

MMS:

Market Submission Validation Rules

**Version 1.4**

Document Revisions

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Version | Description | Author(s) |
| April 10, 2019 | 1.0 | Changed name from “Explanation of Market Submission Items” to match MIS name; updated document to match current ERCOT logo/template. Substantive changes include adding PTP bid limits per QSE effective for Operating Day 4/11/19; and a clarification of the process for new settlement points in the credit evaluation. | C. Bivens |
| August 9, 2019 | 1.1 | Updated rules based on full implementation of NPRR925, SCR796, and SCR798 | C. Bivens |
| March 25, 2020 | 1.2 | Update CP limit for DAM PTP Obligation Bid IDs of SCR798 to 2,000 | A. Moreno |
| July 13, 2020 | 1.3 | Update CP limit for DAM PTP Obligation Bid IDs of SCR798 to 1,500 | A. Moreno |
| January 27, 2021 | 1.4 | Update AS Trade, AS Self-Arranged to reflect introduction of new NSPIN from NPRR1093 | N. Smith |

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Scope

This document is intended to help Qualified Scheduling Entities (QSEs) understand the validation rules as referenced in protocol section 4.2.5, ERCOT Notice of Validation Rules for the Day-Ahead, and it describes data items that are submitted on a transactional basis, when these items are submitted, and how each submission affects previous submissions and inputs to each MMS market application. This document does not describe in detail how each item is used in each MMS market application. This is a living document, wherein periodic updates and corrections may occur.

Offers

Three-Part Supply Offer

A Three-Part Supply Offer is submitted by a QSE that represents a specific Resource. A Three-Part Supply Offer submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* Resource ID (includes Mode/Configuration)
* Combined Cycle Plant Name (required for Combined Cycle Resources only)
* Expiration Date/Time
* One or more sets of data applicable to separate periods of time in the day:
* Start-Up Offer ($)
	+ - Hot Start-Up Price
		- Intermediate Start-Up Price
		- Cold Start-Up Price
		- Start Date/Hour
		- End Date/Hour
* Minimum-Energy Offer ($/MWh)
	+ - Start Date/Hour
		- End Date/Hour
* Energy Offer Curve
	+ - Up to 10 price ($/MWh) and quantity (MW) pairs
		- Exclusive/Inclusive indicator
		- Reason Code (optional) (“OUT” – forced outage, “FUEL” – fuel curtailment, “DSCM” – day-ahead self-commitment)
		- Start Date/Hour
		- End Date/Hour
* Percentage of FIP and Percentage of FOP for EOC
	+ - Start Date/Hour
		- End Date/Hour
* Percentage of FIP and Percentage of FOP for Minimum-Energy/Start-Up Offers
	+ - Start Date/Hour
		- End Date/Hour

An Energy Offer Curve may also be submitted by itself, in which case all of the above elements are required except the Start-Up Offer, Minimum-Energy Offer, Percentage of FIP for Minimum-Energy/Start-Up, and Percentage of FOP for Minimum-Energy/Start-Up Offers.

The following is an example of data contained within one Three-Part Supply Offer submission:

|  |  |  |  |
| --- | --- | --- | --- |
| **QSE Short Name** | **Resource ID** | **Combined Cycle Plant Name** | **Expiration Date/Time** |
| QABC | GENERAL\_CT1 | GENERAL\_CC | 3/31/2008 00:00 |
|  |  |  |  |  |
| **Energy Offer Curve** |  |  |  |  |  |  |  |  |
| **Start Date/Hour** | **End Date/Hour** | **Quantity** | **Price** | **Quantity** | **Price** | **…** | **Quantity** | **Price** |
| 3/30/2008 HE 1 | 3/30/2008 HE 7 | 10MW | $10  | 15MW | $20 | … | 100MW | $80 |
| 3/30/2008 HE 8 | 3/30/2008 HE 18 | 5MW | $10  | 10MW | $15  | … | 100MW | $100  |
| 3/30/2008 HE 19 | 3/30/2008 HE 24 | 15MW | $12  | 20MW | $20 | … | 120MW | $50 |
| **EOC Fuel Percentages** |  | **%FIP** | **%FOP** |  |  |  |  |  |
| 3/30/2008 HE 1 | 3/30/2008 HE 24 | 100 | 0 |  |  |  |  |  |
| **S/U Costs** |  | **Hot** | **Int.** | **Cold** |  |  |  |  |
| 3/30/2008 HE 1 | 3/30/2008 HE 12 | $500 | $1000 | $2000 |  |  |  |  |
| 3/30/2008 HE 13 | 3/30/2008 HE 24 | $800 | $1200 | $2500 |  |  |  |  |
| **M/E Costs** |  | **Cost** |  |  |  |  |  |  |
| 3/30/2008 HE 1 | 3/30/2008 HE 24 | $18 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **S/U and M/E Fuel Percentages** |  | **%FIP** | **%FOP** |  |  |  |  |  |
| 3/30/2008 HE 1 | 3/30/2008 HE 24 | 80 | 20 |  |  |  |  |  |

A QSE may submit a Three-Part Supply Offer starting fourteen days before the Operating Day specified in the offer, upon which it will be subject to a validation process as described in the Validation section. If a valid Three-Part Supply Offer had been previously submitted for the same Resource ID for the same time period, the new valid offer will overwrite the old offer for the hours specified in the new offer. Any portions of the old offer containing hours not specified in the new offer will be maintained.

THREE-PART SUPPLY OFFER EXAMPLE

 *The following table shows an example for a valid original offer starting at hour 3 and ending at hour 7 for a typical Operating Day, and the system response to a new valid offer for hour 6 to hour 8 (an overlapping time period). The final time period of the offer is from hour 3 to hour 8. Later examples in this document are interpreted similarly. The numbers ‘50’ and ‘100’ represent all appropriate data that is part of that submission type*.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Hour** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Original Offer |  |  | 50 | 50 | 50 | 50 | 50 |  |
| New Offer |  |  |  |  |  | 100 | 100 | 100 |
| Final Offer |  |  | 50 | 50 | 50 | 100 | 100 | 100 |

A QSE may modify or cancel any offer any time after passing initial validation until the DAM submission deadline (normally 1000). A valid Three-Part Supply Offer submission will automatically cancel any Output Schedule for that Resource for that same time period that had been previously entered.

Any valid Three-Part Supply Offer will be considered by the DAM and DRUC if it is submitted before the DAM submission deadline for the following Operating Day and passes all validation tests. Three-Part Supply Offers for the following Operating Day may not be submitted or modified after the DAM submission deadline until DRUC results are posted.

In each DRUC and HRUC, a Three-Part Supply Offer will be created if none has been submitted by the QSE for any Resource that is shown in the COP as offline and available. The Startup and Minimum Energy offers are based on 150% of verifiable costs, if available for that Resource; otherwise they are based on 150% of resource category generic costs. If a valid Three-Part Supply Offer had been submitted prior to the DAM, the same Startup and Minimum Energy costs are used in DRUC, regardless of the expiration time of the offer. These costs from the Three-Part Supply Offer are also used in HRUC until the offer is cancelled or expired. The Three-Part Supply Offer may be updated in the Adjustment Period for any hour if that hour hasn’t been DAM or RUC-committed (with the exceptions set forth in the protocols and described in the next paragraph), in which case the most recently submitted offer is used by HRUC. A proxy Energy Offer Curve as described in the Nodal Protocols is created for RUC use for all available units, whether or not there is a submitted Energy Offer Curve.

During the Adjustment Period, a Three-Part Supply Offer for a Resource for an hour that was not DAM-committed or RUC-committed may be submitted, modified, or cancelled.

During the Adjustment Period, the MMS will accept a valid Three-Part Supply Offer submission for a Resource if the COP status for that Resource shows ONTEST, ONOS, ONOSREG, ONDSRREG or ONDSR or there is no COP for that hour, but will also send a warning message to the QSE stating that there is a conflict between the Three-Part Supply Offer and the COP Resource Status.

Once the Adjustment Period closes for a particular hour in the operating day, a Three-Part Supply Offer for that “closed” hour cannot be submitted, updated, or cancelled.

If the Resource is On-line according to Resource Status telemetry, SCED will use the Energy Offer Curve from the Three-Part Supply Offer.

AS Offer

An AS Offer is submitted by a QSE that represents a specific Resource. An AS Offer submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* Resource ID (includes Mode/Configuration)
* Combined Cycle Plant Name (required for Combined Cycle Resources only)
* Noncontrollable Load flag (true/false indicating UFR or CLR, required for Load Resources only)
* Expiration Date/Time
* One or more sets of data applicable to separate periods of time in the day:
* Start Date/Hour
* End Date/Hour
* Up to five capacity amounts (in MW) for an AS category (“Online Reserves”- includes RRS, Reg-Up, On-line Non-spin; “Regulation-Down”; and “Non-Spin Offline” – Resources must be qualified to provide the AS Type and Load Resources qualified for Non-spin cannot submit Non-Spin Offline)
* A price associated with each AS type for each capacity amount, if offered for that capacity
* Fixed/Variable quantity block indicator, for each capacity amount (only Load Resources can indicate Fixed)
* Multi-hour Indicator

The following is an example of data contained within one AS Offer submission:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
| **QSE Short Name** | **Resource ID** | **Combined Cycle Plant Name** | **Expiration Date/Time** |
| QABC | GENERAL\_CT1 | GENERAL\_CC | 3/31/2008 00:00 |
|  |  |  |  |  |  |  |
| **Start Date/Hour** | **End Date/Hour** | **Multi-Hr Indicator** | **AS Category** | **Quantity** | **Reg-Up** | **RRS** | **Online NS** |
| 3/30/2008 HE 1 | 3/30/2008 HE 7 | True | ONRES | 10 MW | $10 | $5 | $1 |
|  |  |  |  |  |  | … | $100  |
|  |  |  |  |  |  | … | $50 |
| 3/30/2008 HE 8 | 3/30/2008 HE 18 | True | ONRES | 20 MW | $10 |  |  |
| 3/30/2008 HE 19 | 3/30/2008 HE 24 | True | ONRES | 5 MW | $5 |  |  |

A QSE may submit an AS Offer starting fourteen days before the Operating Day specified in the offer, upon which it will be subject to a validation process as described in the Validation section. AS Offers have a multi-hour indicator which determines whether the offer is split up into multiple individual hour-long offers or not. When the multi-hour indicator is set to ‘false,’ each hour is treated as a separate offer and therefore each hour may be awarded at different quantities. When the multi-hour indicator is set to ‘true,’ all hours of the offer are awarded at the same quantity. Multi-hour blocks must contain contiguous hours.

If a valid AS Offer had been previously submitted for the same Resource for the same time period, the new valid offer will overwrite the old offer for the hours specified in the new offer. However, if the existing AS Offer(s) were part of a multi-hour block, the first and last hours specified by the new AS Offer must match the first and last hours of the existing offer exactly, or else the new offer will be rejected. If different multi-hour blocks are desired, the existing multi-hour block must first be cancelled for the appropriate hours before submitting the new offer.

MULTI-HOUR BLOCK AS OFFER EXAMPLE 1

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Hour** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Original multi-hour Offer |  |  | 50 | 50 | 50 | 50 | 50 |  |
| New Offer (either multi-hour blocked or not) |  |  |  |  |  | 100 | 100 | 100 |
| New Offer rejected since the first and last hours do not match the existing offer; original offer remains |  |  | 50 | 50 | 50 | 50 | 50 |  |

MULTI-HOUR BLOCK AS OFFER EXAMPLE 2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Hour** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Original multi-hour Offer |  |  | 50 | 50 | 50 | 50 | 50 |  |
| New Offer (either multi-hour blocked or not) |  |  | 100 | 100 | 100 | 100 | 100 |  |
| New Offer is accepted since the first and last hours match the existing offer |  |  | 100 | 100 | 100 | 100 | 100 |  |

MULTI-HOUR BLOCK AS OFFER EXAMPLE 3

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Hour** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Original Offer (no multi-hour blocks) |  |  | 50 | 50 | 50 | 50 | 50 |  |
| New Offer  |  |  |  |  |  | 100 | 100 | 100 |
| Final Offer |  |  | 50 | 50 | 50 | 100 | 100 | 100 |

A QSE may cancel any offer any time after passing initial validation until the DAM submission deadline.

Any valid AS Offer which is submitted before the DAM submission deadline and passes all the validations will be considered by the DAM. ERCOT may extend the deadline for AS Offers for use in the DAM if ERCOT determines that there are insufficient AS Offers in the DAM to fulfill the AS Plan.

After DAM, AS Offers for SASM are automatically created based on unawarded amounts from the DAM AS Offers (as long as the offer has not expired). MMS will automatically inactivate the AS Offer at the offer expiration date and time specified by the QSE. QSEs can also modify/resubmit their AS Offers during the Adjustment Period for use in a SASM should it be needed.

After the DAM submission deadline, new AS Offers may be submitted even if there was not an offer submitted for that Resource, AS category and time period before the DAM submission deadline for the DAM. This offer will go through the Phase One and Phase Two validations as described in the Validation section, and will be considered by any SASM that occurs after that offer is validated, if SASM is executed.

Uncleared valid AS Offers existing in the MMS will be used in any subsequent SASM that is executed, with the exception that if QSEs are given notice that a SASM will occur and the SASM is delayed to allow QSEs to provide additional AS Self-Arrangement, any AS Offer submitted between the time of the notice and time of SASM execution will not be used in that particular SASM; however, AS offers that are in place prior to the SASM may be modified and will be considered in the SASM per the conditions in the nodal protocols.

MMS will automatically inactivate the AS Offer at the offer expiration date and time specified by the QSE.

Incremental/Decremental Energy Offer Curve

An Incremental and Decremental Energy Offer Curve is submitted for a DSR in addition to the Output Schedule by the QSE that represents the DSR. An Incremental / Decremental Energy Offer Curve submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* Resource ID (includes Mode/Configuration)
* Combined Cycle Plant Name (required for Combined Cycle Resources only)
* Type Indicator (“INC” or “DEC”)
* Expiration Date/Time
* One or more sets of data applicable to separate periods of time in the day:
* Energy Offer Curve (Incremental and Decremental)
	+ - Up to 10 price ($/MWh) and quantity (MW) pairs
		- Start Date/Hour
		- End Date/Hour
* Percentage of FIP and Percentage of FOP
	+ - Start Date/Hour
		- End Date/Hour

A QSE may submit an Incremental and/or Decremental Energy Offer Curve starting fourteen days before the hours specified in the offer, upon which it will be subject to a validation process as described in the Validation section. The first MW quantity must equal to LRL and the last MW quantity must equal HRL for both the Incremental Energy Offer Curve and the Decremental Energy Offer Curve. Inc/Dec Energy Offer Curves must both be monotonically non-decreasing in price. An Incremental Energy Offer Curve must at all quantities be priced higher than a Decremental Energy Offer Curve for the same Resource and time period. The submission will be rejected if the above validation criteria are not met.

If the valid Incremental or Decremental Energy Offer Curves have been previously submitted for the Resource for the same time period, the new offer will overwrite the old offer for the hours specified in the new offer, using the same logic as shown in the Three-Part Supply Offer section. See the Three-Part Supply Offer section for examples.

After the end of the Adjustment Period, no new Incremental or Decremental Energy Offer Curves will be accepted for that Operating Hour, and no existing offer for the Operating Hour can be cancelled. Inc/Dec Offers are not used by any MMS process except SCED. Any valid Incremental and Decremental Energy Offer Curve stored in the MMS at the end of the Adjustment Period and the corresponding Resource’s Output Schedule will be used to create the proxy Energy Offer Curve for the Resource to be used by SCED executed during the Operating Hour if no Three-Part Supply Offer Curve is available for that hour. If a Three-Part Supply Offer exists for that hour, the Inc/Dec Offer is not used.

* The proxy Energy Offer Curve is created as follows:
* Each Incremental and Decremental Energy Offer Curve will represent monotonically increasing prices for a range of increasing MW values from LRL to HRL. The proxy Energy Offer Curve for the DSR for a particular SCED execution, based on its Output Schedule for that SCED execution, must be created as described below:

|  |  |
| --- | --- |
| **MW** | **Price (per MWH)** |
| Output Schedule MW plus 1 MW to HRL | Incremental Energy Offer Curve |
| LRL to Output Schedule MW | Decremental Energy Offer Curve |



DAM Energy-Only Offer

A DAM Energy-Only Offer is submitted by a QSE and represents the QSE’s willingness to sell energy at or above a certain price and at a certain quantity at a specific Settlement Point in the DAM. DAM Energy-Only Offers do not specify a physical Resource, but they may represent a physical Resource. DAM Energy-Only Offers can be used to submit “virtual offers,” in which the offer does not represent any physical resource. A DAM Energy-Only Offer submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* Offer ID
* Settlement Point
* Expiration Date/Time
* One or more sets of data applicable to separate periods of time in the day:
	+ Start Date/Hour
	+ End Date/Hour
	+ A fixed/variable/curve quantity indicator
	+ For a Fixed quantity: quantity (MW), and price ($/MWh)
	+ For a Variable quantity, “up to” quantity (MW), and price ($/MWh),
	+ For a curve, monotonically non-decreasing curve with up to 10 quantity (MW) and price ($/MW) pairs
	+ Multi-hour Indicator

The following is an example of data contained within one Energy-Only Offer submission:

|  |  |  |  |
| --- | --- | --- | --- |
| **QSE Short Name** | **Offer ID** | **Settlement Point** | **Expiration Date/Time** |
| QABC | 123 | LZ\_NORTH | 3/31/2008 00:00 |
|  |  |  |  |  |
| **Start Date/Hour** | **End Date/Hour** | **F/V/C** | **Multi-Hr Indicator** | **Quantity** | **Price** | **Quantity** | **Price** | **…** | **Quantity** | **Price** |
| 3/30/2008 HE 1 | 3/30/2008 HE 7 | F | True | 10 MW | $10 | n/a | n/a | ... | n/a | n/a |
| 3/30/2008 HE 8 | 3/30/2008 HE 18 | C | True | 5 MW | $10 | 10 MW | $15 | ... | 100 MW | $100 |
| 3/30/2008 HE 19 | 3/30/2008 HE 24 | V | True | 15 MW | $12 | n/a | n/a | ... | n/a | n/a |

A QSE may submit a DAM Energy-Only Offer starting fourteen days before the Operating Day specified by the offer, upon which it will be subject to a validation process as described in the Validation section. There is a limit of 35 Offer IDs per Settlement Point per QSE per Operating Day. The minimum amount for each DAM Energy-Only Offer that may be offered is one MW. DAM Energy-Only Offers have a multi-hour indicator which determines whether the offer is split up into multiple individual hour-long offers or not for fixed or variable quantity offers. When the multi-hour indicator is set to ‘false,’ each hour is treated as a separate offer and therefore each hour may be awarded at different quantities. When the multi-hour indicator is set to ‘true,’ all hours of the offer are awarded at the same quantity. Multi-hour blocks are not permitted for offers submitted as a curve. Multi-hour blocks must contain contiguous hours. If a DAM Energy-Only Offer had been previously submitted for the Settlement Point with the same offer ID, the new valid offer will overwrite the old offer for the hours specified in the new offer. Any portions of the old offer containing hours not specified in the new offer will be maintained.

If any part of the old offer(s) were part of a multi-hour block, the first and last hours specified by the new offer must match the first and last hours of the old offer exactly, or the new offer will be rejected. If different multi-hour blocks are desired under the same Offer ID, the original multi-hour block must first be cancelled for the appropriate hours before submitting the new offer. See the AS Offer section for examples of this logic.

For a quantity indicator of ‘variable’ or ‘fixed’, only one price/quantity pair may be entered. If only one price/quantity pair is entered for a ‘curve’ indicator, the offer will be treated as ‘variable.’

Energy-Only Offers are not allowed on select Resource Nodes within a Private Use Network (PUN) site. The list of excluded Resource Nodes within Private Use Network (PUN) sites are published daily as part of the report NP4-500-SG, Day-Ahead PSS/E Network Operations Model and Supporting Files with a file named as DAMmmddyyyy\_SpNb.csv, where mmddyyyy denotes the Operating Day in month day year format of the DAM study.

After the DAM submission deadline (normally 1000), no new DAM Energy-Only Offers will be accepted for the DAM for that Operating Day, and no existing valid DAM Energy-Only Offers for that Operating Day can be modified or cancelled.  Any valid DAM Energy-Only Offers maintained in the MMS at the DAM submission deadline will be considered by the DAM. DAM Energy-Only Offers are not used in any MMS process except the DAM.

Bids

PTP Obligation Bid

A PTP Obligation bid is submitted by a QSE. A PTP Obligation bid submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* Bid ID
* Source Settlement Point
* Sink Settlement Point
* One or more sets of data applicable to separate periods of time in the day:
	+ Start Date/Hour
	+ End Date/Hour
	+ Quantity (MW)
	+ Price ($/MW)
	+ Multi-hour Indicator

The following is an example of data contained within one PTP Obligation bid submission:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **QSE Short Name** | **Bid ID** | **CRR ID** | **Source Settlement Point** | **Sink Settlement Point** |
| QABC | 123 | CRR\_12345 | LZ\_NORTH | HB\_NORTH |
|  |  |  |  |  |  |  |  |
| **Start Date/Hour** | **End Date/Hour** | **Multi-Hr Indicator** | **Quantity** | **Price** |
| 3/30/2008 HE 1 | 3/30/2008 HE 7 | True | 10 MW | $10 |
| 3/30/2008 HE 8 | 3/30/2008 HE 18 | True | 10 MW | $15 |
| 3/30/2008 HE 19 | 3/30/2008 HE 24 | True | 10 MW | $10 |

A QSE may submit a PTP Obligation bid starting fourteen days before the Operating Day specified by the bid. There is a limit of 35 Bid IDs per Settlement Point source/sink pairs per QSE per Operating Day. There is also a limit of 2,500 unique Bid ID/source/sink combinations per QSE per Operating Day and a limit of 1,500 unique Bid ID/source/sink combinations per Counter-Party per Operating Day. The minimum amount for each PTP Obligation bid is one MW.

PTP Obligation bids have a multi-hour indicator which determines whether the bid is split up into multiple individual hour-long bids or not. When the multi-hour indicator is set to ‘false,’ each hour is treated as a separate bid and therefore each hour may be awarded at different quantities. When the multi-hour indicator is set to ‘true,’ all hours of the bid are awarded at the same quantity. Multi-hour blocks must contain contiguous hours. Multi-hour block are not permitted for bids submitted as a curve. If a PTP Obligation bid had been previously submitted with the same Bid ID, the new valid bid will overwrite the old bid for the hours specified in the new bid. Any portions of the old bid containing hours not specified in the new bid will be maintained. However, if the existing PTP Obligation bid was part of a multi-hour block, the first and last hours specified by the new PTP Obligation bid must match the first and last hours of the existing bid exactly, or else the new bid will be rejected. See the AS Offer section for examples of this logic. A QSE may cancel any PTP Obligation bid any time after passing the validation until the DAM submission deadline in the Day-Ahead.

A PTP Obligation bid should not contain a source Settlement Point and a sink Settlement Point that are Electrically Similar Settlement Points. A list of Electrically Similar Settlement Points is posted on the MIS.

PTP Obligation bids are not allowed to source or sink at select Resource Nodes within a Private Use Network (PUN) site. The list of excluded Resource Nodes within Private Use Network (PUN) sites are published daily as part of the report NP4-500-SG, Day-Ahead PSS/E Network Operations Model and Supporting Files with a file named as DAMmmddyyyy\_SpNb.csv, where mmddyyyy denotes the Operating Day in month day year format of the DAM study.

After the DAM submission deadline, no PTP Obligation bid will be accepted for the DAM for that Operating Day, and no existing bid can be cancelled by the QSE. Any valid PTP Obligation bid stored in the MMS at the DAM submission deadline in the Day-Ahead will be considered by the DAM. PTP Obligation bids are not used in any MMS process except DAM.

PTP Obligation Bid with Links to an Option

A PTP Obligation bid with Links to an Option (PTPLO) is submitted by a QSE representing a NOIE which is also a CRR account holder. A PTPLO submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* NOIE CRR Account Holder Short Name
* CRR ID
* Bid ID
* Source Settlement Point, which must be the source settlement point for the CRR identified by the CRR ID
* Sink Settlement Point, which must be the sink settlement point for the CRR identified by the CRR ID
* NOIE Peak Load forecast for Operating Day
* One or more sets of data applicable to separate periods of time in the day:
	+ Start Date/Hour
	+ End Date/Hour
	+ Quantity (MW), which may not exceed the amount of the CRR associated with the NOIE CRRAH
	+ Price ($/MW)
	+ Multi-hour Indicator

The following is an example of data contained within one PTPLO submission:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **QSE Short Name** | **CRRAH ID** | **Bid ID** | **CRR ID** | **Source Settlement Point** | **Sink Settlement Point** | **Peak Load Forecast** |
| QABC | XABC | 123 | CRR\_12345 | RN\_123 | LZ\_NORTH | 10 MW |
|  |  |  |  |  |  |  |  |
| **Start Date/Hour** | **End Date/Hour** | **Multi-Hr Indicator** | **Quantity** | **Price** |
| 3/30/2008 HE 1 | 3/30/2008 HE 7 | True | 10 MW | $10 |
| 3/30/2008 HE 8 | 3/30/2008 HE 18 | True | 5 MW | $10 |
| 3/30/2008 HE 19 | 3/30/2008 HE 24 | True | 15 MW | $12 |

A QSE declares a CRR for Real-Time Settlement by submitting a PTPLO into the DAM, where it will then be evaluated the same as PTP Obligation bids for purposes of DAM clearing. Only the PTP Options and PTP Options with Refund declared by NOIEs for Real-Time settlement by submitting PTPLOs will be considered in DAM clearing. If not declared, the CRR will be settled based on DAM prices.

PTPLOs for a DAM may be submitted starting fourteen days before the Operating Day specified by the offer, upon which they will be subject to a validation process as described in the Validation section. The minimum amount for each PTPLO is one-tenth of one MW. PTPLOs have a multi-hour indicator which determines whether the offer is split up into multiple individual hour-long offers or not. When the multi-hour indicator is set to ‘false,’ each hour is treated as a separate offer and therefore each hour may be awarded at different quantities. When the multi-hour indicator is set to ‘true,’ all hours of the offer are awarded at the same quantity. Multi-hour blocks must contain contiguous hours. If a PTPLO had been previously submitted with the same Bid ID, the new valid offer will overwrite the old offer for the hours specified in the new offer. Any portions of the old offer containing hours not specified in the new offer will be maintained.

If any part of the old offer(s) were part of a multi-hour block, the first and last hours specified by the new offer must match the first and last hours of the old offer exactly, or the new offer will be rejected. If different multi-hour blocks are desired, the original multi-hour block must first be cancelled for the appropriate hours before submitting the new offer. See the AS Offer section for examples of this logic.

A submitter may cancel any PTPLO any time after passing the validation until the DAM submission deadline.

After the DAM submission deadline, no PTPLO will be accepted for the next Operating Day, and no existing offer can be cancelled. Any valid PTPLO stored in the MMS at the DAM submission deadline in the Day-Ahead will be considered by the DAM.

DAM Energy Bid

A DAM Energy Bid is submitted by a QSE to buy energy in the DAM. A DAM Energy Bid is only used in the DAM. A DAM Energy Bid represents the QSE’s willingness to buy energy at or below a certain price and at a certain quantity at a specific Settlement Point in the DAM. DAM Energy Bids do not specify physical load, but they may represent physical load. DAM Energy Bids can be used to submit “virtual bids,” in which the bid does not represent any physical load. A DAM Energy Bid submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* Bid ID
* Settlement Point
* One or more sets of data applicable to separate periods of time in the day:
	+ Start Date/Hour
	+ End Date/Hour
	+ A fixed /variable/curve indicator
	+ For a Fixed quantity: quantity (MW), and price ($/MWh)
	+ For a Variable quantity, “up to” quantity (MW), and price ($/MWh),
	+ For a curve, monotonically non-increasing curve with up to 10 quantity (MW) and price ($/MW) pairs
	+ Multi-hour Indicator

Timeline of submission, validation rules, overwriting logic, and use in MMS processes for DAM Energy Bids are similar to those for DAM Energy-Only Offers. See The DAM Energy-Only Offer section for a description of these features.

RTM Energy Bid

An RTM Energy Bid is submitted by a QSE and represents the QSE’s willingness to buy energy at or below a certain price, not to exceed the System-Wide Offer Cap (SWCAP), for the Demand response capability of a Controllable Load Resource in the RTM.

An RTM Energy Bid submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* Load Resource Name
* Expiration Date/Time
* One or more sets of data applicable to separate periods of time in the day:
* Energy Bid Curve
	+ - Up to 10 price ($/MWh) and quantity (MW) pairs
		- Start Date/Hour
		- End Date/Hour

The following is an example of data contained within one RTM Energy Bid submission:

|  |  |  |
| --- | --- | --- |
| **QSE Short Name** | **Resource ID** | **Expiration Date/Time** |
| QABC | GENERAL\_LD1 | 3/31/2008 00:00 |
|  |  |  |  |  |
| **Energy Bid Curve** |  |  |  |  |  |  |  |  |
| **Start Date/Hour** | **End Date/Hour** | **Quantity** | **Price** | **Quantity** | **Price** | **…** | **Quantity** | **Price** |
| 3/30/2008 HE 1 | 3/30/2008 HE 7 | 0 MW | $300 | 15MW | $200 | … | 100MW | $100 |
| 3/30/2008 HE 8 | 3/30/2008 HE 18 | 0 MW | $400 | 10MW | $300  | … | 100MW | $100  |
| 3/30/2008 HE 19 | 3/30/2008 HE 24 | 0 MW | $300 | 20MW | $200 | … | 120MW | $100 |

For any Operating Hour, the QSE may submit or change an RTM Energy Bid in the Adjustment Period. Submissions for the Operating day after the end of the Adjustment Period for the submitted hour shall be rejected

* Bid Curves will be rejected if:
	+ prices are not entirely monotonically non-increasing
	+ any price is lower than a resource-specific floor or higher than a resource-specific cap, if a resource-specific floor or cap exists
	+ quantities are not entirely monotonically non-decreasing
	+ the first quantity is not zero MW
	+ the last quantity is not at least 0.1 MW
	+ any price is higher than the System-Wide Offer Cap.

Once the Adjustment Period closes for a particular hour in the operating day, a RTM Energy Bid for that “closed” hour cannot be submitted, updated, or cancelled.

Plans

Current Operating Plan

A Current Operating Plan, submitted by the QSE for each Resource, reflects expected operating conditions for each Resource for each hour in the Operating Day and the next seven Operating Days. Each COP submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* Resource ID
* One or more sets of data applicable to separate periods of time in the day:
* Expected Resource Status
	+ - Start Date/Hour
		- End Date/Hour
* Resource Limits
	+ - High-Sustained Limit (HSL)
		- Low-Sustained Limit (LSL)
		- High-Emergency Limit (HEL)
		- Low-Emergency Limit (LEL)
		- Start Date/Hour
		- End Date/Hour
* Ancillary Service Responsibility (MW) for:
	+ - Reg-Up
		- Reg-Down
		- Responsive Reserve Service
		- Non-Spin
		- Start Date/Hour
		- End Date/Hour

A QSE must submit a COP for the next seven days for each Resource it represents. Each QSE is also responsible for submitting a COP for its individual part of a Split Generation Resource and for each operating configuration for a Combined-cycle Resource. In case of changes in availability of any Resource, the QSE that represents the Resource should update its COP as soon as reasonably practicable, but not later than 60 minutes after the event that caused the change.

The COP for any hour can’t be updated after the end of the corresponding Adjustment Period. By 0900, a notification will be sent to the QSE of any Resource that doesn’t have a valid COP for all hours of the current Operating Day and the following day.

Once submitted, the COP will be subject to a validation process as described in the Validation section. If a COP had been previously submitted for the Resource, the new COP will overwrite the old COP for the hours specified in the new entry. Any portions of the old COP containing hours not specified in the new entry will be maintained. COPs cannot be canceled.

When COP entry is validated, warning messages are sent based on the Resource Status specified in the COP entry to remind the QSE of missing data submissions or data entry in the database which conflict with the current entry. Warning messages are sent if an Output Schedule exists for the hour for which the Resource has ON or ONREG Resource Status, or if an Energy Offer Curve is present for the hour for which the Resource has ONTEST, ONOS, ONOSREG, ONDSRREG or ONDSR Resource Status. A warning message will also be sent if a valid COP does not exist for the Operating Hour by one hour before the end of the Adjustment Period for each Operating Hour.

The data contained in COP is used in some fashion by DAM, AS Responsibility Check, RUC, COP monitor, and SASM.

DAM uses LSL and HSL to determine the limits on what can be awarded for Resource-specific offers. If a COP was not submitted, LSL and HSL are set to zero and DAM will not award Resource-specific offers. DAM also uses the COP Resource Status for the remainder of the current Operating Day to determine how long the Resource is expected to be On-line or Off-line at the beginning of the study period (the following) day, which is used to decide whether a DAM awarded start is a hot, intermediate, or cold start.

Before 1430 in the Day-Ahead or prior to the DRUC execution, whichever occurs later, the QSE must notify ERCOT, in its COP, which Resources represented by the QSE will provide the Ancillary Service necessary to meet the QSE’s Ancillary Service Supply Responsibility, specified by Resource, hour, and service type. DAM Ancillary Service awards are Resource-specific. The QSE must include those DAM AS awards in its COP, and the QSE may not change that Resource-specific AS DAM award information until after 1600. Prior to DRUC execution, the MMS shall check whether the QSE has updated the AS schedules based on the DAM results and a notification will be sent to QSEs whose AS capacity schedule specified in COP is less than DAM awarded AS for that Resource for that type of AS.

RUC uses each Resource’s COP to determine if any additional Resources must be committed, or any Resources must be decommitted, to meet forecasted load and reserves and not violate the appropriate network constraints. QSE’s acknowledge the receipt of RUC Resource commitment or decommitment Dispatch Instructions by submitting an updated COP. During the Adjustment Period, QSE should use COP to communicate to ERCOT the request to decommit a Resource for any interval that is not a RUC-Committed Interval, notification of force outage or the request to change the Resource supplying AS. This is done by updating the Resource Status or AS Responsibility in the QSE’s COP.

When a QSE updates the COP entry for a Resource, the COP Monitor alarms the ERCOT Operator of changes in the COP related to Ancillary Services, HSL/LSL and/or Resource Status changes. A QSE requests decommitment by a change from On-Line to Off-Line Available state. ERCOT shall review all requests for decommitment using the next scheduled HRUC. On detection of a change in COP for Resources providing Ancillary Services, ERCOT may review the impact on AS deliverability. If ERCOT’s evaluation of the changes to the COP shows that the AS cannot be delivered, this fact is communicated to the QSE. The QSE is then required to update the COP to reflect that the Resource will not provide the AS found to be undeliverable.

SASM uses LSL and HSL to determine the limits on what can be awarded for Resource-specific offers, and also uses Resource Status to determine what types of AS can be awarded. For instance, a Resource that indicates that it will be OFFNS (Off-line providing Non-Spin) can only be awarded Non-Spin.

Availability Plan

An Availability Plan, submitted by the QSE for Resources that are under contract for Black-Start, Reliability Must-Run, or Synchronous Condenser services, reflects expected availability of the applicable service on the Resource for each hour in the Operating Day. Each Availability Plan submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* Resource ID
* Availability Type (“BLACKSTART’, “RMR”, or “SYNCCOND”)
* One or more sets of data applicable to separate periods of time in the day:
* Availability - Available (“A”) or Unavailable (“U”)
* Start Date/Hour
* End Date/Hour

A QSE may submit an Availability Plan starting fourteen days before the Operating Day specified by the plan. A QSE must submit an Availability Plan for the appropriate service by 0600 for the following day. In case of changes in availability of any Resource, the QSE that represents the Resource should update its Availability Plan as soon as reasonably practicable, but not later than 60 minutes after the event that caused the change.

The Availability Plan for any hour can’t be updated after the end of the corresponding Adjustment Period. An Availability Plan submitted for a Resource that is not qualified for the service will be rejected.

Once submitted, the Availability Plan will be subject to a validation process as described in the Validation section. If an Availability Plan had been previously submitted for the Resource and Availability Type, the new Availability Plan will overwrite the old Availability Plan for the hours specified in the new entry. Any portions of the old Availability Plan containing hours not specified in the new entry will be maintained.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Hour** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Original Availability Plan |  |  | A | A | A | A | A |  |
| New Availability Plan |  |  |  |  |  | U | U | U |
| Final Availability Plan |  |  | A | A | A | U | U | u |

The data contained in the Availability Plan is displayed to ERCOT Operators and may be used for settlement purposes.

Schedules

Output Schedule

An Output Schedule is telemetered in Real Time and/or submitted via XML for a DSR and submitted via XML for a non-DSR by a QSE that represents the specific Resource. The Output Schedule is used only in SCED and not in DAM, SASM or RUC. An Output Schedule submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* Resource ID
* Cancel EOC flag (applies to both Three-Part Offers and Energy Offer Curves-only)
* One or more sets of data applicable to separate periods of time in the day:
* Output level (MW)
* Start date/five-minute interval
* End date/ five-minute interval

A QSE may submit an Output Schedule starting fourteen days before the Operating Day specified by the schedule. The QSE can submit an Output Schedule for a block of five minute intervals by specifying the start and end interval.

MMS will allow entry of an Output Schedule for a period of time if a valid Energy Offer Curve is available for that period, but will not use the Output Schedule unless the ‘Cancel EOC’ flag is set. If the flag is set, and the Output Schedule passes all validations, then MMS will cancel the Energy Offer Curve or the Three-Part Offer. MMS will automatically invalidate an Output Schedule for a Resource if a valid Energy Offer Curve is submitted for that time period.

When submitting an Output Schedule during the Adjustment Period, a warning message will also be sent if a COP has not been submitted reflecting the use of an Output Schedule, for the time specified in the Output Schedule submission.

Once submitted, the Output Schedule will be subject to a validation process as described in the Validation section. If an Output Schedule had been previously submitted for the Resource for the same time period, the new Output Schedule will overwrite the old one for the intervals specified in the new Output Schedule. Any portions of the old Output Schedule containing intervals not specified in the new one will be maintained.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Five-minute Interval** | **05** | **10** | **15** | **15** | **20** | **25** | **30** | **35** |
| Original Schedule |  |  | 50 | 50 | 50 | 50 | 50 |  |
| New Schedule |  |  |  |  |  | 100 | 100 | 100 |
| Final Schedule |  |  | 50 | 50 | 50 | 100 | 100 | 100 |

When an Output Schedule is submitted, a warning message will be sent to the QSE if the QSE has not submitted an Output Schedule for all time periods of that Operating Day that are indicated as On-line by COP Resource Status that are not already covered by an Energy Offer Curve.

For each Operating Hour, one hour before the end of the Adjustment Period for that Operating Hour, for any Resource that planned to be On-line as reported in its COP, a notification will be sent to the QSE if the QSE has not submitted an Energy Offer Curve or Output Schedule or the submitted Output Schedule is found invalid when checked against COP.

The QSE can update the Output Schedule for non-DSR until the end of the Adjustment Period to create a valid Output Schedule. The QSE can update the Output Schedule for DSR until the SCED execution for the appropriate five-minute interval to create a valid Output Schedule.

At the end of the Adjustment Period, the MMS will use COP for the Operating Hour and Normal/ Emergency Ramp Rate to do another check for any Output Schedule for non-DSRs for the Operating Hour. After this validation the QSE will be immediately informed of any discrepancy; however, the Output Schedule will not be invalidated.

Before each SCED run, if a valid Energy Offer Curve or an Output Schedule does not exist for a Non-DSR which is not an Intermittent Renewable Resources (IRR) or Qualifying Facility (QF) and it has an On-Line telemetered Resource Status, ERCOT will notify the QSE and set the Output Schedule equal to the telemetered output of the Resource at the end of the Adjustment Period until an Output Schedule or Energy Offer Curve is submitted in a subsequent Adjustment Period.

Before each SCED run, if a valid Energy Offer Curve does not exist for a Non-DSR which is an Intermittent Renewable Resources (IRR) or Qualifying Facility (QF) and it has an On-Line telemetered Resource Status then ERCOT will notify the QSE and set the Output Schedule equal to the current telemetered output of the Resource until a valid Energy Offer Curve is submitted in a subsequent Adjustment Period.

Before each SCED run, if a valid Energy Offer Curve or a valid Output Schedule does not exist for a Resource that has the status of On-Line DSR, ERCOT will notify the QSE and set the Output Schedule to the telemetered output for the resource at the time of each SCED execution until a revised Output Schedule is validated.

Before each SCED run, MMS will validate the Output Schedule for DSRs. The input to this preprocessing will be either telemetered Output Schedule value or Output Schedule submitted using XML depending on whether the quality code for the telemetered Output Schedule is good or not. If the input to the Output Schedule validation process doesn’t pass the validation, then MMS shall notify the QSE and set the Output Schedule equal to the telemetered generation at the time of SCED execution.

Self-Schedule

A Self-Schedule is submitted by any QSE to specify the amount of the QSE’s energy supply to be used to meet the QSE’s energy obligation for Real-Time Settlement. A Self-Schedule submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* Source Settlement Point
* Sink Settlement Point
* One or more sets of data applicable to separate periods of time in the day:
* Start Date/15-minute Settlement Interval
* End Date/15-minute Settlement Interval
* Quantity (MW)

A QSE may submit a Self-Schedule starting fourteen days before the Operating Day specified by the Self-Schedule, upon which it will be subject to a validation process as described in the Validation section. If a Self-Schedule had been previously submitted for the QSE for the same time period and the same pair of source and sink Settlement Points, the new schedule will overwrite the old schedule for the Settlement Intervals specified in the new schedule. Any portions of the old schedule containing Settlement Intervals not specified in the new schedule will be maintained.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Settlement Interval** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Original Schedule |  |  | 50 | 50 | 50 | 50 | 50 |  |
| New Schedule |  |  |  |  |  | 100 | 100 | 100 |
| Final Schedule  |  |  | 50 | 50 | 50 | 100 | 100 | 100 |

Self-Schedules are not used in the DAM, DRUC, HRUC, SCED, or any MMS process. Self-Schedules provide an accounting mechanism that serves to segregate congestion charges/payments from energy charges/payments on the Real-Time Settlement Statement, so that tax-exempt organizations can separate member and non-member income.

After the end of the Adjustment Period for the time period specified in the Self-Schedule, the schedule cannot be modified or cancelled.

Trades

Capacity Trade

A Capacity Trade is submitted by a QSE that has a bilateral contract for capacity with another QSE. A Capacity Trade submission consists of:

* A set of data applicable to the entire submission:
* Buying QSE Short Name
* Selling QSE Short Name
* One or more sets of data applicable to separate periods of time in the day:
* Start Date/Hour
* End Date/Hour
* Quantity (MW)

A QSE may submit a Capacity Trade starting fourteen days before the Operating Day specified by the trade, upon which it will be subject to a validation process as described in the Validation section. Capacity Trades are stored in MMS as individual hour trades. Once the trade passes validation, the MMS will search the system to see if the other QSE has submitted an identical trade. If an identical trade is found, both trade submissions will be marked as ‘confirmed’. QSEs can query the MMS for both confirmed and unconfirmed trades in which the QSE is identified as a counterparty.

If a trade had been previously submitted for the same buying and selling QSEs for the same time period and has not been confirmed, the new trade will overwrite the old trade for the hours specified in the new trade. Any portions of the old trade containing hours not specified in the new trade will be maintained. A QSE may cancel or modify any unconfirmed trade any time until the end of the Adjustment Period for the time specified by the trade.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Hour** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Original Trade (unconfirmed) |  |  | 50 | 50 | 50 | 50 | 50 |  |
| New Trade (unconfirmed) |  |  |  |  |  | 100 | 100 | 100 |
| Final Trade (unconfirmed) |  |  | 50 | 50 | 50 | 100 | 100 | 100 |

If a trade had been previously submitted for the same buying and selling QSEs for the same time period and it has already been confirmed, a QSE wishing to modify the trade must cancel the trade and submit a new one. The system will not change the other QSE’s copy of the trade other than to mark it as unconfirmed, because the two trades no longer match. The other QSE must then also cancel the existing trade and submit the identical trade for those hours for the trade to be marked as confirmed for both parties. Any hours of a previous trade not specified in the new trade submission are maintained. Either QSE may cancel any trade any time until the end of the Adjustment Period for the time specified by the trade.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Hour** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Original Trade between QSE A and QSE B (confirmed hours in bold) |  |  | **50** | **50** | **50** | **50** | **50** |  |
| QSE A cancels trade for hours 6-7 |  |  | **50** | **50** | **50** |  |  |  |
| Trade as seen by QSE B after QSE A cancels hours 6-7 (confirmed hours in bold) |  |  | **50** | **50** | **50** | 50 | 50 |  |
| New Trade from QSE A |  |  |  |  |  | 100 | 100 | 100 |
| Trade as seen by QSE A before QSE B submits matching trade (confirmed hours in bold) |  |  | **50** | **50** | **50** | 100 | 100 | 100 |
| Trade as seen by QSE B before QSE B submits matching trade (confirmed hours in bold) |  |  | **50** | **50** | **50** | 50 | 50 |  |
| QSE B cancels trade for hours 6-7 |  |  | **50** | **50** | **50** |  |  |  |
| New Trade from QSE B |  |  |  |  |  | 100 | 100 | 100 |
| Trade as seen by both QSE A and QSE B (confirmed hours in bold) |  |  | **50** | **50** | **50** | **100** | **100** | **100** |

Capacity Trades are used only in settlements and are not considered in any DAM, DRUC, HRUC, or SCED process.

After the Adjustment Period for the hours specified by the Capacity Trade, any confirmed trade cannot be modified or cancelled. Any unconfirmed trade is not used by any process.

Energy Trade

An Energy Trade is submitted by a QSE that has a bilateral contract for energy with another QSE. An Energy Trade submission consists of:

* A set of data applicable to the entire submission:
* Buying QSE Short Name
* Selling QSE Short Name
* Settlement Point
* One or more sets of data applicable to separate periods of time in the day:
* Start Date/Settlement Interval
* End Date/ Settlement Interval
* Quantity (MW)
* Net Trade Sale/Purchase flag (“S”/”P” if Buying/Selling QSE are the same—DSR use only)

A QSE may submit an Energy Trade starting fourteen days before the Operating Day specified by the trade, and until 1430 the day after the Operating Day, upon which it will be subject to a validation process as described in the Validation section. Energy Trades are stored in MMS as individual 15-minute interval settlement interval trades. Once the trade passes validation, the MMS will search the system on an individual interval basis to see if the other QSE has submitted an identical trade except for the DSR trades described below. If an identical trade is found, both trade submissions will be marked as ‘confirmed’. QSEs can query the MMS for both confirmed and unconfirmed trades in which the QSE is identified as a counterparty.

The process of updating and reconfirming existing Energy Trades is identical to the process described in the Capacity Trade section. See the Capacity Trade section for a description and examples.

Energy Trades are used only in settlements and are not considered in any DAM, DRUC, HRUC, or SCED process, except for DSRs as described below.

Each QSE representing a DSR will submit by the end of the Adjustment Period an Energy Trade where the QSE is both the buyer and the seller to indicate the net Energy Trades, DAM awards and Energy from the QSE’s non-DSR Generation Resources used to meet the QSE’s Load as well as any Energy Trade or DAM award that is satisfied by energy from the DSR Resources. These DSR trades are automatically confirmed as soon as they are validated (i.e. there is no matching that takes place). A Sale/Purchase flag will specify whether the trade is a net energy sale or a net energy purchase. The net energy sold of X MW indicates that the DSR has to generate X MW in addition to the corresponding DSR Load. The net energy purchase of Y MW indicates that the QSE is purchasing Y MW so that the DSR has to generate Y MW less than the corresponding DSR Load.

A QSE may cancel or modify a trade any time before 1430 of the day following the Operating Day. After 1430 on the day following the Operating Day specified by the Energy Trade, any confirmed trade cannot be modified or cancelled. Any unconfirmed trade is not used by any process.

Ancillary Service Trade

An Ancillary Service Trade is submitted by a QSE that has a bilateral contract for AS with another QSE. An AS Trade submission consists of:

* A set of data applicable to the entire submission:
* Buying QSE Short Name
* Selling QSE Short Name
* AS Type
* One or more sets of data applicable to separate periods of time in the day:
* Start Date/Hour
* End Date/Hour
* Quantity (MW)

A QSE may submit an AS Trade starting fourteen days before the Operating Day specified by the trade, upon which it will be subject to a validation process as described in the Validation section. AS Trades are stored in MMS as individual one hour trades. Once the trade passes validation, the MMS will search the system on an individual hour basis to see if the other QSE has submitted an identical trade. If an identical trade is found, both trade submissions will be marked as ‘confirmed’. QSEs can query the MMS for both confirmed and unconfirmed trades in which the QSE is identified as a counterparty.

The process of updating and reconfirming existing AS Trades is identical to the process described in the Capacity Trade section. See the Capacity Trade section for a description and examples.

Confirmed AS Trades change each QSE’s AS Supply Responsibility, which is the amount of AS provided by the QSE’s own Resources. The QSE AS Supply Responsibility should be equal to the summation of the AS Schedules as shown in the Resources’ COPs.

Either QSE may cancel a trade any time until the end of the Adjustment Period for the time specified by the trade. After the Adjustment Period for the hours specified by the AS Trade, any confirmed trade cannot be cancelled. Any unconfirmed trade is not used by any process.

Other

AS Self-Arrangement

An AS Self-Arrangement is submitted by a QSE. The AS Self-Arrangement is used to compute how much AS must be procured by DAM or SASM. An AS Self-Arrangement submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* AS Type – Reg-Up, Reg-Down, RRS (divided into subtypes of RRSGN, RRSLD, RRSNC), Non-Spin (divided into subtypes NSPIN and NSPNM)
* One or more sets of data applicable to separate periods of time in the day:
* Start Date/Hour
* End Date/Hour
* Quantity (MW)

Before 0600 in the Day-Ahead, each QSE is notified of its AS Obligation (in MW) for each AS Type for each hour of the Operating Day. A QSE may submit a Self-Arrangement starting fourteen days before the Operating Day (even though the AS Obligation is not known until the Day-Ahead), and may submit or update the Self-Arrangement until the DAM submission deadline in the Day-Ahead. Each submission is subject to a validation process as described in the Validation section. If a Self-Arrangement had been previously submitted for the QSE for the same time period and same AS type, the new Self-Arrangement will overwrite the old Self-Arrangement for the hours specified in the new Self-Arrangement. Any portions of the old Self-Arrangement containing hours and types not specified in the new Self-Arrangement will be maintained.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Hour** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Original Arrangement |  |  | 50 | 50 | 50 | 50 | 50 |  |
| New Arrangement |  |  |  |  |  | 100 | 100 | 100 |
| Final Arrangement |  |  | 50 | 50 | 50 | 100 | 100 | 100 |

After the DAM submission deadline, AS Self-Arrangements cannot be modified or cancelled for that Operating Day, except as noted below. By 1430, a QSE must update their AS Responsibility in their COP to reflect all AS Self-Arrangements, AS Trades and awarded AS Offers.

If ERCOT increases the AS Plan during the Adjustment Period, the QSE will be informed of its new AS Obligation. The QSE will have at least thirty minutes following this notice to update their AS Self-Arrangements to reflect the new AS Obligation. After the DAM, the AS Self-Arrangement values are used along with the QSE’s AS Obligation, AS Trades and AS awards to compute the QSE’s AS Supply Responsibility, which is the net amount of AS the QSE is obligated to deliver to ERCOT from its own Resources. Periodically, this AS Supply Responsibility is compared to the QSE’s AS Responsibility provided in their Resources’ COPs to see whether or not the QSE has assigned enough MW to cover their AS Supply Responsibility. If not, a warning message is sent to the QSE. If the discrepancy is not resolved, the QSE will be responsible for any costs associated with procuring the deficient AS amounts from other QSEs.

If ERCOT decides to raise the AS Plan (and therefore the AS Obligation for each QSE) after the DAM, QSEs will be able to submit new AS Self-Arrangement amounts. The notice to QSEs will include the incremental AS Obligation due to the AS Plan increase. QSEs will then submit a new AS Self-Arrangement specifying how much of the incremental amount they will self-arrange. AS amounts not self-arranged will be procured in a SASM.

Verbal Dispatch Instructions

Verbal Dispatch Instructions (VDIs) are issued by ERCOT and acknowledged by QSEs or TSPs. When ERCOT issues a VDI, a notification is sent to the appropriate Market Participant. The Market Participant must then query MMS for the VDI to retrieve the VDI information. A VDI consists of:

* + QSE Name
	+ Resource
	+ ERCOT Operator
	+ Instruction Type (Commit or Decommit)
	+ Current Operating Level
	+ Current State
	+ Final Operating level
	+ Final State
	+ Notification Time
	+ Initiation Time
	+ Completion Time
	+ Reference Number
	+ Other Information
* The following is an example of data contained within one VDI:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **QSE Short Name** | **Resource** | **ERCOT Operator** | **Instruction Type** | **Current Operating Level** | **Current state** | **Final Op Level** | **Final state** |
| QABC | ABC\_GEN\_1 | JG | COMMIT | 0 MW | OFF | 150 MW | ON |
|  |  |  |  |  |  |  |  |
| **Notification Time** | **Initiation Time** | **Completion Time** | **Reference Number** | **Other Information** |
| 3/30/2008 14:12:00 | 3/30/2008 14:15 | 3/30/2008 15:00 | VDI12345 | None |

A QSE acknowledges receipt of the VDI by repeating the VDI information back to ERCOT via a submission. Once a VDI is acknowledged, it can no longer be queried.

Resource Parameters

Resource Parameters are submitted by QSEs that represent Resources. The Resource Parameters limit what can be awarded to each Resource by the DAM, RUC, and SASM processes and limit how each Resource is dispatched by SCED. The specific parameters vary depending on whether the Resource is a Generation Resource, Controllable Load Resource (CLR), or Non-Controllable Load Resource (NCLR). A Resource Parameter submission consists of:

* QSE Short Name
* Resource ID
* Normal Ramp Rate Curve (Generation and Controllable Load Resources)
	+ Up to 10 Up Ramp Rate (MW/min), Down Ramp Rate (MW/min), and breakpoint (MW) triplets
* Emergency Ramp Rate Curve (Generation and Controllable Load Resources)
	+ Up to 10 Up Ramp Rate (MW/min), Down Ramp Rate (MW/min), and breakpoint (MW) triplets
* Min Online Time (Generator) / Min Restoration Time (NCLR)
* Min Offline Time (Generator) / Min Interruption Time (NCLR)
* Max Online Time (Generator) / Max Deployment Time (CLR) / Max Interruption Time (NCLR)
* Max Daily Starts (Generator) / Max Daily Deployments (NCLR)
* Max Weekly Starts (Generator) / Max Weekly Deployments (NCLR)
* Max Weekly Energy (all)
* Hot Start Time (Generator)
* Intermediate Start Time (Generator)
* Cold Start Time (Generator)
* Hot to Intermediate Time (Generator)
* Intermediate to Cold Time (Generator)
* Min Notice Time (NCLR)
* Reason (all)

The following is an example of data contained within one Resource Parameter submission:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **QSE Short Name** | **Resource** | **Min Online Time** | **Min Offline Time** | **Max Online Time** | **Max Daily Starts** | **Max Weekly Starts** |
| QABC | ABC\_GEN\_1 | 3 | 3 | 10 | 2 | 10 |
| **Max Weekly Energy** | **Hot Start Time** | **Intermediate Start Time** | **Cold Start Time** | **Hot to Int Time** | **Int to Cold Time** | **Reason** |
| 5000 MWh | 0 | 3 | 5 | 2 | 5 | Seasonal Parameters |
| **Normal Ramp BP** | **Normal Up Ramp Rate** | **Normal Down Ramp Rate** |  | **Emer Ramp Rate BP** | **Emer Up Ramp Rate** | **Emer Down Ramp Rate** |
| 0 | 5.0 | 5.0 |  | 0 | 5.0 | 5.0 |
| 30 | 3.0 | 3.0 |  | 30 | 3.0 | 3.0 |
| 70 | 1.0 | 1.0 |  | 70 | 1.0 | 1.0 |

Resource Parameter submissions will be rejected if the base points of ramp rate curves are not greater than or equal to 0 and are not between the High Reasonability Limit and Low Reasonability Limits. They will also be rejected if Maximum Weekly Energy is less than zero, Minimum Interruption Time is greater than Maximum Interruption Time, or Minimum Online Time is greater than Maximum Online Time.

A Resource Parameter submission becomes effective as soon as it is successfully submitted. A subsequent Resource Parameter submission will overwrite any previous submission. Before any Resource Parameter submission is made, parameters submitted through the registration process are used. The submitted Resource Parameters may be canceled at any time, upon which the registration parameters will be used again. The registration-specified Resource Parameters may be queried, but not canceled.

Validation Process

Prior to Receipt by MMS – Phase Zero External Interface (TIBCO) Validation

Submissions received by that External Interface System that have not yet been successfully transmitted to MMS, but passed the simple XML message structure and certificate security validations, will be marked as ‘received.’ Otherwise, those failing validation will be marked as ‘rejected.’

Phase One MMS Validation

All Market Participant submissions are allowed starting fourteen days before the applicable Operating Day. Immediately upon receipt by the MMS, each submission is subjected to a series of validation rules. These rules check for the proper XML format of the submission, proper QSE permission to make the submission, and other content criteria based on the Protocols. If a submission passes validation, it is stored in the MMS and may be queried, updated, or cancelled. Invalid submissions are retained separately for audit purposes, but cannot be viewed by the QSE, as queries to MMS only return valid submitted items. The QSE will be immediately informed of any invalid submissions and the reasons why it is invalid.

Phase Two MMS Validation

At 0700 on the day before the Operating Day, all Market Participant submissions for the applicable Operating Day that were submitted prior to 0700 that have passed Phase One validation are subjected to a second series of validation rules, referred to as Phase Two. Phase Two consists of some additional rules for certain types of submissions. Any submission for the applicable Operating Day made after 0700 in the Day-Ahead will be subjected to both Phase One and Phase Two Validations. The QSE will be immediately informed of any invalid submissions and the reasons why it is invalid. Once a submission passes Phase Two validation, the submission is fully validated and will be used by all applicable processes. Market Participants should avoid making any submissions for the next Operating Day when the system is preparing for Phase Two validation and while it is running, generally between 6:55am and 7:05am. Until Phase Two validation is complete, a message will be received by the QSE that indicates that submissions for tomorrow’s Operating Day are not available at this time.

All submissions may be modified or cancelled any time before the DAM submission deadline in the Day-Ahead, with the exception of the COP. The COP may be modified, but not cancelled.

The following is a list of validation rules where it is possible that validation data has changed between the time of submission and 0700 in the Day-Ahead. The validation rules will be used in both Phase One and Phase Two:

All submission types

* Validity of QSE Short Name and User Name
* Permissions of QSE/User to submit to MMS

All Offers

* Offer prices vs. system-wide offer caps

Resource-specific Submissions (AS Offers, Three-Part Supply Offers, Inc/Dec Offers, Current Operating Plan, Availability Plan, RTM Energy Bids)

* Resource representation by QSE
* Offer prices vs. verifiable or generic caps
* Resource qualification to provide Ancillary Service, qualification as a DSR, RMR, Black-Start Resource, or Synchronous Condenser Resource

Trades

* Validity of Buying and Selling QSE short names

The following is a list of validation rules that cannot take place during Phase One validation, because some data used by the rule is not available until 0700 in the Day-Ahead. The rules will be used in Phase Two only:

Self-Arranged AS

* Self-arranged quantity vs. self-arranged quantity limit (Ancillary Service Obligation plus AS-specific excess allowance)

Three-Part Supply Offers, DAM Energy-Only Offers, DAM Energy Bids, PTP Obligation bids, Self-arranged AS

* Credit Exposure vs. available credit

PTPLOs

* CRR Ownership

Credit Process

QSE participation in the DAM is subject to a credit limit, which is computed at a Counter-Party level and sent to MMS by the Credit Monitoring System at the close of business on Business Days for use by the DAM that runs on the following day. If any Counter-Party’s credit limit is not updated from the Credit Monitoring System, DAM Team will work with Credit Group to manually update credit limit data.

A single Counter-Party may represent multiple QSEs and CRR Account Holders. DAM Energy Bids, DAM Energy Offers (which includes DAM Energy-Only Offers and Three-Part Supply Offers), PTP Obligation bids, and Ancillary Services that a QSE does not self-arrange (and therefore must be procured in the DAM) all contribute to the applicable Counter-Party’s credit exposure. The exposure calculation is based on price information that is not available until the Day-Ahead. Therefore, the credit validation will not take place when the item is submitted before the Day-Ahead. The credit validation must take place during Phase Two validation, which takes place either at 0700 in the Day-Ahead for otherwise valid items submitted before 0700, or at the time of submission when submitted between 0700 and the DAM submission deadline in the Day-Ahead. At 0700, the credit exposure is initially set to zero. The amount of credit exposure related to each submission are calculated in accordance with Protocol Section 4.4.10.

For Counter-Parties that represent more than one QSE, MMS processes the entire bid set of one QSE before moving on to the next. The Ancillary Services that were not reported as self-arranged are added to the total exposure first. The exposure due to each individual submission is added to the total within each submission type, in the following order: DAM Energy-Only Offers, Three-Part Supply Offers, DAM Energy-Only Bids, PTP Obligation bids. The exposure for any of these types submitted between 0700 and the DAM submission deadline is added as it is received by MMS. Cancellation of a bid/offer will remove that exposure from the total exposure. When an individual item causes the Counter-Party’s credit exposure to exceed the Counter-Party’s credit limit, that individual item is rejected. However, future submissions by any QSE represented by the Counter-Party that do not cause the credit exposure to exceed the credit limit are still allowed. The Three-Part Supply Offer calculation may result in a negative credit exposure amount. In this situation, the Three-Part Supply Offer may in effect cause a higher credit limit for the Counter-Party as this negative exposure amount will increase the exposure available for other bids and offers.

When a new settlement point is added to the system, a proxy will be used for credit calculation.

# Use of Submissions in MMS Processes

| **Submission Type** | **WRUC** | **DAM** | **DRUC** | **HRUC** | **SASM** | **SCED** | **Submission Window** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Offers** |  |  |  |  |  |  |  |
| Three-Part Supply Offer |   | X | X | X |   | X | 14 days prior to OD until DA 1000 |
|   |   |   | X |   | X | Start of AP until end of AP |
| AS Offer |   | X |   |   | X |   | 14 days prior to OD until DA 1000 |
|   | X |   |   | X |   | DA 1000 until Alert specified deadline |
|   |   |   |   | X |   | After DAM until end of AP |
| Inc/Dec Energy Offer |   |   |   |   |   | X | 14 days prior to OD until end of AP |
| DAM Energy-Only Offer |   | X |   |   |   |   | 14 days prior to OD until DA 1000 |
| CRR Offer |   | X |   |   |   |  | 14 days prior to OD until DA 1000 |
| **Bids** |   |   |   |   |   |   |   |
| DAM Energy Bid |   | X |   |   |   |   | 14 days prior to OD until DA 1000 |
| PTP Obligation bid |   | X |   |   |   |   | 14 days prior to OD until DA 1000 |
| **Schedules** |   |   |   |   |   |   |   |
| Output Schedule |   |   |   |   |   | X | 14 days prior to OD until end of AP |
| DSR Output Schedule |   |   |   |   |   | X | 14 days prior to OD until end of AP |
| Self-Schedule |   |   |   |   |   |   | 14 days prior to OD until end of AP |
| DC Tie Schedule |   |   | X | X |   |  | 14 days prior to OD until end of AP |
| **Trades** |   |   |   |   |   |   |   |
| Capacity Trade |   |   |  |  |   |   | 14 days prior to OD until end of AP |
| Energy Trade |   |   |  |  |   |   | 14 days prior to OD until 1430 day following OD |
| AS Trade |   |   |  |  |  |   | 14 days prior to OD until end of AP |
| **Other** |   |   |   |   |   |   |   |
| AS Self-Arrangement |   | X |  |  |  |   | 14 days prior to OD until DA 1000 |
|   |   |   |   | X |   | SASM Alert until SASM execution |
| COP | X | X | X | X | X |  | 14 days prior to OD until end of AP |
| Availability Plan |  |  |  |  |  |  | 14 days prior to OD until end of AP |
| Resource Parameters | X | X | X | X | X | X | Any time |
| Verbal Dispatch Instruction |  |  |  |  |  |  | Any time |

OD: Operating Day AP: Adjustment Period Applicable to all inputs: DAM: PD2, PD3