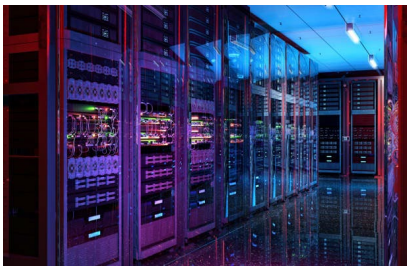
Alberta Data Centres: Boom or Bust?

Banzi Advisory



Electricity access and policy uncertainty is a challenge to Data Centre development realisation

$300 Billion dollars of private capital investment in a free-market economy needs a degree of certainty that it is going to make some profit out of the investment before it will commit to the industry. Increasing the risks on this certainty can usually be accepted if there are alternatives that a financial model can understand and find a path to commercialisation. If there is still sufficient certainty on profit, or the reward is worth the risk then rational capital would be deployed and the investment future is realised.

So how does the Alberta data centre development investment market stack up? Let's look at the profitability equation

Revenue

Data centre developers, at their basic context, sell commercial retail space. They'll enter lease agreements with tech entities looking to house compute space who would typically install, own and operate their own computing servers. Landlord ensures all the systems and utilities required are installed and well maintained. Developers de-risk the capital build by securing sufficient lease to enable a base business case. Once this hurdle is overcome, construction can start. Well established development teams will have a pipeline of customers seeking space, have trust with eachother and are likely to close the revenue negotiations for lease space on a bilateral basis reasonably easily. The commercial pathway that underpins the investment is well established and likely to not be a challenge if the tenants have everything they need. Pricing against alternative jurisdictions does depend on local costs and the developer being able to flow these through to the tenant or recover them from the lease. Who takes on these variable risks is important in the Alberta context.

Capital Costs

Concrete, steel, HVAC and cooling systems & on-site electrical etc. Engineers are very good at designing and costing out the capital costs. Some delays & overages are factored in with some contingency, but by the time construction starts, build cost *should be* known. Risk of blowing out the budget is well mitigated on the equipment side with locked down purchase agreements. Labour and weather are variable and likely to become more volatile. If significant and simultaneous infrastructure builds are taking place across the province, labour, with accommodation to support, may become constrained. Securing labour at known costs and ability to hit construction schedules may become a challenge for EPCs to price correctly, likely to lead to additional contingency being priced into capital. Capital costs will likely show increasing price pressure, but once construction starts, variations should be within a risk adjusted acceptable range.

Opex Costs

Land leases, taxes, utilities (energy, water & fiber links), O&M costs would constitute the OPEX cost bucket.

Land – facility sizes are typically around 5,000ft^2 per MW (DataCentreKnowledge.com) and thus for 13,000MW we'll need approximately 60,000 acres. Prime sites close to amenities and utility interconnections will command a premium, but developers will already have these option agreements in-place, so land access and cost certainty won't be a challenge.

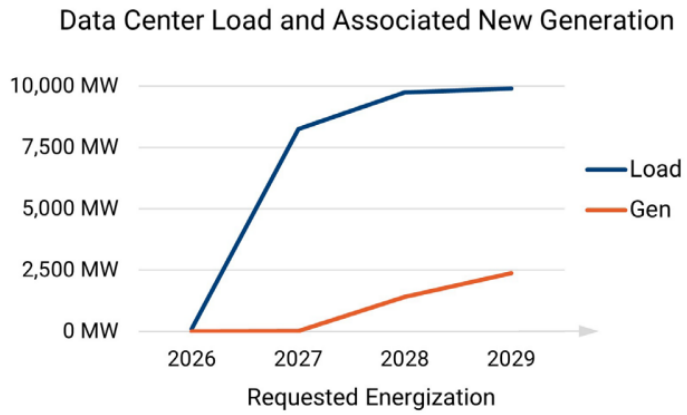
Taxes – known tax structures through the municipalities and districts allow land taxes to be quantified and calculated with little risk other than through town council changes. Uncertainty risk low.

Utility costs – will likely become increasingly uncertain, significantly increasing the development cycle timeline and costs to finalise an economic decision pack for capital investment and lending. The particular considerations are detailed below:

Electricity

The Government of Alberta through the AESO has indicated they will "enable the connection of up to 1,200MW of large load projects" by 2028 (https://www.aeso.ca/aeso/media/aeso-announces-interim-approach-to-large-load-connections), for everyone else, bring your own power.

While not a complex problem to technically solve, the determination of reasonable cost certainty to support investment decision making is going to be a challenge, especially for those entities looking to secure debt to support construction.



Source: AESO Data Centre Update

As there is a transmission system capacity shortage, on-site generation would be an option that developers have better control over to execute and access power. The need for reliability and cost effectiveness would push the technology choice to a combustion form of generation and mostly natural gas. This is abundant in Alberta, with reasonably easy access to the pipeline network, which makes it the base choice.

However, lead times on gas fueled electricity generating equipment is getting longer and longer (https://www.reuters.com/business/energy/rush-us-gas-plants-drives-up-costs-lead-times-2025-07-21/), with OEMs of gas turbine generators indicating lead times of 5 – 7 years depending on size and type. Specific technology choice will need to consider future policy compliance, including clean electricity regulations and carbon policy and pricing abatement technologies and sequestration services. As Alberta challenges the constitutionality of the Federal Clean Electricity Regulations and policy uncertainty is introduced regarding the price of carbon under the Pollution Pricing Act and Alberta's compliance with that, choosing the right technology for the optimal business case comes with significant long term value risks.

Hyperscalers are still committed to a net-zero future, many with a renewable commitment too. Without grid access, it will become a challenge for Hyperscalers to meet their climate goals if they rely on behind the fence gas fired generation. How may this limit the population of credit worthy data-centre tenants and convert into bank-able revenue leases for the developers?

Natural Gas

To supply 115TWh of gas generation will need about 2.25 Bcf/d or 20% more than current gas production in Alberta (AER). Gas reserves are unlikely to be a challenge, however might transportation and distribution bottlenecks be the next obstacle review that the GoA asks to be paused while it considers a cost effective path forward for Alberta consumers? Gas prices and thus cost of electricity production are likely to rise with this increase in demand, although as a sophisticated market, costs are likely to be modelled more reasonably. 2

Fiber connectivity

Public data on trunkline capacity is somewhat scarce, however assume telcos will be sufficiently rewarded to build out new infrastructure to debottleneck constraints where they are found. Cross border flow of data, while not on the radar might become a security concern for future regulatory considerations.

Opex cost certainty and start-up dates are going to remain a challenge in the near to mid-term. Some developers may try to push these onto the tenants through the leases, however, will the tenants see sufficient benefits in the other locational advantages to accept these risks and choose Alberta as a destination of choice, or may other jurisdictions be more supportive?

Key risks that remain uncertain and which will impact investment decision making:

- Revenue – certainty for users on costs of operations – high variability due to opex flow through risks and costs. Protracted negotiations and slow deal making.
- Labour costs in capital estimates - moderate risk of uncertainty
- Schedule delays in project completion – moderate risk of uncertainty
- Electricity cost – high risk of pricing uncertainty and a wide cost input variable.
- Gas Costs – Moderate / low risk, although supply shortages might drive pricing on an international basis with knock on impacts locally.