

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

Period of Comment: September 7, 2018 through September 28, 2018

Comments From: ATCO

Date [yyyy/mm/dd]: 2018/08/28

Contact: Kurtis Glasier

Phone: (587) 228-9617

Email: Kurtis.Glasier@atco.com

Please provide comments relating to the subsection of the proposed rule in the corresponding box. Please include any views on whether the language clearly articulates the requirement for either the AESO or a market participant, and provide any proposed alternative wording by blacklining the proposed language below.

Section	Subsection	Proposed language	Stakeholder comments
		Applicability	
1		Section 207.1 applies to: (a) the ISO .	
		Requirements Gross Minimum Procurement Volume	
2		The ISO must, for each base auction and rebalancing auction , establish the gross minimum procurement volume that meets the resource adequacy standard in accordance with subsections 3 and 4 below.	
		Base Auction Gross Minimum Procurement Volumes for 2021/2022 and 2022/2023 Obligation Periods	
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.	The AESO has indicated that the demand curve being sought to be approved as part of the provisional rules could realistically be used for the first four auctions/delivery periods; however, this ISO Rule only includes maximum capability values for the first two auctions/delivery periods. It seems unclear whether approval of this ISO Rule is an approval of the methodology only, or the methodology and the resulting minimum procurement volumes (as only two of the four values have been provided).

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		Probabilistic Model	
4	(1)	<p>The ISO must perform a probabilistic model of resource adequacy that considers the following characteristics:</p> <ul style="list-style-type: none"> (a) the load forecast referred to in subsection 5; (b) the available capability or available generation from all individual generating units and aggregated generating facilities in Alberta that the ISO anticipates will have, for the obligation period, a: <ul style="list-style-type: none"> (i) maximum capability greater than or equal to 5 MW; or (ii) uniform capacity value that is greater than or equal to 1 MW. (c) historical outages of thermal assets, including automatic forced outages, delayed forced outages, planned outages and ambient temperature derates, and any projected changes as applicable; (d) historical performance of existing intermittent resources, including wind and solar, and any projected changes; (e) anticipated performance of new intermittent resources, including wind and solar; (f) historical performance of hydroelectric generation and any projected changes; (g) historical performance of cogeneration sites in Alberta and any projected changes; (h) the correlation of load and generation at cogeneration sites in Alberta, as applicable; (i) the available transfer capability and gross import offers on the interties; and (j) capacity to maintain regulating reserve. 	<p>For clarity and with the hope of obtaining a full record, ATCO requests that the changes from the August probabilistic model and the probabilistic model that formed the values in this ISO Rule be published. During the September 13th meeting, the AESO suggested that changes to the load forecast altered the required generic build for 2021/2022 from 18MW to 156MW. This seems like a material change as 156MW is multiple CONE reference technology builds expected whereas 18MW is not even one. ATCO hopes to understand the sensitivity of the probabilistic model and the substantial changes that occur from small input assumptions being changed.</p> <p>The description of the probabilistic model could be supplemented by a process document which details the procedures that the AESO will undertake to produce the compliant probabilistic model. This would aid in the transparency and vetting of the probabilistic model and assumptions being made by the AESO. A requirement in the ISO Rule to publish the associated data and procedures for each gross minimum procurement volume would be helpful to stakeholders.</p>
4	(2)	<p>The ISO must, as applicable, make assumptions about the model characteristics identified in subsection 4(1) in order to minimize model error and the risk of over procuring or under procuring capacity to the extent practicable.</p>	

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4	(3)	The ISO must add or subtract capacity from the probabilistic model referred to in subsection 4(1) to determine the gross minimum procurement volume that meets the resource adequacy standard .	ATCO requires more clarity surrounding the process that the AESO would use to subtract capacity from the probabilistic model. It understands that the addition of capacity would be through the inclusion of generic units of the chosen CONE reference technology; the process that the AESO would use to subtract capacity from the incumbent fleet is not clear and should be detailed in the authoritative document.
		Load Forecast	
5		<p>The ISO must, for the purpose of performing the probabilistic model in subsection 4, complete a forecast of Alberta gross load for a 5-year forward looking period, considering the following variables:</p> <ul style="list-style-type: none"> (a) economic growth indicators in Alberta including real gross domestic product, population, employment, and natural resource production; (b) weather and temperature data selected from multiple locations across Alberta; (c) load variations in Alberta based on calendar variables, including month of the year, day of the week, hour of the day, daylight savings, and holidays; (d) historical load behaviour in Alberta and any projected changes; (e) performance data from load assets that are qualified to participate in the capacity market to provide demand response; (f) load forecast uncertainty reflecting variability in the load forecast due to weather and economic forecasts; and (g) any other variables that, in the ISO's determination, may maximize the performance of the load forecast model. 	
		Filing of Base Auction Gross Minimum Procurement Volume	
6		The ISO must file the gross minimum procurement volume for a base auction determined in accordance with this section 207.1 with the Commission for approval a minimum of 6 months prior to the publication of the <i>Capacity Market Auction Guidelines</i> for the applicable base auction .	This seems like an inconsistent requirement for the first two auctions, as the gross minimum procurement volumes are included in the Rule for approval, while the Guidelines have not been seen. This annual filing of the gross minimum procurement volume with the Commission seems inefficient and burdensome. The same approach as Section 501.10 <i>Transmission Loss Factors</i> could be taken, whereby the Commission approves a detailed methodology in the rule, albeit for a fixed number of years, and the resultant procurement

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			volume is vetted by stakeholders through AESO consultation.
		Applicable Auctions	
7		<p>This Section 207.2 207.1 is in effect for the following auctions:</p> <ul style="list-style-type: none"> (a) the base auction and rebalancing auction for the 2021/2022 obligation period; (b) the base auction and rebalancing auction for the 2022/2023 obligation period; (c) the base auction and rebalancing auction for the 2023/2024 obligation period; and (d) the base auction and rebalancing auctions for the 2024/2025 obligation period. 	<p>ATCO is supportive of using the same probabilistic model methodology and demand curve parameters for the set of auctions for a specific obligation period. Applying the assumptions used in the base auction in the same manner for all other related auctions for the associated obligation period will provide some consistency between auctions.</p>

Please provide your comments on this rule's appendices:

Empty comment box

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 the proposed new ISO Rule – Section 207.1, <i>Gross Minimum Procurement Volume</i> relates to the capacity market and why or why not	
2	whether you agree that the proposed new ISO Rule – 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 the proposed new ISO Rule – Section 207.1, <i>Gross Minimum Procurement Volume</i> and whether, in your view, the proposed new ISO Rule – Section 207.1, <i>Gross Minimum Procurement Volume</i> meets the objective or purpose	
4	how, in your view, the proposed new ISO Rule – Section 207.1, <i>Gross Minimum Procurement Volume</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 the proposed new ISO Rule – Section 207.1, <i>Gross Minimum Procurement Volume</i>	
6	whether you agree with the proposed new ISO Rule – 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	

Item #		Stakeholder comments
7	whether you would suggest any alternatives to the proposed new ISO Rule – Section 207.1, <i>Gross Minimum Procurement Volume</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	
9	whether you agree that the proposed provisional rule supports the public interest and why or why not	

Please provide your views on the type of content that should be included in an information document associated with the proposed new ISO Rule – Section 207.1, Gross Minimum Procurement Volume.

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

Period of Comment: September 7, 2018 through September 28, 2018

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Section	Subsection	Proposed language	Stakeholder comments
		Applicability	
		Section 207.2 applies to: (a) the ISO .	
		Requirements Establish Gross-CONE, Energy and Ancillary Services Offset and Net-CONE	
2		The ISO must establish for each obligation period : (a) a gross-CONE value in \$/kW-year in accordance with subsections 3 and 4, as applicable; (b) an energy and ancillary services offset value in \$/kW-year in accordance with subsection 5; and (c) a net-CONE value in \$/kW-year in accordance with subsection 6.	
		Initial Gross-CONE Value for 2021/2022 Obligation Period	
		The ISO must establish an initial gross-CONE value for the 2021/2022 obligation period of \$244.2/kW-year.	
		Calculation of Gross-CONE	

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4	(1)	<p>The ISO must calculate the gross-CONE value for every the applicable obligation periods following the 2021/2022 obligation period in accordance with the following formula:</p> $\text{gross-CONE}_t = \text{gross-CONE}_{t=2021/2022} \times \text{Composite Index}_t$ <p>where:</p> <ul style="list-style-type: none"> (i) t equals the obligation period for which the gross-CONE is being determined; (ii) gross-CONE_t is the gross-CONE value for obligation period t; (iii) $\text{gross-CONE}_{t=2021/2022}$ is the initial gross-CONE value in subsection 3 above; and (iv) Composite Index_t is the composite index value for obligation period t calculated in accordance with subsection 4(2) below. 	<p>See blackline edits. The ISO Rule should be limited to apply only to the years applicable within the range of years that AESO is seeking approval for, i.e. for the 2021/22 through 2024/25 obligation periods.</p>
4	(2)	<p>The ISO must, in calculating the gross-CONE_t value under subsection 4(1) above, calculate the Composite Index_t using the following formula:</p> $\text{Composite Index}_t = 0.25 \times \frac{\text{Labour Index}_t}{60.7} + 0.35 \times \frac{\text{Materials Index}_t}{118.5} + 0.40 \times \frac{\text{Turbine US Cost Index}_t \times \text{Foreign Exchange Rate}_t}{268.7}$ <p>where:</p> <ul style="list-style-type: none"> (i) t equals the obligation period for which the gross-CONE value is being determined; (ii) Composite Index_t is the composite index value for obligation period t; (iii) Labour Index_t is the most recent 12 month average of published Statistics Canada Construction Union Wage Rates (Electrician), Monthly for Edmonton Alberta, Table 18-10-0046-01; 	<p>ATCO assumes that the highlighted hard-coded values are the values from the 2021/2022 obligation period. It would be helpful if the origin of these numbers, and in general all hard-coded numbers, to be made explicit.</p> <p>The use of formulas is helpful in this Rule. A formula allows the AESO to include explanations for all of the values/variables that are being used.</p>

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		<p>(iv) Materials Index $_t$ is the most recently published Statistics Canada Gross National and Gross Domestic Income, Indexes and Related Statistics, Annual, Table 36-10-0105-01;</p> <p>(v) Turbine US Cost Index $_t$ is the most recent 12 month average of published Federal Reserve Economic Data (St. Louis) Producer Price Index by Industry: Turbine and Turbine Generator Set Units Manufacturing (PCU333611333611); and</p> <p>(vi) USD/CAD Foreign Exchange Rate $_t$ is the most recent 12 month average of published Statistics Canada Monthly Average Exchange Rates in Canadian Dollars, U.S. Dollar monthly average, Table 33-10-0163-01.</p>	
		<p>Calculation of Energy and Ancillary Services Offset</p>	
5	(1)	<p>The ISO must, for every obligation period, calculate the energy and ancillary services offset value in accordance with the following formula:</p> $= \frac{\text{EAS Offset}_t}{\text{Nameplate Capacity} \times 1000} \times \text{Forward Product Energy}_t$ <p>where;</p> <ul style="list-style-type: none"> (i) t equals the obligation period for which the energy and ancillary services offset is being determined; (ii) EAS Offset $_t$ is the energy and ancillary services offset for obligation period t; (iii) Forward Power Price $_t$ is the weighted average of the settlements matching the obligation period t, where the settlements are the average over a period determined by the ISO, for the published NGX forward power product in Appendix 1 that yields the highest EAS Offset $_t$ for obligation period t; (iv) Energy Market Expense $_t$ is the energy market expense value for obligation period t calculated in accordance with subsection 5(3) below; 	<p>ATCO believes there is a disconnect by not calculating a levelized value of the EAS offset forecast for multiple years of operation, taking into account the expected maintenance costs over the life of the plant based on operation assumptions. The gross CONE is a levelized cost, for consistency in the Net-CONE calculation the EAS offset should also be levelized to reflect realistic assumptions for a merchant investment generator.</p>

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		<p>(v) Forward Product Energy $_t$ is the forward product energy value for obligation period t calculated in accordance with subsection 5(2) below; and</p> <p>(vi) Nameplate Capacity is equal to 93 MW.</p>	
5	(2)	<p>The ISO must, in calculating the EAS Offset $_t$ under subsection 5(1) above, calculate the Forward Product Energy $_t$ using the following formula:</p> $\begin{aligned} \text{Forward Product Energy}_t &= \text{Average Capacity} \times (1 - \text{Forced Outage Rate}) \\ &\times \text{Forward Product Hours}_t \end{aligned}$ <p>where:</p> <ul style="list-style-type: none"> (i) t equals the obligation period for which the generation is being determined; (ii) Average Capacity is equal to 87 MW; (iii) Forced Outage Rate is equal to 3.0%; and (iv) Forward Product Hours $_t$ is the number of hours defined in the ICE NGX Contracting Party Agreement for the forward power product associated with the Forward Power Price in subsection 5(1)(iii) above, for obligation period t. 	
5	(3)	<p>The ISO must, in calculating the EAS Offset $_t$ under subsection 5(1) above, calculate the Energy Market Expense $_t$ using the following formula:</p>	<p>See blackline edits. The addition sign between “Forward Gas Price” and “(1+Commodity Fuel Charge)” should be a multiplication sign.</p>

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		<p>Energy Market Expense_t = [Forward Gas Price_t + (1 + Commodity Fuel Charge_t)] × Heat Rate_t + Variable Operations and Maintenance_t + (Emission Intensity – Established Benchmark_t) × Carbon Price_t + Transmission Losses_t + Trading Charge_t</p> <p>where;</p> <ul style="list-style-type: none"> (i) <i>t</i> equals the obligation period for which the energy and ancillary services offset is being determined; (ii) Energy Market Expense_t is the energy market expense value for obligation period t; (iii) Forward Gas Price_t is the weighted average of the settlements matching the obligation period t, where the settlements are the average over the period determined by the ISO in subsection 5(1)(iii), of NGX Phys, FP (CA/GJ), AB-NIT; (iv) Commodity Fuel Charge_t is the most recent 12 month average of published NOVA Gas Transmission Ltd NGTL Fuel Usage and Measurement Variance; (v) Heat Rate is equal to 9.677 GJ/MWh; (vi) Variable Operations and Maintenance_t is the variable operations and maintenance value for obligation period t calculated in accordance with subsection 5(4) below; (vii) Emission Intensity is equal to 0.50 tonnes of CO2/MWh; (viii) Established Benchmark_t is the weighted average of the calendar year values matching obligation period t for an established benchmark for electricity published by a public authority; 	

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		<p>(ix) Carbon Price $_t$ is the weighted average of the calendar year values matching obligation period t for the carbon price published by a public authority;</p> <p>(x) Transmission Losses $_t$ is the transmission loss value for obligation period t calculated in accordance with subsection 5(5) below; and</p> <p>(xi) Energy Market Trading Charge $_t$ is the most recent energy market trading charge published on the AESO website.</p>	
5	(4)	<p>The ISO must, in calculating the Energy Market Expense $_t$ under subsection 5(3) above, calculate the Variable Operations and Maintenance $_t$ value using the following formula:</p> $\text{Variable Operations and Maintenance}_t = \text{Variable Operations and Maintenance}_{t=2021/2022} \times \frac{\text{Materials Index}_t}{118.5}$ <p>where:</p> <p>(i) t equals the obligation period for which the variable operations and maintenance is being determined;</p> <p>(ii) Variable Operations and Maintenance $_{t=2021/2022}$ is equal to \$4.60/ MWh; and</p> <p>(iii) Materials Index $_t$ for obligation period t is the value in subsection 4(2)(a)(iv) above.</p>	
5	(5)	<p>The ISO must, in calculating the Energy Market Expense $_t$ under subsection 5(2) above, calculate the Transmission Losses $_t$ value using the following formula:</p> $\text{Transmission Losses}_t = \frac{\sum_{i=1}^n \text{Loss Factor}_i}{n} \times \text{Forward Power Price}_t$ <p>where:</p> <p>(i) t equals the obligation period for which the transmission losses is being determined;</p> <p>(ii) $i...n$ are facilities located in the Fort Saskatchewan area identified in the</p>	

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		<p>most recent Loss Factors published on the AESO website;</p> <p>(iii) Loss Factor $_t$ is the most recent published loss factor values published on the AESO website; and</p> <p>(iv) Forward Power Price $_t$ for obligation period t is the value in subsection 5(1)(a)(iii) above.</p>	
		<p>Calculation of Net-CONE</p>	
6	(1)	<p>The ISO must, subject to subsection 6(2), calculate the net-CONE value for every obligation period in accordance with the following formula:</p> $\text{net-CONE}_t = \text{gross-CONE}_t - \text{EAS Offset}_t$ <p>where:</p> <p>(i) t equals the obligation period for which the net-CONE value is being determined;</p> <p>(ii) gross-CONE $_t$ is the gross-CONE value in subsection 3 above or the gross-CONE value calculated in accordance with subsection 4 above for the obligation period t, as applicable; and</p> <p>(iii) EAS Offset $_t$ is energy and ancillary services offset value calculated in accordance with subsection 5 above for obligation period t.</p>	
6	(2)	<p>The ISO must, if the net-CONE value calculated in subsection 6(1) is:</p> <p>(a) below zero, set the net-CONE value at zero.</p> <p>(b) above the gross-CONE value in subsection 3 or 4, set the net-CONE value at the gross-CONE value</p>	
		<p>Publication of Net-CONE, Data and Indices</p>	
7		<p>The ISO must, publish the net-CONE value determined in accordance with this section 207.2 and the following data and indices in the <i>Capacity Market Auction Guidelines</i> for each base auction and rebalancing auction:</p> <p>(a) Composite Index $_{t=2021/2022}$;</p>	

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		<ul style="list-style-type: none"> (b) Composite Index $_t$; (c) Labour Index $_t$; (d) Material Index $_t$; (e) Turbine US Cost Index $_t$; (f) USD/CAD Foreign Exchange Rate $_t$; (g) Energy Market Expense $_t$; (h) Forward Power Price $_t$; (i) Forward Product Hours $_t$; (j) Forward Product Energy $_t$; (k) The period determined by ISO refer to in subsections 5(1)(iii), 5(2)(iv) and 5(3)(iii) ; (l) Forward Gas Price $_t$; (m) Commodity Fuel Charge $_t$; (n) (o) Variable Operations and Maintenance $_t$; (o) (p) Emission Intensity; (p) Established Benchmark $_t$; (q) Carbon Price $_t$; (r) Transmission Losses $_t$; (s) Loss Factor $_i$; and (t) Trading Charge $_t$ 	
		<p>Substitute Index or Benchmark</p>	
9		<p>The ISO must, if any of the indices or benchmarks referred to in this section 207.2 are unavailable or not applicable for use in the calculation of the net-CONE value, use another</p>	

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		comparable industry index or benchmark and publish the index or benchmark in the <i>Capacity Market Auction Guidelines</i> for each base auction and rebalancing auction .	
		Applicable Auctions	
10		This Section 207.2 is in effect for the following auctions: <ul style="list-style-type: none"> (a) the base auction and rebalancing auction for the 2021/2022 obligation period; (a) the base auction and rebalancing auction for the 2022/2023 obligation period; (a) the base auction and rebalancing auction for the 2023/2024 obligation period; and (a) the base auction and rebalancing auctions for the 2024/2025 obligation period. 	

Please provide your comments on this rule's appendices:

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 the proposed new ISO Rule – Section 207.2, <i>Calculation of Net-CONE</i> relates to the capacity market and why or why not	
2	whether you agree that the proposed new ISO Rule – 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 the proposed new ISO Rule – Section 207.2, <i>Calculation of Net-CONE</i> and whether, in your view, the proposed new ISO Rule – Section 207.2, <i>Calculation of Net-CONE</i> meets the objective or purpose	
4	how, in your view, the proposed new ISO Rule – 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 the proposed new ISO Rule – Section 207.2, <i>Calculation of Net-CONE</i>	
6	whether you agree with the proposed new ISO Rule – 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 the proposed new ISO Rule – Section 207.2, <i>Calculation of Net-CONE</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	

Please provide your views on the type of content that should be included in an information document associated with the proposed new ISO Rule – Section 207.2, Calculation of Net-CONE.

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

Period of Comment: September 7, 2018 through September 28, 2018

Contact: Kurtis Glasier

Comments From: ATCO

Phone: (587) 228-9617

Date [yyyy/mm/dd]: 2018/09/28

Email: Kurtis.Glasier@atco.com

Please provide comments relating to the subsection of the proposed rule in the corresponding box. Please include any views on whether the language clearly articulates the requirement for either the AESO or a market participant, and provide any proposed alternative wording by blacklining the proposed language below.

Section	Subsection	Proposed language	Stakeholder comments
		Applicability	
		Section 207.3 applies to: (a) the ISO.	
		Requirements Establish Preliminary Demand Curve	
2	(1)	The ISO must, for the purpose of establishing a preliminary demand curve in accordance with subsection 2(2), estimate the net minimum procurement volume in subsection 3 below based on the most recent uniform capacity values calculated by the ISO in accordance with Section 206.3 of the ISO rules, Uniform Capacity Value Determination	
2	(2)	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 2(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 , <i>Calculation of Net-CONE</i> divided by 0.8 ; (b) a downward-sloping section from the estimate of the net minimum	ATCO assumes that the “0.8” that is hard-coded in the Rule is representative of the 80% expected performance factor for the chosen reference technology. If this is confirmed, it could be beneficial to define this within the Rule to explain the value and its importance in the calculation. Currently, it seems inefficient to not reduce the multiplication by 0.5 and division by 0.8, to simply a multiplication by 0.625.

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		<p>procurement volume in subsection 2(1) at the price cap in subsection 2(2)(a) to an inflection point set at a multiplier 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</p> <p>(c) a downward sloping section from the inflection point in 2(1)(b) to a price floor of zero dollars at a quantity 18% above the estimate of the net minimum procurement volume.</p>	
2	(3)	The ISO must publish the preliminary demand curve in the <i>Capacity Market Auction Guidelines</i> for the relevant base auction or rebalancing auction .	
		Net Minimum Procurement Volume	
3		<p>The ISO must, after uniform capacity values are assigned in accordance with Section 206.3 of the ISO rules, <i>Uniform Capacity Value Determination</i>, adjust the gross minimum procurement volume established for each base auction or rebalancing auction in accordance with Section 207.1 of the ISO rules, <i>Gross Minimum Procurement Volume</i> to a net minimum procurement volume using the following formula:</p> $Net\ minimum\ procurement\ volume_t = \sum_i^n UCAP_{Actual(i)}$ <p>where:</p> <ul style="list-style-type: none"> (i) <i>t</i> is the obligation period for the base auction or rebalancing auction that the gross minimum procurement volume was established for; (ii) <i>i...n</i> are all the assets modelled in the probabilistic model that established the gross minimum procurement volume for the obligation period; (iii) $UCAP_{Actual(i)}$ is the final uniform capacity value determined in accordance with Section 206.3 of the ISO rules, <i>Uniform Capacity Value Determination</i> for such asset or the most recent estimate of the uniform capacity value for such asset; 	
		Adjusted Net-CONE	
		The ISO must, using the following formula, adjust the net-CONE established for each obligation period in accordance with Section 207.2 of the ISO rules , <i>Calculation of Net-</i>	See comment above regarding “0.8” value. In general, ATCO finds it cumbersome to use hard-coded values without explanation. A formulaic term that is defined or an explanation

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		<p><i>CONE:</i></p> $\text{Adjusted net-CONE}_t = \frac{\text{net-CONE}_t}{0.8}$ <p>where;</p> <ul style="list-style-type: none"> (i) <i>t</i> equals the obligation period for which the adjusted net-CONE value is being determined; and (ii) net-CONE _{<i>t</i>} is net-CONE value established in accordance with Section 207.2 of the ISO rules, <i>Calculation of Net-CONE</i> in \$/kW-year. 	<p>for the hard-coded value would be beneficial and more transparent.</p>
		<p>Establish Final Demand Curve for Base Auction and Rebalancing Auction</p>	
5	(1)	<p>The ISO must, for each base auction and rebalancing auction, establish a final downward-sloping convex demand curve with the following:</p> <ul style="list-style-type: none"> (a) a horizontal section from 0 MW to the net minimum procurement volume in subsection 3, at a price cap that is the greater of: <ul style="list-style-type: none"> (i) 1.75 times the adjusted net-CONE in subsection 4; or (j) 0.5 times gross-CONE established in accordance with Section 207.2 of the ISO rules, <i>Calculation of Net-CONE</i> divided by 0.8; (b) a downward-sloping section from the net minimum procurement volume in subsection 3 at the price cap in subsection 5(1)(a) to an inflection point set at a multiplier of 0.875 times the adjusted net-CONE in subsection 4 below at a quantity 7% above the net minimum procurement volume; and (c) a downward sloping section from the inflection point in 5(1)(b) to a price floor of zero dollars at a quantity 18% above the net minimum procurement volume in subsection 3 below. 	<p>ATCO has concerns with the consistency of the demand curve ISO Rule with CMD Final. ATCO notes that the analysis published by Brattle was done based on gross minimum procurement volume, while the Rule now states net minimum procurement volume. The values of “7% above the net minimum procurement volume” and “18% above the net minimum procurement volume” are presumably incorporated in the Rule based on the CMD Final rationale.</p> <p>The AESO has not shown results of stress testing for when the minimum procurement volume is changed from gross to net so that no more than 5% of the time the market clears below the minimum procurement volume. The change from gross to net minimum procurement volumes likely changes the shape of the demand curve, especially the total width, as both the inflection point and foot are tied to this value.</p> <p>ATCO requests that the AESO publish analysis that shows that the change from net to gross values for the inflection point (7% above the net minimum procurement volume) and the floor (18% above the net minimum procurement volume) still support a demand curve that clears at the cap with a frequency of 5% or less than 1 in 20 years.</p> <p>Alternatively, the AESO could provide the rationale for the chosen inflection point and floor as linked to the net minimum procurement volume, ideally as criteria within the Rule.</p>
5	(2)	<p>The ISO must publish the final demand curve prior to the opening of the offering window for each base auction or rebalancing auction.</p>	
		<p>Applicable Auctions</p>	

Section	Subsection	Proposed language	Stakeholder comments
6		<p>This Section 207.2 is in effect for the following auctions:</p> <ul style="list-style-type: none"> (a) the base auction and rebalancing auction for the 2021/2022 obligation period; (b) the base auction and rebalancing auction for the 2022/2023 obligation period; (c) the base auction and rebalancing auction for the 2023/2024 obligation period; and (d) the base auction and rebalancing auctions for the 2024/2025 obligation period. 	

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 the proposed new ISO Rule – Section 207.3, <i>Shape of Demand Curve</i> relates to the capacity market and why or why not	
2	whether you agree that the proposed new ISO Rule – 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 the proposed new ISO Rule – Section 207.3, <i>Shape of Demand Curve</i> and whether, in your view, the proposed new ISO Rule – Section 207.3, <i>Shape of Demand Curve</i> meets the objective or purpose	
4	how, in your view, the proposed new ISO Rule – 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 the proposed new ISO Rule – Section 207.3, <i>Shape of Demand Curve</i>	
6	whether you agree with the proposed new ISO Rule – 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 the proposed new ISO Rule – 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	

Please provide your views on the type of content that should be included in an information document associated with the proposed new ISO Rule – Section 207.3, Shape of Demand Curve.