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# MSA REPORT

## Powerex Active Spinning Reserve Review

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27 August, 2004

**MARKET SURVEILLANCE**  
ADMINISTRATOR

## 1 EXECUTIVE SUMMARY

This report presents the results of an informal investigation conducted by the MSA in response to a complaint received from a market participant. The complainant asserted that Powerex, the marketing arm of BC Hydro and largest user of the Alberta/BC interconnection, may be responsible for making the intertie the single largest contingency (SLC), resulting in the curtailment of their Active Spinning Reserve (ASR) contracts by the AESO. Despite the fact that the reserves were not delivered, Powerex continued to receive payment for their curtailed contracts. The complainant pointed out the **unfairness** of this practice relative to other AS providers, who do not receive payment for undelivered reserves and are also assessed liquidated damages for non-delivery.

The informal investigation, which focused on the 2003 time period, included research into AESO rules and policies in effect during the period, an analysis of the available evidence and an assessment of market impact based on the MSA's Investigation Process and Assessment Guidelines.<sup>1</sup> As a result of the informal investigation, the MSA recommends that the AESO cease making payment to Powerex for non-delivery of AS reserves when the intertie becomes the SLC. Further, the MSA recommends that the AESO enforce the terms of the Watt-Ex contract (and OTC contracts, if applicable) in respect of all AS suppliers in a consistent manner.

## 2 INTRODUCTION

The intent of the investigation is to focus on an issue of fairness arising from the external provision of Active Spinning Reserves (ASR) across the Alberta/BC interconnection. The issue arises when net energy imports flowing across the intertie cause it to become the SLC<sup>2</sup> in the Alberta Interconnected Electric System (AIES)<sup>3</sup>. Generally, AESO operating policy provides that when a unit/facility becomes the SLC, it can no longer carry active reserves. Further, according to the AESO's operating policy rules pertaining to the intertie, external ancillary services (AS) cannot be provided over the intertie for system security reasons when the intertie becomes the SLC. Pursuant to this policy, the AESO curtails any active external ancillary services contracts, causing non-provision of the service contracted for.

During 2003, Powerex was the only external provider of ancillary services to the AESO and was primarily involved in selling Active Spinning Reserves to the AESO via the Alberta Watt Exchange (Watt-Ex). Although Powerex has firm transmission access as specified by the AESO's technical requirements for AS providers, their ASR contract was periodically curtailed pursuant to AESO interconnection management policy. When curtailment occurs, Powerex continues to receive contract payments from the AESO for undelivered ASR volumes.

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<sup>1</sup> <http://www.albertamsa.ca/files/MSAInvestigationProcessGuidelines012604.pdf>

<sup>2</sup> The single largest contingency in the system is the potential loss of a single largest system element under any operating condition or anticipated mode of operation. For full coverage of the concept please see Section 4.3. of this report.

<sup>3</sup> In compliance with WECC reliability standards.

### 3 METHODOLOGY

The MSA investigation focused on four important questions related to the issue:

1. Is the AESO's treatment of Powerex different from the treatment of other AS providers? If so, what are the grounds for such differences?
2. Does Powerex have the ability to make the intertie the SLC and does it do so intentionally?
3. Is the current practice of payments to Powerex for undelivered reserves fair?
4. Will the situation continue in the future?

To answer these questions the MSA employed the following methodology which included:

- Reviewing AESO rules, operating policies and AS contract obligations to determine if Powerex was treated differently from other AS providers and on what basis.
- Reviewing and analyzing Powerex's activity in the Active Spinning Reserve market to better understand Powerex's role in the market and their potential strategies.
- Analyzing Powerex's potential profit maximizing strategy in relation to the hours when Powerex's Active Spinning Reserve contracts were curtailed to determine if Powerex has the ability and incentive to cause the intertie to become the SLC.
- Assessing the fairness of the existing practice using the Assessment Tool outlined in Appendix A of the MSA Investigation Process and Assessment Guidelines. The assessment guidelines focus on key areas of a market participant's behaviour including, intent, materiality, sustainability and repeatability<sup>4</sup>.

The analysis presented in this report focuses on the market activities in 2003 and is presented in the context of the existing regulatory and competitive landscape during this timeframe.

### 4 BACKGROUND

#### 4.1 Historical Development

The first step of the investigation was to look into existing AESO policies concerning settlement with external AS providers (i.e., Powerex). A thorough review of the AESO policies discovered that no such written policy exists. However, multiple interviews with AESO staff have helped to recreate the likely background which drove the AESO's practice of paying Powerex for undelivered reserves.

Although there has never been a documented directive, ruling, or change in regulation mandating payment for curtailed reserves from an external supply source, there is anecdotal evidence to suggest that purchasing external reserves was encouraged by the Department of Energy in the early days of market deregulation. There appears to have been some concern that the market could not, under certain circumstances, meet requirements for ancillary services through

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<sup>4</sup> "The MSA Investigation Process and Assessment Guidelines" (<http://www.albertamsa.ca/files/MSAINvestigationProcessGuidelines012604.pdf>)  
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internal resources. External reserves were therefore viewed as a highly desirable source of supply. British Columbia, with its ability to provide low-cost operating reserves using firm transmission capacity was an ideal candidate to diversify Alberta's supply sources. We assume that BC Hydro was therefore encouraged to participate in the Alberta AS market. It is further assumed that, as a result of negotiations with BC Hydro/Powerex, they were guaranteed some relief from contractual obligations applicable to other AS providers as an incentive to supply externally sourced operating reserves.

After three years of operation, the generating capacity in the deregulated electricity market in Alberta has grown considerably to the point where there is less concern about internal sources being unable to provide adequate reserves to support the electric system. Furthermore, the AS market is becoming more competitive, and there has been a significant increase in the number of participants who are active in the market such that there is now more capacity available than required to ensure system security.

**Table 1** compares the difference between available AS reserves when the AESO commenced market-based procurement of ancillary services in July 2001 and January 2004.

**Table 1**  
**Available Reserves for Ancillary Services**

Unit	SR (max output/MW) as at July 31, 2001	2001 Supply Share (%)	SR (max output/MW) as at Q1/2004	2004 Supply Share (%)
NX01		0%	80	3%
BR3, BR4, BR5		0%	100	4%
BIG	80	7%	80	3%
BOW	330	30%	330	12%
BRA	160	15%	160	6%
CAL1		0%	80	3%
EC01		0%	80	3%
CG1, CG2, CG3, CG4	96	9%	96	3%
DOWG		0%	80	3%
GN1, GN2	160	15%	160	6%
HRM	20	2%	20	1%
JOF1		0%	160	6%
KH1, KH2		0%	160	6%
MKR1		0%	80	3%
PH11		0%	45	2%
RB1, RB2, RB3, RL1, RB5		0%	151	5%
RG8, RG9, RG10		0%	60	2%
SH1, SH2	160	15%	156	6%
SD1, SD2, SD3, SD4, SD5, SD6		0%	440	16%
VVW1		0%	50	2%
WB1, WB2, WB4		0%	100	4%
PWSR	80	7%	80	3%
<b>Total</b>	<b>1,086</b>	<b>100%</b>	<b>2,748</b>	<b>100%</b>

Note: Percentages may not add due to rounding error.

**Table 1** indicates that the total volume of available supply of spinning reserves has grown from 1,086 MW in 2001 to 2,748 MW in 2004, an increase of 153%. Currently, the 80 MW of ASR provided by Powerex represents only 3% of the total supply available, compared to their supply share of 7% in 2001. Note that the requirement for Active Spinning Reserves is approximately 260 MW<sup>7</sup> during peak demand hours - much smaller than the capacity available to meet the need.

<sup>7</sup> 260 MW was the contingency reserve requirement for the hour ending 18 on December 15<sup>th</sup>, 2003, when peak demand for the AEIS was set. The contingency reserve requirement was calculated according to the WECC reliability standards.

## 4.2 Ancillary Services Supply Contracts

Suppliers of AS have two choices for selling reserves; namely, a standard form Ancillary Services Exchange Customer Agreement with the Alberta Watt Exchange Limited (Watt-Ex) or a Master Ancillary Services Purchase (Over-the-Counter) Agreement with the AESO.

### 4.2.1 Powerex Contracts

During 2003, Powerex participated in the ASR market exclusively through Watt-Ex. According to the AESO reliability standards, the sum of all external spinning and supplemental reserves dispatched across the Alberta/BC interconnection cannot exceed 80 MW. Thus Powerex was limited to providing no more than 80 MW of Active Spinning Reserves.

As a regular participant on Watt-Ex, Powerex was subject to all terms and conditions of the standard Ancillary Services Exchange Customer Agreement. The key contract terms related to the complaint are outlined in section 4.2.2. The complaint arose because Powerex received different treatment from the AESO when its contracts were curtailed, although they were subject to the same contractual obligations as the other participants in the province. Alternatively, the complaint could be viewed from the perspective that the AESO fails to enforce the terms of the Watt-Ex contract in a consistent manner.

### 4.2.2 Watt-Ex Contract

In order to sell ancillary services to Watt-Ex, each AS provider must sign the Ancillary Services Exchange Customer Agreement (Agreement). Pursuant to Section 3011 of the Agreement a non-performing AS supplier will:

- (a) be responsible for any direct incremental costs incurred by the AESO to procure the replacement reserves (Section 3011.(a));
- (b) be responsible on account of liquidated damages for any direct incremental costs related to the AESO's failure to procure such replacements, whether a system event occurred or not (Section 3011.(b)); and
- (c) not be paid for the undelivered portion of the contract (Section 3011.(c)).

According to Section 3012 of the Agreement, Force Majeure events are defined as:

*“any occurrence, which is beyond the reasonable control of the Customer [the seller of AS] which could not have been avoided through the use of Good Electric Operating Practice and which renders the Customer unable to provide the AS...”*

The payment process for services provided is outlined in Article 112 (“Invoicing”) of the Agreement. Section 112.01 (“Payment Instructions for Ancillary Service Contracts Delivered”) states that:

*“Invoices in respect of Ancillary Service Contracts that have been Delivered shall be issued by Watt-Ex and be due and payable by the Customer.... These Ancillary Service Contracts must be Successfully Performed by the Seller prior to the Buyer being required to make payment or the Seller receiving any payment with respect to that Ancillary Service Contract....”* [emphasis added]

The Agreement clearly outlines the financial responsibilities of AS providers should they not be able to deliver their contracted reserves. However, the Agreement does not seem to cover the case of curtailment of reserves by the AESO for system security reasons. According to the standard Watt-Ex contract, a participant receives payment for their services only if the service has been performed. If the service was not delivered, the participant does not get paid and may be assessed liquidated damages, unless force majeure circumstances are declared, in which case the failed AS provider is not held responsible for incurred damages, though no payments are made for the undelivered service.<sup>8</sup>

#### 4.2.3 Over-the-Counter Contract

The AESO's current Master Ancillary Services Purchase Agreement (Master Agreement) used for the procurement of "over-the-counter" reserves also contains provisions that deal with the curtailment of reserves for reasons related to system security.<sup>10</sup> Article 5.2. ("Curtailment") of the Agreement states:

*"Notwithstanding any term herein to the contrary, the AESO shall not be obligated to make any payment to the Supplier on account of the Settlement Amount if Contracted Ancillary Services are not provided hereunder (following the Supplier receiving a Valid Dispatch Instruction for the provision thereof) as a result of the Contracted Ancillary Services subsequently being curtailed in the entirety by the AESO (pursuant to the ISO Rules) during any portion of the hour specified in the relevant Valid Dispatch Instruction for reasons of System Security or transmission congestion management, as determined by the AESO in its sole discretion; provided, for clarity, that in the event that less than the entirety of the Contracted Ancillary Services are so curtailed, the AESO shall pay to the Supplier (in accordance with this Article 5) that portion of the Settlement Amount applicable to the amount (in MW) of the Contracted Ancillary Services which was actually supplied in compliance with the terms of a Valid Dispatch Instruction for the entire hour specified in such Valid Dispatch Instruction."* [emphasis added]

In other words, if the service was curtailed for security reasons or as part of transmission congestion management, the AESO is not obligated to make payments for the undelivered ancillary service. If the service was not supplied for other reasons, the AESO, as in the case of Watt-Ex, can claim the cost of procuring replacement reserves from the supplier as liquidated damages.

#### 4.2.4 Technical Requirements for Provision of Spinning Reserves

To participate in the Active Spinning Reserve market, suppliers must satisfy certain requirements outlined in the AESO's (and previously ESBI's) operating policies<sup>11</sup>. In particular, to offer ancillary services a provider must:

- Provide a minimum of 10 MW and a maximum of 80 MW of spinning reserves;

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<sup>8</sup> The force majeure provisions of the Agreement do not appear to specifically deal with situations where the AESO curtails reserves due the intertie becoming the SLC. Moreover, the MSA is not aware of any instances where Powerex declared force majeure when an event "presumably beyond its control" occurred.

<sup>10</sup> A revised version of the current Master Agreement is forthcoming.

<sup>11</sup> ESBI Alberta Ltd., Technical Requirements for Provision of Spinning Reserve (July 4, 2001)

AESO, Operating Policies and Procedures, OPP 403, "External Spinning and Supplemental Reserves from BC Hydro" (July 28, 2003)

- Have specified telemetry requirements; and
- Have a firm transmission reservation.

Powerex qualifies as an ASR provider since it holds firm transmission rights to the Alberta/BC intertie sufficient to meet its contractual obligations.

### 4.3 The Single Largest Contingency

One of the key reliability concerns in the Alberta market is that a trip of the Alberta/BC intertie will result in isolation of the Alberta system from external control areas. Should Alberta be importing power at the time, the tie-line trip represents a supply contingency and requires the use of contingency reserves to rebalance system frequency.

Intertie management tools are discussed in the AESO's Operating Policies and Procedures (OPPs)<sup>12</sup>. The AESO's policy outlined in OPP 403 "External Spinning and Supplemental Reserves from BC Hydro"<sup>13</sup> is not to use external spinning and supplemental reserve services *"to ensure prompt frequency recovery from a contingency involving loss of the Alberta/BC interconnection... when the Alberta/BC interconnection becomes the determining contingency for establishing Alberta control area contingency reserve levels"*.

The policy states that the following condition must be satisfied to ensure reliable operation of the interconnection and the AIES:

$$\text{Net Imports} + \text{External Reserves} \leq \text{AIES Contingency Reserves}$$

The minimum volume of contingency reserves the AIES carried in 2003 was 368 MW. On average, the AIES carried approximately 452 MW of contingency reserves. According to the policy, if external reserves are 80 MW, they may be supplied without curtailment, only if net imports are less than 372 MW. The System Controller determines when ASR reserves at the intertie must be curtailed. However, for purposes of the analysis, we have assumed that, according to the above equation, external reserves may be supplied without curtailment only if net imports are less than 400 MW. This is considered to be a conservative approach.

## 5 ANALYSIS

The analysis presented in this section addresses the question of whether occurrences of the intertie becoming the SLC and subsequent reserve curtailment were random events or whether a link between these events and Powerex's conduct in the market can be established.

### 5.1 Spinning Reserve Market

The ASR market is an integral component of the Alberta electricity market and represents a significant revenue opportunity for market participants. In 2003, the AESO paid approximately \$45 million on a volume of about 1.9 million MWh for Active Spinning Reserves.

<sup>12</sup> AESO's OPPs can be found at [http://www.aeso.ca/files/ISO\\_OPP.pdf](http://www.aeso.ca/files/ISO_OPP.pdf)

<sup>13</sup> OPP 403 "External Spinning and Supplemental Reserves from BC Hydro", 28 July 2003.

<sup>16</sup> The largest single unit in the system is currently Sundance #6 with 399MW MCR. Both Joffre and Suncor have stated MCR capacities of more than 400MW; however these plants are comprised of more than one unit, each with an MCR less than 400MW.

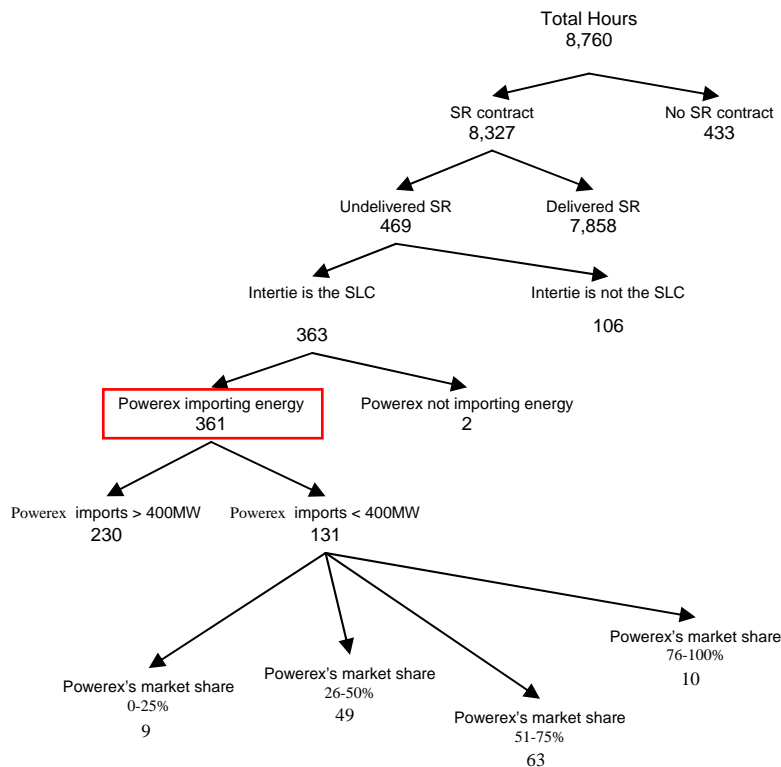


## 5.2 Powerex's Activity in the Active Spinning Reserve Market

The MSA's review of Powerex's activity in the Active Spinning Reserve market during 2003 focused on those hours when contracted reserves were not provided by Powerex due to curtailment by the AESO. Powerex supplied Active Spinning Reserves for about 95% of all hours during 2003. In terms of the financial consideration Powerex received for its ASR contracts, approximately \$1.9 million was for undelivered reserves.

**Figure 1** summarizes Powerex's 2003 ASR market activity with respect to delivered and undelivered reserves.

**Figure 1 Summary of Powerex's 2003 Activity in the Active Spinning Reserve Market**



During 2003, Powerex was contracted to supply Active Spinning Reserves for 8,327 hours and of those hours Powerex did not deliver Active Spinning Reserves for 469 hours (5.6%).

In 363 of the 469 hours when reserves were undelivered (77.4%), Active Spinning Reserves were curtailed because the intertie became the SLC. In the remaining 106 hours, reserves were undelivered for other reasons such as tie-line outages, tie-line derates, and ILRAS load derates.

During 361 of the 363 hours (99.4%) when the intertie became the SLC, Powerex was importing energy into Alberta. The review focused on these hours to determine whether the intertie curtailment was caused by Powerex, intentionally or otherwise.

The analysis indicated that in 230 of 361 hours (64% of the time) when the intertie was the SLC, Powerex was importing more than 400 MW (more than the

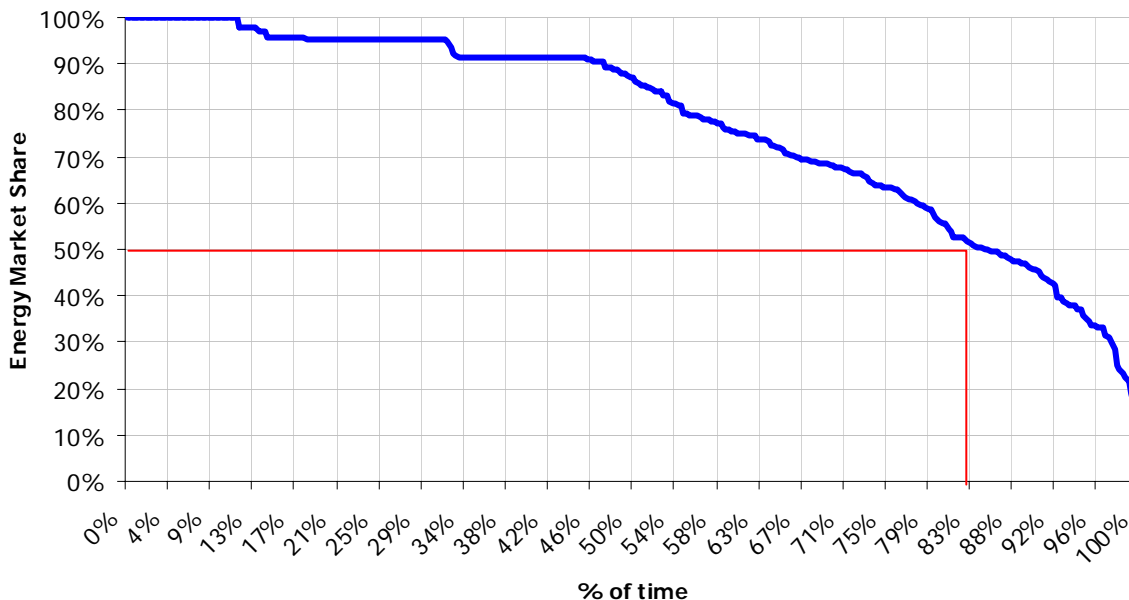
capacity of any single unit within the province).<sup>16</sup> During these hours, the average Pool price was \$148.09/MWh.

When Powerex imported more than 400 MW of energy into Alberta they single-handedly caused the intertie to become the SLC. However, in the remaining 131 hours when they imported less than 400 MW of energy, Powerex still had a very significant share of the import market and were often the largest contributor to the total energy flow across the intertie.

**Figure 2** summarizes Powerex’s import market share during the 361 hours when their Active Spinning Reserves were curtailed.

**Figure 2**

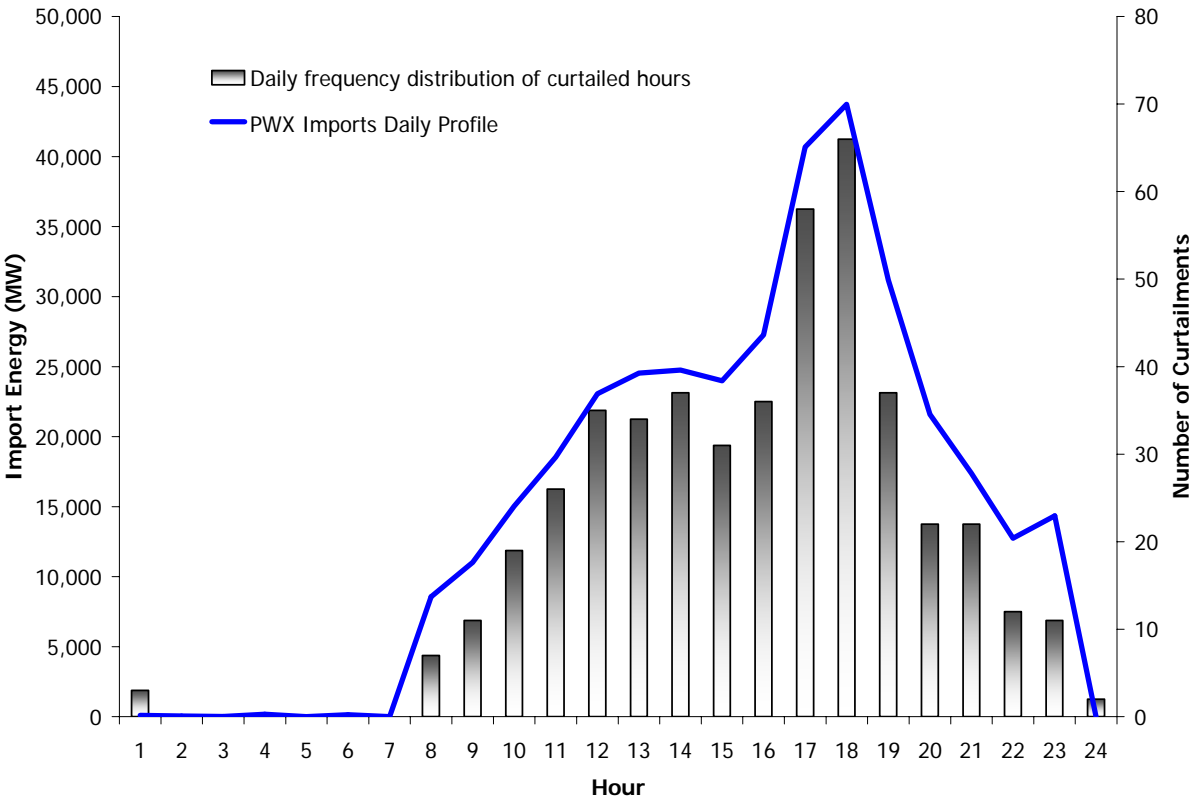
**Powerex Market Share of energy on the intertie when Powerex was importing and the intertie was the single largest contingency in the system (361 hours)**



The graph shows that 85% of the time Powerex’s market share of imports on the tie-line exceeded 50%. This suggests that Powerex may have been a major contributor to the intertie becoming the SLC in the majority of hours when their reserves were curtailed. The average Pool price during these hours was \$128.43/MWh – more than twice the average Pool price for the year of \$62.99/MWh. Historically, there has been a strong correlation between import volumes and Pool prices. As expected, when curtailments occurred, they typically happened in periods of time when import levels were increasing in response to higher Pool prices and, correspondingly, the occurrences of the intertie becoming the SLC also increased. The occurrences of SLC appear to be the outcome of Powerex’s import strategy in the sense that as Powerex increases its import volumes they effectively displaced their ASR contract as the 400 MW threshold is crossed.

**Figure 3** illustrates the frequency distribution of AS curtailment for each hour of the day plotted against Powerex’s daily profile of energy imports, for all hours in 2003. As the graph shows, the frequency distribution of curtailments closely follows the Powerex’s energy imports. The more energy Powerex imports to Alberta, the higher the frequency of curtailments. We can therefore conclude that curtailment is more likely to occur as Powerex’s import volumes increase during the day in response to rising Pool prices.

**Figure 3**  
**Powerex Energy Imports Daily Profile vs. Frequency Distribution of Curtailments**



**5.3 Powerex Revenue Maximization Strategy**

In terms of importing energy, Powerex has a great deal of flexibility to vary import levels in response to changing Pool prices due to its control over firm transmission capacity and the scheduling protocols that are currently in use. Powerex has the ability to vary import levels on an hourly basis up to the level of its firm transmission rights or ATC, whichever is lower.<sup>18</sup> Powerex’s primary concern is to optimize import energy revenue by selling the volume of energy that meets its marketing objectives.

<sup>18</sup> The MSA has been unable to determine if capacity reserved for AS is made available for energy imports if reserves are curtailed when the intertie becomes the SLC.

Powerex essentially has a “free option” concerning the provision of Active Spinning Reserves.<sup>19</sup> The “free option” exists because Powerex continues to be paid if AS reserves are curtailed as a result of the intertie becoming the SLC. The main concern in selling AS is to ensure that they successfully complete the necessary sale transactions on Watt-Ex. Thus, it would appear that Powerex’s revenue maximization strategy is simply to get what they can for Active Spinning Reserves and import the highest volume of energy that meets their Pool price objectives. In the course of pursuing this objective, Powerex periodically caused the Alberta/BC intertie to become the SLC. We were unable to determine if Powerex specifically intended to cause the intertie to become the SLC.

#### **5.4 Cost of Active Spinning Reserve Procurement**

Powerex holds a strong position in the Active Spinning Reserve market, generally selling their contracts at a competitive price. The price paid for Powerex’s Spinning Reserves, however, does not necessarily reflect the real cost of procuring the required amount of reserves. When Powerex’s contracts are curtailed the AESO is forced to procure reserves from the more expensive Standby Reserve market. The procurement of replacement reserves increases the total cost to the AESO. The total value of Powerex’s undelivered reserves for 2003 amounted to \$1.9 million. The activation cost of Standby Spinning Reserves triggered by non-delivery of the Powerex’s AS reserves was reported by the AESO to be \$2.8 million. Therefore, the total cost to the AESO of providing spinning reserves during the hours when Powerex did not deliver was \$4.8 million.

The practice of paying Powerex for undelivered reserves effectively increased the AESO’s overall cost of Active Spinning Reserves beyond what it might have otherwise been therefore resulting in increased cost to consumers.

### **6 FINDINGS**

At the start of the investigation we resolved to find answers to the four important questions that would serve as a basis for the MSA’s recommendation on the issue. The answers are presented below.

- 1. Is the AESO’s treatment of Powerex different from the treatment of other AS providers? If so, what are the grounds for such differences?*

The MSA believes that the AESO’s treatment of Powerex in regard to payment for undelivered reserves was not consistent with their treatment of other AS providers pursuant to the terms of the Watt-Ex contract. AS providers are not paid for non-delivery of reserves and are required to reimburse the AESO for the cost of replacement reserves, whereas Powerex was not invoiced for replacement reserves and also received payment from the AESO for undelivered reserves.

The reason for the difference in treatment between Powerex and other AS providers originally stemmed from the need to ensure adequate AS reserves for the purpose maintaining system security. However, the initial driver for the preferential treatment of Powerex by the AESO is no longer relevant to the current market situation. The Alberta internal supply of active spinning reserves

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<sup>19</sup> This assumes that firm transmission costs are treated as sunk costs.

has grown by 153% since 2001, and Powerex's participation in the market, though still highly desirable, is not pivotal to an adequate supply of Spinning Reserves in the province.

2. *Does Powerex intend and have the ability to make the intertie the SLC and does it do so intentionally?*

The analysis demonstrated that curtailment of Powerex's reserves as a result of the intertie becoming the SLC was not necessarily a random event and arose from Powerex's actions in response to market conditions. The MSA concludes that Powerex has both the motivation and the ability to cause the intertie to become the SLC. Given that Powerex has earned a significant revenue from undelivered AS reserves, the MSA concludes that Powerex intentionally takes advantage of its "free option" which results in the intertie to becoming the single largest contingency.

3. *Is the current practice of payments to Powerex for undelivered reserves fair?*

Since Powerex appears to be directly responsible for the curtailment of their reserves in at least some of the curtailed hours, the MSA considers the current practice of payments to Powerex for undelivered reserves as unfair to other AS suppliers. In other words, it is unfair when one participant is treated differently and receives an advantage over other market participants.

The MSA's analysis also shows that the practice of paying for undelivered reserves increased the total cost of AS procurement to the AESO and ultimately consumers by at least \$1.9 million in 2003. Moreover, if Powerex had been assessed liquidated damages for non-delivery pursuant to the terms of the Watt-Ex (or OTC) contract, it may have been possible to recover some portion of the \$2.8 million paid for Standby Reserves.

4. *Will the situation continue in the future?*

Since Powerex was importing energy in a manner consistent with "established practice" and not with the intent of breaching specific rules, the MSA concludes that the company maximized their profit with a strategy that reflects the incentives presented to them by the current AESO policy. However, no other participant has the option to execute similar strategies, and, consequently, no supplier can engage in similar behaviour nor can impede such behaviour through competitive actions. The MSA believes that if nothing changes in the way the AESO treats the issue of Powerex's undelivered reserves, there will be no incentive for Powerex to change their behaviour. This means that nothing will prevent Powerex from continuing to engage in their current strategy of maximizing their profit by "self-curtailling" their ASR. The situation is therefore *sustainable* and may continue as long as Powerex is presented with the same set of incentives from the AESO policies as it faces right now. Such behaviour is also repeatable and has been repeated throughout 2003, as shown in the analysis.

The analysis presented herein is based on 2003 data and uses Operating Policies and Procedures relevant to the 2003 time frame. In March 2004, the AESO revised OPP 312<sup>20</sup> which outlines the measures designed to impact the frequency

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<sup>20</sup> OPP 312 "Alberta/BC Interconnection Import Load Remedial Action Scheme (ILRAS)"  
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with which external reserves are curtailed. Under the revised policy, the System Controller is able to adjust the volume of LSS and ILRAS reserves so that the sum of net imports and external reserves remains less than or equal to the sum of total contingency reserves in the AIES, contracted Load Shed Service (LSS) and Import Load Remedial Action Scheme (ILRAS). In other words:

$$\text{Net Imports} + \text{External Reserves} \leq \text{AIES Contingency Reserves} + \text{LSS} + \text{ILRAS}$$

With LSS and ILRAS added to the equation, the AIES will be able to import more energy than in 2003 without curtailing external reserves. At the present time, the MSA is unable to determine the overall impact of these enhancements due to the short time since implementation of the new operating policy. However, we expect to see fewer hours when the System Controller has to curtail external reserves to satisfy the AESO's system security standards.

Both LSS and ILRAS loads are contracted by the AESO to trip either automatically in response to a frequency change or an intertie trip, or manually based on a directive from the System Controller. These additions to the AESO's intertie management tools are intended to prevent curtailment of external reserve services when the Alberta/BC interconnection is in service, provided there is sufficient ILRAS and LSS load available.

## 7 RECOMMENDATIONS

The MSA believes Powerex's exercise of their "free option" strategy did not constitute a behaviour issue. Powerex acted as a profit maximizing entity in the best interest of its shareholders and within the rules and operating policies set out by the AESO. However, it is impossible to ignore the material adverse effects such behaviour has on the "*fair, efficient and openly competitive*" spirit of the Alberta marketplace. In view of the findings of this informal investigation the MSA recommends that the AESO abandon the practice of paying Powerex for undelivered reserves which it has curtailed when the intertie becomes the SLC. Notwithstanding the recent change to OPP 312 which we believe will significantly reduce the number of occurrences when the intertie becomes the SLC, we believe it is still necessary to ensure a level playing field for all AS suppliers.

The MSA recognizes that Powerex is an important participant in the Alberta electricity market, and its participation in both the energy and ancillary services markets should be encouraged. However, it is imperative that such participation is brought in line with how other AS providers are treated and the market spirit of a "*fair, efficient and openly competitive*" market. The MSA suggests that the AESO work out alternative ways to encourage Powerex's participation in the AS market and to accommodate Powerex's interests stemming from the seams issues between the AIES and BC Hydro control areas.<sup>21</sup> One of such ways may be an "over-the-counter" agreement that could accommodate the interests of both parties.

By eliminating the current practice of paying Powerex for their undelivered reserves the AESO will "level the playing field" for all AS providers in the Alberta electricity market. Equal and fair treatment of all participants will boost market confidence, which is an important component of all participants' business decisions. The MSA therefore believes that elimination of this practice will greatly benefit the overall climate in the market.

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<sup>21</sup> Participants of BC Hydro control area must purchase transmission capacity for their transactions, whereas the AIES participants do not need to do so.

Further, the AESO should enforce the terms of the Watt-Ex contract in respect of all AS suppliers in a consistent manner.

The MSA foresees that a change in the AESO's current practice may result in a change in the way Powerex offers their spinning reserves to reflect the new set of incentives and risks the company will face. This in turn may cause a potential change in the total cost of procurement of Active Spinning Reserves for the AESO and consumers, due to the fact that Powerex is a major player in the active spinning reserve market. However, the MSA believes that any change will be the result of a market with a more level playing field for all AS providers, and which should more accurately reflect the true cost of active spinning reserve procurement. The end result would be a more efficient market which would send the right signals to investors.