



NEW ENGLAND POWER POOL

David T. Doot

Secretary

July 17, 2018

VIA ELECTRONIC MAIL

TO: MEMBERS AND ALTERNATES OF THE NEPOOL PARTICIPANTS COMMITTEE

RE: Supplemental Notice of July 24, 2018 NEPOOL Participants Committee Teleconference Meeting

Pursuant to Section 6.6 of the Second Restated New England Power Pool Agreement, supplemental notice is hereby given that a meeting of the NEPOOL Participants Committee **will be held via teleconference on Tuesday, July 24 2018, at 9:00 a.m.** for the following purposes:

1. To consider and take action on the ISO's proposal to permit Market Participants the flexibility to specify for a generator a Rationing Maximum Limit for use in the Forward Capacity Auction (the FCA Rationing Limit Proposal). The FCA Rationing Limit Proposal was unanimously recommended for Participants Committee support by the Markets Committee at its July 17 meeting. Background materials and a draft resolution are included with this supplemental notice.

Respecting the requirements of Rule 606 of the FERC's Rules of Practice and Procedure requiring that settlement discussions be maintained in confidence, discussion and voting on Item 2 will be held in Executive Session jointly with the Transmission Committee. Participation in that portion of the meeting will be limited exclusively to Participant representatives and those who have already been involved with the confidential settlement discussions. The Transmission Committee will vote immediately prior to Participants Committee action.

2. To consider and take action, as appropriate, on revisions to the ISO-NE Tariff to reflect a settlement among certain settling parties in the formula rate proceeding in FERC Docket No. EL16-19. We have included with this supplemental notice a background memorandum, including a draft form of resolution for use during the meeting. Because the settlement has not yet been finalized and remains subject to privileged and confidential treatment, pursuant to Rule 606 of the FERC's Rules of Practice and Procedure, the additional materials for this item are confidential will be circulated under separate confidential cover only to members and alternates of the Transmission and Participants Committees.

3. To transact such other business as may properly come before the Committee.

Those who will be in Westborough for the Transmission Committee meeting will be able to participate in the Participants Committee and joint Participants/Transmission Committee portion of the meeting from the conference room. For those not in the room with the Transmission Committee, the dial-in number for the meeting, to be used only by those who otherwise attend NEPOOL meetings, is **866-738-8593; Passcode: 6132205**.

For your information, this meeting will be recorded, as are all the NEPOOL Participants Committee meetings. NEPOOL meetings, while not public, are open to all NEPOOL Participants, their authorized representatives and, except as otherwise limited for discussions in executive session, consumer advocates that are not members, federal and state officials and guests whose attendance has been cleared with the Committee Chair. All those participating in this meeting must identify themselves and their affiliation at the meeting. Official records and minutes of meetings are posted publicly. No statements made in NEPOOL meetings are to be quoted or published publicly.

Respectfully yours,

/s/

David T. Doot, Secretary

MEMORANDUM

TO: NEPOOL Participants Committee Members and Alternates
FROM: Sebastian M. Lombardi, NEPOOL Counsel
DATE: July 17, 2018
RE: FCA Rationing Limit Proposal

At the July 24, 2018 Participants Committee teleconference meeting, you will be asked to consider supporting Markets Committee-recommended Tariff revisions to permit Market Participants the flexibility to specify for a generator a Rationing Minimum Limit for use in the Forward Capacity Auction (the FCA Rationing Limit Proposal). A copy of these recommended changes are included with this memorandum as Attachment A. At its July 17, 2018 meeting, the Markets Committee voted unanimously to recommend Participants Committee support for the FCA Rationing Limit Proposal.¹ The Participants Committee is acting on this matter on July 24 in order for the Proposal to be filed in time for FERC approval prior to the start of the Static De-List Bid finalization window for FCA 13 (Sept. 28 – Oct. 5, 2018).

The ISO developed the FCA Rationing Limit Proposal to allow a generating resource that dynamically delists from a capacity auction to obtain a minimum Capacity Supply Obligation (CSO) amount that may provide sufficient revenues to cover any residual CSO that must be retained if that resource's Dynamic De-List Bid is rationed in the FCA. Under the FCA Rationing Limit Proposal, a new defined term in the Tariff, 'Rationing Minimum Limit,'² would establish the lowest MW quantity value for which a generating resource is willing to accept a CSO. With this change, Participants would have the opportunity to modify a generator's Rationing Minimum Limit during each FCA qualification cycle to ensure that the magnitude of the CSO amount awarded in the FCA can better correspond with the resource's de-list price. The recommended enhancements to the Forward Capacity Market are described in greater detail in materials from the ISO that were previously circulated to the Markets Committee (*See Attachment B*).

The following form of resolution may be used for Participants Committee action:

RESOLVED, that the Participants Committee supports the revisions to Tariff Section I.2.2 and Market Rule 1 for the Forward Capacity Auction Rationing Limit project, as recommended by the Markets Committee at its July 17, 2018 meeting and as provided to this Committee in advance of this meeting, together with [any changes agreed to by the Participants Committee at this meeting and] such non-substantive changes as may be approved by the Chair and Vice-Chair of the Markets Committee.

¹ There were 11 abstentions noted (10 from the Publicly Owned Entity Sector; 1 from the Supplier Sector).

² As proposed in Tariff Section I.2.2 (Definitions section), 'Rationing Minimum Limit' is defined as "the MW quantity for a New Generating Capacity Resource or Existing Generating Capacity Resource below which an offer or bid may not be rationed in the Forward Capacity Auction, but shall not apply to supply offers or demand bids in a substitution auction as specified in Section III.13.2.8.2 and Section III.13.2.8.3."

I.2.2. Definitions:

In this Tariff, the terms listed in this section shall be defined as described below:

Rationing Minimum Limit is the MW quantity for a New Generating Capacity Resource or Existing Generating Capacity Resource below which an offer or bid may not be rationed in the Forward Capacity Auction, but shall not apply to supply offers or demand bids in a substitution auction as specified in Section III.13.2.8.2 and Section III.13.2.8.3.

III.13.1. Forward Capacity Auction Qualification.

III.13.1.1.2.1. New Capacity Show of Interest Form.

Except as otherwise provided in this Section III.13.1.1.2.1, for each resource that a Project Sponsor seeks to offer in the Forward Capacity Auction as a New Generating Capacity Resource, the Project Sponsor must submit to the ISO a New Capacity Show of Interest Form as described in this Section III.13.1.1.2.1 during the New Capacity Show of Interest Submission Window. After submission of a New Capacity Show of Interest Form, Material Modification (as defined in Section 4.4 of Schedule 22, Section 1.5 of Schedule 23, or Section 4.4 of Schedule 25 of Section II of the Transmission, Markets and Services Tariff) may not be made to the information contained therein or the New Capacity Show of Interest Form shall be considered withdrawn. No change that may result in a reduction in capacity may be made to a project described in a New Capacity Show of Interest Form or New Capacity Qualification Package between the date that is 150 days before the start of the Forward Capacity Auction and the deadline for qualification determination notifications described in Section III.13.1.1.2.8.

(a) A completed New Capacity Show of Interest Form shall include the following information, to the extent the information is not already provided under an active Interconnection Request under Schedules 22, 23 and 25 of Section II of the Transmission, Markets and Services Tariff, and other such information necessary to evaluate a project: the project name; the Project Sponsor's contact information; the Project Sponsor's ISO customer status; the date by which the project is expected to achieve Commercial Operation (as defined in Schedule 22, 23, or 25 of Section II of the Transmission, Markets and Services Tariff); the project address or location, and if relevant, asset identification number; the status of the project under the interconnection procedures described in Schedules 22, 23 and 25 of Section II of the Transmission, Markets and Services Tariff; whether the resource has ever previously had a Capacity Supply Obligation or previously received payment as a capacity resource pursuant to the market rules in effect prior to June 1, 2010; the capacity (in MW) of the New Generating Capacity Resource; ~~the~~

~~Economic Minimum Limit (in MW) of the New Generating Capacity Resource;~~ a general description of the project's equipment configuration, including a description of the resource type (such as those listed in the table in Section III.A.21 or some other type); a simple location plan and a one-line diagram of the plant and station facilities, including any known transmission facilities; the location of the proposed interconnection; and other specific project data as set forth in the New Capacity Show of Interest Form. The ISO may waive the submission of any information not required for evaluation of a project. A completed New Capacity Show of Interest Form shall also specify the Queue Position associated with the project pursuant to Section 4.1 of Schedule 22, Section 1.5 of Schedule 23 or Section 4.1 of Schedule 25 of Section II of the Transmission, Markets and Services Tariff. In the case of a resource that a Project Sponsor seeks to offer in the Forward Capacity Auction as a New Generating Capacity Resource that is supported by an Internal Elective Transmission Upgrade, all Queue Positions associated with the project must be submitted in the New Capacity Show of Interest Form. Submittal of the Interconnection Request may take place prior to the qualification process described here, but no later than the date on which the New Capacity Show of Interest Form is submitted to the ISO; however, the Interconnection Customer Interconnection Request must still be active and consistent with the project described in the New Capacity Show of Interest Form as well as the New Capacity Qualification Package to be submitted as described in Section III.13.1.1.2.2.

(b) The Project Sponsor must submit with the New Capacity Show of Interest Form, documentation demonstrating that the Project Sponsor has already achieved control of the project site for the duration of the relevant Capacity Commitment Period pursuant to Section III.13.1.1.2.2.1.

(c) In the New Capacity Show of Interest Form, the Project Sponsor must indicate if the New Generating Capacity Resource is incremental capacity associated with a resource that previously had a Capacity Supply Obligation or previously received payment as a capacity resource pursuant to the market rules in effect prior to June 1, 2010 as discussed in Section III.13.1.1.1.3, or if the New Generating Capacity Resource is incremental capacity associated with a resource previously listed as a capacity resource that has been de-rated for three or more years at the time of the Forward Capacity Auction, as discussed in Section III.13.1.1.1.4.

(d) [Reserved.]

(e) With the New Capacity Show of Interest Form, the Project Sponsor must submit the Qualification Process Cost Reimbursement Deposit, as described in Section III.13.1.9.3.

III.13.1.1.2.2.3. Offer Information.

(a) All New Generating Capacity Resources that might submit offers in the Forward Capacity Auction at prices below the relevant Offer Review Trigger Price must include in the New Capacity Qualification Package the lowest price at which the resource requests to offer capacity in the Forward Capacity Auction and supporting documentation justifying that price as competitive in light of the resource's costs (as described in Section III.A.21). This price is subject to review by the Internal Market Monitor pursuant to Section III.A.21.2 and must include the additional documentation described in that Section.

(b) The Project Sponsor for a New Generating Capacity Resource must indicate in the New Capacity Qualification Package if an offer from the New Generating Capacity Resource may be rationed. A Project Sponsor may specify a ~~single MW quantity at or above the Economic Minimum Limit~~ Rationing Minimum Limit to which offers may be rationed. Without such indication, offers will only be accepted or rejected in whole. This rationing election shall apply for the entire Forward Capacity Auction.

(c) By submitting a New Capacity Qualification Package, the Project Sponsor certifies that an offer from the New Generating Capacity Resource will not include any anticipated revenues the resource is expected to receive for its capacity cost as a Qualified Generator Reactive Resource pursuant to Schedule 2 of Section II of the Transmission, Markets and Services Tariff.

III.13.1.2.1.2 Rationing Minimum Limit.

No later than 120 days before the Forward Capacity Auction Market Participants may specify a Rationing Minimum Limit for an Existing Generating Capacity Resource.

III.13.1.2.3.1.1. Static De-List Bids.

A Lead Market Participant with an Existing Capacity Resource, or a portion thereof, seeking to specify a price below which it would not accept a Capacity Supply Obligation for that resource, or a portion thereof, at prices at or above the Dynamic De-List Bid Threshold during a single Capacity Commitment Period may submit a Static De-List Bid in the associated Forward Capacity Auction qualification process. A Static De-List Bid may not result in a resource's Capacity Supply Obligation being less than its ~~Economic Minimum Limit~~ Rationing Minimum Limit except where the resource submits de-list and export bids totaling the resource's full summer Qualified Capacity. Each Static De-List Bid must be detailed in an Existing Capacity Qualification Package submitted to the ISO no later than the Existing

Capacity Qualification Deadline, and must be in the form of a curve (up to five price-quantity pairs). The curve may in no case increase the quantity offered as the price decreases. All Static De-List Bids are subject to a reliability review as described in Section III.13.2.5.2.5. Static De-List Bids are subject to review by the Internal Market Monitor pursuant to Section III.13.1.2.3.2 and must include the additional documentation described in that section. With the submission of a Static De-List Bid, the Lead Market Participant must notify the ISO if the Existing Capacity Resource will not be participating in the energy and ancillary services markets during the Capacity Commitment Period (except for necessary audits or tests).

No later than seven days after the issuance by the ISO of the qualification determination notification described in Section III.13.1.2.4(b), a Lead Market Participant that submitted a Static De-List Bid may: (a) lower the price of any price-quantity pair of a Static De-List Bid, provided that the revised price is greater than or equal to the Dynamic De-List Bid Threshold, or; (b) withdraw any price-quantity pair of a Static De-List Bid.

III.13.1.2.3.1.3. Export Bids.

An Existing Generating Capacity Resource within the New England Control Area, other than an Intermittent Power Resource or a Renewable Technology Resource, seeking to export all or part of its capacity during a Capacity Commitment Period may submit an Export Bid in the associated Forward Capacity Auction qualification process. An Export Bid may not result in a resource's Capacity Supply Obligation being less than its ~~Economic Minimum Limit~~ Rationing Minimum Limit except where the resource submits de-list and export bids totaling the resource's full summer Qualified Capacity. All Export Bids are subject to a reliability review as described in Section III.13.2.5.2.5. Export Bids at or above the Dynamic De-List Bid Threshold are subject to review by the Internal Market Monitor pursuant to Section III.13.1.2.3.2 and must include the additional information described in that Section. Each Export Bid must be detailed in an Existing Capacity Qualification Package submitted to the ISO no later than the Existing Capacity Qualification Deadline, and must be in the form of a curve (up to five price-quantity pairs) associated with a specific Existing Generating Capacity Resource. The curve may in no case increase the quantity offered as the price decreases. Each price-quantity pair must be less than the Forward Capacity Auction Starting Price. The Existing Capacity Qualification Package for each Export Bid must also specify the interface over which the capacity will be exported. Export Bids shall be entered into the Forward Capacity Auction pursuant to Section III.13.2.3.2(b).

III.13.1.2.3.1.4. Administrative Export De-List Bids.

An Existing Generating Capacity Resource other than an Intermittent Power Resource or a Renewable Technology Resource subject to a multiyear contract to sell capacity outside of the New England Control Area during the Capacity Commitment Period that either: (i) cleared as an Export Bid in a previous Forward Capacity Auction for a Capacity Commitment Period within the duration of the contract; or (ii) entered into a contract prior to April 30, 2007 to sell capacity outside of the New England Control Area during the Capacity Commitment Period, may submit an Administrative Export De-List Bid in the associated Forward Capacity Auction qualification process. An Administrative Export De-List Bid may not result in a resource's Capacity Supply Obligation being less than its [Economic Minimum Limit](#) [Rationing Minimum Limit](#) except where the resource submits de-list and export bids totaling the resource's full summer Qualified Capacity. Unless reviewed as an Export Bid in a previous Forward Capacity Auction, an Administrative Export De-List Bid is subject to a reliability review prior to clearing in a Forward Capacity Auction, as described in Section III.13.2.5.2.5, and is subject to review by the Internal Market Monitor in the first Forward Capacity Auction in which it participates, pursuant to Section III.13.1.7. Both the reliability review and the review by the Internal Market Monitor shall be conducted once and shall remain valid for the multiyear contract period. Each Administrative Export De-List Bid must be detailed in an Existing Capacity Qualification Package submitted to the ISO no later than the Existing Capacity Qualification Deadline, must be associated with a specific Existing Generating Capacity Resource, and must indicate the quantity of capacity subject to the bid. The Existing Capacity Qualification Package for each Administrative Export De-List Bid must also specify the interface over which the capacity will be exported, and must include documentation demonstrating a contractual obligation to sell capacity outside of the New England Control Area during the whole Capacity Commitment Period. Administrative Export De-List Bids shall be entered into the Forward Capacity Auction pursuant to Section III.13.2.5.2.4.

III.13.1.2.3.1.5. Permanent De-List Bids and Retirement De-List Bids.

(a) A Lead Market Participant with an Existing Capacity Resource seeking to specify a price at or below which it would not accept a Capacity Supply Obligation permanently for all or part of a Generating Capacity Resource beginning at the start of a particular Capacity Commitment Period may submit a Permanent De-List Bid in the associated Forward Capacity Auction qualification process.

(b) A Lead Market Participant with an Existing Capacity Resource seeking to specify a price at or below which it would retire all or part of a Generating Capacity Resource from all New England Markets

beginning at the start of a particular Capacity Commitment Period may submit a Retirement De-List Bid in the associated Forward Capacity Auction qualification process.

(c) No Permanent De-List Bid or Retirement De-List Bid may result in a resource's Capacity Supply Obligation being less than its ~~Economic Minimum Limit~~ Rationing Minimum Limit unless the Permanent De-List Bid or Retirement De-List Bid is for the entire resource. Each Permanent De-List Bid and Retirement De-List Bid must be detailed in an Existing Capacity Retirement Package submitted to the ISO no later than the Existing Capacity Retirement Deadline, and must be in the form of a curve (up to five price-quantity pairs) associated with a specific Existing Capacity Resource. The curve may in no case increase the quantity offered as the price decreases. Permanent De-List Bids and Retirement De-List Bids are subject to review by the Internal Market Monitor pursuant to Section III.13.1.2.3.2.1 and must include the additional documentation described in that section. Once submitted, no Permanent De-List Bid or Retirement De-List Bid may be withdrawn, except as provided in Section III.13.1.2.4.1.

III.13.2.3.2. Step 2: Compilation of Offers and Bids.

The auctioneer shall compile all of the offers and bids for that round, as follows:

(a) Offers from New Generating Capacity Resources, New Import Capacity Resources, and New Demand Capacity Resources.

(i) The Project Sponsor for any New Generating Capacity Resource, New Import Capacity Resource that is backed by a single new External Resource and that is associated with an investment in transmission that increases New England's import capability, New Import Capacity Resource that is associated with an Elective Transmission Upgrade, or New Demand Capacity Resource accepted in the qualification process for participation in the Forward Capacity Auction may submit a New Capacity Offer indicating the quantity of capacity that the Project Sponsor would commit to provide from the resource during the Capacity Commitment Period at that round's prices. A New Capacity Offer shall be defined by the submission of one to five prices, each strictly less than the Start-of-Round Price but greater than or equal to the End-of-Round Price, and an associated quantity in the applicable Capacity Zone. Each price shall be expressed in units of dollars per kilowatt-month to an accuracy of at most three digits to the right of the decimal point, and each quantity shall be expressed in units of MWs to an accuracy of at most three digits to the right of the decimal point. A New Capacity Offer shall imply a supply curve indicating quantities offered at all of that round's prices, pursuant to the convention of Section III.13.2.3.2(a)(iii).

(ii) If the Project Sponsor of a New Generating Capacity Resource, New Import Capacity Resource that is backed by a single new External Resource and that is associated with an investment in transmission that increases New England's import capability, New Import Capacity Resource that is associated with an Elective Transmission Upgrade, or New Demand Capacity Resource elects to offer in a Forward Capacity Auction, the Project Sponsor must offer the resource's full FCA Qualified Capacity at the Forward Capacity Auction Starting Price in the first round of the auction. A New Capacity Offer for a resource may in no event be for greater capacity than the resource's full FCA Qualified Capacity at any price. A New Capacity Offer for a resource may not be for less capacity than the resource's ~~Economic Minimum Limit~~ Rationing Minimum Limit at any price, except where the New Capacity Offer is for a capacity quantity of zero.

(iii) Let the Start-of-Round Price and End-of-Round Price for a given round be P_S and P_E , respectively. Let the m prices ($1 \leq m \leq 5$) submitted by a Project Sponsor for a modeled Capacity Zone be p_1, p_2, \dots, p_m , where $P_S > p_1 > p_2 > \dots > p_m \geq P_E$, and let the associated quantities submitted for a New Capacity Resource be q_1, q_2, \dots, q_m . Then the Project Sponsor's supply curve, for all prices strictly less than P_S but greater than or equal to P_E , shall be taken to be:

$$S(p) = \begin{cases} q_0, & \text{if } p > p_1, \\ q_1, & \text{if } p_2 < p \leq p_1, \\ q_2, & \text{if } p_3 < p \leq p_2, \\ \dots & \dots, \\ q_m, & \text{if } p \leq p_m. \end{cases}$$

where, in the first round, q_0 is the resource's full FCA Qualified Capacity and, in subsequent rounds, q_0 is the resource's quantity offered at the lowest price of the previous round.

(iv) Except for Renewable Technology Resources and except as provided in Section III.13.2.3.2(a)(v), a New Capacity Resource may not include any capacity in a New Capacity Offer during the Forward Capacity Auction at any price below the resource's New Resource Offer Floor Price. The amount of capacity included in each New Capacity Offer at each price shall be included in the aggregate supply curves at that price as described in Section III.13.2.3.3.

(v) Capacity associated with a New Import Capacity Resource (other than a New Import Capacity Resource that is backed by a single new External Resource and that is associated with an investment in transmission that increases New England's import capability or a New Import Capacity Resource that is associated with an Elective Transmission Upgrade) shall be automatically included in the aggregate supply curves as described in Section III.13.2.3.3 at prices at or above the resource's offer prices (as they may be modified pursuant to Section III.A.21.2) and shall be automatically removed from the aggregate supply curves at prices below the resource's offer prices (as they may be modified pursuant to Section III.A.21.2), except under the following circumstances:

In any round of the Forward Capacity Auction in which prices are below the Dynamic De-List Bid Threshold, the Project Sponsor for a New Import Capacity Resource (other than a New Import Capacity Resource that is backed by a single new External Resource and that is associated

with an investment in transmission that increases New England's import capability or a New Import Capacity Resource that is associated with an Elective Transmission Upgrade) with offer prices (as they may be modified pursuant to Section III.A.21.2) that are less than the Dynamic De-list Bid Threshold may submit a New Capacity Offer indicating the quantity of capacity that the Project Sponsor would commit to provide from the resource during the Capacity Commitment Period at that round's prices. Such an offer shall be defined by the submission of one to five prices, each less than the Dynamic De-list Bid Threshold (or the Start-of-Round Price, if lower than the Dynamic De-list Bid Threshold) but greater than or equal to the End-of-Round Price, and a single quantity associated with each price. Such an offer shall be expressed in the same form as specified in Section III.13.2.3.2(a)(i) and shall imply a curve indicating quantities at all of that round's relevant prices, pursuant to the convention of Section III.13.2.3.2(a)(iii). The curve may not increase the quantity offered as the price decreases.

(b) **Bids from Existing Capacity Resources**

(i) Static De-list Bids, Permanent De-list Bids, Retirement De-list Bids, and Export Bids from Existing Generating Capacity Resources, Existing Import Capacity Resources, and Existing Demand Capacity Resources, as finalized in the qualification process or as otherwise directed by the Commission shall be automatically bid into the appropriate rounds of the Forward Capacity Auction, such that each such resource's FCA Qualified Capacity will be included in the aggregate supply curves as described in Section III.13.2.3.3 until any Static De-list Bid, Permanent De-list Bid, Retirement D-list Bid, or Export Bid clears in the Forward Capacity Auction, as described in Section III.13.2.5.2, and is removed from the aggregate supply curves. In the case of a Commission-approved Permanent De-list Bid or Commission-approved Retirement De-list Bid at or above the Forward Capacity Auction Starting Price, or where a Permanent De-list Bid or Retirement De-list Bid is subject to an election under Section III.13.1.2.4.1(a), the resource's FCA Qualified Capacity will be reduced by the quantity of the de-list bid (unless the resource was retained for reliability pursuant to Section III.13.1.2.3.1.5.1) and the Permanent De-list Bid or Retirement De-list Bid shall not be included in the Forward Capacity Auction. Permanent De-list Bids and Retirement De-list Bids subject to an election under Section III.13.1.2.4.1(a) or Section III.13.1.2.4.1(b) shall not be included in the Forward Capacity Auction and shall be treated according to Section III.13.2.3.2(b)(ii). In the case of a Static De-list Bid, if the Market Participant revised the bid pursuant to Section III.13.1.2.3.1.1, then the revised bid shall be used in place of the submitted bid; if the Market Participant withdrew the bid pursuant to Section

III.13.1.2.3.1.1, then the capacity associated with the withdrawn bid shall be entered into the auction pursuant to Section III.13.2.3.2(c). If the amount of capacity associated with Export Bids for an interface exceeds the transfer limit of that interface (minus any accepted Administrative De-List Bids over that interface), then the set of Export Bids associated with that interface equal to the interface's transfer limit (minus any accepted Administrative De-List Bids over that interface) having the highest bid prices shall be included in the auction as described above; capacity for which Export Bids are not included in the auction as a result of this provision shall be entered into the auction pursuant to Section III.13.2.3.2(c).

(ii) For Permanent De-List Bids and Retirement De-List Bids, the ISO will enter a Proxy De-List Bid into the appropriate rounds of the Forward Capacity Auction in the following circumstances: (1) if the Lead Market Participant has elected pursuant to Section III.13.1.2.4.1(a) to retire the resource or portion thereof, the resource has not been retained for reliability pursuant to Section III.13.1.2.3.1.5.1, the price specified in the Commission-approved de-list bid is less than the Forward Capacity Auction Starting Price, and the Internal Market Monitor has found a portfolio benefit pursuant to Section III.A.24; or (2) if the Lead Market Participant has elected conditional treatment pursuant to Section III.13.1.2.4.1(b), the resource has not been retained for reliability pursuant to Section III.13.1.2.3.1.5.1, and the price specified in the Commission-approved de-list bid is less than the price specified in the de-list bid submitted by the Lead Market Participant and less than the Forward Capacity Auction Starting Price. The Proxy De-List Bid shall be non-rationable and shall be equal in price and quantity to, and located in the same Capacity Zone as, the Commission-approved Permanent De-List Bid or Commission-approved Retirement De-List Bid, and shall be entered into the appropriate rounds of the Forward Capacity Auction such that the capacity associated with the Proxy De-List Bid will be included in the aggregate supply curves as described in Section III.13.2.3.3 until the Proxy De-List Bid clears in the Forward Capacity Auction, as described in Section III.13.2.5.2, and is removed from the aggregate supply curves. If the Lead Market Participant has elected conditional treatment pursuant to Section III.13.1.2.4.1(b), the resource has not been retained for reliability pursuant to Section III.13.1.2.3.1.5.1, and the Commission-approved Permanent De-List Bid or Commission-approved Retirement De-List Bid is equal to or greater than the de-list bid submitted by the Lead Market Participant, no Proxy De-List Bid shall be used and the Commission-approved de-list bid shall be entered in the Forward Capacity Auction pursuant to Section III.13.2.3.2(b)(i).

(iii) For purposes of this subsection (b), if an Internal Market Monitor-determined price has been established for a Static De-List Bid and the associated resource's capacity is pivotal pursuant to Sections III.A.23.1 and III.A.23.2, then (unless otherwise directed by the Commission) the lower of the Internal Market Monitor-determined price and any revised bid that is submitted pursuant to Section III.13.1.2.3.1.1 will be used in place of the initially submitted bid; provided, however, that if the bid was withdrawn pursuant to Section III.13.1.2.3.1.1, then the capacity associated with the withdrawn bid shall be entered into the auction pursuant to Section III.13.2.3.2(c). If an Internal Market Monitor-determined price has been established for an Export Bid and the associated resource's capacity is pivotal pursuant to Sections III.A.23.1 and III.A.23.2, then the Internal Market Monitor-determined price (or price directed by the Commission) will be used in place of the submitted bid.

Any Static De-List Bid for ambient air conditions that has not been verified pursuant to Section III.13.1.2.3.2.4 shall not be subject to the provisions of this subsection (b).

(c) **Existing Capacity Resources Without De-List or Export Bids and Self-Supplied FCA Resources.** Each Existing Generating Capacity Resource, Existing Import Capacity Resource, and Existing Demand Capacity Resource without a Static De-List Bid, a Permanent De-List Bid, a Retirement De-List Bid, an Export Bid or an Administrative Export De-List Bid in its Existing Capacity Qualification Package, and each existing Self-Supplied FCA Resource shall be automatically entered into each round of the Forward Capacity Auction at its FCA Qualified Capacity, such that the resource's FCA Qualified Capacity will be included in the aggregate supply curves as described in Section III.13.2.3.3, except where such resource, if permitted, submits an appropriate Dynamic De-List Bid, as described in Section III.13.2.3.2(d). Each new Self-Supplied FCA Resource shall be automatically entered into each round of the Forward Capacity Auction at its designated self-supplied quantity at prices at or above the resource's New Resource Offer Floor Price, such that the resource's designated self-supply quantity will be included in the aggregate supply curves as described in Section III.13.2.3.3.

(d) **Dynamic De-List Bids.** In any round of the Forward Capacity Auction in which prices are below the Dynamic De-List Bid Threshold, any Existing Generating Capacity Resource, Existing Import Capacity Resource, or Existing Demand Capacity Resource (but not any Self-Supplied FCA Resources) may submit a Dynamic De-List Bid at prices below the Dynamic De-List Bid Threshold. Such a bid shall be defined by the submission of one to five prices, each less than the Dynamic De-List Bid Threshold (or the Start-of-Round Price, if lower than the Dynamic De-List Bid Threshold) but greater than or equal to

the End-of-Round Price, and a single quantity associated with each price. Such a bid shall be expressed in the same form as specified in Section III.13.2.3.2(a)(i) and shall imply a curve indicating quantities at all of that round's relevant prices, pursuant to the convention of Section III.13.2.3.2(a)(iii). The curve may in no case increase the quantity offered as the price decreases. A dynamic De-List Bid may not offer less capacity than the resource's ~~Economic Minimum Limit~~ Rationing Minimum Limit at any price, except where the amount of capacity offered is zero. All Dynamic De-List Bids are subject to a reliability review as described in Section III.13.2.5.2.5, and if not rejected for reliability reasons, shall be included in the round in the same manner as Static De-List Bids as described in Section III.13.2.3.2(b). Where a resource elected pursuant to Section III.13.1.1.2.2.4 or Section III.13.1.4.1.1.2.7 to have the Capacity Supply Obligation and Capacity Clearing Price continue to apply after the Capacity Commitment Period associated with the Forward Capacity Auction in which the offer clears, the capacity associated with any resulting Capacity Supply Obligation may not be subject to a Dynamic De-List Bid in subsequent Forward Capacity Auctions for Capacity Commitment Periods for which the Project Sponsor elected to have the Capacity Supply Obligation and Capacity Clearing Price continue to apply. Where a Lead Market Participant submits any combination of Dynamic De-List Bid, Static De-List Bid, Export Bid, and Administrative Export De-List Bid for a single resource, none of the prices in a set of price-quantity pairs associated with a bid may be the same as any price in any other set of price-quantity pairs associated with another bid for the same resource.

(e) **Repowering.** Offers and bids associated with a resource participating in the Forward Capacity Auction as a New Generating Capacity Resource pursuant to Section III.13.1.1.1.2 (resources previously counted as capacity resources) shall be addressed in the Forward Capacity Auction in accordance with the provisions of this Section III.13.2.3.2(e). The Project Sponsor shall offer such a New Generating Capacity Resource into the Forward Capacity Auction in the same manner and pursuant to the same rules as other New Generating Capacity Resources, as described in Section III.13.2.3.2(a). As long as any capacity is offered from the New Generating Capacity Resource, the amount of capacity offered is the amount that the auctioneer shall include in the aggregate supply curve at the relevant prices, and the quantity of capacity offered from the associated Existing Generating Capacity Resource shall not be included in the aggregate supply curve. If any portion of the New Generating Capacity Resource clears in the Forward Capacity Auction, the associated Existing Generating Capacity Resource shall be permanently de-listed as of the start of the associated Capacity Commitment Period. If at any price, no capacity is offered from the New Generating Capacity Resource, then the auctioneer shall include capacity from the associated Existing Generating Capacity Resource at that price, subject to any bids submitted and accepted in the qualification process for that Existing Generating Capacity Resource pursuant to Section III.13.1.2.5.

Bids submitted and accepted in the qualification process for an Existing Generating Capacity Resource pursuant to Section III.13.1.2.5 shall only be entered into the Forward Capacity Auction after the associated New Generating Capacity Resource is fully withdrawn (that is, the Forward Capacity Auction reaches a price at which the resource's New Capacity Offer is zero capacity), and shall only then be subject to the reliability review described in Section III.13.2.5.2.5.

(f) **Conditional Qualified New Resources.** Offers associated with a resource participating in the Forward Capacity Auction as a Conditional Qualified New Resource pursuant to Section III.13.1.1.2.3(f) shall be addressed in the Forward Capacity Auction in accordance with the provisions of this Section III.13.2.3.2(f). The Project Sponsor shall offer such a Conditional Qualified New Resource into the Forward Capacity Auction in the same manner and pursuant to the same rules as other New Generating Capacity Resources, as described in Section III.13.2.3.2(a). An offer from at most one resource at a Conditional Qualified New Resource's location will be permitted to clear (receive a Capacity Supply Obligation for the associated Capacity Commitment Period) in the Forward Capacity Auction. As long as a positive quantity is offered at the End-of-Round Price in the final round of the Forward Capacity Auction by the resource having a higher queue priority at the Conditional Qualified New Resource's location, as described in Section III.13.1.1.2.3(f), then no capacity from the Conditional Qualified New Resource shall clear. If at any price greater than or equal to the End-of-Round Price in the final round of the Forward Capacity Auction, zero quantity is offered from the resource having higher queue priority at the Conditional Qualified New Resource's location, as described in Section III.13.1.1.2.3(f), then the auctioneer shall consider capacity offered from the Conditional Qualified New Resource in the determination of clearing, including the application of Section III.13.2.7.

(g) **Mechanics.** Offers and bids that may be submitted during a round of the Forward Capacity Auction must be received between the starting time and ending time of the round, as announced by the auctioneer in advance. The ISO at its sole discretion may authorize a participant in the auction to complete or correct its submission after the ending time of a round, but only if the participant can demonstrate to the ISO's satisfaction that the participant was making reasonable efforts to complete a valid offer submission before the ending time of the round, and only if the ISO determines that allowing the completion or correction will not unreasonably disrupt the auction process. All decisions by the ISO concerning whether or not a participant may complete or correct a submission after the ending time of a round are final.

III.13.2.5.2.3. Dynamic De-List Bids.

A Dynamic De-List Bid clears in the Forward Capacity Auction (does not receive a Capacity Supply Obligation for the associated Capacity Commitment Period) if the Capacity Clearing Price is less than or equal to the price specified in the bid, except possibly as a result of the Capacity Rationing Rule described in Section III.13.2.6. If more Dynamic De-List Bids are submitted at a price than are needed to clear the market, such Dynamic De-List Bids shall be cleared pro-rata, but in no case less than a resource's ~~Economic Minimum Limit~~ Rationing Minimum Limit.

III.13.2.6. Capacity Rationing Rule.

Except for Dynamic De-List Bids, Export Bids, and offers from New Import Capacity Resources that are subject to rationing pursuant to Section III.13.1.3.5.8 and Existing Import Capacity Resources that are subject to rationing pursuant to Section III.13.1.3.3.A, offers and bids in the Forward Capacity Auction must clear or not clear in whole, unless the offer or bid specifically indicates that it may be rationed. A resource may elect to be rationed to ~~either its Economic Minimum Limit or a level above its Economic Minimum Limit. These levels are submitted~~ Rationing Minimum Limit pursuant to Sections III.13.1.1.2.2.3 and III.13.1.2.1.2. Offers from New Import Capacity Resources and Existing Import Capacity Resources will not be rationed where such rationing would violate any applicable physical minimum flow requirements on the associated interface. Export Bids may elect to be rationed generally, but regardless of such election will always be subject to potential rationing where the associated external interface binds. If more Dynamic De-List Bids are submitted at a price than are needed to clear the market, the bids shall be cleared pro-rata, subject to honoring the ~~Economic Minimum Limit~~ Rationing Minimum Limit of the resources. Where an offer or bid may be rationed, such rationing may not result in procuring an amount of capacity that is below the associated resource's ~~Economic Minimum Limit~~ Rationing Minimum Limit.



memo

To: NEPOOL Markets Committee
From: Andrew Gillespie
Date: July 17-19, 2018
Subject: FCA Rationing Limit

The ISO is requesting a vote on the FCA Rationing Limit proposal. This proposal addresses the concern raised by NEPGA that in the Forward Capacity Auction (FCA), a generator may be awarded a Capacity Supply Obligation (CSO) amount that is less than the MW quantity inherent in the submitted de-list bid price if the generator's Dynamic De-List Bid is rationed.

The proposal addresses this concern by providing Market Participants the flexibility to specify for a generator a Rationing Minimum Limit for use in the FCA. Under the proposal, the new defined term 'Rationing Minimum Limit' basically re-purposes and replaces the current Economic Minimum Limit parameter used for generating resources that are new and existing in the relevant sections of Market Rule 1. With this change, the magnitude of the CSO amount awarded in the FCA to a generator can be directly associated with a specific MW quantity inherent in the de-list price.

The specific proposal for the committee's consideration today has been presented in the meeting dates outlined below.

- March 6, 2018, agenda item #8 (NEPGA) [2018-03-06 MC A08 The Unilateral Rationing of Dynamic De-list Bids: A Proposal to Allow A Market Participant to Decide Whether Its De-list Bid is Rationable](#)
- April 10, 2018, agenda item #5 (NEPGA) [2018-04-10 MC A05 Involuntary Rationing of Dynamic De-List Bids: A Proposal to Allow a Market Participant to Decide Whether Its De-List Bid is Rationable](#)
- May 8-9, 2018, agenda item #3 (NEPGA) [2018-05-08 and 2018-05-09 MC A03 A Proposal to Allow a Market Participant to Reflect Capacity Resource "Lumpiness" in a Dynamic De-list Bid](#)
- June 6-7, 2018, agenda item #11 (ISO)
 - [2018-06-06 and 2018-06-07 MC A11 Forward Capacity Auction Rationing Limit - Revision 1](#)
 - [2018-06-06 and 2018-06-07 MC A11 Tariff Redlines - Forward Capacity Auction Rationing Limit](#)

Forward Capacity Auction Rationing Limit



*Previously known as New England Power
Generators Association (NEPGA) FCM Dynamic
De-List Bid Rationing proposal*

Andrew Gillespie

(413) 540-4088

AGILLESPIE@ISO-NE.COM



Forward Capacity Auction Rationing Limit

WMPP ID:
126

Proposed Effective Date: October 2018

- **Genesis:** NEPGA's *FCM Dynamic De-List Bid Rationing* proposal which was presented to the Markets Committee (MC) at its March 6, 2018, April 10, 2019, and May 9, 2018 meetings
- **Issue:** "A rationed de-list bid can cause a resource to assume a CSO in a quantity less than that inherent in the supply offer price" – *NEPGA's MC presentation, May 9, 2018, slide 3*
- Today:
 - Review the problem and associated auction basics
 - Review the proposal
 - Review the proposed Tariff language

Problem Summary

In the Forward Capacity Auction (FCA) a generator may be awarded a Capacity Supply Obligation (CSO) amount that is less than the MW quantity inherent in the submitted de-list bid price when/if the generator's Dynamic De-List Bid is rationed

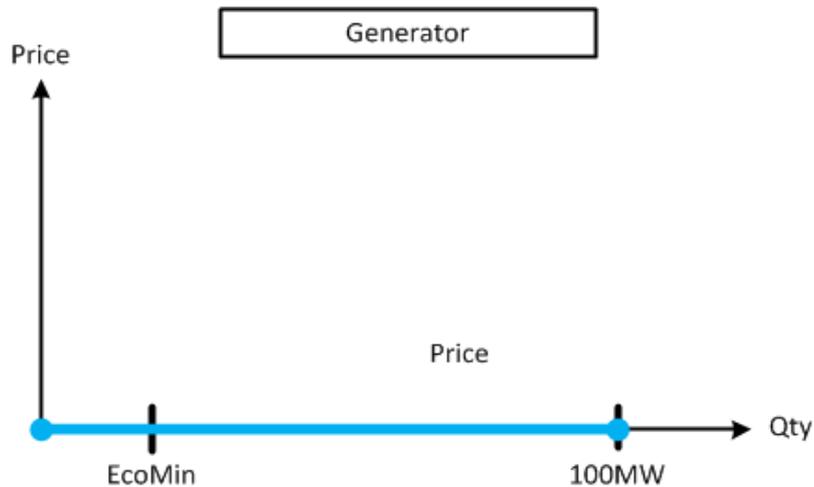


BACKGROUND

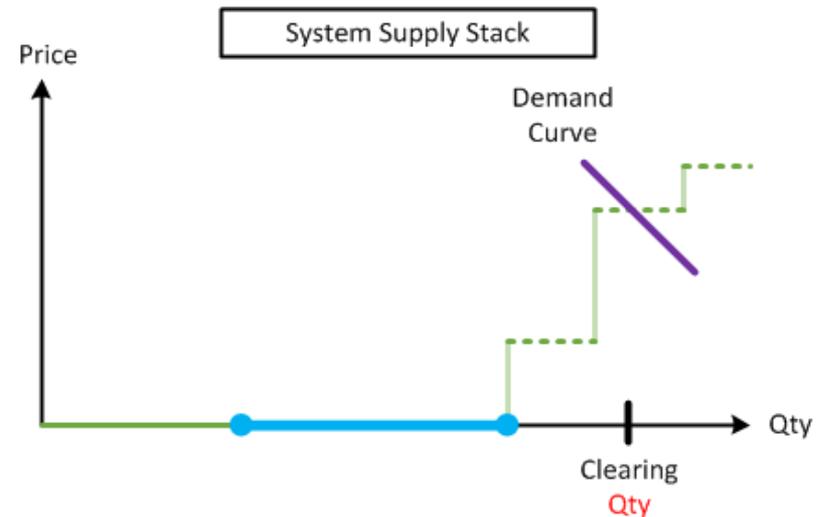
- *Rationing Dynamic De-List Bids vs. Non-rationable (lumpy) supply segments*

Supply in the Dynamic Price Range

First, consider the supply segment for a resource without a Dynamic De-List Bid



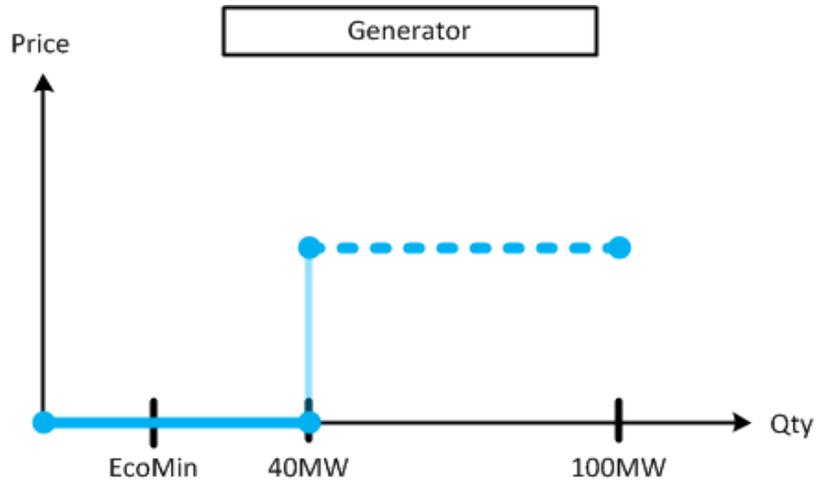
End-of-round Standing Quantity = 100MW
Dynamic De-List Bid = 0MW
Economic Minimum Limit = 20MW



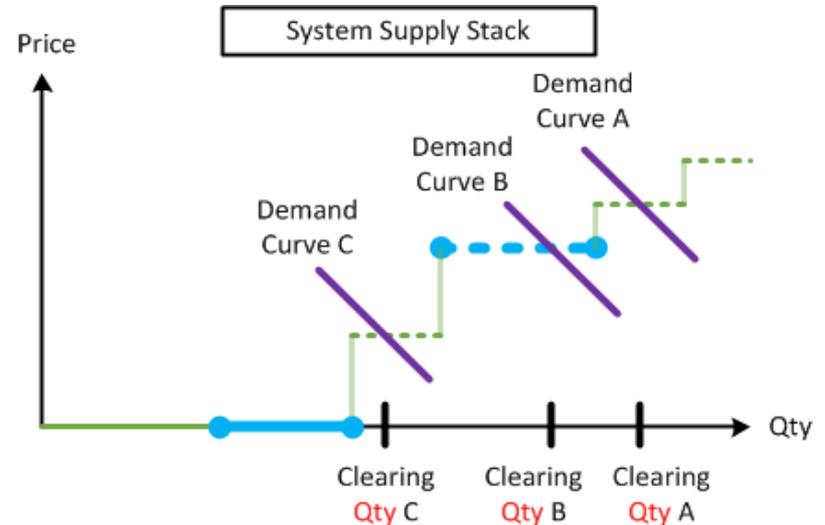
CSO = 100MW

Supply in the Dynamic Price Range - *continued*

Next, consider the same resource with a Dynamic De-List Bid for part of the resource



End-of-round Standing Quantity = 40MW
Dynamic De-List Bid = 60MW
Economic Minimum Limit = 20MW

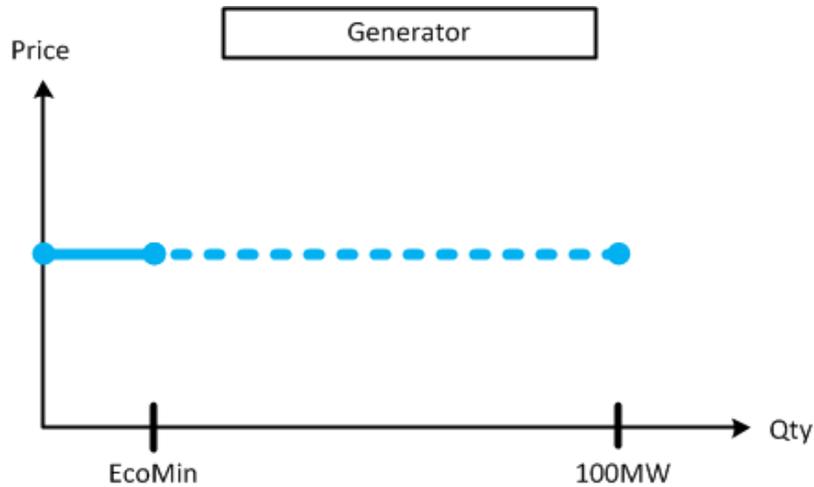


Possible Outcomes:

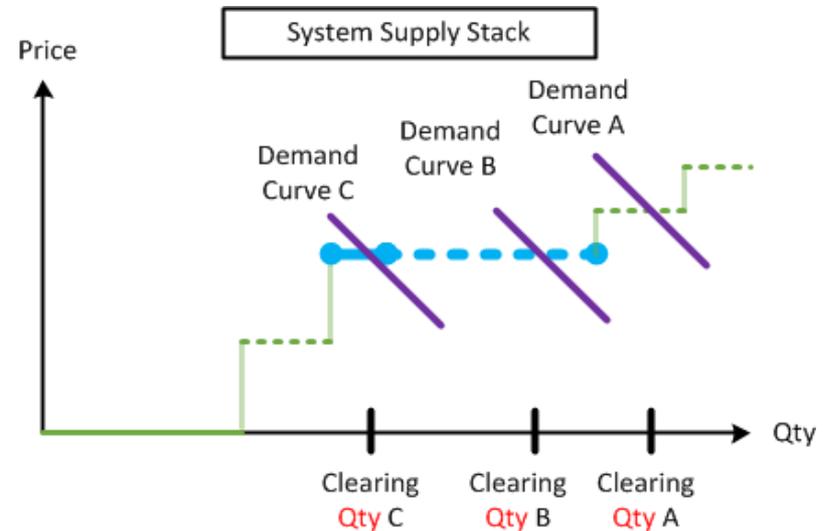
- Case A: CSO = 100MW
- Case B: **Rationable** $40\text{MW} < \text{CSO} < 100\text{MW}$
- Case C: Resource CSO = 40MW

Supply in the Dynamic Price Range - *continued*

Now, consider the same resource with a Dynamic De-list Bid for the entire resource



End-of-round Standing Quantity = 0MW
Dynamic De-List Bid = 100MW
Economic Minimum Limit = 20MW



Possible Outcomes:

Case A: CSO = 100MW

Case B: **Rationable** $20\text{MW} < \text{CSO} < 100\text{MW}$

Case C: **Non-rationable supply segment (lumpy)**

CSO = 0MW or 20MW (see Appendix)

PROPOSAL

Proposal

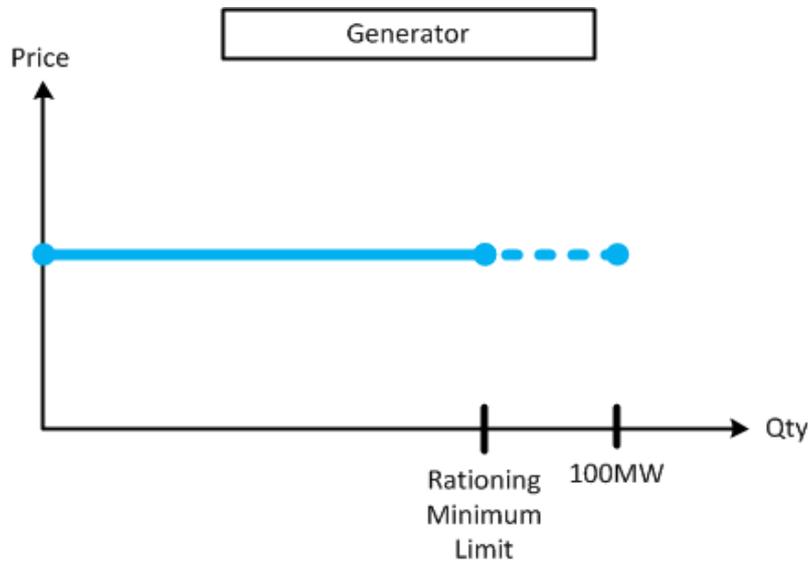
Allow Market Participants to specify for a generator a Rationing Minimum Limit for use in the FCA

- To accomplish this, the current Economic Minimum Limit parameter for generating resources ('new' and 'existing') will be re-purposed (re-labeled) and called a generator's Rationing Minimum Limit
- Functionally there is no change in implementation; whether this parameter is called the Economic Minimum Limit or Rationing Minimum Limit, the function of this parameter in the FCA is the same
- This change is not to be confused with nor intended to affect the current and continued use of the term Economic Minimum Limit as it pertains to the physical attributes of the generator, participation in the energy markets, or the offer requirements of a generator with a CSO

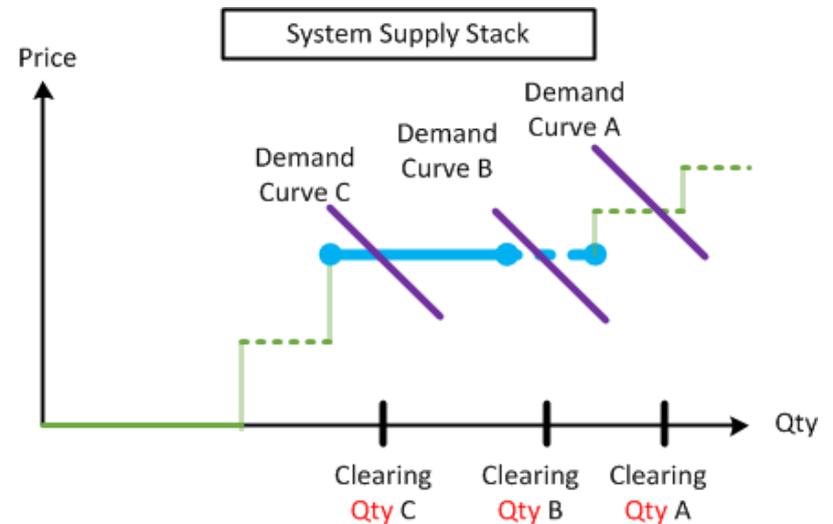


Non-rationable Supply Segments

Consider the previous resource and Dynamic De-list Bid example for the entire resource (Slide 7), but now with a participant-specified rationing limit



End-of-round Standing Quantity = 0MW
 Dynamic De-List Bid = 100MW
Rationing Minimum Limit = **80MW**



Possible Outcomes:
 Case A; CSO = 100MW
 Case B; **Rationable** $80\text{MW} < \text{CSO} < 100\text{MW}$
 Case C; **Non-rationable supply segment (lumpy)**
 $\text{CSO} = 0\text{MW}$ or **80MW** (see Appendix)

Proposal - Mechanics

- During each FCA qualification cycle beginning with the window within which a Market Participant may update a generator's attributes, through the Static De-List Bid finalization window, participants will be able to modify a generator's Rationing Minimum Limit
 - This will allow Market Participants to modify the Rationing Minimum Limit if, for example, a submitted Static De-List Bid is withdrawn before the finalization window closes
- The current validations related to the submittal of a de-list bid will remain; a de-list bid may not result in a resource's CSO being less than its Rationing Minimum Limit (unless zero)
- The Rationing Minimum Limit will be the value of record in FCTS until modified by a Market Participant; Rationing Minimum Limits will not be re-set or purged after each FCA

Implementation

- With the implementation of this change each generator's Economic Minimum Limit of record will become the generator's Rationing Minimum Limit of record, until and unless modified by the Market Participant
- The Rationing Minimum Limit will not apply to demand bids or supply offers in the substitution auction



PROPOSED TARIFF CHANGES

Section I – General Terms and Conditions

Tariff Section	Tariff Change	Reason for Change
I.2.2 Definitions	Added <u>Rationing Minimum Limit</u>	New defined term

Section III.13 – The Forward Capacity Market

Tariff Section	Tariff Change	Reason for Change
III.13.1.1.2.1	Delete required submittal of Economic Minimum Limit	The Economic Minimum Limit is not necessary for the FCA (<i>i.e.</i> , not needed in FCTS)
III.13.1.1.2.2.3 & III.13.2.6	Modify language to conform to single rationing limit	There is just the one rationing limit now.
III.13.1.2.1.1	Added Rationing Minimum Limit specification	Specification of an existing generator's Rationing Minimum Limit

Section III.13 – The Forward Capacity Market

Continued

Tariff Section	Tariff Change	Reason for Change
III.13.1.2.3.1.1, III.13.1.2.3.1.3, III.13.1.2.3.1.4, III.13.1.2.3.1.5, III.13.2.3.2, III.13.2.5.2.3, & III.13.2.6.	Replace 'Economic Minimum Limit' with 'Rationing Minimum Limit'	Re-purpose (re-label) this resource auction parameter

CONCLUSION

Conclusion

Re-purposing the current *Economic* Minimum Limit parameter for generators, calling it instead the *Rationing* Minimum Limit:

- Solves the problem: The magnitude of the CSO amount awarded in the FCA to a generator can be directly associated with a specific MW quantity inherent in the de-list price
- Leverages current functionality: Whether this parameter is called the Economic Minimum Limit or Rationing Minimum Limit, the function of this parameter in the FCA is the same



Stakeholder Schedule

Stakeholder Committee and Date	Scheduled Project Milestone
Markets Committee March 6, 2018	NEPGA presentation
Markets Committee April 10, 2018	NEPGA presentation
Markets Committee May 8, 2018	NEPGA presentation
Markets Committee June 6-7, 2018	ISO proposal discussion and Tariff language presentation

Previous NEPGA Presentations

- March 6, 2018 Markets Committee Meeting: agenda item #8: [2018-03-06 MC A08 The Unilateral Rationing of Dynamic De-list Bids: A Proposal to Allow A Market Participant to Decide Whether Its De-list Bid is Rationable](#)
- April 10, 2018 Markets Committee Meeting: agenda item #5: [2018-04-10 MC A05 Involuntary Rationing of Dynamic De-List Bids: A Proposal to Allow a Market Participant to Decide Whether Its De-List Bid is Rationable](#)
- May 8, 2018 Markets Committee Meeting, agenda item #3: [2018-05-08 and 2018-05-09 MC A03 A Proposal to Allow a Market Participant to Reflect Capacity Resource “Lumpiness” in a Dynamic De-list Bid](#)

Questions

Andrew Gillespie

(413) 540-4088 | AGILLESPIE@ISO-NE.COM



Acronyms Used in this Presentation

- CSO – Capacity Supply Obligation
- FCA – Forward Capacity Auction
- DCA – Descending Clock Auction
- MCE – Market Clearing Engine
- FCTS – Forward Capacity Tracking System



APPENDIX

The objective function of the Market Clearing Engine in the Forward Capacity Auction

Clearing the Forward Capacity Auction

The Forward Capacity Auction can be conceptually thought of as having two parts:

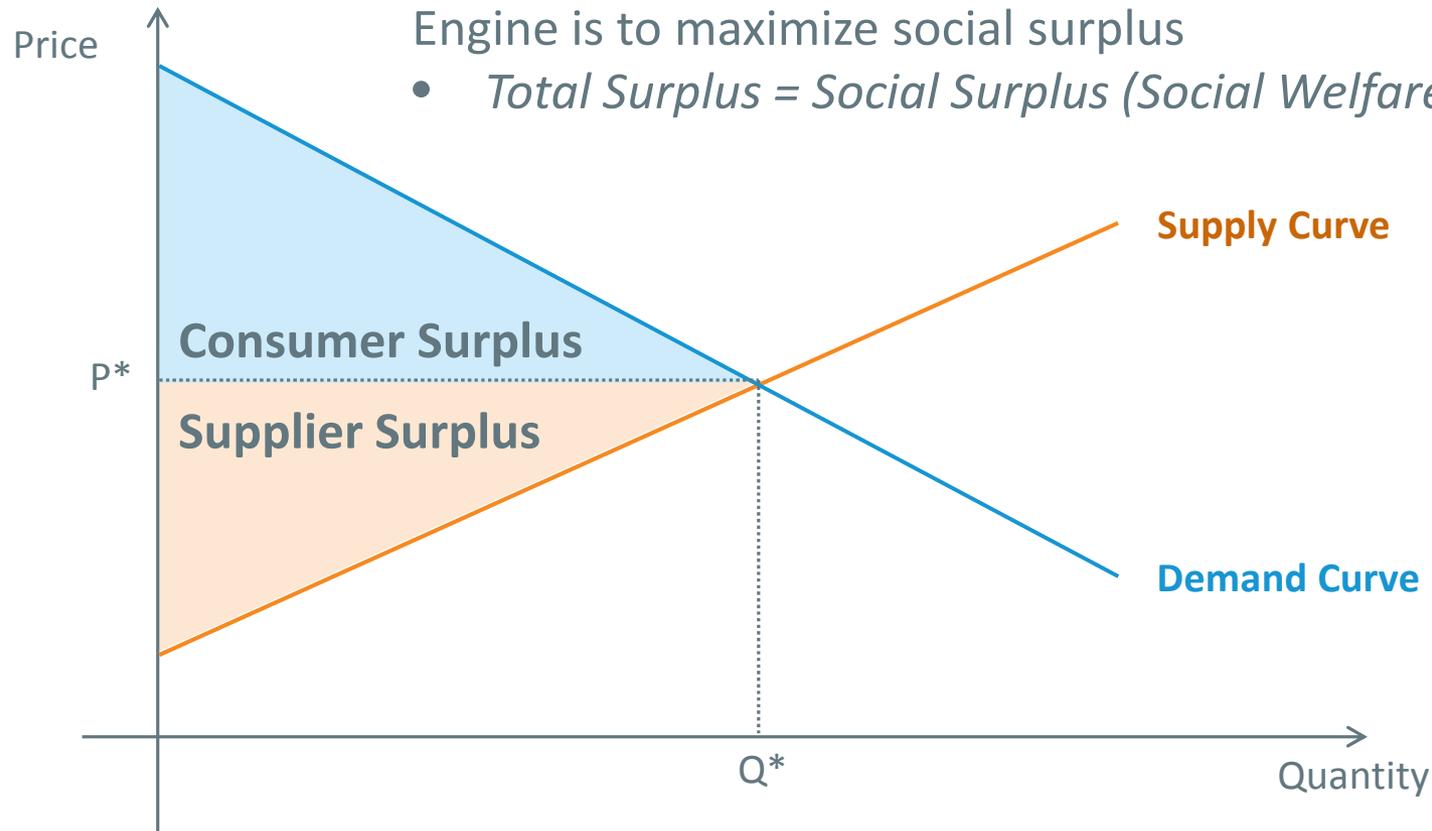
- **The Descending Clock Auction (DCA):** A bid/offer collection mechanism
- **The Market Clearing Engine (MCE):** An optimization algorithm that determines final clearing prices and resource CSO awards within imposed limits and constraints
 - The MCE determines the optimal bids/offers to clear to meet the demand as represented by the demand curve (*i.e.*, what to clear to maximize social surplus)
 - The MCE also considers the zone configuration and may use rationing to clear the auction, and/or break ties if two or more supply segments are at the same price



Maximizing Social Surplus

The objective function of the Market Clearing Engine is to maximize social surplus

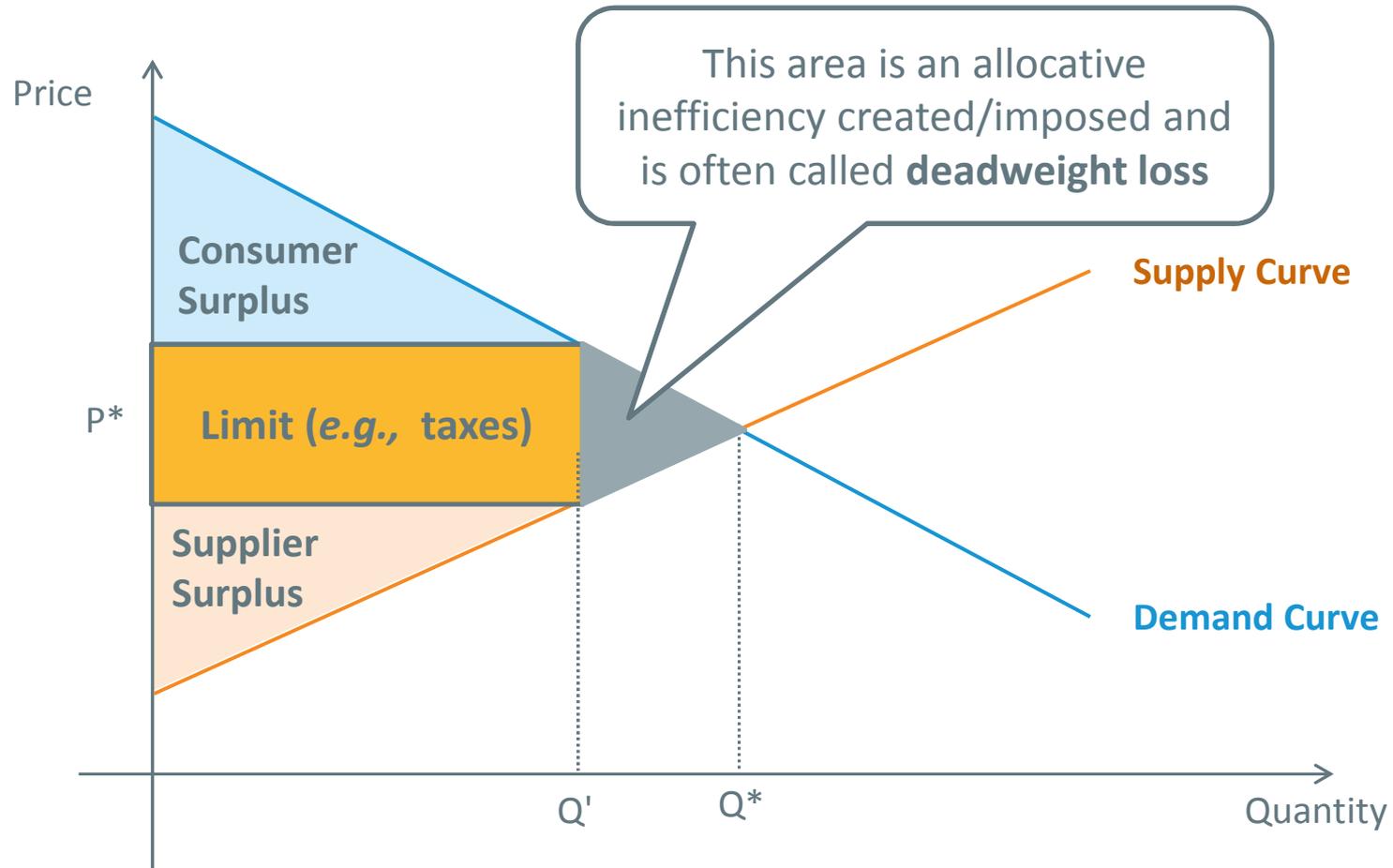
- *Total Surplus = Social Surplus (Social Welfare)*



$$\text{Total Surplus} = \text{Supplier Surplus} + \text{Consumer Surplus}$$

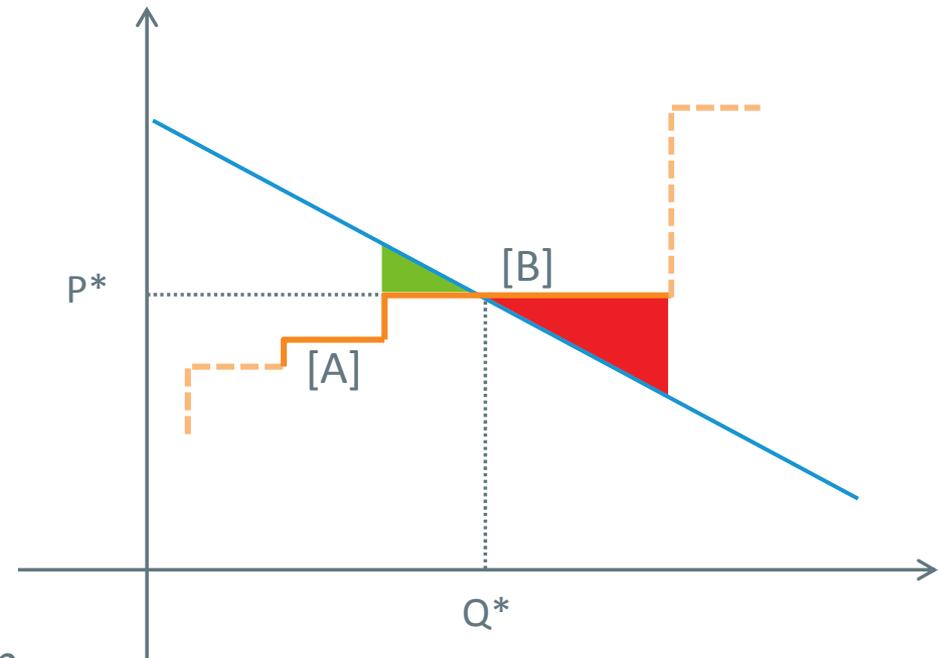
Understanding Deadweight Loss

- *Deadweight Reduces Social Surplus*



Minimizing Deadweight Loss

- **Clear non-rationable (*lumpy*) supply segment [B]**
Yields a lower clearing price and more cleared capacity, but creates a deadweight loss (represented by red triangle)
- **Do not clear non-rationable (*lumpy*) supply segment [B]**
Yields a higher clearing price and less cleared capacity, but also creates a deadweight loss (represented by green triangle)



The optimal choice in this example is to maximize social welfare by minimizing the deadweight loss – so segment [B] would only clear if the green triangle (left) is larger than the red triangle (right)

MEMORANDUM

TO: NEPOOL Transmission Committee

FROM: Eric Runge, NEPOOL Counsel

DATE: July 17, 2018

RE: Participants Committee Vote on Settlement-Related Formula Rate Revisions in EL16-19-000

At the July 24 teleconference meeting of the Participants Committee you will be asked to vote on whether NEPOOL supports revisions to the ISO New England Inc. Transmission, Markets and Services Tariff (“ISO-NE Tariff”) to reflect a settlement among certain settling parties in the formula rate proceeding in EL16-19-000 (the “Formula Rate Proceeding”). The Transmission Committee will vote on the settlement-related revisions on the same day prior to the Participants Committee. The same-day votes on the settlement revisions to the ISO-NE Tariff in the Formula Rate Proceeding (the “Formula Rate Revisions”) have been scheduled as a matter of efficiency, because the Participants Committee was already scheduled to meet that day for another matter, and to avoid an extra meeting on August 3.

Respecting the requirements of Rule 606 of the FERC’s Rules of Practice and Procedure requiring that settlement discussions be maintained in confidence, discussion and voting on this matter will take place in Executive Session jointly with the Transmission Committee. Provided in a separate confidential memo to the Participants Committee is background and a high-level description of the settlement in the Formula Rate Proceeding, a description of the Formula Rate Revisions, and a brief discussion of process.

The Participants Committee can use the following form of resolution to consider the Formula Rate Revisions.

RESOLVED, that the Participants Committee supports the Formula Rate Revisions, as recommended by the Transmission Committee and as distributed to the Participants Committee for its July 24, 2018 meeting, together with such [changes agreed to at the meeting and such] non-material changes as the Transmission Committee Chair and Vice-Chair may approve.