Alberta's Workforce for the Data-Driven Future: A Skills Needs Analysis for 2030

As data centers surge to the forefront of Alberta's industrial landscape, preparing our workforce for this shift is crucial. This article outlines the type of operational jobs that can be anticipated in Alberta.

Executive Summary

- Expect an expansion of power infrastructure and jobs in energy generation, transmission, and emissions reduction
- For every 30 operational jobs in data centers, 10 additional roles will be needed in the supporting energy sector.
- Labour demand will be occupation-specific, with a mix of engineering, technical, and skilled trades roles. IT-specific positions are projected to comprise about 30% of total jobs.
- Operational hiring for data centers will ramp up by 2028, underscoring the need to begin skills development by 2026.

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

This article examines the workforce required for long-term facility operations in data centers and highlights essential roles. Our data source is the announced data centre/AI compute projects in Alberta's Major Project List[1]. By evaluating factors such as labour intensity and variability, realization and construction variability, automation sensitivity, and demand elasticity, we provide insights into what Alberta's workforce future will be if planned data centers are established.

Key Insights

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

Alberta's proposed large-scale data centre developments, which together would require over 5 gigawatts of capacity, are expected to place a significant demand on the current grid by 2029. For reference, typical grid demand across the province ranges from about 8 to 12 gigawatts[2]. These data centres will require power equivalent to 65% of the province's total daily energy use. To maintain adequate grid reserve margins while

[1] *Government of Alberta. (2026). Alberta Major Projects. https://majorprojects.alberta.ca/*

[2] Alberta Electric System Operator. (2026). *Annual Market Statistics Reports » AESO.* https://www.aeso.ca/market/market-and-system-reporting/annual-market-statistic-reports/

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

Data Center	Facility Demand (Mega Watt)	Investment (C$M)
Synapse Olds Data Centre	1000 MW	$10 billion
Beacon Artificial Intelligence Hub (5 locations)	2000 MW (5 x 400 MW)	$20 billion ($4 billion x 5)
Wonder Valley AI Data Centre Park (Phase 1)	1400 MW	$12 billion
Technologies New Energy & Data Centre District Centres	240 MW (combined)	$1.2 billion
eStructure CAL-3 Data Center	90 MW	$.75 billion
Crusoe AI Data Centres	~510 MW (3 x 170MW)	$3 billion

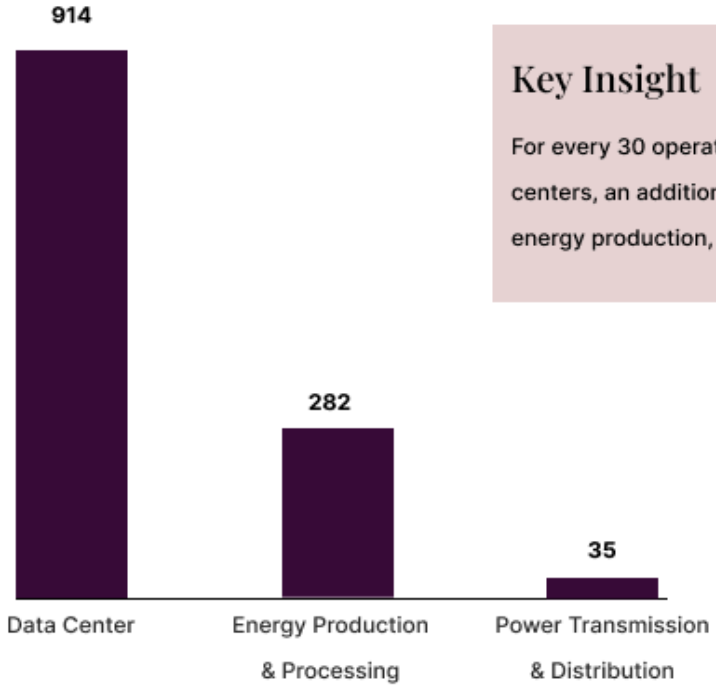
Source: Alberta Major Projects; Government of Alberta

supporting industrial growth, Alberta will need to improve its infrastructure. This includes upgrades to power transmission systems, natural gas and fuel supply.

We can expect new operational jobs in power generation, transmission, and management to precede core data centre operations jobs at a ratio of 1:3 as shown in the chart below. These data centre-enabling energy jobs will also feature a vibrant mix of clean technology roles, particularly in Carbon Capture, Utilization, and Storage. The recent shift from production-limiting caps to climate competitiveness, which prioritizes carbon pricing and capture, will enable increased conventional energy production while reducing emissions through industrial carbon pricing and significant investment in emissions-reduction technologies[3]. This new approach will require large-scale implementation of carbon capture technologies, supporting environmental goals and creating job opportunities in power generation, transmission, and emissions reduction.

[3] Prime Minister of Canada. (2025). *Canada-Alberta Memorandum of Understanding*. https://www.pm.gc.ca/en/news/backgrounders/2025/11/27/canada-alberta-memorandum-understanding

Projected Operational Jobs in Data Centers and Resulting Energy Jobs



Key Insight

For every 30 operations jobs created in data centers, an additional 10 jobs will be needed in energy production, transmission, or distribution.

2. Workforce pressure will be occupation-specific

As we integrate data center projects with the energy infrastructure projects that support their operations, we start to identify the broad range of occupations needed. This analysis is based on historical data regarding labour intensity, labour variability, demand elasticity, and automation sensitivity. Evidence suggests that a typical data center facility employs a few dozen permanent staff, many of whom are technicians and infrastructure operators rather than IT specialists[4].

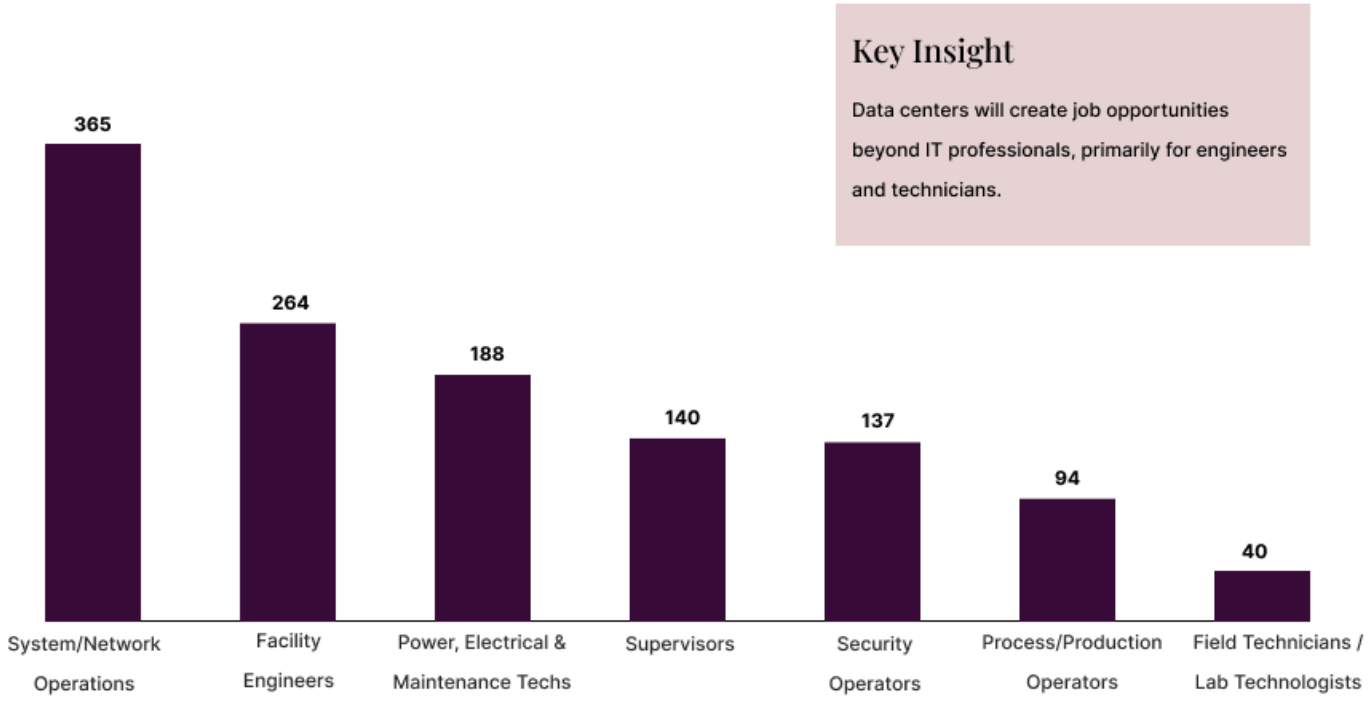
Total operations jobs across the referenced data centers will range from about 1,000 to 1,800, with the most likely number just over 1,230. The broad occupations of operational roles are shown in the chart below. Demand for workers will be primarily concentrated in:

- Engineering and technical roles,
- Skilled trades, electrical roles, and
- Power and process operator roles.

IT specialist roles will represent approximately 30% of total operations positions due to greater projected sensitivity to and adoption of AI and automation in day-to-day operations.

[4] Tozzi, C. (2025). How Many Jobs Do Data Centers Create? It Depends. *Data Center Knowledge*. https://www.datacenterknowledge.com/operations-and-management/how-many-jobs-do-data-centers-create-it-depends

Projected Operational Jobs by Broad Occupations



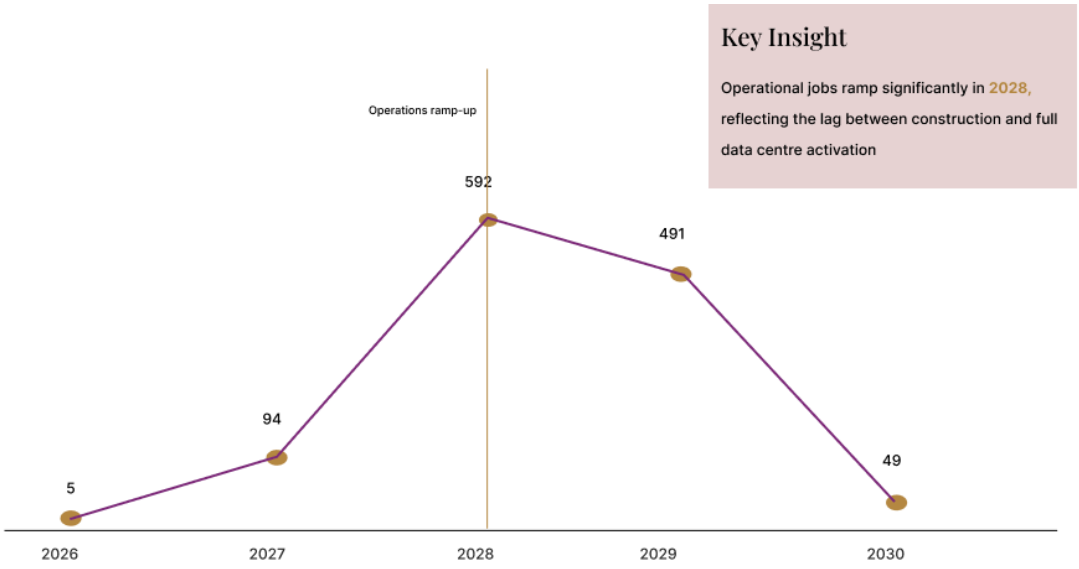
3. Operations ramp-up will happen in 2028

We examined the potential timeline for operational jobs to become available based on historical data related to construction timelines per billion dollars. This analysis took into account both realization risk and construction risk.

Realization risk was quantified using a coefficient derived from several preconstruction factors, including municipal support and readiness, projected demand, overcoming policy and regulatory challenges, and access to essential resources like power, water, cooling, and labour. On the other hand, construction risk was assessed based on historical timelines for similar projects, accounting for potential delays and the availability of construction labour.

Operations are expected to ramp up significantly in 2028. As such, skills development to meet the future needs should ideally have begun by now.

Five-Year Operations Job Trend with Data Center Implementation



Conclusion

Preparing for the future

Alberta is on 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 for our communities and future generations.

As we prepare for a ramp-up in operations by 2028, three core elements will be essential to solidify Alberta's future as the energy powerhouse for AI:

1. Education Systems: Our education systems must align with industry demands.
2. Skills Transformation: We need to focus on upskilling and reskilling workers to equip them with the capabilities required for emerging sectors.
3. Labour Mobility: Workers must be empowered to move efficiently between different sectors, regions, and occupations.

To fully harness the opportunities ahead, government, educational institutions, communities and industry must collaborate now to ensure a skilled workforce.

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