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| NPRR Number | [872](http://www.ercot.com/mktrules/issues/NPRR872) | NPRR Title | Modifying the SASM Shadow Price Cap |
| Date Posted | April 17, 2018 |
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| Requested Resolution  | Normal |
| Nodal Protocol Sections Requiring Revision  | 6.4.9.2.2, SASM Clearing Process |
| Related Documents Requiring Revision/Related Revision Requests | None |
| Revision Description | This Nodal Protocol Revision Request (NPRR) modifies the Shadow Price cap for Ancillary Services in Supplemental Ancillary Service Markets (SASMs) to five times the awarded price in the Day-Ahead Market (DAM) up to a maximum of the Value Of Lost Load (VOLL) based on the amount of total Ancillary Services requirements that are being met.  |
| Reason for Revision |  Addresses current operational issues. Meets Strategic goals (tied to the [ERCOT Strategic Plan](http://www.ercot.com/content/news/presentations/2013/ERCOT%20Strat%20Plan%20FINAL%20112213.pdf) or directed by the ERCOT Board). Market efficiencies or enhancements Administrative Regulatory requirements Other: (explain)*(please select all that apply)* |
| Business Case | SASMs sometimes clear at extremely high prices which are not driven by market fundamentals but are caused by insufficient Ancillary Service Offers. These high prices harm Market Participants who do not have sufficient fleet capacity to cover their obligation during Forced Outages, Maintenance Outages, or other unforeseen circumstances.SASMs force Market Participants to maintain a risk-based contingency that could be offered into the SASM market if the risks were appropriately aligned with system conditions. Thus, the current SASM market creates undue liquidity and price risks.Creating a demand curve for the SASM would allow Market Participants to offer more capacity into the Ancillary Services with more confidence, creating a more liquid market. |

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| Proposed Protocol Language Revision |

***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 total sum of all Ancillary Services requirements (i.e., RRS + Reg-Up + Non-Spin) is met by 75% or more, the Shadow Price shall be the lesser of five times the Day-Ahead clearing price for the corresponding Ancillary Service and the VOLL.

(ii) When the total sum of all Ancillary Services requirements (i.e., RRS + Reg-Up + Non-Spin) 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 the corresponding Ancillary Service.

(iii) When the total sum of all Ancillary Services requirements (i.e., RRS + Reg-Up + Non-Spin) is less than or equal to 50%, the Shadow Price shall be set to the VOLL.