Restructuring the Alberta Electric Industry

Presentation to

Competition in the Canadian Electricity Market

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Overview

- Background -- Alberta Interconnected System
- Consultative and Legislative Process
- The Electric Utilities Act
Alberta Interconnected System

- Investor and municipal utilities
- Coal-based system

<table>
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<tr>
<th>1993 Capacity</th>
<th>Coal</th>
<th>Gas</th>
<th>Hydro</th>
<th>Total</th>
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<td><strong>Utility Generation (Megawatts)</strong></td>
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<th>Non-Utility Generation</th>
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<td><strong>Total</strong></td>
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<td>Saskatchewan</td>
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<td><strong>Total</strong></td>
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- Major Transmission Lines
Significant Rate Disparities Prior to EEMA
EEMA Cost Averaging
Introduced in 1982

Generation
- Alberta Power
- Edmonton Power
- TransAlta Utilities

Transmission System
- Power Pool
- EEMA Averaging Through Transfer Payments
  +/-

Distribution
- Alberta Power
- Edmonton Power
- TransAlta Utilities
- Calgary
  Red Deer
  Lethbridge
Low Load Growth Deferred the Addition of Approved Plants and Rate Impacts

Cents per kilowatt hour

- Forecast Unit Requirements
- Units Required

Forces for Industry Structure Change

- Planning and approval process of new plants
- 1992 EEMA Review
- More competitive industry structure
  - technological change
  - open system access

Cost of incremental power

Lower natural gas prices and technological improvements

Small-scale gas units are now competitive for large or small incremental loads
Government Commitment

- Fair replacement for EEMA from a province-wide perspective

- Industry structure and regulatory reforms to preserve and enhance competitive electricity prices
Consultative and Legislative Process

- Steering Committee representing a broad cross-section of industry and consumer groups to review alternatives (May 1994)
- Mayors' Committee involved municipal leaders from across the province
- Steering Committee consensus proposal circulated for comment in October 1994
- Legislation passed May 1995
- Implementation January 1, 1996
Stakeholder Involvement

Steering Committee
Alberta Assoc. of MD and Counties
Alberta Department of Energy
Alberta Federation of REAs
Alberta Irrigation Projects Assoc.
Alberta Power Limited
City of Calgary Electric System
City of Medicine Hat
Edmonton Power
Environmental Law Centre
Industrial Power Consumers Assoc. of Alberta
Independent Power Producers Society of Alberta
Northern Alberta Development Council
Public Institutional Consumers of Alberta
TransAlta Utilities Corporation

Mayors Committee
Alberta Assoc. of MD and Counties
City of Calgary
City of Edmonton
City of Fort McMurray
City of Grand Prairie
City of Lethbridge
City of Lloydminster
City of Red Deer
Oldman River Regional Planning Commission
Mackenzie Regional Planning Commission
Consensus Proposal

- Fair Replacement for EEMA
- Open Competition for Generation
  - Open Access Power Pool
  - Competitive Process for New Contracts
- Regulatory Reforms
  - Incentive Regulation
  - Negotiated Settlements
- Study of Generation Price Options for Customers
Rate Implications of the Restructuring

- No immediate impact on electricity rates
  - the benefits and costs of existing generation will continue to be shared province-wide
  - transmission costs shared province-wide

- Downward pressure on rates over longer term
  - increased competition
  - incentives for efficiency
  - lower regulatory costs
Outlook for
Generation and Transmission Costs

Cents per Kilowatt Hour

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Forecast Range of Potential Differences in Generation and Transmission Costs Among Distribution Systems
The Electric Utilities Act

Part 1. General Matters

Part 2. Power Pool

Part 3. Transmission

Part 4. Generation

Part 5. Regulation of Electric Utilities and the Transmission System

Part 6. Negotiated Settlement

Part 7. Regulations, Board Rules and Offences

Part 8. Transitional Provisions and Consequential Amendments
Part 1.
General Matters

Key Definitions

s. 1(1) (h)  eligible person
            (i)  entitled electric distribution system
            (x)  regulated generating unit
            (bb) system access service

No Retail Competition

s. 5 A person wishing to obtain electricity for use on property must buy the electricity from the owner of the electric distribution system in whose service area the property is located. (except on-site)
Part 1.
General Matters

Purposes of Act

s. 6 (a) replace the Electric Energy Marketing Act

(b) an efficient market for electricity based on fair and open competition

(c) no distortions by unfair advantages of government-owned participants

(d) decisions about generation are guided by competitive market forces

(e) minimize the cost of effective regulation and provide incentives for efficiency.
Part 2.
Power Pool

**Definition**

s.1(1)(w) "power pool" means the scheme for the dispatch and exchange of electric energy and financial settlement,

- Generators offer all of their power into the pool
- Distribution systems get all of their supply from the pool
- The power pool acts as an hourly "spot market"
Part 2. 
Power Pool

Power Pool Council

s. 9(1) The Power Pool Council shall

(a) before October 1, 1995, establish the rules of the power pool,

(b) appoint a person to carry out the power pool administration function,

(c) appoint a person to carry out the system control function
Part 2.
Power Pool

Power Pool Administration Function

s. 11 (a) determine the order in which electric energy produced by generating units in Alberta is to be dispatched

(b) carry out, financial settlement for the electric energy exchanged

(c) fix and vary charges that do not exceed the just and reasonable costs necessary to operate the power pool
s. 12 (a) ensure that electric energy is dispatched according to merit order

(b) ensure that exchanges with electric systems bordering Alberta are as scheduled

(c) direct owners of transmission facilities

(d) ensure that adequate levels of system support services are provided
Part 3. Transmission

System Access Service

s. 1(1)(bb) "system access service" means the service obtained through the transmission system and includes access to exchange electric energy through the power pool and access to system support services;

- Regulated single province-wide transmission system
- "Postage stamp" rates for distribution systems
- "Location based" rates for new generation
Part 3. Transmission

Electric Transmission Council

s.18 The ETC may advise and make recommendations to owners of transmission facilities and the Transmission Administrator regarding

(a) proposed modifications or additions to the transmission system,

(b) planning for future modifications or additions to the transmission system,

(c) any matter concerning the transmission system, its operation, including tariffs
Part 3.
Transmission

Transmission Administrator

s. 21 The LGIC shall appoint a Transmission Administrator (Joint venture between APL, CCES, EP & TAU)

s. 26 The Transmission Administrator shall

(a) make prudent financial arrangements so that adequate transmission facilities are available

(b) pay the cost associated with line losses

(c) enter into, in accordance with the regulations, arrangements governing exchange with electric systems in jurisdictions bordering Alberta
s. 26 The Transmission Administrator shall

(d) set standards and requirements for system support services

(e) pay generation costs that arise from constraints on transmission

(f) ensure that the arrangements are communicated to the Power Pool Administration and System Control

(g) pay farm transmission costs.
Part 3.
Transmission

Arrangements with Neighboring Systems

Bilateral Physical Wheeling

Coordinated System Control and Dispatch
Part 3. Transmission

Transmission Tariff

s. 27(1) The TA shall prepare a single tariff

(2) The rates set out in the tariff

(a) must reflect prudent costs attributable to each class of system access service, and

(b) must not be different for owners of electric distribution systems
Part 3.
Transmission

Transmission Owners

s. 29 Each owner of a transmission facility shall prepare a tariff setting out the rates to be paid by the TA

s. 31 One or more owners of transmission facilities may agree with the TA to prepare one joint tariff
s. 6(a) ... the benefits and costs associated with regulated generating units are shared by all consumers.

*Cents per Kilowatt Hour

**Future generation costs increase with inflation**

**Existing generation costs remain stable**

**Provincial average of existing and new generation costs**

* Assumes natural gas turbine units. Shading represents range of natural gas prices.
Part 4. Generation

Legislated Financial Obligations & Entitlements

Importer  IPP  TAU Regulated Generation  EP Regulated Generation  APL Regulated Generation

Power Pool

Financial Settlement for all energy exchanged

Legislated Financial Obligations and Entitlements

TRANS.CO (pays line losses)

Exporter

Calgary  Lethbridge  Red Deer  TAU Distribution  EP Distribution  APL Distribution

APL Transmission  TAU Transmission  Cities Transmission
Part 4.
Generation

- Distributors and the TA pay a share of annual fixed costs through their "Reservation Payments"

- Distributors and the TA are entitled to pay variable cost
  - pay the hourly "pool price" for the electric energy they take
  - credited with a share of the hourly "unit obligation value"

![Diagram showing cost and obligation amounts for different energy sources.](image-url)
Part 4. Generation

Unit Obligation Amount

s. 32(1) The LGIC may make regulations respecting the unit obligation amounts for each regulated generating unit.

(2) The unit obligation amounts must be set so as to allow the owner, over time, a reasonable opportunity to pay the unit obligation values.

Unit Obligation Price

s. 33(1) Each owner of a regulated generating unit shall prepare a tariff setting out the unit obligation price.

(2) The unit obligation price must reflect the prudent variable cost.
Part 4. Generation

Unit Obligation Value

s. 34(1) Each owner of a regulated generating unit has an obligation to pay, through financial settlement, the unit obligation value.

(2) The amount to be paid is calculated by multiplying the unit obligation amount by the difference between the unit obligation price and the pool price reported for that hour.
Part 4.
Generation

Entitlements Shares

s. 35(1) Entitled electric distribution systems and the TA receive a percentage share of the sum of the unit obligation values.

(2) LGIC may make regulations respecting the setting of the percentage shares.
Part 4.
Generation

Reservation Prices

s. 36(1) Each owner of a regulated generating unit shall include in its tariff an aggregate reservation price that may include

(a) a unit reservation price for each regulated generating unit
   - capital and fixed operating costs;
   - other adjustments, costs or credits;

(b) other costs, as approved by the Board;

(c) costs associated with the SPRD Act, as approved by the Board in accordance with the regulations;
Part 4. Generation

Reservation Payments

s. 37(1) Entitled electric distribution systems and the TA pay a percentage share of the sum of all aggregate reservation prices.

(2) LGIC may make regulations respecting the setting of the percentage shares.

"Bumpless"

s. 38(1) Regulations setting percentage shares must attempt to ensure the allocation of costs is not significantly different than if the Act had not come into force.
Part 4.
Generation

Negotiated Removal from Regulated Service

s. 41(1) The owner of a regulated generating unit and the owners of entitled distribution systems may agree to remove the generating unit from regulated service -- with Board approval.

Regulations for Removal from Regulated Service

s. 42(1) LGIC may make regulations respecting:

(a) all aspects of the ongoing investment in regulated generating units

(b) all aspects of the removal of regulated generating units from regulated service
Part 4.
Generation

Municipal Ownership of Generation

s. 45(1) A municipality may not hold, an interest in a generating unit except in accordance with any or all of the provisions in this section.

(2) If a municipality has an interest in a generating unit on May 1, 1995, it may continue to hold that interest.

(6) A municipality may hold an interest in a generating unit provided that the arrangement is structured so that it prevents any tax, subsidy or financing advantage or any other direct or indirect benefit as a result of association with the municipality.

(7) The Minister shall establish procedures to provide an independent assessment of whether a proposal by a municipality is in accordance with (6).
Part 5.
Regulation

Tariff Provisions

s. 49(1) The owner of an electric utility and the TA shall apply to the Board for approval of the tariff.

(3) A tariff must describe how it may change over the period in which it is intended to have effect.

(4) A tariff may provide for maximum rates.

(5) A tariff may provide for increases or decreases in the rates to correspond to

(a) increases or decreases in fuel costs, taxes or other costs, or

(b) price indices, rates of inflation or similar measurements.
s. 51(1) the Board shall ensure

(a) that the tariff is just and reasonable,

(b) that the tariff provides for incentives for efficiencies that result in cost savings or other benefits that can be shared in an equitable manner between the electric utility and customers, and

(c) that the tariff is not unduly preferential, arbitrarily or unjustly discriminatory
Part 5.
Regulation

Tariff Approval -- Costs

s. 52(1) A tariff approved by the Board must provide the owner of an electric utility with a reasonable opportunity to recover

(a) the costs associated with the capital investment in the electric utility, if the costs are prudent and if they provide an appropriate composition of debt and equity for the investment,

(b) other prudent costs associated with generation, transmission, exchange or distribution of electricity or associated with the power pool,
s. 56(1) The owner of an electric distribution system may apply to the Board for approval of any financial arrangement to manage financial risk associated with the pool price.

(a) the Board must decide if the arrangement is prudently made, and

(b) the Board may, where appropriate, decide if the arrangement is the result of a fair and competitive process carried out in accordance with rules that may be established by the Board.
Part 5. Regulation

Electric Distribution Systems maintain a "portfolio" of pricing arrangements to manage the cost of the electricity they take from the power pool.

[Graph showing pool price and legislated financial entitlements over time]
Part 5.
Regulation

Limited Review of Approved Rates

s. 57(1) No order of the Board approving a tariff shall be reviewed, rescinded or varied during the period in which the tariff is intended to have effect, except

(a) if the terms for discontinuing the rates have been met

(b) if the owner of the electric utility has breached in a material manner a term or condition of the tariff,

(c) if circumstances have changed in a substantial and unforeseen manner that renders the continuation of the tariff unjust and unreasonable
s. 66 As part of the rules, practices and procedures (established by the Board to facilitate the settlement of an issue) the Board may

(a) provide for the appointment of mediators to assist parties in negotiating the settlement of an issue,

(b) provide for the appointment of employees of the Board as mediators, where requested to do so,

(c) provide for employees of the Board to attend the settlement process, where requested to do so,
Part 6. Negotiated Settlement

Settlement Rules
CONTINUED

s. 66 (d) recognize or establish rules to ensure that the parties to an issue receive

(i) adequate notice of the settlement process,

(ii) adequate disclosure of the positions of the parties, and

(iii) an appropriate opportunity to participate
Part 6.
Negotiated Settlement

Settlement Rules
CONTINUED

s. 66 (g) provide that, before an issue may become the subject of a hearing before the Board,

(i) the parties shall attempt to negotiate a settlement of the issue in accordance with the rules, practices and procedures

(ii) any bad faith certificate has been withdrawn

No Partial Approval

s. 68 The Board shall not approve part of a settlement if the settlement is contingent on the Board's accepting the entire settlement.
Part 7.
Regulations, Board Rules and Offences

Regulations for Deficiencies

s. 72(1)  The LGIC may make regulations ... respecting any matter that the Minister considers is not provided for or is insufficiently provided for in this Act.

(2) A regulation made under this section is repealed .. 2 years after the regulation comes into force.

(4) No regulation shall be made under subsection (1) after December 31, 1997.
Summary

- Generation, transmission and distribution treated separately for regulatory / accounting purposes
- No requirements for divestiture
- Competition for Generation
- Fair Replacement for EEMA
- Regulatory Reforms
- Detailed regulations and regulatory hearings required for full implementation January 1, 1996
Future Action

- Study of Generation Price Options for Customers
  - examine the merits of allowing end-use customers to manage the financial risk associated with the pool price for their share of incremental requirements
  - study to begin in 1996
Part 8.
Transitional Provisions and Consequential Amendments

Timing of Tariff Approvals

s. 75 Each owner of an electric utility and the TA shall apply to the Board before November 1, 1995 for approval of the tariff.

s. 76 The Board shall, before January 1, 1996, approve the tariff to be put into effect.

s. 77 If the Board does not approve tariffs before January 1, 1996, the rates in effect on December 31, 1995 for electric distribution systems shall continue to apply.
s. 82 The Hydro and Electric Energy Act is amended

2.1 Where the Board is considering an application for the construction or operation or for the connection of a generating unit the Board shall treat the application in a manner similar to an industrial facility, and shall have regard for the purposes of the Electric Utilities Act.
Environmental Issues

- New generation and transmission facilities continue to require approval to ensure compliance with siting and environmental requirements.

- The restructuring initiative eliminates barriers so that all producers may compete to supply the Alberta market.

- Creating a "visible" hourly spot price will promote greater efficiency in electricity consumption.
Environmental Issues

- Air Quality issues are addressed under the "Clean Air Strategic Alliance for Alberta" (CASA initiative).
  - CASA D3 Alternative Electricity Sources:
    "In general, broad cross-sectoral approaches, designed to directly address air quality priorities hold more promise than narrow, sector-specific approaches for improving the effective management of emissions."

- The restructuring initiative does not preclude any action that the Government might elect to take to further address environmental priorities