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Alberta Electric System Operator
2500, 330 – 5th Ave SW
Calgary, Alberta T2P 0L4

Attention: Mr. Kris Aksomitis, Market Design Specialist

Dear Kris:

This letter is in response to the AESO's request for stakeholder comments on its October 22, 2009 *Alberta Demand Response Initiative Discussion Paper*. ENMAX Energy Corporation ("EEC") appreciates both the opportunity to provide feedback and the AESO's efforts to address this important topic.

At this time, EEC will restrict its comments to the demand response principles discussed in Section 2.3 of the paper. For reasons set out below, EEC believes further review of the principles is necessary, though it is not suggesting any delay in the work needed to incorporate demand response ("DR") into the reliable and economic operation of the province's electric system.

Summary of EEC's Views

- EEC agrees that any demand response initiative must be consistent with a fair, efficient, and openly competitive ("FEOC") market, though EEC's view of FEOC appears to differ in certain respects from the AESO's.
- EEC agrees that barriers to demand response should be removed wherever possible.
- EEC does not agree that demand response product design should be consistent with the existing energy-only, real-time price signal, because such a restriction leads to a non-FEOC outcome.
- EEC agrees that reliability products should be open to participation by both generation and DR resources whenever technically possible.
- EEC agrees that market price signals should be visible, but notes that the decisions of market participants can and should be influenced by more than the spot price of electricity alone.

- EEC agrees that AESO initiatives such as the operating reserves market redesign should incorporate the objective of including DR.

The Energy-Only Market and Non-FEOC Outcomes

The AESO's discussion paper states, at page 7, that product design should be consistent with the existing market structure and support the existing energy-only, real-time price signal. EEC does not agree, for two reasons. First, Alberta does not have an energy-only market, at least from the perspective of electricity consumers. Second, such a restriction is not in keeping with a FEOC market.

Since AESO tariffs are generally established with the goal, *inter alia*, of having each transmission facility owner ("TFO") recover its revenue requirement regardless of the amount of energy actually transmitted across its wires, consumers make *de facto* capacity payments. Non-energy payments are also made for ancillary services. In total, non-energy payments amount to hundreds of millions of dollars per year, a material fraction of consumers' overall energy bill. Consequently, any rule that restricts non-energy payments to DR providers (or local generators) is inconsistent with the existing market structure.

In EEC's view, a rule that prohibits non-energy payments to DR providers or local generators would also violate FEOC. To see this, consider two options for meeting consumers' electricity needs. Under Option A, loads make capacity payments to a TFO to ensure that one or more remote generators are available when required. Under Option B, loads make capacity payments to one or more local generators and/or interruptible loads to ensure their availability when required. In a fair, efficient, and openly competitive market, consumers are able to choose the option with the lower overall cost, and are able to make their own trade-offs (if any are required) with respect to reliability. This view is consistent with that taken by the United States Federal Energy Regulatory Commission, whose strategic plan encourages the use of any of transmission, generation, or demand response to meet consumers' electricity needs.

Asymmetric Rules

The discussion paper states, at page 8, that the AESO should strive to ensure that there are symmetric rules for generation and load wherever practical. EEC supports such rule symmetry *in principle*. However, many of the conclusions the AESO has drawn regarding DR follow from the false premise that Alberta's electricity market exhibits symmetry in the first place. It does not.

An extremely important example of the lack of symmetry is the transmission policy, which requires consumers to pay for an unconstrained-for-generators bulk transmission system. The policy allows generators to minimize their private costs at the expense of those

consumers. For example, a generator could construct a facility on the upstream end of a constrained path, where its fuel, land, or other costs may be slightly lower. From an engineering perspective, such an outcome is suboptimal because it results in lower system stability, lower reliability, higher losses, and more instances of congestion compared to the case where the generation is constructed downstream of the constraint. From an economic perspective, such an outcome will be inefficient if the total cost of the upstream generation plus the transmission upgrade necessitated by the generator's locational choice exceeds the cost of the downstream generation. The inefficiency of the wires alternative is even greater when the upstream facility is a peaking plant, because the latter lowers the effective capacity factor—and therefore raises the cost per MWh—of the wires.

Additional market asymmetry is evident in the fact that generators receive the direct benefit of the reduction in losses that results when consumers pay for increased transmission capacity. (The laws of physics and the market design make it unlikely that generators will be able to fully pass on the reduced losses charges to consumers.)

In EEC's view, the appeals by certain parties for rule symmetry are not consistent with their support for the existing, highly asymmetric allocation of transmission costs.

Price Fidelity

The discussion paper states, at page 8, that a key principle is that programs designed to encourage DR in the energy market should not alter the fundamental economic decision that loads make to curtail, and that in essence, loads should curtail only when the price of electricity is higher than the value of their lost load. EEC agrees that loads should curtail when the economic benefit of curtailing exceeds the economic benefit of continuing to consume, but does not agree that the economic value is simply spot price times megawatts.

Consider a simple example. In hour one, electricity demand is 10,001 MW and the price is \$100/MWh. In hour two, a load reduces demand by 1 MW, foregoing \$5,000 worth of production in the process. In accordance with the energy market merit order, the reduced demand causes the price to fall to \$90/MWh. As a result, consumers' aggregate cost of electricity falls from $10,001 \text{ MW} \times 1 \text{ hour} \times \$100/\text{MWh} = \$1,000,100$ in hour one, to $10,000 \text{ MW} \times 1 \text{ hour} \times \$90/\text{MWh} = \$900,000$ in hour two. Consumers as a whole therefore achieve a gross benefit of roughly \$100,000. If the load is paid \$10,000 for interrupting, consumers in aggregate are better off by \$90,000 and the load is better off by \$5,000, clearly an economically efficient outcome. Prohibiting the load from receiving any payment beyond the foregone cost of electricity ($1 \text{ MWh} \times \$100/\text{MWh} = \100) would result in the load not interrupting and *society* suffering a net loss of roughly $\$100,000 - \$5,000 = \$95,000$. A similar situation exists around infrastructure, since not interrupting in one "right" hour in a year could create the need for an additional MW of transmission capacity that must be paid for 8760 hours a year.

Clearly, a rule (or a payment scheme) that allows a load to curtail only when the spot price of electricity in a given hour is higher than its value of lost load is *not* in keeping with a fair or efficient market. It is perfectly legitimate for loads collectively to seek, through competitive processes, parties willing to provide the benefits achievable through demand response in return for payments greater than the cost of foregone energy. Seeking to minimize the delivered cost of energy over the long term does not, as some have suggested, constitute anticompetitive behaviour.

Conclusion

As noted above, EEC is concerned that an “energy only market” may now be viewed as an end in itself, rather than as a means to provide consumers with a safe, reliable, and economic supply of electricity at the lowest possible delivered cost. EEC therefore urges the AESO to review again the principles behind demand response with a view to ensuring the appropriate objectives and interpretations are in place. EEC will be happy to comment on specific details surrounding the design of DR products once the appropriate principles have been incorporated.

Yours truly,

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