



AMI Services

Solutions for Alberta's Deregulated Market
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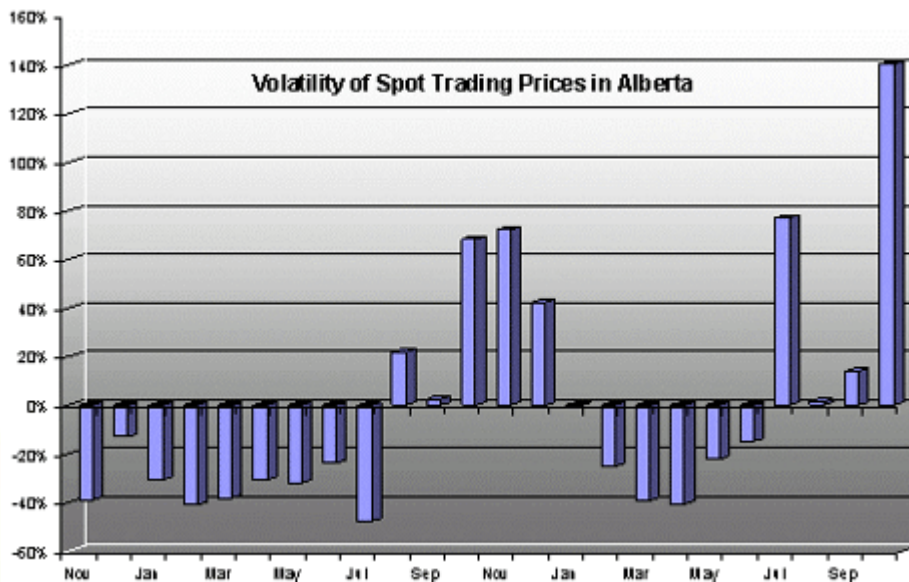
When the Department of Energy in Alberta, Canada (ADOE), deregulated the electricity market, it progressively unbundled the business functions of generation, transmission, wires operations, load settlement, wholesale and retail in an attempt to create an open and competitive market. Restructuring the market has been an evolving process, with the function of MDM services being one of the last pieces of the puzzle left to be addressed.

With AMI now being evaluated, some questions surface: Who are the beneficiaries of an integrated AMI solution? How is it funded? Is the cost justified?

In reality, during the process of unbundling all the various services in Alberta's deregulated market, the value chain of the market was fractured. The investor-owned utilities (IOUs) -- wires companies -- retained the MDM function, while the independent retailers own the commercial customer relationship. As such, this split has created a problem that the regulators have not yet addressed. The Alberta Electric Utilities Board (AEUB) is not mandated to allow the IOUs to include in their cost justification of AMI the full list of potential benefits that would impact the consumer, but rather only the benefits over which wires operators have control.

Understandably, the IOUs, when considering the cost of an AMI system, respectfully must adhere to regulatory cost justification guidelines as published by the AEUB. But clearly, if new competitive retailers intend on offering a wider selection of retail products and services, then more in-depth AMI information is needed. The ADOE has been requested to intercede in this debate and establish minimum standards that benefit all parties.

AMI cannot be looked at in isolation and limited to the wires companies' perspective of the needs of the market, when at the same time retailers (and ultimately the customer who has to pay the bill) are facing issues that impact the accuracy of customer information, collections, the need for metered data integrated into marketing campaigns and the reality of a highly volatile energy market. How volatile is the spot market in Alberta? The monthly average Power Pool price spiked last month (October 2006) 140 percent above the previous 24-month average price.



Retailers require information that addresses cost allocation (load profiling), access to more detail and accurate “rate-friendly-data”, such as time-of-use. The government should be looking at making changes to the load settlement and wholesale invoice processes to help facilitate the continued growth of a truly competitive marketplace. Failure to do so will eventually expose consumers to wild fluctuations in their monthly energy bill with few real options.

While the investor-owned wires companies as overseen by the Utilities Board are forced to operate within a narrow and limiting scope, at the same time, the cooperative members of the Alberta Federation of Rural Electrification Association (REA) function independently and are not encumbered the same controls of the AEUB. As such, in evaluating the benefits of AMI, they have taken a broader perspective.

REAs have a responsibility for both the wires function as well as retailing to their membership. As a retailer, they are currently considering the advantages of offering their membership more than the basic regulated rate, but also fixed-term contracts and dynamic retail rates, including: time-of-use (TOU); critical peak pricing (CPP); real time pricing (RTP); and variable peak pricing [VPP]. And with the pilot project underway, they foresee benefits that will result in lower metering costs, improved wires operation and customer care efficiencies, plus more accurate billing.

Regardless of which pricing strategies or schemas are adopted in Alberta by the REAs, accurate metering information is the common denominator and foundation requirement for invoicing. But, unfortunately, current metering data and load settlement processes in Alberta do not meet the real needs of the competitive retail market. For the industry to capitalize on the benefits of AMI, then the shortcomings in current policies need to be addressed by the ADOE.

Business Drivers

The decision to move forward by the REAs was based on a number of objectives and business drivers:

- The need to drive their wires (core business), operational and service costs down (e.g. implementing two-way communications to remotely enroll, disconnect, energize or de-energize a site, without rolling a truck, which will improve the quality of service and safety, while delivering cost savings);
- The impact and related risk management issues pertaining to the new RRO (as the government moves the RRO policy closer to month-ahead spot prices, the financial risk to REAs will increase);
- The ability to manage the REA membership when members are buying power from other retailers;
- The reality of high and volatile spot market prices brought about by the energy crunch and ongoing electricity generation supply issues;
- The need to aggregate consumption, implement hedging strategies, mitigate their financial risks and offer stable rates and lower retail prices to their REA members; and
- The ongoing attempt to increase the value offered to their members, implement an in-house load profiling system plus increase the accuracy of billing, automate meter reads and do reads on-demand.

The REA Advantage & Views of the AFREA

The first AMI application in Alberta is being installed at Lakeland REA in Vegreville. This is a new communication network, controls and information system that is being installed to help manage their business. Using a radio frequency (RF 902 MHz) and CDMA/GPRS two-way remote communications-based system, installed at the transformer pole in the farmyard, the network

card in the meters will be linked to an AMI gateway collector. Once fully operational, real-time metered data will be staged at a series of remote gateway transmitters. The metered data will be sent over the Internet to UTILITYnet's data center. From there, the DCM will be created and automatically streamed to all the appropriate parties. The single data point will be used in reconciliation of settlement charges, wires invoices and customer billing.

Moreover, with the AMI network/gateway infrastructure in place, the REAs using the AMI application can promote the use of the network gateway system to neighboring municipalities and/or other co-operatives. By offering the automated meter processing of other commodities such as gas and/or water, this cuts the overall cost of the infrastructure and/or leverages the upfront investment into an added value revenue stream. For retailers offering dual fuels, the advantage of aggregating all the information in one system and on one customer bill is obvious.

Technical Standards / What should we look for?

If Alberta is to retain its position as a leader in the deregulated markets then the ADOE and the AEUB should consider adopting new metering standards focused on interoperability.

A standards checklist should include:

- Native IP addressing to all network devices
- ANSI C12.19, C12.20 for all meters
- IPSec (IPSecurity) a set of protocols developed by the IETF to support secure exchange of information packets at the IP layer, or similar open security
- Open, license free reference designs and interfaces to all devices
- Webservice APIs

Summary of Benefits

If the ADOE adopts a provincial wide AMI strategy, wires companies will benefit in a number of ways. The details below are drawn from a research report prepared in June 2006 by Frost & Sullivan of Palo Alto, Calif., indicating areas of possible cost benefits. We expect the results from the REA Pilot and deployment of AMI in Alberta will be very similar.

Benefits of Advanced Metering

