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| NPRR Number | [872](http://www.ercot.com/mktrules/issues/nprr872) | NPRR Title | Modifying the SASM Shadow Price Cap |
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| Date | | May 9, 2018 | |
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| Submitter’s Information | | | |
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| Market Segment | | Cooperative | |

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| Comments |

LCRA submits the following modifications to the proposed language in Nodal Protocol Revision Request (NPRR) 872. This revised language adjusts the values detailed under paragraph (1)(e) to create a demand curve for each Ancillary Service instead of having an aggregate demand curve for all Ancillary Services.

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| Revised Cover Page Language |

None.

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| Revised Proposed Protocol Language |

***6.4.9.2.2 SASM Clearing Process***

(1) SASM procurement requirements are:

(a) ERCOT shall procure the additional quantity required of each Ancillary Service, less the quantity self-arranged, if applicable. ERCOT may not buy more of one Ancillary Service in place of the quantity of a different service.

(b) ERCOT shall select Ancillary Service Offers submitted by QSEs, such that:

(i) For each Ancillary Service being procured, other than Reg-Down, ERCOT shall select offers that minimize the overall offer-based cost of these Ancillary Services. For each of these Ancillary Services, if selection of the Resource offer exceeds ERCOT’s required Ancillary Service quantity, then ERCOT shall select a portion of the Resource offer to meet the Ancillary Service quantity required. For Load Resources offering a block of capacity, ERCOT shall ignore the offer unless the entire block can be accepted.

(ii) For Reg-Down, ERCOT shall procure required quantities by selecting capacity in ascending order starting from the lowest-priced offer. ERCOT shall continue this selection process until the required quantity of Reg-Down is obtained. If selection of the Resource offer exceeds ERCOT’s required Ancillary Service quantity, then ERCOT shall select a portion of the Resource offer to meet the Ancillary Service quantity required. For Load Resources offering a block of capacity, ERCOT shall ignore the offer unless the entire block can be accepted.

(iii) For each Ancillary Service Offer from an Off-Line Resource considered in a SASM, the offer will be awarded only if it can meet the start-up time of the Resource based on the current and the historical operational state of the Resource. If the start-up time cannot be met for the first hour of a block offer, then the whole block offer shall not be considered.

(c) If a QSE has submitted offers of the same Resource capacity for more than one Ancillary Service (sometimes called linked offers), ERCOT may not select any one part of that Resource capacity to provide more than one Ancillary Service in the same Operating Hour. ERCOT may, however, select part of that Resource capacity to provide one Ancillary Service and another part of that capacity to provide a different Ancillary Service in the same Operating Hour.

(d) The SASM MCPC for each hour for each service is the Shadow Price for the corresponding Ancillary Service constraint for the hour as determined by the SASM algorithm.

(e) In no case shall the maximum Shadow Price for each Ancillary Service in the SASM exceed the Value of Lost Load (VOLL); a monotonically increasing sloped curve shall be created using the values described below:

(i) When the sum of RRS requirements is met by 75% or more, the Shadow Price shall be the lesser of five times the Day-Ahead clearing price for RRS and the VOLL.

(ii) When the sum of RRS is met by more than 50% but less than 75%, the Shadow Price shall be the greater of $2000/MWh or five times the Day-Ahead clearing price for RRS.

(iii) When the sum of RRS requirements is less than or equal to 50%, the Shadow Price shall be set to the VOLL.

(iv) When the sum of Reg-Up requirements is met by 75% or more, the Shadow Price shall be the lesser of five times the Day-Ahead clearing price for Reg-Up and the VOLL.

(v) When the sum of Reg-Up requirements is met by more than 50% but less than 75%, the Shadow Price shall be the greater of $2000/MWh or five times the Day-Ahead clearing price for Reg-Up.

(vi) When the sum of Reg-Up requirements is less than or equal to 50%, the Shadow Price shall be set to the VOLL.

(vii) When the sum of Non-Spin requirements is met by 75% or more, the Shadow Price shall be the lesser of five times the Day-Ahead clearing price for Non-Spin and the VOLL.

(viii) When the sum of Non-Spin requirements is met by more than 50% but less than 75%, the Shadow Price shall be the greater of $2000/MWh or five times the Day-Ahead clearing price for Non-Spin.

(ix) When the sum of Non-Spin requirements is less than or equal to 50%, the Shadow Price shall be set to the greater of five times the Day-Ahead clearing price for Non-Spin and VOLL divided by two.

(x) When the sum of Reg-Down requirements is met by 75% or more, the Shadow Price shall be the lesser of five times the Day-Ahead clearing price for Reg-Down and the VOLL.

(xi) When the sum of Reg-Down requirements is met by more than 50% but less than 75%, the Shadow Price shall be the greater of $2000/MWh or five times the Day-Ahead clearing price for Reg-Down.

(xii) When the sum of Reg-Down requirements is less than or equal to 50%, the Shadow Price shall be set to the VOLL.