

Response to Questions Document

Capitalized terms used in this Response to Questions Document have the meanings provided to them in the either the RFP and/or the Agreement.

Question 1	
Section Reference	Question & Answer
LSSi Requirements: Section 3.6 Section 4.5 RFP: Schedule "A"	<p>Is it acceptable to offer a single, large load for LSSi Service when an electrical fault could cause protection systems to remove the load from service during the scheduling hour? (This is expected to happen rarely, and would always disconnect the corresponding load from the AIES, so reliability limits would not be violated.)</p> <p>Yes, it is acceptable to offer a single, large load up to 150MW for LSSi Service subject to correct operation of the protection systems. If the protection systems were activated due to an electrical fault in the System the Service Provider could claim Force Majeure under the terms and conditions of the Agreement;</p> <p>However, if the load in question is a frequency sensitive load and the above stated protection systems are designed to disconnect the load from the System to protect against a frequency change and which would disconnect the load prior to the frequency reaching 59.5Hz, then this load would not be eligible for LSSi.</p>

Question 2	
Section Reference	Question & Answer
RFP: Section 4.8	<p>The AESO states that they have the right to make amendments/deletions/additions etc. to the agreement. What rights will a respondent have to alter or withdraw their offer if any AESO changes materially impact the intention or the potential value of the service? We request that a bid condition is that if AESO makes unreasonable changes to the agreement after the bid is submitted that the respondent will have the right to approve those amendments before execution.</p> <p>It is the AESO's intention that there will be not be any further amendments to the Agreement. However if there</p>

	<p>are technical or typographical errors it should be the intention of all parties to correct such errors. All changes to the Agreement will be posted as an Addendum to the RFP and in accordance with the existing RFP Process such Addendum must be completed prior to the Submission Deadline.</p> <p>In the event, for an unanticipated reason, the AESO is required to make any material changes to the Agreement after the Submission Deadline it would be the AESO's intention to permit all parties to resubmit their proposals.</p>
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Question 3	
Section Reference	Question & Answer
RFP: Schedule "D"	<p>How detailed does the supporting documentation for billing purposes have to be? What resolution is the AESO requiring for the data points? (Actual Volume, Offered Volume, Dispatch status etc)?</p> <p>Please refer to Appendix A of this Response to Questions Document which provides a template for the Service Provider to submit their supporting documentation.</p> <p>Please note that the AESO is considering an Addendum to Schedule "D" of the RFP and the Agreement to address this question.</p>

Question 4	
Section Reference	Question & Answer
RFP: Schedule "D"	<p>Can AESO supply the calculation for the purchase price in logic flow chart format (algorithm)? This would remove all ambiguity in how the billing is to be determined.</p> <p>Please refer to Appendix B of this Response to Questions Document.</p>

Question 5	
Section Reference	Question & Answer
LSSi Requirements:	<p>If during a trip event, the LSSi provider was outside the 95% to 120% threshold band, but the trend for the</p>

Section 4.5	<p>dispatch period was such that they were in the threshold band, what would be the implications to the provider?</p> <p>If average Actual Volume for the period prior to the trip and including the time of the trip was within the 95% to 120% tolerance band the LSSi Service Provider would receive the Trip Payment for the Trip event.</p> <p>If average Actual Volume for the period prior to the trip and including the time of the trip was NOT within the 95% to 120% tolerance band the LSSi Service Provider would not receive any type of Payment for the Trip event.</p>
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Question 6	
Section Reference	Question & Answer
LSSi Requirements: Section 4.5	<p>If a company has multiple blocks of volumes bid in at the same price, can the threshold compliance be determined from the aggregate amount of the armed volume bocks?</p> <p>No, compliance is determined on a per block basis.</p>

Question 7	
Section Reference	Question & Answer
RFP: Section 6.3 (1)(h)	<p>Does the required date factor into the AESO selection? Is there a date that the service starting becomes unacceptable to the AESO for example a required date past Jan 2012?</p> <p>The in service date may be taken into account in the selection process. At this time the AESO is looking for Service Provider's to commence service prior to the end of 2011.</p>

Question 8	
Section Reference	Question & Answer
LSSi Requirements: Section 2	<p>How precise does the time synchronization between the AESO and the provider equipment have to be? What is the maximum discrepancy allowed?</p> <p>From a technical perspective, there is no time synchronization required other than what is stipulated in AESO's SCADA Standard. Please refer to :</p> <p>http://www.aeso.ca/downloads/SCADA_Standard_Final.pdf and refer to Section 7.0 for more detail.</p> <p>Regarding time synchronization for billing purposes please refer to the response in question 3</p>

Question 9	
Section Reference	Question & Answer
Agreement: Article 8	<p>Can the AESO confirm that the risk born by providers for non compliance is a termination of the agreement, potential loss of revenue and a loss of the \$40,000 prudential requirement?</p> <p>The contractual risks born by Service Providers for contractual non-compliance is possible agreement termination, potential loss of revenue and \$40,000 in liquidated damages. Please refer to Article 8 of the Agreement for further information.</p> <p>In addition to their contractual obligations Service Providers are also subject to the ISO Rules, Alberta Reliability Standards, and the terms and conditions of the ISO Tariff.</p> <p>The Agreement can be accessed using the following link: http://www.aeso.ca/downloads/LSSi_Agreement_-_March_20_2011_FINAL.pdf</p>

Question 10	
Section Reference	Question & Answer
RFP: Section 3.6	<p>Can the AESO confirm what, if any Addendums have been issued under the RFP? Can the AESO provide the location on it's website where all of the LSSi documentation is located?</p> <p>As of April 14, 2011 there have been no Addenda issued for the RFP.</p> <p>The location of all RFP documentation including any Addenda can be found on the AESO website using the following path: Markets>Market Policy Implementation>Intertie Restoration.</p> <p>All the RFP documentation can also be found using the following link: http://www.aeso.ca/market/20238.html</p>

Question 11	
Section Reference	Question & Answer
RFP: Schedule "A"	<p>How will renewals of contract (1/3 year) be handled?</p> <p>Upon expiration of the contract, the AESO will evaluate its LSSi requirements and if the AESO requires additional LSSi volume it will post its required volume on its website and allow any Service Provider to offer to provide the Service.</p> <p>The AESO will not give first of right refusal to the existing Service Provider for renewal.</p>

Question 12	
Section Reference	Question & Answer
Agreement: Article 8	<p>Are there any penalties levied for either not engaging the trip relay within .2 seconds (load still curtailing) or not maintaining the 95-120% range for Actual Volume?</p> <p>The contractual risk born by Service Providers for contractual non-compliance is possible agreement termination, potential loss of revenue and \$40,000 in liquidated damages. Please refer to Article 8 of the</p>

	<p>Agreement for further information.</p> <p>In addition to their contractual obligations Service Providers are also subject to the ISO Rules, Alberta Reliability Standards, and the terms and conditions of the ISO Tariff</p> <p>The Agreement can be accessed using the following link:</p> <p>http://www.aeso.ca/downloads/LSSi_Agreement_-_March_20_2011_FINAL.pdf</p>
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Question 13	
Section Reference	Question & Answer
RFP: Schedule "A"	<p>Is there an option to have a contract length beyond 3 years?</p> <p>No.</p>

Question 14	
Section Reference	Question & Answer
RFP: Schedule "D" Schedule "E"	<p>Schedule "D" and "E" specify that we need to fill out the form "in its entirety;" please clarify which parts of the form we need to fill out.</p> <p>Please refer to Appendix C of this Response to Question Document, which contains of Schedule "D" and "E". These Schedules have been highlighted to indicate the areas that Bidders are required to complete.</p>

Question 15	
Section Reference	Question & Answer
RFP: Section 4.4	<p>To comply with this section of the RFP regarding the Technical submission, can an Aggregator provide a generic single line diagram illustrating the proposed location of the frequency relay that represents all of the loads in a given portfolio, or must the Aggregator provide an actual wiring diagram for each individual load?</p> <p>Yes an Aggregator may provide a generic single line diagram illustrating the proposed location of the frequency relay(s) that represents all of the loads in a given portfolio. No wiring diagrams are required.</p>

Question 16	
Section Reference	Question & Answer
RFP: Schedule "F"	<p>If the volume is to come on in stages based on required facility upgrades, does the AESO want respondents to indicate the expected total volume or the initial volume in line 1? I.e. a portion of the volume is available in July and a portion in September.</p> <p>Please note that the AESO is considering an Addendum to Schedule "F" of the RFP to address this question.</p>

Question 17	
Section Reference	Question & Answer
Agreement: No Section	<p>Will the AESO consider suggested changes by a given Bidder to the Agreement? If so, how should these changes be submitted for consideration?</p> <p>No. The Agreement is a standard form agreement that all Service Providers must execute in order to provide LSSi.</p>

Question 18	
Section Reference	Question & Answer
RFP: Schedule "F" Section 4.4	<p>It is common practice for Aggregators to enroll individual customer loads after the award quantity and arming price are known, thus making a commitment for quantity but the individual loads which will make up that quantity are unknown at the time of bid. Is this allowable under the RFP or must all participating loads be known at the time of bidding?</p> <p>Yes making a commitment for a quantity without knowing the exact composition of the load is acceptable.</p>

Question 19	
Section Reference	Question & Answer
RFP: No Section Schedule "F"	<p>When is the first date that resources may be offering into the LSSi program? Must all resources be made available on this date, and is there a penalty if they do not? What is the latest date that resources may be made available for LSSi participation?</p> <p>The AESO will coordinate with the Service Providers based on their estimated in service date.</p> <p>The AESO expects the in service date to be specified by the Bidder in its proposal. The AESO recognizes that different processes and loads will require different lead times to install equipment and/or upgrade facilities in order to provider LSSi.</p> <p>There is no requirement for all resources to be made available on this date, however the Bidder must indicate what its expected total volume will be in the future, what its initial load will be and then provide the AESO with a timeline for expected load increases.</p> <p>Please refer to question 7 for the latest in service date acceptable to the AESO.</p>

Question 20	
Section Reference	Question & Answer
LSSi Requirements: Section 4.8 Section 4.9 Section 4.10	<p>Please confirm that no special time synchronization requirements apply to the time stamps provided with the trip records in LSSi requirements - 4.8, 4.9, and 4.10.</p> <p>The AESO confirms that there is no special time synchronization requirement for the trip record described in sections 4.8, 4.9, 4.10 of the LSSi Requirements.</p>

Question 21	
Section Reference	Question & Answer
LSSi Requirements: Section 4.8	<p>Will the AESO consider a shorter data capture interval for the period prior to and after a trip event? The relay technical specifications from a number of potential providers have a 64 cycle prior to and after an event capture window. The resolution of the event capture can be as small as 1/16 of a cycle. This would provide the AESO with the visibility to see the frequency drop to 59.5 Hz and within 12 cycles the current wave form would disappear with the breaker opening. We have not been able to source any equipment capable of recording 1 minute prior and after an event. Without reconsideration of this technical requirement, it will delay providers in service dates.</p> <p>Yes, the AESO would consider a shorter data capture period.</p> <p>Please note that the AESO is considering an Addendum to LSSi Requirements of the RFP to address this question.</p> <p>An example of several devices that are able to provide the type of data in sections 4.8, 4.9 and 4.10 of the LSSi requirements are available using the following links:</p> <p>http://www.gedigitalenergy.com/multilin/catalog/f35.htm</p> <p>http://www.gedigitalenergy.com/multilin/catalog/c90plus.htm</p> <p>http://www.selinc.com/engineeringservices/PowerManagementSolutions/</p>

	<p>In addition to these devices there are many other manufacturers such as Alstom, ABB, Schneider Electric (Power Measurements Ltd.), Siemens, Beckwith, Basler, and Eaton that could provide a similar product. The AESO is not requiring Service Providers to use any of the products/matrix manufacturer's listed. This list is being provided as an example of products that are able to meet the LSSi Requirements.</p>
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Question 22	
Section Reference	Question & Answer
LSSi Requirements: Section 1.4	<p>What is the approximate load amount which will be excluded from LSSi due to UFLS time delayed blocks D1, D2 and D3?</p> <p>According to Table 1 of OPP – 804, block D1 sheds 2.3%, block D2 sheds 1.7% and block D3 sheds 2.0% of the customer load. The actual real power (MW) value of the load that is shed under the UFLS program varies hourly and seasonally.</p>

Question 23	
Section Reference	Question & Answer
No Section	<p>Are we required to meter every individual load that is dropping off at the load, or is metering at the subpanel sufficient? Also confirming what was mentioned at the technical meeting, we confirm that no metering needs to be Measurement Canada certified and sealed.</p> <p>RMS instantaneous real power measurements are required for each feeder/load that is to form part of the Actual Volume. These measurements should be summed and will form a single SCADA point (Actual Volume) to the AESO as per section 2.1 a) i) A) of the document LSSi Requirements. The AESO only requires a composite single SCADA real power measurement.</p> <p>The measurement devices required for this program do not have to be Measurement Canada certified.</p>

Question 24	
Section Reference	Question & Answer
Agreement No Section	<p>Will an Aggregator need to be an AESO pool or market participant to enter into LSSi?</p> <p>Aggregators will be required to register as a pool participant. When aggregating assets, the AESO requires one (1) entity to be the representing pool participant for matters such as financial settlement and compliance. For further information on becoming a pool participant with the AESO, please refer the Information Document: Becoming a Pool Participant.</p> <p>The information document can be accessed by using the following link: http://www.aeso.ca/downloads/ID - Pool Participants Rev 3 01 -FINAL Feb - 2011.pdf</p>

Question 25	
Section Reference	Question & Answer
RFP: Section 4.4	<p>Is the AESO looking for a graph of an 8760 hour plot of the load or hourly load data points? If it is hourly load data, does the AESO want it electronically? If the load currently exists behind a meter that includes load that will not be provided for the LSSI service, can the respondent provide the total load profile and indicate what portion of it (in a percent) that represents the offered load?</p> <p>Please note that the AESO is considering an Addendum to the RFP to address this question.</p>

Question 26	
Section Reference	Question & Answer
RFP: Schedule "F"	<p>Is it appropriate for the contract volume to reflect the Maximum capacity of LSSi of the respondent? Would the AESO prefer the respondent to reflect their average expected available capacity?</p> <p>The contract volume should represent the maximum capacity of the Service Provider. A Service Provider cannot be paid for more than the contract volume in any hour. Service Providers are free to offer or provide less capacity than the contract amount in any given hour depending on real time operational considerations.</p>

Question 27	
Section Reference	Question & Answer
RFP: Schedule "D"	<p>Does the contract volume impact the billing parameters in any way? I.e. If the offered volume becomes greater than the contract volume will the payment max out at the contract volume?</p> <p>The contract volume sets the maximum payment for any given hour. Service Providers cannot be paid for more volume than contracted.</p>

Question 28	
Section Reference	Question & Answer
RFP: Schedule "D"	<p>When the Arming Volume for an Hourly Dispatch Period is zero (average Actual Volume for the dispatch period is outside the tolerance band) do we lose the Availability Payment for the complete hour?</p> <p>Yes. All payments are forfeit for the hour in which the arming volume is set to zero (0) due to non-compliance or force majeure.</p>

Question 29	
Section Reference	Question & Answer
LSSi Requirements: Section 3.3	<p>When the Armed Volume is changed (i.e. re-arm to a different value) can there be a "grace period" to allow for the load transition to the new target? Otherwise it is impossible to meet the volume tolerances for both the dispatch periods (the one before and the one after the Armed Volume change).</p> <p>Service Providers have fifteen (15) minutes to position an asset in response to a dispatch or re-dispatch. Compliance will not apply during this period.</p>

Question 30	
Section Reference	Question & Answer
RFP: Section 1.3 (6)	<p>Please confirm that the merit order of LSSi dispatch is only based on the Arming Price and not on Offered Volume. This was communicated during the Technical Workshop in Edmonton on March 31. However in the RFP 1.3 (6) it is stated that "the merit of the dispatch shall be based upon pricing and offered volumes considerations, ..."</p> <p>Arming price is the first and primary order of dispatch. In the event Service Providers have identical prices, the AESO will arm the Service Provider(s) that best meet the volume requirement. For example, assume two Service Providers have identical prices and one Service Provider offers 50 MW and the second 100 MW. If the AESO needs 50 MW or less, the first Service Provider will be armed. If more than 50 MW but less than 100 MW are required, the second will be armed. If more than 100 MW are required, both Service Providers will be armed.</p>

Question 31	
Section Reference	Question & Answer
LSSi Requirements: Section 4.5	<p>Can the AESO confirm that the compliance with the threshold of 95% to 120% of the armed volume will be determined by calculating the average actual armed volume from the time of confirmed arming to the time of the disarm dispatch (i.e. potentially up to 95 min)?</p> <p>Please note that the AESO is considering an Addendum to RFP and the Agreement to address this question.</p>

Question 32	
Section Reference	Question & Answer
LSSi Requirements: Section 2.1	<p>Can the AESO make available an analog data point of the real time pool price to participants?</p> <p>The real time pool price is available on the AESO webpage. This data will not be made available through SCADA</p>

Question 33	
Section Reference	Question & Answer
RFP: Section 1.2(5)	<p>Will the capacity currently enrolled in LSS be added to the target for LSSi, or will that capacity be removed from the 485 MW target? (RFP section 1.2(5))</p> <p>The current LSS program will be discontinued. The AESO is seeking up to 485 MW of LSSi.</p>

Question 34	
Section Reference	Question & Answer
No Section	<p>Does a site have to be available for LSSi 24/7 or can they contract to a lesser availability?</p> <p>A site does not require volume 24/7 to participate in the program. The site must reflect this capability in its offer, i.e. ensure its offer is 0 MW when it is not available. However,</p>

	Service Providers must provide twenty-four (24) hour voice communication capability as a backup option to SCADA communication.
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Question 35	
Section Reference	Question & Answer
LSSi Requirements: Section 3.7	<p>Please confirm whether LSSi Dispatch will be (XX:35) as in the RFP or (XX:40) as reported in the meeting on 4/1/11.</p> <p>The two references are related but somewhat different. Dispatches to arm the LSSi service will typically occur between XX:40 and XX:45. This is based on current practices that imports are scheduled at this time each hour. The majority of arm dispatches should occur in this timeframe.</p> <p>The reference to XX:35 means that any arm dispatch that occurs after XX:35 obligates the Service Provider to remain armed for the next scheduling hour if required. In essence, if the system controller arms an offer from a Service Provider any time after XX:35, that Service Provider is obligated to maintain the volume for as long as 10 minutes after the top of the next hour, i.e. 95 minutes.</p> <p>Dispatches may also come at different times within the hour; for example, if another Service Provider experiences a force majeure, more LSSi must be armed to replace that Service Provider.</p>

Question 36	
Section Reference	Question & Answer
LSSi Requirements: Section 4.1 Section 4.5	<p>For an Aggregator, do the requirements for the .2 second trip and 95-120% Actual Volume range apply to the aggregated load versus individual sites?</p> <p>The requirements apply to the aggregator and not the individual sites.</p>

Question 37	
Section Reference	Question & Answer
LSSi Requirements: Attachment "1"	<p>Per the example given in Attachment 1 of the LSSi Requirements document, the LSSi Provider was able to change their bid to a partial amount of their committed load. Will this option be available to Aggregated loads? (LSSi Requirements - Attachment 1)</p> <p>Yes. Aggregators have the same options as individual sites.</p>

Question 38	
Section Reference	Question & Answer
No Section	<p>Will the AESO request partial load arming of LSSi participants? For example, 25 MW of a 50 MW contracted LSSi Participant's load? (No section)</p> <p>No. The AESO will arm based on the offer that is in place at the time of arming. The offer is treated as an all or none offer. The contracted volume is a cap on volume only and does not play into real-time arming volumes which will likely vary with operational conditions at the facility.</p>

Question 39	
Section Reference	Question & Answer
No Section	<p>If an Aggregator is submitting a portfolio of load resources, how should the Aggregator submit different price/quantity pairs? Must the individual price/quantity pairs be submitted as unique standalone proposals?</p> <p>Bidders should submit offers based on their situation. Aggregators and all other potential Service Providers should submit different price quantity pairs as a unique contract. The Service Provider should ensure that each contract can be operated independently, i.e. if two price quantity pairs are submitted, it must be possible to trip one of the loads without tripping the other.</p>

Question 40	
Section Reference	Question & Answer
No Section	<p>If an Aggregator submits a portfolio of resources at different price/quantity pairs in a single proposal, can the AESO opt to select some but not all of the price/quantity pairs?</p> <p>Yes. This is true of all submissions. Each price quantity pair is a unique contract and will be evaluated on its own merit and not as part of a portfolio.</p>

Question 41	
Section Reference	Question & Answer
RFP: Section 5.1	<p>Please clarify the following, "Multiple Proposals may be submitted in respect of Load from a single Facility." Does this imply that multiple proposal submissions to the AESO are allowable for the same load? If not, please provide clarification. If so, how will the AESO avoid double counting the given loads capacity?</p> <p>The same load cannot be submitted in two separate Proposals. However, load from a single facility can be broken into smaller pieces (and proposed in separate Proposals) provided it can be armed and tripped independently.</p> <p>As an example if a single facility has a total LSSi load of 80MW, the Service Provider can submit a proposal for one block of 80MW, or 2 proposals for 1 block of 40MW in each proposal, etc.</p>

Question 42	
Section Reference	Question & Answer
LSSi Requirements: Section 2	<p>Armed volume and actual volume. In the case where the actual volume is not representative of what is currently armed i.e. A partial available volume, what real time value does the AESO want to be visible? The actual volume behind relays that may be armed in a different hour or the actual volume that is armed in the present hour or both? (SCADA Data points)</p> <p>Actual volume must always represent what is currently subject to the tripping scheme, whether armed or not. In other words, actual volume is what is currently physically armed whenever the Service Provider is armed, or the physical volume that is being offered for arming.</p> <p>Armed volume is the amount that has been dispatched by the system controller based on a Service Providers offer. It is an entered number and does not represent a physically measured value. It is the volume that Service Providers have agreed to for compliance purposes.</p>

Question 43	
Section Reference	Question & Answer
RFP: Section 3.3(3)	<p>Can the AESO Confirm that the restrictions on communication in section 3.3(3) of the RFP are not intended to apply to a respondent's wholly owned subsidiaries or partnerships that own facilities in respect of which bids will be submitted?</p> <p>The restrictions on communications in section 3.3(3) are not intend to apply to a Bidder's wholly owned subsidiaries or partnerships that own facilities in respect of which Proposals will be submitted unless such wholly owned subsidiaries or partnerships intend to be a bidder separate and apart from its parent</p>

Question 44	
Section Reference	Question & Answer
Agreement: No Section	<p>Can the AESO confirm that bidders may submit a bid with proposed changes to the form of Load Shed Services Agreement so the agreement is specific to the circumstances of the bidder and its facility?</p> <p>A bidder cannot submit proposed changes to the Agreement</p>

Question 45	
Section Reference	Question & Answer
LSSi Requirements: Section 2.1	<p>Is it acceptable to multiplex the required SCADA data for LSSi with the required SCADA data for AGC and other functions?</p> <p>Yes, there should be no restriction in regards to sharing a communications channel with other SCADA data so long as the required data points are supplied and meet all specified technical requirements.</p>

Question 46	
Section Reference	Question & Answer
LSSi Requirements: No Section	<p>What type of testing environment and support will be provided by AESO for the integration of SCADA communications? Is there a "sandbox" environment that we can connect to during the development phase in order to perform end-to-end testing?</p> <p>The AESO only has the facility to test from their production systems at this time. All testing will be coordinated with EMS Operations, System Control, and Compliance to ensure that there is an appropriate level of awareness of the work being performed.</p>

Question 47	
Section Reference	Question & Answer
RFP: Schedule "C"	<p>Under what circumstances can the respondent not have to provide 5 years of financial statements? If they have been assessed by a rating agency or are a publicly traded entity will those reports or directions to a corporate website be acceptable?</p> <p>If the financial statements referred to above are not available, the AESO will consider alternative forms of financial information provided by the Bidder in its Proposal. If there are financial statements for the last 5 years, they should be made available (directions to a website are acceptable). The AESO will consider the assessment by a rating agency, but the financial statements should still be made available. The interim financial statements referred to would only be applicable for the last year (not the last 5 years).</p>

Question 48	
Section Reference	Question & Answer
RFP: Schedule "C"	<p>Confirm that a respondent can submit the audited financial statements of any public parent company that directly or indirectly owns the respondents operations and facilities in respect of which bids will be submitted. The legal entities that own these facilities may not have separate audited statements.</p> <p>If the financial statements for the Bidders are not available, the AESO will consider alternative forms of financial information provided by the Bidder in its Proposal. If the Bidders do not have audited financial statements the AESO would review unaudited financial statement. Parent company financials where the Bidders' financial information is included (and the parent directly (100% owns) the Bidder) could also be reviewed by the AESO.</p>

Question 49	
Section Reference	Question & Answer
LSSi Requirements	<p>After a trip how will the AESO notify a provider that they can restore load?</p> <p>When a load trips, the AESO will leave the load armed at the volume that was armed when the trip occurred (even though the Actual Volume would be zero). The AESO will send the Service Provider a disarm signal when the load is permitted to restore. Following a trip event a disarm signal means that the load can restore.</p> <p>During a Trip event the load will be paid the Arming Payment for the entire duration that it is armed even if the Actual Volume is Zero.</p>

Question 50																									
Section Reference	Question & Answer																								
No Section	<p>What percentage of hours can a provider expect to be armed? Will the AESO consider guaranteeing a minimum amount of armed hours?</p> <p>The table below illustrates the historical potential for LSSi to be Armed. The information indicates the frequency where net scheduled imports and the AB-BC intertie were within 75MW or 100MW of the ATC. Given historical LSS volumes imports at these levels would indicate the need for some Armed LSSi.</p> <table border="1" data-bbox="537 1480 1382 1661"> <thead> <tr> <th colspan="6">Annual # of hours where B.C. imports (net) schedules have been within 75 or 100 MW of the posted ATC</th> </tr> <tr> <th>Year</th> <th>2006</th> <th>2007</th> <th>2008</th> <th>2009</th> <th>2010</th> </tr> </thead> <tbody> <tr> <td>w/in 75 MW of ATC</td> <td>253</td> <td>215</td> <td>1,639</td> <td>996</td> <td>1,497</td> </tr> <tr> <td>w/in 100 MW of ATC</td> <td>533</td> <td>567</td> <td>2,413</td> <td>1,506</td> <td>2,048</td> </tr> </tbody> </table> <p>Please note that the AESO is considering an Addendum to the RFP and the Agreement to address this question.</p>	Annual # of hours where B.C. imports (net) schedules have been within 75 or 100 MW of the posted ATC						Year	2006	2007	2008	2009	2010	w/in 75 MW of ATC	253	215	1,639	996	1,497	w/in 100 MW of ATC	533	567	2,413	1,506	2,048
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Appendix A – RE: Question 3: Supporting documentation

The following link provides a template that will be available to Service Provider's to submit their supporting documentation.

[http://www.aeso.ca/downloads/Response_to_Questions_Document -
_Settlement_Template.xls](http://www.aeso.ca/downloads/Response_to_Questions_Document_-_Settlement_Template.xls)

Appendix B – RE: Question 4: Calculation of Purchase Price

Provided below are **examples** of the types of dispatches that a Service Provider may experience on a theoretical day. The example below provides a synopsis of the day, a detailed breakdown of the dispatches that occurred during the day, the calculation of the purchase price using the settlement template, as well as an explanation on how each figure in the purchase price was derived.

Synopsis of the day:

At 7:40am the Service Provider has an offer of 30MW. The Service Provider receives a dispatch for 30MW at 7:40AM. The Service Provider accepts the dispatch at 7:45AM. The Service Provider changes its offer at 9:30AM to 20MW. At 10:08AM the Service Provider receives a rearm dispatch to 20MW. The Service Provider accepts the dispatch at 10:15AM. At 1:30PM a Trip Event occurs. At 1:45PM the Service Providers receives a disarm signal notifying the Service Provider that it can now restore its load if it wishes. Also at 1:45PM the Service Provider changes its offer to 0MW while it is restores its load. At 2:10PM after the Service Provider has restored its load it changes its offer from 0MW to 30MW. The Service Provider is maintains its offer at 30MW until 5:00PM. The Service Provider is not Dispatched during this period. At 5:00pm the Service Provider changes its Offer to 0MW for the rest of the day.

Summary of Dispatches:

Time	Event
7:40AM	Offer is 30MW
7:40AM	Dispatched (Armed) for 30MW
7:45AM	Dispatch accepted – Armed for 30MW
7:45AM to 8:00AM	Armed for 30MW -Average Actual Volume was 29.0MW (In compliance)
8:00AM to 9:00AM	Armed for 30MW - Average Actual Volume was 33.0MW (In compliance)
9:30AM	Offer changed to 20MW
9:00AM to 10:00AM	Armed for 30MW - Average Actual Volume – 29.0MW (In compliance)
10:00AM to 10:08AM	Armed for 30MW - Average Actual Volume – 29.0MW (In compliance)
10:08AM	Dispatched down to 20MW (Armed for 20MW)
10:08AM to 11:00AM	Armed for 20MW - Average Actual Volume – 19.0MW (In compliance)
11:00AM to 12:00PM	Armed for 20MW - Average Actual Volume – 19.0MW (In compliance)
12:00PM to 1:00PM	Armed for 20MW - Average Actual Volume – 10.0MW (Not in Compliance)

1:30PM	Trip Event – Armed for 20MW - Actual Volume drops to 0MW
1:45PM	Disarm Signal Sent – Signal to Service Provider that they may restore load
1:45PM	Offer changed to 0MW
1:45PM to 2:10PM	Load is restoring
2:10PM	Load Restored
2:10PM	Offer changed to 30MW
2:00PM - 5:00PM	Offer is 30MW
5:00PM	Offer changed to 0MW

Price Details:

Price Assumptions (Illustrative Purpose Only)	
1	Availability Price = \$5/MW
2	Arming Price = \$1/MW
3	Trip Price = \$1000/MW

Calculation of Purchase Price:

The Purchase Price has been calculated using the “LSSi Settlement Template”. Please use the following link to view the completed “LSSi Settlement Template” for this example.

http://www.aeso.ca/downloads/Response_to_Questions_Document_Settlement_Example_Amended_April_20_2011.xls

Explanation of Purchase Price Calculation

Availability Payment Tab:

HE	Availability Determination
HE8	<p>At 7:00AM the Service Provider had an Offer of 30MW (which was the lowest Offer in the hour), the average Actual Volume for the hour was 29MW (In Compliance). At 7:45AM a Dispatch for 30MW was accepted by the Service Provider.</p> <p>Therefore Availability for HE7 was determined by the lowest Offered Volume in the hour (The Service Provider Offered 30MW for the entire hour).</p>

HE9	<p>The Service Provider was Armed for the whole hour (8AM to 9AM). The minimum offer in the hour was 30MW. The average Actual Volume was 33.0MW (In compliance), and the minimum Armed Volume was 30MW.</p> <p>Therefore Availability for HE9 was determined by the lowest Armed Volume in the hour (30MW was the lowest Armed Volume in the hour).</p>
HE10	<p>The Service Provider was Armed for 30MW for the entire hour (9AM to 10AM). The minimum offer in the hour was 20MW (The Service Provider changed its offer from 30MW to 20MW at 9:30AM). The average Actual Volume was 28.0MW (In compliance), and the minimum Armed Volume was 30MW.</p> <p>Therefore Availability for HE10 was determined by the lowest Armed Volume in the hour (30MW was the lowest Armed Volume in the hour).</p>
HE11	<p>The Service Provider was Armed for 30MW from 10:00AM to 10:08AM. The Service Provider was Armed for 20MW from 10:08 to 11:00AM. The minimum Offer in the hour was 20MW. The Average Actual Volume was 20.2MW.</p> <p>Therefore Availability for HE11 was determined by the lowest Armed Volume in the hour (20MW was the lowest Armed Volume in the hour).</p>
HE12	<p>The Service Provider was Armed for 20MW for the entire hour (11AM to 12PM). The minimum offer in the hour was 20MW. The average Actual Volume was 19.0MW (In compliance), and the minimum Armed Volume was 20MW.</p> <p>Therefore Availability for HE12 was determined by the lowest Armed Volume in the hour due to the Service Provider being Armed for 20MW (20MW was the lowest Armed Volume in the hour).</p>
HE13	<p>The Service Provider was Armed for 20MW the entire hour (12PM to 1PM). The minimum offer in the hour was 20MW. The average Actual Volume was 10.0MW (Not in compliance), and the minimum Armed Volume was 20MW.</p> <p>Therefore Availability for HE13 was 0MW since the Average Actual Volume was not in compliance with the Armed Volume.</p>

HE14	<p>The Service Provider was Armed for 20MW. At 1:30PM a Trip Event occurred. At 1:45PM a Disarm signal was sent to the Service Provider. Also at 1:45PM the Service Provider changed its Offer to 0MW. The minimum Armed Volume in the hour was 20MW, the lowest Offer in the hour was 0MW, and the Average Actual Volume was 10MW (Not in Compliance).</p> <p>Therefore Availability for HE14 was 20MW, which is the minimum Armed Volume in the hour. Note that although the Average Actual Volume was not in compliance with the Armed Volume, Availability was not forfeited. Compliance on the Availability Volume is not assessed during a Trip event.</p>
HE15	<p>The Service Provider changed its Offer to 30MW at 2:10PM. The minimum Offer in the hour was 0MW, the Average Actual Volume was 26MW, and there was no Armed Volume.</p> <p>Therefore Availability for HE15 was determined by the minimum Offer in the hour (0MW was the minimum offer in the hour)</p>
HE16	<p>The Service Provider was not Armed. The minimum Offer in the hour was 30MW. The Average Actual Volume was 28MW.</p> <p>Therefore Availability for HE16 was determined by the Average Actual Volume (28MW was the Average Actual Volume in the hour)</p>
HE17	<p>The Service Provider was not Armed. The minimum Offer in the hour was 30MW. The Average Actual Volume was 33MW.</p> <p>Therefore Availability for HE17 was determined by the minimum Offer in the hour (30MW was the minimum Offer in the hour)</p>
HE18	<p>The Service Provider was not Armed and changed its offer to 0MW.</p> <p>Therefore Availability for HE18 was determined by the minimum Offer in the hour. (0MW was the minimum Offer in the hour)</p>

Arming Payment Tab

HE	Arming Determination
HE8	<p>The Service Provider has an offer of 30MW. The Service Provider accepts a Dispatch for 30MW at 7:45AM. The Service Provider is Armed for the remainder of the hour (15mins). The Average Actual Volume during the Arming was 29.0MW (which is in compliance).</p> <p>The Dispatch for 30MW was issued at 7:40AM, however the Armed Volume does not take affect until the Service Provider accepts the Dispatch. Therefore Armed minutes for the period is 15 minutes.</p>

HE9	<p>The Service Provider has an offer of 30MW. The Service Provider is still dispatched for 30MW. The Service Provider is Armed for the entire duration of the hour (60mins). The Average Actual Volume during the Arming was 33.0MW (which is in compliance).</p>
HE10	<p>The Service Provider has an offer of 30MW. The Service Provider is still dispatched for 30MW. The Service Provider is Armed for the entire duration of the hour (60mins). The Average Actual Volume during the Arming was 28.0MW (which is in compliance).</p> <p>The Service Provider changes its Offer to 20MW at 9:30am, however given that the Service Provider is currently Armed at 30MW the Service Provider does not receive a dispatch down to 20MW immediately. The Service Provider is committed to maintain the Armed Volume of 30MW until 10:10am (unless dispatched down prior to 10:10AM)</p>
HE11	<p>The Service Provider is Armed at 30MW from 10:00AM to 10:08AM. The Service Provider is Armed at 30MW for 8mins. The Average Actual Volume during the Arming was 28.0MW (which is in compliance).</p>
HE11	<p>At 10:08AM The Service Provider is dispatched down to 20MW (The Service Provider changed its Offer to 20MW at 9:30AM). The Service Provider is Armed at 20MW for the remainder of the hour (52 mins). The Average Actual Volume during the Arming was 19.0MW (which is in compliance).</p> <p>Upon a Dispatch Down (i.e. 30MW to 20MW) or upon a Disarm signal the lower Dispatched Volume takes affect immediately.</p>
HE12	<p>The Service Provider is Armed at 20MW for the entire hour (60mins). The Average Actual Volume during the Arming was 19.0MW (in compliance)</p>
HE13	<p>The Service Provider is Armed at 20MW for the entire hour (60mins). The Average Actual Volume during the Arming was 10.0MW (not in compliance). The Service Provide forfeits payment for this hour.</p>
HE14	<p>The Service Provider is Armed at 20MW. At 1:30PM a Trip event occurs and the Actual Volume of the Service Provider immediately drops to 0MW. At 1:45PM the Service Provider receives a Disarm signal.</p> <p>The Service Provider was Armed for a total of 45 mins (1:00PM to 1:45PM). The Average Actual Volume over this period was 5.0MW (due to the Trip event causing the Actual Volume to drop to 0MW). Although the Average Actual Volume was not in compliance over the arming period, compliance is not assessed on the Arming Payment during the Trip event (as long as the Average Actual Volume prior to the Trip Event was in compliance).</p>

HE14	At 1:45PM the Service Provider receives a Disarm signal. The Service Provider accepts the Disarm signal at 1:50PM
HE15	The Service Provider was not Armed.
HE16	The Service Provider was not Armed.
HE17	The Service Provider was not Armed.

Trip Payment Tab:

HE	Trip Determination
HE14	<p>A Trip event occurred at 1:30PM. The Armed Volume when the Trip occurred was 20MW. The Actual Volume when the Trip occurred was 22MW.</p> <p>The Trip payment is determined by the Armed Volume at the time of Trip. If the Actual Volume at the time of Trip was less than the Armed Volume then the Trip Payment is determined by the Actual Volume.</p>

Total Payment (Hourly Detail) Tab:

The Total Payment (Hourly Detail) tab sums the Availability Payment, Arming Payment and Trip Payment to calculate the Purchase Price.

Appendix C – RE: Question 14: Supporting documentation

A copy of Schedule "D" and "E" have been provided below. The Schedules have been highlighted to indicate the area that the Bidder is required to fill out.

THIS IS SCHEDULE "D" TO THE REQUEST FOR PROPOSAL DATED MARCH 21, 2011 ISSUED BY THE INDEPENDENT SYSTEM OPERATOR, OPERATING AS AESO

PRICE FORM

Bidders please note, while not all definitions set forth below are required for the calculation of Arming Price the remaining definitions has been retained for convenience to allow a full calculation of Purchase Price.

The Bidder shall complete this Price Form in its entirety. The amount determined below shall be the "Arming Payment" used in determining the Purchase Price for the purposes of the Agreement, including Section 4.1 and Schedule "B" thereof. Capitalized terms used in this Schedule but not defined in the RFP shall have the meaning provided to them in the Agreement and, in addition:

1.1 Definitions

- (a) "**Actual Volume**" means the total amount of real power (in MW) being consumed by the Service Provider that is subject to LSSi.
- (b) "**Armed Volume**" means the amount of real power (in MW) agreed by the Service Provider to be Armed for LSSi following a Dispatch.
- (c) "**Arming Payment**" means the sum of all Hourly Arming Payments for the applicable Month where the Service Provider provided Armed Volume.
- (d) "**Arming Price**", for any given hour, means **[\$[Bidder to insert amount]]/MW**
- (e) "**Arming Volume**" for each Hourly Dispatch Period means the lesser of:
 - (i) 0 MW, when the average Actual Volume for such Hourly Dispatch Period is not within the tolerance band of the Dispatched Volume established in the LSSi Requirements; or
 - (ii) the Armed Volume, when the average Actual Volume for such Hourly Dispatch Period is within the tolerance band of the Dispatched Volume established in the LSSi Requirements.
- (f) "**Availability Payment**" means the sum of all Hourly Availability Payments for the applicable Month where the Service Provider was capable of responding to a Dispatch and to provide LSSi.
- (g) "**Availability Price**" means \$5/MW.
- (h) "**Availability Volume**" means for any given hour, any one of the following
 - (i) the lesser of the average Actual Volume and the minimum Offered Volume in such hour when the Dispatched Volume is 0 MW in such hour;

- (ii) the greater of the minimum Offered Volume and the minimum Armed Volume in such hour when the Dispatched Volume is greater than 0 MW in such hour;
 - (iii) the greater of the minimum Offered Volume and the minimum Armed Volume in such hour when both the Dispatched Volume and the Trip Volume are greater than 0 MW in such hour;
 - (iv) 0 MW when:
 - (A) the Arming Volume is 0 MW for such hour; and
 - (B) the Armed Volume is greater than 0 MW for such hour; or
 - (v) 0 MW when a Trip does not occur in accordance with the LSSi Requirements in such hour.
- (i) **"Dispatch"** means "ancillary services dispatch", as defined in the ISO Authoritative Document Consolidated Glossary
 - (j) **"Dispatched Volume"** means the amount of real power (in MW) Dispatched by the System Controller to be armed for LSSi.
 - (k) **"Hourly Arming Duration"** means the number of minutes in the Hourly Dispatch Period that the load was Armed.
 - (l) **"Hourly Arming Payments"** for any given hour, means the sum of all Hourly Dispatch Period Arming Payments in such hour.
 - (m) **"Hourly Availability Payments"** for any given hour, means:
 - [Availability Volume X Availability Price]
 - (n) **"Hourly Dispatch Period Arming Payment"** means for each Hourly Dispatch Period:
 - [Arming Volume X Arming Price X Hourly Arming Duration] / 60
 - (o) **"Hourly Dispatch Period"** means, within a given hour, a period of time of no greater than sixty (60) minutes during which there is Armed Volume. For greater certainty for any given hour there may be multiple Hourly Dispatch Periods.
 - (p) **"Hourly Trip Payments"** means:
 - [Trip Volume X Trip Price]
 - (q) **"Offered Volume"** means, in any given hour, the amount of real power (in MW) offered by the Service Provider for LSSi.
 - (r) **"System Controller"** means the "system controller", as defined in the ISO Authoritative Document Consolidated Glossary.
 - (s) **"Trip"** means the disconnection of the Contracted Load from the System within 0.2 seconds (twelve (12) cycles) of the frequency reaching 59.50 Hz (+/- 0.02 Hz).

- (t) **"Trip Payment"** means the sum of the Hourly Tripping Payments for the applicable month where the Service Provider's LSSi Facility was Tripped.
- (u) **"Trip Price"** means \$1000/MW.
- (v) **"Trip Volume"** means, when a Trip occurs in accordance with the LSSi Requirements, the lesser of the Actual Volume and the Armed Volume.

1.2 Calculation of Purchase Price

The price to be paid by AESO to the Service Provider for the purchase of the LSSi Services under the Agreement (the **"Purchase Price"**) will be calculated on a monthly basis as the sum of:

- (a) the Availability Payment;
- (b) the Arming Payment; and
- (c) the Trip Payment.

THIS IS SCHEDULE "E" TO THE REQUEST FOR PROPOSAL DATED MARCH 21, 2011 ISSUED BY THE INDEPENDENT SYSTEM OPERATOR, OPERATING AS AESO

LIQUIDATED DAMAGES FORM

The Bidder shall complete this Liquidated Damages Form in its entirety. The amount determined below shall be the "liquidated damages" used in Section 8.4(a) of the Agreement. Capitalized terms used in this Schedule but not defined in the RFP shall have the meaning provided to them in the Agreement and, in addition:

"Agreement Default" means any material misrepresentation or breach of warranty made by a Party, or the failure by a Party to perform or observe in any material respect any of the covenants or agreements to be performed by such Party under this Agreement, except for the covenants contained in Sections 8.1(a)(i), 8.1(a)(iii), 8.1(a)(iv) or 8.1(a)(v) of this Agreement, or any other agreement delivered in connection herewith;

"Insolvency Event" means, in relation to any Person, the occurrence of one or more of the following:

- (a) an order is made or an effective resolution passed for the winding-up, liquidation or dissolution of such Person;
- (b) such Person institutes proceedings for its winding up, liquidation or dissolution, or take action to become a voluntary bankrupt, or consents to the filing of a bankruptcy proceeding against it, or files a proposal, a notice of intention to make a proposal, a petition or answer or consent seeking reorganization, readjustment, arrangement, composition or similar relief under any bankruptcy law or any other similar Applicable Law or consents to the filing of any such petition, or consents to the appointment of a receiver, liquidator, trustee or assignee in bankruptcy or insolvency of all or a substantial part of the property of such Person or makes an assignment for the benefit of creditors, or admits in writing its inability to pay its debts generally as they come due or commits any other act of bankruptcy, or suspends or threatens to suspend transaction of its usual business, or any action is taken by such Person in furtherance of any of the aforesaid;

- (c) a court having jurisdiction enters a decree or order adjudging such Person a bankrupt or insolvent, or approving as properly filed a petition seeking reorganization, readjustment, arrangement, composition or similar relief under any bankruptcy law or any other similar Applicable Law, or a decree or order of a court having jurisdiction for the appointment of a receiver, liquidator, trustee or assignee in bankruptcy or insolvency of all or a substantial part of the undertaking or property of such Person, or for the winding up, dissolution or liquidation of its affairs, is entered and such decree, order or petition is not contested and the effect thereof stayed, or any material part of the property of such Person is sequestered or attached and is not returned to the possession of such Person or released from such attachment within twenty (20) days thereafter; or
- (d) any proceedings, voluntary or involuntary, is commenced, or an order or petition is issued, respecting such Person pursuant to any Applicable Law relating to bankruptcy, insolvency, reorganization of debts, liquidation, winding-up or dissolution;
- (e) such Person causes or institutes any proceeding for its dissolution or termination;
- (f) such Person is generally not paying its debts as they become due, or such Person makes a general assignment for the benefit of creditors.

Event of Default by the AESO

The AESO shall be in default under this Agreement upon the happening or occurrence of any of the following events, each of which shall be deemed to be an event of default with respect to the AESO for the purposes of this Agreement (an "**AESO Event of Default**"):

- (a) an Insolvency Event by or in relation to the AESO; or
- (b) an Agreement Default by or in relation to the AESO and such default has not been cured (or, to the extent such breach is incapable of being cured retrospectively, then cured prospectively) within thirty (30) days following notice thereof from the Service Provider.

Remedies on AESO Event of Default

Upon the occurrence of an AESO Event of Default, the Service Provider may terminate this Agreement by delivery of a notice of termination to the AESO and, effective as of the date of such termination, declare an amount equal to **[\$Bidder to insert amount]** immediately due and payable on account of liquidated damages.