

Comment Matrix – AESO Response to Stakeholder Comments
 Market Suspension – Issue Identification Paper
 December 18, 2009

Period of consultation: July 30, 2009 – August 28, 2009

1.0, 2.0 & 3.0
Introduction, Purpose, Rule History

Stakeholder	Stakeholder Comment	AESO Response
ATCO	<p>Rule 6.9 states “under extraordinary circumstances, the system controller may suspend the normal operation of the energy market” (emphasis added). Market suspension should only be contemplated for unexpected elements that cannot be effectively controlled for, such as acts of force majeure.</p> <p>The AESO should not suspend the market due to known transmission congestion on the system or supply surplus or any other issue that is within the AESO’s control. If the AESO suspends the market for these reasons it has not effectively fulfilled its mandate in operating the AIES and facilitating Alberta’s competitive wholesale electricity market.</p> <p>ATCO Power agrees with the AESO’s assessment that the current rule is outdated and could benefit from some revisions. We believe the focus and first priority of the AESO should be on ensuring the rules within the competitive market are working before undertaking changes to the market suspension rule.</p>	<p>It is the AESO’s view that market suspension should only occur under extraordinary circumstances and is a last resort.</p> <p>The AESO agrees that appropriate rules that facilitate a competitive market are of primary importance but views the market suspension rule as a necessary tool to be used in rare circumstance when the market fails to function or cannot be operated in a fair efficient openly competitive manner.</p>

<p>IPPSA</p>	<p>IPPSA advances three principles for the AESO to consider in its review of the market suspension rule:</p> <ol style="list-style-type: none"> 1) The market suspension rule should be used only as a last resort. As the AESO can appreciate, Alberta's economy requires an electricity market that functions and that can continue to command supplier and consumer confidence. A low threshold for the invocation of market suspension could greatly undermine that confidence. 2) Market solutions remain the best way to resolve market and system problems. With this, the price determined during market suspension should reflect what the market requires – e.g. more supply, or less supply, or the market price being unaffected (e.g. if suspension is driven by an AESO IT failure.) 3) The avenues for market suspension must be clear, predictable and transparent. We do not support System Controller discretion in market suspension, nor the idea of varied, and potentially differing criteria for suspension, such as a stand-alone rule, and a constraints management rule, and a resource adequacy rule. <p>With these principles in mind, IPPSA recommends reviewing the grounds for invoking the rule. Where the rule may be invoked as a response to a resource or a transmission adequacy issue, we believe it should be incorporated into existing and known protocols for addressing reliability, e.g. OPP 801 (Resource Adequacy) or Rule 9.4. (Constraints Management). With that, the market suspension rule could deal with residual, non-adequacy related-issues, such as IT</p>	<p>The AESO agrees that the suspension of the normal operation of the market should only be contemplated under extraordinary circumstances and used as a last resort. The AESO does not contemplate increases in the deployment of the market suspension rule compared to its past use.</p> <p>The AESO supports rules and procedures that are transparent and supportive of a fair efficient openly competitive market. It is our view that it will be difficult to eliminate all system controller discretion simply because the operation of the market and system rely to a certain extent on system controller discretion. There may be some level of AESO discretion in determining a market suspension, as all situations or conditions may not be predicted in advance.</p> <p>OPP 801 deals specifically with supply shortfall. Since not all market suspension reasons are related to supply shortfall it is appropriate that market suspension rules are kept separate and are not tied to OPP 801.</p> <p>The AESO will consider the proposals submitted by IPPSA in the Market Suspension discussion paper.</p>
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	<p>failure or Control Centre evacuation.</p> <p>This would also achieve a goal of ensuring there is no market confusion as to when the rule would be invoked to address resource adequacy, for example. A stand-alone rule may create a different set of criteria for the system controller to follow than one that is tied to OPP 801 for example.</p> <p>In terms of how to set the price during a suspension event, IPPSA advances the principle that market solutions remain the best way to resolve market challenges. As such, the price set during a suspension event should reflect the goal of what the market needs to achieve. If that goal is to ensure all available supply is dispatched and all price responsive load is curtailed, then the price should be high. If the goal is to ensure normalcy in the market during an IT failure, then the price should reflect where the market would normally clear. If the goal is to curtail excess supply, in an islanded part of the market, then the price should be set low enough to back off that supply.</p>	
TransAlta	<p>The Market suspension rule should only be used as a last resort. The rule should be clear, with little to no interpretation required as to when market suspension is or is not required. Markets tend to function at their best when they are interfered with the least.</p>	<p>The AESO agrees that the suspension of the normal operation of the market should only be contemplated as a last resort.</p> <p>It is our goal to develop an updated market suspension rule through working with stakeholders that is clear and transparent and limits the interpretation required.</p>

3.3 Conditions for suspending the market under the current rule

3.3.1 Blackout

- Does this rule require an update? Please provide reasons why or why not

ATCO	Eventually this rule should be updated with a different pricing mechanism.	The AESO agrees that the pricing mechanism within the current rule 6.9.4 requires an update as indicated in section 4.5 of the market suspension issue identification paper.
Capital Power	Capital Power agrees that in circumstances where the AESO is unable to operate the system in a safe and reliable manner, such as a system wide blackout, it may be appropriate to suspend the market. However, Capital Power would like more information as to how such events are defined. Perhaps the AESO definition of “blackout” would benefit from further refinement i.e.) the AESO could quantify what portion of the system would need to be deenergized in order to be considered a system wide blackout.	Determining what portion of the system would need to be deenergized in order to be considered a system wide blackout depends on the area or combination of areas the interruption occurred, the type of interruption, etc. Therefore defining the term in this context in advance may not be practical or provide any benefit.
IPPSA	If the absence of a market price in a blackout condition, how would we ensure that we attract all possible supply in Alberta, plus imports, plus curtailable loads? Here’s where the market suspension rule may best work as the last step in OPP 801. IPPSA would agree that the reasonableness of continuing under a protracted 801 circumstance needs to be assessed. Perhaps a temporal boundary is set at so many hours or days and after that, a cost-based compensation regime is established. We would be	The AESO agrees with the concerns expressed by IPPSA regarding sending the correct signal to supply and demand during a blackout condition but notes that during a blackout loads and generation are likely to be under the direction of the system controller. The AESO will consider the proposals submitted by IPPSA in the Market Suspension discussion paper.

	pleased to further discuss the details of such an approach as part of the consultation on this rule.	
TransAlta	Given the probability of a blackout, the resources required to amend the rule are probably disproportionately high compared to the real or perceived value in any recommended changes.	Acknowledged.
TransCanada	<p>There is no reason to change this portion of the rule. There have been no developments or rule changes that render the existing rule with respect to Blackout ineffective, nor has there been any event where problems emerged to demonstrate that change is needed.</p> <p>To speculate and debate on how a Blackout should be handled is merely to repeat past speculation and debate. The Blackstart team is a technical one and its concern with how settlement should occur is understandable but unfounded.</p>	Acknowledged.

3.3.2 The AIES breaks up into two or more electrical islands

- Does this rule require an update? Please provide reasons why or why not.

<p>ATCO</p>	<p>An electrical island is defined as a condition in the electrical system where geographic areas of the AIES electrically separate from the AIES, resulting from system disturbances, such that there exists both generation and load in these separated areas. Disturbances are defined as an unplanned event which produces abnormal system conditions or the effects experienced by a power system following a contingency, such as high or low frequency, abnormal voltage, or oscillations in the system.</p> <p>As the AIES breaking up into two or more electrical islands hinges on an unplanned abnormal system event, one would assume this to have a low probability of occurrence. Are we correct in our assumption that this is a low probability event?</p>	<p>The AESO agrees that the AIES breaking up into two or more electrical islands is a low probability occurrence.</p>
<p>Capital Power</p>	<p>To the extent that the break up of the system into two or more electrical islands impairs the AESO's ability to operate the system in a safe and reliable manner, Capital Power agrees that it may be necessary for the AESO to consider suspending the market.</p> <p>Additional information such as the likelihood of such an event and the impacts of such an event on the AESO's ability to operate the system in a safe and reliable manner would be helpful for market participants providing feedback on this topic. Capital Power would appreciate more clarity from the AESO</p>	<p>The AIES breaking up into two or more electrical islands is a low probability occurrence.</p> <p>Not all cases of electrical islanding will result in market suspension. The determinations are not made in advance. There are many permutations and combinations of islanding and merit orders. In every case supply demand balance must be maintained in each island. The most likely case would see the AIES remain intact except for a very small portion which can be managed through the dispatch of TMR. In other cases the break up may be to the extent that it is impossible to follow the merit order to maintain the reliability of the system and the market</p>

	<p>on how it proposes to evaluate the need to suspend the market in the event that the system splits up into two or more electrical islands. Do all cases in which the system has split into two or more islands result in the need for market suspension? Is the AESO capable of using out-of-market solutions such as TMR to address the reliability issues rather than market suspension? Perhaps the AESO could provide further detail on the threshold tests the AESO currently uses when making these determinations.</p>	<p>fundamentals cannot be adhered to. In the latter case, a market suspension may be declared.</p> <p>The AESO will consult further on the thresholds for market suspension under these conditions.</p>
<p>IPPSA</p>	<p>Can the AESO please provide stakeholders with an understanding of how likely an islanded market is, especially in light of the proposed transmission build? And what amount of load and supply are most at risk of being islanded? 50%? 5%?</p> <p>It is difficult to provide input to a hypothetical situation, without understanding its probability or magnitude.</p> <p>In terms of principles, should a region of the province be islanded, the price could and should be set at a level to keep supply and demand in balance, whether that's high enough to shed excess demand/incent extra supply, or low enough to curtail excess supply.</p> <p>Another option to managing islanded parts of the province is to contract for TMR or failing that, to conscript supply for TMR. If an area is supply deficient, the AESO should contract for Load Shed Service or conscript for Load Shed Service. Again, market suspension should be employed as a last resort.</p>	<p>Please refer to response to Capital Power within this section.</p> <p>The break up of the system is a low probability event. In any case suspension of the market should be a last resort.</p> <p>Providing a percentage of load and supply that are at risk depends on the circumstances of the break up and therefore is unpredictable.</p> <p>The probability of an islanded market is less likely as more transmission lines are built into each geographical area of the province.</p> <p>The AESO has used TMR for managing islanded parts of the province. To date, islanding conditions have been infrequent, consisted of a small part of the AIES being separated from the bulk of the system and have not resulted in market suspension.</p> <p>It is difficult to contract in advance for TMR or load shed</p>

	A final option could be to employ the steps in OPP 801 within the regions. Again, all options should be explored before market suspension is invoked.	service as any break up of the system is unpredictable.
TransAlta	Is this likely? The current rule would probably suffice in this instance.	The AIES breaking up into two or more electrical islands is a low probability occurrence.
TransCanada	There is no reason to change this portion of the rule. The paper discussion of an uncompetitive market outcome being considered an islanding situation is based on misunderstanding of the term islanding. Islanding of power systems is when one or more parts of the system electrically disconnect from the system. To introduce a second interpretation of a standard industry term is inadvisable.	The AESO agrees with TransCanada's interpretation of the term islanding. The intent of the market suspension issue identification paper with regard to this section refers to the consideration of a situation in which electrical islanding may result in an uncompetitive market outcome. The reference here is to the potential for uncompetitive market outcomes because the merit order is no longer effective due to the break up of the AIES into multiple electrical islands.

3.3.3 System Controller is unable to access or utilize the market management tools such as the energy market merit order.

- **Does this rule require an update? Please provide reasons why or why not.**

ATCO	The AESO should ensure it has robust contingency plans in place so the loss of market management tools would only occur under very extreme circumstances.	Reliability of the AESO's IT services is, and will continue to be, a critical consideration in our support strategies and system design. All AESO critical systems are designed to be highly available and disaster recoverable. Additionally, a comprehensive business continuity plan is in place and well understood by AESO employees. This plan is tested and assessed on an annual basis (at minimum).
Capital Power	It would be helpful for market participants if the AESO provided further information regarding the possibility and likelihood of an IT failure. Alberta's electricity market is extremely IT dependent and it is therefore both prudent and necessary that the AESO have in place a disaster recovery plan to ensure that there are back up systems to mitigate the impact of the loss of such critical IT infrastructure and resume normal operations in a timely fashion. Most large scale organizations perform business continuity and disaster recovery planning to minimize the potential impact of events such as IT failures. The AESO should be required to ensure continuous operation of the electricity market and any information with respect to its obligations to do so would be helpful. Capital Power also requests that the AESO provide more detail regarding its disaster recovery plan and estimated down time in the event of a major IT failure.	<p>Please refer to response to ATCO within this section.</p> <p>The details of our Business Continuity Plan are for AESO internal use only. Making these plans available to the public introduces security risks.</p> <p>As IT solutions approach near 100% reliability, the costs to implement them increase exponentially. As part of our solution design we evaluate the appropriate level of investment required to give a desired level of reliability. Our 10 year old Energy Trading solution was designed to provide at least 99.5% availability, which includes 1 hour of planned down time per month. Historically, we have achieved availability levels much higher than that, however; improving this base availability will require fundamental changes in the system design and are best implemented as part of a market system replacement.</p> <p>The AESO's current practice, as discussed within section 3.3.3 of the market suspension issue identification paper,</p>

	<p>With respect to the loss of Energy Trading System (ETS) or ADaMS it is Capital Power's view the market should be operated in all circumstances for which it is technically feasible to do so (with the exception of a loss of reliability). Although it may be inconvenient for the system controller to receive offer submissions and to dispatch generating assets by phone and/or fax, it is technically feasible for the AESO to do so and thus should not constitute a market suspension event. With respect to the loss of Dispatch Tool (DT), Capital Power is of the view that it is reasonable to operate the market using the last available merit order. Once again, this is technically feasible and thus there is no need to suspend the market.</p>	<p>is to continue operation of the market if reliability is not compromised and it is technically feasible and practical to do so.</p>
IPPSA	<p>Can the AESO explain the risks of an IT system failure? And how long might a failure last? Again, it is difficult to provide input to a hypothetical situation, without understanding its probability or magnitude.</p> <p>In this scenario, pricing under market suspension should reflect the 'system normal' pricing that would occur under functioning IT systems. Keeping the price as it normally would be during an IT failure would help to preserve the nature of the market.</p>	<p>Please refer to response to Capital Power within this section.</p> <p>The AESO will consider IPPSA's suggestions in the Market Suspension discussion paper.</p>
TransAlta	<p>The AESO has previously updated prices ex-poste due to technical "glitches". Unless the IT outage is substantial in length (probability?), current policy and procedures are probably sufficient to handle most instances.</p>	<p>Please refer to response to Capital Power within this section.</p> <p>The AESO will consider TransAlta's suggestions in the Market Suspension discussion paper.</p>
TransCanada	<p>There are no changes required under this section. When this rule was implemented the merit order was</p>	<p>The AESO agrees that the implementation of the T-2 rules implemented in Dec 2007, introduced merit order</p>

	<p>much more fluid. With T-2 rules the demands on the System Controller during such situations should be less than in the past. It is our opinion therefore, that the likelihood of needing to suspend the market for this reason is diminished, nonetheless the ability to do so should be retained in case an outage to such tools lasted long enough that breakdowns in the marketplace were occurring.</p>	<p>stabilizers within T-2. For situations in which there is an interruption to the market management tools extending over the T-2 timeframe, the paper indicates that: “an update is necessary to provide further clarity to pool participants and the system controller with respect to the length of time the system controller is able to proficiently operate the market and provide transparency to participants when faced with the loss of one or more market management tools.”</p>
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3.3.4 The AIES is not in a secure operating state and in the judgement of the SC is on the verge of a system emergency

- **Does this rule require an update? Please provide reasons why or why not.**

ATCO	It would be beneficial to define secure operating state.	Secure operating state is a commonly used term in the electrical industry. While not specifically defined, NERC uses the term to refer to a condition where a system can be operated reliably in anticipated normal and contingency system conditions.
Capital Power	<p>Capital Power encourages the AESO to consult on those circumstances that should be considered a System Emergency and to the extent possible these circumstances should be transparent in the rule. Given that the rule indicates that the term “Secure Operating State” is the threshold for determining a system emergency, the term must be defined.</p> <p>Capital Power also encourages the AESO to ensure that all other potential solutions in response to a system emergency are considered before market suspension.</p>	<p>Please refer to the AESO response to ATCO in this section.</p> <p>It is the AESO’s view that market suspension should only be used under extraordinary circumstances and as a last resort.</p>
IPPSA	<p>We take note of the AESO’s comments that “secure operating state” is not defined in rules. As such, perhaps the AESO should stick with “system emergency” language.</p> <p>The AESO goes on to suggest that ‘secure operating state’ is when the AESO is on the verge of a ‘system emergency.’ We would ask whether there are other avenues for the System Controller to correct the situation other than proceeding with market suspension.</p>	<p>Please refer to the AESO response to Capital Power in this section.</p> <p>The AESO does not see combining the market suspension rules with OPP 801 but we agree that market suspension must be used as a last resort.</p>

	For example, wouldn't OPP 801 provide sufficient tools for the SC, rather than creating new steps and tools under a new and potentially competing market suspension rule? As above, 'market suspension' could be a new step 32 in OPP 801.	
TransAlta	OPP 801 was designed for this very reason. Market suspension has nothing do with the reliability requirements of the AESO.	There are reliability situations, as outlined in the problem identification paper that could lead to a market suspension. OPP 801 was designed to deal with Supply Shortfall situations and is not applicable for market suspension.
TransCanada	This portion of the rule could be deleted. The AESO has, in different rules and OPPs, the right to direct operation in such instances.	The AESO will consider the suggestion submitted by TransCanada in the Market Suspension discussion paper.

3.3.5 SC forced to abandon the workplace

- Does this rule require an update? Please provide reasons why or why not.

ATCO	Given back-up systems are in place, this rule does not appear to need changing.	Acknowledged.
Capital Power	Capital Power acknowledges that suspending the market may be necessary if the system controller is forced to abandon the work place. We would, however, like to understand the extent to which the AESO is able to make use of the back-up control centre and how quickly the AESO would be able to resume the normal market operations (estimated downtime).	The AESO has a completely redundant site on “warm” standby (little to no start-up time required) for all market functions, a full back-up and recovery capability, and same site redundancy of hardware supporting critical functions. Despite this we cannot achieve system availability beyond 99.5%. The downtime is entirely dependant on the nature of the disaster. Under optimal conditions, the SCC function can be restored from warm stand-by within 1 hour of having to evacuate; however, the time may vary depending on the conditions during that time (ie. type of interruption, environmental considerations).
IPPSA	<p>As per 3.3.2 above, how likely is this to happen? Are there not backup systems?</p> <p>In this scenario, pricing under market suspension should reflect the ‘system normal’ pricing that would occur under a functioning IT system. We would encourage the AESO to explore such options as a means to retain investor confidence.</p> <p>We would also appreciate understanding how long the AESO thinks it can operate with a paper merit order? Is this a day or a week or a month?</p>	<p>Please refer to response to Capital Power within this section.</p> <p>The AESO will consider the proposals submitted by IPPSA in the Market Suspension discussion paper.</p> <p>The AESO has the ability to operate the energy market using a paper merit order for a period of time; however, without the ability to incorporate restatements or post prices the operation of the market is seriously affected as the information is out of date and not reflective of market conditions at that time. The AESO is interested in the tolerance of participants for operation of the market in this condition and participant feedback on the thresholds associated with operating the market in this condition.</p>

TransAlta	The AESO has alternative sites for emergency conditions. There is no reason to introduce market suspension rules in this instance. In a catastrophe where by where both sites are unusable, market suspension rules are likely the last of our concerns.	Please refer to response to Capital Power within this section. The AESO will consider the suggestions submitted by TransAlta in the Market Suspension discussion paper.
TransCanada	There is no update required for the reasons put forth in the paper.	Acknowledged.

3.3.6 An order is received from the Commission to suspend market operations

- Does this rule require an update? Please provide reasons why or why not?

ATCO	The EUB needs to be changed to the AUC. The pricing methodology could benefit from an update. This would be more of a concern if the AUC did not order a specific price.	<p>Section 3.4 of the Market Suspension Issue Identification Paper notes that “administrative changes for updating the rule language to reflect changes in legislation (EUB to AUC) should be incorporated as part of this review”.</p> <p>An update to the pricing methodology is being considered as part of the Market Suspension rule review, as noted in section 4.5 of the Market Suspension Issue Identification Paper.</p>
Capital Power	Capital Power requests that the AESO provide more information around the Commission’s jurisdiction to suspend the market. We are uncertain that the Commission does in fact possess the authority to suspend the market.	<p>The provision in ISO Rule 6.9 allowing the Commission to suspend market operations was created in 1999. At that time, it was deemed appropriate for the Commission (known as the EUB) to hold such jurisdiction within the ISO Rules as the Alberta wholesale market for electricity had only been operational for a short period of time.</p> <p>The AESO will consider Capital Power’s comments, and further investigate the role of the Commission, as part of the Market Suspension discussion paper.</p>
IPPSA	We would appreciate it if the AESO can provide participants with an understanding of how the AUC can order the market suspended? Such an authority seems to contravene the purposes of the Electric Utilities Act.	Please refer to response to Capital Power within this section.
TransAlta	The current rule is sufficient given the probability of this event.	Acknowledged.
TransCanada	There is no update required for the reasons put forth in the paper.	Acknowledged.

3.4 Current Pricing Methodology

- Does this rule require an update? Please provide reasons why or why not?

ATCO	The rule does require an update, but we believe the priority for updating it is low relative to other rules. We would prefer the AESO to focus their efforts on congestion management and dispatch down service rules prior to a revision of the market suspension rule.	Acknowledged. The AESO continues to develop and update other market rules in parallel with this initiative.
Capital Power	In the event of a market suspension it is critical that the pricing mechanism reflects as closely as practicable the underlying market conditions. In Capital Power’s view market conditions may differ significantly depending on if the AESO has suspended the market for insufficient reliability or if the Government of Alberta has ordered that the market be suspended due to a “market failure”. Therefore, the AESO should undertake to develop pricing mechanisms to address these different cases.	The AESO will consider the proposals submitted by Capital Power in the Market Suspension discussion paper.
IPPSA	Consistent with the second principle we advance, <i>“market solutions remain the best way to resolve market and system problems”</i> , we believe that the price determined during market suspension should reflect what the market requires. This may mean a high price that seeks to attract supply and shed curtailable load, or a low price to back off supply, or an unaffected price if the issue relates to an AESO IT failure.	The AESO will consider the proposals submitted by IPPSA in the Market Suspension discussion paper.
TransAlta	TransAlta would recommend a specified heat rate (12.5 to remain consistent with current/relevant policy) versus that	The AESO will consider the proposal submitted by TransAlta in the Market Suspension discussion paper.

	of a fixed price that may or may not reflect the current state of the market.	
TransCanada	Changes to this portion of the rule are more likely to cause problems than to reduce or eliminate them. The situations put forward in support of change in the paper, particularly that extended supply adequacy or congestion should be considered as reasons to suspend the market, overlook that there are other rules that specifically apply to these circumstances. Where these other rules do not provide correct price signals it is these rules that should be changed.	<p>The suspension of the normal operation of the market should only be contemplated under extraordinary circumstances as a last resort.</p> <p>This rule review is to ensure that there are mitigating measures in place in case the market is not functioning in a fair, efficient and openly competitive manner. For example, sustained high or low prices not based on market fundamentals for an extended period of time, where the period of time needs to be determined through consultation with stakeholders.</p>

4.0 Rationale for changing the rule

4.1 Inability to operate multiple markets during the loss of market management tools for an extended period of time.

- To what extent does the failure of an IT system warrant a market suspension?
- Is it appropriate to suspend the DDS market during a DT outage?
- Should the rule consider partial market suspension in such conditions?

Capital Power	<p>Once again, all action must be taken to avoid suspending the market, including the use of manual dispatching and last available merit order. It is necessary that the AESO has an appropriate disaster recovery plan in place to ensure that there are back up systems to mitigate the impact of the loss of such critical infrastructure in a timely fashion</p> <p>With respect to the DDS market, it is not acceptable to suspend the DDS market during a DT outage. The AESO was directed by to reconstitute price to account for the impact of transmission congestion at all times. Therefore, the AESO must upgrade its system such that it can operate the DDS market during a DT outage.</p> <p>Capital Power requests that the AESO clarify what they are contemplating by a partial suspension of the market. Capital Power is of the view that Market Suspension is only applicable to system emergencies that impact the entire grid.</p>	<p>Reliability of the AESO's IT services is, and will continue to be, a critical consideration in our support strategies and system design. All AESO critical systems are designed to be highly available and disaster recoverable. Additionally, a comprehensive business continuity plan is in place and well understood by AESO employees. This plan is tested and assessed on an annual basis (at minimum).</p> <p>The dispatch tool (DT) is the system that operates the real-time DDS market. In the event of a failure of DT the DDS market is too complex to operate in a manual, paper based, fashion in real-time and therefore it has been suspended for this reason during such occurrences thus far.</p> <p>A partial market suspension, for example, might see the DDS market discontinued during a DT outage. While the energy market may continue to be operated manually during short DT outages, the DDS market is much more reliant on a functioning DT. Rather than suspend the entire market, DDS might not be dispatched during the DT outage.</p>
IPPSA	To IPPSA, a protracted reliance on a 'paper merit	The AESO has the ability to operate the energy market

	<p>order' in light of IT system failures appears to be a compelling justification for a market suspension circumstance. However, the duration should be quantified. How likely would such a circumstance be and how long could it last (days, weeks or months)?</p> <p>Because so much rides on Alberta's electricity market, namely billions of dollars of invested supply and billions of proposed additions, we urge the AESO to operate its paper merit order for as long as practical before invoking market suspension.</p>	<p>using a paper merit order for a period of time; however, without the ability to incorporate restatements or post prices the operation of the market is seriously affected as the information is out of date and not reflective of market conditions at that time. The AESO is interested in the tolerance of participants for operation of the market in this condition and participant feedback on the thresholds associated with operating the market in this condition.</p>
Load Coalition	<p>The Load Coalition supports the current rule definition in regards to IT system failures. The current rule empowers the System Controller to declare a market suspension with the failure of an IT system. It is acceptable for the System Controller to utilize a paper merit order for several hours, prior to declaring a market suspension.</p> <p>It is the understanding of the Load Coalition that the AESO utilizes a paper merit order during the initial stages of a DT outage. The Load Coalition supports the AESO's current practice since maintaining system security is the overriding concern and the suspension of the DDS market during this condition seems appropriate.</p>	Acknowledged.
TransAlta	<p>An 'extended period of time' needs to be clearly defined in advance of any event. A decision to suspend a market should not be based arbitrarily on a case by case basis.</p>	<p>The AESO agrees that "an extended period of time" needs to be clearly defined.</p> <p>In the AESO's view, it is appropriate to set up parameters (guidelines or criteria), through consultation with stakeholders that would guide the decision for a market suspension in this context, as it may not be possible to</p>

		predict the occurrence of every disturbance.
TransCanada	<p>There are no changes required under this section. When this rule was implemented the merit order was much more fluid. With T-2 rules the demands on the System Controller during such situations should be less than in the past. It is our opinion therefore that the likelihood of needing to suspend the market for this reason is diminished, nonetheless the ability to do so should be retained in case an outage to such tools lasted long enough that breakdowns in the marketplace were occurring.</p> <p>DDS should not be suspended during DT outages. DDS is a physical offset to TMR energy quantities that improves the price signal. Processes should be created to retain the use of DDS during DT outages instead of proposing a rule change allowing the suspension of its use.</p>	<p>The AESO agrees that the implementation of the T-2 rules implemented in Dec 2007, introduced merit order stabilizers within T-2. For situations in which there is an interruption to the market management tools which extend over the T-2 timeframe, the paper indicates that: "an update is necessary to provide further clarity to pool participants and the system controller with respect to the length of time the system controller is able to proficiently operate the market and provide transparency to participants when faced with the loss of one or more market management tools."</p> <p>The dispatch tool (DT) is the system that operates the real-time DDS market. In the event of a failure of DT the DDS market is too complex to operate in a manual, paper based, fashion in real-time and therefore it has been suspended for this reason during such occurrences thus far. The AESO will consider TransCanada's comments in the Market Suspension discussion paper.</p>

4.2 Inability to operate the market competitively as a result of transmission constraints

- **When does the market switch from competitive to non-competitive due to constraints on the AIES?**

ATCO	The inability to operate the market competitively as a result of transmission constraints is a market design issue. We encourage the AESO to reconsider its congestion management methodology.	While only to be used as a last resort, it is important that the market suspension rule is applicable under extraordinary circumstances. The AESO is currently reviewing congestion management rules.
Capital Power	To the extent that the system controller determines that the system is in a state of emergency due to the loss of critical transmission it may be prudent to suspend the market. However, the AESO is specifically mandated to build transmission in advance of need to ensure that the market can function competitively. Capital Power feels that AESO does not have the jurisdiction to take action, such as a market suspension, in or near real-time based on its assessment of the relative competitiveness or non-competitiveness of the market. Issues related to the level of competition in the market are more appropriately dealt with by the Market Surveillance Administrator (MSA).	In order to fulfill our mandate under Section 17 of the EUA, the AESO must ensure appropriate rules are in place to facilitate the fair, efficient, and openly competitive exchange of electric energy. In the AESO's view, this may include the determination of thresholds that result in a non-competitive market. To this end the AESO is consulting on the relative levels of competitiveness or non-competitiveness that might lead to a market suspension.
IPPSA	IPPSA has a number of observations pertaining to the use of market suspension as a remedy for transmission constraints. First, how will the AESO determine if a market is not competitive? Can it make this determination unilaterally? We know that the AESO has committed to seeking the MSA's input, for example, when it	The market suspension issue identification paper seeks stakeholder input regarding the determination of thresholds that determine the level at which competitive becomes non-competitive as a result of transmission

	<p>comes to determining whether RFPs for ancillary services are competitive.</p> <p>Second, IPPSA does not believe that an approach to constraints management that has the prospect of a market suspension as a fall back is a valid methodology within a FEOC market. We made this point before the AUC when objecting to the AESO's approach. We take this opportunity to encourage the AESO to reconsider its congestion management methodology.</p> <p>We believe that a CM protocol which uses Transmission Must Run and Load Shed Service contracting with Dispatch Down Service, and then conscription, if need be, would enable the AESO to manage congestion without requiring a market suspension fall-back. This is consistent with the ENMAX approach that the AUC directed the AESO to consider.</p>	<p>constraints. The AESO will explore this further within its market suspension discussion paper, and welcomes stakeholder feedback in this context.</p> <p>The AESO is continuing its work and stakeholder consultation on congestion management rules, including consideration of the ENMAX approach.</p>
Load Coalition	<p>The Load Coalition generally supports market solutions to constraint conditions. The use of Market Suspension for general congestion on the transmission system is not a preferred alternative. However, it is possible for constraints on the system to create a dependence on select generators, and this dependence may create a scenario of non-competitive prices. However the pricing mechanisms provided for in Article 11, and the overall TMR framework, should be sufficient to manage the market in most constraint conditions of moderate duration.</p> <p>The current rule enables the System Controller and the EUB (AUC) to use discretion in assessing these types</p>	<p>The suspension of the normal operation of the market should only be contemplated under extraordinary circumstances and as a last resort. It is not our intent to use market suspension to manage transmission constraints. The intent is to develop parameters that would indicate that the market is no longer functioning in a fair efficient and openly competitive manner and should be suspended.</p> <p>The AESO will consider the comments submitted by the Load Coalition in the Market Suspension discussion</p>

	of conditions and suspending the market as it deems appropriate. The Load Coalition supports the continued discretion of the System Controller and AUC in declaring a market suspension.	paper.
TransAlta	TransAlta encourages the AESO fulfill its mandate to provide adequate transmission. OPP 801 and Rule 9.4 are designed to handle these types of events.	<p>Please refer to AESO response to Capital Power within this section.</p> <p>OPP 801 deals with supply shortfall situations and rule 9.4 is intended to deal with transmission constraints. It is not our intent to use market suspension to manage either of these situations. The intent is to develop parameters that would indicate that the market is no longer functioning in a fair efficient and openly competitive manner and should be suspended.</p>
TransCanada	TransCanada has previously proposed solutions to this situation which have been rejected by the AESO.	The AESO appreciates and gives due consideration to all suggestions received during consultation.

4.3 Need for clarity for the System Controller

<p>IPPSA</p>	<p>We recognize the need for clarity for the System Operator as a justification for the rule. However, we believe the AESO should commit to limiting the use of market suspension to as narrow a list of triggers as possible. For example, we do not believe it needs to be used for resource adequacy or transmission adequacy, in light of OPP 801 and Rule 9.4, as there are other steps that must be employed first to remedy these circumstances.</p> <p>We do not support enabling the System Controller to suspend the market on his or her judgment alone.</p>	<p>Please refer to AESO response to TransAlta in section 4.2.</p> <p>It is important that the system controller has established and transparent parameters to guide a decision to suspend the market. The AESO seeks to establish those parameters through this consultation. However, it will be difficult to eliminate all system controller discretion simply because the operation of the market and system rely to a certain extent on system controller discretion. There may be some level of AESO discretion in determining a market suspension, as all situations or conditions may not be predicted or tested in advance.</p>
<p>TransAlta</p>	<p>Market suspension is a serious event. Any event serious enough to warrant market suspension should be previously defined.</p> <p>Judgment from a system controller should only be applied to the reliability of the system, not the market signal resulting from the reliability event.</p>	<p>Please refer to AESO response to TransAlta in section 4.2.</p>

4.4 Need for clarity for Market Participants

Capital Power	Market participants need to clearly understand the risks associated with investing and participating in Alberta’s energy-only market. All process, procedures and thresholds concerning the suspension of the market must be clearly documented and transparent.	The AESO agrees that the rules and procedures should be clearly documented and transparent. The objectives for reviewing the rule at this time include providing more transparency and clarity.
IPPSA	<p>We support the need for clarity around when market suspension can be invoked, by whom (AESO, not AUC order) and what the level of compensation will be.</p> <p>Here we reiterate the need to tie market suspension related to resource adequacy or transmission adequacy to the steps the AESO currently has to mitigate those problems (e.g. OPP 801 or rule 9.4.4.)</p>	Please refer to responses to Capital Power in this section and to TransAlta in section 4.2.
TransAlta	We support the need for clarity around when market suspension can be invoked, by whom (AESO, not AUC order) and what the level of compensation will be.	Please refer to AESO response to TransAlta in section 4.2.

4.5 Pricing during an Energy Market Suspension

- What is a fair pricing mechanism during an energy market suspension?

<p>Capital Power</p>	<p>The price for electricity should reflect the offers in the energy market merit order. When the AESO is forced to suspend the market it is essential that the pricing mechanism take into account the underlying value of the commodity. A “one size fits all” formulaic approach or a static value pricing mechanism is inappropriate.</p> <p>In the event that the system is suspended due to the AESO’s inability to operate the grid in a safe and reliable manner the AESO should require that market participants continue to submit offers and the AESO should retroactively (once the reliability issue has been resolved) calculate the pool price. If the AESO suspends the market due to an IT does the AESO currently have the ability to capture the required information to carry out this calculation? If not, the AESO should undertake to implement a backup system to ensure that this information can be retrieved in order to calculate the market clearing price after the fact.</p> <p>In the event that the system is suspended in response to a directive from the Government of Alberta due to a “market failure” it may be necessary to calculate the market price while controlling for the “market failure” and removing it’s impact i.e.) In the case of a non-competitive outcome due to market</p>	<p>The AESO will consider the proposal submitted by Capital Power in the Market Suspension discussion paper.</p> <p>The approach suggested by Capital Power may work in some circumstances; however, the AESO is concerned that offer prices will not be reflective of the appropriate price of energy in all circumstances. For example, when the system is being blackstarted, very few MW will be required initially and these MW may be coming from \$0 or \$999 offer blocks. Neither of these may be the appropriate price for the energy as directives will decide which MW are produced and not the energy market merit order.</p>
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	<p>power of a single participant, the AESO should calculate the market clearing price using only the offers from market participants offers who are not considered to have market power.</p>	
IPPSA	<p>This depends on what the market needs to achieve. If it is to ensure that all available supply and imports are offering in and all available demand response is curtailing, this price will have to be high. Again, we suggest this rule become a part of OPP 801, when it pertains to resource adequacy.</p> <p>If there is adequate supply, but some other breakdown occurs, e.g. IT failures, it is suggested that the market during suspension needs to resemble the market in normal operations to the greatest degree possible in order to maintain investor confidence.</p> <p>In this case, IPPSA is open to discussing options, which may include setting the price as the last offer price for some duration of time, or developing a proxy for the market price based on recent price behavior.</p>	Please refer to AESO response to Capital Power in this section.
Load Coalition	<p>The Load Coalition appreciates the documentation provided of various jurisdictions and the market suspension price setting mechanisms from these markets. The AESO's current method of setting market suspension prices appears outdated when compared to other markets.</p> <p>The Load Coalition generally favors a price setting mechanism that will compensate generators adequately for their costs. The Blackout rate of \$50/MWh and the setting of price at the last block</p>	The AESO will consider the comments submitted by the Load Coalition in the Market Suspension discussion paper.

	<p>should likely be updated. The Philippine method of utilizing a weighted average of four most recent same day prices likely has merit – since these recent prices likely provide an objective guide to current market conditions that existed prior to the market suspension event.</p>	
TransAlta	<p>As discussed in our opening statement, any rule that involves compensation to generators needs to be grounded under the principle of fairness. At a very minimum, at no time should a generator be forced to generate without being eligible to receive compensation for its variable cost. Instead of the current \$50 price, TransAlta recommends a 12.5 heat rate be applied.</p>	<p>The AESO will consider the proposal submitted by TransAlta in the Market Suspension discussion paper.</p>

4.6 Insufficient energy supply over an extended period of time

- At what point does insufficient energy supply become non-competitive?

ATCO	A well designed market should not reach this state.	The AESO agrees that appropriate rules that facilitate a competitive market are of primary importance but views the market suspension rule as necessary. It should be used in rare circumstance when the market fails to function or cannot be operated in a fair efficient openly competitive manner. The AESO continues to develop and update other market rules in parallel with this initiative.
Capital Power	<p>If there is insufficient energy due to a supply shortfall it is essential that the prices are reflective of the scarcity. Suspending the market would be inappropriate and could limit a response to address the shortfall situation.</p> <p>The AESO is mandated to facilitate the operation of a market such it is fair and open and to promote a fair, efficient and openly competitive market for electricity. It is Capital Power's view that the AESO's role is to develop rules and design the market such that it promotes FEOC, however, the AESO should be neutral to price outcomes. The AESO's mandate does not include a duty to assess the level of competition in or near real-time. Rather, the monitoring and investigating of market outcomes and the prosecution of market participants that do not support FEOC is more appropriately address by MSA.</p>	<p>Please refer to the response to Capital Power in section 4.2.</p> <p>The AESO agrees that market participants should receive the appropriate price signal. The concern is that the price signal may be driven by abnormalities in the market and may not be reflective of FEOC conditions. Through this consultation the AESO is attempting to establish appropriate parameters to be used when considering market suspension under these circumstances.</p>

	<p>Furthermore, the market rules dictate that all participants must offer their entire capacity. Therefore, suspending the market is not action that will address an insufficient supply situation as the action will not result in additional generation coming online in either the short- term or the long-term.</p> <p>Under extended periods of insufficient supply it is of the utmost importance that electricity investors, generators and consumers are receiving the appropriate price signal. This is the only way to ensure the continual investment in generating resources as well as the appropriate market responses during such events.</p>	
IPPSA	We reiterate our suggestion that the market suspension rule should be tied to OPP 801. In terms of a reasonable duration, we're open to discussing this with the AESO.	Please refer to AESO response to TransAlta in section 4.2.
Load Coalition	<p>The Load Coalition generally supports market solutions to energy supply situations. In the event that a large generator outage creates a supply shortfall for a long period of time, prices may be set at a high level for an extended period. However, the high level of price will encourage load curtailment, the use of imports and the use of typically higher priced supply.</p> <p>The current rule empowers the AUC (EUB) to suspend the market and set price through a specific order. The Load Coalition believes that the AUC is likely in a strong position to review the market in a longer term insufficient energy supply situation, to monitor participant behavior and to provide an order, if required.</p>	<p>Please refer to AESO response to Capital Power within this section.</p> <p>The AESO will consider the Load Coalitions comments with respect to the AUC in the Market Suspension discussion paper.</p>

TransAlta	Whatever time period the AESO chooses (if one is required at all), that time period needs to be clearly pre-established and not invoked based on any one person's judgment on what an appropriate price signal should be.	Please refer to AESO response to Capital Power within this section.
TransCanada	<p>The AESO has other rules that allow it to direct generators and loads as required for system security. If all generators are running and load is being directed off, it is logical that the price in the market should reflect scarcity.</p> <p>Further, other rules and laws exist to address anti-competitive behavior but give the authority to act on these to others. The AESO in considering a change to this rule is therefore contemplating giving itself authority that legislation gives to others.</p>	Please refer to AESO response to Capital Power within this section.

4.7 Supply Surplus over an extended period of time

- At what point does a supply surplus condition become non-competitive?

ATCO	A well designed market should not have \$0 prices over an extended period of time.	Please refer to AESO response to ATCO in section 4.6
Capital Power	<p>Once again the market fundamentals should be free to dictate the price. The market should be designed to allow market participants to accurately reflect their willingness to supply or consume.</p> <p>Furthermore, market response and competitive action occurs over a range of supply and demand circumstances (i.e. from shortages to over-supply). Interventions only serve to reduce market responses and potential delay normal self balancing mechanisms inherent in the market design (e.g. reductions to production or reductions in consumption). Suspending the market is as inappropriate for instances of excess supply as it is for scarce supply situations. Moreover, suspending the market in excess supply situations will not result in a supply reduction due to the must offer obligation for generators. We feel that this question is more appropriately addressed in a forum on market design rather than market suspension.</p>	Please refer to AESO response to Capital Power in section 4.6.
IPPSA	Again, market suspension should be used as a last resort. Market-based options for managing supply surplus are being considered under that consultation process and include DDS or negative pricing.	<p>The AESO agrees that the suspension of the normal operation of the market should only be contemplated as a last resort.</p> <p>Please refer to AESO response to TransAlta in section 4.2.</p>

Load Coalition	<p>The Load Coalition supports market solutions to energy market issues. In the event that market conditions and participant behavior results in a \$0 price for a long period of time, the Load Coalition does not believe a market suspension order is warranted.</p> <p>The Load Coalition encourages the AESO to create a market design that enables generators to choose to dispatch off the system to rectify situations of \$0. A “DDS” type market, where Generators provide offers to dispatch down – and are compensated by other generators for providing this service, is likely one method. An alternative method is to enable negative bidding, as occurs in other markets such as Ontario. If a negative price is set, loads or exporters gain by increasing consumption while Generators are encouraged to dispatch off-line.</p> <p>Alberta has structured its electric market around a single market price clearing mechanism. To maintain overall market integrity, that design approach should be consistently followed, using methods such as negative offers to clear the market rather than administrative rules.</p>	Acknowledged.
TransAlta	<p>Negative pricing is unacceptable unless the current price cap is removed on BOTH ends of the spectrum. The principles of FEOC would require this.</p>	Acknowledged.
TransCanada	<p>The AESO has other rules that allow it to direct generators and loads as required for system security.</p> <p>We believe generators in a supply surplus situation will</p>	Please refer to AESO response to TransAlta in section 4.2 and ATCO in section 4.6.

	behave rationally and that the situation will resolve not through the suspension of the market but rather because of it, if it is allowed to.	
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5.0 Other Markets

- **What information from other market designs is pertinent to the design consideration in Alberta?**
- **Are the pricing alternatives appropriate during a suspension and how should they be addressed?**

Capital Power	<p>Capital Power notes that of the markets reviewed that do have market suspension rules in almost all cases the ISO only considers suspending the market in the event of a system emergency.</p> <p>The pricing mechanism that is decided that is most appropriate for Alberta is the one that takes into account all of the market design features in Alberta's energy market including those that are unique to this province.</p>	Acknowledged.
Load Coalition	<p>The Load Coalition supports the efforts of the AESO to review the market designs of other jurisdictions. Lessons of other jurisdictions may provide a guide for Alberta market design.</p> <p>The Load Coalition encourages the AESO to interview the market design specialists in these other jurisdictions for their assessments of the benefits and drawbacks of their current market suspension rules. While the AESO has presented the facts, these assessments may also provide helpful guidance.</p>	Acknowledged.

Additional Comments

TransCanada	Chief among our concerns is that making market suspension simple undermines the commitment to making the market work and market suspension becomes a self-fulfilling prophecy	It is the AESO's view that the suspension of the normal operation of the market should only be contemplated under extraordinary circumstances and as a last resort. The AESO is not operating under the assumption that market suspension is simple. We are committed to providing a fair, efficient and openly competitive market.
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