

# Powering Alberta

Calgary Chamber of Commerce  
Thursday, April 24, 2008

Reliable **Power**

Reliable **Markets**

Reliable **People**



Dale McMaster  
President and  
Chief Executive Officer



# Agenda

- Role of the AESO
- Supply and Demand
- Competitive Market
- Transmission Planning
- Operational Challenges
- System Access Service
- Wind Integration



# What is the AESO?



- Established in 2003 through the EUA to integrate Power Pool of Alberta and Transmission Administrator
- Performs “Independent System Operator” function
- Non-profit organization independent of all other electricity market participants
- Governed by independent board appointed by the Minister of Energy
- Regulated by Alberta Utilities Commission
  - Transmission Tariff
  - Transmission Development
  - AESO Rules
- Operation of the AESO funded through Energy Trading Charge and Transmission Tariff



# Our Core Business

- **Markets:** develop and operate Alberta's real-time wholesale energy market to facilitate fair, efficient and open competition
- **Transmission System Development:** plan and develop the transmission system to ensure continued reliability and facilitate the competitive market and investment in new supply
- **Transmission System Access:** provide system access for both generation and load customers
- **System Operations:** direct the reliable operation of Alberta's power grid



# Alberta's Demand Growth

## Demand

- Demand for power up 28% since 2000
- Alberta has led North America in load growth
- Load growth is forecasted to grow by about 3% per year
- Equivalent to adding two cities the size of Red Deer each year

## Supply

- Adequate supply in the near term
- Forecasted need for 5,000 MW by 2017 and 11,500 MW by 2027 (double current capacity)
- Generation investment driven by market forces
- More than 4,400 MW of new generating capacity added since 1998
- Investors must have confidence in the market and that the system is capable of taking their production to the end use consumer

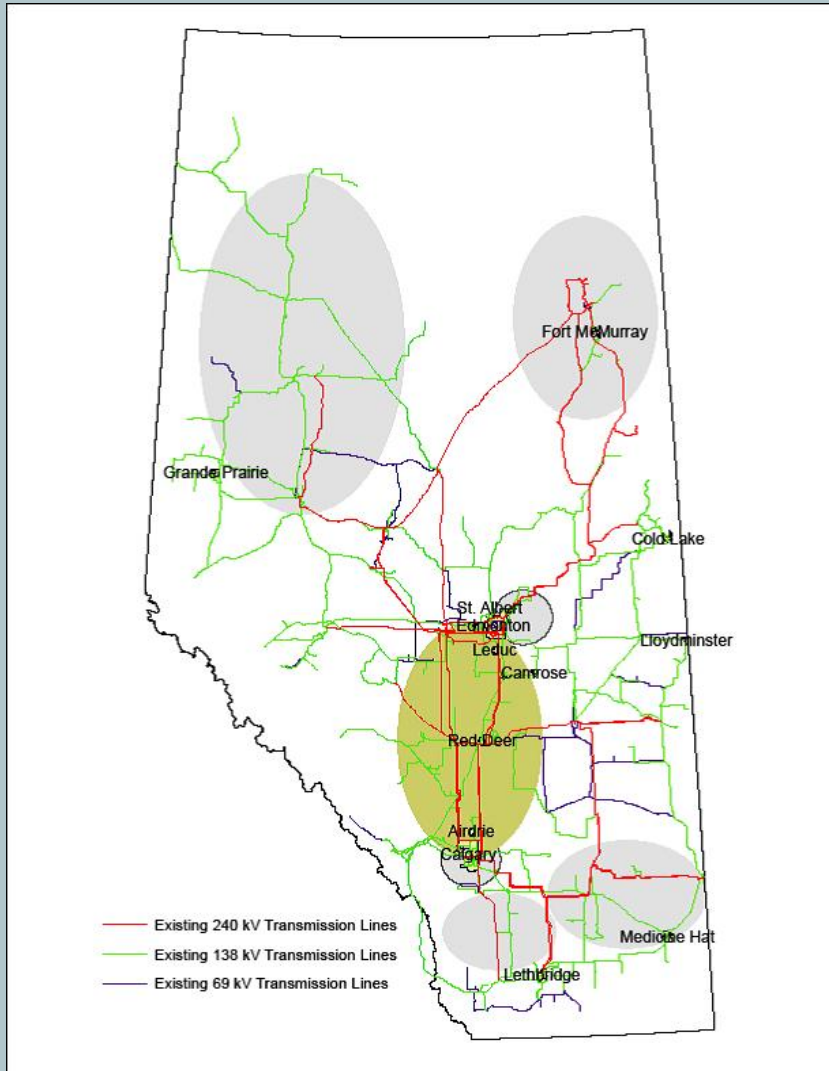


# The Competitive Wholesale Market



- The competitive market has been in operation since 1996
- “Energy only” market design with a single price
- We rely on the market to provide adequate supply
  - it is imperative that investors have confidence in the market structure and the price signal
- The market structure and rules have evolved over time to meet the needs of Market Participants
- AESO recently implemented a series of market enhancements to increase the visibility of available supply, stabilize merit order and improve price fidelity

# Transmission System Development



- ***No major upgrades to the transmission backbone in 20 years***
- Edmonton to Calgary System Reinforcement
- NW Alberta
- Southern Alberta
- Fort McMurray
- Heartland/Fort Saskatchewan
- Calgary area

# Calgary – Edmonton Transmission System Reinforcement



- Critical infrastructure -- the “backbone” of the system
- System reinforcement is required to:
  - Ensure system reliability
  - Facilitate the competitive market
  - Resolve “technical” issues in the Lake Wabamun area
  - System efficiency – reduced losses
  - Partial restoration of the intertie capacity with British Columbia
- AESO is preparing a Need Application
  - Evaluating alternative routes and technologies
  - Comprehensive stakeholder consultation

# Engaging Stakeholders



- Effective public outreach and comprehensive stakeholder consultation supports all transmission planning
- Public information efforts
  - second issue of “Powering Albertans” magazine distributed to 1.5 million Alberta homes
  - Informational video aired on Access TV and being distributed to key audiences in Alberta
- Objective is to address the information gap that exists regarding the roles, responsibilities and how our industry works
- Provides background and context for AESO initiatives

# Operational Challenges



- Until the system is reinforced, we are operating the system at or near its safe operating limits more often and for longer duration
- Developing innovative ways to extract performance from a stretched system while maintaining reliability
- Enhancing operating tools for system monitoring, as well as policies, procedures and training for system controllers
- Investing in a new Energy Management System (EMS) to enhance system operations and the evolving electricity market

# System Access Service



- Unprecedented demand for customer interconnections
- 87 applications for transmission service in 2007
  - 32% increase over previous year
  - Trend is expected to continue
- Requests for service are larger in magnitude and increasingly complex
- Created customer service team to focus on complex industrial and generator interconnections
- Goal is to achieve seamless interaction between DFOs, TFOs, AESO and the customer to ensure timely and cost effective service

# Wind Integration

- Alberta leads Canada in wind development
- Applications for over 9,000 MW
- Effective collaboration with Canadian Wind Energy Association (CanWEA)
- Challenge is to manage variability of wind
  - ✓ Developing a leading edge wind forecasting methodology
  - ✓ Market and Operational Framework
- UWIG recognition of AESO achievements



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