



Transmission: Critical Infrastructure

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Electricity: Key to Alberta's Growth

- **Electricity is one of the cornerstones for Alberta's ongoing economic growth and a critical piece of public infrastructure**
- **Electricity becomes even more important as Alberta becomes "the" supplier of energy for North America**
 - **Infrastructure to support development**
 - **Reliable supply of electricity for operations**
 - **Implications of a supply interruption would be felt well beyond Alberta**



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The AESO: Background

- **Created as part of electric industry restructuring**
- **Our mandate is defined by legislation**
 - “not-for-profit” organization
 - Independent of industry
 - Acts in the public interest
- **Our mission:**

The AESO facilitates a fair, efficient, openly competitive and sustainable market for electricity and provides for the safe, reliable and economic operation of the Alberta Interconnected Electric System.



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AESO: Our Core Business

- **Develop and operate Alberta's real-time electric energy market**
 - **Facilitate the fair, efficient and openly competitive market for electricity**
- **Direct the operation of Alberta's power grid to ensure reliability**
- **Plan development of Alberta's transmission system to ensure reliability and to facilitate the competitive market and investment in new supply**
- **Provide system access for both generation and load customers**



Snapshot: Alberta Load and Supply

➤ A Bit of History:

- 4.2% average annual growth rate in energy and peak demand over the past five years
- 4.9% 2006 year-to-date growth in energy
- More than 3,000 MW of new generation added since 2001

➤ 10-Year Outlook: 2007 to 2016

- 3% average annual growth rate in energy and peak demand
- requirement for about 3,800 MW of new generation by 2016



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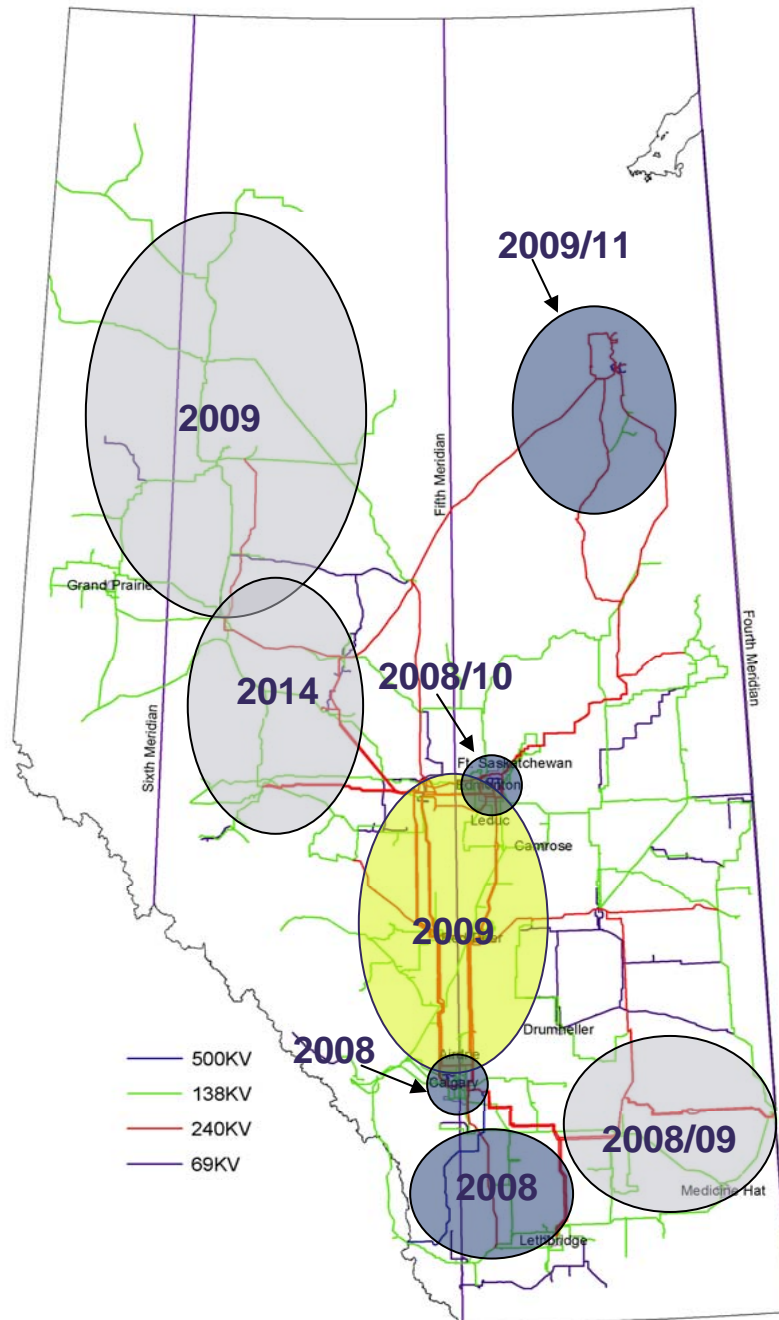
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Transmission: Critical Infrastructure

- **Alberta must have a robust transmission system to ensure reliability and to facilitate the competitive market and investment in new supply**
- **No significant transmission investment in 20 years (except for ATCO's Ft. McMurray to Whitefish line)**
- **AESO has about \$1 billion in transmission investment approved and underway:**
 - **Edmonton to Calgary 500 kV**
 - **Southwest 240 kV**
 - **City of Edmonton 240 kV**
 - **Northwest 240 kV**
- **Planning underway: Northeast (Fort McMurray and Fort Saskatchewan) and Southeast**
- **Upwards of \$3 billion in new transmission could be required in the next 10 to 15 years**



Major Transmission System Projects Being Advanced



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Strengthening the Grid 'Backbone'

- **There has been no reinforcement of the “backbone” of the system for 30 years**
- **The “need” for a 500 kV reinforcement between Edmonton and Calgary was approved by the EUB in 2005**
- **This reinforcement is required by 2009 to:**
 - **ensure the ongoing reliability of service**
 - **connect additional generation in Lake Wabamun area**
 - **improve overall power system efficiency – saves about the same amount of power Red Deer uses**
 - **partial restoration of the capability of the B.C. intertie**



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Strengthening Interties

- **Transmission interties are essential to system reliability and the competitive market**
- **Restoration of intertie with B.C.**
 - **First 500 kV Edmonton to Calgary line planned for reliability but does provide partial restoration of intertie capability**
 - **Second 500 kV Edmonton to Calgary line for system reliability and to complete intertie capability restoration**
- **Restoration of intertie with Saskatchewan (Southeast system reinforcement)**
- **Development of future interties:**
 - **Facilitating merchant transmission projects**
 - **Initiated/participating in studies on:**
 - **a second B.C. intertie with BCTC**
 - **an intertie to the United States**



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Summary

- **Alberta must have a robust transmission system to ensure reliability and to facilitate the competitive market and investment in new supply**
- **Upwards of \$3 billion in new transmission could be required in the next 10 to 15 years**
- **First 500 kV Edmonton to Calgary line is critical for ongoing reliability and to connect new supply in the Lake Wabamun area**
- **AESO will continue to work with industry to deliver reliable power supply to Albertans**
- **Strengthening interties with neighbouring jurisdictions is essential to reliability and competitive markets**



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