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| Key Topic Concept (KTC) Number | 15 | KTC Title | Additional Items  15.1: Proxy Process for ESR Energy Bids/Offers and Ancillary Service Offers |
| Date Posted | | April 3, 2020 | |
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| Executive Summary | | This KTC describes the proxy process for ESRs for the Combo Model era and the Single Model era. | |
| Recommendation Description | | This KTC describes the following:  Item 1:   1. For the Combo Model era: 2. Proxy Energy Bid process for the Controllable Load Resource (CLR) side of an ESR 3. Proxy Energy Offer process for the Generation Resource side of an ESR 4. For the Single Model era, the proxy Energy Bid/Offer Curve process for ESRs 5. For the Single Model era, the proxy Ancillary Service Offer process for ESRs | |
| BESTF Discussion | | On 02/25/2020, ERCOT staff presented a presentation on the concepts of the proxy process.  On 03/13/20, the BESTF reached consensus on KTC 15. | |
| TAC Action Requested | | BESTF plans to request at the 04/01/20 TAC meeting a vote to approve KTC 15. | |
| TAC Action Summary | | On 4/1/20, TAC approved KTC 15, Item 1. | |

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| Proposed KTC Recommendation Language |

# *Key Topic/Concept recommendation Language for TAC Approval*

None.

# *Key Topic/Concept recommendation Language Previously APProved by tac*

04/01/20 TAC Meeting (Consensus from 03/13/20 BESTF meeting):

Item 1:

1. The existing proxy Energy Offer and Bid creation process for Generators and CLRs were not developed with ESRs in mind and do not account for the duration-limited nature of ESRs. ERCOT’s Market Management System (MMS) should be updated to use a different proxy Energy Offer/Bid creation process for ESRs in both the Combo Model and Single Model eras, where the intent of the proxy process is to dispatch the Resource to a neutral level for charging and discharging (e.g., 0 MW).
2. In the Combo Model era, the MMS should be updated to use the following logic to create proxy Energy Bids for ESR CLRs and proxy Energy Offers for ESR Generation Resources:
   1. Proxy Energy Bid for ESR CLRS:
      1. If no Energy Bid submitted, SCED will create a proxy Energy Bid from LPC to MPC at -$250/MWh.
      2. If a partial Energy Bid is submitted, SCED will create a proxy Energy Bid as described below:

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| **MW** | **Price (per MWh)** |
| LPC (if less than lowest MW of RTM Energy Bid) to lowest MW in RTM Energy Bid curve | Price associated with the lowest MW in submitted RTM Energy Bid curve |
| RTM Energy Bid curve | RTM Energy Bid curve |
| Maximum MW of RTM Energy Bid curve to MPC (if more than Maximum MW of RTM Energy Bid) | -$250.00 |

* 1. Proxy Energy Offer for ESR Generators
     1. If no Energy offer or Output Schedule submitted, SCED will create a proxy Energy Offer from LSL to HSL at the SWCAP.
     2. If a partial Energy Offer is submitted, SCED will create a proxy Energy Offer as described below:

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| **MW** | **Price (per MWh)** |
| LSL (if less than lowest MW of RTM Energy Offer) to lowest MW in RTM Energy Offer curve | Price associated with the lowest MW in submitted RTM Energy Offer curve |
| RTM Energy Offer curve | RTM Energy Offer curve |
| Maximum MW of RTM Energy Offer curve to HSL(if more than Maximum MW of RTM Energy Offer) | SWCAP |

* + 1. If only an Output Schedule is submitted, SCED will create a proxy Energy Offer as described below:

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| **MW** | **Price (per MWh)** |
| HSL | SWCAP |
| Output Schedule | SWCAP |
| Output Schedule | -$250.00 |
| LSL | -$250.00 |

1. In the Single Model era, the MMS should be updated to use the following logic to create proxy Energy Bid/Offer Curves for ESRs:
   1. If no Bid/Offer or Output Schedule submitted, SCED will create a proxy Energy Bid/Offer Curve at -$250/MWh from LSL to 0 MW and at the RTSWCAP from 0 MW to HSL.
   2. If a partial Energy Bid/Offer is submitted, SCED will create a proxy Energy Bid/Offer Curve as described below:

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| **Scenario** | **MW Segment** | **Price (per MWh)** |
| HSL MW and the highest MW point on the Energy Bid/Offer are both greater than or equal to zero,  and,  HSL is greater than the highest MW in submitted Energy Bid/Offer Curve | From highest MW point on submitted Energy Bid/Offer Curve to HSL MW | RTSWCAP in effect |
| HSL MW is greater than or equal to zero,  and,  the highest MW point on the Energy Bid/Offer is less than zero | From highest MW point on submitted Energy Bid/Offer Curve to 0 MW | Price associated with the highest MW in submitted Energy Offer Curve |
| From 0 MW to HSL | RTSWCAP in effect |
| HSL is less than zero and is also greater than the highest MW in submitted Energy Bid/Offer Curve | From highest MW point on submitted Energy Bid/Offer Curve to HSL MW | Price associated with the highest MW in submitted Energy Offer Curve |
| Energy Bid/Offer Curve |  | Energy Bid/Offer Curve |
| LSL MW and the lowest MW point on the Energy Bid/Offer Curve are both greater than or equal to zero,  and,  LSL is less than the lowest MW in submitted Energy Bid/Offer Curve | From LSL to lowest MW point on submitted Energy Bid/Offer Curve | Price associated with the lowest MW in submitted Energy Offer Curve |
| LSL MW is less than zero,  and,  the lowest MW point on the Energy Bid/Offer Curve is greater than zero | From LSL to 0 MW | -$250.00 |
| From 0 MW to lowest MW point on submitted Energy Bid/Offer Curve | Price associated with the lowest MW in submitted Energy Offer Curve |
| LSL and the lowest MW point on the Energy Bid/Offer Curve are both less than or equal to zero,  and,  LSL is lower than the lowest MW point on the Energy Bid/Offer Curve | From LSL to lowest MW point on submitted Energy Bid/Offer Curve | -$250.00 |

* 1. If only an Output Schedule is submitted, SCED will create a proxy Energy Bid/Offer Curve as described below:

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| --- | --- |
| **MW** | **Price (per MWh)** |
| HSL | RTSWCAP |
| Output Schedule | RTSWCAP |
| Output Schedule | -$250.00 |
| LSL | -$250.00 |

1. The proxy Energy Offer/Bid Curve process applies only to Real-Time SCED, not DAM.

In the Single Model era, the MMS shall use the logic described in RTC KP1.3 (Offering and Awarding Ancillary Services in Real-Time) to create a Proxy AS Offer for an ESR. The MMS shall allow an ESR to have ESR-specific proxy offer price floors for Ancillary Service sub-types other than the Proxy offer price floors in place for Generation Resources and Load Resources, if necessary. MMS shall make these ESR-specific price floors as configurable parameters. These ESR-specific Ancillary Service proxy offer price floor parameter settings will be approved by TAC and posted on the MIS Public Area together with other non-ESR Ancillary Service proxy offer price floor parameter settings..

# *Key Topic/Concept recommendation Language IN DISCUSSION AT BESTF*

None.

# *Future Decision Points and Issues for Developing Key topic/Concept recommendation Language*

None identified at this time.

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| Applicable Protocol Section(s) |  |
| Impacted System(s) / Application(s) |  |