

Proposed New ISO rule –Section 103.9, Capacity Market Financial Settlement

Period of Comment:	October 26, 2018	through	November 14, 2018	Contact:	Leonard Olien
Comments From:	Solas Energy Consulting on behalf of the Renewable Energy Coalition			Phone:	403-200-0049
Date [yyyy/mm/dd]:	2018/11/14			Email:	lolien@solasenergyconsulting.com

Please include any suggestions for alternative rule wording and accompanying rationale in the table below. Cut and paste the existing rule wording into column one below and track in your changes.

Blackline of Suggested Rule Wording	Rationale
<p>(2) The ISO must set the payment cap as the greater of:</p> <p>(a) \$2,771/MW multiplied by the capacity commitment associated with the asset, if the clearing price of the base auction was less than \$33/kW-year; or</p> <p>(b) 2 times the capacity award for the asset, in all other cases.</p>	<p>2(a) is not necessary provided the capacity award is changed following the methodology in the Solas comment matrix for section 103.10</p>
<p>Monthly Capacity Payment for an Asset with a Negative Capacity Award Payment</p> <p>4(1) Where the Monthly Capacity Payment exceeds the Rebalancing Amount, the ISO must pay the market participant the difference.</p> <p>(2) Where the Rebalancing Amount exceeds the Monthly Capacity Payment, the market participant must pay the ISO the difference.</p> <p>, for an asset that is subject to a capacity commitment with a negative capacity award calculated in accordance with Section 103.10 of the ISO rules, Capacity Award Calculation, pay the ISO the capacity payment determined in accordance with subsection 5 for each settlement period, if such amount is negative. (2) A capacity market participant must, for an asset that is not subject to a capacity commitment with a negative capacity award calculated in accordance with Section 103.10 of the ISO rules, Capacity Award Calculation, pay the ISO the capacity award for each settlement period.</p> <p>ISO Rules Part 100 General Division 103 Administration Section 103.9 Capacity Market Financial Settlement</p>	<p>Based on the proposed changes to the calculation in section 103.10, there will not be negative Monthly Capacity Payments. Rather any volumes purchased in a rebalancing auction are paid for by the market participant.</p>

Blackline of Suggested Rule Wording	Rationale
<p>Issued for Consultation: Page 2 of 8 Public October 22, 2018</p> <p>(3) The ISO must, for an asset subject to a capacity commitment with a negative capacity award calculated in accordance with Section 103.10 of the ISO rules, Capacity Award Calculation, pay the capacity market participant for each settlement period the capacity payment determined in accordance with subsection 5, if such amount is positive.</p>	

Please provide your comments on the following (as set out in AUC Rule 017 s. 13(b-j)):

Item #		Stakeholder comments
1	whether you agree that Section 103.9, <i>Capacity Market Financial Settlement</i> relates to the capacity market and why or why not	
2	whether you agree that Section 103.9, <i>Capacity Market Financial Settlement</i> should or should not be in effect for a fixed term and why or why not	
3	whether you understand and agree with the objective or purpose of Section 103.9, <i>Capacity Market Financial Settlement</i> and whether, in your view, Section 103.9, <i>Capacity Market Financial Settlement</i> meets the objective or purpose	
4	how, in your view, Section 103.9, <i>Capacity Market Financial Settlement</i> affects the performance of the capacity market and the electricity market	
5	your views on any analysis conducted or commissioned by the AESO supporting Section 103.9, <i>Capacity Market Financial Settlement</i>	
6	whether you agree with Section 103.9, <i>Capacity Market Financial Settlement</i> taken together with all ISO rules and in light of the principle of a fair, efficient and openly competitive market	
7	whether you would suggest any alternatives to Section 103.9, <i>Capacity Market Financial Settlement</i>	

Item #		Stakeholder comments
8	whether you agree that the proposed provisional rule supports ensuring a reliable supply of electricity at a reasonable cost to customers and why or why not	The cost to consumers is increased by the AESO's version of section 103.10 and the consequent adjustments made to the performance assessment methodology to account for the possibility of negative capacity awards. The changes proposed the Renewable Energy Coalition simplify and remove unwanted consequences from the purchases of capacity by the market participant in the rebalancing auction.
9	whether you agree that the proposed provisional rule supports the public interest and why or why not	
10	whether you have any additional comments	

Proposed New ISO rule –Section 103.10, Capacity Award Calculation

Period of Comment:	October 26, 2018 through November 14, 2018	Contact:	Leonard Olien
Comments From:	Solas Energy Consulting on behalf of the Renewable Energy Coalition	Phone:	403-200-0049
Date [yyyy/mm/dd]:	2018/11/14	Email:	lolien@solasenergyconsulting.com

Please include any suggestions for alternative rule wording and accompanying rationale in the table below. Cut and paste the existing rule wording into column one below and track in your changes.

Blackline of Suggested Rule Wording	Rationale
<p><i>2 The ISO must calculate the monthly capacity award, and monthly rebalancing amount, in Canadian dollars, for an asset subject to a capacity commitment as follows:</i></p> $\text{capacity award} = \{[\text{commitment}_b \times \text{price}_b \times 1000] = +[(\text{commitment}_b - \text{commitment}_{r1} - \text{commitment}_b) \times \text{price}_r1 \times 1000] = + [(\text{commitment}_{r1} - \text{commitment}_{r2} - \text{commitment}_{r1}) \times \text{price}_r2 \times 1000]\} \div 12$ <p>where:</p> <p>(a) Commitment b equals the capacity commitment in MW after the base auction;</p> <p>(b) Price b equals the clearing price in \$/kW-year of the base auction;</p> <p>(c) Commitment r1 equals the capacity commitment in MW after the first rebalancing auction, which is also the last rebalancing auction for the first 3 obligation periods;</p> <p>(d) Price r1 equals the clearing price in \$/kW-year of the first rebalancing auction, which is also the last rebalancing auction for the first 3 obligation periods;</p> <p>(e) Commitment r2 equals the capacity commitment in MW after the second rebalancing auction, in all other cases; and</p> <p>(f) Price r2 equals:</p> <p>(i) 0 \$/kW-year, in the case of the first 3 obligation periods; and</p>	<p>When mathematically expressing a change from an old value to a new value, it is easier to understand if the formula is in the form of [new] minus [old] because a positive result indicates an increase and a negative value indicates a decrease. The recommended change also changes the subtractions in from of the rebalancing terms to addition. The overall formula stays the same, but is much easier to understand.</p> <p>The new subsections (g) and (h) provide:</p> <ul style="list-style-type: none"> • Correct treatment of the assessment rates in 206.8 (6) and (10) when commitments volumes have

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<p><i>(ii) the clearing price in \$/kW-year of the second rebalancing auction, in all other cases.</i></p> <p><i>(g) and provided:</i></p> <p><i>(i) commitmentr1 is greater than or equal to commitmentb; and</i></p> <p><i>(ii) commitmentr2 is greater than or equal to commitmentr1.</i></p> <p><i>(h) If either condition in (g) fails then the AESO will calculate the CAPACITY AWARD and REBALANCING AMOUNT as follows:</i></p> <p><i>(i) if commitmentr1 is less than commitment b, but commitmentr2 is greater than or equal to commitmentr1:</i></p> $\text{capacity award} = \{[\text{commitmentr1} \times \text{priceb} \times 1000] + [(\text{commitmentr2} - \text{commitmentr1}) \times \text{pricer2} \times 1000]\} \div 12$ <p><i>REBALANCING AMOUNT = {[commitmentb – commitmentr1] x pricer1 x 1000}/12</i></p> <p><i>(ii) if commitmentr1 is greater than or equal to commitment b, but commitmentr2 is less than commitmentr1:</i></p> $\text{capacity award} = \{\text{commitmentr2} \times 1000 \times [(\text{commitmentb} \times \text{priceb}) + ((\text{commitmentr1} - \text{commitmentb}) \times \text{pricer1})] \div (\text{commitmentr1})\} \div 12$ <p><i>REBALANCING AMOUNT = {[commitmentr1 – commitmentr2] x pricer2 x 1000}/12</i></p> <p><i>(iii) if commitmentr1 is less than commitmentb and commitmentr2 is less than commitmentr1:</i></p> $\text{capacity award} = \{\text{commitmentr2} \times \text{priceb} \times 1000\} \div 12$ <p><i>REBALANCING AMOUNT = {[commitmentb – commitmentr1] x pricer1 x 1000} + [(commitmentr1 – commitmentr2) x pricer2 x 1000] \div 12</i></p>	<p>been purchases in the rebalancing auctions. The settlement calculation as proposed by the AESO results in changes to the assessment rates for the remaining commitment volume which does not make sense.</p> <ul style="list-style-type: none"> • Simplification of the Maximum Payment Adjustments as calculated in section 206.8 (14) and (15). • Simplification of the settlement process in Section 103.10. Using the new sections (g) and (h), the capacity award cannot be negative and so the minimums can be avoided. <p>To better understand section (h), the Coalition offers the following details.</p> <p>In (i), the market participant has purchased volumes in the first rebalancing auction only. The capacity award is the commitment volume remaining after the first rebalancing auction times the price from the base auction plus any volumes sold in the second rebalancing auction at the price for the second rebalancing auction. The market participant must pay the AESO the Rebalancing Amount for the volumes purchases in the first rebalancing auction at the price of the first rebalancing auction.</p> <p>In (ii), the market participant has purchased volume in the second rebalancing auction only. The capacity award is the commitment volume remaining after the second rebalancing auction times the weighted average price of the base and first rebalancing auctions. The market participant must pay the AESO the Rebalancing Amount for the volumes purchases in the second rebalancing auction at the price for the second rebalancing auction.</p> <p>In (iii), the market participant has purchases volumes in both rebalancing auctions. The capacity award is the commitment volume remaining after the second rebalancing auction times the price from the base auction. The market participant must pay the AESO the Rebalancing amount which is the the sum of purchased volumes multiplied by their respective rebalancing auction prices.</p>

Blackline of Suggested Rule Wording	Rationale

Please provide your comments on the following (as set out in AUC Rule 017 s. 13(b-j)):

Item #		Stakeholder comments
1	whether you agree that Section 103.10, <i>Capacity Award Calculation</i> relates to the capacity market and why or why not	
2	whether you agree that Section 103.10, <i>Capacity Award Calculation</i> should or should not be in effect for a fixed term and why or why not	
3	whether you understand and agree with the objective or purpose of Section 103.10, <i>Capacity Award Calculation</i> and whether, in your view, Section 103.10, <i>Capacity Award Calculation</i> meets the objective or purpose	
4	how, in your view, Section 103.10, <i>Capacity Award Calculation</i> affects the performance of the capacity market and the electricity market	
5	your views on any analysis conducted or commissioned by the AESO supporting Section 103.10, <i>Capacity Award Calculation</i>	
6	whether you agree with Section 103.10, <i>Capacity Award Calculation</i> taken together with all ISO rules and in light of the principle of a fair, efficient and openly competitive market	
7	whether you would suggest any alternatives to Section 103.10, <i>Capacity Award Calculation</i>	See above.
8	whether you agree that the proposed provisional rule supports ensuring a reliable supply of electricity at a reasonable cost to customers and why or why not	The rule as proposed will increase the cost to consumers because generators will have to price in the risk of variable assessment rates that are due solely to the formula and settlement treatment and are not based on market factors.

Item #		Stakeholder comments
9	whether you agree that the proposed provisional rule supports the public interest and why or why not	
10	whether you have any additional comments	

Please provide your comments on the following (as set out in AUC Rule 017 s. 13(b-j)):

Item #		Stakeholder comments
1	whether you agree that Section 203.5, <i>Energy Market Mitigation</i> relates to the capacity market and why or why not	
2	whether you agree that Section 203.5, <i>Energy Market Mitigation</i> should or should not be in effect for a fixed term and why or why not	
3	whether you understand and agree with the objective or purpose of Section 203.5, <i>Energy Market Mitigation</i> and whether, in your view, Section 203.5, <i>Energy Market Mitigation</i> meets the objective or purpose	
4	how, in your view, Section 203.5, <i>Energy Market Mitigation</i> affects the performance of the capacity market and the electricity market	The electricity market will function best when the majority of the value is transacted via the Energy Market and the Capacity Market is of secondary importance. The new rule provides clarity to market participants on acceptable energy market bidding behavior without unduly restricting the value of the Energy Market.
5	your views on any analysis conducted or commissioned by the AESO supporting Section 203.5, <i>Energy Market Mitigation</i>	
6	whether you agree with Section 203.5, <i>Energy Market Mitigation</i> taken together with all ISO rules and in light of the principle of a fair, efficient and openly competitive market	The choice of 3 times short run marginal cost is the minimum acceptable value, along with the increase to 6 times when the supply cushion is below 1,000 MW. Resources will not necessarily recover full capital costs through the capacity market and therefore flexibility is required in the energy market to allow generators to earn a fair return.
7	whether you would suggest any alternatives to Section 203.5, <i>Energy Market Mitigation</i>	Energy storage facilities do not fit into the description of subsection 3 or subsection 5. Energy storage facilities should be included in the expected supply in merit order for a person (section 8(3)(iii) except when the storage is co-located with a generating asset and the maximum deliverable volume (or STS contract volume) is equal to the maximum capacity of the generating asset.
8	whether you agree that the proposed provisional rule supports ensuring a reliable supply of electricity at a reasonable cost to customers and why or why not	

Item #		Stakeholder comments
9	whether you agree that the proposed provisional rule supports the public interest and why or why not	
10	whether you have any additional comments	

Proposed New ISO rule –Section 206.1, Qualification of Capacity

Period of Comment:	October 26, 2018	through	November 14, 2018	Contact:	Leonard Olien
Comments From:	Solas Energy Consulting on behalf of the Renewable Energy Coalition			Phone:	403-200-0049
Date [yyyy/mm/dd]:	2018/11/11			Email:	lolien@solasenergyconsulting.com

Please include any suggestions for alternative rule wording and accompanying rationale in the table below. Cut and paste the existing rule wording into column one below and track in your changes.

Blackline of Suggested Rule Wording	Rationale
<p>6(1)(d) the asset is not a source asset that is the subject of a renewable electricity support agreement in connection with rounds 1, 2 or 3 of the Renewable Electricity Program during the delivery period, the capacity of the asset will not be subject to a Renewable Energy Supply Agreement associated with rounds 1,2 or 3 or the Renewable Energy Program</p>	<p>The suggested wording provides clarity to the Renewable Electricity Program participants. REP associated assets provide capacity value and are included in the AESO procurement volume calculation. At the expiry of the RESA contract, or if the RESA contract is terminated for any reason, the associated asset should qualify to participate in the capacity auction on an equal basis with any other asset.</p>
<p>6(1) (h) in the case of an energy storage facility, is or will be capable of maintaining energy production at the estimated uniform capacity value for the energy storage facility for a minimum of 4 hours;</p>	<p>The AESO justification that EEA alerts tend to last for four hours is insufficient to justify this restriction on energy storage facilities. The UCV for energy storage facilities should be calculated based on section 206.3 6(1), with the opportunity to submit technical data and analysis per section 206.3 7(1)(b).</p>

Blackline of Suggested Rule Wording	Rationale

Please provide your comments on the following (as set out in AUC Rule 017 s. 13(b-j)):

Item #		Stakeholder comments
1	whether you agree that Section 206.1, <i>Qualification of Capacity</i> relates to the capacity market and why or why not	
2	whether you agree that Section 206.1, <i>Qualification of Capacity</i> should or should not be in effect for a fixed term and why or why not	
3	whether you understand and agree with the objective or purpose of Section 206.1, <i>Qualification of Capacity</i> and whether, in your view, Section 206.1, <i>Qualification of Capacity</i> meets the objective or purpose	
4	how, in your view, Section 206.1, <i>Qualification of Capacity</i> affects the performance of the capacity market and the electricity market	The restriction on the qualification of energy storage facilities in subsection 6(1)(h) negatively impacts the ability of energy storage facilities to participate in the energy market and reduces the competitiveness of the capacity market.
5	your views on any analysis conducted or commissioned by the AESO supporting Section 206.1, <i>Qualification of Capacity</i>	
6	whether you agree with Section 206.1, <i>Qualification of Capacity</i> taken together with all ISO rules and in light of the principle of a fair, efficient and openly competitive market	
7	whether you would suggest any alternatives to Section 206.1, <i>Qualification of Capacity</i>	
8	whether you agree that the proposed provisional rule supports ensuring a reliable supply of electricity at a reasonable cost to customers and why or why not	

Item #		Stakeholder comments
9	whether you agree that the proposed provisional rule supports the public interest and why or why not	
10	whether you have any additional comments	

Proposed New ISO rule –Section 206.3, *Uniform Capacity Value Determination*

Period of Comment:	October 26, 2018	through	November 14, 2018	Contact:	Leonard Olien
Comments From:	Solas Energy Consulting on behalf of the Renewable Energy Coalition			Phone:	403-200-0049
Date [yyyy/mm/dd]:	2018/11/08			Email:	lolien@solasenergyconsulting.com

Please include any suggestions for alternative rule wording and accompanying rationale in the table below. Cut and paste the existing rule wording into column one below and track in your changes.

Blackline of Suggested Rule Wording	Rationale
6 (2) The ISO must calculate a uniform capacity value for a wind, solar, or run of river hydroelectric generating units or an aggregated generating facility, an aggregated asset containing a wind or solar aggregated generating facility, or an asset that cannot change generation levels in response to a dispatch as follows	The rule as stated limits commercial options to mitigate risk.
(9) The ISO must, where the uniform capacity value for at least 1 asset in an aggregated asset would be calculated in accordance with subsection 6(2), calculate the uniform capacity value of the aggregated asset in accordance with subsection 6(2).	The rule as stated limits commercial options to mitigate risk. There was no justification given for this treatment of aggregated assets.
6(1) The ISO must, subject to subsections 6(2) through 6(8) calculate a uniform capacity value for an asset as follows:	A change of wording is not required, however it should be made clear in an information document that, once the four-hour restriction in 206.1- <i>Qualification of Capacity</i> 6(1)(h) is removed, then the UCV of energy storage will be calculated according to the methodology in this section 206.3 – 6(1).
9(1) The ISO must, subject to subsection 9(2), calculate ranges for a uniform capacity value on an asset-specific basis as follows: (a) determine the 5% range rounded to the nearest positive integer, as follows: (i) calculate the upper limit, rounded up to the nearest positive integer as follows: (A) remove 5% of the hours identified in the historical data set, in which the asset’s availability factor or	The rounding can have a significant magnitude for assets with smaller uniform capacity values. Rounding up for the upper limit and down for the lower limit expands the use of the UCV as a risk management mechanism.

Blackline of Suggested Rule Wording	Rationale
<p>capacity factor, as applicable, was the lowest; (B) average the asset's remaining availability factor or capacity factor, as applicable; and (C) multiply the average remaining availability factor or capacity factor, as applicable, by the asset's maximum capability; and</p> <p>(ii) calculate the lower limit, rounded down to the nearest positive integer, as follows: (A) remove 5% of the hours identified in the historical data set, in which the asset's availability factor or capacity factor, as applicable, was the highest; (B) average the asset's remaining availability factor or capacity factor, as applicable; and (C) multiply the average remaining availability factor or capacity factor, as applicable, by the asset's maximum capability;</p>	

Please provide your comments on the following (as set out in AUC Rule 017 s. 13(b-j)):

Item #		Stakeholder comments
1	whether you agree that Section 206.3, <i>Uniform Capacity Value Determination</i> relates to the capacity market and why or why not	
2	whether you agree that Section 206.3, <i>Uniform Capacity Value Determination</i> should or should not be in effect for a fixed term and why or why not	
3	whether you understand and agree with the objective or purpose of Section 206.3, <i>Uniform Capacity Value Determination</i> and whether, in your view, Section 206.3, <i>Uniform Capacity Value Determination</i> meets the objective or purpose	
4	how, in your view, Section 206.3, <i>Uniform Capacity Value Determination</i> affects the performance of the capacity market and the electricity market	The treatment of aggregated facilities as described in subsections 6(2) and 6(9) impedes commercial efforts to reduce risk and therefore negatively affects the performance of the capacity market. The rule needs to be changed as indicated above.
5	your views on any analysis conducted or commissioned by the AESO supporting Section 206.3, <i>Uniform Capacity Value Determination</i>	
6	whether you agree with Section 206.3, <i>Uniform Capacity Value Determination</i> taken together with all ISO rules and in light of the principle of a fair, efficient and openly competitive market	
7	whether you would suggest any alternatives to Section 206.3, <i>Uniform Capacity Value Determination</i>	

Item #		Stakeholder comments
8	whether you agree that the proposed provisional rule supports ensuring a reliable supply of electricity at a reasonable cost to customers and why or why not	
9	whether you agree that the proposed provisional rule supports the public interest and why or why not	
10	whether you have any additional comments	

Proposed New ISO rule –Section 206.8, *Obligation Period Performance Assessments*

Period of Comment:	October 26, 2018 through November 14, 2018	Contact:	Leonard Olien
Comments From:	Solas Energy Consulting on behalf of the Renewable Energy Coalition	Phone:	403-200-0049
Date [yyyy/mm/dd]:	2018/11/14	Email:	lolien@solasenergyconsulting.com

Please include any suggestions for alternative rule wording and accompanying rationale in the table below. Cut and paste the existing rule wording into column one below and track in your changes.

Blackline of Suggested Rule Wording	Rationale
<p><i>Asset-specific Penalty Rate for Availability Assessment</i> 6 (2) The ISO must establish the asset-specific penalty rate in \$/MWh as: (a) \$133/MWh, if the rate calculated in accordance with subsection 6(1) is less than \$133/MWh and the clearing price of the base auction was greater than \$33/kW year; (b) \$0/MWh, if the rate calculated in accordance with subsection 6(1) is less than \$0/MWh and the clearing price of the base auction was less than or equal to \$33/kW year; or (c) the rate calculated in accordance with subsection 6(1) in all other cases.</p>	<p>Using the formula proposed in the Renewable Energy Coalition Comment Matrix for section 103.10, there can be no negative capacity awards and these sections are not needed.</p>
<p><i>Asset-specific Penalty Rate for Delivery Assessments</i> 10 (2) The ISO must establish the asset-specific penalty rate as: (a) \$1,667/MWh, if the rate calculated in accordance with subsection 10(1) is less than \$1,667/MWh and the clearing price of the base auction was greater than \$33/kW year; (b) \$0/MWh, if the rate calculated in accordance with subsection 10(1) is less than \$0/MWh and the clearing price of the base auction was less than or equal to \$33/kW year; or (c) the rate calculated in accordance with subsection 10(1), in all other cases.</p>	<p>Using the formula proposed in the Renewable Energy Coalition Comment Matrix for section 103.10, there can be no negative capacity awards and these sections are not needed.</p>

Blackline of Suggested Rule Wording	Rationale
<p>Maximum Payment Adjustments for Under-availability and Under-delivery</p> <p>14(1) The ISO must cap under-delivery adjustments for an asset during a settlement period at:</p> <p>(a) 3 times the capacity award calculated in accordance with Section 103.10 of the ISO rules, Capacity Award Calculation; or</p> <p>(b) an amount calculated in accordance with the following formula, if the asset specific penalty rate for an asset's delivery assessments is established at \$1,667/MWh in accordance with subsection 10(2)(a):</p> $\text{monthly under delivery payment adjustment cap} = \frac{\text{default rate} \times \text{capacity commitment}}{12} \times 3$ <p>where: (i) default rate is \$33/kW-year * 1000; and (ii) capacity commitment is the capacity commitment associated with the asset.</p> <p>(2) The ISO must, subject to subsection 14(3), cap the sum of any under-availability adjustment and under-delivery adjustments for an asset in an obligation period at an amount in dollars calculated in accordance with the following formula: <i>annual under performance cap = capacity award × 12 × 1.3</i> where:</p> <p>(a) capacity award is the asset's monthly capacity award calculated in accordance with Section 103.10 of the ISO rules, Capacity Award Calculation.</p> <p>(3) The ISO must, if the asset specific penalty rate for an asset's availability assessment is established at \$133/MWh in accordance with subsection 6(2)(a), or if the asset specific penalty rate for an asset's delivery assessments is established at \$1,667/MWh in accordance with subsection 10(2)(a), cap the sum of any under-availability adjustment and under-delivery adjustments for such asset in an obligation period at an amount in dollars equal to: <i>annual under performance cap = default rate × capacity commitment × 1.3</i> where: (a) default rate is \$33/kw-year × 1000; and (b) capacity commitment is the capacity commitment associated with an asset.</p>	<p>Using the formula proposed in the Renewable Energy Coalition Comment Matrix for section 103.10, there can be no negative capacity awards and these sections are not needed.</p>
<p>Maximum Payment Adjustments for Over-availability and Over-delivery</p> <p>15(1) The ISO must, notwithstanding subsection 15(2), cap the sum of any over-availability adjustment and over-delivery adjustments for an obligation period at an amount in dollars for an asset in accordance with the following formula: <i>annual over performamce cap = capacity award × 12</i> where:</p> <p>(a) capacity award is the asset's monthly capacity award in \$/month calculated in accordance with Section 103.10 of the ISO rules, Capacity Award Calculation.</p>	<p>Using the formula proposed in the Renewable Energy Coalition Comment Matrix for section 103.10, there can be no negative capacity awards and these sections are not needed.</p>

Blackline of Suggested Rule Wording	Rationale
<p>(2) The ISO must, if the asset-specific penalty rate for an asset's availability assessment is established at \$133/MWh in accordance with subsection 6(2)(a) or if the asset-specific penalty rate for an asset's delivery assessments is established at \$1,667/MWh in accordance with subsection 10(2)(a), cap the sum of any over-availability adjustment and over-delivery adjustments for each obligation period at an amount in dollars for such asset in accordance with the following formula: <i>annual over performance cap = default rate x capacity commitment</i></p> <p>where: (a) default rate is \$33/kw-year x 1000; and (b) capacity commitment is the capacity commitment associated with an asset.</p>	

Please provide your comments on the following (as set out in AUC Rule 017 s. 13(b-j)):

Item #		Stakeholder comments
1	whether you agree that Section 206.8, <i>Obligation Period Performance Assessments</i> relates to the capacity market and why or why not	
2	whether you agree that Section 206.8, <i>Obligation Period Performance Assessments</i> should or should not be in effect for a fixed term and why or why not	
3	whether you understand and agree with the objective or purpose of Section 206.8, <i>Obligation Period Performance Assessments</i> and whether, in your view, Section 206.8, <i>Obligation Period Performance Assessments</i> meets the objective or purpose	
4	how, in your view, Section 206.8, <i>Obligation Period Performance Assessments</i> affects the performance of the capacity market and the electricity market	
5	your views on any analysis conducted or commissioned by the AESO supporting Section 206.8, <i>Obligation Period Performance Assessments</i>	
6	whether you agree with Section 206.8, <i>Obligation Period Performance Assessments</i> taken together with all ISO rules and in light of the principle of a fair, efficient and openly competitive market	
7	whether you would suggest any alternatives to Section 206.8, <i>Obligation Period Performance Assessments</i>	

Item #		Stakeholder comments
8	whether you agree that the proposed provisional rule supports ensuring a reliable supply of electricity at a reasonable cost to customers and why or why not	The cost to consumers is increased by the AESO's version of section 103.10 and the consequent adjustments made to the performance assessment methodology to account for the possibility of negative capacity awards. The changes proposed the Renewable Energy Coalition simplify and remove unwanted consequences from the purchases of capacity by the market participant in the rebalancing auction.
9	whether you agree that the proposed provisional rule supports the public interest and why or why not	
10	whether you have any additional comments	

Proposed New ISO rule –Section 207.1, *Gross Minimum Procurement Volume*

Period of Comment:	October 26, 2018 through November 14, 2018	Contact:	Leonard Olien
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Please include any suggestions for alternative rule wording and accompanying rationale in the table below. Cut and paste the existing rule wording into column one below and track in your changes.

Blackline of Suggested Rule Wording	Rationale
<p><i>Base Auction Gross Minimum Procurement Volumes for 2021/2022 and 2022/2023 Obligation Periods</i></p> <p><i>3 The ISO must establish the gross minimum procurement volumes as follows: (a) 18,516 MW of maximum capability for the base auction for the 2021/2022 obligation period based on the assets listed in Appendix A; and (b) 18,597 MW of maximum capability for the base auction for the 2022/2023 obligation period based on the assets listed in Appendix B following a methodology that has been reviewed and approved by stakeholders and the Alberta Utilities Commission. The ISO will submit preliminary Gross Minimum Procurement Volumes to the Commission during a period between 60 and 90 days before the initiation of the pre-qualification period for the respective base auction.</i></p>	<p>There is further analysis required to gain stakeholder confidence in the Gross Minimum Procurement Volumes calculated by the AESO. Details of the requested analysis are provided below.</p> <p>Setting the procurement volumes a full year ahead of the base auction:</p> <ul style="list-style-type: none"> • Results in increased uncertainty in the load forecast which will increase the Gross Minimum Procurement Volume above the optimal level. • Ignores relevant data that, if it were included, would increase confidence in generator outage, renewable generation and load profiles. • Creates market inefficiency because the information used by the AESO to create the demand curve is not the same as the information used by market participants to create their supply offers. The efficient market theory rests on symmetry of information on both the supply and demand side of the market. As proposed, the AESO is using information up to November 2018, but market participants will be using information up to November 2019.
<p><i>Filing of Base Auction Gross Minimum Procurement Volume</i></p> <p><i>6 The ISO must, no later than 6 months 60 days prior to the publication of the Capacity Market Auction Guidelines for a base auction, file the gross minimum procurement volume for such base auction that is determined in accordance with this section 207.1 with the Commission for approval.</i></p>	

Blackline of Suggested Rule Wording	Rationale

Please provide your comments on the following (as set out in AUC Rule 017 s. 13(b-j)):

Item #		Stakeholder comments
1	whether you agree that Section 207.1, <i>Gross Minimum Procurement Volume</i> relates to the capacity market and why or why not	
2	whether you agree that Section 207.1, <i>Gross Minimum Procurement Volume</i> should or should not be in effect for a fixed term and why or why not	
3	whether you understand and agree with the objective or purpose of Section 207.1, <i>Gross Minimum Procurement Volume</i> and whether, in your view, Section 207.1, <i>Gross Minimum Procurement Volume</i> meets the objective or purpose	The Coalition does not agree with the objective of submitting Minimum Procurement Volumes to the AUC one year ahead of the start of the Base Auction Prequalification process.
4	how, in your view, Section 207.1, <i>Gross Minimum Procurement Volume</i> affects the performance of the capacity market and the electricity market	The Gross Minimum Procurement Volume as proposed will negative impact the performance of the electricity market due to the risk of over procurement.
5	your views on any analysis conducted or commissioned by the AESO supporting Section 207.1, <i>Gross Minimum Procurement Volume</i>	Further analysis is required to understand the reliability model and reliability results. Details recommendations have been included below.
6	whether you agree with Section 207.1, <i>Gross Minimum Procurement Volume</i> taken together with all ISO rules and in light of the principle of a fair, efficient and openly competitive market	The proposed Minimum Procurement Volumes present a risk to the efficiency and competitiveness of the market. There risk of over procurement will lead to depressed energy market prices which is not economically efficient and will hurt the ability for generators to compete.
7	whether you would suggest any alternatives to Section 207.1, <i>Gross Minimum Procurement Volume</i>	Minimum Procurement Volumes should be submitted to the AUC for approval approximately two months of the start of the Base Auction Prequalification process. The AESO and AUC should develop rules to facilitate Minimum Procurement Volume approval within that timeframe.

Item #		Stakeholder comments
8	whether you agree that the proposed provisional rule supports ensuring a reliable supply of electricity at a reasonable cost to customers and why or why not	The Minimum Procurement Volumes as proposed will result in elevated Capacity Market costs to customers due to the high likelihood of over procurement. Over procurement may lead to depressed energy market prices, but this balance is not in customers interests. Customers can control their Energy Market costs, but not their Capacity Market costs. It is in the customers interest to minimize the risk of over procurement.
9	whether you agree that the proposed provisional rule supports the public interest and why or why not	The proposed Minimum Procurement Volumes are not in the public interest. Over procurement will lead to higher than necessary Capacity Market costs and depressed Energy Market prices that will reduce investor confidence and lead to higher cost volatility and higher overall costs in the long run.

Item #		Stakeholder comments
10	whether you have any additional comments	<p>The Coalition requests the following analyses be performed to justify calculation of the Gross Minimum Procurement Volume:</p> <p>Analysis #1: Gross minimum procurement volume calculation with a different distribution of economic scenarios. With reference to Information Document – Capacity Market Load Forecast, which relates to Section 2017.1 – Gross Minimum Procurement Volume, section 4.2 describes the methodology for assessing economic uncertainty. The first paragraph states “The AESO created the scenarios by looking at the minimum and maximum growth rates that have been observed on the economic index in the last 20 years”. Table 4: Scenario probability distribution indicates a probability of 10% for the Minimum and Maximum scenarios. Because 20 years of data were used, the appropriate weight for the maximum and minimum scenario is 5%. The appropriate weight for the Reference Scenario is 50%. CanSIA also requests the AESO release the dataset of 20 economic index growth rates so that the shape of the AESO Scenario probability distribution can be compared to the shape of the actual distribution.</p> <p>Analysis #2: Model calibration for additional years. The AESO has performed a calibration of the model against 2017 data. However unserved energy is a rare phenomenon and one year of calibration is insufficient to determine Reliability model accuracy. CanSIA requests the calibration analysis be performed for at least ten years of historical data.</p> <p>Analysis #3: Future Wind Generation Profile. The Renewable Energy Program is expected to add 1,300 MW of new renewable energy by the 2021/2022 delivery period. The AESO has developed a methodology to estimate generation for the new assets based on existing, nearby wind generation assets. Though resourceful, the methodology results in correlations between wind generating facilities that are too high and subsequently underestimates the capacity value of the new facilities. The current AESO methodology contributes to the risk of over-procurement of capacity and the consequent decrease in energy market prices. CanSIA requests the AESO acquire wind data and engage a respected Wind Resource Assessment consultant to generate appropriate generation data for new renewable energy facilities.</p> <p>Analysis #4: Historical Estimation of Gross Minimum Procurement Volume. Historically, market participants have observed the electric system Reserve Margin as an investment signal to determine if the market is over or under supplied. The Reserve Margin is defined as the percentage of peak load by which installed capacity exceeds peak load. With the increase in variable renewables and the introduction of the Capacity Market the historical Reserve Margin calculation is no longer valuable. Instead, market participants will observe the Gross Minimum Procurement Volume as expressed in MW of Uniform Capacity Value. To provide historical context for the new measure, CanSIA requests an analysis of the Gross Minimum Procurement Volume in historical years, which is the System installed capacity and UCV that would have delivered the regulated Expected Unserved Energy threshold of 0.0011%. To perform the analysis, the Reliability Assessment Model (RAM) will be run for 10 past years. For each year, the model is run with steadily decreasing installed capacity until the reliability threshold is reached. The historical installed capacity and system Uniform Capacity Values (UCV) results will provide context to understanding of the RAM model's performance compared to historical reliability.</p> <p>Analysis #5: Sensitivity analysis of the RAM to the modelled forced outage rates. The AESO indicated during the Straw Alberta Model (SAM) process that data in the Electric Trading System (ETS) relating to outages does not reliably differentiate between planned and forced outages. The AESO has made assumptions about the planned and forced outage rates for each generation unit. Multiple stakeholders have stated that the gross minimum procurement volumes are too high. Performing a sensitivity analysis on the forced outage rate would provide clarity on the impact of these assumptions.</p>

Proposed New ISO rule –Section 207.2, Calculation of Net-CONE

Period of Comment:	October 26, 2018	through	November 14, 2018	Contact:	Leonard Olien
Comments From:	Solas Energy Consulting on behalf of the Renewable Energy Coalition			Phone:	403-200-0049
Date [yyyy/mm/dd]:	2018/11/11			Email:	lolien@solasenergyconsulting.com

Please include any suggestions for alternative rule wording and accompanying rationale in the table below. Cut and paste the existing rule wording into column one below and track in your changes.

Blackline of Suggested Rule Wording	Rationale
<p><i>Subsection 5(1)</i></p> <p><i>energy offsett = (forward power pricet – energy market expenset) *forward product energyt maximum capability × 1000 x technology adjustment factor</i></p> <p><i>Where technology adjustment factor is the ratio of historical actual energy market revenue to average energy market revenue for the reference technology.</i></p>	<p>In section 206.11, the AESO adjusts the energy offset for wind and other assets that may not capture the average market value of electricity. Some technologies capture higher value than the average market value of electricity and the increased revenue potential should be captured in the calculation of the energy offset.</p>

Blackline of Suggested Rule Wording	Rationale

Please provide your comments on the following (as set out in AUC Rule 017 s. 13(b-j)):

Item #		Stakeholder comments
1	whether you agree that Section 207.2, <i>Calculation of Net-CONE</i> relates to the capacity market and why or why not	
2	whether you agree that Section 207.2, <i>Calculation of Net-CONE</i> should or should not be in effect for a fixed term and why or why not	
3	whether you understand and agree with the objective or purpose of Section 207.2, <i>Calculation of Net-CONE</i> and whether, in your view, Section 207.2, <i>Calculation of Net-CONE</i> meets the objective or purpose	
4	how, in your view, Section 207.2, <i>Calculation of Net-CONE</i> affects the performance of the capacity market and the electricity market	
5	your views on any analysis conducted or commissioned by the AESO supporting Section 207.2, <i>Calculation of Net-CONE</i>	
6	whether you agree with Section 207.2, <i>Calculation of Net-CONE</i> taken together with all ISO rules and in light of the principle of a fair, efficient and openly competitive market	
7	whether you would suggest any alternatives to Section 207.2, <i>Calculation of Net-CONE</i>	
8	whether you agree that the proposed provisional rule supports ensuring a reliable supply of electricity at a reasonable cost to customers and why or why not	

Item #		Stakeholder comments
9	whether you agree that the proposed provisional rule supports the public interest and why or why not	
10	whether you have any additional comments	

Proposed New ISO rule –Section 207.3, *Shape of Demand Curve*

Period of Comment:	October 26, 2018	through	November 14, 2018	Contact:	Leonard Olien
Comments From:	Solas Energy Consulting of behalf of the Renewable Energy Coalition			Phone:	403-200-0049
Date [yyyy/mm/dd]:	2018/11/11			Email:	

Please include any suggestions for alternative rule wording and accompanying rationale in the table below. Cut and paste the existing rule wording into column one below and track in your changes.

Blackline of Suggested Rule Wording	Rationale
<p><i>Establish Preliminary Demand Curve 2(1) The ISO must, for each base auction and rebalancing auction, establish a preliminary downward-sloping convex demand curve with the following: (a) a horizontal section from 0 MW to the estimate of the net minimum procurement volume in subsection 3(1), at a price cap that is the greater of: (i) 1.75 times the adjusted net-CONE in subsection 4; or (ii) 0.5 times gross-CONE established in accordance with Section 207.2 of the ISO rules, Calculation of Net-CONE divided by the performance factor in subsection 4(iii); (b) a downward-sloping section from the estimate of the net minimum procurement volume in subsection 3(1) at the price cap in subsection 2(1)(a) to an inflection point set at a multiple of 0.875 times the adjusted net-CONE in subsection 4 below at a quantity 7% above the estimate of the net minimum procurement volume; and (c) a downward sloping section from the inflection point in subsection 2(1)(b) to a price floor of zero dollars at a quantity 18% above the estimate of the net minimum procurement volume.</i></p>	<p>The Coalition would like further details on the analysis used to determine the price cap, the inflection point and the foot of the demand curve. In particular, the Coalition would like details on the supply curve that is used in the analysis. The Coalition is concerned that the supply curve is not appropriate for the current Alberta context and may contribute to procurement of more capacity than is optimal.</p>

Blackline of Suggested Rule Wording	Rationale

Please provide your comments on the following (as set out in AUC Rule 017 s. 13(b-j)):

Item #		Stakeholder comments
1	whether you agree that Section 207.3, <i>Shape of Demand Curve</i> relates to the capacity market and why or why not	
2	whether you agree that Section 207.3, <i>Shape of Demand Curve</i> should or should not be in effect for a fixed term and why or why not	
3	whether you understand and agree with the objective or purpose of Section 207.3, <i>Shape of Demand Curve</i> and whether, in your view, Section 207.3, <i>Shape of Demand Curve</i> meets the objective or purpose	
4	how, in your view, Section 207.3, <i>Shape of Demand Curve</i> affects the performance of the capacity market and the electricity market	
5	your views on any analysis conducted or commissioned by the AESO supporting Section 207.3, <i>Shape of Demand Curve</i>	
6	whether you agree with Section 207.3, <i>Shape of Demand Curve</i> taken together with all ISO rules and in light of the principle of a fair, efficient and openly competitive market	
7	whether you would suggest any alternatives to Section 207.3, <i>Shape of Demand Curve</i>	
8	whether you agree that the proposed provisional rule supports ensuring a reliable supply of electricity at a reasonable cost to customers and why or why not	

Item #		Stakeholder comments
9	whether you agree that the proposed provisional rule supports the public interest and why or why not	
10	whether you have any additional comments	