

Need for Transmission Upgrades

Transmission is the backbone of the electrical system, moving power from where it is generated to where it is used. A strong, efficient and unconstrained transmission system acts as an 'electricity highway' essential to the delivery of power and the competitive functioning of the electricity market.

Alberta's existing system is congested, aging and inefficient. Although currently able to meet our needs, the province's transmission system requires significant upgrades in order to meet the province's future energy requirements.

The demand for electricity in Alberta is forecast to grow by about 3% per year, a rate equal to adding two cities the size of Red Deer to the power system each year. As demand grows, transmission must be upgraded to ensure that all consumers have reliable electrical service.

Reliability standards are common across North America. These standards are aimed at ensuring sufficient transmission is in place to avoid costly electricity service interruptions. Compliance with the standards ensures that most weather events and equipment failures do not result in outages. After decades without any major transmission upgrades, Alberta's system requires upgrading to meet these reliability standards.

Our transmission system is also becoming increasingly inefficient and must be upgraded to reduce the amount of electricity lost when moving power from one location to another. In 2008, the cost of transmission line losses in Alberta was approximately \$220 million. These transmission line losses increase as lines are forced to operate closer to their capacity.

In addition to providing reliable electricity service, transmission is also vital to the operation of the competitive electricity market. A robust transmission system provides the confidence to those investing in new sources of electricity generation that they will be able to transmit the electricity they produce to consumers. When the transmission grid is constrained or congested, investment is stalled, resulting in market prices that reflect decreased competition.

Upgrades to the system are also necessary to accommodate Alberta's renewable energy portfolio, which is comprised of wind, solar, hydro and biomass supplies. Renewable generation occurs when and where nature provides it, which is often a significant distance from where it is required; therefore, a strong transmission network is needed to transport electricity. Transmission is also key to maintaining reliability when renewable generation is at a low output level (as happens when there is no wind or during dry hydro conditions) since energy from other generation sources is needed.