materials, critical minerals, and small modular nuclear technologies.

The search for purpose

Pay and security still matter, but they are not enough. Younger workers also want interesting work, visible impact, and a sense of purpose. The sectors can make a stronger case by connecting careers to energy security, critical minerals, responsible resource development, clean technology, and Canada's economic resilience.

Location and access barriers

Remote work sites, housing pressures, regional mobility, and limited awareness of career pathways can narrow the talent pool. Stronger participation by women, Indigenous peoples, newcomers, and other underrepresented groups remains both an inclusion priority and a workforce opportunity.

Promising approaches

Build training with industry

Co-develop short-cycle programs and credentials based on real operating needs. Use employer partnerships to keep curriculum current.

Create transition pathways

Help experienced workers move between industries and roles by mapping adjacent skills and providing targeted bridging programs.

Show the work as it is

Reach students through credible ambassadors, contemporary channels, and authentic stories of innovation, creativity, and impact.

Test Learn and Stay models

Pair tuition support with regional work commitments to improve recruitment and retention in northern and rural communities. The mining model discussed remains a proposal and has not yet launched.

Examples from Cambrian College

- Battery-electric vehicle maintenance for experienced diesel mechanics
- Data analytics, data visualization, and introductory AI for mining professionals
- Surface-to-underground and cross-industry transition training
- Underground construction-miner preparation and mining terminology support for newcomers
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Priority actions

Industry	Invest in reskilling and retention. Deepen partnerships. Tell a clearer story about purpose, innovation, creativity, and transferable skills.
Government	Modernize technology-adoption incentives. Improve permitting and project coordination. Support regional workforce development, housing, and Indigenous partnerships.
Education	Align programs with changing industry needs. Build flexible credentials and transition pathways. Bring credible industry voices into student decision-making.

Bottom line

Canada has the resources, industrial capabilities, and innovation networks to lead. The constraint is execution. Progress will require a coordinated talent strategy that attracts new entrants, expands participation, upgrades existing skills, and links workforce development directly to technology adoption.

Source: Webinar transcript, *Fuelling Our Future: Talent and Technology in Canada's Mining and Oil & Gas Industries*, September 8, 2026.