The AESO's Role in Data Centre Projects

Interest in developing data centres in Alberta is growing, bringing increased demand for electricity. The AESO works to ensure these projects can connect to the grid while maintaining reliable service and supporting a safe and affordable electricity system for Albertans.

What does the AESO do for data centre projects?

1. We assess requests to connect to the grid

Facilities that need to connect to Alberta's transmission system go through the AESO's Connection Process.

The AESO studies the proposed connection to understand how it would affect the electricity system. This includes reviewing the project's expected electricity demand, the strength and stability of the grid in the area, and whether changes to the transmission system may be needed.

Each connection is assessed against the technical and reliability requirements of the grid.

2. We set technical requirements for transmission-connected data centres

Data centres can operate differently from many traditional electricity users. Their equipment can cause rapid changes in electricity supply and demand, and the size of some facilities can have significant operational impacts on the grid, and some facilities can have large or rapidly changing electricity needs.

The AESO has established technical and operational connection requirements for transmission-connected data centres. These requirements set clear expectations for how data centres must connect and operate on the grid safely and reliably.

3. We assess how much new demand the grid can reliably serve

The AESO cannot connect every proposed project at the same time. Doing so would affect the reliability of the electricity system.

In June 2025, the AESO established an interim allowance of 1,200 megawatts (MW) for new large-load connections (75 MW or more) that could be reliably served between 2025 and 2028. The approach was designed to make use of the existing transmission system to serve new load while supporting resource adequacy.

All interim 1,200 MW have been allocated to prospective projects.

4. We are now developing the long-term framework for data centres

One way to support large new electricity users is for a project to bring new electricity supply with it.

The AESO is developing a bring-your-own-generation (BYOG) process for large loads. The approach is intended to recognize projects that provide new sources of supply alongside new electricity demand.

This framework is being developed with industry input. It considers how it can support large-load growth while maintaining reliability and avoiding unnecessary impacts on other electricity customers.

The AESO continually plans for future electricity needs and determines when and where infrastructure is needed to maintain reliability.

Does the AESO approve data centres?

The AESO does not approve or regulate data centres. The following list showcases who's responsible for what:

AESO
Plans and operates Alberta's electricity system; assesses connections; establishes technical requirements; plans transmission needs and maintains system reliability.

Data Centre Developer
Develops the data centre and must meet applicable connection, technical and regulatory requirements.

Alberta Utilities Commission
Independently reviews and decides applications for regulated utility infrastructure, such as power plants, transmission lines and substations.

Government of Alberta
Establishes the energy policy and the legislative framework that guides the electricity sector and supports economic growth.

Transmission Facility Owner
Designs, builds, owns and maintains transmission facilities required for approved connections.

Distribution Facility Owner
Own and operate the local power lines that deliver electricity to homes and businesses.

Retailers
Sell electricity and manage customer billing.

Why do data centres require additional planning?

Data centres can use large amounts of electricity and may have operating characteristics that differ from traditional electricity loads.

For the AESO, this creates several considerations:

- **Reliability:** The electricity system must have enough supply and transmission capacity to serve new demand reliably.
- **Grid stability:** Large or rapidly changing loads can affect system voltage and frequency.
- **Power quality:** Data centre equipment can have characteristics that affect power quality and system performance.
- **System planning:** The AESO needs to understand where and when new demand may develop so it can plan the transmission system.
- **Costs:** New transmission infrastructure is ultimately paid for through electricity rates and upfront contributions. Planning must consider who benefits from new infrastructure and how costs are allocated.
- **Project readiness:** The AESO needs confidence that projects are sufficiently advanced to support reliable system planning and connection decisions.

What happens when a data centre needs to connect?

A simplified version of the process looks like this:

1. A project proposes a connection

The developer provides information about the proposed data centre, including its expected electricity demand and connection requirements.

2. The AESO studies the connection

The AESO assesses how the project would affect the electricity system and identifies any technical requirements or system upgrades that may be needed.

3. The project meets connection requirements

The developer must meet the applicable technical, operational and project-readiness requirements before the connection can move forward.

4. Regulatory approvals may be required

Where new utility infrastructure is required, the appropriate regulatory approvals are obtained. The AUC has a role in reviewing applications for regulated utility infrastructure.

5. The project connects and operates within system requirements

Once the required steps are complete, the data centre can connect and operate, subject to the requirements that apply to its connection.

Learn more

For more information about the AESO's role in connecting data centres, visit these resources:

- Large Load Projects
- Phase 2A: Large Load Integration | BYOG Process | AESO Engage
- Connection Requirements for Transmission-Connected Data Centres
- The AESO Connection Process
- Map of current data centre projects in the Connection Process