



Flick a switch, and instantly the lights come on. We rarely think about where electricity comes from or how it gets to our homes and businesses. It may seem like magic, but it takes immense planning, coordination and perfect execution to ensure we have power when and where we need it.

> WHAT IS THE GRID?

The Alberta Interconnected Electric System or “grid,” consists of electricity generators—powered by a variety of different fuel sources—and the large high-voltage power lines and equipment that bring electricity to where it’s needed. Think of transmission lines like an extension cord in your home; they transport power from where the energy is, e.g., your wall outlet, to where it’s needed, such as an appliance.

> THE SYSTEM COORDINATION CENTRE

Keeping the lights on requires constant monitoring of the grid, 24 hours per day, every day of the year. Within the AESO’s System Coordination Centre (SCC), System Controllers monitor the entire system including *generation* (how much electricity is being created), and *demand* (how much electricity is needed). They ensure the two are connected through the grid.

If a power line goes out of service, other equipment breaks down, or unforeseen circumstances occur in the system, the controllers can reroute electricity through other lines. If one region of the province has exceptionally high electricity demand, System Controllers make sure enough electricity is delivered while never compromising another area.

Alberta’s grid isn’t completely independent. The SCC ensures electricity can move back and forth between our neighbours through “interties.” These are transmission lines connecting us to the rest of western North America through British Columbia, Saskatchewan and Montana.

> LOOKING TOWARD THE FUTURE

Planning ahead is a complex task and the AESO must accurately forecast how much electricity we will need, and ensure we have a grid capable of meeting those needs. A robust and unconstrained transmission system is one that provides open access and sufficient transmission capacity, so that all available energy can be transmitted without constraint under normal conditions. If the grid isn’t sufficient, the livelihood of all Albertans and our economy is put at risk.

> CHECKS AND BALANCES

The *Electric Utilities Act*, passed by the Government of Alberta, is legislation that establishes the AESO’s mandate to operate the grid. At all times, we act in the public interest. The AESO must also adhere to rules and reliability standards set forth by several organizations including the Alberta Utilities Commission, the Western Electricity Coordinating Council and the North American Electric Reliability Corporation.