Alberta's AI Economy is an Energy Workforce Story

Alberta is not building a digital economy. We are building an **energy system for AI**. The workforce implications are widely misunderstood.

Executive Summary

- Data centres in Alberta are **energy projects before they are digital ones**. Power infrastructure must precede compute capacity.
- Energy workforce demand will scale ahead of data centre operations, with **5 energy jobs for every 6 operational roles**.
- Workforce demand will be concentrated in engineering, skilled trades, and facility operations. IT roles will account for roughly **30–33% of total jobs**, not the majority.
- Timing is critical: operational hiring is expected to ramp up by **2028**, leaving a narrow window to align workforce development with demand.

By February 2026, Alberta's Major Projects list highlighted an impressive $46.95 billion in new data centre initiatives. If realized, these projects promise to create a significant positive impact on Alberta's GDP and boost economic growth. The question is, ***what long-term jobs will the industrial development of data centres create in Alberta?***

This article outlines the operational roles expected as data centres are established in Alberta. Our primary data source is the announced data centre projects in Alberta's Major Project List[1]. By evaluating factors such as labour intensity and variability, automation sensitivity, and demand elasticity, we provide insights into what the workforce could look like if planned data centres are established.

Key Insights

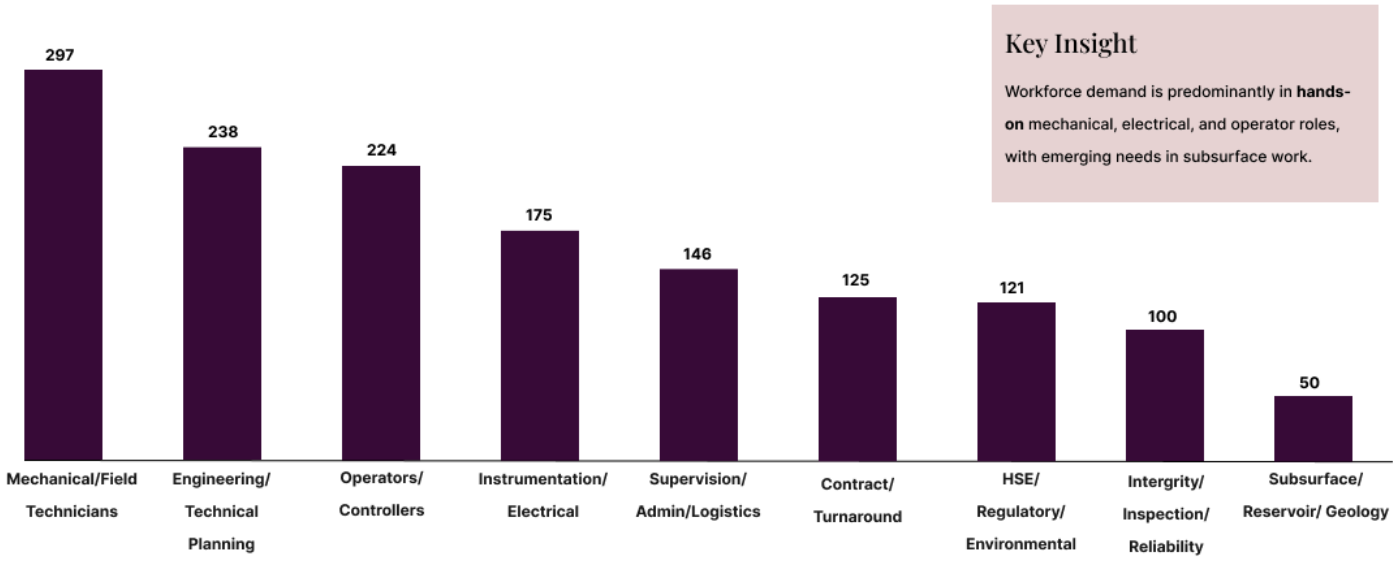
1. Data centres: Energy projects first, digital projects second.

The proposed wave of large-scale data centre developments in Alberta will require over 5.2 GW of power by 2029—a significant addition to a grid that typically operates within an 8–12 GW demand range[2]. In effect, these projects alone could represent up to ~65% of the current provincial load, reshaping Alberta's power demand profile. Provincial directives now require data centre developers to "*bring their own power*." This means energy infrastructure must be financed, permitted, and operational before a single server is deployed.

Developers will need to stand up new generation capacity, alongside supporting infrastructure, including natural gas production and processing, power generation facilities, transmission and interconnection upgrades, and fuel supply logistics.

[1] Alberta Major Projects: Government of Alberta; 2026
[2] Annual Market Statistics Reports : Alberta Electric System Operator; 2026

Fig 1: Energy Infrastructure Workforce (FTEs) Required to Support Development of Multiple Data Centres (Combined 5.2 GW Capacity)



This phase will drive substantial job creation across upstream energy, midstream infrastructure, and grid development, as shown in Figure 1.

Alberta's policy shift—from production caps to carbon competitiveness—creates a pathway to expand energy production while managing emissions at scale[3]. Given the expected reliance on natural gas generation, this implies significant deployment of Carbon Capture, Utilization, and Storage (CCUS) across power and industrial systems. Consequently, CCUS will become increasingly embedded in the energy strategy, driving new demand for specialized roles in capture systems, CO_2 transport, storage, and monitoring, especially for subsurface specialists.

What this means:

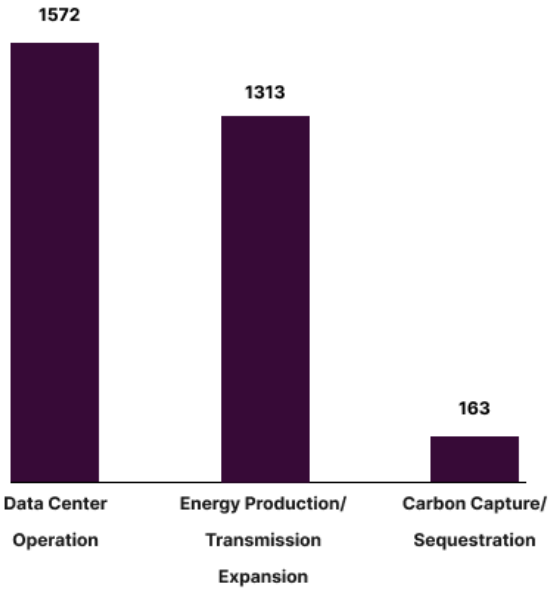
- Mechanical, electrical and operator roles will dominate the energy workforce with **emerging demand for subsurface specialists.**
- Energy-related roles will precede and enable data centre employment, with a rough order-of-magnitude relationship of **~5 energy jobs for every 6 data centre operational roles,** as shown in Figure 2.

2. Workforce pressure will be infrastructure-led

A typical data centre facility employs only a few dozen permanent staff, with roles concentrated less on software and more on operations, infrastructure, and

[3] *Canada-Alberta Memorandum of Understanding*; Prime Minister of Canada; 2025

Fig 2. Projected Operational FTEs Across Multiple Data Centres (Combined 5.2 GW Capacity) and Associated Energy Sector FTEs



Key Insight

Energy-related roles will enable data centre employment at a scale of 5 energy jobs for every 6 data center operational roles.

reliability[4]. Using staffing benchmarks and workforce data, the total number of operational roles required is expected to range from **1,048 to 2,359 FTE**, with a central estimate of **~1,572**. As shown in Fig 3, demand will be concentrated in:

- Engineering: electrical, mechanical, and controls;
- Facilities and infrastructure operations: electricians, heating, ventilation and air conditioning (HVAC) techs; and
- IT operations.

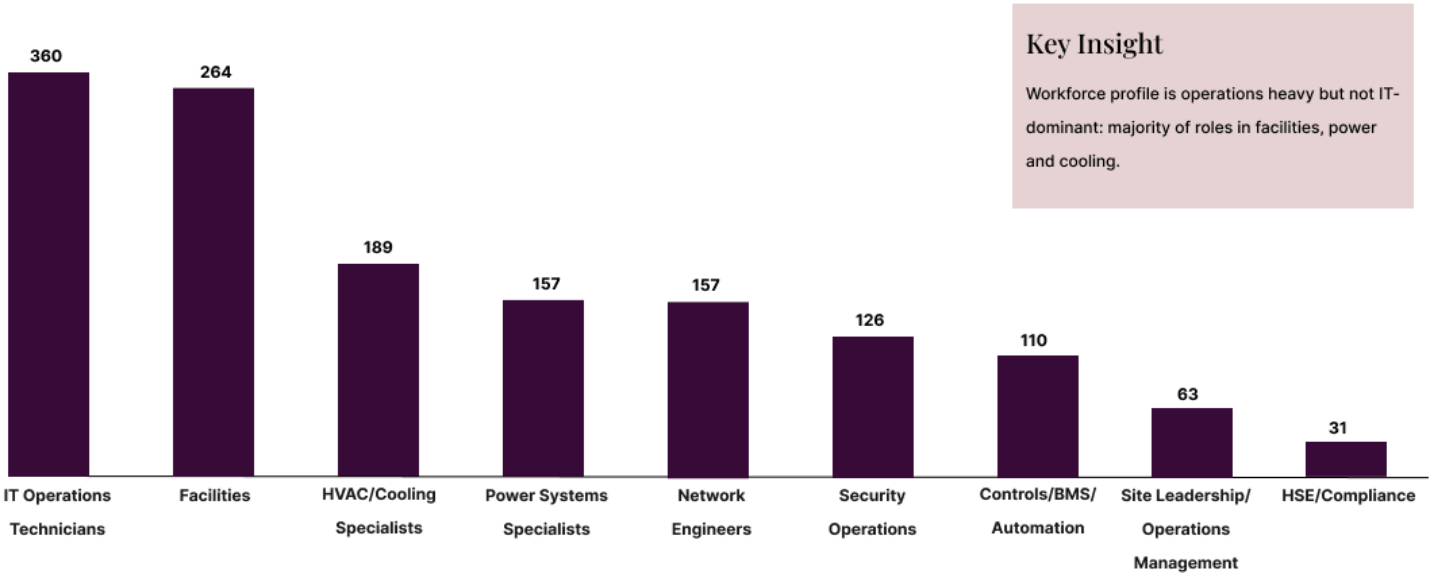
IT roles will remain critical, but not dominant. We estimate they will account for **~30% of total operations roles**. Across Meta[5] and Google[6] data centres, the most consistently hired roles are in electrical, mechanical and facilities systems—confirming that data centres operate as infrastructure systems, not IT-dominant workplaces. Within the IT roles, workforce data suggest that demand will be dominated by skilled labourers[7]. Particularly, fibre technicians, physical connectivity installers and network engineering techs.

What this means:

- **Post-secondary institutions:** Shift from IT software-heavy programs to electrical, mechanical, operations and physical connectivity training.

[4] How Many Jobs Do Data Centres Create? It Depends. Data Center Knowledge; 2025
[5] Growing local economies; Meta; 2026
[6] Data Center Careers; Google Data Centers; 2026
[7] AI growth sparks demand for fibre techs; Business Insider; 2026

Fig 3. Distribution of FTEs Across Core Operational Functions for Multiple Data Centres with a Combined 5.2 GW Capacity.



- **Government:** Align workforce strategy with energy and infrastructure development.
- **Industry:** Expect increased competition for trades and facility operators—not software engineers.

3. Operations ramp-up: 2028

Based on our analysis of large-scale project delivery timelines, operational hiring tied to new developments is likely to begin ramping up in **2028**. To arrive at this, we examined historical construction timelines on a per-billion-dollar basis and layered in two critical dimensions of risk.

First, **realization risk**—the likelihood that announced projects actually move forward. This was assessed through pre-construction signals: municipal readiness, strength of demand, regulatory and policy pathways, and access to enabling infrastructure such as power, water, cooling, and labour.

Second, **construction risk**—the variability in delivery timelines once projects are underway. Here, we drew on historical benchmarks, factoring in labour availability and the potential for schedule slippage.

Across both dimensions, projects that clear early-stage hurdles today translate into **operational workforce demand within a compressed 2-year window**.

What this means:
Alberta is now operating within a narrowing window **(2026 to 2028)** to align workforce systems with emerging demand. By the time hiring begins at scale,

the ability to respond will be largely predetermined by the actions taken now.

In practical terms, the 2028 workforce should already be in development.

Conclusion

Preparing for the future

In Alberta, the AI economy will be built by electricians, operators, and engineers before it is run by software. We are at the brink of a transformative era that will involve both an energy transition and a workforce transformation as the province adapts to a changing landscape of major investments and technological advancements.

The changes ahead present both challenges and opportunities. To fully harness these opportunities, government, educational institutions, communities and industry must collaborate to ensure a skilled workforce.

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How this analysis was built

This analysis estimates long-term operational roles required for optimal operations of announced data centre projects listed in Alberta's Major Projects Inventory and the energy infrastructure that will enable them.

Announced Data Centres on Alberta's Major Project List Included in this Analysis

Data Center	Facility Demand (MW)
Synapse Olds Data Centre	1000 MW
Beacon Artificial Intelligence Hub (5 locations)	2000 MW (5 x 400 MW)
Wonder Valley AI Data Centre Park (Phase 1)	1400 MW
Technologies New Energy & Data Centre District Centres	240 MW
eStructure CAL-3 Data Center	90 MW
Crusoe AI Data Centres	~510 MW (3 x 170MW)

Source: Alberta Major Projects List, Government of Alberta

Project baseline and workforce demand estimates

This analysis combines project-level demand estimates with industry workforce benchmarks to model employment impacts from data centre development in Alberta.

Power requirements for proposed facilities (~5.2 GW) were compiled from publicly available project disclosures and compared against Alberta's current grid capacity to assess infrastructure implications. Workforce estimates were then developed as follows:

1. Scale of employment (how many jobs): Benchmarked using industry staffing ratios (FTE per MW) and observed headcounts from operating hyperscale data centres, as reported by Uptime Institute[8] and market analyses.

[8] The people challenge: Global data center staffing forecast 2021-2025; Uptime Institute, 2021

2. Occupational distribution (what kinds of jobs): Derived from Uptime Institute staffing frameworks and triangulated with real-world role structures disclosed by operators such as Meta and Google, including facilities (power and cooling), IT operations, engineering, and site support.
3. Energy-related employment (generation, transmission, and carbon capture) was modelled separately based on the additional capacity required under Alberta's "bring your own power" policy, using analogous workforce patterns from natural gas and power infrastructure projects.

Estimates are presented as ranges to reflect variation in facility design, automation levels, operating models, and delivery timelines.

Adjustment factors

Estimates were refined using four key modifiers:

- **Automation sensitivity:** Higher automation reduces routine IT and monitoring roles
- **Labour intensity:** Varies by facility design, uptime requirements, and redundancy
- **Realization probability:** Accounts for the likelihood of project execution based on infrastructure readiness and policy conditions.
- **Construction and commissioning timelines:** Determine when operational roles materialize

Limitations

This analysis focuses solely on **long-term roles required for optimal operations** and excludes construction employment, indirect and induced jobs, and short-term commissioning labour. Actual outcomes will depend on final investment decisions and the pace of project execution.