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The State of Electricity De-Regulation in Alberta and the Alberta Electric System Operators Role

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AESO

- **The Alberta Electric System Operator System (AESO) has the mandate to ensure that all Albertans receive safe, economic and reliable power today and in the future;**
- **The AESO does not own or operate any power facilities;**
- **It does not have a financial interest in the industry;**
- **It is a not for profit company;**
- **It is driven by all of it's business activities to plan, develop and operate the power system in a way that is in the best interests of all Albertans.**

The AESO was created under the provisions of the *Electric Utilities Act* Chapter E-5.1 S.A. 2003

AESO

- **The AESO manages and coordinates operation of the power grid and makes sure that the supply of power is in constant balance with the demand for power across the province;**
- **The AESO plans the provincial transmission system including all of its interties with neighboring provinces;**
- **The AESO operates Alberta's wholesale electricity market with 200 participants and about \$7 billion dollars in annual energy transactions, insuring a fair, efficient and openly competitive market for all participants.**
- **The AESO has a duty to act responsibly as set out in Section 16 of the EUA**

“The independent system operator must exercise its power and carry out its duties, responsibilities and functions in a timely manner that is fair and responsible to provide for the safe, reliable and economical operation of the interconnected electric system and to promote a fair efficient openly competitive market for electricity”.

History of De-Regulation

To understand the state of electricity de-regulation in Alberta it helps to know a bit about the history of de-regulation and how we got to where we are today.

- **Following a number of years of stakeholder consultation the Alberta Government passed the *Electric Utilities Act* (1996) effective January 1, 1996;**
- **The Act created the wholesale market clearing entity know as the Power Pool of Alberta, a not for profit entity that was charged with the operation of the competitive wholesale market including dispatch of generation;**
- **The EUA stipulated all electric energy bought and sold in Alberta had to be exchanged through the pool;**
- **The pool served as an independent, central, open access pool that functioned as a spot market intending to match the demand with the lowest cost supply and establish an hourly pool price;**

1996 EUA

- **The 1996 Act also provided for open and non-discriminatory access to the provincial transmission system that would be operated by an independent, for profit transmission administrator;**
 - **To protect utility investment in existing generation capacity, legislative financial arrangements or hedges were established so that all consumers shared the cost and benefits of the formerly regulated generation facilities-while at the same time allowing the nascent power pool a chance to work out some kinks;**
 - **established a 10 member council representing industry stakeholders and had its mandate to establish market rules and operating policies to ensure that power pool operated in accordance with it's mandate.**

Electric Utilities Amendment Act (1998-2001)

Following the initial 1996 Electric Utilities Act the framework for establishing a competitive market environment evolved with stakeholder input.

The 1998 EUA amendments were designed to further the transition to an effective competitive industry. The main elements included:

- **Refinements to power pool governance;**
- **Clarification of the mandate of the market surveillance administrator;**
- **De-regulate generation built before the act was introduced;**
- **Introduce customer choice (retail competition as of January 1, 2001).**

EUA 1998

In 1998 the Power Pool administrator carried out the financial transactions and general operation of the pool including:

- **Managing the bid offer process;**
- **Determining over all scheduling for dispatch of generation units;**
- **Schedule units to provide ancillary services (operation reserve, black start etc.);**
- **Carry out all financial settlements for energy transactions;**
- **Determine rules and define the market design;**
- **Transmission administrator was responsible for the over all management of the transmission system.**

EUA 1998

Transmission administrator was responsible for the over all management of the transmission system including:

- **Contracting with transmission facility owners to provide services;**
- **Acting as a financial clearing house between buyers of transmission services and TFO's;**
- **Setting up province wide tariffs for system access;**
- **Managing cost associated with system support services;**
- **Setting interconnection and engineering standards;**
- **Interacting with the power pool on issues such as operating reserves.**

EUA 1998

Market Surveillance Administrator (MSA)

The market surveillance administrator (MSA) was responsible for ensuring that market participants complied with market rules and regulations intended to discourage anti-competitive practices - its responsibilities included:

- **monitoring electricity markets;**
- **investigating complaints by market participants;**
- **assisting in dispute resolution between market participants;**
- **making recommendations to the power pool to improve the market rules;**

EUA 1998

Power Purchase Arrangements

The 1998 EUA replaced the Government managed legislated financial hedge mechanism with a plan to auction the rights to the output of existing generating units to qualified buyers – this was known as the power purchase arrangements or PPA's;

- **An entity called the Independent Assessment Team was created to manage the process relating to the form and substance of the PPA's and to design and implement the auction rules;**
- **The PPA's set the terms and conditions and the operating and commercial arrangements between the owners of the generating units and the purchasers of the capacity from the generating units;**
- **PPA's ran as long as 20 years;**
- **Once the PPA's were auctioned the proceeds from the auction were deposited to the balancing pool;**

PPA's

- **The initial PPA auction received just over \$1.1 billion dollars – the sum was credited to Alberta Consumers;**
- **The owner's had full rights to the capacity under contract (as distinct from the generating units capacity)**
- **PPA buyers could develop the units daily offer strategy into the pool**
- **PPA buyers compensated the unit owners through a series of fixed, variable and incentive payments outlined in the PPA's;**
- **Once the term of the PPA is completed, rights to the output of the generating unit revert back to respective owners.**

PPA's / Balancing Pool

- **The Balancing Pool Administrator (BPA) was created as an entity to hold and administer any generation facilities that failed to sell in the auction of the power purchase arrangements.**

Returning the Proceeds of the PPA sale to customers

The Alberta Government returned the proceeds obtained from selling the PPA's to customers.

- **Starting January 1, 2001 all residential customers received a rebate on their bills equal to \$40.00 a month;**
- **Farm customers received \$40.00 per month plus 3.6 cents per kilowatt hour;**
- **Commercial and Industrial customers received 3.6 cents per kilowatt hour;**
- **During the years from 2002-2005 the balancing pool did not provide any rebates to customers;**
- **Beginning 2006, following the successful sale of the Sheerness PPA the balancing pool announced that customers would receive a \$0.001 per kilowatt hour (or \$1.00 per mega watt hour) a rebate on their power bills for 2006 consumption.**

The AESO's role in Implementing Policy in Alberta

Implementation of Market Policy and - Market place signals – Reflecting Adequacy of supply

- **The Alberta Department of Energy (DOE) issued a Policy Paper in June 2005, which formed the basis of the AESO's August and November 2006 discussion papers on "Long-Term Adequacy" in the supply market**
- **The AESO's role is central to the DOE's vision of how market signals and information is to be disseminated in the market place.**
- **Pursuant to section 17 of the EUA, the Independent System Operator has a number of duties, including:
"to collect, store and disseminate information relating to the current and future electricity needs of Alberta and the capacity of the interconnected electric system to meet those needs, and make that information available to the public".**

Market Signals

The AESO discussion paper sets out a number of “metrics” intended to provide information to the marketplace, they include:

- **New generation status and retirements;**
- **Reserve margins;**
- **Supply cushion;**
- **2 year of probability of supply adequacy shortfall;**
- **Loss of load probability and expected unserved energy;**
- **Generation investment sign posts;**
- **Contribution to fix costs of notional gas fired peaking unit;**

Market Signals

The AESO's discussion paper also included a number of "threshold actions" to be taken by the AESO:

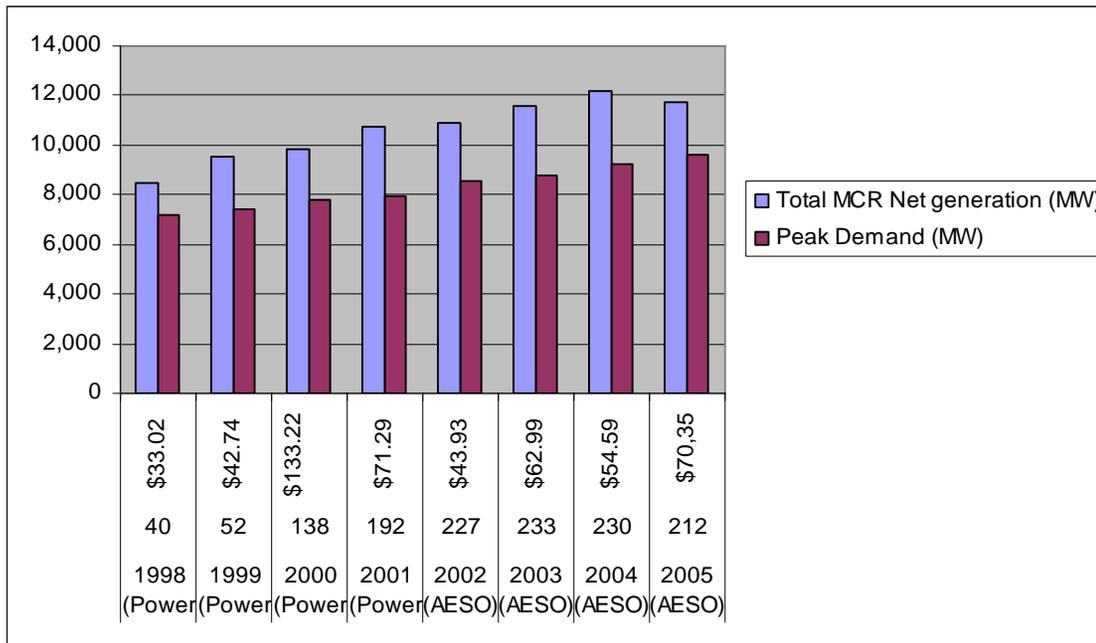
- **Load shed service;**
- **Self-supply and back up generation;**
- **There is no agreement yet about what the threshold trigger is**

Other Market Signals and Market Policy

In addition to the long term adequacy discussions the AESO and Stakeholders are considering a number of other measures in connection with facilitating and deregulation, these include:

- **Removing or altering the price caps;**
- **Building sufficient transmission so that all in merit energy can be dispatched free of constraints (pending final transmission regulation due anytime);**
- **Increasing transfer capacity on the BC interties and building new inter ties;**
- **Moving the Regulated Rate Option (consumer rate) towards exposure to the pool price this year the RRO rate will be based in part upon 40% exposure to the pool price;**
- **Providing timely information with respect to generation outages.**

Year	1998 (Power Pool of Alberta)	1999 (Power Pool of Alberta)	2000 (Power Pool of Alberta)	2001 (Power Pool of Alberta)	2002 (AESO)	2003 (AESO)	2004 (AESO)	2005 (AESO)
Participants	40	52	138	192	227	233	230	212
Average real-time wholesale market price (/MW)	\$33.02	\$42.74	\$133.22	\$71.29	\$43.93	\$62.99	\$54.59	\$70.35
Total MCR Net generation (MW)	8,468	9,521	9,851	10,776	10,913	11,578	12,193	11,734
Peak Demand (MW)	7,209	7,408	7,785	7,934	8,570	8,786	9,236	9,580



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