



Economic Demand Response (DR) Proposal

October 6, 2008

Background Information

The AESO's DR Working Group, re-initiated in September 2008, has a broad membership and an extensive list of discussion items. The overarching objectives of the WG are to *“develop, evaluate and make recommendations regarding demand response programs within the existing mandate of the AESO.”*

To date, the WG has contended with managing an extensive portfolio of work and a diverse and overwhelming membership. The AESO is currently contemplating how to break up the project into manageable components and has indicated that suggestions on addressing this issue would be welcome. The WG dialogue has focused primarily on DR as a reliability mechanism. Some stakeholders are concerned that the role of DR as an economic tool will not be given sufficient attention under the current WG structure.

Several Alberta load associations are proposing to develop and facilitate a sub-group focused on Economic DR. This sub-group would meet more frequently than the parent group – via conference call and in person – and would concentrate on examining the value of Economic DR to Alberta loads and developing appropriate Economic DR products tailored for the Alberta electricity marketplace. The sub-group will contemplate Economic DR in the context of other market changes such as increased price caps, and examine possible trade-offs and complementary market activity.

Value of Economic DR in Alberta

In order to appreciate that DR product development is not a one-size-fits-all solution, it is necessary to examine Alberta's load profile. Alberta is unique in its electricity consumption pattern, with one of the highest utilization factors in North America at just over 80%. This is mainly due to the influence of large industrial base-load demand. Industrial loads are just over 55% of total Alberta consumption compared to 25 to 30% in other jurisdictions. This high incidence of baseload is coupled with a relatively low peak to average demand. High prices in the Alberta hourly market are not necessarily coincident with periods of seasonal or even hourly peak demand.

Figures 1 and 2 provide the Alberta load duration curves with the associated hourly prices corresponding to each quantity of load from 2007 and 2008 to date. These graphs provide a clear visual of the significant volatility in the AESO hourly market and how this volatility has increased over the past year. Volatility analysis is critical to understanding how to optimize the use of DR as an economic tool to hedge against high prices and provide some price elasticity in an otherwise supply-dominated marketplace.

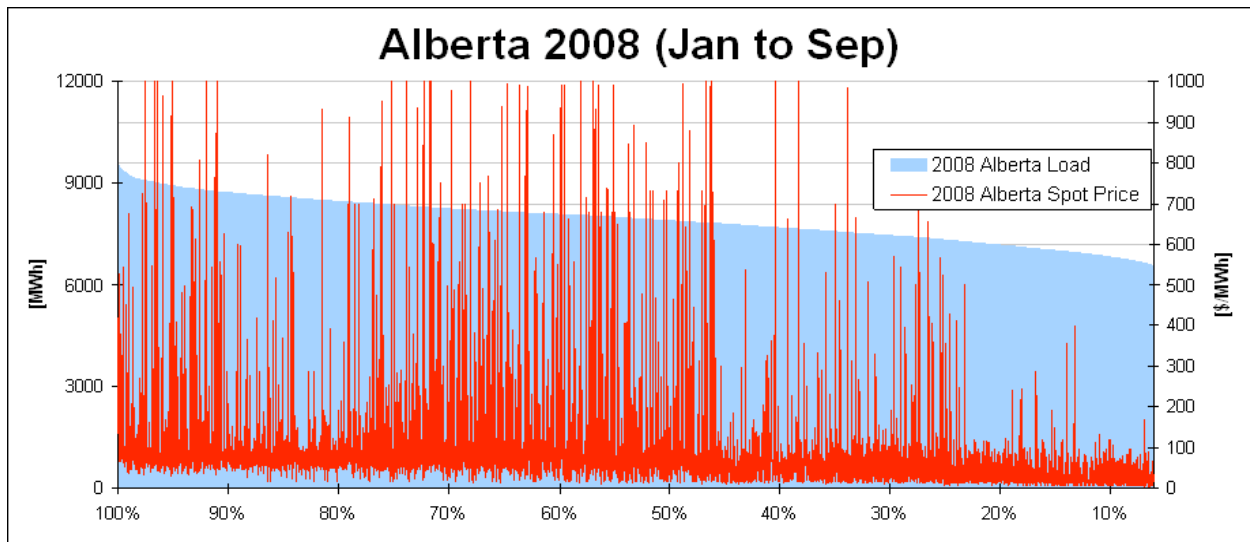


Figure 1

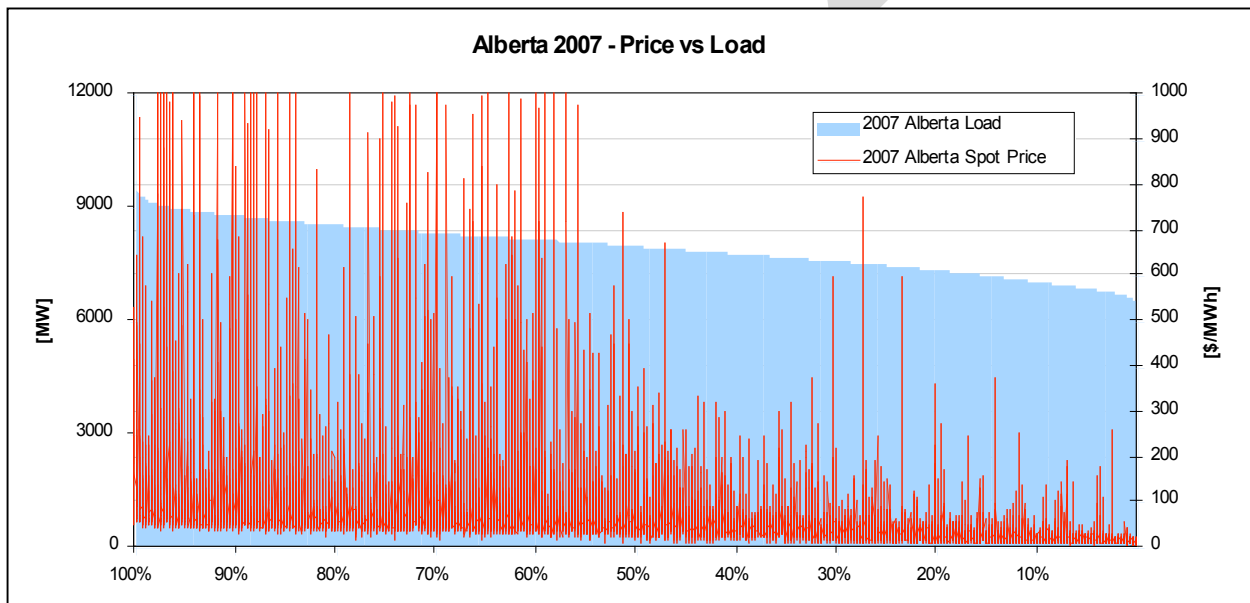


Figure 2

Of particular note with respect to these increased volatilities is the dispersion across a broad range of hours and loads. Unlike many jurisdictions where the high prices generally coincide with peak demand, the Alberta market has the potential for high prices across 50% to 60% of the hours and loads. This uncertainty in prices is causing concerns for the level of reliable and dispatchable generation and has led to concerns with the growth in wind-based generation that is neither dispatchable nor reliable.

Proposal

Scope of Work

A load-facilitated sub-group (SG) would be established to focus on Economic DR and report recommendations back to the parent DR WG. Membership would be self-limiting due to the work requirements of participating. Membership involvement would be required on a weekly basis, and the SG would set aggressive timelines to:

- A. Conduct market analysis to determine the value and appropriate timing and quantity of Economic DR; and
- B. Conduct a consultation to develop product design alternatives, including design work on: contracts, pricing mechanism, and rules governing contract performance and pricing elements. Design work would be completed as part of a comprehensive DR plan for the Alberta Market, giving consideration to costs to implement, benefits and impacts.

Structure

The following table highlights the potential entities and individual representatives for the Economic DR sub-group:

Entity	Individual
IPCAA	Sheldon Fulton Vittoria Bellissimo
ADC	Colette Kearl
UCA	Ron Henderson
PICA	Raj Retnanandan
AESO	Laura Letourneau
IPPSA	Evan Bahry
TCE	Vince Kostaskey (<i>if available</i>)

These entities represent a substantial portion of the total Alberta load, including industrial, institutional and residential customers. It will also be valuable to have a generator perspective and voice at the table, hence the inclusion of IPPSA and TransCanada Energy – both of which have expressed interest in DR as an economic tool, and have indicated it may have a significant role to play in wind contingencies and TMR issues. Roles, responsibilities and structure within the sub-group will need to be established, and a framework will need to be created within which to conduct the analysis and design work. The following sections lay out the general DR product objectives, categories and types of programs.

Economic DR Objectives

1. Reliably predict uptake (MW) by hour
2. Compensate curtailment in an appropriate manner
3. Standardized and efficient measurement and verification
4. Full understanding and management of feed-back loops
5. A series of complementary DR Programs targeted at the various categories of economic DR

Categories of DR

1. Load Shedding
2. Load Shifting
3. Distributed Generation

Types of Programs

1. Voluntary
 - a. Participants are notified of need for demand curtailment and can select whether or not to curtail without commitment in advance
 - b. Participants are notified of the need for demand curtailment and must offer in specified curtailment proposals. Once offers are accepted, participants are obligated to curtail demand as proposed.
2. Contractual
 - Once participants have qualified for the DR Program they are obligated to curtail their demand on execution of the trigger signal.
 - Participants receive an "availability" payment for committed MWs and hours; must be consuming in order to receive payments

Timeframes

Sub-group work should be completed on an aggressive timeline with the end goal of taking products to market in 2009. Key phases of activities are outlined below:

1. Initial market analysis for general DR product requirements → mid-November 2008
2. Design work and structure of DR products → end of November 2008
3. Work plan for moving forward → end of December 2008
4. Products to market → 2009

Key Questions

Pricing Options

- How would DR be priced?
 - Availability payments?
 - Utilization payments?
- How does the remainder of load compensate the curtailed load?
 - Exercisable option contracts?
 - Price Insurance?
 - System benefit charge?
 - Alternatives?

Product Design and Specifications:

- What would DR products look like?
 - Voluntary/Contractual?
 - Seasonality?
 - On-peak/Off-peak?
- How is the value relationship between Economic DR and Reliability DR defined?
 - Product design work needs to occur in parallel

Eligibility:

- Should Distributed Generation (DG) be eligible to participate in DR programs?

Contact Details

For questions or comments please contact IPCAA:

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