

MMS

Market Submission Validation Rules

**Version 3.0**

Document Revisions

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|  |  |  |  |
| 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 |
| May 26, 2022 | 1.4 | Update AS Trade, AS Self-Arranged to reflect introduction of new NSPIN from NPRR1093Introduce SCR814 CP limit for DAM PTP Obligation Intervals  | N. Smith |
| October 13, 2022 | 1.5 | Update AS Offer, COP, AS Self-Arranged and AS Trade to reflect introduction of RRS Subtypes from FFR Advancement Project. | N. Smith |
| October 13, 2022 | 1.6 | Update Availability Plan for new Availability Type Firm Fuel Supply Service  | N. Smith |
| June 8, 2023 | 1.7 | Update AS Offer, COP, AS Self-Arranged and AS Trade to reflect ECRS implementation of NPRR863 | N. Smith |
| August 10, 2023 | 1.8 | Update CP limit for DAM PTP Obligation Bid IDs of SCR798 to 1,000Corrected PTP Obligation Bid submission data example | C. Holden |
| January 8, 2024 | 1.9 | Correction to which protocol section references the intention of this document to NP 4.2.6 | C. Holden |
| May 15, 2024 | 2.0 | Update COP for implementation of State of Charge for ESRs in NPRR1186 | N. Smith |
| June 24,2024 | 3.0 | Update for RTC+B including new section for AS Only Offers, updates to Three-Part Supply Offer for Energy Bid/Offer Curves from ESRs, COP AS Capability changes, as well as submission window changes due to NPRR1058; DSR removal due to NPRR1000 | 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 4.2.6, 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. The Three-Part Supply Offer is also used by an Energy Storage Resource (ESR) to submit their Energy Bid/Offer Curve. Startup Offers and Minimum-Energy Offers are not applicable to ESRs. 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 (Energy Bid/Offer Curve for ESR)
	+ - Up to 10 price ($/MWh) and quantity (MW) pairs (quantities can be negative and positive for Energy Storage Resource (ESR) to represent Energy Bid/Offer Curve charging and discharging MW range)
		- Exclusive/Inclusive indicator
		- Reason Code (optional) (“OUT” – forced outage, “FUEL” – fuel curtailment, “DSCM” – day-ahead self-commitment, “OTHR” – Other)
		- Reason Text (optional) - Reason for update of the offer, if submitting after the end of the Adjustment Period.
		- Start Date/Hour
		- End Date/Hour
* Percentage of FIP and Percentage of FOP for EOC – not applicable to ESRs
	+ - 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 |

The following is an example of data contained within one Energy Bid/Offer Curve submission:

|  |  |  |
| --- | --- | --- |
| **QSE Short Name** | **Resource ID** | **Expiration Date/Time** |
| QABC | GENERAL\_ESR | 3/31/2026 00:00 |
|  |  |  |
| **Energy Bid/Offer Curve** |  |  |  |  |  |  |  |  |
| **Start Date/Hour** | **End Date/Hour** | **Quantity** | **Price** | **Quantity** | **Price** | **…** | **Quantity** | **Price** |
| 3/30/2026 HE 1 | 3/30/2026 HE 7 | -10MW | $10  | -5MW | $20 | … | 15MW | $80 |
| 3/30/2026 HE 8 | 3/30/2026 HE 18 | -5MW | $10  | 5MW | $15  | … | 15MW | $100  |
| 3/30/2026 HE 19 | 3/30/2026 HE 24 | -15MW | $5  | 5MW | $30 | … | 15MW | $50 |

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 or Energy Bid/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 or Energy Bid/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 or ONOS 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 except where detailed in the next paragraph.

For any Operating Hour, the QSE for a Resource may submit or change Energy Offer Curve information at any time prior to SCED execution, except for the percentage of FIP and percentage of FOP, and SCED will use the latest updated Energy Offer Curve available in the system. The QSE must provide a brief freeform reason at the time of the submission of the Energy Offer Curve if submitted after the end of the Adjustment Period. For the percentage FIP and percentage of FOP within the Energy Offer Curve, submissions and updates must be received by ERCOT’s systems in the Adjustment Period. If a new Energy Offer Curve is not deemed to be valid, then the most recent valid Energy Offer Curve available in the system at the time of SCED execution will be used and ERCOT will notify the QSE that the invalid Energy Offer Curve was rejected. Once an Operating Hour ends, an Energy Offer Curve for that hour cannot be submitted, updated, or canceled.

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

In the RTM, a QSE may submit or change an Energy Bid/Offer Curve at any time prior to SCED execution, and SCED will use the latest updated Energy Bid/Offer Curve available in the system. If a new Energy Bid/Offer Curve is not deemed to be valid, then the most recent valid Energy Bid/Offer Curve available in the system at the time of SCED execution will be used and ERCOT will notify the QSE that the invalid Energy Bid/Offer Curve was rejected. Once an Operating Hour ends, an Energy Bid/Offer Curve for that hour cannot be submitted, updated, or canceled.

An energy Bid/Offer Curve price shall be bounded by the offer floor and either the DASWCAP or RTSWCAP depending on the timing of the submission in dollars per MWh. The ERCOT systems must allow ERCOT to enter ESR-specific Energy Bid/Offer Curve floors and caps.

In DAM and SCED, an Energy Bid/Offer Curve shall be considered to be inclusive of Ancillary Service Offers.

Energy Curves and Energy Bid/Offer Curves for the next Operating Day will not be allowed to be submitted or altered after the DAM submission deadline and before DAM publish.

Resource-Specific 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)
* 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 subtypes RRSPF/RRSUF/RRSFF, Reg-Up, On-line Non-spin, and On-line ECRS; “Regulation-Down”; and “Offline Reserves”- includes Off-line Non-Spin and Off-line ECRS – Resources must be qualified to provide the AS Type/subtype and Load Resources qualified for Non-spin cannot submit Non-Spin Offline)
* A price associated with each AS type/subtype for each capacity amount, if offered for that capacity
* Fixed/Variable quantity block indicator, for each capacity amount (only Load Resources can indicate Fixed) – only used by DAM
* Multi-hour Indicator – only used by DAM

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** | **RRSPF** |  **RRSUF** |  **RRSFF** | **Online NS** | **ECRS** |
| 3/30/2008 HE 1 | 3/30/2008 HE 7 | True | ONRES | 10 MW | $10 | $5 |  |  | $1 | $5 |
| 3/30/2008 HE 8 | 3/30/2008 HE 18 | True | ONRES | 20 MW | $10 |  |  | $1 |  | $5 |
| 3/30/2008 HE 19 | 3/30/2008 HE 24 | True | ONRES | 5 MW | $5 | $10 |  | $5 |  | $1 |

A Resource may not offer both RRSUF and RRSFF for the same hour of the Operating Day.

A Load Resource that is not a Controllable Load Resource, may simultaneously offer RRS, ECRS and Non-Spin in a DAM and be awarded RRS, ECRS and Non-Spin for the same Operating Hour in the DAM, but will not be awarded Non-Spin and RRS or Non-Spin and ECRS on the same Load Resource simultaneously in Real-Time.

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. Multi-hour blocks will only be considered in the DAM and will be ignored for awarding of Ancillary Services in the RTM;

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. QSEs should update their offers after DAM publish to remove multi-hour blocks to prevent issues modifying their AS Offers during Real-Time.

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 |

For DAM, 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.

No Resource-Specific Ancillary Service Offer received before DAM submission deadline may contain a price exceeding the Day-Ahead System-Wide Offer Cap (DASWCAP). Resource-Specific Ancillary Service Offers received after 1430 in the Day-Ahead or DRUC execution may not contain a price exceeding the Real-Time System-Wide Offer Cap (RTSWCAP). During the Operating Hours in which prioritizing the procurement of FFR up to the maximum FFR amount is in effect, an FFR Ancillary Service Offer price may not be less than -$0.01 per MW. FFR Ancillary Service Offer prices at all other times and any other Ancillary Service Offer prices may not be less than $0 per MW.

If there is a difference in DASWCAP and RTSWCAP at DRUC execution in the Day-Ahead, AS Offers above RTSWCAP will be cancelled.

For SCED, QSEs may update their Ancillary Service Offers in Real-Time. SCED shall use the latest updated Ancillary Service Offers available to it at the time of the SCED execution.

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 prior to SCED for use in SCED.

For use as SCED inputs for determining energy dispatch and Ancillary Service awards, ERCOT shall use the available Ancillary Service MW capacity of all Resources by creating a proxy Ancillary Service Offer for qualified Resources according to protocols.

For all Resources that do not have a valid Ancillary Service Offer but are qualified to provide an Ancillary Service, ERCOT shall create an Ancillary Service Offer Curve for use in RUC as described in the protocols.

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

AS Only Offer

A DAM AS Only Offer is submitted by a QSE to offer to sell Ancillary Service Capacity in the DAM that is not associated with a specific Resource. An individual Ancillary Service Only Offer must be exclusive to a single Ancillary Service product. A DAM AS Only Offer submission consists of:

* A set of data applicable to the entire submission:
* QSE Short Name
* AS Type (restricted to REGUP, REGDN, RRSPF, ONNS, or ECRSS)
* 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 the AS Type
* A price associated with each entered capacity amount

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **QSE Short Name** | **Offer ID** | **AS Type** |
| QABC | ABCRRSPF1 | RRSPF |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Start Date/Hour** | **End Date/Hour** | **Quantity1** | **Price1** | **Quantity2** | **Price2** | **Quantity3** | **Price3** | **Quantity4** | **Price4** | **Quantity5** | **Price5** |
| 3/30/2026 HE 1 | 3/30/2026 HE 7 | 10 MW | $5 | 5 MW | $10 | 20 MW | $3 | 10 MW | $15 | 5 MW | $100 |
| 3/30/2026 HE 8 | 3/30/2026 HE 18 | 20 MW | $5 | 30 MW  | $10 |  |  |  |  |  |  |
| 3/30/2026 HE 19 | 3/30/2026 HE 24 | 5 MW | $1 | 40 MW | $5 | 5 MW | $30 |  |  |  |  |

A QSE may submit an AS Only 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. A QSE may cancel any AS Only Offer any time after passing initial validation until the DAM submission deadline. If an AS Only Offer had been previously submitted for the AS type, 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.

Any valid AS Only Offer which is submitted before the DAM submission deadline and passes all the validations will be considered by the DAM. AS Only Offers will only be considered in the DAM.

No Ancillary Service Only Offer price may exceed the DASWCAP (in $/MW).

Ancillary Service Only Offer prices may not be less than $0 per MW. The minimum amount that may be offered is one-tenth (0.1) MW.

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |

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.

A DAM Energy-Only Offer Curve must be within the range of the offer floor and the DASWCAP in dollars per MWh.

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** | **Source Settlement Point** | **Sink Settlement Point** |
| QABC | 123 | 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 1,000 unique Bid ID/source/sink combinations per Counter-Party per Operating Day. Further, there is a limit of 10,000 PTP bid intervals 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 Real Time System-Wide Offer Cap (RTSWCAP), 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 at any time prior to SCED execution, and SCED will use the latest updated RTM Energy Bid available in the system. If a new RTM Energy Bid is not deemed to be valid, then the most recent valid RTM Energy Bid available in the system at the time of SCED execution will be used and ERCOT will notify the QSE that the invalid RTM Energy Bid was rejected. Once an Operating Hour ends, an RTM Energy Bid for that hour cannot be submitted, updated, or canceled.

* 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 Real-Time System-Wide Offer Cap.

If the QSE has not submitted a valid RTM Energy Bid for an Operating Hour, ERCOT shall create a proxy RTM Energy Bid for the entire Demand response capability of that Load Resource with a not-to-exceed price at the RTSWCAP.

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
* State of Char–e - only for Energy Storage Resource (ESR) Generation Resource:
	+ Minimum State of Charge (MinSOC)
	+ Maximum State of Charge (MaxSOC)
	+ Hour Beginning Planned SOC
* Ancillary Service Capability (MW) for:
	+ - Reg-Up
		- Reg-Down
		- R–S - Primary Frequency Response (RRSPF)
		- R–S - Load Resources controlled by high-set under-frequency relays (RRSUF)
		- R–S - Fast Frequency Response (RRSFF)
		- Non-Spin
		- ECRS
		- 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 Resource Status, or if an Energy Offer Curve or Energy Bid/Offer Curve is present for the hour for which the Resource has ONTEST or ONOS 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 and RUC.

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 submit an updated COP.

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 or notification of force outage. This is done by updating the Resource Status 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. .

A COP for an Energy Storage Resource-Generation Resource (ESR-GR) should contain information about the State of Charge (SOC) for the resource, including the Hour Beginning Planned SOC, the Minimum SOC, and the Maximum SOC for each hour of the COP. For On-Line ESRs, the Hour Beginning Planned SOC values provided in the COP for a given hour are discounted to ensure sufficient SOC is preserved to meet Ancillary Service Resource Responsibilities, as reflected in the COP. Any remaining SOC on the ESR will be considered available for energy dispatch by RUC while respecting the MinSOC and MaxSOC values provided in the COP.

COP MinSOC submitted should be greater than or equal to the registered MinSOC for that ESR-GR. COP MaxSOC submitted should be less than or equal to the registered MaxSOC for that ESR-GR. COP MinSOC submitted should be less than or equal to submitted Hour Beginning Planned SOC which should be less than or equal to submitted MaxSOC COP submissions validation will reject those submissions that don’t meet these requirements.

Availability Plan

An Availability Plan, submitted by the QSE for Resources that are under contract for Firm Fuel Supply Service, 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 (“FFSS”, “BLACKSTART”, “RMR”, or “SYNCCOND”)
* One or more sets of data applicable to separate periods of time in the day:
* Availabili–y - 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 submitted via XML by a QSE that represents the specific Resource. The Output Schedule is used only in SCED and not in DAMor 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, Energy Offer Curves-only, and Energy Bid/Offer Curves)
* 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 or Energy Bid/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, Energy Bid/Offer Curve, or the Three-Part Offer. MMS will automatically invalidate an Output Schedule for a Resource if a valid Energy Offer Curve or Energy Bid/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 or Energy Bid/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 Energy Bid/Offer Curve or Output Schedule or the submitted Output Schedule is found invalid when checked against COP.

The QSE can update the Output Schedule until the end of the Adjustment Period 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 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, Energy Bid/Offer Curve, or an Output Schedule does not exist for a Resource 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, Energy Offer Curve, or Energy Bid/Offer Curve is submitted.

Before each SCED run, if a valid Energy Offer Curve or Energy Bid/Offer Curve does not exist for 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 or Energy Bid/Offer Curve is submitted.

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)

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. 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.

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/subtype
* 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 Position, which is the amount of AS provided by the QSE’s own Resources. The QSE’s AS Position is the sum of the QSE’s Self-Arranged AS quantity, the total MW of sold AS Trades, and DAM AS Awards minus the total MW of bought AS Trades.

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. 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 RRSPF, RRSUF, RRSFF), Non-Spin (divided into subtypes NSPIN and NSPNM), ECRS (divided into subtypes ECRSS and ECRSM)
* 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 Advisory 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. For Non-Spin, if a QSE is only self-arranging NSPNM, the NSPIN value should be set to 0. 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.

After DAM has published, ERCOT shall notify each QSE of its final Ancillary Service Obligation based on the total DAM Ancillary Service procurement quantity, comprised of DAM Ancillary Service awards and Self-Arranged Ancillary Service Quantities for each service and for each hour of the Operating Day..

..

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 and RUC processes and limit how each Resource is dispatched by SCED. The specific parameters vary depending on whether the Resource is a Generation Resource, Energy Storage Resource (ESR), 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)
* Nameplate Min SOC (only required for ESR)
* Nameplate Max SOC (only required for ESR)
* Round Trip Efficiency (only required for ESR)
* 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 (including Energy Bid/Offer Curves), 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 an 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 (Advisory Ancillary Service Obligation)

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

* 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 (including bid portion of Energy Bid/Offer Curves), DAM Energy Offers (which includes DAM Energy-Only Offers, Three-Part Supply Offers, and offer portion of Energy Bid/Offer Curves), 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(including Energy Bid/Offer Curves for ESRs), DAM Energy-Only Bids, PTP Obligation bids, DAM AS-Only Offers. 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** | **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 Operating Hour |
| AS Offer |  | X | X | X | X | 14 days prior to OD until DA 1000 |
|  |  | X | X | X | Start of AP until end of Operating Hour |
| DAM Energy-Only Offer |  | X |  |  |  | 14 days prior to OD until DA 1000 |
| DAM AS-Only 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 |
| PTP Obligation bid with Links to an Option |  | X |  |  |  | 14 days prior to OD until DA 1000 |
| RTM Energy Bid |  |  |  |  | X | 14 days prior to OD until end of Operating Hour |
| **Schedules** |  |  |  |  |  |   |
| 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 |
| COP | 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 | Any time |
| Verbal Dispatch Instruction |  |  |  |  |  | Any time |

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